

# The Connected Business

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## Employers get up close and personal

Companies used to fret when staff brought their devices to work but now they acknowledge its impact on innovation, writes *Paul Taylor*

Thirty years ago, most innovation in IT happened in companies and found its way into the consumer market only months, or even years, later. Times change and the rapid advances in semiconductors coupled with the bring your own device (BYOD) trend, cloud computing and mobility have turned old models on their heads. This has opened the door to the so-called "consumerisation" of corporate IT, in which the technologies used in everyday life have been adopted by businesses.

"There was a time when the devices we were given at work were much more advanced and user-friendly than the clunky, slow devices we used at home," says Thomas Davies, Google Enterprise's European director. "That time is long gone thanks to consumer

technology, where falling costs and the proliferation of affordable laptops, tablets and mobile phones allow users to experience computing more powerful than the ships we sent into space in the 1960s."

Mr Davies adds: "The consumerisation of IT is an unstoppable force sweeping through businesses of all sizes and industries, driving innovation as well as cost savings. Workers don't want to be captives of their IT department. They want to work the way they live and use the devices they are familiar and comfortable with."

Many of the tablets and smartphones that are bought as gifts this holiday season are likely to end up doing double duty as workplace tools. Underlining this, a report published last week by Juniper Research, a



Double duty: some of the devices being bought as holiday season gifts will be used at work and home

Illustrations: Oivind Hovland

UK-based research firm, forecasts that the number of employee-owned smartphones and tablets used in the enterprise will exceed 1bn by 2018. This represents almost 35 per cent of the total installed base of consumer owned tablets and smartphones.

Traditionally, corporate IT departments often frowned on the use of

personal devices at work, but turned a blind eye to "shadow IT" – personal WiFi hotspots, external hard drives and other paraphernalia set up inside corporate firewalls by frustrated but technology-savvy workers.

That was the case at General Motors, the Detroit-based carmaker, before the credit crunch forced a big

restructuring. "One of the challenges we had was that there was a lot of doing IT outside of IT – or shadow IT," says Randy Mott, who became GM's chief information officer in 2012. "Our approach has been to bring that back into IT," he says. "We are

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#### Smartening up

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## The Connected Business

# CIOs face standoff as digital rivals ride into town

**Management** Chief information officers may need to reinvent themselves with demand for CDOs rising sharply, reports *Maija Palmer*

The corporate IT world these days reads a bit like the plot of the classic children's film *Toy Story*: a key moment comes as Woody, the cowboy doll, grows anxious about losing his status when his owner, Andy, gets a new and exciting Buzz Lightyear action figure for his birthday.

In the business IT version, the part of Woody is played by the chief information officer, while the shiny new addition to the corporate toy box is the chief digital officer.

It is a role that has very recently become popular with companies.

"There are probably about 500 people in the world with that title at the moment," says Dave Aron, fellow at US technology advisers Gartner. "IT strategy, the sort of thing a CIO would have done, would be about how to support the company's business strategy with technology. A digital strategy is almost the opposite: it is about how to change the business to take advantage of new digital opportunities. It needs different skills."

The chief digital officer might look at what the company should be doing on social media, or whether it should adopt a new delivery model or electronic payments system.

Tim Cook, who co-runs the information officers practice at Russell Reynolds, the executive search company, says two years ago only a handful of companies, mainly in the US, had CDOs. Since 2012 there has been a growing demand for people to fill the role, not just from Silicon Valley-style technology-based companies but from "old economy" companies such as mining businesses and manufacturers, too.

According to Gartner, 6-7 per cent of companies have a CDO and that percentage is expected to triple in the next year.

Should CIOs be worried by this trend? Possibly, says George Westerman, research scientist at MIT Sloan's Center for Digital Business. "There is an awful lot of angst in the CIO community, as they feel they could become subordinate to the CDO role," he says.

Mr Aron agrees. "It is obviously a worry that the CIO role could atrophy," he says.



