Economist Intelligence Unit

The Economist

Managing the company's carbon footprint

The emerging role of ICT

A report from the Economist Intelligence Unit

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Preface

Managing the company's carbon footprint: The emerging role of ICT investigates the role of information and communication technology in lowering organisations' carbon-dioxide emissions. The report was commissioned by AT&T and Cisco. The Economist Intelligence Unit bears sole responsibility for the content of this report. The Economist Intelligence Unit's editorial team executed the online survey, conducted the interviews and wrote the report. The findings and views expressed in this report do not necessarily reflect the views of the sponsor.

Richard Handford was the author of the report and Clint Witchalls was the editor. Svetlana Issaeva also contributed to the research. Mike Kenny was responsible for layout and design. We would like to thank all the executives who participated in the survey and interviews for their time and insight.

February 2008

Executive summary

Climate change is a fact, and the scientific evidence so far seems to implicate greenhouse gases, such as carbon dioxide, as the cause of climate change. Since the industrial revolution, carbon dioxide concentrations in the atmosphere have gone from 280ppm (parts per million) to 380ppm. Clearly, commerce and industry had a big role to play in this increase, so it is hardly surprising that, today, companies are under increasing pressure to clean up their act.

All industries are culpable, to some extent, for the rise in greenhouse gases. At the moment, though, it is the more obvious or visible offenders that are feeling the pressure to change—the oil industry and the airline industry to name a couple. But, as consumer and regulatory pressure grows, all companies will be compelled to reduce their carbon footprint. Many industries are already beginning to recognise the need to manage their energy use as strategically as possible in order to reduce environmental impact. In the information and communication technology (ICT) sector, for example, power consumption is high in areas such as data management and server demand.

That means that understanding the implications of such consumption on climate change is important for consumers and businesses that use computing equipment and servers. However, more importantly, it is a critical area for any company operating in the ICT field.

But the good news is that ICT companies have a variety of options for managing power consumption more efficiently, including such options as server virtualisation and more energy efficient computing chips.

The goal of this report is not to identify ways in which ICT can become more energy efficient, but rather to identify the variety of means by which ICT can be used as a means to reduce carbon emissions. For example, video and audio conferencing can be used to save on business travel, which in turn reduces the potential of carbon emissions from aeroplanes, cars and other modes of transport. In addition, the internet and digital collaboration tools make home-working a possibility for many millions of employees, obviating their need to commute. Furthermore, scheduling software and radio frequency identification tags have made supply chains more efficient.

This global survey of 345 senior executives, conducted by the Economist Intelligence Unit on behalf of AT&T and Cisco, aims to gain a deeper understanding of the how companies perceive and use ICT as a tool for sustainability. The following are some of our key findings:

Despite the opportunities that ICT presents, only 36% of those polled said their organisation's carbon-reduction strategy explicitly refers to the role of ICT in achieving targets. Clearly, senior managers surveyed in this research do not yet appreciate the potential of ICT to help achieve carbon-reduction goals. Our panel believes that CIOs can play a leading role in educating the board and other senior executives about the use of technology in reducing CO_2 outputs.

Web and video conferencing are the most popular tools for reducing the organisation's carbon footprint. Part of the attraction of audio, video and web-conferencing is that it is easy to measure the resulting reduction in air or car miles following its adoption. In terms of an internal environmental audit, this makes conferencing an attractive technology compared to other initiatives which may not deliver such direct benefits.

Home-working is not widely adopted, despite the tools being available to make it possible. However, Braden Allenby, professor of civil and environmental engineering at Arizona State University, found that a lot of home-working goes on under the radar. Home-working is often ad-hoc and given as a perk to select individuals. Our panel is confident about the adoption of home-working and believes that many more people will work from home in two years' time.

The CIO is underutilised as an agent for change. With 39% of companies having a green strategy in the pipeline, the CIO is uniquely positioned to demonstrate the benefits—as outlined in this report—that ICT can bring to the table.

Introduction

The debate on climate change has moved beyond an argument about whether it is happening or not, to a discussion about what can be done to tackle its causes. Companies are conscious of their actions and many industries are working to address reductions in environmental impact. Our survey reveals that the pressure on organisations to manage carbon more effectively mainly comes from central government (30%) and their own customers (25%). Local government (20%) provides some impetus for change, well ahead of a company's own employee base at a mere 9%. And, for all the talk of shareholder activism, only 8% of companies feel pressure from this corner.

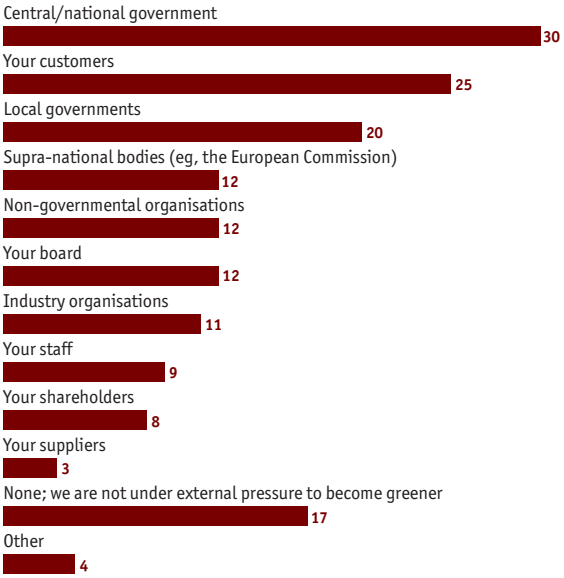
While 56% of firms say that carbon reduction initiatives are a necessary concession to external pressure, there is growing recognition that financial rewards can accrue from adopting greener policies. In fact, 57% of our sample agreed that there are commercial opportunities in having a carbon reduction initiative.

Gary Hird, IT strategy manager at UK retailer, John Lewis, says an awareness of energy efficiency fits with the company's ethos which emphasises responsible capitalism and employee democracy. "I joined the company in 1989," says Mr Hird, "and one of the first things I noticed was that every light switch had a sticker next to it, reading 'switch off, you're burning my bonus.' It made pure sense to do that because we all benefited as a result."

Jim Hagan, GlaxoSmithKline's vice president for environmental health and safety, echoes this sentiment: "The fact that you can pursue programmes that cost less money, of course, is a prime driver. But if you can also consume less energy, reduce impact on the environment and improve the work-life balance of employees, well that all adds up to a richer and more persuasive context," he says. "It helps people understand how beneficial these programmes are."

There are a number of ways for companies to reduce their overall carbon footprint. They can offset their own energy consumption by investing in renewable energy either directly by putting up a wind turbine or a solar power on their premises, or indirectly through mechanisms such as carbon offsetting. Alternatively, they can try to run their businesses more efficiently by consuming less energy. How ICT can assist companies in this process is the subject of this report.

