I Global Intelligence for the CIO

One-to-One... with Siemens CIO **Dr. Norbert Kleinjohann**

Special Report: The cloud-enabled journey to business agility

Interface: Do CFOs have too much control over the IT agenda?

DIMENSIONS OF THOUGHT

Why leading neuroscientist **Susan Greenfield** believes IT-induced "mind change" is the biggest threat — and opportunity — facing business

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I Global Intelligence for the CIO

In this issue…

Editor's letter

Welcome to the latest edition of *I: Global Intelligence for the CIO,* the exclusive publication for group CIOs, brought to you by Fujitsu.

The central theme of this issue is agility — business agility (and the CIO's role in enabling that), agility in the workforce and agility of thought (or absence of it) in an Internet-dominated world.

Whether supporting a new strategic direction, an acquisition opportunity, a global expansion or some other business move, IT has often been seen as an inhibitor of business change. But several factors are coming together that will (hopefully) relegate that perception to history. Above all, cloud technologies and services are starting to reset those expectations for IT, recasting it as an enabler of business agility.

Our **Special Report** looks at how CIOs from some of the world's largest companies and public sector organizations are feeling a sense of liberation as they start to deliver on that promise of business flexibility. To paraphrase several of the IT leaders we talked to: cloud is decoupling the ability to undertake business initiatives from the sometimes-sclerotic pace of creating the supporting IT in-house.

There is also plenty of evidence of IT's ability to eliminate constraints in our **Strategic Focus**. Over the past two decades, the world of work has become progressively more flexible, as corporate networks have been opened up for remote access and communications tools have become more pervasive. The mobile and social technologies that have emerged in recent years — many with their roots in the consumer world — have created work-anywhere, work-anytime cultures that are proving to be the source of real productivity gains.

There is a very different perspective on agility in this issue's **Interview**. Oxford University neuroscientist Baroness Susan Greenfield has grabbed headlines around the world with her controversial theory that the mass consumption of technology is fundamentally changing the way we all think, learn and make decisions — and this "evolution" is something businesses simply can't ignore. The 8,000 IT insiders expected at **Fujitsu Forum 2011** in Munich on November 9 and 10 will get a chance to make their own minds up on that when they hear her keynote at the company's premier customer event.

Meanwhile, we are introducing an exciting new section in this issue of the magazine. **Talking...** provides a platform for two industry thought-leaders to weigh up some of the core challenges facing global CIOs. And it kicks off in style with the CIO of Siemens, Dr. Norbert Kleinjohann, sharing his insights into IT's role as an agent of business transformation with Fujitsu Technology Solutions' CEO Rolf Schwirz — who will also be delivering a keynote address at Fujitsu Forum.

Look out for our upcoming coverage of the conference at **i-cio.com**, where you'll also find lots of additional exclusive content — interviews, videos, appointments, news and more.

Hopefully it will stimulate some agile thinking.

Editor
kenny.maciver@redwoodgroup.net

Contributors

ADRIAN GARDNER
CIO, NASA Goddard
Space Flight Center
Barometer, p20

When it comes to long-term planning, CIO roles don't get tougher than Adrian Gardner's. As IT chief of one of NASA's key mission control centers, he has to ensure the necessary information technology is available to support projects that could span decades.

Little wonder, therefore, that cloud computing figures strongly in his armory of solutions. "With the availability of on-demand access to compute and incredible scalability, there is no need for advanced estimating," he tells *I*. "But," he warns, "for an organization to utilize cloud as a business game-changer, it should be embedded in the project management process."

In a fitting addition to his current role, he is also chair of the Proof of Concept Working Group for Data.gov, the US government's open data project.

Illustrations: Yusuke Saitoh

SOUMITRA DUTTA
Professor of information
systems, INSEAD
Boardroom View, p18

Few people are better qualified to advise on the role of the CIO in enabling business agility than Professor Soumitra Dutta of INSEAD in Paris, one of the world's most highly-regarded business schools. His qualifications include a PhD in computer science and an MSc in business administration, and he has served as a visiting professor at both Oxford and Cambridge Universities.

As well as pursuing his academic role, where he specializes in technology strategy and innovation, he is currently a member of the Advisory Committee for ICT for the government of Qatar and has consulted with — and directed top management programs for — some of the world's leading international corporations. He also co-edits the World Economic Forum's annual *Global Information Technology Report*.

FEDERICO FLÓREZ
CIO,
Ferrovial
Barometer, p20

Federico Flórez brings a broad range and depth of experience to his current role as CIO of Ferrovial, the €12 billion Spanish transportation and infrastructure group that he joined in 2008. Over an IT career spanning more than two decades, he has held similar positions at the Bank of Spain, Telefónica Data and Alcatel Access, and has business qualifications from some of the world's most prestigious institutions, including INSEAD, Harvard and MIT. In 2007 he was voted CIO of the Year in Spain.

In this issue's Barometer section, he gives valuable insight into how Ferrovial is leveraging cloud services to add business value in areas as diverse as payroll management, HR and smarter trash collection in Barcelona.

DR. NORBERT KLEINJOHANN
CIO,
Siemens
Talking..., p8

Major business change holds no fears for Dr. Norbert Kleinjohann, CIO of Siemens, the €76 billion German electronics and electrical engineering giant. Since he was appointed to the role in 2007 he has, among other achievements, overseen the establishment of an agile IT architecture that is enabling rapid business transformation, and masterminded what is widely regarded as the world's largest cloud software implementation to date — an HR solution that is available to all of the company's 400,000 employees in 58 countries.

In this issue of *I*, he takes time out from his day job to discuss with a trusted partner, Rolf Schwirz, CEO of Fujitsu Technology Solutions, how CIOs are playing a key role in empowering business transformation.

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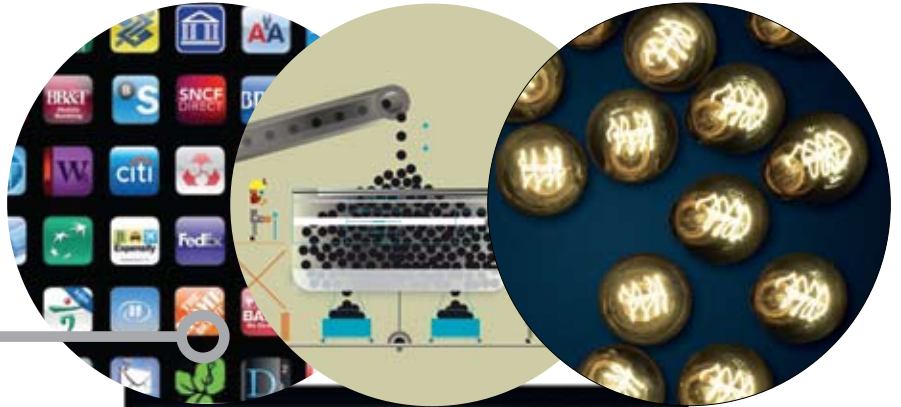
VIDEO
Social media in the enterprise

Tom Kelly, a leading authority on collaborative innovation and CEO of Moxie Software, discusses the impact of social technology in the workplace.

EXCLUSIVE AT:
www.i-cio.com/video

Social media in the enterprise: Part 1

Tom Kelly, CEO of Moxie Software, discusses the impact of collaborative technologies on working practices.

Can't see video? Click here to install Flash player

Tom Kelly is a leading authority on collaborative innovation. M Valley-based company he heads, has partnered with infi social software package for the enterprise. The comp and thought-leadership group chaired by Don Tap

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Our regular round-up of the latest CIO job changes at the world's largest organizations.

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The Quarter

IPO fever takes hold
The billions raised in public flotations will position some unlikely candidates for starring roles in mainstream IT.

- $100 billion
- $90 billion
- $80 billion
- $70 billion
- $60 billion
- $50 billion
- $40 billion
- $30 billion
- $20 billion
- $10 billion
- $0

The current wave of Internet company initial public offerings (IPOs) and stratospheric valuations means this second generation of dot-com businesses has the potential to change the landscape of the IT industry — not just in the US where they are raising vast funds, but around the world.

Google's IPO seven years ago gave it an R&D and acquisitions war chest of $1.67 billion that helped it, among other things, break into the enterprise IT market with cloud-based office apps, enterprise search appliances, web analytics and security services. In a similar way, the latest batch of IPOs will provide mountains of cash to fuel similar ambitions that span the consumer and business worlds. And the numbers involved are eye-popping:

● With its IPO on the New York Stock Exchange in May, business social networking company LinkedIn added $352.8 million to its bank balance
● Yandex, Russia's largest search engine group, floated a week later on the NYSE, raising $1.3 billion
● During the same month, Renren.com, China's social networking giant, raised $743 million with its US listing
● Group discount site Groupon said in June that it hopes (at some stage) to raise $750 million with its IPO
● China's answer to Amazon, Jingdong Mall (also known by the name 360buy.com), is targeting a US IPO of $4-$5 billion next year.

Of course, all of these are likely to be dwarfed by Facebook's much talked-about flotation (expected next year), given that the company's current valuation is around $50 billion, according to analysts such as Goldman Sachs.

Not all of these companies have stated ambitions in mainstream IT. But then no one ever suggested back in 1997 that an online bookseller would become the world's biggest public cloud computing company, or in 2004 that a web search and online advertising company would lead the market for cloud-based office apps.
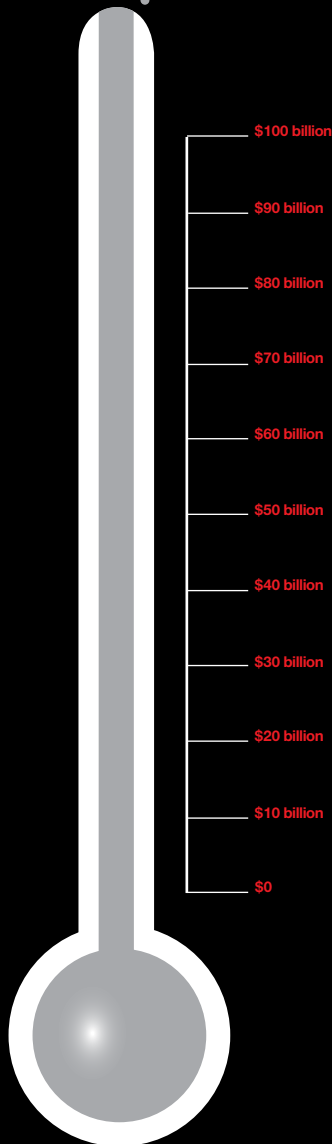
Talking...
...transformation

For many companies, business transformation is no longer the exception but the norm. Such fundamental change — whether a move into a new sector, an acquisition-driven change or an overhaul of the company's cost base — impacts all operational areas, not least of all IT. In fact, in recent times the new opportunities offered by information and communication technologies have often been the trigger for such corporate transformation. So what does the need to support continual change mean for the CIO?

Two technology industry thought-leaders — **Dr. Norbert Kleinjohann**, CIO of electronics and electrical engineering giant Siemens AG, and **Rolf Schwirz**, CEO of Fujitsu Technology Solutions, recently sat down to weigh up some of the key challenges.

CIO AS AGENT OF CHANGE

Dr. Norbert Kleinjohann: I have a critical view of the role of the CIO here: a CIO should never regard himself or herself as a driver of change but rather as a moderator or enabler of it. Of course, as CIOs we are also in a position to inform our company of new opportunities. However, that can only occur if there is a close alignment to the business. In my career, I have seen IT departments implement things that their companies did not necessarily need. The original requirement must be clear, and come directly from, and be linked to, the business. In other words, the CIO must not be the one to generate the original need, as may have occasionally been the case.

My philosophy is very simple: IT should be brought as close to the business as possible. That means joint decisions being made between the operational CEOs and the relevant CIOs.

Rolf Schwirz: The most successful companies have been those that have managed to position IT and the business alongside one another in the precise manner you're describing. Even today, one rarely finds qualified IT experts on companies' executive management teams. Their expertise is more typically focused in the classic IT department. However, the companies that have successfully implemented

the biggest changes have only been able to do so because of the understanding that has been reached between these two parts of the organization.

This has involved the CIO offering guidance on the directions in which technology is developing and the new possibilities that are arising. That has allowed the management team to plan for how this could fit with the company's actual needs within the scope of its strategic considerations. At other times, the CIO simply inspires the management to adopt a brand new technology.

Dr. Kleinjohann: A company's CIO organization no longer has the classic role as "IT deliverer" only. Instead, it becomes the enabler for IT's intelligent implementation. If we look back

the culture that existed in the days when IT departments had to discover everything for themselves is not one that will simply disappear.

BUSINESS PRIORITIES

Rolf Schwirz: From my perspective [as a former Siemens manager and now a business partner to the company], the strong, regional structure of Siemens AG has always been a major determining factor in its organizational development. Now, the new management team believes it needs to go beyond country borders and view the business on the basis of types of business, customer segments and industries. Such organizational transformation is only possible because the IT department is now in a situation to support it.

Dr. Norbert Kleinjohann (right, in images below) is CIO of Siemens AG, the global powerhouse in engineering and electronics. His 30-year career in IT has spanned senior roles at engineering and logistics company Mannesmann and a variety of Siemens business units.

Rolf Schwirz is chief executive officer of Fujitsu Technology Solutions, based in Munich. He leads Fujitsu's Continental Europe, Middle East, Africa and India sales region and draws on extensive management experience at technology firms SAP, Oracle and Siemens Nixdorf.

the IT department is now far more able to turn the idea of such transformations into reality.

The most recent example is the implementation of a fourth business sector at Siemens [Infrastructure & Cities] to supplement the existing core sectors of Industry, Energy and Healthcare. Naturally, this decision was not foreseeable when we originally planned our IT resources. Despite this, we are still able to implement the change within the shortest of times. And that is far from simple. There are many teething problems, but we will succeed.

Rolf Schwirz: That is precisely what I mean: without already knowing about it a year in advance and being able to plan and prepare for it, such performance was only possible

to the 1980s, IT used to just buy tools: computers, operating systems, programming languages. There were no real enterprise solutions; you had to build everything yourself. The understanding of the role was completely different.

Now, the IT department and the CIO have become pathfinders for the best use of technology. In a situation of change, this has demanded they become change enablers or even change managers. However,

In the days you are describing, in which the IT department was practically still building technology, this simply would not have been possible.

Dr. Kleinjohann: The basic principle of "vertical global entrepreneurship" over "matrix responsibility within countries" already existed [in the company]; it is just that the rules of the game and priorities at Siemens have now been more clearly defined. However, it is true that

TALKING… POINTS
● CIOs need to be **"change enablers"** — even managers of business change.
● An **agile IT architecture** is underpinning transformational change at Siemens.
● The **cloud computing model** promises to increase overall flexibility, fulfilling the need for IT to support business change processes.

because you had already developed an agile and flexible IT architecture with the buy-in of all the operational staff.

Dr. Kleinjohann: We are continuously improving a whole array of things within the architecture in terms of agility and flexibility. To put it simply, the plan is to achieve a certain level of modularity in the architectures, to ensure the individual components should be as change-resistant as

possible. That not only applies to the IT infrastructure, which should remain unaffected by organizational changes, but also to the needs of the individual end users.