It is possible, Mr Cook says, that the chief digital officer could simply swallow up the role of CIO. There are already a few high-profile examples, such as Genevieve Shore at Pearson, owner of the Financial Times, who started off as director of digital

strategy at the Penguin publishing business but has since become CIO as well as digital strategy officer of the parent company.

Similarly, Paul Cheesbrough went from controller of digital media at the BBC to his present role as chief

technology officer at News Corp.

Or it could be that the CIO role is made much less interesting, with the CIO focusing on keeping legacy IT systems running while the CDO gets to do the big-picture planning. "Organisations that don't get it right

'It is obviously a worry that the role could atrophy'

Dave Aron, Gartner fellow

can get into a situation where the CIO gets to do all the boring stuff and the CDO gets the fun side," says Mr Westerman at MIT Sloan.

Not everyone believes CIOs will slink off quietly into the sunset. In a spirited defence of the role in Computerworld magazine last month, Thornton May, executive director of the IT Leadership Academy at Florida State College, says: "Why do so many people think the CIO is going to disappear just when the party starts to get interesting? The vast majority of CIOs are amazing. They are wicked smart and scary funny... It is ludicrous to believe that by importing a digital shaman (a.k.a. a chief digital officer), an enterprise will be able to realise the full fruits of the technology buffet set before us."

One possible outcome – and potentially the one that is best for companies – is some kind of equal collaboration between the two roles. Mr Westerman says a strong CIO is ideally needed to balance the CDO and help work out how new digital initiatives can be carried out safely and efficiently.

A joint research report by MIT Sloan Management Review and Capgemini found that companies that embraced digital technologies quickly tended to have higher sales than their peers. However, those that applied more discipline to their digital spending tended to be more profitable.

"The CIO can help the digital people develop the right instincts on spending," Mr Westerman says. Just as Woody and Buzz end up friends at the end of the first *Toy Story* film, organisations such as Starbucks have managed to forge strong partnerships between the CIO and CDO role.

Mr Cook warns that it will not be an easy few years for CIOs. "CIOs need to make sure they are understanding more of the business context. The CIO needs to become the chief insight officer – if they are not providing insight for the business, they become just a utility," says Mr Cook.

Mr Aron expresses a similar viewpoint. "For the CIOs who are at the top of their game this is an exciting opportunity," he says. "For those that are struggling this is a worry."

## Employees sign up with the company store

### Enterprise apps

An in-house app market means greater control of BYOD devices, finds *Jessica Twentyman*

By 2017, one in four organisations will have deployed an enterprise app store, where employees can download company-sanctioned apps to their mobile devices.

That forecast comes from IT market research company Gartner, where analysts see a range of benefits for companies.

"Enterprise app stores promise greater control over the apps used by employees, greater control over software expenditure and greater negotiating leverage with apps vendors," says Gartner analyst Ian Finley.

Some companies have already made a start. At Essilor International, the big French manufacturer of ophthalmic lenses, the domestic sales force has been armed with iPads to take to customer meetings. The apps they need to make a sale are downloaded from the company's Essi Store, an enterprise app store built with technology from Airwatch, a mobile device management specialist.

The tools available to them there include an electronic catalogue of all the company's lenses, animated presentations that help them market specific kinds of lenses to customers and an internally developed customer relationship management application, Teranga. The latter gives them instant access to details of leads, existing customer accounts and sample contracts, explains Mathieu Ngo, IT project manager at Essilor International.

the availability of new apps and updates and push the apps to an employee's iPad". The team is working on a project to push apps to Windows 8 tablets and plans new sales force apps for 2014, he says.

Users tend to be comfortable with this kind of set-up, because it mirrors their experience of downloading apps from consumer-focused app stores such as Google Play and Apple's App Store, says Alex Achucarro, head of mobile at Avanade UK, a business technology services company formed as a joint venture between Microsoft and Accenture.

When it comes to IT professionals, he adds, "you're pushing at an open door." This is "because the widespread introduction of BYOD [bring your own device] policies in organisations has got managers worried about the potential risks and administrative burden associated with making sure that employees are using approved applications, securely, on a vast array of different devices".