Which of the following are the most important sources of external pressure influencing your organisation's carbon-reduction initiatives? Select up to two responses.
(% respondents)

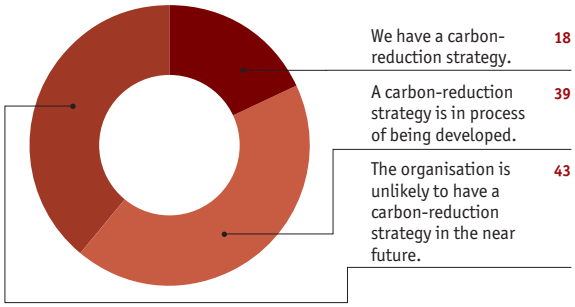


Source: Economist Intelligence Unit survey, 2007.

Developing strategies, setting targets

GlaxoSmithKline (GSK) has followed the pronouncements of the Intergovernmental Panel on Climate Change (IPCC), since the mid-90s says Mr Hagan. The IPCC has influenced GSK in its setting of targets to reduce the company's energy consumption

How would you describe the status of your organisation's carbon-reduction initiatives?
(% respondents)



Source: Economist Intelligence Unit survey, 2007.

and hence its climate change impact.

"In 2007 the IPCC came out with a report that said 'we have been certain climate change is happening but we also 90% sure it is due to human activity'. I took that to our corporate executive team and board of directors and they approved new, more aggressive energy and climate change targets," says Mr Hagan. "Now we are saying we will reduce operational energy consumption and related climate change potential by 20% per unit sales by 2010 and by 45% by 2015 from a 2006 baseline year."

Our survey shows that the majority (57%) of companies either have a carbon-reduction strategy in place or are in the process of developing one. However, 43% of those polled said their company was unlikely to develop such a strategy in the near future, indicating that there is still substantial room for improvement.

Of those companies that have a green strategy, 13% aim to be entirely carbon neutral by 2012, however, most firms have more modest targets in mind.

The role of ICT

According to research firm, Gartner, ICT accounts for the same level of carbon emissions as the aviation industry (about 2% of total global emissions). However, while data centres are an area of concern when it comes to energy efficiency, ICT can also be used to proactively cut carbon emissions when combined with changes in business practices and human behaviours. For example, video and audio conferencing can be used to save on business travel. The internet has made tele-working a possibility for many millions of employees, obviating their need to commute. Additionally, scheduling software and radio frequency ID tags have made supply chains much more efficient.

In spite of the opportunities that ICT presents, only 36% of those polled said their organisation's carbon-reduction strategy explicitly refers to the role of ICT in achieving carbon reduction targets. Clearly, senior managers do not yet appreciate the potential of ICT to help achieve carbon-reduction goals.

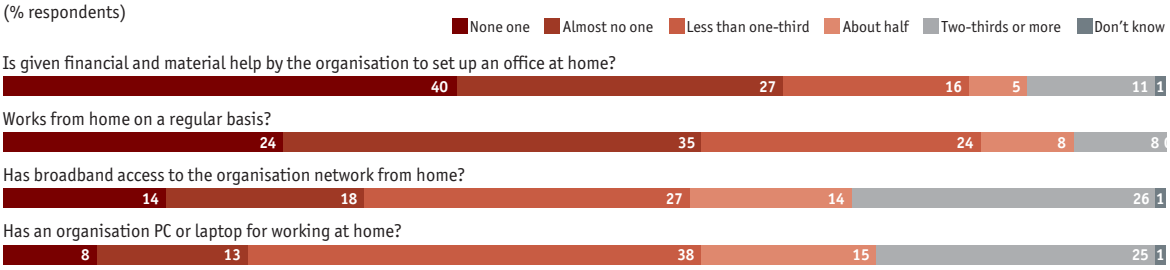
Tele-working

While tele-working is one of the more established ways of reducing an organisation's carbon footprint, it is still not as widely adopted as one might expect. Fully 59% of the survey panel said that no one or almost no one at their organisations works from home on a regular basis. Likewise, two-thirds (67%) of respondents said no-one, or almost no-one in their organisation, is given financial or material assistance to set up an office from home.

But Braden Allenby, professor of civil and environmental engineering at Arizona State University, argues that such findings actually mask the full extent of home-working.

"This reflects both definitional and management

As of now, what proportion of your workforce...
(% respondents)



Source: Economist Intelligence Unit survey, 2007.

issues," says Mr Allenby. "What we found at many firms - including our own - is that occasional tele-work is quite common. Everything from nursing a cold at home with a laptop, to taking kids to a doctor's appointment to bad weather was a reason. But regular tele-work or virtual offices are more difficult for managers to admit to because it may require more paperwork, not least for legal reasons."

On top of this, home-working is often awarded by managers as an informal perk for high-achieving workers. In order not to induce jealousy among colleagues, the home-working is not officially recorded. Financial or material assistance to set up the apparatus for home-working only follows when such an official policy is created.

Our poll shows that over the next two years the proportion of respondents who believe no-one or almost no-one works from home on a regular basis, falls dramatically from 59% to 33%. Likewise the two-thirds (67%) of respondents who said no-one, or almost no-one in their organisation, is given financial or material assistance to set up an office at home is set to drop to 37% over the next couple of years.

But home-working is not without its doubters. For instance, one criticism is that by working from home, employees are swapping an environmentally-sound modern office for the badly-insulated older building, namely their home. However, this is not so much an argument against home-working as an argument for better insulated homes.

For those who are wedded to the office, some companies are beginning to offer more environmentally-friendly alternatives to driving to work. Microsoft, for instance, has financial inducements for its employees to ride a bicycle, join a carpool, use public transport or climb on board one of the company's new shuttle buses, which are equipped with WiFi so passengers can access their email and internet en route to the office. By 2015, Microsoft expects 40% of its workforce to have adopted more environmentally-friendly transport to work.