In the past, standardization at the end-user level was widely applied; today, though, you are no longer able to do this. A certain level of standardization remains necessary but this is achieved via specific individual components. Each component is highly standardized but the ability to combine them gives rise to an abundance that can fulfil many different needs.

STANDARDIZATION VIA THE CLOUD

Dr. Kleinjohann: The many things that need to be standardized in the company should no longer occur in the

> ## "IT VENDORS NEED TO DEVELOP MORE FLEXIBLE BUSINESS MODELS IF THEY ARE TO SUPPORT CUSTOMERS' CHANGE PROCESSES."

devices to have certain different features or flavors. The entire topic of mobile working has taken on a completely different dimension today compared to a decade ago. We therefore try to eliminate as many fixed

actually cannibalize their existing and very successful business models? We see it as our role to support customers' moves to these new cloud architectures and services. And we can, because, with the exception of Japan, we are not in the software business. This means we do have the expertise to go into the cloud and develop such offers without the rug being pulled from under our feet.

Dr Kleinjohann: Viewed from a long-term perspective, the regular release model represents a cost burden with no real value — and that is now placing more and more pressure on the entire [software] sector.

Rolf Schwirz: That is not the only thing that cloud computing could change; it could also

sections of the IT industry still work in this way. However, to support their customers' transformation and change processes, IT companies must undergo change themselves: they need to develop more flexibility in their business models and a comprehensive range of combination options for infrastructure products and services. At Fujitsu, cloud computing has ideally prepared us for the changes. We have the skills that support a solutions business and the expertise for the supply models used in the cloud — without having to jeopardize our business model.

Dr. Kleinjohann: For suppliers that do not have to break their existing business models, the changes offer more opportunities than risks.

end device, but in the cloud — and if that is not possible, they should at least be installed from the cloud. Previously, the idea was that the 400,000 people at Siemens were to have standard PCs that differed by way of certain business applications.

This was the right concept 10 or 15 years ago but is no longer tenable today. The employees, especially those from the younger generation, have their own ideas about how to work and want end

elements as possible from end-user equipment. This will not happen overnight, but our new architecture, which we are gradually implementing with new services, is fully supporting the process.

Rolf Schwirz: Cloud computing can help here; at the end of the day, pay-per-use instead of upfront payment is the approach of cloud computing. How seriously are software providers following this path? Will they

change the entire procurement model. Previously, tools and hardware were purchased as pre-investments. Customer payments were actually issued against future invoices. Large

And for us, the new [cloud computing] approaches increase our overall flexibility — which is precisely what we need to successfully [support] change processes. ●

Who's moving where. . .

New roles and opportunities for CIOs around the globe.

Stepping up

➤ AUSTRALIA
Credit Union Australia has appointed David Gee, formerly of KPMG and Eli Lilly, as its new CIO • **Citigroup** in Australia and New Zealand has made Deepak Jain head of operations and technology.

➤ CANADA
Canadian Tire Corp has named Kristine Freudenthaler as SVP for IT and CIO.

➤ CHINA
Insurer **MetLife** has made Terence Yeung head of IT for Hong Kong.

➤ GERMANY
Dorothée Appel is the new CIO of **Microsoft Germany** • Optical systems maker **Carl Zeiss** has made Hans Achim Quitmann its first CIO.

➤ ITALY
Luxottica, the eyewear conglomerate that owns **Sunglass Hut**, has appointed Tom Schuetz CTO for Luxottica Retail in North America.

➤ SOUTH KOREA
Alexander Kim is the new CIO for Korea at **Standard Chartered Bank**.

➤ UK
David Smith, formerly CIO and CTO of **Fujitsu UK & Ireland**, has been promoted to chief innovation and technology officer for the company's **Global Business Group** • Airport operator **BAA** has appointed Simon Fell as its first CTO.

➤ USA
Office supplies group **Staples** has promoted Christine Putur to CIO • Mike Lang is the new CIO at tech giant **Honeywell** • Ronald Sorozan has been appointed CIO for rail group **Amtrak** • **Time Warner** has made Bill Krivoshik its new CIO • Ex-Virgin America CIO Ravi Simhambhatla has joined **Tesla Motors** as VP of IT • Adel Ebeid is leaving as CIO for the State of New Jersey to be CIO for the **State of Philadelphia** • Recruitment giant **Monster Worldwide** has appointed Mark Conway as CIO • Vinnie Rao is to be **Indiana's** first CIO • Banking group **Wells Fargo** has named Kevin Rhein as CIO.

In the public eye

● Former Microsoft executive Steven VanRoekel is taking over as the next CIO of the **US Federal Government**. He succeeds Vivek Kundra, who has left to take up a fellowship at **Harvard University**.

● Carlos Ramos has been appointed as CIO for the **State of California**.

● Brendan Boyle, New Zealand Government CIO and CEO of its Department of Internal Affairs, is moving on to become CEO of the **Ministry of Social Development**.

● **Transport for London** has made Steve Townsend its new CIO.

The average salary for CIOs in large US enterprises is $175,363, up 2% from the first six months of 2010.

Janco Associates mid-year survey (large enterprise defined as having revenues of over $500m a year)

THE
PATH
TO
BUSINESS
AGILITY

Words: **Kenny MacIver & James Lawrence**
Photography: **Nato Welton**

THE GROWING NEED FOR FLEXIBILITY IS DRIVING CIOS DEEP INTO THE CLOUD.

In this 10-page report:

For the past three years, keynote presentations by some of the world's top CIOs have featured a consistent message — "Beware of cloud hype." No one could blame them for taking such a view: with companies on every side of the IT industry, from tape backup specialists to providers of payroll services, reworking their marketing materials to highlight often-questionable cloud credentials, IT leaders have been duly skeptical.

But recently that kind of warning has started to disappear. As organizations' early experiments with cloud have turned to deployments, and as cloud's uncertainties and barriers have become quantifiable risks and addressable challenges, there has been a distinct change in the rhetoric.

Today, many CIOs' presentations acknowledge that cloud computing, with its model of on-demand access to a pool of IT capability on a pay-per-use basis, has the potential to remove many of the constraints associated with traditional IT. Instead of new business initiatives being dependent on systems that take months or years to staff up and build, cloud computing services can simply be provisioned to support the business need when they are required and in the quantity required.

The result: the information technology element of any business project, acquisition, business resizing or new market opportunity — which might have previously been perceived as an inhibitor of business agility — becomes its enabler.

And there are plenty of voices to suggest that shift is well underway. "Historically, technology might have been one of the constraining factors in our business vision," says Marcus East, CIO at the UK charity group, Comic Relief. "But we now view cloud as a brilliant way of enabling and supporting that vision. CIOs across the industry are thinking about how they can achieve the flexibility to accommodate significant growth but without compromising functionality and security."

His sense that cloud has a potentially liberating effect on IT is shared by Dan West, IT director at ASOS, one of the world's top online fashion retailers. "Cloud largely takes away the fear of not having enough [IT capability] because in the cloud world you can over-provision for that possibility and only pay for what you use — which is actually beautiful," he says.

Incredible acceleration

Both those organizations deal with dramatic, often-unpredictable, spikes in demand, but they are hardly alone in living with major and constant change. In the current global economic climate, with countries experiencing wildly different growth rates, businesses of all sizes, as well as public sector organizations, are having to cope with change on an unprecedented scale and at an unprecedented pace. And in many cases, they are looking to IT — and the flexibility afforded by cloud computing — to play a critical role in addressing that.

"The demand for agility is increasing," says Maggie Miller, who until last year was senior VP and CIO of Warner Music Group. "[Fortunately] the restrictions on agility are lessening — both business barriers and technology barriers. Although in my view IT has always been an enabler of business agility, cloud is offering more to CIOs to allow them to fulfil that. The point really is that you can deliver new capabilities so much faster — and cheaper. And if cloud allows you to do so, then that's a huge enabler of business flexibility."

It's a change that is resonating across the industry. "Cloud is an incredible accelerator," says Dr. Joseph Reger, CTO of Fujitsu Technology Solutions. It also decouples business execution from IT provision. "Historically, the IT part of a business project could be a real problem area, but now the project planning can proceed without waiting on IT because it is not on hold until the IT is installed, or reconfigured or customized. So [in a cloud world] there is no more waiting for IT in a business project. That is all eliminated. And that's a tremendous enabler."

That proposition is manifesting itself in some pretty big commitments to cloud. Organizations are using cloud as the base for an increasingly sophisticated set of projects, while corporate cloud service providers such as Fujitsu are spending billions to create capabilities that offer trusted public, private ▶

and hybrid cloud facilities globally. Not only are such moves beginning to change the shape of the industry, they are altering the role and the status of the CIO within the business.

One reason for that is an acceptance that cloud is not about tactical cost reduction — it is a lot more strategic than that. As Chris Swan, CTO for security at Swiss banking group UBS, points out: "Too often the conversation about cloud is about it being cheaper. The true message is that cloud is actually about agility. And agility is a premium rather than a discount offering. You [need] to figure out what you are willing to pay for that agility."

So far, UBS has adopted software-as-a-service for a number of activities, such as travel booking and employee expenses. But that will inevitably be extended to other non-core processing, says Swan: "We have seen a lot of that [kind of activity] going down the outsourcing route over the last decade, and I am now seeing us turning the corner, with firms going down the route to a cloud-based and as-a-service model rather than a people-based, business process outsourcing model."

No one is suggesting, though, that the opportunity cloud presents has emerged from nowhere. "Let's not pretend that every aspect, every component of cloud is new," says Fujitsu's Reger. "But the changes are sufficiently significant to allow us to bring forward new value propositions. Specifically, it enables a new delivery model in which you don't have to buy IT, you don't have to run it. Services are just delivered on the level the customer wishes to consume."

Extreme cloud

For some businesses, such as ASOS, the plan is to consume all it can eat. With ecommerce sites in the UK, Germany, France, the US and Australia offering 50,000-plus items to around 13 million unique visitors each month, the online retailer took £340 million

($530m) of orders from 3.2 million customers in 160 countries during its fiscal 2011 — all served from an IT hub in the UK.

After 11 years, ASOS is still enjoying a growth run rate of around 50%; but its pace outside of its original UK market, from where half the company's revenues now come, is soaring, hitting 142% in 2011. Fueling that are two components: speed and a great customer experience, says Dan West.

"By its very nature, its seasonality, its need to be 'on trend,' fashion retail has to be especially agile," he says. "In our case, there are no bricks and mortar, there are no stores. I effectively own the keys to all the shops worldwide. So agility and flexibility are the really important things that need to be provided."

ASOS's strategy has been to progressively move IT "out of the data center" — to swap on-premise solutions for cloud options. The first to move were the more commoditized services, such as email, with the company adopting Microsoft's Business Productivity Online Standard Suite and Office 365. Here, the consideration is again not necessarily one of cost, but responsiveness.

"It gives us global scale and enhanced features from day one," says West. "Not only does that free any constraints on future growth globally, it has also provided a new set of collaboration tools that support communications across the expanding operations. It also allows me to repurpose some of our resources and the effort that was traditionally focused on looking after email, and to channel it back into more value-added activities internally."

To further ensure a positive customer experience, the company is now looking to use cloud services to spread more of its browsing workload internationally. "Those cloud-based services will effectively create points of presence around the world locally, giving us the reliability and the security that we require."

On a more internal level, ASOS's own development and software testing environment has also been moved into the cloud, giving flexibility to create and recreate environments cost-effectively and with few restrictions. "That frees and empowers the development and testing process, which should really improve speed to market," says West.

And this is just the beginning. As it shoots for a revenue target of £1 billion ($1.8bn) by 2015, ASOS is talking about being 100% cloud. At this stage, West's optimism for achieving this is centered on the front-end web and ecommerce cloud components. Back-office systems — supporting fulfilment and logistics — which are traditionally on-premise solutions and which demand traditional data centers, are more of a challenge.

"We will start to migrate [those] into infrastructure-as-a-service or platform-as-a-service," he says. "The question now is: Why would we write any app as an on-premise solution? Why wouldn't we write new features and new apps into a cloud-based system?"

West is not alone in having this vision of an industry facing change. The fact that the cloud is as much a consumer model as a corporate one is influencing some decisions, as Marcus East at Comic Relief highlights. "We have projects that we need to stand up at very short notice and people need to ▶

" Cloud enables a new delivery model. Services are just delivered on the level the customer wishes to consume. "

make really quick decisions about the [technologies] they use."

In a recent project, one Comic Relief team started by using an internal SharePoint system and another team, a more remotely based group, decided to use the cloud-based collaboration tool Huddle. "We allowed that to happen to try to learn about the adoption, to see where the market was telling us it wanted to go. [That incorporation of consumer cloud] is challenging, but also exciting," says East.

The universal adoption that ASOS has in mind is also evident at media company News International, where cloud capabilities such as Google Apps, Salesforce.com's CRM and social networking tools, Amazon's EC2, and Socialwok collaboration services are already in action. Says CIO Paul Cheesbrough: "We put a lot of time and effort into putting everything through the browser for the employee. [Then] you can have that flexibility; we won't put any new systems in unless they can deliver in that way through virtualized technology or through cloud-based technology. That's a core part of our technology strategy and there is a lot of legacy we are unpicking to make that happen."

Relevant skillset

Such moves, however, raise the question as to how the IT organization and role of the CIO will evolve. "I think the biggest challenge is letting go, and understanding that the world is a very different place going forward," says Maggie Miller, who before Warner Music was CIO at UK supermarket group J Sainsbury. "Where a CIO can add most value these days is as an enabler, a service broker to their [business] customers, offering an environment in which capabilities can be provided very, very rapidly and cost effectively — but still within a framework where critical issues like security and data integration are managed.

"So it's a very new role for a CIO, especially those who've grown up to believe they have to control all those core systems. There'll be some risk involved, but I think what's crucial for CIOs is to explain the balance of risk versus reward to their business colleagues, and to partner with them on the pros and cons of accepting those risks. But if CIOs don't embrace these concepts and try to live in the old world, they'll end up irrelevant. Any CIO who tries to just frustrate the march of cloud is going to have a problem."

Fujitsu Forum 2011

MUNICH, NOVEMBER 9 & 10

Dr. Joseph Reger, CTO of Fujitsu Technology Solutions, will deliver a keynote at Fujitsu Forum 2011 featuring live discussion with experts on innovation and novel IT solutions like cloud and business agility — plus the future shape of IT.

http://ts.fujitsu.com/fujitsuforum

> "Any CIO who tries to frustrate the march of cloud is going to have a problem."

Comic Relief's Marcus East, Paul Cheesbrough of News International and UBS's Chris Swan were guest speakers at the Hosting and Cloud Transformation Summit Europe 2011.

CASE STUDY

THE UK'S HIGHEST-PROFILE CHARITY, **COMIC RELIEF**, RELIES ON CLOUD'S FLEXIBILITY TO PROCESS A SURGE OF DONATIONS ON ITS BIG NIGHT.