'They start with one or two apps, but other parts of the business start to demand their own'

If enterprise app stores are to compete for the hearts and minds of mobile-equipped employees, they need to offer employees the same kind of choice, flexibility and user experience as their consumer counterparts, says Mr Finley at Gartner.

An enterprise app store can help IT departments achieve greater control only if it is widely adopted by employees, he points out. A limited choice of applications will doom the effort to failure. "Choice is a critical value proposition for an enterprise app store. Without



Eyes down: apps are catching on fast at lensmaker Essilor

it, there is no reason for a user to participate," he says. "They should be able to research a catalogue of options and make selections based on their own preferences."

A good enterprise app store, for example, will enable users to base their choices on feedback from their colleagues and to provide their own feedback.

At broadcasting company BSkyB a concerted effort is under way to increase the choice of apps available to employees on the in-house enterprise app store, My Apps.

This store, based on technology from mobile device management specialist MobileIron, was implemented 12 months ago for the use of two groups of BSkyB employees.

Sales advisers can download an app that enables them to show the range of programme choices available to potential customers. Engineers, meanwhile, can use apps to track and manage jobs and to place orders.

But, says Amardeep Rai, a solutions architect at BSkyB, "we have seen a cross-department interest in in-house apps that wasn't expected".

Development teams at BSkyB are working on a much wider range of apps for employees, including

holiday booking, time sheet submission and expenses apps, as well as an app for tracking the balance of their canteen cash card. "And we are still in the early stages of revolutionising the way users interact with the company through mobile applications," says Mr Rai.

It is a pattern that Avanade's Mr Achucarro has observed at many organisations. "They start off with one or two apps, but other parts of the business start to demand their own and the whole effort starts to balloon," he says. "That can present problems for in-house software development teams, he says, because employees have high expectations of an app, whether it is downloaded from a consumer or enterprise app store.

## Battle lines drawn for control of the enterprise cloud market

### File sharing

Fierce competition to become leading service is expected, writes *Paul Taylor*

Cloud-based file sharing, storage and synchronisation services are at the forefront of the consumerisation trend. They enable employees to collaborate more effectively and boost productivity by using simple tools with interfaces they are familiar with.

"We don't think people should need different tools at work from those they use at home," says Ilya Fushman, head of product for its business and mobile at Dropbox, best known of the cloud storage providers.

"As knowledge workers are becoming increasingly mobile, they're searching not only for devices but also services that 'just work' and let them focus on doing their jobs," he adds.

Typically, companies have had to choose between consumer services that are simple and elegant, or enterprise tools that are cumbersome and difficult to use but secure, says Aaron Levie, chief executive of Box, a rival provider.

"What we did was to balance these two options," he says, providing employees with easy to use tools that still satisfy enterprise security requirements.

Box has about 20m users in 180,000 companies who use the platform to upload files, collaborate, and share content online. "What we're relying on is that we can

build enough traction, get enough of the industry, that we become the de facto platform in enterprise," Mr Levie says.

"That gives us a launch-off point into a bunch of other services. It will be determined in the next year and a half to two years, because the market is adopting this right now. We need to grow as fast as humanly possible right now, because the opportunity is right now."

Dropbox's Mr Fushman agrees. Along with other services that began by focusing on the consumer market and have ridden the consumerisation wave into the heart of many companies, Dropbox has been investing heavily in its business offerings this year, adding features that enable corporate IT departments to oversee and manage file distribution and meet regulatory and other requirements.

Last month, Dropbox launched Dropbox for Business, which added more controls for IT departments, including the ability to create team spaces for sharing and syncing documents and managing accounts through Microsoft's Active Directory.

Explaining the move, Mr Fushman says: "As we got more excited about building more features for Dropbox for Business, we kept running into the same problem: just as people often work at home, they also want to have their personal files with them at the office."

"With only one Dropbox, users wound up putting their personal files in their Dropbox for Business. We

needed to build a way to help people keep their stuff separate, but still make both sets available from everywhere."