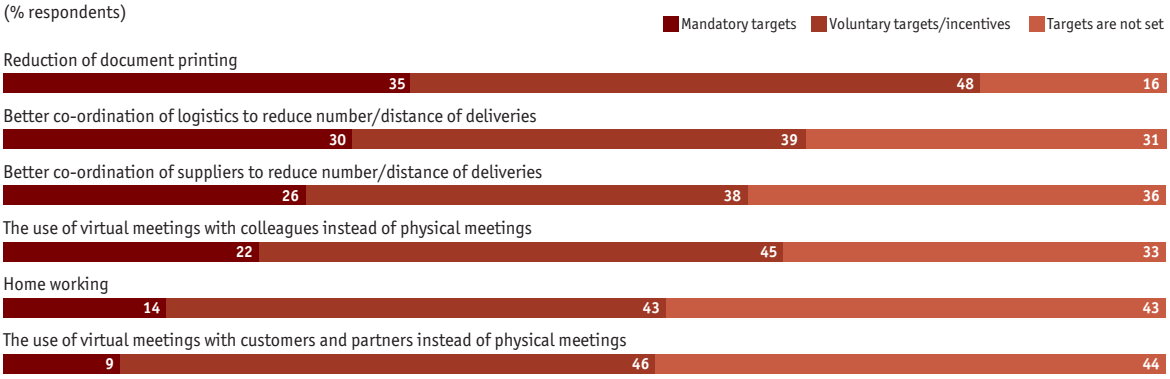
Kicking the flying habit

While some managers remain sceptical of the benefits of home-working, many are more sanguine about the use of web and video conferencing to reduce business travel. When asked which technologies will prove most beneficial in helping an organisation to reduce its carbon footprint, web and video conferencing came top of the list.

Despite this enthusiasm for conferencing technologies, companies are reluctant to make their use mandatory. Less than one in ten respondents (9%) thought a prescriptive approach the best one for meetings with customers and partners, although the proportion rose to nearly one in four (22%) when the choice was for virtual meetings with colleagues internally.

Interestingly, the figures in favour of setting targets and incentives to encourage use of virtual

What mechanism, if any, does your organisation use (or plan to use in the near future) to encourage the following activities by employees?
(% respondents)



Source: Economist Intelligence Unit survey, 2007.

meetings rise significantly for both internal and external meetings when it is done on a voluntary basis—each rising to 46%.

Virtual meetings can take several forms. These include audio or voice conferencing where three or more participants speak together via a common telephone number. Web or data conferencing allows participants to follow a common presentation, but all accessing the same website. It is usually accompanied by an audio conference. Web conferencing is the fastest-growing of these services. In addition to audio and web conferencing is videoconferencing, which allows participants to see as well as hear one another via a video link.

"The green issue is and will become more of a real factor for organizations in why they utilise conferencing technologies," says Richard Norris, a consultant with Wainhouse Research, a US consultancy that specializes in conferencing technology, "partly because of their own corporate responsibilities but also because of legislative encouragement and, I think, for public image reasons."

Wainhouse's own survey of European business users this summer found that more than half (56%) of respondents said their use of collaboration and conferencing technology was influenced by concerns over climate change.

The attraction of conferencing as a CO_2 reduction tool is increased because it is easily measurable in terms of the resulting reduction in air or car miles following its adoption. In terms of an internal environmental audit, this makes conferencing an attractive technology compared to other initiatives which may not deliver such direct benefits.

However, there are still some factors that limit the

In your view, what are the primary factors limiting the use of virtual meetings to replace physical meetings at your organisation? Select up to two responses.
(% respondents)

Source: Economist Intelligence Unit survey, 2007.

Greater London congestion charging scheme looks to new technologies to improve efficiency

Congestion charging, which levies a road usage fee in designated urban areas, is one of the best known transport initiatives to reduce traffic and encourage use of more environment friendly public transport. According to Transport for London (TfL), an organisation that manages the transport network of the London metropolitan area, cars are responsible for 47% of all carbon dioxide (CO_2) emissions in London, compared to 21% generated by public transport.

Introduction of congestion charge scheme in Greater London in February 2003 was a highly political move, and its success depended on such factors as ease and speed of implementation as well as perceived fairness and effectiveness. The rollout of the 8-square-mile congestion zone would have been impossible without advanced technologies. At the time of launch, automatic license plate recognition and electronic payment technologies were chosen to support the scheme's day-to-day operations.

Since then, technological developments have lead to improved accuracy and cost of in-car transponders, radio communications and payment systems. Congestion schemes of Malta and Singapore, for example, already make use of in-vehicle units with embedded smartcards, which are scanned by gantries with built-in short-range communication technologies. Combined with flexible electronic payment for registered individual users, these technologies provide for more efficient navigation and reduce incident-generated congestion.

Already in August 2003, TfL stated that it was investigating how new technologies may provide more flexibility for paying the charges, or which may reduce the operating costs of the scheme. It trialled a large number of technologies and decided to focus on the following three: Dedicated Short Range Communications, which would allow tagging and scanning cars through a network of beacons; satellite navigation systems for distance-based charging system; and smart electronic payment systems for more efficient customer charging and billing. Stage 2 trials of these technologies were completed in 2006, and TfL is now preparing for Stage 3, which will focus on technology usability and operational issues.

The company has already decided that it would introduce the Global Positioning Radio Satellite vehicle-tracking system for its support fleet, which will eliminate unnecessary mileage and use of fuel. Further improvements are expected to come when IBM takes over the scheme management in November 2009. During the announcement of the new scheme managing contract in October 2007 TfL said: "We're looking to take the congestion charge scheme further to make it more flexible, going into such areas as automatic payment."

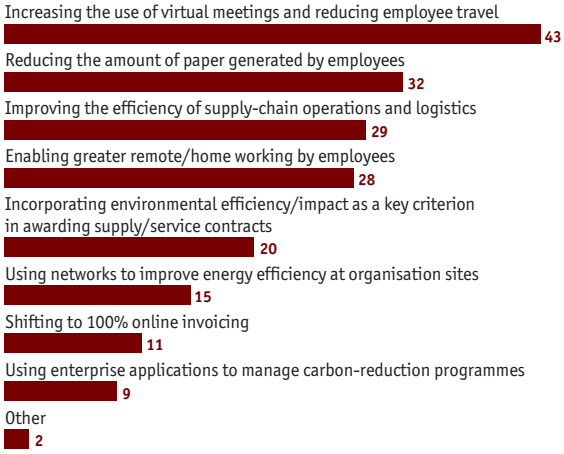
There are several reasons why further improvements of the London scheme will be important. First, there is desire to improve its environmental impact: during the scheme's first year of operation, congestion declined by 30 per cent and has since stabilised at 21 per cent below the 2002 level. In 2006/2007, the scheme generated provisional net revenues of £123m, which will be spent on further improvements of London transport. Finally, the success of the scheme encouraged the launch of congestion charging zone in Stockholm in 2006, and it serves as a benchmark for the congestion zone planned in New York. But TfL does not plan to rest on its laurels. It will continue exploring new ways to improve the scheme's efficiency and performance.

wholesale uptake of remote conferencing. The top concern, according to our panel, is the loss of person-to-person interaction. Meeting someone on a screen, no matter how high-definition, will never substitute for a handshake. But once someone has been met in person and the connection made, there is no reason not to make the next meeting a virtual one.

