

The Connected Business

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Stay ahead by becoming mobile

Strategy There is much more to being smart than simply issuing smartphones and tablets, explains Paul Taylor

Mobilising the business has become a priority for companies that want to stay ahead of the competition, build customer loyalty and improve efficiency. But as Andy Geisse, chief executive of AT&T's Business Solutions division points out, building an effective corporate mobile strategy is about much more than technology.

"Mobilising companies involves far more than just handing smartphones or tablets to employees," he says. "AT&T helps businesses take it to the next level by mobilising their processes, as well as their physical assets. That's how companies can gain competitive advantage and grow their revenues or significantly reduce their costs, potentially transforming not only their own operations but creating change throughout their industry."

A simple example comes from Freescale Semiconductor. The chipmaker has deployed 150 Apple iPads to operators in its semiconductor wafer making process so they check machine settings or look up tolerances in an onscreen browser, rather than referring to pieces of paper or dragging unwieldy laptops around.

Freescale's IT department suggested replacing ageing laptops with the iPads, immediately saving about \$67,000 over the cost of refreshing the laptops. "At the end of the day we want to replace paper in all our facilities," explains Tarek ElHadidi, Freescale's chief information officer.

Mr ElHadidi believes the tablet deployment, once completed across the company's three factories, will save about 30 minutes per shift as a result of improved efficiency, equivalent to annual savings of almost \$1m. In addition he says the iPads should reduce support costs by about 50 per cent.

Others are using mobile data to improve customer service or productivity and exploiting the rapidly falling costs of technologies, such as machine-to-machine (M2M) modules, to expand operations and address opportunities in industries as diverse as logistics, utilities and forestry.

For example, fleet management companies are using cellular networks to optimise operations and reduce the need to dispatch trucks and, thus, cut costs. In the US, American Trash Management is using M2M technology to transform the waste management business. ATM installs its SmartTrash device in the rubbish compactors and balers of supermarkets, retailers, hospitals, schools and factories. The device time-stamps, records and analyses compactor data including information about how full the compactor is and its energy use.

This information is transmitted across Sprint's and Verizon's 3G networks to ATM's data centre. When a compactor requires pick-up, ATM contacts the customer's hauling company by phone, fax or email and schedules a pick-up. Customers can acquire their compactor data from anywhere via a web browser. As a result, ATM's



customers were able to reduce their pick-ups on average from once a day, to once every 1.7 days. On average, the SmartTrash system saves customers 25 per cent of waste management costs.

Some companies such as British Gas, Britain's biggest utility company with 12m customers, have combined both approaches in an integrated mobile strategy designed to improve customer service and reduce costs. "We wanted to give our customers greater control over energy and over how they use and enjoy their homes," says Nina Bhatia, managing director of British Gas strategy for M&A and connected homes.

As part of the programme British Gas equipped its field engineers with tablets and smartphones to improve productivity, designed a customer portal and developed an app that allows customers to remotely monitor and control home appliances and security systems. About 600,000 people are

'Companies realise they can use mobility and broadband data to get closer to their customers'

already using the app, which is available for both iOS and Android devices.

In addition, British Gas offers its customers an M2M home automation package consisting of a control module, wireless thermostats and a home hub that plugs into a broadband router and enables them to monitor and control their home heating systems. In the future the company may also allow makers of appliances to remotely monitor their products' performance in the home, enabling them to anticipate problems and arrange repairs where necessary.

Daniel Eckert, a director of PwC's Emerging Technology & Architecture group, says there are many methods companies can use to create a successful mobility strategy. He identifies

three steps in particular.

First, "make sure what you are developing aligns to the organisation's overall business strategy. This may sound obvious, but in comparison to creating traditional applications, creating a solution for a mobile device is relatively inexpensive and many organisations are creating their own apps – using outside resources – without considering the impact on their entire strategy or organisation."

Second, "make sure your support, operations, and technology teams are ready, and be prepared to address a problem quickly, before it becomes a discussion point in social media channels."

