The Connected Business

Wednesday October 16 2013 www.ft.com/reports | @ftreports

Benefits of outsourcing come under scrutiny

Illustration: Oivind Hovland

Signs suggest that the industry's growth rate may be slowing, with some companies shifting operations from abroad, writes *Paul Taylor*

Outsourcing is often seen as a cure-all for the cost-related ills afflicting businesses. While it is true that outsourcing can help rebalance information technology budgets and release funds for projects to spur growth, it is also the case that many companies are examining the benefits of outsourcing and asking if there are better ways of achieving their goals.

There has been a particular trend for business process outsourcing (BPO), which has enabled companies, especially in western Europe and the US, to streamline operations and optimise back office processes, and thereby take advantage of lower wage costs in countries such as India.

Many large businesses continue to outsource at least some IT operations to specialist service providers such as Indian companies Tata Consultancy Services, Infosys and Wipro, or to offshore information technology operations that they have established.

"We have 6,000 IT employees in India and they undertake the full range of IT functions for us, including research and development," says the chief information officer of one large US bank.

Many Indian outsourcers that began by providing maintenance or basic coding functions provide a wide range of IT services, including consulting and product development.

"As the relationship with the outsourcing partner has matured, companies have pushed the limits of outsourcing and BPO, in both [the office process and technology areas] to extract the investment dollars required to spur innovation and growth in their primary businesses," says Keshav Murugesh, chairman of the business process management council at Indian IT trade association Nasscom.

Mr Murugesh adds that, while companies' experiences vary, the scale of adoption of outsourcing, and the dependence on it by global organisations, indicates that such programmes have proved their worth. He also argues that the innovative use of technology has led to better pricing and delivery models, better use of technology and improvements in overall productivity.

But there have been signs that the pace of growth in IT outsourcing, BPO and even offshore contract manufacturing in the consumer electronics industry has begun to slow or even reverse.

Wage inflation in traditional outsourcing centres such as India and China has, in some cases, reduced opportunities for negotiating lower staffing costs. Some high-tech manufacturers, including Apple, Google's Motorola and Lenovo, the Chinese computer group, have in the past year announced plans to shift some manufacturing operations to the US.

Whether these moves represent the start of a trend or merely a blip – perhaps an opportunistic one – is open to debate.

"There will always be ebb and flow in outsourcing, with some companies returning functions in house, owing to changing business needs," says Hubert Giraud, chief executive of the BPO operations of Capgemini, the consultancy.

He says he is seeing an increased focus among his clients on best practice and deploying business models that add value, save costs and improve competitiveness. "BPO is increasingly more about business transformation than pure back office optimisation," he says.

Capgemini has, for example, provided an organisation entering Europe with the critical processing capabilities to support its business in the

The Connected Business

Manufacturers capitalise on goods 'made in the USA'

Onshoring Trend to produce on home soil is not limited to big names, writes *Tim Bradshaw*

The iPhone maker was trading on the mystique of the US's West Coast, as well as 21st-century dynamism, for which the company is known, when it used the slogan "Designed by Apple in California" as part of a summer advertising campaign.

Google's mobile phone unit, Motorola, responded in its campaign for its latest flagship smartphone, the Moto X with the phrase: "Designed by you – assembled in the USA."

Behind this tit-for-tat marketing, an important message was being conveyed, namely that Google and Apple had moved some high-tech manufacturing from Asia to the US. While Google can lay claim to producing the first smartphone made on US soil, Apple's desktop computer, the Mac Pro, is also "Made in USA".

This is not just a trend among large technology companies. Smaller start-ups are building gadgets in north America rather than in China.

From flying robots to smart-home appliances, the trade-off between speed, labour costs, component prices and manufacturing complexity is, in certain cases, tipping the advantage back towards the US.

Tim Cook, Apple's chief executive, says this is less a rebirth of US manufacturing than a new beginning. "The consumer electronics world was really never here. It's not really a matter of bringing it back, it's a matter of starting it here," he said in an interview with NBC's *Rock Center*.

"Over time there are skills associated with manufacturing that have left the USA – not necessarily people, but the education system has stopped producing them. It's a concerted effort to get them back."

For many, China has a 20-year head start over the US in creating the right skills, especially in component making. Zach Hoeken Smith, a co-founder of 3D-printing company MakerBot and programme director at Haxlr8r – which provides early stage funding for hardware start-ups – says high-tech production relies on skills and knowledge that can only be found in Asia.

"It's not any more about outsourcing to another country – it's about leveraging the knowledge base, integrating the [systems] that are completely worldwide," he says.

Shenzhen in China is at the heart of this world, a place where any electronic component can be bought for a few dollars and new ideas flow freely.