Streamlining supply chains

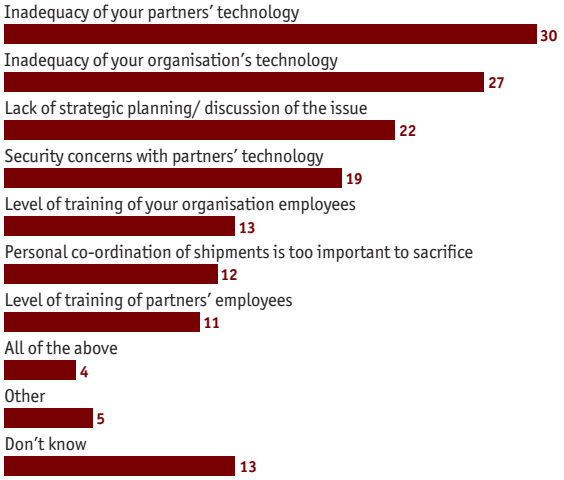
Less obvious than the reduction in CO_2 emissions that comes from cutting business travel, introducing greater efficiency into a company's supply chain or logistics operations through increased use of ICT can also generate environmental benefits. More astute use of technology reduces the distance goods have to travel and improves consolidation of shipments, thus reducing the total number of trips needed.

Which of the following improvements in operations are likely to make the greatest contribution to an organisation's carbon-reduction efforts? Select up to two responses.
(% respondents)



Source: Economist Intelligence Unit survey, 2007.

In your view, what are the main factors limiting the use of automated supply-chain and logistics solutions to reduce the number/distance of deliveries? Select up to two responses.
(% respondents)



Source: Economist Intelligence Unit survey, 2007.

Survey respondents selected improved efficiency of supply chains and logistics as making the biggest contribution to reducing their carbon footprint (29%), behind reducing paper consumption (33%) and increasing the use of virtual meetings (43%).

Some companies are using their influence to improve the energy-efficiency of the entire supply chain, not just their portion of it. Earlier this autumn, Wal-Mart announced it would ask its more than 60,000 suppliers to measure and report their CO_2 emissions. The retailer argues that becoming equipped with energy-consumption information fits with its wider strategy of driving down costs in its supply chain. The initiative is a partnership with the Carbon Disclosure Project, a group of institutional investors that approaches companies to publish their emission figures.

The first step to measuring partners' carbon footprints is to gather actual environmental performance data from suppliers. This in itself is a technical challenge given thousands of companies might be involved in supplying a major corporation. It is also a situation where ICT has a role to play.

For instance, GSK already has an electronic network established for communicating with its suppliers and contract manufacturers. Normally, the network is used for processes such as gathering request for proposals, but GSK has turned to it to gather emissions information. The company sent a questionnaire to suppliers and manufacturers asking for information about the environmental impact of their work for GSK. The aim is to report the information gathered alongside internal results for GSK's own carbon footprint. Combining the two sets of results—external as well as internal—will give company stakeholders a fuller picture of GSK's environmental impact.

However, there are limits to what can be accomplished electronically. Actual audits of suppliers and manufacturers' environmental performance still have to be conducted via a physical visit to their sites.

Feeling comfortable with a partners' supply chain was a key consideration for survey respondents. In fact, the inadequacy of partners' technology was the single most cited factor for why respondents had not made more use of automated supply chains and logistics solutions. The second most popular answer

was the inadequacy respondents felt about their own company's technology.

Of course, when an organisation controls a technical solution, end-to-end, then an innovation aimed at reducing CO_2 emissions is easier to implement. For instance, logistics group Deutsche Post World Net—the parent company of DHL - is looking at how to reduce the miles travelled by its worldwide fleet of 130,000 vehicles.

Its DHL innovation centre is working on a fleet management system that will use satellite navigation to plan more efficient routes for delivery vans. The management system will plan the optimum route for the delivery and collection of parcels. In addition to the shortest distance between destinations, the system also takes account of other elements. In urban areas, the system minimises the van's left-hand turns across traffic since waiting to turn involves inefficient fuel consumption (in those countries such as the UK which drive on the opposite side of the road, the system will minimise right-hand turns).

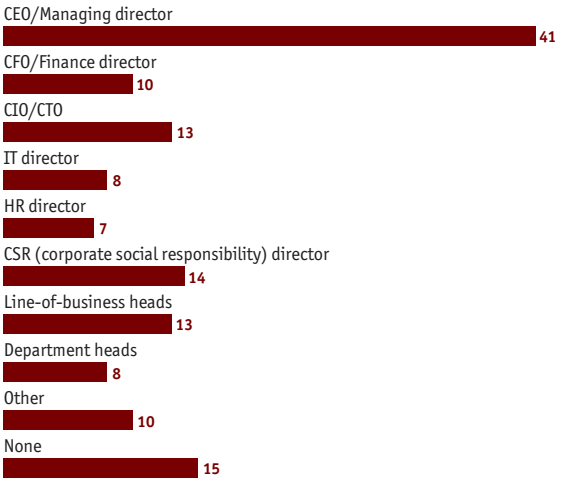
Each van will be programmed at the start of a working day, and will then be fed new data on traffic conditions continually during the day so the drivers can adjust their plans accordingly. A further innovation would involve the system arranging for two or more vans to meet up and swap packages where one could more efficiently fit a certain delivery into its schedule.

The delivery of timely data is crucial to the success of the system. In addition to satellite navigation technology, DHL is also investigating whether cellular networks or even WiFi technology could relay data to the vans.

One possibility is a so-called meshed network where the vans themselves act as nodes in a wireless network, as well as being the recipients of data. Mesh networks are often used in locations where conventional network coverage is unavailable.

These technical innovations still being tested, but Deutsche Post says rough calculations indicate they might reduce the company's carbon footprint by about 5%.

Which executives in your organisation are primarily responsible for developing carbon-reduction strategy or initiatives and overseeing their implementation? Select up to two responses. (% respondents)



Source: Economist Intelligence Unit survey, 2007.

The CIO as an agent for change

ICT has an important role to play in managing and reducing the organisation's carbon footprint across all business process, says David Clarke, Chief Executive of the British Computer Society. "Without an intimate understanding of what ICT can realistically deliver, however, decisions can have unintended consequences," he says. "This means that CIOs and their teams have a strategic role to play in carbon reduction and management."

Yet, according to our survey results, CIOs have yet to define a role for themselves in the climate change debate. Half our sample said that their CIO has little or no input in their organisation's carbon reduction discussions. Perhaps this is because ICT is not yet seen as offering the solutions needed to reduce carbon emissions. Yet ICT has huge potential, albeit largely unexplored, to make a positive contribution to the greening of companies.

