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Innovation achievable in spite of tight budget

IT managers are under pressure to deliver more for less, reports *Paul Taylor*, but they still have the power to transform their businesses


Illustration: Øivind Hovland

Pity the poor corporate information technology chiefs. Often with little or no increase in budgets they must be innovative and introduce products and services that business leaders need to create fresh sources of customer value. They must also discover ways to turn these into revenue streams.

As Mark McDonald, a research fellow at market researchers Gartner, says, corporate IT departments are "under constant pressure to deliver more with less". Global IT spending by companies is expected to rise by just 2.5 per cent next year to about $2.68tn, says Gartner. It forecasts that banking, communications, media and services, and manufacturing will account for the bulk of growth opportunities until 2016.

To highlight the small growth in budgets, Gartner expects IT spending next year to increase in manufacturing and natural resources by 2.3 per cent; in banking and securities by 3.5 per cent; and in the communications, media and services sector by 3 per cent. Spending in the transport and insurance sectors is expected to rise more than 4 per cent.

Kenneth Brant, Gartner research director, says: "The global economic outlook has deteriorated in 2012, leading to scant overall growth in enterprise [corporate] IT spending.

"However, our third-quarter outlook points to more substantial growth in 2013 – if significant fiscal crises are avoided in the US and Europe – and in subsequent years."

As Mr Brant notes: "Most enterprises have already significantly cut discretionary IT spending growth over the past several years and, barring a global economic catastrophe and significant contraction of operations, they have little room to reduce IT spending further in the long run."

Mr McDonald, co-author of a recently published book, *The Digital Edge, Exploiting Information and Technology for Business Advantage*, says that corporate IT chiefs can nevertheless help transform businesses by aligning the spending of their budget with business objectives.

> 'Most enterprises have cut discretionary IT spending growth'

He points to Royal Caribbean Cruises, which adopted a target of zero tolerance for passenger queues.

Bill Martin, Royal Caribbean's vice-president and chief information officer, says: "If you have to stand in line, the ship suddenly seems too big and the experience diminishes sharply." Imagine the potential for lines when 5,400 people on a single ship want to eat dinner, see a show, or take an trip ashore. Rather than making lines more endurable, Royal

Continued on Page 3

Inside »

Cost control develops into full reviews of processes

Spending

Downturn leads to greater focus on functionality, writes *Charles Batchelor*


Totting up: trend is for a deeper analysis of data Dreamstime

The management of IT costs used to be a black art for many companies.

In the good times, managers might be forgiven for exercising less than optimal control of spending on a range of barely understood technologies. The downturn has changed all that, however.

"When the top line was growing, managers did not scrutinise their IT costs as much," says one head of European operations at a global supplier of business management software. "Now, everyone wants to know what they are spending their money on."

But sensible cost management is about far more than totting up the expenditure on servers, software licences and the IT department's headcount. It involves a thorough review of business procedures to ensure they are organised to produce results at the lowest cost.

"There is no such thing as an IT project," advises David Elton, an IT and change management specialist at PA Consulting. "There are only business projects with IT in them."

This is leading, in the view of some experts, to the role of chief information officer becoming more closely allied to that of chief operating officer, and to some companies giving managers responsibility for IT alongside facilities or property management more generally.

Other observers, however, believe IT remains too complex to become part of a generalist's portfolio.

Instead of focusing on easily identifiable but essentially random parts of their IT expenditure, such as the number of servers in use, businesses need to look at the cost of delivering particular services, such as email, trading platforms or handheld devices, against the size of the business.

"We take multiple data sources, including the company's financial data, assets employed and employee numbers, and apply our model to break down all the costs," the European operations manager says.

"The customer can see how much he is spending on his IT infrastructure and roll this into a model of how much it costs him per service."

This sort of analysis can have surprising results. A business running five computer applications might discover that it obtained 90 per cent functionality from four and that the fifth was used by only a handful of its staff. It might then ask itself whether it can turn off the fifth application and still operate effectively.

Another business signed up to an all-day, every-day, high-level support service might find it could manage very well without this service out of business hours and at weekends.

The cloud has become a popular means of buying in computer capacity from a third-party supplier and avoiding the costs of new projects. It allows a company to reduce its capital expenditure in return for increased but visible operational spending that can be tweaked to respond to the swings of the business cycle.

But if a business is already invested in internal systems that have been customised to its requirements, it may make sense to stick with this arrangement. A cloud service that does not fully match the company's needs is unlikely to bring the efficiencies that are being sought.

> 'There is no such thing as an IT project. There are only businesses with IT in them'

The consensus in the industry at the moment is that 60-80 per cent of any business's IT expenditure goes on running the IT network and just 20-40 per cent is devoted to developing applications that bring about change.

"I advise managers to invest in IT that will change the way the business works," says Mr Elton.

"The cost of IT is coming down but the cost of implementation is not. You have to manage change or you could find that you are not achieving full functionality from your investment.

"If your investment is failing, you need to look for reasons outside the technology. Look at the implementation."

Staff need to be properly trained and convinced of the advantages of new IT systems or they may persist with old working methods. A company that implemented a new resource planning system to improve the performance of its human resources department found employees were pasting old Microsoft Word templates on to the fields in the system.

Sanjay Purohit, global head of products, platforms and solutions at Infosys, the consulting and IT services provider, says cost savings and business change can be achieved by looking at management functions such as marketing and human resources in the round. He says cost-cutting traditionally has been undertaken in the infrastructure, applications or services layers of the so-called IT "stack".