Now he says, a personal Dropbox can be connected to a user's Dropbox for Business account on all their devices. Each Dropbox comes with its own password, contacts, settings, and files. "It's like having your house keys and your company's key-card on one keychain and with you at all times," he says.

In addition to single sign-on, two-step verification, sharing controls and the admin console, the new

Services designed for enterprise are sceptical on use of consumer apps

Dropbox for Business comes with a suite of new features including the ability for IT administrators to share audit logs and remotely delete a Dropbox folder from a computers and mobile device if the item is lost or an employee leaves the company.

IT staff can also transfer all the files from a former user into another team member's Dropbox.

"With your new Dropbox for Business account, you can know exactly what's happening to corporate data, take action if something goes wrong, and easily continue your business when employees move on," says Mr Fushman. "Most importantly, you can do all

this without putting your corporate data at risk."

Not surprisingly perhaps, rival file sharing services, such as Intralinks, Egnyte and Workshare that were designed from the outset for business use, still express doubts.

"Dropbox will find it difficult to shake off its reputation as a consumer storage application," says Anthony Foy, chief executive of Workshare, a leading provider of secure enterprise collaboration application.

"B2B companies will not be shy in challenging them on the security and control of its applications," he adds.

"There are so many cases every week where data has been leaked through a consumer storage or file sharing application," says Mr Foy, whose customers are mostly in regulated or semi-regulated sectors, such as law, finance and pharmaceuticals.

Mimecast, which specialises in protecting data exchanged via email, agrees.

"Sharing enterprise data over consumer cloud file share apps is a significant security, compliance and reputational risk for enterprises," says the UK-based company. "These services may be good for consumers, but they have not been designed to match the security needs of CIOs. You can't just bolt new 'features' on top of your consumer service and make them work for the enterprise."

The battle lines for control of the corporate market for file sharing services are drawn.

## Contributors >>

**Paul Taylor**  
US business technology and telecoms correspondent

**Tim Bradshaw**  
San Francisco correspondent

**Maija Palmer**  
Social media journalist

**Jane Bird, Michael Dempsey, Paul Solman, Jessica Twentyman**  
Freelance writers

**Adam Jezard**  
Commissioning  
**Andrew Baxter**  
Production

**Chris Lawson**  
Pictures  
**Steven Bird**  
Designer

For advertising details, contact: **James Aylott**, tel +44 (0)20 7873 3392, email james.aylott@ft.com or your usual FT representative.

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## The Connected Business

# Smart moves off the phone and on to your wrist

**Gadgets** Mundane devices are getting more intelligent, says *Tim Bradshaw*

For much of the developed world, 2013 marked the beginning of a new technological era. More than half the people in North America, the UK, Japan, South Korea and the Nordic countries now own a smartphone, market researchers have concluded. By next year, the rest of western Europe will join that mobile majority.

The rise of the smartphone has already created new winners and losers in the consumer electronics market. According to a November estimate by analysts at US investment bank Canaccord Genuity, Apple and Samsung captured a "remarkable" 109 per cent of handset industry profits in the third quarter of 2013, a figure that makes sense only if the losses suffered by suppliers such as BlackBerry, Nokia and Taiwan's HTC are counted as "negative profits".

But it is not just their mobile rivals' earnings that Apple's iPhone and Samsung's Galaxy devices have gobbled up. Cameras, music and

radio players, alarm clocks, navigation systems, even torches and compasses are now absorbed into a glowing screen.

Yet as smartphones increase in sophistication, they are also enabling new categories of gadget that harness their always-on connection, sensors and processing power.

Wearable technology, "smart home" devices such as lights and security systems, fitness trackers and even toys are all orbiting the smartphone, making connected devices one of 2013's hottest gadget trends.

As innovation in smartphones themselves starts to slow down, the platform that they are enabling is just getting started – even if analysts say mass-market adoption is still years away.

"The nice thing about the internet of things is it's not monolithic," says Rob Chandhok, president of Qualcomm's interactive platforms division, who predicts a "Cambrian explosion" of smart devices.