"It's kind of like how ideas propagate on the web," says Brady Forrest, head of Highway 1, a hardware start-up specialist, part of PCH International, which handles supply chain and logistics for both small start-ups and giants including Apple. Yet Highway 1 is based not in Shenzhen but San Francisco.

As well as raising funds and perfecting ideas in Silicon Valley, some US tech entrepreneurs are choosing to build products there, too. "If there is one positive outcome from the recession, it appears to have stimulated onshore manufacturing," says Jason Johnson, chief executive of August, a soon-to-launch product that lets people open their front door with their smartphone. "In our research, after

Data transfer: the launch of the Moto-X in August. The device is now made partly in the US Getty

adding shipping costs, duty fees, and the costs associated with either hiring an overseas team, or flying our San Francisco team members back and forth, the marginal cost saving per unit is not significant."

California-based 3D Robotics, which sells drone technology to hobbyists and farmers, has its factory just across the US border in Tijuana, Mexico. "It's just time. The longer your supply chain, the slower you move," says Chris Anderson, chief executive of 3D.

"The metabolic rate of innovation in technology has risen. The [product] cycles of the Samsungs and the Apples have put pressure on everybody else in the electronics industry to maintain that same kind of cycle. That's faster than it used to be and it's too fast for a 12,000-mile contract."

Though it still does some work in China, 3D Robotics is one customer among many there, and most of the others are much larger. "We get pushed down the priority queue, " Mr Anderson says.

That is unlikely to be a problem for

the big names. For the Moto X, which uses many Chinese components, the value of onshoring is in the final assembly, which allows products to be personalised to a customer's wants.

Combining Chinese components with US assembly allows Motorola to achieve similar unit costs to products made in Asia, according to research group IHS, which estimates the Moto X's material costs to be $214.

"While the manufacturing expense of the Moto X is $3.50 to $4.00 more than [competing] phones, the total cost to make Motorola's smartphone is only 9 per cent more than the iPhone 5 and about 5 per cent less than the Galaxy S4," IHS said.

The amount of high-tech manufacturing in the US amounts to a trickle rather than a flood but the main advantage to a "Made in USA" product may be reputational. "As a non-commoditised speciality product, we believe our customers will appreciate that it's designed and assembled in California," says August's Mr Johnson. "We will proudly label the product accordingly."

The cloud: please use responsibly

Opinion
BERND CARSTEN STAHL

Cloud computing – the storage of data in remotely hosted servers – is highly convenient. It makes information easily accessible and the sharing of data, services and the outsourcing of processes easier.

Because of this it is easy to see why cloud computing keeps growing in popularity. However, despite such positive aspects, the cloud poses a number of ethical questions, such as: what is a good, or bad, use of the technology and what is the right, or wrong, way of engaging with it?

These are difficult questions because in pluralistic societies there is no agreement on what counts as being ethically good.

However, users of cloud computing, as well as service providers, need to be aware of such concerns and to address them early. One concern is, who is in control? By putting data or services in the cloud, the user gives up much of the control they might have expected if they had kept them in the own servers.

While this can be seen as an ethical problem in its own right, it potentially creates others. Chief among these is the question of ownership. Users may assume they remain the owners of data, but it is not always clear how property rights can be protected and enforced.

It is one of the characteristics of cloud systems that the user often does not know where the data are physically stored and who has access to it. This is exacerbated by the "problem of many hands" – which means so many people are involved in the development, maintenance and provision of cloud services that it is often difficult, if not impossible, to pinpoint the responsibility and liability for specific actions taken with it.

An intriguing aspect of the ownership problem relates to metadata generated by cloud applications, which may be more valuable than the data itself.

Amazon, to take an example of a large cloud provider, stores customer data and content for free, but also generates large amounts of valuable metadata. This allows it to

assess user preferences in detail, which is one of its most valuable tools for targeted advertising.

Such use of metadata is common, but it is far from clear that it is ethically acceptable to collect it and use it commercially.

The significant amount of cloud services that already exist give rise to concerns about "function creep". Data, once collected, may be repurposed and used in ways that users may object to. Commercial data, for example, may be used for security purposes.

Recent scandals indicate that such practices may be widespread and that even legal safeguards of democratic societies are not sufficient to prevent this. Once the data exists and are accessible, there will be numerous temptations to use them for purposes that differ from those they were intended for, which may be ethically problematic.

Users may have concerns about privacy and data protection when they use cloud services. These concerns are related to questions of security and control on the one hand, but also with users' perceptions of appropriate use of particular types of data. The European data protection framework, for example, gives clear guidance on which types of data are deemed to be personal and sensitive, and how such data are to be treated.

This reflects culturally shared views, and can become problematic in the cloud. Cloud services are not linked to particular locations. While this enables global reach, it can also lead to a lack of cultural sensitivity and problems arising from a lack of clarity over which countries' laws may be applied to stored data. Data that may be appropriate to share in one context may be considered private in another. The global nature of cloud providers can make it difficult to deal with such differences appropriately.