Comic Relief's mission presents the quintessential cloud computing challenge. Since 1985, the charity has rallied the big names of British comedy behind a biennial binge of fund-raising that culminates in Red Nose Day and its evening-long telethon. Over a matter of hours, the surge of phone, text and web donations takes its IT systems from idling to a peak level that in 2011 hit an unprecedented (and unpredicted) 214 transactions per second (tps). The end-of-day campaign total, destined for some of the world's poorest and most disadvantaged people: £74.3 million ($118m).

That burst of activity means an intense few hours for Comic Relief's CIO, Marcus East, and his IT team, whose job is to deliver the hugely scalable capability needed to process such vast volumes. Not only is it difficult for them to predict how any comedy sketch or individual appeal will impact traffic flows (indeed, the previous year's peak *only* reached 146tps), but also the one-off opportunity for pulling in donations means the whole event is dependent on IT being able to scale to meet whatever demand is thrown at it.

Cloud, or its previous incarnations, grid and utility computing, has always been the key, says East. "The Comic Relief business model, its DNA, is geared around flexibility. The only way to deliver our On-the-Night Donations platform is through cloud — there would be no other way to get that ability to flex up and down without significantly increasing the cost, risk and resources put into it."

Years at the cutting edge of cloud have provided East with some invaluable lessons: "The first is to understand what adopting cloud for any particular application really means in terms of the scalability, costs and what you need to deliver."
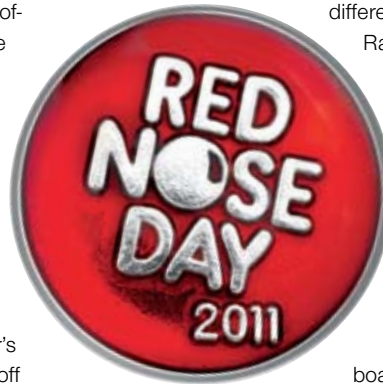
Photo: Comic Relief

Despite suggestions to the contrary, there is a cost associated with cloud, and some organizations could find it is more expensive to have things "on tap" than to put in place a managed service, he points out.

There is also a learning curve regarding new charging models. "There are numerous ways that a cloud can be billed. One is capacity, which is relatively straightforward given that storage is quite cheap. But when you start looking at things like processing power, the equation starts to get interesting. For example, if your company produces an application that ends up becoming incredibly successful and therefore needs a lot of processing power, you can suddenly find yourself with 100,000 concurrent users and an unpredicted cost," East explains.

His warning: "If you don't have a good view of either what your limits are or what the usage is likely to be, then you are, in some respects, signing a blank check."

Another area where IT teams need to understand the dynamics of cloud is in applications design. "The mindset around your application development needs to change. Creating apps for a data center environment is very different to developing them to work in a cloud. Rather than thinking about secure database connections between servers that sit within a physical environment, knowing that the application is going to have access to those kinds of services, you need to start thinking about an app as more all-encompassing and autonomous — something you can send off like a fire-and-forget missile that can report back to base but will hit the target."

Another critical lesson East has taken on board is to "absolutely take the business with you." There are likely to be multiple stakeholders in any cloud initiative, he says — or there should be. "The IT team might want to protect the infrastructure and do things that are right from a technology perspective; on the other hand, there are various interests on the business side who have a different set of priorities — to drive change, growth, and cost savings."

Any cloud adoption needs a "joined-up conversation," he emphasizes: "It is not for the IT department to say we are going to cloud whether the rest of the business likes it or not."

Such conversations have clearly taken place at Comic Relief. "We need the confidence that we can continue to drive and process those high volumes of donations," says East. So for the big donation nights at Comic Relief, the commitment to cloud — from both IT and the business — is nothing short of "absolute."

"Think of a cloud app as something you send off like a fire-and-forget missile."

BOARDROOM VIEW

A CIO's PRIMARY RESPONSIBILITY IS TO ENABLE AGILE INNOVATION, ARGUES **SOUMITRA DUTTA.**

Soumitra Dutta is professor of information systems and the Roland Berger chaired professor in business and technology at leading business school INSEAD. He advises national governments on ICT issues, is chairman of the European Commission's panel on innovation in the ICT sector and is a fellow of the World Economic Forum. His most recent book is *Throwing Sheep in the Boardroom: How Online Social Networking Will Transform Your Life, Work and World*.

Four forces are now converging to create a tremendous global upsurge in innovation. First is rapid progress in the consumerization of technology. The mobile phone is the poster child for this, but a range of technologies is now suddenly available to people worldwide, delivering increased power, speed, connectivity and user-friendliness.

Second is the rapid adoption of these technologies by young people. In many emerging markets, such as India, up to 50% of the population may be below 25, and these people are becoming both employees of companies, where they are driving change from the inside, and also customers demanding changes to products and services.

Third is the fact that emerging markets, such as China, India and Brazil, are moving hundreds of millions of people beyond the poverty line — and enormous numbers of them have suddenly become consumers.

And fourth is an increased concern about sustainability and the environment, which is forcing businesses to change their products, services and operating practices.

To convert this increased pace of innovation into improved business agility, it is necessary to transform many of the core capabilities of organizations. For example, how multinational corporations deal with geography has to change.

A lot of new growth is occurring in markets that are far away from many organizations' traditional home markets, so these enterprises have to think about how they will actually learn about the needs of this new segment of people. And to do that they have to change their culture so they are open to accepting ideas and innovations from different regions that previously were not part of the innovation ecosystem.

Here, the role of IT is twofold. First, it must enable collaboration that leads to more innovation on a global basis. Second, in order to create better products for these emerging new customers' needs, technology has to become a vital part of the actual product and service delivery. It has an embedded value that is critical, and CIOs must look at that aspect carefully.

One important technology that is speeding up the capacity for agile innovation is cloud computing. It gives businesses the flexibility to experiment, scale up and create innovations without necessarily having to deal with the challenges of large infrastructure deployment.

Cloud is especially beneficial to smaller companies as it enables them to emulate the benefits of a large infrastructure without making it essential to invest in it. Big business should bear this potential threat in mind and focus on becoming as innovative and agile as small firms.

At board level, therefore, discussions about technology and IT-enabled innovation must become more of a priority. If you look at many boards today, they may have an audit committee or a compensation committee, but rarely do they have committees for technology or innovation.

The level of knowledge among senior board-level directors is still quite low and more emphasis needs to be placed on increasing engagement and understanding of technologies, and on the role of innovation, especially on a global scale.

The CIO can play an educational role here, and should be capable of at least stimulating some processes and activities

Cloud computing is speeding up the capacity for agile innovation.

If you combine these forces, it becomes clear that the need for innovation is no longer a business nice-to-have; it has become a must-have, or else you cannot succeed and grow.

In response to this, corporate leaders have to accept that business as usual is no longer possible, whether they have ambitious growth targets or simply want to defend what they have now.

inside the company to increase the level of knowledge — but you can't expect him or her to perform miracles.

In terms of the expectations the rest of the C-suite is likely to have of CIOs, the single most important is that technology has to help the business innovate in an agile fashion. However, this is dependent on technology infrastructure evolving successfully, which in turn depends on the infrastructure being secure and stable. Unless CIOs get this balancing act right, rapid innovation and agility will never be possible.

Illustration: Yusuke Saitoh

THE GROWING CLOUD

$241 billion
The predicted size of the global cloud computing market by 2020, compared with $40.7 billion in 2011. (Forrester)

7%
The proportion of enterprise resource planning (ERP) revenue attributed to SaaS. (Gartner)

$12.1 billion
The forecast size of the global software-as-a-service (SaaS) market in 2011, representing a 20.7% increase year-on-year. The North American region will account for 63.6% of this revenue. (Gartner)

$3.7 billion
The estimated size of the worldwide infrastructure-as-a-service (IaaS) market in 2011. It is predicted to grow to $10.5bn by 2014. (Gartner)

32%
The proportion of SaaS accounted for by CRM software in 2011, the biggest single slice of the SaaS pie. (Gartner)

DATA FEED
SIZING UP THE CONNECTION BETWEEN AGILITY AND THE CLOUD.

ENABLING BUSINESS AGILITY

In a global survey of 600 corporate decision-makers (both IT and non-IT executives) conducted by virtualization software market leader VMware:

● More than **80%** agreed that agility is moderately or more than moderately linked to improving corporate revenue, cost and risk profiles

● Companies that classed themselves as "extremely agile" claimed that IT is one of their **top two** agile business functions

● Companies that did not class themselves as agile reported that IT is among the **two least** agile of their business functions

● **65%** of executives said cloud computing plays a key role in increasing IT agility

● **63%** agreed that cloud computing can make their entire organization more "business agile" and "responsive."
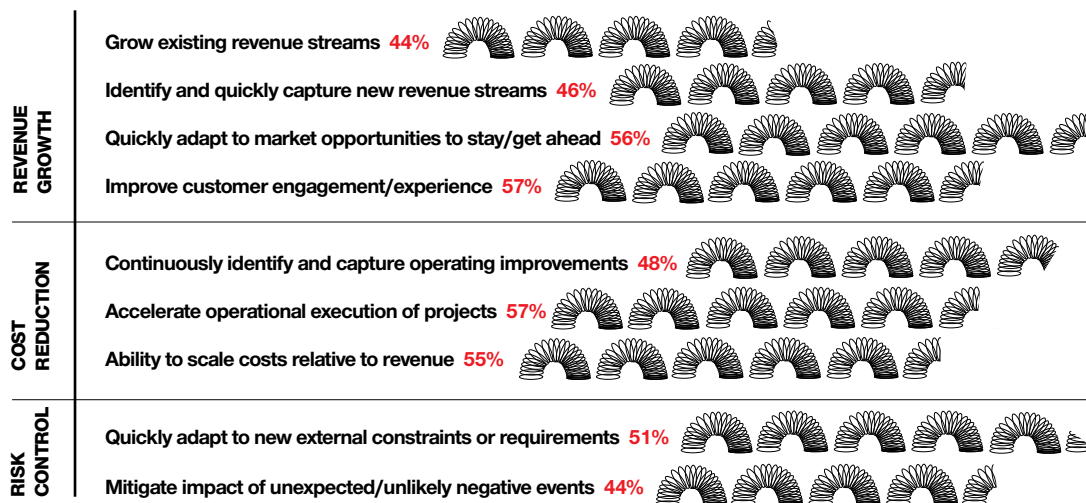
CIO PRIORITIES

● **66%** of board directors in the US are expecting a high to extremely-high strategic contribution from IT in 2012. (Gartner/Forbes)

● **73%** of board directors believe the economic situation will remain tough for the foreseeable future, yet 51% are still focused on revenue growth. According to Gartner: "The tension between these two views means CIOs will need to plan for systems that will be required for growth but build in flexibility should circumstances change amid high levels of uncertainty."

● Almost **half** of CIOs expect to be operating their applications and infrastructures via cloud technologies within five years. (Gartner)

"One of the things I think about every day is: How can we make this company operate as quickly as possible? And often that's encouraging people to move quickly, but a lot of it's about building really good infrastructure that enables people to move quickly on top of solid abstractions that we built. And that's a real big deal, I think."
Mark Zuckerberg, CEO, Facebook

CLOUD BENEFITS

In a global survey by VMware, 373 business leaders were asked what role they think cloud computing could play in achieving the following outcomes for their companies:

REVENUE GROWTH

Grow existing revenue streams **44%**

Identify and quickly capture new revenue streams **46%**

Quickly adapt to market opportunities to stay/get ahead **56%**

Improve customer engagement/experience **57%**

COST REDUCTION

Continuously identify and capture operating improvements **48%**

Accelerate operational execution of projects **57%**

Ability to scale costs relative to revenue **55%**

RISK CONTROL

Quickly adapt to new external constraints or requirements **51%**

Mitigate impact of unexpected/unlikely negative events **44%**

BAROMETER

EXCLUSIVE: IT LEADERS ON
THE ISSUES THAT MATTER

How do organizations ensure cloud computing is a business game-changer?

ADRIAN GARDNER
**CIO and director of the IT and
Communications Directorate
NASA Goddard Space Flight Center**

Provides research and mission control services to the US space agency

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As a highly technical governmental agency, NASA's success leans heavily on its IT capabilities. Utilizing the most efficient and effective approaches for storage, processing and bandwidth is imperative.

Mission-based projects within the agency often have very long IT lifecycles, and they are also usually one-of-a-kind, complex, high-stake endeavors. Decisions for missions begin early in the strategic planning phase. Due to long lead times for procurement, IT acquisition also happens early in the lifecycle and upgrades need to occur regularly, otherwise, what was new when the planning began will be obsolete by the actual launch date. In addition, the necessary compute capability must be estimated far in advance of when it will actually be needed. Another important aspect is that duplicate IT environments are sometimes created from the variety of projects, resulting in the duplication of software, hardware and licenses.

Cloud computing, when used strategically, offers solutions to many of these scenarios. With the availability of on-demand access to compute and incredible scalability (elasticity), there is no need for advanced estimating, duplicative environments, non-sharing of expensive licensing, and non-sharing of hardware and software.

That said, cloud is not a one-size-fits-all solution, because some systems (e.g. embedded systems) do not fall within its use cases. There are other obstacles, which need to be considered carefully before proceeding, such as the introduction of possible complications to a project or potential security risks. Latency can also become an issue once data and applications become distributed. Additionally, cultural resistance to change may be a good reason to hold off on a rapid migration to cloud.

Indeed, for certain organizations, it may not be feasible to implement cloud computing on an enterprise-wide basis. Their alternative is to use cloud computing on a project-by-project basis, for example when there is a need for a stop-gap capability or when there is uncertainty over project funding or scope. But in order for an organization to utilize cloud computing as a business game-changer, it should be implemented strategically — embedded in the project management process to ensure business success, risk mitigation, significant cost savings, a better understanding of compute requirements and the ability to obtain the latest technologies.

THE VERDICT

Is business agility the primary driver behind your cloud computing strategy?

The majority of global CIOs are counting on cloud to have a liberating effect on their organization.

Poll of 24 CIOs worldwide conducted by *I*, September 2011

58%YES

42% NO

MIKE WRIGHT
Global head of technology Man Group
World's largest publicly-listed alternative asset manager

Cloud technology is going to fundamentally decouple the ability to set up and run business initiatives from the need to have in-house IT infrastructure. If that's the case, why is there any debate about when and how computing is going to be changed by cloud?

At Man, we have started to explore cloud-based delivery because it potentially removes some traditional constraints and reduces the costs of projects involving non-core business activities, allowing us to move them up the priority list and do them faster.

The projects we've undertaken to date have not included any client or investment data but have provided some useful lessons:
● Recognize that data security and privacy issues are still evolving rapidly, and data sovereignty is a complex area
● When a cloud application involves large volumes of data, then data connection speeds may not be sufficient
● Identity verification needs to be simplified so people can sign on once to gain access to both cloud and non-cloud applications.