"I expect wearables to be on a very fast cadence as form factors fall out."

Pebble, one of the best-known independent makers of smartwatches, which raised \$10m on US-based crowdfunding platform Kickstarter last year, said in November that it had sold 190,000 watches in total – impressive for a start-up but hardly the sort of volume that would have Apple rushing its rumoured iWatch to market.

As with most smartwatches, the

Pebble mainly acts as a way to notify the wearer of incoming messages or other alerts from a Bluetooth-tethered smartphone.

The September launch of Samsung's Galaxy Gear marked a significant moment for the smartwatch market. Although the device has had mixed reviews, the endorsement of the form factor by the South Korean electronics group – coupled with persistent rumours that Google, Microsoft and others are all working on similar watches – signalled that smart watches may not be a niche for much longer. Even Casio's G-Shock now has a Bluetooth connection to receive message notifications – and has the benefit of actually looking like a watch.

At the same time as the Galaxy Gear was unveiled, Qualcomm launched the Toq, a smartwatch that uses its Mirasol screen to showcase the potential of the technology.

Unlike the Gear, which needs charging every day and does not keep its watch face lit all the time, the Toq's screen is always on and the battery lasts for several days.

"Being able to do things at a glance is very powerful," says Mr Chandhok. "I don't want to replicate the smartphone, but I do want to use it to raise things above the noise level. Notification really only works



Clockwise, from left: Dropcam's Pro camera, the Pebble smartwatch and Samsung's Galaxy Gear watch

when it's at a glance."

But Robert Brunner, partner at the design agency Ammunition Group, which works on products such as Beats by Dr Dre headphones, says the appearance of these devices is just as important as what they do. "We are in the fashion business," Mr Brunner said at a recent GigaOm conference in San Francisco. "The things that people carry and use define us almost as much as the clothes we wear... Wearable technology needs to understand fashion."

A similar challenge lies in the smart home market, where devices such as the internet fridge are solutions searching for a problem.

"The magic that we all love of being connected and the things that it does is going, going, gone," Mr Brunner says. "At some point, having running water in your house was amazing. It's no longer just about this magic, it's about what it's actually doing in our lives."

Dozens of new devices have emerged in recent months, from smart locks such as August and Lockitron, which open with a wave of a smartphone, to Philips' Hue lightbulbs, which can be set to match the colour of a photo from a

mobile app, as well as other features.

Some are aimed at security-conscious folk: Dropcam's \$200 Pro camera constantly monitors its owner's home, alerting them to movement after they've left the house and letting them watch a live video feed. SmartThings sells kits that enable garage doors to be locked remotely or sends notifications to a phone when the kids get home from school. Large retailers such as Home Depot, Staples and Lowe's are devoting more and more floor space to such products, even though it is unclear how large the market for them is today.

"It takes time for people to embrace connectivity," says Tony Fadell, chief executive of Nest, whose "learning" thermostat and app-enabled smoke alarm have attained an Apple-like cult following among early adopters of the "connected home".

"Most people are just jamming things together because that's the fastest thing to do. They don't rethink the experience from top to bottom... Just because it can be connected doesn't mean it should," he says.

Ben Wood, analyst at tech consultancy CCS Insight, sees great potential in smartwatches, but says the connected home is "just too hard for the man on the street right now". The plethora of single-purpose "point solutions" is still a long way from the joined-up vision touted at trade shows, he says.

Amanda Peyton, co-founder of Grand St, a marketplace for creative technology, admits that the "independent, creative, alternative electronics" market is worth just a fraction of the \$1tn consumer electronics market today.

"But it is absolutely the fastest growing of any sector," she says.

"Over the next few years, you will see this section of the market just growing enormously. It's going to cut into some of the existing consumer electronics market, but it's going to grow the whole thing overall."

Wearables and other "smart" devices might not overtake the smartphone market any time soon – but they promise to be a much livelier arena for innovation in the coming years.