HSBC Takes Green IT Strategy to the Boardroom

The global financial group, HSBC, has emerged as an environmental front-runner in the financial services community. It was among the first to announce the decision to become carbon neutral, launch environmental and sustainability programmes and set up a dedicated group corporate sustainability department that provides strategic direction with regards to sustainability. The company emphasises that it views energy efficiency programmes as an investment rather than a cost, but its decision to become carbon neutral will require some tough commitments.

The IT organisation emerged as the most strategic among all internal functions examined by HSBC for their impact on carbon emissions. "The IT sustainability action plan highlighted those functions and activities that have the biggest impact," says Matthew Robinson, Footprint Manager at HSBC's Group Corporate Sustainability. "As part of this strategy, HSBC decided to develop a managed process that focused on data centres, video and audio-conferencing, as well as green hardware and software procurement and support practices."

Improvements in data centre design and operation became the first priority, with the focus on sustainability, green design and improvements in efficiency. At this time, HSBC is building three new data centres in the UK, which are designed in compliance with the Building Research Establishment Environmental Assessment Method—the world's most widely used environmental assessment method for buildings. Investment into green design is expected to have direct impact on the bottom line, translating into future savings of approximately 20,000 tonnes of carbon dioxide per annum and £3.02m in costs savings.

The outcome of HSBC's decision to minimise business travel was the implementation and application of IT solutions, including the construction of virtual boardrooms and telepresence facilities. The upfront financial outlay required for these is substantial, but the costs of such high-quality telepresence facilities, currently in London, Hong Kong and New York, will pay back in less than three years.

Equally noteworthy are the smaller initiatives that have a big impact and that can be replicated in other companies. Office equipment, for example, is the fastest growing area of energy use. One of the measures adopted across the HSBC group is a managed print service, which has increased the number of shared printers. The subsequent paper consumption in the UK is expected to reduce by up to 25%. HSBC is also using energy-smart software, which automatically switches off computers at night and over weekends and will be further rolling out this software across the group in 2008. By the bank's estimate, its operations in Asia-Pacific have already made a reduction of 90 tonnes of CO_2 by installing energy-smart software on new computers. HSBC is also making changes to its IT procurement practices, prioritising purchases of IT goods and services from environmentally responsible vendors and checking that sub-components are sourced accordingly.

The final change will affect the company's IT procurement practices, prioritising purchases of IT goods and services from environmentally responsible vendors and checking that sub-components are sourced accordingly. This joined-up approach of HSBC's Group IT and Group Corporate Sustainability departments will be continued with long-term IT planning that incorporates the principles of sustainability and environmental protection—the elements of which will hopefully become "hygiene factors" for all companies in the near future.

Conclusion

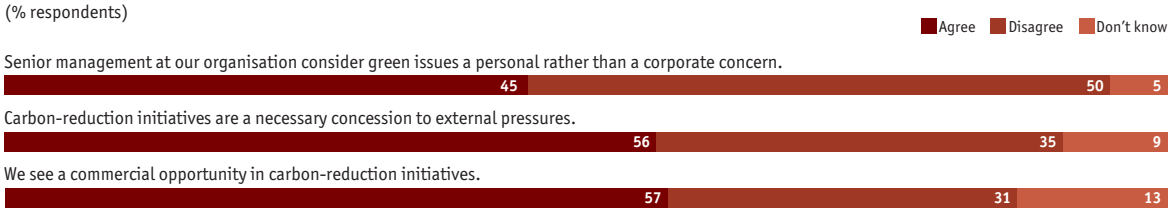
Although companies are feeling pressure from various quarters to decrease their carbon footprint, few are doing so in a co-ordinated fashion. "Most businesses are not set up to understand the effects of carbon footprint end-to-end," says Mr Clarke of the British Computer Society. "In many cases, costs of carbon footprint and benefits are felt in different parts of the business. To join up what are in effect departmental externalities requires a great deal of vision, leading all concerned to work in the best interests of the whole business rather than localised wins and losses."

The IT organisation is one of the few departments with a helicopter view of the company, both in terms of systems and processes. And, as previously mentioned, the CIO can play a pivotal role in helping to better inform the organisation's green agenda. With a large and growing number of companies having a green strategy in the pipeline, the CIO can demonstrate the benefits—as outlined in this report—that ICT can bring to the table.

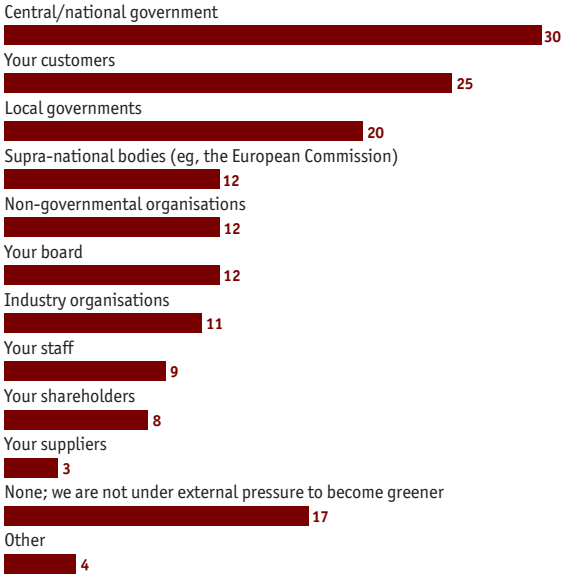
Appendix: Survey results

In October 2007, The Economist Intelligence Unit surveyed 345 executives from around the world. Our sincere thanks go to all those who took part in the survey. Please note that not all answers add up to 100%, because of rounding or because respondents were able to provide multiple answers to some questions.

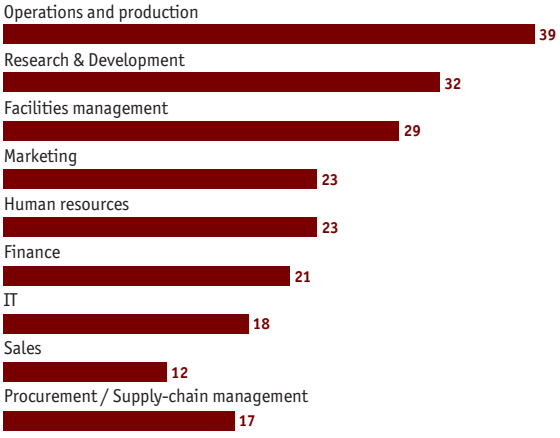
Please state whether you agree or disagree with the following statements:
(% respondents)