To make matters worse, many ethical problems are local and context dependent. So, what is a cloud service provider to do? The answer is that a responsible approach to cloud computing will require an active attempt to engage with users and stakeholders to identify problems early.

This requires an open mind and a willingness to respond to concerns. It also means recognising that cloud computing is not just a value-neutral tool.

After all, it is in everybody's interest to work together to ensure that difficulties arising from the cloud's use do not outweigh the many potential advantages.

The writer is professor of critical research in technology and director of the centre for computing and social responsibility at De Montfort University in Leicester, UK

**Ethical view:
Bernd Carsten Stahl**

India's earnings landmark leads to introspection

Service providers

The aftermath of the financial crisis has been difficult, writes *James Crabtree*

India's IT outsourcing sector earned $100bn in revenues for the first time in 2013. For an industry barely three decades old, this ought to have prompted celebrations. Instead, it seemed to herald doubts and introspection.

The nation's software development sector grew by 10.5 per cent in the last financial year, trade body Nasscom says. This sounds healthy, but it undershot industry projections for the second year running. The growth rate was double that in 2011. As recently as 2007, the rate of expansion had been a heady 33 per cent.

Much of the slowdown stems from weaker growth in Europe and the US, the markets to which India's larger IT houses, such as Tata Consultancy Services

(TCS) and Wipro, export most of their services – such as building, running and fixing complex software systems for multinationals.

Yet even beyond this, the sector appears to be suffering from growing pains as it struggles to develop more sophisticated and lucrative products, or to expand into foreign markets.

Some companies have been particularly affected, most notably Bangalore-based Infosys. In the face of repeated accusations of management drift, the one-time industry bellwether in June recalled from retirement one of its celebrated co-founders, Narayana Murthy, as part of an attempt to recover ground lost to competitors.

At one level this sense of doubt is surprising, given the insistence of senior executives at India's IT houses that demand for their services is increasing quickly. Global businesses continue to seek to reduce costs and restructure operations, processes that inevitably involve updating or adapting IT systems.

Hold on: an Indian call centre

"From the sector's point of view, and from ours, as well we continue to see lots of opportunities," says Natarajan Chandrasekaran, chief executive of Mumbai-based TCS, the country's largest software house by revenue. "Companies around the globe, in many different industries, are being driven by adoption of technology on the one side and the need for efficiencies on the other."

From this standpoint, the building blocks that stimulated the early phase of

India's IT revolution remain in place, not least the cost advantage that comes from outsourcing IT work to a county where engineering talent is plentiful and labour relatively cheap.

Yet even industry optimists admit the aftermath of the global financial crisis has been difficult.

Demand for technology services keeps rising but spending has not always kept pace, as companies trim budgets.

According to research group Gartner, total global IT costs will remain static this year at around $450bn. "Clients under budget pressures look to pass them downwards to the supply chain, leading to squeezes on the suppliers' profit margins," says Kit Burden, a partner at professional services firm DLA Piper.

Indian software groups have also made slow progress expanding into emerging nations such as Brazil or China – seen by many as an important source of future growth – and into industrial economies, such as Japan, where

fewer companies have traditionally chosen to outsource.

As a result, India's industry still remains vulnerable to sudden changes in its main western export markets, be that slowdowns in spending or more specific problems, such as pending legislative changes in the US likely to make it harder for Indian IT workers to obtain temporary visas.

More worrying still has been the industry's limited success moving upmarket. Some, including Infosys, have attempted to mimic western services companies such as IBM and Accenture by combining IT services with more sophisticated offerings, including management consulting. But as yet, such ventures contribute a tiny slice of the company's overall revenues.

Industry figures such as Mr Chandrasekaran stress the progress their companies have made expanding into more technologically complex services, such as mobile computing or data analytics. DLA Piper's Mr Burden cites cloud com-

puting as another potential growth area, as companies increasingly turn to complex software packages offered over the internet by companies such as Salesforce.com, rather than hiring outsourcing groups to run in-house packages.

Adapting to such trends is crucial if India's outsourcing companies are to prosper in the long term, even as more immediate factors may be turning in their favour.

The sector has performed relatively well in recent months, aided by repeated declines in the value of the rupee, which has boosted dollar revenues that companies earn abroad. A return to growth in both the US and the eurozone should help to improve performance in the coming quarters as well, say Citigroup analysts.

Nonetheless, when Mr Murthy returned to Infosys this year he described his comeback as a "second innings" – one that it seems will take place in more challenging circumstances than the first.

Benefits of outsourcing come under scrutiny

region and underpin its growth plans, which let the client focus on the "big picture", Mr Giraud says.