"Rather than looking at costs in one layer, we take a vertical slice through the stack. We started looking at full organisational processes such as digital marketing to see how we could reduce costs," Mr Purohit says.

The result was applications that allow managers to bring together information on customers, internal contacts and markets on to one cloud-based platform to improve efficiency and reduce costs.

"It is not only about taking out IT technology costs," says Mr Purohit. "It is about taking out all costs, including those involved in the processes."

Illustration: Øivind Hovland

Businesses turn to brokers to get more from the cloud

Advisory services Corporates seek help from external experts, writes *Maija Palmer*

During a gold rush, it is the sellers of picks and shovels that make the surest money. So it may prove with the stampede to put corporate IT infrastructure on the internet.

A new category of company has emerged in the past few years that offers advice and tools to help companies manage their move to the cloud. Known as cloud service brokers, they are thriving.

Benoit Lheureux, an analyst at Gartner, the IT research group, says this market is growing by about 20 per cent a year and he expects it to be worth some $100bn by 2014. There are at least 100 or more companies offering services, from the traditional IT service integrators such as Accenture or Capgemini, to start-ups.

Appirio, a 600-employee company based in San Francisco that mostly helps medium-to-large companies migrate systems online, says its sales grew by about 80 per cent last year.

Rick Nucci, founder and general manager of Boomi, a cloud service broker bought by Dell in 2010, says many IT departments are waking up to the realisation that business departments and individuals have been buying and using cloud services in a piecemeal fashion inside the company for years, but often these have not been vetted, integrated or managed properly by the IT department.

Mr Nucci says: "Software-as-a-service providers for years avoided involving the IT department. They went straight to the vice-president of sales, for example, and got him to use Salesforce.com [best known for its customer relationship management software] for his department. Now IT departments are looking at this and saying they have regulations to comply with and they have to get their arms around all these things that went on in different business units."

> 'Companies are often unaware of the extent to which staff are using the cloud as part of their daily lives'

Martin Lee, cloud product marketing manager for Europe, Middle East and Africa for Symantec, the IT security company, says unmanaged cloud deployments can be a big risk.

Mr Lee says: "Users are using cloud whether IT departments want them to or not. But companies have obligations around things like control of data. They are also realising that a lot of the value of the business is in its intellectual property, not the bricks and mortar, and they want to be in control of who sees it and handles it.

"Companies are often unaware of the extent to which staff are using cloud as part of their daily live. When they see the logs of network activity, it can be a real wake-up call."

This is often the moment when the cloud services broker gets a call. Mr Lee says Symantec is asked to help companies encrypt sensitive data that is passing into the cloud, and to help simplify the way employees sign on to different cloud services.

Companies want brokers to help them get more out of their disparate cloud software programmes. Mr Nucci says: "To do any analysis on these services you need to integrate them. Let's say you want to analyse whether your hiring strategy is working. You need to touch at least three or four different systems, including human resources and payroll."

The trouble is, the cloud-based human resources system will not necessarily talk to your in-house payroll programme, without either some complex internal engineering or the help of an external expert.

Such help is not cheap. Appirio says companies can pay between $10,000 and single-digit millions for help in making the transition and in running the cloud system subsequently.

However, Chris Barbin, chief executive at Appirio, says this is less than companies would have spent in the past on IT contractors who would spend three to five years designing an IT transformation project that would often fail. The results of transferring IT to the cloud are quicker and come in increments that can be tested along the way. Changes, even at big companies, can be made in four to six weeks or less.

"We've all read about the big IT failures of the past and people are sick of that," says Mr Barbin. "Customers don't want to wait three years for a project, and for IT consultants to spend so much time conducting a survey of requirements that by the time it is finished those requirements have changed."

Gartner's Mr Lheureux says choosing the right cloud service provider can be tricky. Is it better to stay with a tried and tested name from the systems integration industry, or embrace a newer company, which may be speedier?

"If you are a large company with an established relationship with a systems integrator, and that provider has demonstrated that they have invested in cloud technologies sufficiently, there is no reason not to consider them for cloud service brokerage," Mr Lheureux says. "On the other hand, if you don't have an established relationship, it may be good to try a specialist company. They are particularly good if you have a new project that is truly cloud-centric."

Either way, there are two important questions to ask a prospective cloud service provider, he says. One is whether they can manage employee identity by providing a single sign on for staff to all the company's different cloud accounts. This is crucial for managing security. The other question is whether a cloud service broker can handle both cloud and traditional computing work. Given that most companies will have some programs running on the cloud and some in-house, this is important.

"Ask what their strategy is to access data when the cloud provider is not available," says Mr Lheureux.

Caution needed over decision to migrate

Management

Web-based services may not work for everyone, reports *Maija Palmer*

It is hard to find a company these days that is not planning some kind of move to cloud computing. Most are at least dipping their toe in a little bit of online customer relationship management, such as Salesforce.com, or moving their employee email on to Google's Gmail.

"We are moving towards a world where cloud computing just becomes 'computing'," says Martin Lee, cloud product marketing manager for Europe, Middle East and Africa for Symantec, the security software company.

"The drivers, such as sufficient internet bandwidth, are all in place so that to end-users it doesn't matter if a server is in the next room or located on the other side of the world."