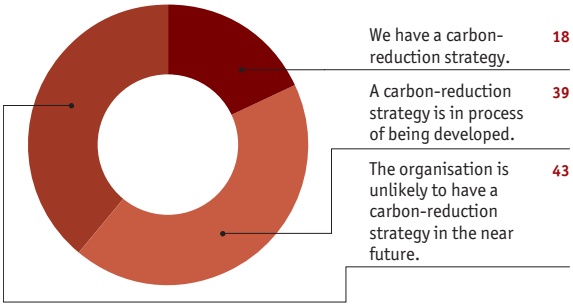
Which of the following are the most important sources of external pressure influencing your organisation's carbon-reduction initiatives? Select up to two responses.
(% respondents)



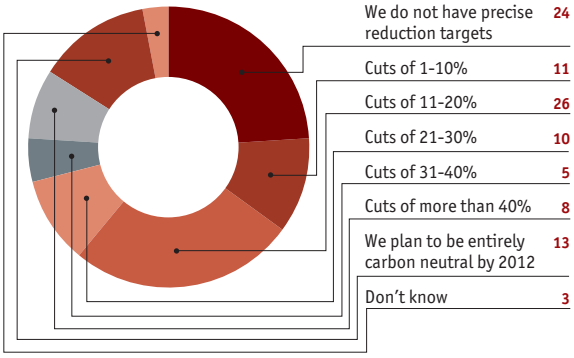
Which department has the greatest level of awareness of your organisation's environmental impact? Select up to three.
(% respondents)



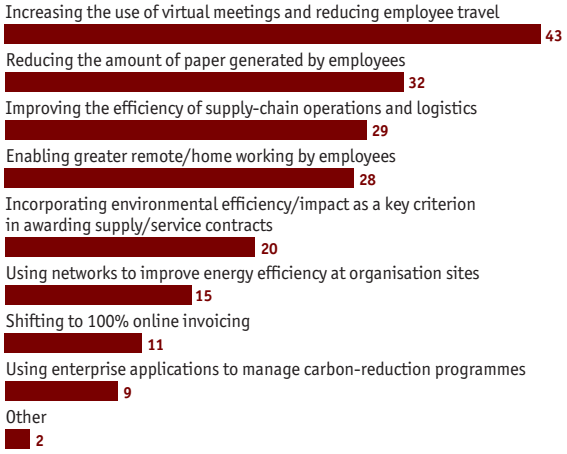
How would you describe the status of your organisation's carbon-reduction initiatives?
(% respondents)



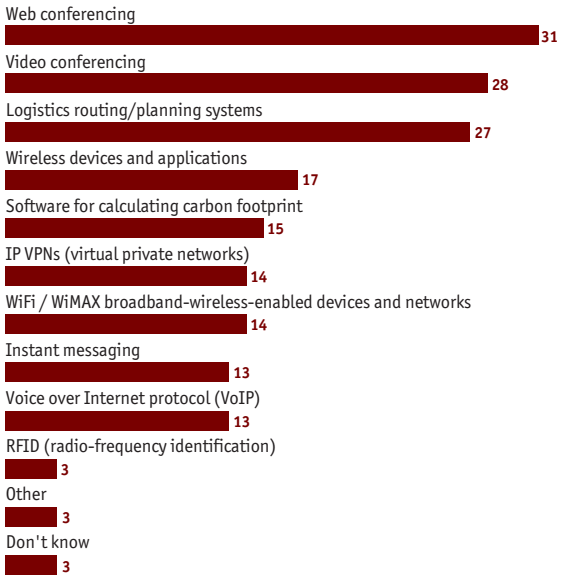
What cuts in carbon emission does your organisation intend to make by 2012?
(% respondents)



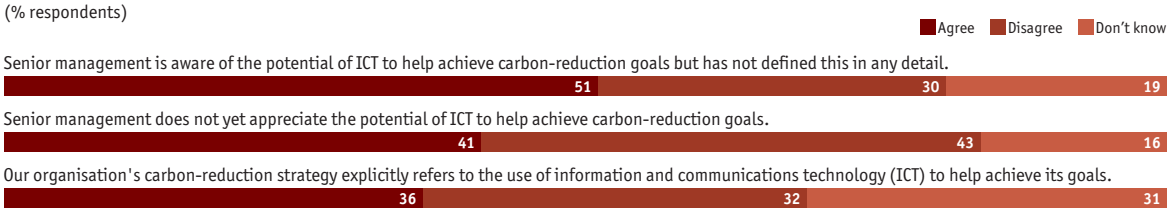
Which of the following improvements in operations are likely to make the greatest contribution to an organisation's carbon-reduction efforts? Select up to two responses.
(% respondents)



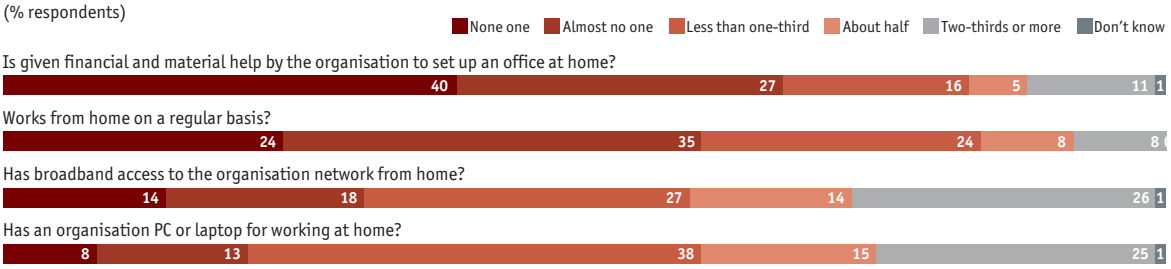
In your view, which of the following technologies will prove most beneficial in helping an organisation to reduce its carbon footprint? Select up to two responses.
(% respondents)



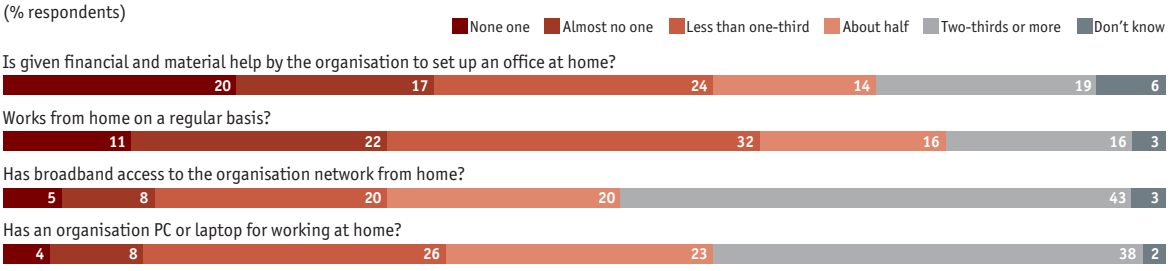
Please state whether you agree or disagree with the following statements on ICT and carbon-reduction strategy:
(% respondents)