Outsourcers can also help companies bridge cultural or technological gaps, such as when they are combining systems after an acquisition, or taking their first steps into the cloud, either by acting as cloud service providers or as cloud service brokers.

"BPO can help global organisations seamlessly transform [themselves] into agile, responsive enterprises by harnessing the power of big data [the information generated from websites and other sources] and cloud technologies to sup-

port decision making, boost performance and manage business process complexity," says Mr Giraud.

Nevertheless, Ovum, the London-based IT research company, predicts global outsourcing market revenues will grow by just 4 per cent by 2014, affirming the view that outsourcing is no longer perceived as the main tool an IT chief has at his disposal to fight budget cuts.

Instead, process optimisation and shared services are now seen by companies as higher priorities.

Ovum says the crucial market over the next 18 months will be the US, but the current "fiscal cliff" difficulties there will add to the problems already facing

the outsourcing sector. These include a wave of contract renegotiations and restructurings that Ovum thinks will be a key characteristic of the future global outsourcing market.
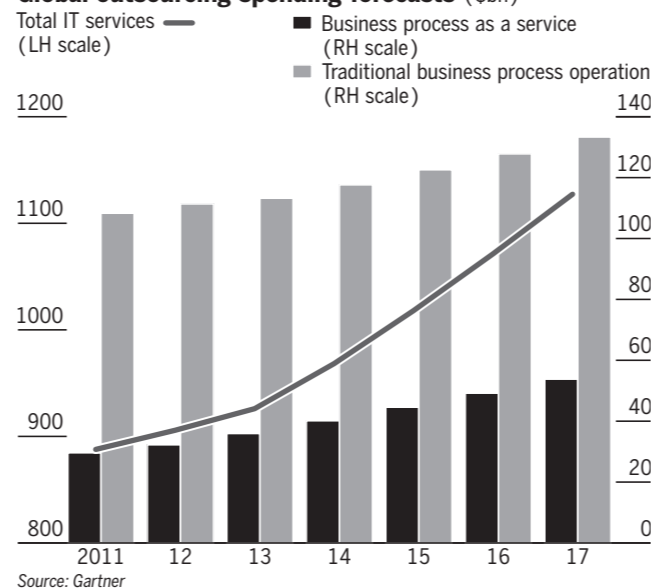
According to Ovum, nearly $150bn worth of contracts – many negotiated in the early 2000s – will expire by the end of 2014 and industry analysts expect to see an acceleration of multi-sourcing as well as smaller contracts.

Cloud services will lead to growth in the market in terms of activity, but this will put pressure on providers' earnings.

Industry analysts emphasise it is important to keep this in perspective.

"Despite all the negative

Global outsourcing spending forecasts ($bn)

Total IT services (LH scale)	■ Business process as a service (RH scale)
	■ Traditional business process operation (RH scale)

	2011	12	13	14	15	16	17
(LH scale) 1200 / 1100 / 1000 / 900 / 800							
(RH scale) 140 / 120 / 100 / 80 / 60 / 40 / 20 / 0							

Source: Gartner

headlines…culminating in some commentators insinuating the death of outsourcing, we believe that outsourcing will continue to remain a strategic management tool," says Thomas Reuner, a principal analyst at Ovum.

He accepts that there are fundamental challenges ahead, especially in the US and UK public sectors, caused by the upheaval brought about by the financial crisis.

Ovum says reduced public expenditure will test the responses of traditional outsource providers, such as IBM, HP and CSC, which are overexposed in the segment, especially given the increasing use of multiple suppliers and lower barriers

to entry for new rivals. "The strongest expansion of scope will occur in application management and finance and accounting BPO," says Mr Reuner. "While [IT] infrastructure will continue to show subdued growth, we expect significantly stronger growth in BPO as the offerings are maturing and more and more projects become proc-ess led."

Chandrashekar Kakal, global head of business IT services for Infosys, agrees. "Rather than peaking, the nature of outsourcing is evolving," he says.

"Prolonged economic challenges and increased competition are driving IT departments to deliver a lot more than just 'keeping the

lights on'." As a result companies are increasingly turning to outsourcing in an effort to improve and transform the way they do business, Mr Kakal says.

Importantly, he argues that outsourcing is moving to "outcome sourcing", whereby the successful results of operations that have been farmed out are valued and paid for, rather than the focus being on meeting a range of technical service level criteria, which used to be the norm.

"We are also seeing more projects where savings from the improvement in productivity that outsourcing provides are ringfenced for investment in projects that will drive growth," Mr Kakal says.

The Connected Business

Added value replaces saving cash as spur to contracting out

Management Streamlining of systems can deliver considerable benefits, reports *Jane Bird*

Due process: organisations are looking for more value in terms of the insights outsourced services can provide for their businesses — Dreamstime

Hiring retail staff used to be a labour-intensive task for shop managers at Levi Strauss, the clothing company, which has 1,900 stores worldwide. Senior staff spent hours posting jobs online, attending recruitment events and dealing with paperwork.