In 2001 Symantec's annual study of more than 5,000 organisations around the world showed three quarters were in discussions about some form of cloud computing.

Indeed, some companies, particularly those most recently founded, already do everything on the cloud.

"We don't own a single server and we never plan to," says Chris Barbin, the chief executive of Appirio, based in San Francisco.

Given that Appirio is a company that offers other businesses help in moving to the cloud, this stance is perhaps not surprising. But the cloud does give the 600-person business an enviable agility.

Mr Barbin says: "We acquired a company and, on the day the acquisition was announced, we had all the staff from the acquired company already up on our internal social networking system. In the old days you couldn't even requisition a server in less than a few weeks."

But the cloud might not be the right choice for absolutely every business right now. Mr Barbin says Appirio's largest concentration of customers is in the technology, financial services and healthcare sectors. Businesses based on manufacturing, often with very customised core software, have been slower to make the move.

Sometimes even the cloud service providers will advise companies against going online immediately.

"We had one case of a very large organisation where we didn't recommend they move their financial system over to the cloud, not for several years. They just were not ready," says Mr Barbin. "It can be a big risk to move a very large core system. Some companies have been making some of these systems for 30 years and it is difficult to transition away from them."

Mr Barbin recommends large companies begin by moving just some peripheral programmes online. Rather than the whole financial system, perhaps just moving an application that pays out commissions online is something to start with.

Symantec's Mr Lee says: "It is important that companies think about their own data. There may be some data that is better to keep in house. Organisations need to consider very carefully the data that distinguishes them from other organisations. If the data are unique to the business and there is no cloud solution available, it might not make sense to migrate straight away. More generic business functions like HR systems and accounting can move sooner."

> 'The industry claims it saves 50 or 60 per cent of costs, but I don't buy it'

Rick Nucci, founder and general manager at Dell Boomi, the cloud service brokerage company, says: "Seventy-five per cent of the time customers are using a hybrid model. Often they are using apps that are very specific to their industry, where there isn't a cloud offering yet. In those cases it does not make sense for them to move to the cloud."

Benoit Lheureux, analyst at Gartner, the IT research group, says it may not make sense for small companies to move to cloud computing unless they are ready to go all the way and move all their computer systems over. Running a hybrid system with some IT functions on the company's own servers and some in the cloud is too complicated and costly for tiny businesses, he says.

Companies should not assume they will save enormous sums of money in moving their computing to the cloud, says Mr Lheureux. If this is the sole motivation, they need to think again.

"Savings will be in the 10 to 30 per cent range. The industry has claims of saving 50 or 60 per cent of costs, but I don't buy it," Mr Lheureux says. "While there are efficiencies of scale in using the cloud, there is no general rule that says you will save money. Under some conditions you will save money, but the better you are at running big projects in-house, the less the savings will be."

Instead of cost, Mr Lheureux says companies should consider the benefits, such as being able to deploy projects faster because they can tap into extra cloud computing resources quickly. Where this is not important, cloud computing makes less sense.

Mr Barbin believes it will take several decades for companies to move completely online. Although a majority of companies are looking at the cloud, only 20 per cent of the businesses surveyed by Symantec had completed deployments.

While the cloud market's estimated worth this year is $100bn, says Gartner, it is only a fraction of the estimated $3tn global value of the industry.

Mr Barbin says: "We are at the early stage of a multiyear migration. It is not an on-and-off switch, it is a dimmer switch that gradually grows brighter."

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Cost comparison with peers might reduce procurement bills

Benchmarking

A range of tools can aid the search for best value, reports *Jessica Twentyman*

When companies are cutting costs, many are paying "exorbitant" margins on hardware and software. So says Al Nagar, head of benchmarking at Mercato Solutions, a company in Birmingham, UK, that helps IT buyers strike better deals with resellers and component suppliers.

Socitm, the UK association for public sector information and communications professionals, suggests that 3 per cent is the average margin on IT products that organisations should pay resellers. But research by Mercato indicates average margins paid for IT products stand at 26 per cent in the retail sector, 27.5 per cent for pharmaceuticals companies and 44 per cent for fast-moving consumer goods' businesses.

The trouble is not just that customers have no knowledge of the prices resellers pay their own suppliers, but also that these prices are volatile, often changing daily according to supply and demand.

Dramatic constraints in the supply chain can have dramatic consequences. In the aftermath of the Japanese tsunami in 2011, the price of hard disc drives quadrupled, says Mr Nagar.

"Buyers have the issue of finding and validating trade prices on every product, every day," he says. "And while suppliers are quick to pass on price increases, they're not so quick to reduce them when the supply chain's flowing again."

These are not the only problems with IT benchmarking – comparing an organisation's IT costs with those of its peers.

Whether a company buys through resellers or direct from vendors, benchmarking remains an imprecise discipline.

Steve Watmough, partner in the chief information officer advisory practice at KPMG, the professional services firm, says benchmarks are only a "starting point" on the road to optimising IT spending.

He says any data available "has to be understood by users as something that may be misleading as, depending on an individual's approach to issues such as depreciation, it could be made to look too high or too low".

Such complexity deters many IT departments, but at a time of continued economic austerity, those that have not started on a formal benchmarking process are increasingly finding it being imposed on them from above, often with dire consequences, according to Kurt Potter, an analyst at IT research firm, Gartner.