Third, "take small steps. Your app doesn't have to have thousands of functions; focus on the top four or five functions that will benefit your customers. It is important, however, that you have a road map – plan on what you are going to create over the next 12 months, and refresh it every 90 days. The market changes overnight, your resources may be constrained, so you must keep your teams focused on creating the right application."

Mr Eckert argues that financial services is an industry where it is very important to have a mobile strategy because of mobile banking and remote deposit capture (and soon mobile payments). However, he says most financial services organisations have progressed beyond creating a mobile strategy and are using mobile to innovate.

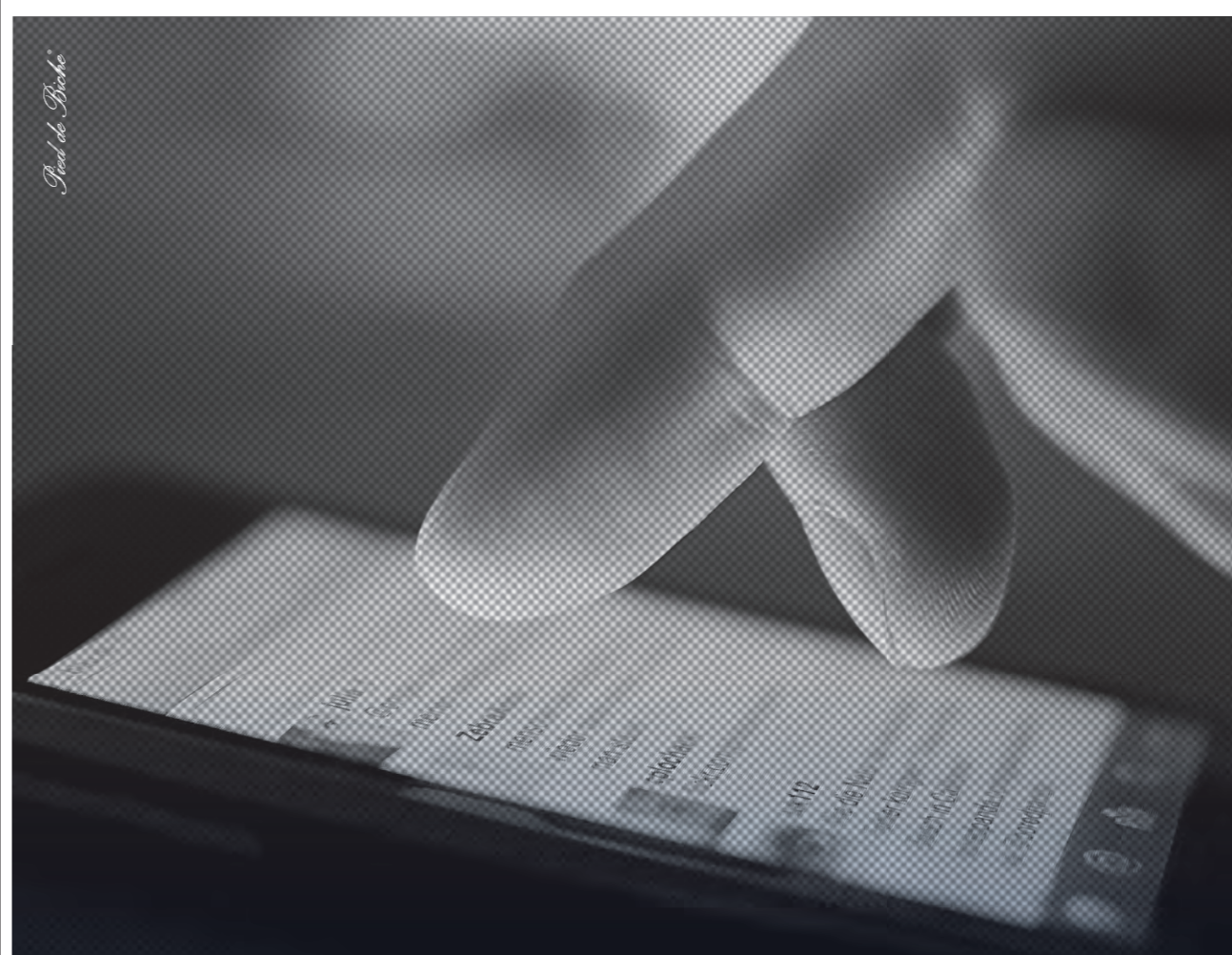
"The big banks started by offering basic mobile banking apps several years ago to support transaction and balancing monitoring and bill payment. In the past 18 months, they have introduced RDC (Remote Deposit Capture), account to account transfers, robust alerting and notification, and person-to-person (P2P) payments. It wasn't long ago that features and services like these were out of reach of smaller, regional banks. Now, just about every bank provides these services."