Delegating recruitment to a business process outsourcing (BPO) provider means that managers have 300,000 fewer pieces of paper a year to process. It has reduced errors by 60 per cent and occurrences of "missing information" by 30 per cent.

Levi Strauss has been able to beat the competition at hiring key staff during the peak back-to-school and holiday seasons, says Mike Salvino, group chief executive of BPO at Accenture, the outsourcing company which worked with the jeans maker.

BPO involves the contracting out of specific business functions. It was first introduced for activities such as manufacturing or running the supply chain and then moved on to non-core and back-office functions in areas such as human resources, finance and procurement.

As with traditional outsourcing, BPO was originally about saving money.

Now businesses are looking for more value in the form of insight and innovation, says Mr Salvino.

He says: "They are asking BPO service providers: 'What can you do to improve my business performance?'"

At Levi Strauss, Accenture provides analytics and reporting, project management, human resources software and training. "The company can now monitor and assess its retail recruitment programme, improve demand forecasting, resolve bottlenecks and optimise spending," Mr Salvino says.

Jameel Khokhar, director of shared services and outsourcing at KPMG Management Consulting, agrees that BPO concerns much more than cutting costs: "Today, the focus is more on achieving greater speed to market and faster decision making. It also helps organisations become more open and collaborative."

This has been the experience of the brand teams at Procter & Gamble, which is using BPO to develop packaging for 90 per cent of its products, from Pampers and Duracell to Olay. The service includes the development and operation of P&G's 20 design studios worldwide.

Here BPO is used to create 3D simulations and has brought timescales down to days or hours instead of weeks or months. It has enabled P&G designers to model 150 virtual stores, in partnership with retailers, to study how products look on the shelves.

Another example is Microsoft, which has reduced the cost of procurement and finance for 90 subsidiaries worldwide by 35 per cent, while giving staff more time for other activities.

Many organisations have systems that are not integrated, where there is a large amount of duplication, and they have overlapping inconsistent systems and operating procedures, says Rahul Singh, president of business and financial services at HCL Technologies, a BPO provider.

"HCL reduced costs by 40 per cent for an international bank with processes such as this across 47 countries in areas such as accounts payable, billing and fixed asset accounting," Mr Singh says.

But BPO entails risks. Some organisations have outsourced too much, says KPMG's Mr Khokhar. "Their in-house understanding of operational systems and technology developments becomes limited so they can no longer oversee third parties."

This can cause a retreat, Mr Khokhar says. "Some companies are pulling back, as they reassess the optimal balance between in-house and external capability."

The consequences of getting the balance wrong can be loss of brand identity and ignorance of problem areas in the business.

"Ironically, this is causing high-growth businesses in emerging markets such as India and China – the providers of many outsourcing services – to retain in-house talent and competitive advantage by not outsourcing key processes or technologies that give them competitive advantage," Mr Khokhar says. Social media, mining and analytics are among the activities kept in-house.

Data security is a problem. Organisations should take this very seriously, says Jonathan Cooper-Bagnall, head of PA Consulting's outsourcing practice. "They need to be sure they know what information is being outsourced, where it is being stored and who has access to it."

This is particularly important for new enterprises that may be looking for low-cost BPO options from large commoditised service providers, Mr Cooper-Bagnall says.

"With these providers, it may be hard for clients to gain insight into what sort of security measures are in place," he adds.

On the other hand, unless individual companies have world-class protection from cyber attack, BPO providers are often a safer place to keep data.

In the most progressive BPO relationships, new forms of business value are emerging, says Mr Salvino. These include improving customer satisfaction, increasing working capital and revenue generation, and optimising costs and profit and loss performance.

'It may be hard to gain an insight into what security measures are in place'

Everything you wanted to know about BPO

Jane Bird takes a look at the history and language of the outsourcing industry

Outsourcing is the contracting out of a business function, such as manufacturing, supply chain operations or logistics, to a third party. Sometimes this can involve transferring staff and assets to the service provider. The outsourcing provider might be local, in a country close by (nearshoring), or based overseas (offshoring).

The original motivation of outsourcing was to save money. Work was often transferred to suppliers who were more efficient or had lower wages.

Other benefits include reducing the need to hire and train specialised staff, enabling companies to focus on their core business and helping them adapt more rapidly to changing market requirements.

BPO
Business process outsourcing, or BPO, began with manufacturers contracting out activities, for example Coca Cola and its bottling. It evolved to include front-office customer-related services such as call centres.

Next came IT-intensive business functions that an external provider manages and is responsible for. Contracts set clearly defined targets and performance indicators.