> 'I can now ask suppliers if they can deliver on a best practice cost, plus 3 per cent margin'

"When non-IT [company] leaders feel they have to stage an intervention and call in external benchmarking consultants, the internal IT team loses respect and this can lead to reorganisation and outsourcing," he says. "Where IT teams do make a last-minute internal attempt to provide benchmarking, their results are almost always questioned or rejected by the business."

It is hardly surprising that there is a huge range of tools and services that promise to take the problem off IT's hands, for a price.

Most of the large management consultancy firms offer IT benchmarking services, as do smaller specialist consultancies. Some of the independent IT market research companies, such as Gartner and IDC, also offer them. At the heart of these products typically lies a huge database of companies, products and prices paid. An example is a new entrant, virtualisation specialist VMware, which launched its own IT benchmarking tool this year. Customers can measure their expenditure against their peers on metrics such as cost per server, average cost per staff member or total facilities cost.

"We can do this, because we have 400,000 companies worldwide using core technology inside their enterprise data centres," says Paul Strong, the company's chief technology officer for global field and customer initiatives. "It's an unrivalled opportunity for us to provide a great sample that will allow customers to see where they sit on the spectrum of IT efficiency, within their specific industries and geographies."

Mercato, too, provides IT buyers with access to a database that contains trade guide prices and stock levels on more than 150,000 products from over 2,500 manufacturers. The Mercato ITelligence tool is fed by automated feeds of prices from 37 suppliers that, in turn, provide IT resellers with stock.

Mr Nagar says this means customers can get true transparency about the real cost of IT.

In turn, IT buyers can import their list of required products into the online tool – or simply perform spot checks – to see what particular products might cost resellers, as well as analyse trends in price and stock levels. For example, photographic retailer Jessops has recently started using the service.

Before Neil Stokes, the company's group service delivery manager, signed up for Mercato ITelligence, he ran a demo on the tool, to compare the prices Jessops pays for Lexmark printer ink with prices found on the tool. He discovered he could be saving £30,000 per year on that product alone.

Mr Stokes says: "Whenever I'm approached by a supplier now, I go straight to the tool. I can now openly ask the supplier if they can deliver on a best practice cost, plus 3 per cent margin. When they hear that, there is usually a sharp intake of breath, but it's a quick conversation that delivers value."

Apply science to beat 'bloat' of applications

Software Managing IT means taking stock of what processes are in use, says *Jane Bird*

Just as athletes regularly monitor their heart rate, oxygen saturation and lactic acid levels, so IT applications need routine "health checks" to ensure they are delivering optimum performance.

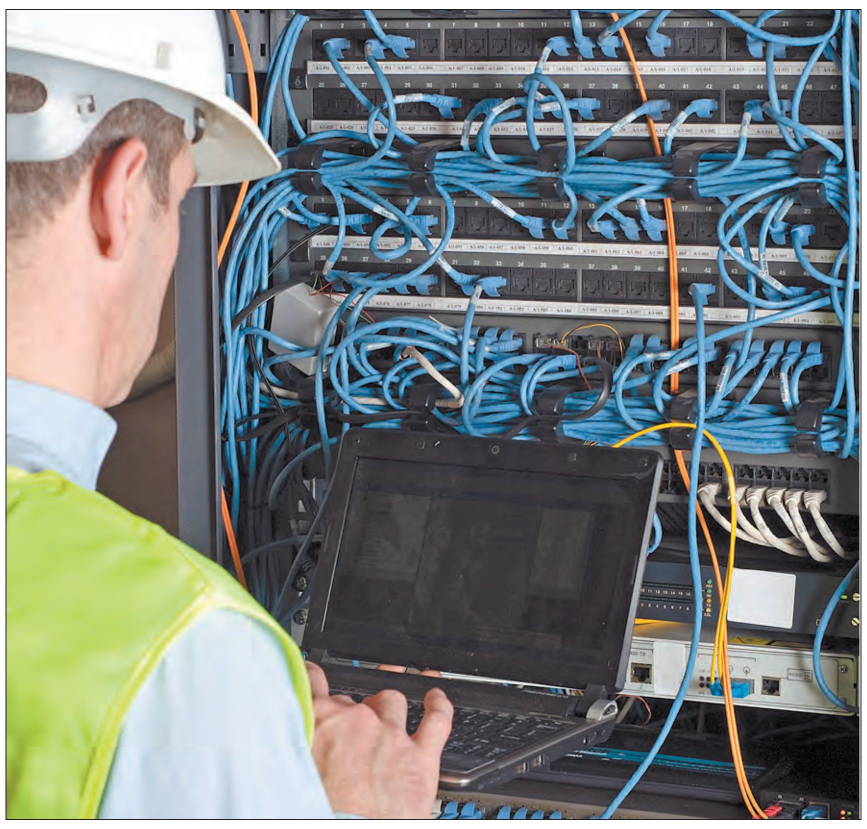
So says Peter O'Toole, capacity and performance manager at VocaLink, which operates the UK national payment infrastructure.

His first task each day is to check application memory usage, storage and computer power – for example, how long it takes to get a response from the database. "This ensures everything is optimised," Mr O'Toole says.

Frequent checks can help tackle the growing problem of application 'bloat'. This means an organisation is running programmes that are not performing efficiently, duplicate each other or are no longer needed.

It is a huge problem. Application performance management (APM) was by far the highest priority cited in a survey of 500 senior IT managers in the US, UK and Germany, by Quocirca, a research company. Optimising applications can yield big cash savings. Using an APM tool such as Precise can identify problems and speed up processes from minutes to sub-seconds, says Mr O'Toole.