But probably the most important thing to understand is that cloud providers fall into two types. There are "digital natives" who say they can do everything but are tremendously naive about service-level provision. We found it difficult to get them to accept the idea of an agreement that involves penalties if they didn't provide the service. On the other hand, larger firms have better ideas about relationship and service management, but tend to cost more.

We have also learned a lot internally: our operating processes and skillsets need to change. We must be more agile, and more multi-functional. With cloud, we need to bring in legal, compliance and auditing earlier in the project. Security and confidentiality of our data (especially client data) remains the top concern. But our involvement to date has demonstrated that these changes are real — and, over time, cloud will fundamentally change the financial services industry.

DAN WEST
IT director ASOS
UK-based online fashion retailer with 52% sales growth year-on-year

ASOS is growing quickly, and most of that growth is coming from overseas markets. Customer experience is crucial: we have to supply a secure, reliable and consistent service that people can trust in the 160 countries where we have customers. And we have to deal with massive peaks in demand at certain times of the year, as well as enabling our marketing teams to quickly launch campaigns. Retail is a fast and competitive world. Fashion is even more so. To succeed, we've got to be faster and better than everyone else.

In terms of the technology required to support this, agility and flexibility are key. Cloud in all its guises — software-as-a-service, infrastructure-as-a-service, platform-as-a-service and content delivery networks — is a way of providing that. Our first step was to move email and our customer care systems into the cloud. That allowed us to scale them up quickly and easily, and also let us repurpose some of the resources and effort that was looking after those systems into more value-added activities. I now have a vision that we will be asset-less in five years, if technologies and regulation permit. I can't deliver the speed and global reach the business requires if I have a load of servers based in one location. For example, we will start to migrate our behind-the-scenes fulfilment and logistics systems, which currently have very traditional on-premise solutions, to either infrastructure-as-a-service or true platform-as-a-service.

No one can accurately predict the scale of our future requirements, but cloud gives us a flexible system that we can turn up or down depending upon the demand. It takes away that fear of "not having enough."

"CLOUD IN ALL ITS GUISES IS A WAY OF PROVIDING AGILITY AND FLEXIBILITY."

FEDERICO FLÓREZ
CIO Ferrovial
Global construction and transportation infrastructure group with revenues of €12bn

At Ferrovial, we typically don't buy standard solutions; we want technology that differentiates us from competitors. So we build vertical solutions in-house for our many different lines of business. But where we find synergies across the group around the globe, we have sought to apply a "Just One Ferrovial" approach. The primary area where we have been able to communalize our IT is in infrastructure — comms, collaboration tools, office computing, email, Internet.

Outsourcing that common infrastructure has taken us an important step down the road towards cloud computing, with some providers already delivering those to us as cloud services. So now we use software-as-a-service products for purchasing, payroll management and human resources — indeed, all 100,000 employees are serviced from the cloud through HR applications.

A more vertical example involves our activities in Barcelona, where we are contracted by the local authority to collect garbage. We have equipped each container in the street with a sensor that sends a message to a cloud application alerting us when it needs emptying. And in that moment — not before, not later — the truck is dispatched to change the container. We call that Smart Rubbish: it enhances the service provided to the citizen, it is more efficient, it is more environmentally friendly.

As that highlights, with cloud we are not just looking for cost savings, we are looking for better service, better systems availability — and above all to add business value.

We've learned some lessons. For example, cloud is not ready for everywhere. Legislation in different countries, governing things like data security, makes implementing a solution internationally still quite difficult. You also need to consider the impact on the organization in terms of change management. And you have to develop, or hire, new capabilities and skills. ●

THIS WAY UP

Bob McKinnon, group executive of technology at Australian banking giant Westpac, is leading its ambitious IT turnaround.

Words: **Andy McCue & James Lawrence** Photography: **Damian Bennett**

Bob McKinnon
is group executive of technology at Australian bank Westpac. He brings to the role a diverse skillset accumulated through his CEO, CFO and CIO experience in companies including Lend Lease, State Street and Commonwealth Bank of Australia.

Like the hard-nosed, crime-busting movie cop about to retire but unable to resist "one last case," Bob McKinnon was contemplating a well-earned and leisurely retirement of playing golf and spending time with his family when the call came from a former colleague.

Gail Kelly, with whom McKinnon had worked at the Commonwealth Bank of Australia, had just taken on the role of CEO at Westpac, the Sydney-headquartered financial services group. The banking industry star needed a turnaround executive to fix the company's troubled IT operations and drive through a five-year A$2 billion ($2.1bn) transformation program — and she knew exactly who to ask. McKinnon, having spent his working life taking on major change projects, was unable to resist the challenge.

That was in 2008 and a long way from where the young McKinnon, starting out as an accountant working on insolvency cases for Price Waterhouse in 1972, had envisaged his career would go. "My ambition had been to spend my whole life working for Price Waterhouse, progressing to become a partner in the firm," he says.

But he soon broadened his horizons and, instead, headed for some of Australia's biggest enterprises in the finance, construction and property management industries, where he has subsequently enjoyed an illustrious career holding all three of the top C-suite positions — CEO, CFO and CIO.

McKinnon is now group executive of technology at Westpac and three years into a major overhaul that has seen radical improvements in the reliability and efficiency of the bank's IT, the integration of a major acquisition (the St. George banking group) and the development of Westpac's technology offerings to support the next generation of banking. "In some ways it's as though everything I've been doing over the past 38 years has been preparing me for this one last role," he says. "It's been a lot of fun because of the great team we've built and the extraordinary progress we've been able to make in just three years."

Some of those key skills were first honed in a formative 18-year stint at the then-young, innovative and fast-growing Australian property company Lend Lease, which he joined in 1979. During those years from his late 20s to his early 40s, McKinnon rose from being a head office accountant to group CFO and then chief general manager of the company's financial services arm, MLC. "I think a lot of my key learnings come from that time. From a career point of view

1972-1979
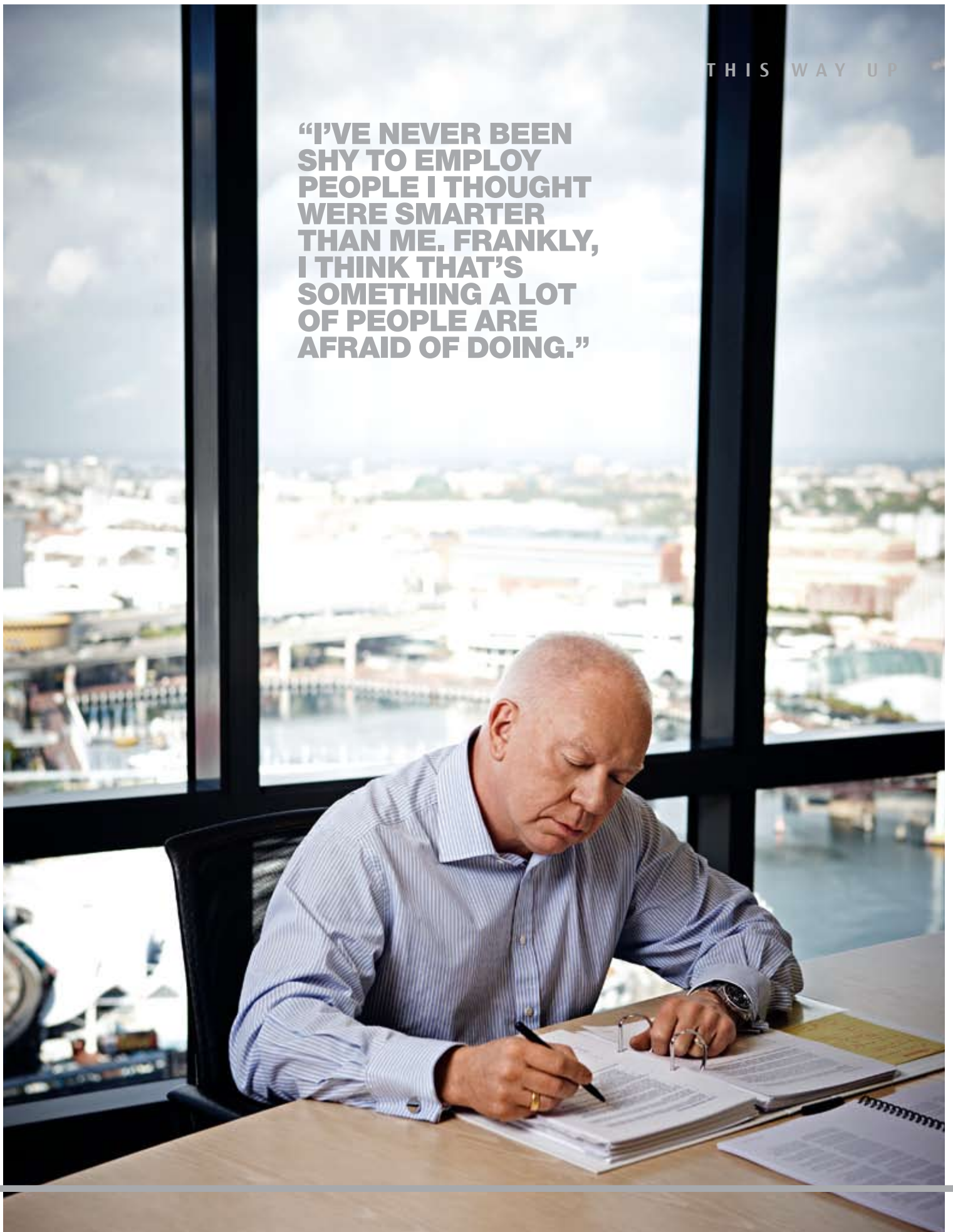Insolvency accountant
Price Waterhouse
Accounting services

1979-1991
A variety of roles, rising to CFO
Lend Lease Corporation Group
Property solutions

1991-1995
General manager, finance
MLC
Lend Lease's financial services arm

"I'VE NEVER BEEN SHY TO EMPLOY PEOPLE I THOUGHT WERE SMARTER THAN ME. FRANKLY, I THINK THAT'S SOMETHING A LOT OF PEOPLE ARE AFRAID OF DOING."

it took me from being an accountant to being a leader and into a group executive-type role," he explains. "It's where I learned the importance of culture, the importance of having the right team around you, of having the 'A' team on the job. There are many things from those days that are career highlights."

Two of the crucial things McKinnon learned from his time at Lend Lease, which have been themes ever since, are the value of people and the value of leadership. "When I started at Lend Lease in that CFO role, the succession planning in finance was in a bit of a mess. It needed a rethink and, over the course of a couple of years, I rebuilt the finance team with a whole lot of great individuals," he says. "Ten of the cadre of people I recruited went on to be CFOs of public companies and some of them still are. The quality of the people we were able to attract and the team we built was quite extraordinary."

But McKinnon's rapid rise through the executive ranks also presented him with a career dilemma. Having become CFO of a public company by the age of 35, he had achieved what was then his main career aim. After a spell as chief general manager of MLC, the question was, "What next?" At Lend Lease he had spent a lot of time in turnarounds and had become known as "Mr Fix It." So, with MLC at the point where Lend Lease could spin it off to focus on its property business, McKinnon took the opportunity to move on, taking on a new challenge as managing director at financial services group State Street Australia, where he was also CEO of Global Investor Services in the Pacific.

Although McKinnon had some exposure to the technology side of the business at Lend Lease and MLC, it was at State Street where he became immersed in it, largely due to the technology- and process-driven nature of the company. Its custodial banking and accounting business had grown too fast and needed to restructure, rebuild the management team and stabilize its financial performance. "That was a turnaround and lasted a couple of years," says McKinnon. "At the end of that time the business was a lot smaller than when I arrived. It had been losing money but now it was back to breaking even and was clearly headed in a new direction. Everyone was excited about where it was going."

In 2000, having been CFO at Lend Lease and the top executive at State Street, McKinnon's next role completed his C-suite hat trick when he segued into the CIO's role at the Commonwealth Bank of Australia. A former Lend Lease colleague was now head of the retail bank and in need of assistance with its IT department, which was having difficulties managing a A$1 billion per year IT outsourcing deal with its US service provider. The problem was the bank hadn't built the internal capabilities to run and get the best value out of such a large contract. "When I arrived, there was no IT strategy," says McKinnon. "The IT was becoming increasingly unstable and all people could do was point to [the service provider] and say, 'It's your problem.' My attitude was, it's our business, our technology, and we're accountable for it."

The turnaround involved building teams and instilling project management discipline into the IT organization. McKinnon's impact was such that he went from being the general manager of technology to joining the bank's group executive and reporting directly to the CEO. "It was an exercise, to some extent, in allowing Commonwealth Bank of Australia to reclaim accountability for the technology outcomes of the business and rebuild the capabilities across a number of different fronts," he says. "And over the next five years we did that. We rebuilt a service management capability and a commercial capability. We rebuilt a sourcing strategy."

Voice at the table

Throughout his C-level career McKinnon has always had a place at the top table and he's clear that CIOs must have influence in the boardroom if they are to succeed — although this doesn't necessarily mean a formal seat on the board. "One way or another CIOs need to have a voice at the table. You can sit on the executive board and still not have a voice because you have two things missing: one is you're not a good influencer and the second is you're not respected by the other leaders of the organization," he says. "Being a good influencer, being aligned with the business and being respected by the leadership team are ultimately more important than the structure you have."

There will also always be a debate about whether it is better to have a CIO who comes from a technology background or not. With his finance and general management career path, McKinnon says this actually helped him fix the problems at Commonwealth Bank, where a lot of the work was around people and strategy rather than day-to-day IT. "One of the things I do best is build teams and put the right people around me. Coming into a place where there was so much learning to do, so much capability to rebuild, it was a great opportunity to get the very best people I could find and start to build a team," he explains. "And I've never been shy to employ people who I thought were smarter than me. Frankly, I think that's something a lot of people are afraid of doing."

That kind of reputation for building crack troubleshooting teams brought McKinnon a new and high-profile challenge. Around the summer of 2006, construction of the high-profile 90,000-seat Wembley

1995-1998
MLC
Chief general manager
Lend Lease's financial services arm

1998-1999
State Street Australia
Managing director & CEO, Global
Investor Services in the Pacific
Global investment services

1999-2000
State Street Australia
Non-executive director & consultant
Global investment services

2000-2005
Commonwealth Bank of Australia
Group executive & CIO
Financial services

"BEING RESPECTED BY THE LEADERSHIP TEAM IS ULTIMATELY MORE IMPORTANT THAN THE STRUCTURE YOU HAVE."

Grooming: Nadine Monley

Stadium in England was attracting headlines for all the wrong reasons. Delays to the project were costing Australian constructor Multiplex huge amounts of money as it fought to save the contract and bring it back on track. At the time, Multiplex was still 25% family-owned, with the son of the original founder in charge, and struggling to make the transition to a public company. With his job at Commonwealth Bank now coming to a natural end, McKinnon was asked to step in as CFO of Multiplex, returning to his roots in construction and finance. His remit from the board was to work with the CEO to drive the company's turnaround and fix the Wembley Stadium problems.