This process allows companies to have access to a skilled talent pool, up-to-date best practice, and the latest tools and technologies, such as cloud computing and analytics, says Hubert Giraud, chief executive of BPO at Capgemini, an outsourcing provider. "It saves clients the capital investment and offers cost savings, continuous improvement and productivity gains."

Software as a service
Often abbreviated as SaaS, this form of outsourcing allows companies to access applications via the cloud without having to buy the software or hardware to run them or bother with licences and upgrades.

It lets companies "turn capital expenditure into operational expenditure", says Vishnu Bhat, head of cloud services at Infosys, an India-based outsourcing provider.

I WAS IN CHARGE OF OUTSOURCING BUT NOW THEY'RE GETTING AN OUTSIDE FIRM TO HANDLE IT
ROGER BEALE

"It is more scalable as well as cheaper," he says.

However, organisations should not get carried away with the pay-as-you-go pricing model, says Joe King, senior vice-president global services, at JDA, a supply chain company.

Mr King says: "When you buy a car, you don't start by going to the finance manager to discuss how you pay for it, you look at the brand, the model, features you need."

This approach can often be costlier in the long term, says Mr King. "Organisations need to work with their finance and accounting departments and weigh up the pros and cons of both models."

'The one thing that can't be outsourced, is responsibility'

Global business services
This refers to the growing trend among multinational companies such as Unilever of consolidating back-office activities including IT, HR, procurement, finance and logistics. These functions often vary across subsidiaries and countries, and are increasingly being outsourced to specialists.

Through simplification and standardisation, GBS creates more efficient systems. Proponents say it can help companies to enter new markets more swiftly, improve decision making, smooth the integration of acquisitions and facilitate divestments.

Contracts
With any form of outsourcing it is important to be clear, before contracts are signed, exactly what outsourcing, BPO and cloud computing are meant to achieve in the business strategy.

It is also vital to determine exactly what the provider is meant to do. "If it's not explicitly mentioned in the contract, it's probably not covered," warns an industry expert. "It's no use taking anything for granted."

When negotiating contracts, clients should scrutinise service levels, extra charges, potential ambiguities and loss of flexibility.

Checking what security measures are in place is also crucial, especially for businesses in the US and Europe contracting in India, China and the Philippines.

Management
Outsourcing providers should be monitored rigorously, says Paul Cash, co-founder and managing director of Partners in IT, a UK based consultancy. Out of sight should not mean out of mind, he says. "The one thing that can't be outsourced, is responsibility."

This can be particularly difficult when there are a number of smaller niche outsourced services for specific functions and technologies. Monitoring them is more like managing a supply chain than a traditional outsourcing function, says Mr Cash.

A failure of one outsourced function can result in a serious knock-on effect for the rest. So, rather than measuring their performance in isolation, metrics should cover processes end-to-end.

Often organisations are using the wrong metrics, Mr Cash says. "They run the risk of hiding poor outsourcer performance and not uncovering it until the damage is done."

The Connected Business

Secrets on display: a giant screen in Hong Kong shows a news story about NSA whistleblower Edward Snowden. His revelations about how the NSA has mined data may have exacerbated fears about the safety of US cloud providers   *AP*

Cloud users spooked by Washington's snooping

Surveillance Concerns about the monitoring of US-based servers could benefit European data and cloud services providers, reports *Paul Taylor*

The revelations made this summer by whistleblower Edward Snowden about clandestine electronic surveillance data mining programmes – such as Prism, run by the US National Security Agency – could benefit European data and cloud services providers.

There is already some evidence that non-US companies are cancelling contracts and curtailing their use of US-based cloud service providers because of their concerns about the extent to which the NSA and other US law enforcement and national security agencies may be using provisions in the Foreign Intelligence Surveillance Act (FISA) and Patriot Act to obtain electronic data from third parties.

"I think it has made European companies think more deeply about who they use for their cloud services and whether or not their data leaves their own locality," says one European financial services IT leader. "But I don't think there were any great surprises in the revelations [of Mr Snowden, an NSA contractor]."

Andrew Walls, a research vice-president at Gartner, agrees. "The revelations merely confirm what most people suspected," he says. "The status quo for cloud users is that they do not fully trust cloud providers. Multiple surveys have shown that even . . . prolific users of cloud systems have low levels of trust in [providers]."

He adds: "The NSA revelations will solidify that position for a while but will not seriously change the level of trust expressed by cloud consumers.

He and other analysts say fears around the Patriot Act have engendered similar doubts about US-based cloud providers operating outside the nation's borders. "These fears have not changed, but have been exacerbated by the NSA revelations," Mr Walls says.

He adds that, while it is tempting to wade into a complex discussion of the relative cost benefit of alternatives to the big US-based cloud providers – for example, Amazon Web Services, Google, MS Office 365, Salesforce – such discussions remain speculative.