He believes the next big wave of mobile innovation will be in healthcare. "We're seeing a major push in

health and biometrics (a variety of companies have fitness monitoring devices) and some medical devices are already connecting to mobile phones and not only providing instant feedback to the consumer but enabling healthcare providers to monitor the health of their patients remotely."

Indeed some such as Hans Vestberg, Ericsson's chief executive, believe mobilising companies and other

organisations will have a profound impact not only on customers, but also on business processes themselves. "In transport, in healthcare, in automotive and elsewhere, companies realise they can use mobility and broadband data to get closer to their customers and change their business models," says Mr Vestberg who adds: "We see mobility as a very big opportunity."



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Personal devices raise prospect of unintended consequences

Management

Ease of use and familiarity are countered by unforeseen costs and security issues, writes Jane Bird

Nigel Moulton used to take a laptop to the office and plug it into a hard-wired ethernet network. Now the chief technology officer of Avaya EMEA, a business communications company, juggles three wireless devices at work – a smartphone, a tablet and laptop.

"When I'm at my desk, the laptop is usually plugged in," he says. "But when I go to meetings I might take it, as well as my smartphone and tablet."

The ease and convenience of mobile devices has meant many people have started using them for work, with or without permission. Often IT departments struggle to support a proliferat-



Juggler: Avaya EMEA's Nigel Moulton

ing range of wireless gadgets over which they have little control.

Spotting an opportunity, the software industry is riding to the rescue with products and services to help manage mobility.

Shortage of bandwidth is often the first warning organisations get that they need to increase wireless capac-

ity, says Mr Moulton. Requirements have soared as people have begun using smartphones and tablets for more data-intensive applications. "Users soon start complaining when video conferencing images become blurred or pixelated and audio calls sound like a mobile phone conversation from the 1990s," he says.

Another problem is the cost. Many companies mistakenly think people using their own devices will lead to savings. However, Glyn Owen, portfolio manager at Damovo, an IT services company, warns: "Be prepared to invest money in tools to manage and control it, rather than just hoping nothing will go wrong."

For example, some 43 per cent of enterprises worldwide have incurred an expensive data roaming bill in the past year, at an average cost of more than \$1,000 per foreign trip, according to research by California-based iPass, a company that unifies the management of remote and mobile devices

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Freedom of choice prompts security issues for IT chiefs

BYOD Organisations must consider action in several important areas before letting staff use their own devices for work, reports Paul Taylor

Consumerisation and the bring-your-own-device (BYOD) trend have changed the way smartphones and tablets are selected and used in business. Ten years ago, it was standard practice for companies and other large organisations to issue executive teams and key travelling staff with smartphones, typically a BlackBerry designed primarily for mobile email and messaging.

Employees loved the devices while corporate IT departments, many of which installed BlackBerry Enterprise Server (BES) software, appreciated the reliability, security and manageability of the BlackBerry system.

But as Research In Motion, the Canadian maker of the BlackBerry, and its rivals including Nokia and Motorola were to discover, the consumerisation of corporate IT, led by the launch of the iPhone and the iOS operating system in 2007 and the subsequent launch of Apple's App store a year later, changed the picture.

Touch-based devices such as the iPhone, iPad and Android-based handsets and tablets, provided consumers with a window into a mobile connected world where information and

entertainment were a finger swipe away. Inevitably, these devices began to find their way into work places.

"It was clear employees were using iPhones and Android smartphones in their personal lives and did not want to carry two devices – one for work and one for everything else," says Nelson Saenz, director of IT for Active Interest Media, a California-based media group that used company Good Technology to provide the software it needed to manage the growing portfolio of devices its staff used at work.