"From a personal achievement point of view it was a fantastic two years. Multiplex was full of great people who, despite the bad press and the struggle to get Wembley finished, got that job done," he says. "Multiplex lost half a billion dollars on the Wembley contract, yet the board was determined that we would finish the project."

As Multiplex emerged stronger from that troubled period, its share price recovered and the firm became a takeover target for asset management company Brookfield. The family stepped down from the management of the company, so McKinnon and the COO took

over as joint managing directors for the next year to oversee the sale to Brookfield, staying on for six months afterwards to help smooth over the transition.

By now 55, McKinnon had his sights set on retirement and less intensive work as a non-executive director when the call came from Gail Kelly, newly appointed CEO at Westpac, asking for help to turn around the bank's well-documented IT problems. "Stability was a major problem," he explains. "The management team was in disarray. Their IT strategy wasn't an IT strategy and the board had lost confidence. The business had lost faith in technology." The first step was to develop an IT strategy that eventually led to a A$2 billion transformation program, which is still underway today.

The most pressing challenges lay in improving the reliability and stability of the bank's IT offerings and regaining the confidence of the business, particularly the frontline. "We've made a 90% improvement in the stability of the platforms but we still have a little way to go. We're striving to get to a state where the highest severity incidents are the exception. So that has brought a lot of confidence to the organization."

The strategy is also about improving sustainability and infrastructure capability — vital when such a large part of the banking operation is technology-driven. This includes rebuilding relationships with the bank's key IT service providers and, as a crucial part of that, Fujitsu will build and operate a new data center, which will serve to improve both efficiency and capabilities for the future.

As with most organizations, cloud computing is becoming a critical feature of Westpac's IT strategy. In one early initiative, the bank plans to use a combination of Fujitsu and IBM expertise to offer a cloud-based version of Microsoft's Collaboration Suite to all of Westpac's 38,000 employees — a unique and innovative combination, he says.

"For us it's more around private rather than public clouds. I don't see many places offering a software-as-a-service solution to core banking," McKinnon predicts. "For us the opportunity is in infrastructure and in our ability to quickly stand up, test and develop the environment, and in our ability to virtualize production environments in an efficient way."

There is still work to do on Westpac's IT turnaround, but McKinnon is clearly enjoying the challenge of what he says will definitely be "the culmination of my executive career." Until that next "last job" comes calling? "I've been getting counseling on how to say no," he jokes. ●

2006-2008
CFO, then joint managing director
Multiplex Group
Property & construction

2008-present
Group executive, technology
Westpac
Global financial services

The changing mind

Mass IT consumption is having a major impact on the way we all think, argues neuroscientist Susan Greenfield — and it's vital that business leaders understand the profound implications.

*Words: **Jo Faragher***
*Photography: **Jake Walters***

When Baroness Susan Greenfield, one of the world's leading neuroscientists, says that digital technology is changing the way we think — for better or for worse — people sit up and take notice. Indeed, in recent years, the Oxford University professor of synaptic pharmacology and member of the UK's House of Lords has not been afraid to court controversy with her strong opinions on how IT, and in particular the influence of the world wide web, online social networking and computer games, is having an impact on the workings of the human brain.

Her detractors, many of them fellow scientists, have criticized her for failing to produce sufficient evidence to back up her claims. But to Greenfield, who happily reels off a list of academic journals that have published research supporting her theories, their disbelief echoes a time when few were prepared to accept that man-made climate change was an emerging reality. "About 30 years ago, the term climate change was only recognized by perhaps a few 'pointy heads,'" she says. "Once people started to introduce the idea, there was a resistance because it challenged our view of the world, our comfort, security, stability. Some people think climate change is exaggerated, some people think we're doomed, some people think science can help. My contention is we're facing a similar ▶

issue where the impact of technology is pervasive and invasive in a way that is unprecedented."

But while Greenfield's concept of what she calls "mind change" may seem alarming, she is at pains to say she is not making a value judgement about technology. "The term 'mind change' is a neutral one, it's value-free," she insists. "Digital technology *is* going to change the way we think. What I'm not saying is whether that's good or bad."

On the plus side, she points to an increase in average IQ scores in many countries, citing evidence from the popular science author Steven Johnson's book *Everything Bad is Good for You*, in which he describes how greater interaction with computers has actually improved our cognitive abilities, and that the skills involved in playing a computer game, for example, can sharpen our mental agility. Given that the core focus of Greenfield's research is finding new approaches to arresting brain degeneration, particularly in cases of Alzheimer's and Parkinson's disease, activities that can exercise the mind, especially in later life, can be deemed a positive development for the benefit of mankind.

Greenfield is also highly enthusiastic about the growing convergence of consumer technologies, which she describes as "exciting," particularly in the field of mobile computing that is increasingly bringing devices closer to the humans who are using them. "Clearly, that is the way technology is going," she says. "A mobile phone — which is really a small computer that you take with you everywhere — is a part of you. If someone even holds my mobile I feel uncomfortable, yet if they hold my laptop I don't mind at all."

However, these technological positives are accompanied by a host of caveats. "When you're good at an IQ test, what you're actually doing is using mental agility, you're seeing patterns or connections very quickly and you're reaching a very specific right or wrong answer," she explains. "We may have seen a positive change in IQ trends, but what we haven't seen is a shift in insight — whether that's insight

into the economic situation or solving the Middle East crisis." Similarly, while the use of many technologies creates a demonstrable and "fantastic" improvement in sensory motor skills, that is only because "the human brain becomes good at whatever it rehearses."

The real value emerges at higher levels. Getting the best out of technology — particularly in the enterprise space — flows from the way in which we turn information into knowledge and insight, she argues. So while dealing with an onslaught of data coming through their servers every day, corporations need to ensure they have trained staff who can apply context to that information, rather than simply processing it.

"We need to go from having the ability and the facility to have endless stats that are not necessarily related to a past, a present or a future, to a wider conceptual framework," she says. "Companies are putting a premium on the one commodity they can't buy, and that's creativity and creative individuals. You might have people with high IQs who can process information quickly, but that is not the same as seeing something in a new way, or understanding something from a different angle and coming up with a new product."

She points to the specific capabilities of the human mind that, as yet, computers have not been able to replicate. "What we can do is think laterally," she argues. "We can think just using intuition and common sense. We can have hunches, we can be creative, and above all we can understand and have insight. Computers can't do that."

Or at least not yet. "I don't think it's beyond the wit of man to design software that helps to convert information into knowledge," she says. "Something more than just Wikipedia, that's not just giving you more facts, but helping you make conceptual leaps between one thing and another."

One of the obstacles to turning that information into knowledge, in her opinion, is that technology itself doesn't give us the space to do so. She cites Google chairman Eric Schmidt, who was recently quoted as saying he worried that "the level of interrupt, the sort of overwhelming rapidity of information... is in fact affecting cognition."

The suggestion: a generation of "digital natives" is entering the workforce, and while they might be able to check their email on a smartphone and simultaneously execute a work task on screen, their understanding of what they are doing, and why they are doing it, is essentially shallow. The constant drip-feeding of information they are processing will never be fully put into context because their engagement is spread too thinly.

"How can you possibly be concentrating and analyzing what's coming in if you're busy processing something going out?" Greenfield asks. "If you're constantly outputting, you're not digesting what's coming in." The imperative for business, therefore, is to design an environment where genuine blue-sky thinking can take place, where employees take time out from the screen, slow down their thoughts, talk through their ideas.

Good leaders, she adds, will be the ones who can promote that deeper understanding, who provide the dots but don't join them together. "A good

"AT THE MOMENT, WE LIVE IN AN ANSWER-RICH, QUESTION-POOR WORLD."

leader and someone who can bring out the best in people is someone who can paint a vision. So it's not so much you tell people things, but you say, 'Imagine if we could do this. Imagine if we could increase our sales by tenfold a month.' Martin Luther King said, 'I have a dream.' He didn't say, 'I have a five-year plan.' Charismatic leaders share their vision, but don't give everyone all the answers. What we need is a more question-rich world. At the moment we live in an answer-rich, question-poor world."

Hand-in-hand with this shallower understanding is a decline in empathy, claims Greenfield. She points to a study, published at the end of 2010 in the magazine *Scientific American*, which found that college students' self-reported empathy has declined since 1980, with an especially steep drop in the past 10 years. By engaging in a screen-dominated world where one is the "passive recipient of senses," as one might be in a computer game, she believes, we lose our connections with the outside world and struggle to understand it.

One of her favorite examples to illustrate this is the empathy we might feel for Princess Maria in Tolstoy's *War and Peace*, compared with the fight to save a princess in a computer game. "When you play to rescue the princess, it's not because you care about her, but rather the thrill of the process of playing and winning the game. When you read a book, it is because you care about the characters, their relationships with others and their fates," she says.

Combine lack of empathy with a shallower level of understanding, and people are also more likely to take risks. When people play computer games, their actions don't have long-term consequences. They may get shot down in a war game but they can live to play another day. She describes this as a "toxic combination of excitement and safety."

"Where's the risk when you play a computer game?" she asks. "It's faster and brighter and noisier and more interactive than the real world, but it's also totally safe. It offers you for the first time ever two mutually exclusive things that until now have been in dynamic equilibrium: [danger-induced] excitement and safety."

Being exposed to this culture of never knowing the consequences of our actions may have had ▶

a more wide-ranging impact than many people realize, argues Greenfield. She goes as far as to suggest that a less risk-averse culture may have played some part in the recent global financial crises. "I won't be crass enough to say that all the financial ills are due to this, but one thinks of young traders sitting there, just pressing buttons and shifting money around in the way their predecessors didn't," she says.

Greenfield accepts that some level of risk can be a good thing, though, and claims that: "I have always been a risk-taker in my research... What you need is not someone who just says 'no' all the time. There's a middle ground you want to occupy." But how do we achieve that balance? In a world where open source technology is becoming pervasive and organizations of all kinds are starting to open up their data to the wider public, our whole notion of progress is predicated on a certain element of risk and openness, she suggests.

When it comes to workplace collaboration via social networks, for example, Greenfield believes there are advantages, in that we can introduce checks and balances and still come up against other people's thoughts.

But again she urges caution: "It seems to be a given that being connected is a good thing, and sharing things can be, a bit like with open source, a good thing. But I think if people get used to only being able to think collectively and 'in the cloud,' as is already happening, then where do 'you' end and 'I' begin? Where's the firewall of your personality? When things move as a swarm they only move in one direction and if you want a diversity of views and talents, you'll be homogenizing everything if everyone is thinking collectively. I think the goal will be to get people to work in teams, but teams where individuality is recognized."

Greenfield is now making her own attempt to harness the positive aspects of technology. She is working with a team of developers to create an app that can stimulate thought by providing simple access to information about how the brain works: a "mind change" app. One of the elements of the program will be the facility for subscribers to log their own experiences with technology (for example, how long they have spent in front of a screen on a particular day) and record how they feel about it. She hopes it will create a vast global survey of views around our technological experiences.

A second project is, perhaps surprisingly for a scientist of her standing, a novel. Provisionally entitled *2121: A Tale from the Next Century*, it's the story of a dystopia, what happens as a consequence of what she believes to be our over-reliance on technology today. "The best review I could have would be for someone to say it was like the *1984* or *Brave New World* of our time," she explains. "It's about people who live in a completely cyber-based world, where everyone is healthy and beautiful, but they don't interact, they don't have a narrative in their life."

Combining her core scientific research at Oxford — which continues to look at new ways to deal with brain degeneration — with her role as a member of the House of Lords (where she sits as an independent

"WE SHOULD SHAPE THE ENVIRONMENT WITH DIGITAL TECHNOLOGY, NOT THE OTHER WAY AROUND."

"crossbencher"), while also writing fiction and non-fiction and developing apps, should be exhausting. But her portfolio approach to life and work is refreshing, and one Greenfield would like to see become more of a social trend in decades to come.

Technology has delivered us a much longer and healthier life, she says, and should we choose to use it selectively and not to the exclusion of everything else, then there's no reason why it can't be a fulfilling element of our lives. As she puts it in a nutshell: "We should shape the environment with technology, not the other way around." ●

● *Further reading: www.susangreenfield.com*

Innovation

Supplanting the PDF

The future of ecommerce

Application portfolio management

Where mobile meets social

Security: Why it's everyone's problem

Innovation strategies predicted

Data-as-a-service

The rise of the citizen developer

Learning to love the Like button

Managing the Internet of Things

1

THE TOWERING CHALLENGE OF APPLICATION MANAGEMENT
The majority of CIOs are letting their software costs spiral out of control.

Almost two-thirds of CIOs don't know how much it's costing them to run their applications, according to new research by Fujitsu. In a survey of 250 IT heads, the global ICT company found that only 39% had a strategy for managing their applications portfolio, with many "almost working blind."

Peter Barrett from the Applications Services division at Fujitsu UK and Ireland says understanding and streamlining the application estate is a key driver of productivity and cost-efficiency — but, worryingly, few organizations are taking the necessary steps to tackle what analysts have dubbed "applications bloat."

As Barrett outlines: "The expanding portfolios of applications in most organizations can cause some painful headaches. They struggle to track which ones are the most strategically important, or which ones they might be able to do without. Businesses also often find it difficult to avoid duplication."

The report estimates that businesses could potentially halve their application management costs by removing unsuitable applications, and achieve a further 15% to 40% saving by getting rid of duplicate licenses. Streamlining applications is also a key step for any organization hoping to gain efficiencies through outsourcing or a switch to cloud provision.

To help organizations, Fujitsu conducts Application Value Assessments for its customers, and also has an application streamlining service as part of its APM Modernization Services for Cloud offering. The company has developed a process to determine the operating status of applications and consolidate the portfolio through a selective process of integration and elimination. When Fujitsu implemented the process internally, it reduced its applications count by around 80%.

"The sheer volume of applications can make the idea of a review daunting," the report adds. "Businesses should look at the cost of maintaining their top 100 applications, and then compare that with the business value of each one."

● *To download the full report, go to: tinyurl.com/6czcnw4*

DATA FEED

Other key findings from the survey of more than 250 CIOs and IT directors include:

● Two-thirds admit their applications portfolio doesn't align with their business strategy

● 53% say they often or always struggle to fund new application development

● Almost half do not have sufficient resources to ensure they get maximum value from their applications.

2

BEYOND PDF
Breathing life into static documents.

Every so often, a new format comes along with ambitions to improve on Adobe's PDF as the *de facto* standard for documents that can be opened on any PC. None so far has succeeded: who, for example, uses Microsoft XPS on a regular basis?

Undaunted, Wolfram Research has recently announced its Computable Document Format (CDF), which the company claims "puts easy-to-author interactivity at its core." The goal is to help business users to bring tables, charts and diagrams to life through animation and interactive features. Documents authored in this format provide a human interface to complex datasets, and the "infographics" they contain can be manipulated to expose the underlying data. All that is required is a free browser plug-in.

There are endless potential uses. For example: using the real-time computation capabilities that underpin CDF, a business leader presenting quarterly results might be better able to field questions on revenues by diving down into sales by product line or region; or marketing teams could develop a business intelligence app to provide them with regular updates on the performance of online advertisements.