"The issue of 'What choice do I have?' should be considered when evaluating the potential impact of [the loss of trust in] dominant cloud providers," he says. "We have seen a slight rise in the number of domestic and regional cloud providers that market on the basis of data localisation to prevent intrusion by foreign governments, but these same services admit that they work closely with their local governments, effectively replicating the NSA collaboration with US providers [in their home countries]. It may be a case of sticking with the devil you know."

At least one study, conducted by the Washington-based Information Technology & Innovation Foundation, has concluded that the NSA revelations could seriously affect US cloud service providers, which could lose between $21.5bn to $35bn in revenues over the next three years.

It warned that exposure of the NSA Prism programme and related revelations "will probably have an immediate and lasting impact on the competitiveness of the US cloud computing industry if foreign customers decide the risks of storing data with a US company outweigh the benefits".

Concerns about surveillance of US providers could be particularly acute because the sector is growing rapidly.

Global spending on cloud computing is expected to have doubled between 2012 and 2016 to about $207bn, while the global IT market as a whole will grow by just 3 per cent annually.

The foundation said: "While much of this projected growth was until recently up for grabs by US companies, the disclosures of the NSA's electronic surveillance may fundamentally alter the market dynamics."

To calculate the potential revenue losses associated with the recent NSA disclosures, the foundation cites a membership survey by the Cloud Security Alliance. This found that among the non-US respondents, 10 per cent said they had cancelled a project with a US-based cloud computing provider, while 56 per cent said that they would be less likely to use a US-based cloud service.

Among US-based respondents,

> US providers stand to lose between 10 and 20 per cent of the foreign market

slightly more than a third, or 36 per cent, indicated that the NSA disclosures had made it more difficult for them to do business outside of the US.

As a result, the foundation estimates that US cloud service providers stand to lose somewhere between 10 and 20 per cent of the foreign market to European or Asian competitors in the next few years, but retain their projected share of the domestic market.

The report notes that some non-US service providers are already reporting their success. For instance, Artmotion, Switzerland's largest hosting company, reported a 45 per cent increase in revenue in the month after details of the NSA's Prism were made public.

But not everyone is convinced.

"The [foundation] is not a neutral party," says Jay Heiser, another Gartner researcher. "It represents the interests of the service providers. While the report is interesting, the business impact is entirely speculative and seems overblown."

However, Mr Heiser also concedes that: "Our clients in Canada, Europe, and in other non-US locations have told us for at least four years that they were concerned about the implications of the US Patriot Act on their use of public cloud computing.

"It is likely that this does have some impact on their willingness to buy US services, or even [on their use of the] cloud in general."

Some legislators, particularly in Europe, have responded to the NSA revelations with their own proposals.

Marc Dautlich, partner and head of data protection at Pinsent Masons, a law firm, says: "Both Germany and France have called for a new provision in the EU data protection regulation currently under negotiation in Brussels, by which companies required or asked to disclose personal information of customers to the NSA would be required to inform the individuals of the data being shared.

"There are already EU data protection rules that require a legal ground to be in place before companies operating in Europe disclose data to third parties, NSA or otherwise.

"This proposed amendment is one part of a wider response by EU data protection authorities and the commission to reporting about Prism."

Privacy experts profit from Prism uproar

Cyber security

Encryption is the vital component of any strategy, says *Maija Palmer*

Since Edward Snowden disclosed details of mass surveillance programmes by the US National Security Agency and the British government, security-conscious companies have been especially keen to find ways to protect voice and data traffic from snoopers.

Encryption is a key element of any security strategy. Mr Snowden himself took extensive encryption measures when he sent information to journalists, and has said that properly encrypted systems can be relied on.

Journalists at The Guardian newspaper working on the Snowden documents have also used encryption technologies from companies including GPG, Silent Circle, Tails, OTR, TrueCrypt and BleachBit – and others they will not name.

Silent Circle, for example, works with governments and businesses and can encrypt anything from phone conversations to text files. For example, about 16 of the Fortune 50 companies use its services.

Mike Janke, Silent Circle's chief executive, says business is booming: "We were growing 100 per cent a year before the NSA/Prism scandal, now we are growing at 400 per cent. We get calls daily. The number one problem for companies in terms of security used to be theft of intellectual property, but now it is tied with concern over government surveillance," he says.

He adds: "Ten years ago, if you had encryption on a device, people asked what you were hiding. Now if you're a business person, and you don't have it, people ask if you are stupid."

However, it is worth making certain just what kind of encryption is being offered. Mr Snowden has revealed that the NSA can crack most commonplace internet security measures, such as the technology that protects websites using the "https" prefix. There is also speculation that some encryption companies may co-operate, or be forced to co-operate, with the US government to decode messages.

Companies such as Silent Circle get around this by giving customers a unique encryption key that is deleted after the message is received.