"This can postpone hardware purchases of more than £1m by two years and cut the cost of licensing, which is more expensive for bigger machines."



Storage problems: better use of applications can yield big cash savings Dreamstime

APM tools can spot unnecessary or duplicate applications, many resulting from mergers and acquisitions or decentralisation, says Adam Burden, global managing director of application modernisation at Accenture.

In large companies a third of applications are more or less redundant and could be removed or consolidated, he says. "One global automotive company had 18 invoicing programmes. There might have been a need for a couple of additional ones, but not 18."

A heavy engineering company created new copies of applications for each construction project rather than use its existing ones. These legacy programmes are expensive to maintain and make it hard to respond to regulatory and tax changes.

Cloud computing and the growth of software as a service (SaaS) have exacerbated application bloat, says Lori Ellsworth, senor vice-president at Michigan-based Compuware, an APM software provider.

"Historically, the IT department had control, but now end users can make rogue acquisitions of applications."

Faced with making an inventory and deciding what applications to cut, organisations become paralysed wondering what to tackle first and give up, she says.

APM software can help by analysing where and when apps were developed, with maintenance, support and upgrading costs, and how many people use them and how often.

"Often the most important metrics are the level of user interaction and satisfaction," Ms Ellsworth says. "You might find 35 applications with a handful of users or that nobody has touched for years, or five HR modules due to acquisitions."

Consolidation is much better than running programmes from different suppliers that perform the same task. "It's almost always cheaper to move to a single vendor because this maximises your ability to negotiate a discount," says Ms Ellsworth.

A common area of duplication is mobile apps. Many organisations have introduced these, with widespread overlap the result, says Gemma Coles, planning director of London-based mobile app developer Mubaloo.

Mobile apps are often muddled in purpose, riddled with mixed messages and confusing to use, she says. "About half could be scrapped, including those designed for in-house use.

"Organisations need to make their apps consistent, integrated with back-end systems and with a clear, relevant role," says Ms Coles.

Accenture helps companies streamline applications by creating a "heat map" of processes they perform that highlights overlap and duplication with colours from green to red.

"It gives a clear picture of how many computer-aided design, human resources or back office systems an organisation has, so it can think about whether all are needed," says Mr Burden at Accenture.

Further rationalisation can be done. A utility might have separate processes for maintenance in the generation, trading and distribution parts of the business. These could be unified.

Mr Burden says while cloud computing and SaaS have contributed to application bloat, their pay-as-you-go model provides an effective way out of the trap of legacy applications.

Many organisations have customised applications with proprietary algorithms and secret functionality. These applications become expensive to run, their documentation may be lost and their programmers have left.

Such applications struggle to interact with tablets and smartphones. But organisations resist modernising for fear of losing customisation that gives them competitive advantage.

But there are now ways to extract the DNA of innermost systems and convert it into up to date applications, says Mr Burden. The customisation is still intact. It is rather like putting a new engine in a classic car.

Innovation in reach in spite of tight budget restrictions

Continued from Page 1

Caribbean sought to eliminate them using a mix of digital and physical resources. For example, the company uses shape recognition cameras to determine restaurant capacity and make the information available to passengers. It also uses smart cards to make the process of booking off-shore excursions as simple as walking into an office building.

Mr McDonald says Royal Caribbean "transformed 26 processes to eliminate lines while protecting passenger privacy, creating choice and the potential for each passenger's experience to match the capabilities of the world's largest class of cruise ship.

The result is a digital edge based on combining digital capabilities rather than merely replacing clipboards with iPads."

Bruce Richardson, chief enterprise strategist at Salesforce.com, the web-based outsourcing company, suggests companies adopt approaches including infrastructure virtualisation, cloud computing and software as a service (SaaS).

> 'Trying to convince the Fortune 500 to go 100 per cent cloud is a tall order'
> **Karim Faris, Google**

Antonio Piriano, chief technology officer of ScienceLogic, a datacentre and cloud services management company, says: "Given the continued pressure to do more with less, IT managers need to . . . be able to identify where to trim costs or invest additional money. Tools that enable Smart IT will emerge as lifesavers, allowing IT to have granular transparency into how much resource each single application is consuming."

While most industry experts agree the decision to move towards virtualisation and cloud computing should be driven by more than cost considerations, Mr Richardson says cloud computing does indeed deliver budgetary benefits.

He points to a report from Nucleus Research based on an analysis of 70 companies that concluded, on average, companies achieve 1.7 times the return on investment from cloud computing projects compared with on-premise deployments. Overall, companies spent 40 per cent less on consulting and 25 per cent less on application support personnel.

The firm said: "Application changes can often be carried out by business analysts rather than developers and the cloud vendor takes over much of traditional application support and maintenance."

Four out of five cloud deployments found an increase in benefit without a rise in costs.

Microsoft's Colin Kerr, banking industry solutions director, and Karen Cone, general manager of worldwide financial services, say companies can maximise the return on their IT investments by adopting new approaches. They cite National Bank of Kuwait which, after decades of using mainframe technology, wanted a scalable server infrastructure the IT department could rely on to deliver to employee and customer services.