"For too long, authors have had to aggressively compress their ideas to fit down the narrow communication pipe of static documents, only for readers at the other end to try to uncompress, reconstruct and guess at the original landscape of information," says Conrad Wolfram, the software company's director of strategic and international development. The CDF, he believes, will put an end to this.

Photos: Shutterstock

3

THE ECOMMERCE REVOLUTION
APIs are an increasingly popular means of growing an online business.

An increasing number of businesses are evangelizing the benefits of opening up ecommerce systems to developers via online application programming interfaces (APIs). In recent years, several big-name companies — including streaming movie service Netflix, US retailers Best Buy and Sears and, most recently (in July), global telco giant Telefónica — have jumped on the bandwagon, encouraging people to develop their own mobile, desktop and web applications that hook directly into their databases and transaction systems.

The interest has largely been sparked by the phenomenal success of Apple's App Store and its Google-owned competitor, Android Market. Users are increasingly bypassing companies' websites and instead choosing to browse online shops and make purchases directly via mobile apps. While many companies develop their own apps, opening up an API can extend customer reach still further by encouraging timely development of specialized user interfaces catering to the needs of particular groups of users, for example shopping apps for those with impaired vision.

Developers can make money by, for instance, charging users a small fee to download the app, earning a small commission on sales/referrals, displaying in-app advertising or cross-selling their own products and services. Retailers, in turn, can gain rapid and agile access to a larger market of potential buyers using a variety of devices without incurring the costly and time-consuming process of developing a raft of different apps and interfaces.

Of course, it has been well understood in the high-tech start-up sector for over a decade that open APIs can boost business and reduce development overheads. Ebay was the first notable company to introduce an

DATA FEED

Programmable Web (www.programmableweb.com), the leading online API and mashup directory, has been tracking the growth of open web APIs for the past six years. According to its research:

● In 2005, there were just 105 open APIs available to developers, including those of Skype, Flickr, Google and Yahoo.

● By 2006 the number had more than trebled to 352 and since then it has nearly doubled every 12 months to reach almost 4,000 today.

● The most popular API is offered by Google Maps, followed by Twitter, Facebook and YouTube.

● Amazon and eBay are the most popular e-commerce APIs (by a considerable margin).

API (in 2000), followed by Amazon in 2002 and Google in 2005. Since then, every web start-up worth its salt has followed this model and some have enjoyed phenomenal growth as a direct result.

Twitter is a case in point. When it launched in 2006 the company made sure it had flexible, open, web-based APIs in place that would allow developers to create a range of user interfaces and bolt-on functions for its core service. A vast ecosystem of developers rapidly grew up around the company, offering myriad Twitter clients for practically any device you could name, plus all manner of add-on features. The result was that Twitter became a far richer user-experience than it would have been if development had been left solely to its in-house team. It remains to be seen how many companies trading online will be able to take advantage of a similar approach.

4

WHERE MOBILE MEETS SOCIAL

The era of location-based social computing has only just begun, says Kevin Lynch, CTO of Adobe.

Kevin Lynch is chief technology officer at Adobe Systems. He is responsible for shaping the content software giant's long-term technology vision and driving innovation across the company. Before joining Adobe, he was chief software architect and president of product development at Macromedia, where he established the company's mobile and devices group.

The multi-screen revolution is upon us, and mobile is at the forefront of this change. The trends driving it are:

1. Processing power. For a long time, the processing we could carry around was relatively underpowered, compared with what was available on desktop devices. But we're now seeing a breakthrough where mobile processing power can be measured in the order of gigahertz. Dual core processors will soon shift to quad core and more, and of course a lot of power will also move to the cloud.

2. Battery power. In the past five years we haven't seen much improvement in battery technology and this is constraining handheld processing power levels. But we will see a breakthrough, partly driven by the move to electric cars as lithium ion battery technology is basically the same as that used in mobile devices.

3. Bandwidth. LTE technology will have capacity of up to 100Mbps and we're already seeing 10 or 20Mbps on some networks. Soon the bandwidth from wireless connectivity will surpass wired connectivity — and that will represent a big disruption.

Because of the convergence of these factors, two or three years from now more people will access the Internet from handheld devices than from PCs. This will mean a revolution in how people consider websites and applications: you'll see the world shift to thinking about mobile first.

Right now, developers are typically building concept applications using PCs, thinking users will access them on PCs. Then, as a sideline, there may be a mobile version. This will change, as they will start considering mobile devices and their constraints first, and then work out how to expand apps to a wider variety of screens.

One major development will be the growth of social, location-based computing. When people are near a place, friends or other devices, some apps will be useful in that context. For example, a tablet may pop up a notification that says: "A mobile app was found nearby, do you want to download it?"

Such apps will, for example, allow users to: see a menu and place an order in a restaurant they've entered; share (with permission) the library on their friend's tablet when close by; or use a tablet to control and share content with other multimedia devices.

This accelerated access to apps which will complement the experiences users are having, wherever they happen to be, is possible now and has a strong future. We've only seen the start.

5

THE INNOVATION OF INNOVATION

Strategies for the future.

In a recent global survey of chief technology officers and chief innovation officers, management consulting firm Arthur D. Little cited five innovation management trends that organizations need to incorporate into their planning for the next decade:

1.
Customer-based innovation
This includes engaging customer emotions through appealing design and using social networking to build customer relationships.

2.
Proactive business model innovation
This includes helping partners and other stakeholders to succeed, and adapting business models to new markets.

3.
Frugal innovation
Businesses have to build structures that allow them to originate, develop and apply innovations in lower-income economies, which can then also be transferred to developed markets.

4.
High-speed/ low-risk innovation
"The drive to reduce time to market and selectively increase the speed of product cycles shows no sign of slowing over the next 10 years," say the authors.

5.
Integrated innovation
Involves shifting responsibility for innovation away from the R&D department and applying it to the entire organization as an integral part of business strategy.

● *For a full summary of the report, go to: tinyurl.com/67ct7an*

6

DELIVERING DATA IN THE CLOUD

Selling datasets 'as a service' may become a new revenue stream for organizations.

Companies are realizing they can leverage cloud technologies to increase agility and change their cost models by deploying software-as-a-service (SaaS) and infrastructure-as-a-service (IaaS) — but in future they may hope to make money from the cloud, too, by offering their own data-as-a-service (DaaS) solutions.

The concept is straightforward enough. An organization stores and secures its database in the cloud, and allows people (or other systems) to query it and extract the information they need online, irrespective of their location.

Of course, the likes of Google and Twitter have been offering free, open access to their databases online in this way for years, both via their traditional web interfaces and via web APIs that conform to "RESTful" (i.e. open) standards. But not everyone wants to give their valuable data away for nothing. Enter DaaS — essentially a more commercially-minded spin on the API — which positions data as another layer in the "as-a-service" stack. In this model, an organization's aim might simply be to reduce data management costs and/or make it easier for employees to access a central database. But it also creates an opportunity for "big data" to become a commercially viable resource, by letting third-party systems query an organization's data for a usage-based fee.

Ian Mitchell, chief architect at Fujitsu UK and Ireland, believes this will become increasingly popular. "It's an area I'm particularly excited about," he says. "There are lots of organizations with tons of data that they'd love to make some money from."

Customers will soon demand to learn more about this concept, he says — and Fujitsu is well-placed to help. "We've done the infrastructure bit in spades, so to add a DaaS layer is a sensible and easy thing to do. It involves putting an access layer on top of the data, which allows you to query the database for individual records or datasets, either directly or cross-referenced with other information. The latter is a powerful benefit as queries that aggregate data from multiple sources will be able to determine even more information and 'wisdom' from the enriched data."

But he cautions that companies will have to take care not to contravene data protection legislation when designing DaaS systems and services.
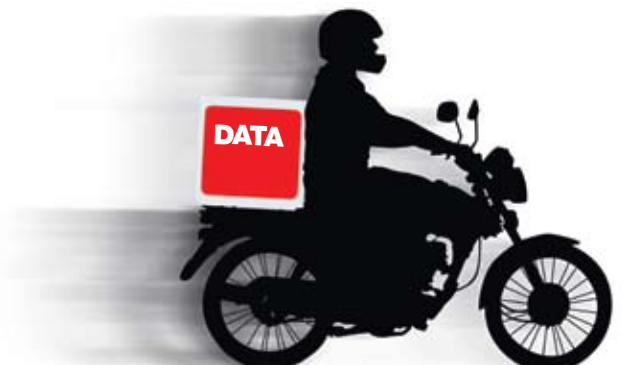
7

SECURITY: WHY IT'S EVERYONE'S PROBLEM

End-users need to take greater responsibility for their actions.

The consumerization of IT is making information security a bigger headache than ever, according to research by analyst group Frost & Sullivan. The report, which canvassed the opinions of 10,400 information security professionals worldwide, found that, in particular, the increased use of employees' own mobile devices in the workplace was a major concern — second only to the more "traditional" issue of application vulnerabilities.

Responsibility for securing information can therefore no longer reside solely with IT and security professionals, says John Colley, managing director, EMEA of (ISC)², the global organization for IT security professionals that commissioned the report. Instead, he says, it must be a concern for each employee. "We must start educating the workforce that they have to take personal responsibility for the security of company data — in the same way that if you give someone a key to the office, they have a responsibility to look after it."

The general "loss of control" caused by the use of mobile devices is also replicated in other areas, such as the growing reliance on social media and cloud services, the report highlights.

Colley says employees need to be given guidelines on how to protect themselves and the organization. This should involve ensuring they understand potential risks and how to prevent them, while stressing that they must take responsibility for their actions. "This shift in emphasis is a lot like bringing up children," he says. "You've controlled their life for them, but eventually you have to let them go off on their own. Then you can only hope they're going to do sensible things."

● *Download the 2011 Global Information Security Workforce Study at: tinyurl.com/6eu6qjp*

DATA FEED

According to the Frost & Sullivan/ (ISC)² survey:

● 66% of security professionals rate mobile devices as a high security concern

● 31% of firms do not have a formal policy for unmanaged mobile devices

● 74% say they need new skills to handle the challenges presented by cloud

● 20% of organizations do not restrict use of social media (either by blocking it or setting and enforcing a policy).

According to a recent report by Symantec, 95% of firms that suffered social media incidents over the past year faced negative consequences including revenue loss, reduced stock price, and litigation.

8

WRITING APPS BECOMES CHILD'S PLAY

The rise of user-developed software.

Ever since the dawn of computing, there have been users and there have been programmers — and they were always separate entities. But as machines become more powerful, applications smaller and lighter (in the form of mobile or web apps), and interfaces more intuitive, the gap is starting to narrow. For example, users can today try their hand at creating web mashups using an online visual tool like Yahoo Pipes. Or they can build basic informational iPhone apps with a template-based web app like App.Cat.

Fujitsu's new web app-building tool, RapidWebSS, is a more business-focused take on a similar idea. Designed mainly for office tasks managed via Microsoft Excel, it enables users to create new web apps in about half a day using familiar Excel operations to build tables, forms, reports and so on. Fujitsu says development times can be even shorter (one or two hours) if you make use of the templates provided for common office tasks like workflow, CRM and bid management.

With analyst firm Gartner predicting that, by 2014, "citizen developers" will build at least 25% of new business apps, it seems likely that this spate of user-generated software could unleash an unprecedented wave of creativity, agility and efficiency in the workplace.

"By 2014, more than 25% of new business apps will be built by citizen developers."

9

THE HUMAN TOUCH COMES TO WEB RANKING

For businesses seeking to enhance their online presence, being 'liked' may soon be more important than SEO.

These days, it's not just the social networking site Facebook where you'll find the "Like" button and its thumbs-up logo, although that's where it began. Devised as a quick and easy way to show approval of a friend's posting, the concept was the brainchild of Bret Taylor, Facebook's chief technology officer. In a smart move, the online social network made it possible for other websites to incorporate the button with just a few lines of free code, and it is now seemingly ubiquitous: on the CNN.com news site, on online movie database IMDb, and on the Levi's Internet shopping site, to name just a few.

Each click on the Like button enables anyone to demonstrate their personal affinity with a particular brand or piece of content in the online world outside of Facebook and passes that information back to the social networking giant. And the really clever part, as far as Facebook is concerned, is that it has now become a powerful data-collection tool in its own right. Today, every click on the Like button, by any of Facebook's 750 million-plus users, on any site that uses Facebook Like buttons, is added to a "social index" that the company is creating as a way to improve the ranking of individual pages on the Internet.

Taylor's groundbreaking work has triggered a larger social indexing trend, recently cited as a top 10 emerging technology by the influential *MIT Technology Review*. It's a way to rank web pages by popularity and relevance based on human connections, rather than on links to and from individual pages (the basis of the approach typically used by search engines such as Google.) Its proponents argue that social indexing provides a more useful view of which pages matter, and to whom, and is less open to manipulation such as search engine optimization.

Unsurprisingly, the idea is spreading. With the recent launch of its own social network, Google+, the search engine giant — which is increasingly finding itself in direct competition with Facebook — has introduced its own "Like" equivalent: the +1. This enables users to flag up for friends the search results or Web pages they've found particularly useful. And already, where users have linked their Google and Twitter accounts, web links shared by their "friends" on Twitter may feature higher in Google search results.

Naturally, the whole concept of social indexing raises the expected data privacy concerns. In late August, the information commissioner for the state of Schleswig-Holstein in Germany, Thilo Weichert, ordered website owners in the region to remove Facebook Like buttons from their pages, on the grounds that they violate German and European law. Technical analysis performed by his team, he claimed, showed that the data collected was being passed to Facebook servers based in the US. Facebook countered that only IP addresses are transferred and are deleted after 90 days.

Regardless of how this dispute turns out, however, it's clear that social indexing could have profound implications for those responsible for maintaining and promoting their organization's brand online. If nothing else, they'll need to find new strategies for ensuring that their pages are "liked," "plus-one'd" or "retweeted" as far and as widely as possible.

EVERY CLICK ON A LIKE BUTTON, BY ANY OF FACEBOOK'S 750 MILLION-PLUS USERS, ON ANY SITE THAT USES FACEBOOK LIKE BUTTONS, IS ADDED TO A "SOCIAL INDEX."

THE INTERNET OF THINGS

"*As objects start to sense and communicate, they help us deal with complex situations.*"

**NEELIE KROES,
EUROPEAN COMMISSIONER FOR DIGITAL AGENDA**

From cloud computing and data breach disclosure to the "right to be forgotten," the European Commission's head of ICT policy, Neelie Kroes, has been a headline-grabbing campaigner in her first 18 months in the job. Now she's turned her formidable gaze towards the threat and opportunity posed by the emergence of the Internet of Things (IoT) — the IP-enabling of the humble objects of daily life.

"The shift from an Internet of People to an Internet of Things [a development that others such as Fujitsu refer to as the "human-centric networked society"] will create unprecedented market opportunities... a new way to think about technology," predicted Kroes at the recent IoT Europe 2011 Conference. "The stakes are high. The IoT is expected to connect 50 billion devices by 2020. That's about six for each man, woman and child on the planet."