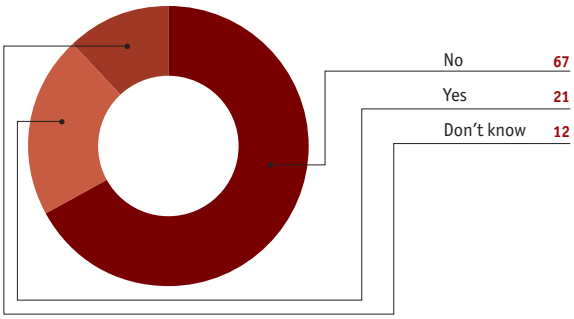
As of now, what proportion of your workforce...
(% respondents)



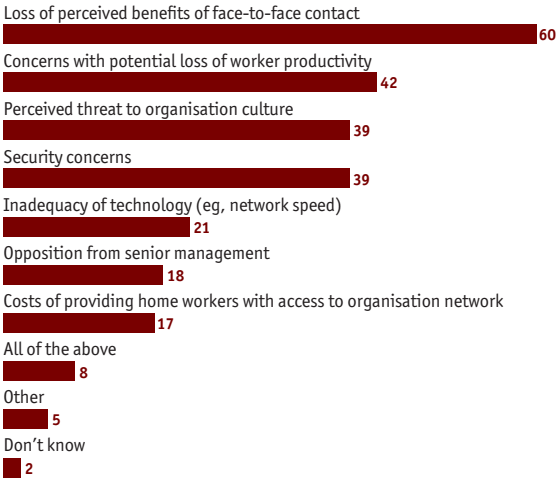
As of now, what proportion of your workforce...
(% respondents)



If your organisation has employees who work from home on a regular basis, does your organisation give advice on reducing the carbon footprint in the home office?
(% respondents)



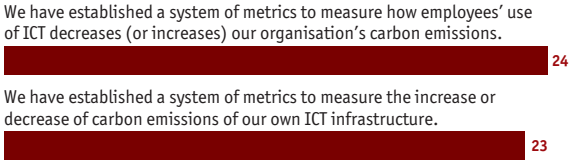
In your view, what are the primary factors in your organisation limiting the use of home working schemes by employees?
Select all that apply.
(% respondents)



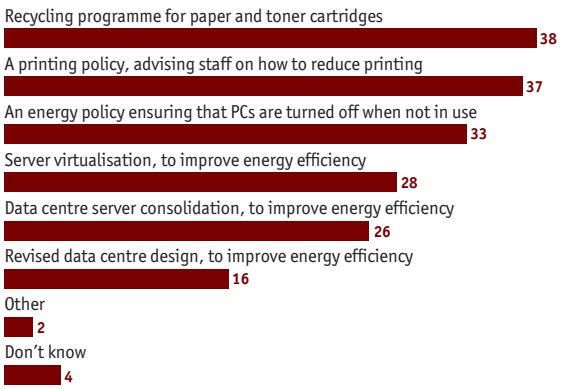
In your view, what are the main factors limiting the use of automated supply-chain and logistics solutions to reduce the number/distance of deliveries? Select up to two responses.
(% respondents)

In your view, what are the primary factors limiting the use of virtual meetings to replace physical meetings at your organisation? Select up to two responses.
(% respondents)

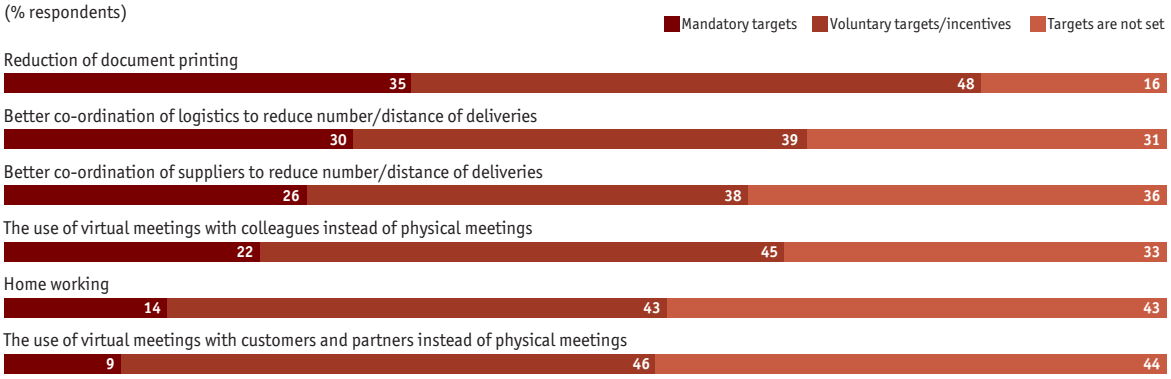
Which of the following statements about measuring the ICT impact on carbon-reduction efforts do you agree with?
Select all that apply.
(% respondents)



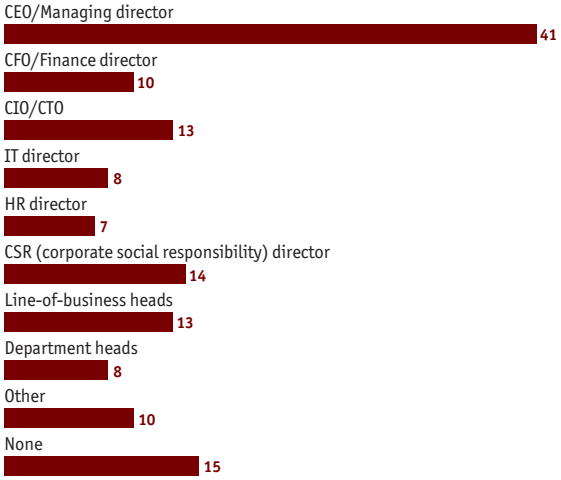
To your knowledge, which of the following are the most important ways that your organisation plans to reduce the carbon footprint of its own ICT infrastructure?
Select up to two responses.
(% respondents)



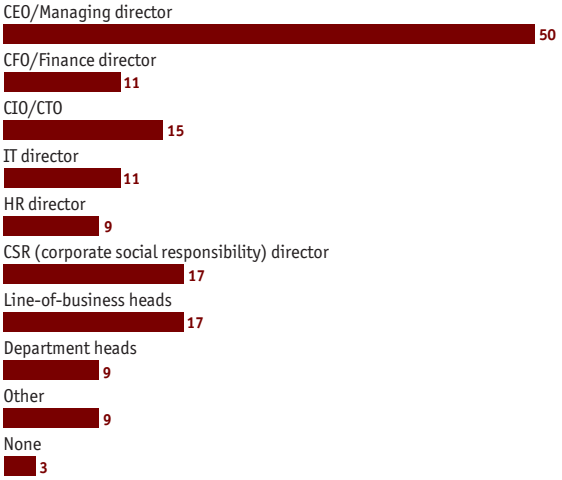
What mechanism, if any, does your organisation use (or plan to use in the near future) to encourage the following activities by employees?
(% respondents)