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Paul Taylor predicts likely trends in the tech market



## From chat to finance, soon your gadget will run your life

### Apps market

Revenues from games and utilities are soaring, reports *Paul Solman*

Apps have become the core feature of every smartphone. Work or leisure, finance or fitness, apps are available for anything you could dream up – and probably some you could not.

Mobile app stores recorded 64bn downloads last year, according to Gartner, the research group, with that figure expected to reach 102bn for 2013. Revenues are forecast to soar to \$26bn this year, from \$18bn in 2012.

And it is not just smartphones. The increasing popularity of tablets has opened up even more possibilities for app designers.

Practical tools such as Google Maps and social media such as Facebook are some of the most widely used apps, but games dominate the market. Top paid-for apps for devices that use Apple's iOS operating system include Backflip Madness, Plague, Duck Dynasty and Minecraft, while top free iOS games are QuizUp, MoviePop and the Sony PlayStation companion app.

On Android, Minecraft and Rayman Jungle Run feature highly in the paid-for charts, while Jelly Splash and Candy Crush Saga are two of the most downloaded free games.

On Windows Phone, among the most popular paid-for apps are Candy Crush Saga Addict and Talking Cat, although utilities such as WhatsApp and Instagram dominate the free charts.

"About 70 to 80 per cent of revenues on Google Play and iTunes come from games," says Marchos Sanchez, vice-president of global communications at App Annie, a digital market analysis group.

"But it's also interesting that countries that are doing the best socio-economically are driving the revenues, whereas the Bric countries [Brazil, Russia, India and China] are driving downloads," he adds. "Brazil, for example, has invested a lot in infrastructure so there has been a big increase in downloads from there."

App Annie's most recent quarterly report revealed that Google Play downloads are about 25 per cent ahead of iOS App Store, with much of the growth coming from increases in Brazil and Argentina.



Blockbuster: the building and adventuring game Minecraft is among the most popular paid-for downloads

"The growth of the Brazilian middle class is driving the country's shift from feature phones to smartphones," App Annie says.

The country's yearly smartphone shipments are expected to rise more than 125 per cent between 2013 and 2017, according to figures from IDC, the international research group – almost double the average of 65 per cent expected globally.

Outside games, Google Play's top paid-for app is Swiftkey Keyboard, a predictive text system. But some of the most downloaded apps on both

'Messaging is very hot at the moment, but these apps offer much more than that'

Android and iOS are social messaging services such as WhatsApp and BBM, BlackBerry's proprietary service that was launched recently for non-BlackBerry devices. Messaging apps such as Line, WeChat and Kakao Talk, all of which began life in Asia, are also expanding rapidly.

"Messaging is very hot at the moment, but these apps offer more than that," says Mr Sanchez. "A lot of them should be seen as platforms that can even be used for games, so it will be interesting to see how the market develops."

"I think of it as the ephemeral revolution," says Mr Sanchez. "It started with Twitter and 140 characters, and now everyone has become used to short communications. With Facebook, you have longstanding conversations, kind of a permanent record. But

these new social apps are instant shares – you put them out there and they disappear."

Other apps that are part of the trend include Snapchat, Instagram and Vine, all of which allow users to send pictures and snippets of video instantly.

"I don't know whether we are seeing the beginning of something that will challenge Facebook, but what all these apps have in common is that they are momentary interactions," Mr Sanchez says.

Another trend could be the crossover between consumer apps and business-based ones, as people increasingly rely on their smartphones.

Enterprise apps (see article on Page 3) have developed significantly in the past few years, says Mark Mason, founder and chief executive of Mubaloo, a UK-based enterprise app group.

"We have seen the change from what you might call 'vanity apps' to what I call 'app 2.0', where organisations really understand how apps can bring together information from systems to feed to the end user," he says.

"Examples include sales people using apps to access up to date information on tablets. Apps can bring together lots of information and a single app can track your day, which is also reflected to some extent in the consumer space."

Indeed, apps can get you up in the morning and get you to work on time. They can keep you entertained and informed on your commute. They can organise your workload and your day, tell you where and what to eat and plan your leisure time.

It could be only matter of time before they will run your whole life.

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