But in a world where objects are gathering and exchanging information independently of humans, there will need to be some ground rules, she believes. "We must gain consumer trust. This requires an ethical and legal framework, supported by technology and service developers, and providing people with control and security. The industry [needs] to work on the technical options for a new kind of freedom: the 'silence of the chips.'"

She explains: "Don't worry — it's not the latest horror film from Belgium. What I'm looking for is an economically sustainable and socially responsible way to ensure the end user will be able to decide between privacy and continuing to have the value-added services."

FURTHER INFORMATION:
- Neelie Kroes's speech at IoT Europe 2011: **tinyurl.com/3t9lo76**
- For more on Fujitsu's vision for a human-centric networked society: **www.fujitsu.com/global/about/tech/rd**

Fujitsu Forum

09 | 10 November 2011
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Reshaping IT
Technologies and Trends Driving Business Agility

On November 9th and 10th leading IT executives, strategists, visionaries and experts from around the world will be at the Fujitsu Forum in Munich to discuss innovative ideas and concepts for making IT more efficient. And you should also be there!

Rolf Schwirz   Rod Vawdrey   Satoru Hayashi   Dr. Joseph Reger   Baroness Susan A. Greenfield   Garry Kasparov

Agenda highlights:

Keynotes
Managing change and reshaping IT from the executive viewpoint
- Rolf Schwirz, CEO Fujitsu Technology Solutions
- Rod Vawdrey, President Global Business Group, Fujitsu
- Satoru Hayashi, Executive Chairman of the Board Fujitsu Technology Solutions
- Dr. Joseph Reger, CTO Fujitsu Technology Solutions

IT seen from an unusual perspective
- Baroness Susan A. Greenfield, neurologist and bestselling author
- Garry Kasparov, Russian chess legend, politician and author

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Adding a social life to business

The rise of social media is enabling remarkable levels of customer engagement and employee collaboration, highlights Dominic Shine, group CIO of global events company Reed Exhibitions.

NAME: Dominic Shine

POSITION: Group CIO, Reed Exhibitions

CHALLENGE: To ensure that the business can identify and capitalize on the huge range of opportunities presented by social media

Reed Exhibitions

Reed Exhibitions is the world's largest events company, staging around 460 trade shows, conventions and conferences annually across 44 industry sectors and 36 countries. Social media has presented the chance to engage much more productively with the seven million people who attend its events each year, while providing the company's employees with business-changing collaboration capabilities. Group CIO Dominic Shine has championed much of that social media adoption, which now extends to the majority of its events and the activities of its business workforce.

Is being a champion for social media a natural role for the CIO?
I am in an interesting position at Reed Exhibitions, with responsibilities that extend to ebusiness development as well as IT, and together with like-minded colleagues at all levels of the organization, I am pushing for us to be more aggressive in our use of social media and social networking. We are a global business and each of our 460 events around the world should have a Twitter page, a Facebook Fan Page, a LinkedIn Group listing, or, if it's taking place somewhere like China, we use local alternatives such as Renren and Weibo.

We kicked off a big program last year to get the entire business using these social tools. Part of my role is to drive that change and develop understanding of what is feasible.

Are you having to make the business case for investment in social media?
It is more of a roll-out and change management challenge than having to make a business case. We have won hearts and minds at senior management level so there is no longer the need to prove the case for social media; there are enough examples of success in terms of marketing, customer engagement and lead generation.

The challenge now is more one of getting everyone who needs to work with social media on a day-to-day basis, in all the countries in which we operate, up to the right level of understanding and competence — to make them comfortable, to get them to experiment and rise up their own learning curve.

But the program has gone far beyond just using social networking to promote our events. We have around seven million people coming to our events every year and hundreds of thousands of exhibiting companies. What we are increasingly doing is looking to give these exhibiting companies better ways to showcase their products and services online to the participants. Our big push at the moment is to get all of our exhibitors to embrace social networking and give them a springboard from our platform to the visitors at an exhibition, extending the engagement period and the relationship beyond the event itself. This drives up their perception of the return on investment they make in our events and services.

For internal social networking, what drove your adoption of Salesforce.com's Chatter over the use of, say, Facebook, LinkedIn or Yammer?
Earlier we tried to use Facebook, LinkedIn and even SharePoint as corporate collaboration tools, and a couple of our units experimented with Yammer. But none was quite right. We had a sales and marketing transformation program underway, enabled by a global roll-out of Salesforce.com to about 1,300 people, so as soon as I saw Chatter, I realized that it was what we were looking for.

For the people using Salesforce it is an add-on tool for general-purpose collaboration

but one that is integrated into their most important applications and data. And for everyone else it is a sexy, relatively low-cost collaboration tool. So someone in sales and marketing may be using it to a sophisticated degree to collaborate across data, cells and dashboards, but they can also join other colleagues as members of a business development group, a competitor intelligence team or a forum on best-practice use of iPads.

What I wanted was something that would unite the company. This pyramid of 460 events involves a group of about 2,700 people, a very federated, siloed structure historically. So you may be in sales, marketing, finance, operations or IT and you don't know much of what's going on with your colleagues. With Chatter we can support communication that breaks down those boundaries.

There is another great use case for us. We run events in the same industry sector in different countries. What we are starting to do is overlay global industry groups on top of the regional events. So previously, all the people who do, say, jewelry events in different countries were brought together twice a year to exchange ideas at enormous cost and questionable efficiency. We might still do that occasionally, but here's a way they can work together online continuously, sharing data, leads, documents and videos, and asking each other questions.

Has take-up by users of corporate social networking been universal?
Not universal. Out of a target group of around 3,000 we've got active participation from around 60%. We have done all sorts of things to increase adoption. We did it top-down, getting the board to buy in — at least half of them are actively chatting. We had a pilot group of 150 people in 10 countries who became a viral seed in the organization. We created training material in different languages and had each business launch it, and we encouraged "lunch and learn" sessions.

The number of people who haven't done much is gradually coming down, as they learn what their colleagues are doing, or they get invited into a group that interests them. So it's not a one-shot deal; it's something you have to continually nurture. But people only need to have a couple of "lightbulb" moments where they get value from it.

A key part in terms of uniting people has been to say: "This is not just a cross-business global collaboration tool. Feel free to set up your own private groups — corporate is not going to look at them." Gradually, it also breaks down the silos of information. Why would you not put everything in there so it becomes where you live? The more collaboration groups, the more data, the more things you can find in that environment, the more it becomes pervasive.

We look at this now and wonder how we coped before social media. The old thinking would have been: "I'm in an app, I've learnt something, I'll go and email someone." Instead, it's more: "I've seen an interesting piece of data, I'll grab this bit of the dashboard and throw it into this Chatter group for comment." It's collaborating around what's happening. And I think we've only scratched the surface of what that makes possible. ●

> ## "WE HAVE ONLY SCRATCHED THE SURFACE OF WHAT SOCIAL MEDIA MAKES POSSIBLE."

From workplace to workspace

Mobile, social and cloud-based technologies are rapidly changing the nature of work. How should CIOs be reacting?

*Words: **Jessica Twentyman***
*Illustrations: **Lyndon Hayes***

Is your organization ready for a time when the majority of its employees work beyond the corporate firewall, most or even all of the time? That's the question recently posed to IT executives in a report by T.J. Keitt, senior analyst at industry watcher Forrester Research. And it demands an urgent response.

Information workers, he says, are moving more swiftly in this direction than many business leaders are ready to acknowledge.

In a survey of over 5,000 North American and European business technology users conducted earlier this year, Forrester found that two-thirds (66%) already work remotely at different points during the working month — whether at home, in a hotel room or airport lounge, at a client's premises or in a service office, while commuting or in any number of other public places.

"If business leaders and their counterparts in IT are to get in front of this trend, they have to understand their mobile and remote workforce," says Keitt. "What they need to ask is: Who is shifting work between the office and other locations? What technology are they using to do so? Do they believe that the company is doing a good job of providing them with the policies and technology to work this way?"

And if senior managers are unable to answer such questions, Keitt warns, they will struggle in the face of what is fast becoming an unstoppable trend — the shift from the "workplace" to the "workspace" — a trend that has "profound implications for everything from the location and design of offices, to IT's provisioning of technology, to how business leaders marshal expertise."

The shift has been underway for the best part of two decades, but it is only now that the full set of enablers has fallen into place: the secure availability of corporate applications via the Internet, an array of collaboration tools and a vast number of (user- or corporate-purchased) mobile devices. Many of those capabilities have emerged from the world of consumer rather than corporate technology and are already part of the DNA of a new generation that has different expectations of how work should be structured.

"The viewpoint of the generation coming into the workforce is that work isn't somewhere you go, it is something you do; that location should be irrelevant," says Craig Baty, chief technology officer for Australia and New Zealand at global ICT company Fujitsu.

"The consumerization of IT is driving a major part of what businesses need to provide to their workforce," he adds. "We're moving into a human-centric era of computing where a combination of network, cloud, devices and even sensors provide access to corporate applications and data from flexible work environments, 24/7 — indeed, people now expect that. The whole area of mobility and end-user computing is putting a lot of pressure on CIOs."

Successfully responding to those pressures, though, can have great benefits for employees and employers alike. Study after study confirms that employees who have the option to telework are not only more satisfied in their jobs, they're more productive, too. For example:

● US electronics retailer Best Buy claims that average productivity increased 35% through flexible work programs
● Dow Chemicals puts the productivity gain at around 33%
● Telecoms company BT says its flexible workers are 20% more productive than their office-based colleagues
● Within American Express's customer sales and service teams, teleworkers handle 26% more calls and produce 43% more business than their office-based counterparts.

In all these cases, contributing factors are: fewer interruptions, more effective time management and a greater feeling of work/life balance despite employees working, on average, longer hours.

For other employees, the shift to a more virtual style of working is dictated by the amount of business travel that their job demands. Whether they are in an airport departure lounge, a conference center or a hotel room, "work has become more a state of being than a place and time for many people," says Kim Woodward, vice president of corporate marketing at desktop virtualization specialist Citrix Systems.

Citrix claims to have coined the term "workshifting" to describe the growing trend of working from anywhere other than a traditional office through the use of web-based technology.

But enabling a virtual workforce can involve considerable risk. In her 2009 book, *Leading the Virtual Workforce: How Great Leaders Transform Organizations in the 21st Century*, Karen Sobel Lojeski, a professor in the Department of Technology and Society at Stony ▶

decisions are now being forced upon them by employees increasingly adamant about making their own choices regarding devices, with or without the IT department's approval.

For example, in a 2010 survey of more than 500 IT managers across the US, Germany, Japan, China and India, conducted by networking technology company Cisco Systems, 41% of respondents confirmed that employees regularly access the corporate network using unsupported devices.

At the same time, it seems that many in IT are resigned to the trend: a November 2010 poll of attendees at market research company Gartner's annual symposium revealed that they expect one in five mobile devices used for business purposes to be employee-owned by 2012.

But whether such devices are company-owned or employee-owned, "if they are used on the organization's network to access the organization's assets, then that organization has a responsibility to measure, check and provide safeguards," say Clive Longbottom and Bob Tarzey, analysts at IT market research company Quocirca, in a recent report.

The goal, however, is not only to secure data — although this is clearly critical — but also to secure the best value for the lowest overall cost to the organization.

Employees buying their own devices might bring potential upfront savings for their employers, Longbottom and Tarzey point out, but there may be unexpected consequences in the form of higher costs elsewhere. For example, what network tariffs are being used? What is the impact on software and support? Are some people unable to function properly because their choices are incompatible in some way

41%

of employees regularly access corporate networks from unsupported devices.

Brook University in the US, argues that it requires a whole new leadership model.

"The problem is that while the way we work has changed, the way leaders lead those workforces has not," she explains. Those leaders are required to deal with issues arising from "virtual distance," a combination of physical separation, technology mediation and disconnected work relationships.

Fortunately, there is much IT leaders can do to mitigate against any danger — but only if they have the right technology strategy in place to nurture and support the virtual workforce, rather than cramp its flexibility and productivity.

The first priority, according to Keitt of Forrester Research, is deciding how to develop the corporate IT infrastructure in line with the workshifting trend. "If portions of the workforce are mobile and/or remote, IT has to decide how to provide these groups with remote access to applications and information," he says. That involves identifying employees who are leaving the confines of the office, as well as the tools, applications and types of connections they require when they do.

"For example, an employee spending the bulk of their time on a client site may not be able to use a VPN [virtual private network] client to access applications, meaning that IT should provide these as a service through an employee portal," he says.

Another important priority is evaluating the devices that IT should (or shouldn't) support. At many companies this is highly problematic, as

"We're only seeing the beginning of the apps that can support flexible working."

with their role, with the technology choices of their colleagues or with other technologies being used by the business?

Another important consideration for the IT department is planning content and collaboration strategies that will keep workers connected. That was a key issue for Medibank Health Solutions, one of Australia's largest providers of private health insurance. The company operates a "work at home" model for its call center, and the majority of the two million calls it receives annually are handled by the 85% of its call-center staff that work from home.

"Our staff loved the idea of working from home and having the flexibility to work a variety of rostered shifts that suited their own personal situation," says Medibank's IT manager, Dave Buckmaster.

"However, we noted early on that this particular style of employment wasn't for everyone. Despite all of our [call center] staff being registered nurses and clinicians, this type of work would sometimes be emotionally trying — for example, if a staff member was working through a call with a patient who was distressed."

Employees needed a better support network to handle situations like these. That has been addressed, says Buckmaster, by implementing the web-based collaboration platform GoToMeeting from Citrix Online to monitor staff in real-time and provide them with induction and training sessions.

Finally, IT leaders will need to anticipate the extent to which facilities costs will change. With fewer workers coming into the office full time, the IT organization has the opportunity to rethink how office-based technology is allocated, says Reitt of Forrester Research.

In fact, right across the board, it's clear that more mature thinking — and certainly more action — is needed on the issue of supporting the virtual workforce. In a recent survey of 500 business leaders in multinational companies, conducted by telco Vodafone, the majority (88%) of respondents say that the implementation of mobile, flexible working is a medium or high strategic priority.

But despite mounting pressure to go in that direction from employees, customers and competitors (more than half of those surveyed, for example, said that their employees wanted the option of flexible working), only 41% have so far implemented such initiatives.

However, for Nicholas McQuire, research director at analyst firm IDC, there is no doubt as to the future direction of flexible working, as the advantages become clearer to business leaders.

"Although there are some perceived obstacles, the benefits around cost reduction, enhanced productivity, more robust business continuity plans and improved sustainability and compliance are helping organizations to overcome any doubts and offer employees greater flexibility in terms of where they choose to work," he says.

And that applies to the tools they work with too. Says Fujitsu's Craig Baty: "We're only seeing the beginning of the applications available that can support flexible working. Many will be sourced from the [public] cloud rather than from your corporate network — apps for smartphones and tablets that make your working life a lot easier."

Or, to put it another way, the shift from workplace to workspace is now unstoppable and too transformational for CIOs to ignore. ●

Case study: Freshfields Bruckhaus Deringer

The global law firm embraces consumer IT to support workforce mobility.