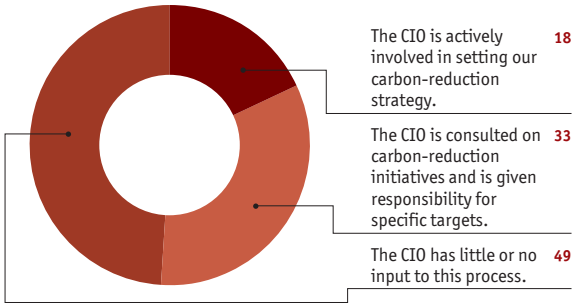
Which executives in your organisation are primarily responsible for developing carbon-reduction strategy or initiatives and overseeing their implementation? Select up to two responses.
(% respondents)



In your view, which executives in your organisation are best placed to lead the development of carbon-reduction strategy?
Select up to two responses.
(% respondents)



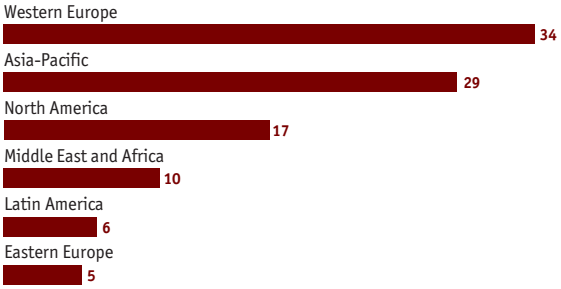
Which of the following statements best characterises the role of your organisation's CIO in senior management discussions on carbon reduction? Select one response only.
(% respondents)



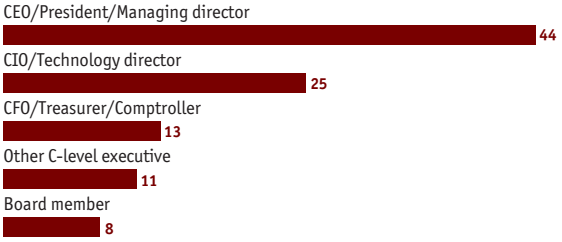
Which of the following would be the most beneficial ways in which the CIO should involve himself/herself in the organisation's carbon-reduction efforts?
Select up to two responses.
(% respondents)

About the respondents

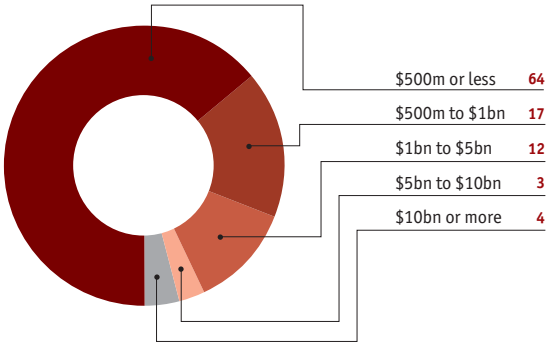
In which region are you personally based?
(% respondents)



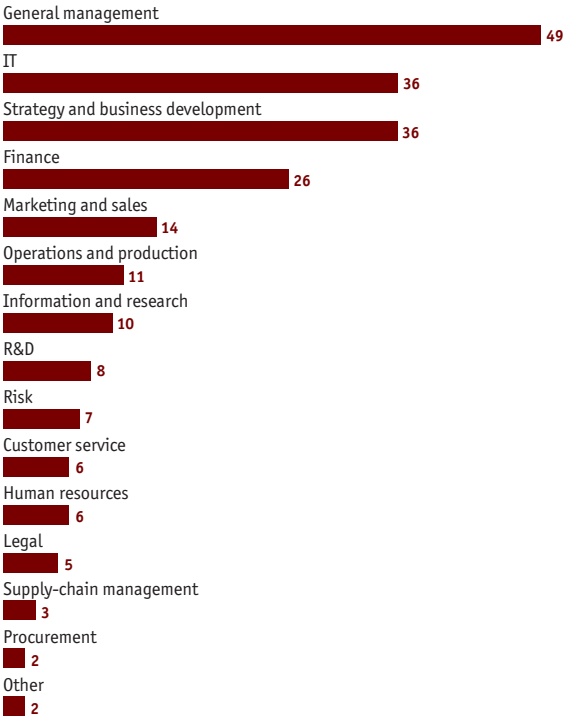
Which of the following best describes your job title?
(% respondents)



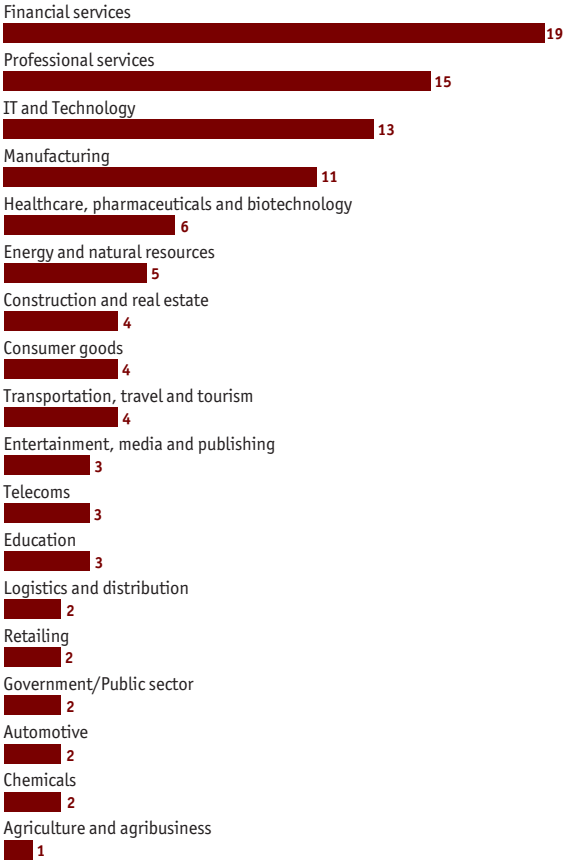
What are your company's annual global revenues in US dollars?
(% respondents)



What are your main functional roles?
Please choose no more than three functions.
(% respondents)



What is your primary industry?
(% respondents)



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