Because of power capacity, it was not feasible for the bank to use hundreds of physical servers. So, since 2008, the bank has used Microsoft technology to virtualise 75 per cent of a portion of its infrastructure (30 physical hosts with 125 virtual machines) and developed a private cloud infrastructure. This costs 40 per cent less than a physical infrastructure and the licensing costs are 20 per cent lower. Microsoft says the bank improved its ability to respond to business needs and is equipped to support growth.

Karim Faris, general partner at Google Ventures, says: "Trying to convince the Fortune 500 to go 100 per cent cloud is a tall order. It will happen, of course, but there are real benefits to having [infrastructure and application] on-site."

Recognising this, Google Ventures has invested in a number of Silicon Valley start-ups that provide what Mr Faris calls bridge technology. "We have the thesis that the best way to the heart of the enterprise is through bridges," he says.

Mr Faris cites Egnyte, the enterprise cloud storage start-up, which last month launched a next-generation content and sharing infrastructure product called Cloud Control.

Cloud Control allows its users "to stitch together a quilt of different storage devices and cloud types . . . gives users access to files irrespective of location, device type, or storage cloud." Content can live completely behind a company's security firewall, in a third-party storage cloud such as Amazon's AWS S3, Microsoft Azure, Rackspace or in Egnyte's public cloud.

Mr Faris calls it "the perfect example of a technology that embraces what you already have, and leverages the strength of what you have, while giving you the goodies of the cloud".

By some estimates, many companies spend up to 70 per cent of their IT budgets on infrastructure and application maintenance or "keeping the lights on".

New approaches including cloud computing, SaaS and virtualisation enable companies to make better use of their existing technology while controlling IT spending and freeing up a greater proportion of their IT budgets for innovation.

Data centres expand to cope with demand for storage

Welcome in the hillside: NGD, a data centre in Wales, says it is powered entirely by renewable energy

Outsourcing *Stephen Pritchard* finds that an ever larger proportion of IT budgets is being spent on externally run services

Data, according to some business commentators, is "the new oil": today's companies depend as much on data as they do on raw materials, people, or capital. If this is the case, then the data centre is the oil rig and the refinery in one.

Over the past few years, many business applications and their data have moved from PCs to servers, which are basically just large computers on which the apps and information can be stored. Now, these servers do not take kindly to being squeezed under desks or into the corners of offices, although directors ofi nformation technology services will sometimes admit this does happen.

Servers need to be housed in a secure, dedicated space with plenty of power and lots of extra equipment to keep them cool. However, that space is not bought cheaply.

Moving IT from the desktop, or the "server in the corner", to a dedicated data centre based outside a company's office brings benefits by making the technology more reliable, easier to manage and less vulnerable to disasters, from floods to fires or power cuts or even just unreliable PCs.

As Nicholas Carter, director of global systems operations at YouGov, the polling company, points out, his staff can log into a computer in an office almost anywhere in the world and have access to all the technology they need, even their phones, as everything is safely stored in the data centre.

Not only are companies running more applications through their data centres but also, in a drive to control costs, IT departments have squeezed more servers into the data centres themselves. The upshot is that the workers' computers may be becoming more reliable and, quite possibly, cheaper to run. But it means an increasing share of the IT budget is being spent on the data centre. This is forcing organisations to pay more attention to such costs.

"As much as 60 per cent of overall IT budgets go on core infrastructure and operations," says Rakesh Kumar, research vice-president at industry analysts Gartner. "About 15-18 per cent of that is the building and facilities of the data centre, excluding IT equipment."

Data centre costs, he says, have risen marginally in recent years but companies are both working their data centres harder and demanding more in terms of space. Globally, data centre space is growing at 8 to 9 per cent a year, with much of that growth down to the provision of support for consumer websites and services, rather than the actual enterprise side of running a business. As a result, data centre operators face rising running costs. Energy bills, in particular, are going up and account for 12-15 per cent of running costs, according to Mr Kumar.

Controlling these costs presents a problem. Energy pricing – mostly electricity – is not always something a business can influence. Though some large data centre operators, including Google and Facebook, have moved their sites to less populated areas of the US, such as Arizona and Oregon, the reliability of power is often more important than its price. Companies in data centres in cities, whether New York, London, or Frankfurt, will usually pay roughly the same tariffs.

Signing longer-term power deals can at least reduce the risks posed by energy price rises but if companies really want to control costs they need to look at the way the data centre is powered and cooled, and the equipment running in it. They might even want to ask whether they should be running data centres at all.

Alastair McCauley, an IT infrastructure expert at PA Consulting, says: "A lot of the work on equipment has been done. You no longer come across many companies running weird or ancient equipment. Most now have quite power efficient IT architectures."

That means IT departments need to focus on other areas of data centre running costs. Power and cooling are the obvious areas to tackle, with the latter offering the potential to bring a double saving, as cooling uses huge amounts of electricity. But, as Mr McCauley warns, it might not be easy to put the latest power distribution or cooling into an ageing data centre. "That is a job for builders," he says.

The challenge of updating the physical infrastructure of a data centre, especially one that is being heavily used, is prompting more businesses either to turn over their IT to a contractor, rent space in a specialist data centre, or use "cloud" applications, where the supplier looks after all the infrastructure.

Specialist data centre operators can achieve economies of scale beyond the reach of most businesses. For those that do need dedicated facilities, there are firms that can build anything from a data centre in a shipping container, to developing a greenfield site.