For Paul Domnick, CIO at law firm Freshfields Bruckhaus Deringer, the shift to new ways of working and, in particular, the uptake of new mobile devices represents a big opportunity for information technology to shine. "This is a time for IT to be great," he says. "If IT really listens to the business, it can come back to users with offers that will surprise and delight."

The risk, as he sees it, is for technology to be seen as an obstacle to these wider work and social trends. "Everybody in the workforce knows they are expected to be more productive year on year. If IT is perceived to be placing barriers in the way of employees' ability to get work done, it can have a negative effect on company morale."

Domnick and his team have been exploring the impact of consumerization on IT strategy at Freshfields for more than two years, he says. "We've seen the importance of experimentation, as you can't anticipate what people will do with devices or what needs they have." That's no understatement when you're dealing with a partnership of 2,400 lawyers across 27 offices around the globe.

The IT team's successes have included a mobile app for fee-earners to record, while out of the office, the time they spend with clients, as well as the creation of a Yammer enterprise social network that enables group collaboration from tablet PCs and smartphones. The company is also switching to a new video-hosting service that better supports streaming of multimedia content to a range of mobile platforms.

Given the dispersed nature of the workforce, Domnick is acutely aware of security pitfalls. As he points out, the success of a law firm often depends on its ability to share — but at the same time protect — highly confidential information.

"My feeling is that we have to move to a world where we protect data, rather than protecting systems, infrastructure and devices," he says. "Once you can secure data properly, if you choose the right solution, you can protect it on multiple platforms at the same time.

"I'm definitely in the camp that believes the consumerization of corporate IT is not happening — it has already happened. And we need to deal with it properly."

"This is a time for IT to be great."

The future of work

If technology is underpinning flexible working, then the CIO is the new enabler of productivity, argue DEGW's Nicola Gillen and Francesca Jack.
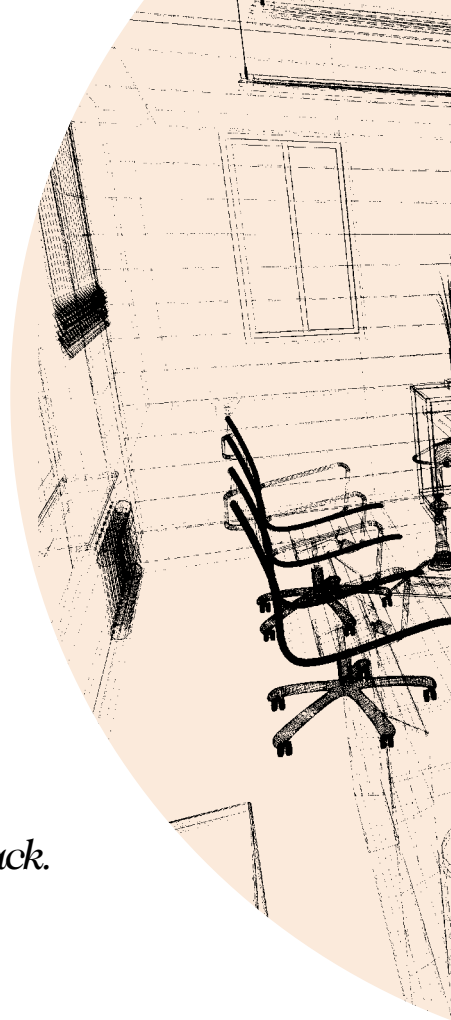
Nicola Gillen (top) and **Francesca Jack** are directors at DEGW, a global consultancy that specializes in enhancing workplaces to maximize productivity. Clients include Credit Suisse, GlaxoSmithKline, Google, Microsoft, Nokia, Rolls-Royce, Telefónica and Westpac.

During the 1980s information technology made its first major impact on the workplace. Office buildings had to accommodate the arrival of personal computers, with associated cooling, cabling and, most importantly, high volumes of people congregating in single locations. But work was contained in the office and managing people and the technology they used was relatively predictable. Then the late 1990s saw the arrival of mobile technology, which has revolutionized how and where work is done. Instead of going to work, or work being a place you go to, work can now go to people, wherever and whenever they choose. The implications ever since have been enormous for organizations, offices, cities and individuals.

Geographically dispersed teams are now a reality for most enterprises. As a result, workers are finding their physical work environment is increasingly disconnected from the people they work with. Under these circumstances, maintaining an effective and productive workspace can be challenging, so keeping people connected takes on renewed importance.

Both technology and the office play an important role in connecting people and maintaining a sense of trust and belonging. What's more, the role of the leader is changing from management by physical presence to communicating and motivating from a distance. As a result, the more virtual work becomes, the more the work environment and IT tools need to evolve to take on new support mechanisms, responsibilities and meaning.

Generation gaps

We are frequently asked about the challenges of creating an environment appropriate for multi-generational working. Responding to this, DEGW carried out some research in Europe and Australia — and the results were surprising. No significant differences in attitudes to work environments

Illustration: Shutterstock

them to work alone?" In response to this and other, similar sentiments where increasing employee effectiveness is top of the agenda, companies are creating exciting work environments focusing on the variety and choice of workspace they offer their people.

The aim is to provide a seamless, integrated environment focused on increasing business productivity, and reducing IT costs while maximizing real estate potential. This may involve employees working across diverse spaces to suit their activities, for example: a project space for teamwork, a quiet booth for confidential work, or a team table for day-to-day activities.

Supporting flexibility

With variety and choice of this kind comes the need for office-wide mobility. In order for workspaces to enable productivity they must have embedded and seamless technology such as wireless LAN, interactive whiteboards, teleconferencing facilities and mobile telephony throughout. And if CIOs fail to provide the right tools to support this level of flexibility then the workforce will gradually become less, not more, effective.

To get a clear picture of what is likely to work best in each environment, it is important for CIOs and other senior management to have a good understanding of employees' work patterns, and, even more fundamentally, to determine whether a spatial or a technological solution is more appropriate. For example, contrary to widely-held beliefs, virtual meetings can in some cases be more effective in maintaining relationships and efficiently updating globally dispersed teams than face-to-face encounters.

In practice, however, this level of understanding is in short supply. For example, increased collaboration is often well supported when teams are sharing the same office space, but neglected at the virtual level. A case in point is the inconsistent provision of IT-enabled collaborative tools across sites, which can be frustrating for dispersed teams. The highest-spec telepresence systems are an efficient way of communicating across geographies — and reducing time, money and carbon spent traveling — but are only effective when every relevant office is similarly equipped.

Another example is the powerful instant messaging systems that IT can provide; left unmanaged, these systems can be a serious distraction. When researching work patterns for clients, DEGW always asks the company's employees what activities occupy their working day. An increasing response to this question is simply "email," which is clearly unsatisfactory on many levels.

Such challenges present a great opportunity for CIOs to maximize their role as an enabler of productivity. The task of the CIO is to connect holistically with the business leadership, HR and real estate; to understand what is driving productivity and to provide the tools that will support it; and to prepare an IT roadmap that is focused on the future. The CIO must therefore have the vision to enable the dispersed, varied and virtual work environments that are increasingly becoming the norm. ●

> Companies are creating exciting work environments focusing on a choice of workspace.

were discovered. Instead, differences tend to be driven by culture and discipline, the research showed.

There is, however, a clear gap between the generations in terms of expectations around flexible working patterns and technology. Increasingly, people are looking to balance work with other priorities, such as study, extended travel and family. And "the consumerization of IT" is most clearly pronounced among Millennials who have the latest mobile devices and laptops, and are increasingly expecting to be able to use their own devices at work. The result is the frequent adoption of "bring your own device" policies, which present a whole new set of challenges in terms of security and support.

So what does all this mean for the future of the workplace? Until recently there was a strong imperative to reduce the amount of real estate used by organizations, and the amount of space allocated to individual desks and offices is shrinking. For some sectors — but not all — highly individual, concentrated work may best be done at home.

But while these trends are still important, there is now an increased demand for alternative work settings in cases where it is agreed that work is best done in a shared environment. As one DEGW client from the pharmaceuticals sector put it: "Why would you bring thousands of people together in order for

Do CFOs have too much

Two business leaders lay bare their views on who

Mahesh Shetty
is COO and CFO of
Encore Enterprise, a
diversified commercial
property firm with a
focus on the southern
US. With more than
25 years of experience
as a senior finance
executive, he is both
a Certified Public
Accountant and a
Certified Information
Technology
Professional.

A recent survey of chief financial officers conducted by analyst firm Gartner and Financial Executives International's Committee on Finance & IT indicated that CFO influence over IT is growing, with CFOs alone authorizing over 26% of all IT investments. So why are CFOs playing a more active role in IT and controlling a greater share of the organization's IT spending?

CFOs have made the transition from being "number-centric" to being "business-centric" and play a critical role in influencing company planning and strategy. IT is a tool to enable businesses to execute their planning and achieve their goals. The CFO's office is a natural repository for guiding and allocating resources for IT.

The demands of the marketplace and the business environment require technology investments to be evaluated like any other capital investment — with the attendant return on investment and business-case justification. The era of "must-have" has now evolved to "why-have," since most organizations' IT infrastructure is mature and there is resistance to adopting new technology unless there is a compelling business need to support the initiative.

Moreover, the regulatory environment as a result of legislation such as the Sarbanes-Oxley Act has also put a greater burden on finance executives to understand and report on the controls surrounding their IT environment.

The CFO needs to have a strategic understanding of how each aspect of the business intersects and the role technology can play in either enhancing or developing the customer interface (both internal and external) and monetizing IT investments. While no CFO can be a technology expert, their understanding of the business helps them articulate business needs to the technology team and remain an objective participant.

And why is the CFO best placed to lead this coordination? The CFO is the most appropriate person to connect the dots between the disparate needs of the enterprise and the strategic direction of the company. Harnessing that information and knowledge to guide IT strategy is a natural extension of their role as a primary custodian of company resources.

GUIDING TECHNOLOGY STRATEGY IS A NATURAL EXTENSION OF THE CFO'S ROLE.

● *Mahesh Shetty is a vice chair of the Committee on Finance & IT at Financial Executives International, the leading US association for CFOs and other senior finance executives. The group's July survey of 334 finance chiefs found that CIOs alone authorize only 5% of IT investment (compared with 26% by CFOs.) Indeed, 42% of IT heads report to the CFO, while 33% are answerable to the CEO. While 47% of CFOs viewed IT as "strategic," only 30% said that IT truly fulfills its mission.*

control over the IT budget?

should make the major technology investment decisions.

Every CIO passionately believes that he or she should be reporting to the CEO or the board, with responsibility for all IT investment decisions. This is a demonstration of IT's strategic intent, as the CEO has a direct overview of the direction taken by IT and the influence it has on the business. Meanwhile, when reporting to the CFO the discussion tends to revolve primarily around cost. While I largely agree with this reasoning, it is essential to acknowledge that a lot of equations changed during the global economic downturn, as CFOs grew in their span of influence.

The CFO has traditionally held the enterprise purse strings, ensuring fiscal prudence while maintaining an adequate financial safety net. But with adequate risk controls and good governance in place, only in the rarest of cases could the CFO overrule other CXOs. Post-downturn, however, we have been bombarded with surveys showing that in most organizations the CIO is no longer in control of the IT budget and the CFO is now responsible for most IT investment decisions.

This has been compounded by the long-held perception of the CIO as the most junior CXO — not always by age but based on the fact that the role has evolved only in the last decade or so — and that he or she typically comes from a technology background, is likely to lack business acumen and is unable to take a broader view of the organization into account.

In most enterprises, IT suffered during the downturn, with squeezed budgets, investments becoming difficult and overall sentiment prevailing around cost containment. Some CIOs had difficulty in adjusting to the new reality, particularly as the CFO inevitably dominated the decision-making process.

However, organizations with good governance processes and CIOs who were aligned to the enterprise realities adapted quickly. These CIOs collaborated with the CEO and CFO to create models that worked for everyone. Innovation slowed in some cases, but did not come to a halt. In the "new normal," they realized, the baseline had shifted: like it or not, the CFO is now an integral part of the decision-making process, and signs off — at least — large-value investments or costs.

My advice to CIOs, therefore, is to become best friends with your CFO. You might even be pleasantly surprised. The stereotypical CFO has changed in recent times, just as the CIO has also evolved. Thus to expect every CFO to be a one-dimensional bean-counter is like expecting

LIKE IT OR NOT, THE CFO IS PART OF THE DECISION-MAKING PROCESS — SO YOU NEED TO BECOME BEST FRIENDS.

every CIO to go and fix the CEO's laptop or the boardroom projector.

CIOs who have already cultivated a strong working relationship with their CFOs — and their other CXO colleagues — are most likely wondering if this talk of rifts between IT and finance is just hype. My view is simple: you should invest in relationships with *all* your C-level colleagues. After all, if you don't help them win, why should they help you? ●

Arun Gupta is group CTO of Shoppers Stop, the leading Indian department store chain. He was previously group CIO at real estate and hospitality giant K Raheja Corp and has held senior management positions at Philips, Pfizer, DHL and Merrill Lynch.

"A leader has to get out front, but all roles are critical to team performance."

Casey Coleman
CIO, General Services Administration of the US Government
ROAD CYCLIST

As a road cyclist, my passion is for speed, rather than the technical prowess that is demanded of an off-road trail rider on a mountain bike. People think of road cycling as something you do by yourself, but it's actually a very social activity. Keen road cyclists enjoy riding in groups, not least of all because of the aerodynamic effect created by a pack of bikes traveling together. So road racing tends to support a very enthusiastic and active community, and great team spirit.

I have a real passion for exercise and fitness; I believe it not only improves your overall quality of life, but also your professional performance. Training for a sport teaches you the discipline of following a training regime, as well as the need to rest and to think holistically — qualities that are really valuable in the workplace. I'm currently reading *Spark: The Revolutionary New Science of Exercise and the Brain* by Dr. John Ratey, which makes that connection.

The lessons and habits I've learned from cycling will stay with me for a lifetime. I've had a few falls — nothing serious, but they teach you a lot about picking yourself up and getting back on your bike. When your feet are clipped to your pedals, as they are on a high-tech road bike, untangling yourself takes some learning. Cycling, like anything, is not risk-free, but as you reach a level of competence and confidence, you learn to measure the risks. You develop split-second reactions and the ability to navigate — the analogies with life go on and on!

My proudest achievement in cycling — and one of my best memories from the sport — comes from my days of competing. For many years, Austin, Texas, hosted a downtown bike race, staged on urban roads. I took part in 2002. It was an extremely demanding, fast race, up and down hills for around one hour. It required a great deal of mental focus and perseverance to keep going and, although I didn't win, I did pretty well in the race. By the time I crossed the finishing line, I knew I had nothing left to give physically, but it was extremely satisfying.

I'm not racing these days and I don't get as much time to ride as I'd like. But I see real parallels between a road cycling team and an IT team. Different team members have different roles: some are supporting players and some are at the front, bearing the brunt of the wind. The leader always has to get out in front and be accountable, but all the roles are critical to overall team performance.

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