Similarly in the UK, the Civil Aviation Authority is rolling out Good for Enterprise software that lets mobile workers securely access emails, contacts and calendars using personal or corporate-owned Android smartphones, iPads and iPhones.

"At the start of this process, our aim was to satisfy employees demand for use of newer devices by moving away from BlackBerry, reduce our overall cost of ownership and increase functionality while not compromising security," says Darryl Sampson, CAA's head of infrastructure.

Companies such as Good Technology have enabled IT departments to embrace the BYOD trend while main-

taining security and manageability. Handset makers including Samsung, the Korean smartphone market leader, are providing mobile security and enterprise management tools as part of their efforts to win more corporate customers.

BlackBerry, recognising it must accommodate other brands if it is to retain its still sizeable market share among corporate customers, has built the ability to manage a diverse range of devices into the latest versions of its BES software. It has introduced a feature with its BlackBerry 10 operating system that will allow users to toggle between work and home modes on Z10 and Q10 handsets.

Although some companies have resisted introducing personal devices into the corporate IT infrastructure, most recognised it makes more sense to embrace and manage the BYOD trend. Some 70 per cent of corporate respondents in a Gartner survey published in December said they already have, or are planning to have, BYOD policies in place within the next 12 months that allow employees to use personal devices to connect to corporate applications. Thirty-three per cent of all organisations surveyed

have BYOD policies in place for mobile devices.

Dionisio Zumerle, principal research analyst at Gartner, says BYOD has a huge effect on mobile security. "Policies and tools initially put in place to deal with mobile devices offering consumer-grade security must be revised to deal with these devices being under the ultimate control of a private user, rather than the organisation."

In particular, Gartner says organisations must consider action in several areas when moving to a BYOD policy:

First, recognise that the right of users to employ the capabilities of their personal devices conflicts with enterprise mobile security policies and increases the risk of data leakage and the exploiting of vulnerabilities.

"Using mobile device management (MDM) software is one way to enforce policy on mobile devices," said the Gartner report. "Users should obtain access to [corporate] information only after having accepted an MDM agent on their personal devices, and possibly a URL filtering tool, such as a cloud-based secure web gateway (SWG) service, to safeguard and enforce [company] policy on internet traffic. Businesses should consider

Safety alert: allowing users to select mobile devices opens the door to inadequate protection

Dreamstime

using application white listing, black-listing and containerisation, as well as setting up an enterprise app store... for apps that are supported."

Second, user freedom of choice of device and the proliferation of devices with inadequate security make it difficult to properly secure certain devices and keep track of vulnerabilities and updates. "Allowing users, rather than the IT department, to select operating systems and versions of mobile devices opens the door to devices that are inadequate from a security standpoint," said the report. "An essential security baseline should require enhanced password controls, lock timeout period enforcement, lock a device after password retry limit, data encryption, remote lock and/or wipe."

The report warned that "excessively limiting the types of allowed devices eliminates the benefits of BYOD for users. There should be no compromise of security for the sake of device variety, but where it is possible to manage and secure a new device model, it should be done. The policies that are enforced will depend on the risk appetite of the organisation and the sensitivity of data allowed to reside on the device."



Some companies have resisted introducing personal devices into the corporate IT infrastructure

Different beast in forest brings app solutions

Partnerships

Marketing agencies have displaced software houses, says Michael Dempsey

When investment fund manager Schroders entered the world of apps, it discovered something fundamental had changed in software production. The traditional software house had been elbowed aside by a different beast – the app developer.

"Our IT people didn't know how to build apps, so we found an apps developer, Mubaloo," Matthew Oakeley, head of group IT at Schroders recalls.

His first impression of dealing with it, and other apps developers Schroders has turned to, is that this was not business as usual in the software industry.

"All these developers seemed to have started as a creative agency and then branched out into building apps," Mubaloo is a marketing agency that found it could turn its talent for design to developing apps.

The process that led Schroders to commission a proprietary app known as SalesConnect was different from the usual way financial software products emerge. "We had a look at the iPad and decided to let our people use it and find out what it was best for."