Moving data centres away from cities, or the fringes of them, can bring other long-term benefits. Land and wages are cheaper, for example. Data centres in cooler climates, from Iceland, Scotland and Wales to Oregon and Vermont, benefit from "free air" cooling, so they use less power.

NGD, a data centre in Wales, says it is powered entirely by renewable energy. Others, such the latest Amsterdam facility, AMS3, belonging to data centre provider Equinix, use deep wells to draw cool water for its site. But the engineering resources this demands are significant and are not core for most businesses.

> Specialist operators can achieve economies of scale beyond the reach of most businesses

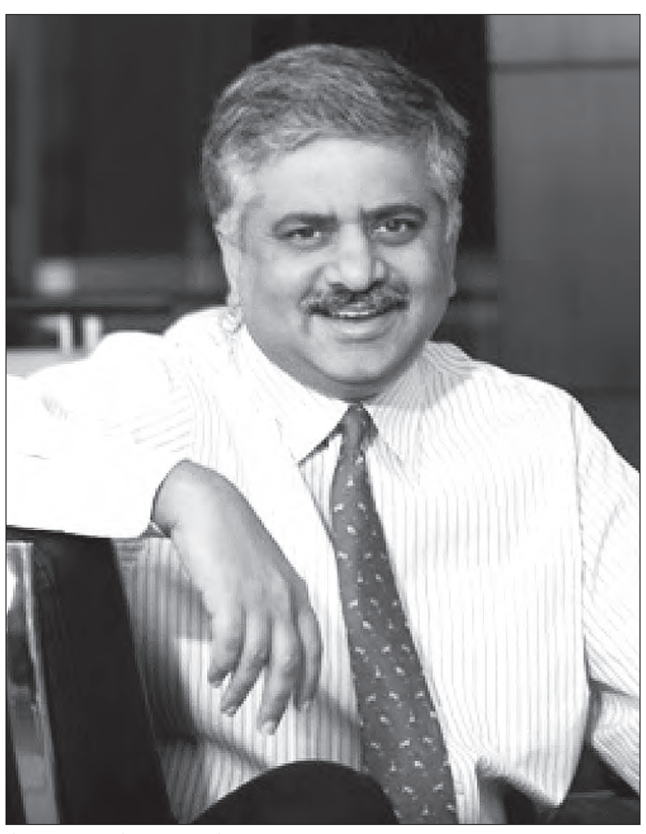
"It would be a mistake for us to own our own data centres and have to buy space and cooling. It would be distracting," says Aaron McKee, chief technology officer of Struq, an online advertising company.

Outsourcing the task is a more viable option for more companies, says Simon Orebi Gann, an IT consultant and investor who has worked on a number ofl arge data centre projects, and is also on the board of NGD.

Better technology, and better internet connections, he says, means companies no longer need data centres that are just a few miles from their main offices. This allows them to use larger, and more efficient, dedicated operators.

"If your data centre is 500 square feet, there is still a minimum number of people, and a minimum amount of infrastructure, you need to run it," he says. "And you need two data centres to be resilient. But commercial data centres are now 500,000 or 750,000 sq ft, and that brings massive economies of scale."

Farming out IT is no cure-all for poor processes



Genpact's Sandeep Sahai: 'We don't go in with an agenda'

BPO

Businesses need to balance the costs and the risks, writes *Michael Dempsey*

For the past three decades business process outsourcing – or BPO – has been touted as the economic answer to managing complex information technology operations. One of the world's biggest deals was a decision by General Motors to embrace outsourced IT on a grand scale.

GM acquired IT services pioneer EDS in 1984, to which it handed responsibility for all ofi ts technology operations. The outsourcing deal remained in place as EDS moved out of GM's immediate orbit and was sold to Hewlett-Packard (HP).

Now the carmaker has turned this arrangement on its head, calling for an army of IT staff to join up as it pulls technology back in-house. By the time this programme is complete only some 10 per cent of GM's IT will be run out of house. Has outsourcing lost its siren appeal?

Answers to this question vary depending on which side of the divide the speaker sits. Consultants shake their heads at the naive way in which clients expect an outsourcing contract to solve deep-rooted problems. Internal IT managers ask bitterly why suppliers boasting massive expertise cannot untangle complexities in return for lucrative deals.

Talking to individuals who have taken personal responsibility for bridging this gap creates a clearer picture. Brian Chant has spent a large part of his career in IT working as an interim manager. Placed in yearly contracts by interim provider Alium Partners, Mr Chant is accustomed to turning round IT departments that have difficulties.

One of these temporary roles turned into a permanent post as chiefi nformation officer at Achilles, a UK procurement services business. Based in Oxford, the company assesses and qualifies potential suppliers for 750 corporate buyers across 23 countries.

When Mr Chant arrived at Achilles in 2011, IT provision was in-house. He says: "Costs were growing, service was poor and delivery was late." His options were to correct the flawed in-house operation, or to contract out the entire IT provision in a traditional outsourcing deal, or to go with an IT partnership between Achilles and a third party.

> 'The partner should be an extension of the existing IT department'

It was this latter approach that appealed to Mr Chant. "Partnering is more flexible, less rigid than conventional outsourcing. The partner should become an extension of the existing IT department and the strategic decisions are retained by the client."

He opted to keep about 30 per cent of Achilles IT staff working in-house while the work of the rest was taken up by Systems Plus, an Indian consulting group.