This means there are no encryption data sitting on a central server for governments or anyone else to use or demand access to, which in theory makes this a more secure system.

However, encryption alone is not a complete solution.

If agencies or organisations are determined to access data, they can use several tactics, such as inserting malware on a device that records keystrokes, or by hacking into the system with a "zero-day attack"–the exploitation of previously unknown weaknesses in programs that software companies have not yet been able to patch up. It is almost impossible to protect yourself from such an attack.

"These are typically used only for high-level targets," Mr Janke says. An international terrorism suspect is more likely to be the target of this sort of snooping than the average businessman, and 99 per cent of the popu-

> 'If you're a business person, and you don't have encryption, people ask if you are stupid'

lation will not be targeted with a zero-day attack.

Other useful preventive measures include using a good virtual private network on your device and never connecting to WiFi without it. There are several virtual private network options, including Tor, which was developed for the US Navy. Tor bounces internet traffic through a global network of relays, allowing users to conceal their location and hide what they are downloading. It was used extensively by protesters during the Arab uprisings to avoid detection by security forces.

However, privacy experts warn that even services such as this are not foolproof against a powerful agencies such as the NSA.

Werner Koch, the author of GNU Privacy Guard cryptographic software, says: "These [tools] work on the assumption that there isn't a real, powerful, global attacker watching. The NSA can tap the internet at any point across the world and can correlate even Tor data. There is not a real technical solution to prevent this."

Other measures might including using a search engine such as Ixquick, which does not store your searches and allows you to connect to web pages via a proxy server that substitutes its address for yours, masking your identity. The fact that Ixquick is in the Netherlands puts it a little further out of reach of a potential US subpoena.

But complete protection is impossible in the modern cyber surveillance age.

Mr Koch says: "There is nothing that really protects you against global surveillance. With encryption you can keep your secrets pretty well, but you cannot get complete anonymity online."

Safety mode: codes are not a complete defence   *Dreamstime*

Storage Three reasons why it matters where you house data

The internet and cloud computing – off-site information storage systems – mean that companies may not necessarily know where their data are located at any given time. The question is does it matter if your client database or your video library is housed in Iceland, or India, or Idaho?

The answer, for three simple reasons, is yes.

The first reason is speed. The closer you are to your data, the quicker it can reach you. While this may not matter much for internal access to the accounts database, if you are a consumer-facing organisation running a shopping website, the speed at which this loads on your customers' computers matters. This is why many UK data centres are now being moved to places such as Manchester, which is more centrally located than London, says Lawrence Jones, chief executive of UKFast, a data centre company.

Second, you may want to have data in a certain country for legal reasons. Betting sites serving the US are located outside the country to avoid strict anti-gambling laws.

But equally, you may want your data to be in your home country to reduce any legal ambiguities. There are restrictions around taking personal data outside the European Union, making an EU-located data centre a necessity for some companies.

Finally, there is security. Many companies have been wary of US cloud providers ever since it emerged that, under the US Patriot Act and the US Foreign Intelligence Surveillance Act Amendments, their records can be accessed by the US government.

A 2012 report by the European parliament into privacy and the cloud raised concerns about this, warning: "It is important to reiterate that jurisdiction still matters. Where the infrastructure underpinning cloud computing (ie, data centres) is located, and the legal framework that cloud service providers are subject to, are key issues."

The report recommended that EU countries build their own cloud computing data centres, located within the continent. "A target could be that by 2020, 50 per cent of EU public services should be running on cloud infrastructure solely under EU jurisdictional control."

One report has suggested that US cloud providers could lose 10 to 20 per cent of their foreign customers in the wake of Edward Snowden's revelations about the extent of the US government's online surveillance programme.

Anecdotally, UKFast's Mr Jones says that over the past few weeks he has seen a sharp increase in the number of requests from UK government agencies to host data in the UK with a nationally based data centre company.

Switzerland and Canada are also popular locations because of their stringent privacy laws.

But Jay Heiser of Gartner, the IT consultancy, questions whether your data really will be any safer in Canada than in the US. Canada may have the stricter privacy regime, but the US government is more constrained in terms of what it can do with snooping in its own country – and there are no rules for what it may do abroad.

"There should be no expectation that by putting data in a certain country you will be keeping it safe," Mr Heiser says.

If security is paramount, one location may be safest of all – your own in-house data centre. Yes, it too can be hacked, but you will have the comfort of knowing exactly where the data are, and it is less likely that there is a secret back door built in to give a government easy access.

Moving away from cloud computing may seem a backward step, but some experts suggest a hybrid model, with the most sensitive data remaining on a company's own servers.

"Some things need to stay in-house," says Mr Heiser. "People need to experiment with this and, over time, we will learn exactly what we need to control and what we can let go."

Maija Palmer

Concerns: the European parliament building in Strasbourg