Some 20 of the Systems Plus staff work on-site, with another 100 in Mumbai, which is just how Mr Chant wants things. "The offshore component is in India, the onshore component is in my office," he says.

He maintains that it is a mistake to try to manage an offshored operation remotely. By blending contract staffi nto his own workplace he can keep day-to-day control of projects while cutting costs.

Achilles gained improved quality and software delivered to a given deadline while making a £1.5m saving on IT spending. This money has been ploughed back into IT projects, keeping the overall IT budget flat while extending the scope of the department's work.

On the supplier side of the debate there is Genpact, a 58,000 strong $1.6bn BPO behemoth. Sandeep Sahai is boss of Genpact's Headstrong division, which provides back office services, and runs IT for the entire business.

Genpact's wider remit covers core activities such as finance, accounting and personnel. Mr Sahai says all of these lines of business call on substantial IT resources and use corporate software packages from big companies such as Oracle and SAP. Yet such commonality in systems does not translate into straightforward contracts. He says: "I don't think it's as easy as it can sound to outsource operations to people who are thousands of miles away."

He puts great emphasis on the need for any business that is contemplating outsourcing to understand what farming parts of a business out to the internet means. He says: "Your processes have to be very strong for you to take them outside of the company. If you're not set up to run in a distributed environment it won't work."

For Mr Sahai and his colleagues, the explosion in internet bandwidth and falling cost of communications have transformed their ability to take over clients' tasks and run them remotely. Genpact, whose clients include AstraZeneca and Heineken, always starts by assessing just how easily each client's business can be translated into an outsourced operation.

"We don't go in with an agenda," Mr Sahai says. "We look for what is right from the point of view of both cost and risk."

Being adaptable and flexible means using new methods

Future proofing

It is possible to build systems that will last, says *Paul Taylor*

The very concept of "future proofing" IT investments might be considered an oxymoron by those who track the pace of change in the sector.

But as Dave Ryerkerk, global IT advisory leader at Ernst & Young, notes, although future proofing is always "a tricky proposition" given the pace of change, focusing on a few key areas can help companies minimise disruption, maximise the value of their IT investments and prepare for the inevitable.

"High on the list is to maintain a cohesive view of a company's information architecture and strategy, so information integrity and security can be maintained through a changing technology and applications landscape," he says.

"Additionally, companies should have a clear view as to how their employees will work in the future so their technology infrastructure can support changing habits regarding mobility needs and social computing.

"Finally," he adds, "it continues to be critical to maintain a clear understanding of which systems maintain a differentiated advantage for the company worthy of continued investment, versus those which are best commoditised and procured from an expanding list of software as a service (SaaS) providers and outsourcers."

Alan Hartwell, vice-president of engineered systems at Oracle, the business software provider, agrees. "In order for companies to future proofi nvestments in IT, they need to erase the downfall that comes from using legacy systems and instead look toward technology that can be integrated into current systems and built to meet bespoke business needs or future business models," he says.

He adds that, more departments are looking to acquire IT to aid business processes, including adopting corporate resource planning by finance divisions. Human resources staff are also implementing talent intelligence software and customer service teams using advanced customer relationship management programs. He says: "It is important that investments in IT ensure interoperability and integration between these departments."

Others concerned about being locked into a single, or limited group of IT vendors, suggest the most effective way to future proof investments is to follow an open source route.

"Software developers across the globe have long championed the benefits of the open source software, providing individuals and businesses with licence-free code to rapidly build and deliver more flexible business solutions," says Dries Buytaert, founder of Drupal, the open source content management platform, and chief technology officer of commercial open source software company Acquia. "The global economic crisis has triggered a radical rethink in business IT strategy, with many chiefi nformation officers now seeing open source as an increasingly attractive, innovative and flexible alternative," he says. "There are obvious economic benefits to utilising open source software when businesses are looking for ways to do more with less.

"Free software code and lack of vendor lock-in is looking particularly appealing in an environment where achieving sign-off on major IT projects is tougher than ever before."

> 'Companies should have a clear view as to how their employees will work in the future'

He adds: "The proprietary model worked very well for a lot of companies for a long time, but that model of software development is changing fast. Open source is transforming the way organisations approach their IT strategy and is now impossible to ignore."

Professor Jim Norton is a UK-based IT expert and the immediate past president of BCS, the Chartered Institute for IT, who authored the report 'Open for business', sponsored by the Amadeus IT group. He says: "Open systems have been around for nearly two decades. They are making significant inroads into enterprise and critical computing systems . . . The road from proprietary to open systems is often challenging but represents nothing less than a revolution in the industry.

"Almost every major business will need to make at least some elements of this transition over the medium term, so understanding how open source software can bring benefits, but also realistically evaluating the challenges of transition, is critical."

Analysts such as Gartner's Daryl Plummer argue that cloud computing offers a degree of future proofing since it enables companies to convert IT-based capital expenditure into a variable operating cost that can be easily adjusted and adapted to changing requirements.

Gartner predicts that the global public cloud services market will grow by 19.6 per cent in this year to total $109bn. This growth is fuelled in part by the increasing popularity of technology such as OpenStack, the cloud management platform backed by the US National Aeronautics and Space Administration and Rackspace, a leading cloud services provider.

Since its launch in 2010, OpenStack has attracted nearly 3,400 experts and developers and 184 participating companies.

Such growth underscores the attraction of a computing model that could help companies capture many of the benefits of cloud computing, and future proof a large chunk of their current IT investments.