The technology sector loves to present its wares in terms of prescribed debates. The bring-your-own-device (BYOD) dilemma of integrating people's smartphones and iPads with corporate systems is a prime example. But it would be wrong to see Schroders' adoption of apps in terms of BYOD, says Mr Oakeley.

"BYOD has not been a problem for us, because staff who use an iPad sign up for our terms of use.

They use the device for note-taking or email to stay connected but not for anything that might be considered deeply confidential."

For Schroders, keeping everything categorised set the entire BYOD circus to one side. Its policy defines how iPads cannot be used to access confidential material, restricts business communication to Schroders' own secure email and bans public cloud products such as Dropbox.

Mr Oakeley is not afraid to say iPads may not be the answer to everyone's prayers. "Some people just didn't like the iPad," he says. But Schroders needed a tool that would allow staff visiting third-party financial consultants to display its range of investment vehicles to these prospective customers.

Mubaloo developed an app that could be synchronised with the latest prices at the office and then accessed in a flash using the iPad as a demonstration device. That exercise is

'It's a bit wild west, as apps are being commissioned by marketing departments'

offline for speed and simplicity but online content can be presented as long as it is insulated from Schroders' operational systems. SalesConnect is working well, Mr Oakeley says. "There is something about an app. It's because it's graphics based and it's the story of the moment."

However, he is extremely sceptical about the lifespan of apps. "Our strategy is to do all content via the web in the long term, rather than creating something specific to Apple."

The control Apple exerts



over the app world is one of the brakes on these colourful tools becoming really established in the corporate environment, Mr Oakeley says. The need to revise an app to integrate it with new Apple software also irritates commercial users. "We have to go back to Mubaloo every time Apple brings out a new version of its operating system."

A further drawback is the way each app has to be tailored to the specific device it runs on and the continuing gulf between Apple and the formats of the Microsoft world.

The graphical heritage of creative agencies is what makes them so suited to breathing life into business requirements via an app. "Mubaloo thought about the user experience first and the IT side second. It's how more software companies should work."

Chelsea Apps Factory in London is another in this mould. It was founded by Mike Anderson, a former publishing executive who spotted an emerging trend, namely "a huge enthusiasm for all things mobile".

He points to the attraction of the short time in which apps can be developed. "We can get to deployment in weeks, not months." Developing a corporate app can cost less than £50,000, cheaper than enterprise software. Apps development within

large organisations can create huge problems, says Mr Anderson. "A chief information officer can find he's got a lot of apps but they're all the product of random commissioning with different departments using different technologies. You've got to bring some order to the disorder." He thinks app developers can do just that and is modest about what distinguishes Chelsea Apps Factory. "We have a slightly more impressive garage of skills and people."

PA Consulting's digital expert Dan Rossner has a software development background and recognises that apps represent a very different world. "It's a bit wild west at the moment, because apps are being commissioned by marketing departments," he says.

Mr Rossner thinks it is important to look beyond the iPad frenzy. "We're trying to see where the app will help a client become more competitive." JCDcaux, the outdoor advertising site specialist, recently turned to PA Consulting for a smartphone app that lets its staff take a time stamped and GPS-verified shot of each display. This gives advertising agencies instant proof that the billboard is carrying the message in the right place at the right time and it quite literally puts mobility and competitive advantage on the same page.

Telecoms place high hopes on machine to machine talk

Growth opportunities

Networks that link devices have great potential, reports Maija Palmer

Even cows in France can send text messages. Farmers do not need to get out of bed at night to check the members of the herd about to calve; they wait for a mobile alert, sent from a wirelessly connected heat sensor on the animal, to say labour has begun.

"The size of farms is increasing and people are not living in the middle of their animals any more," says Emmanuel Mounier, managing director and co-founder of Medria, a small company based in Brittany, that has been developing the wireless sensors since 2007. "This gives them peace of mind and fewer cows die or are injured in labour."

About 4,000 farms in France, Germany and Belgium have the technology. Interest is growing among large industrialised farms in North America.

Other sensors from the company can alert the farmer when the cow is in heat so that insemination can be planned for the right moment. Medria is developing a sensor that can be swallowed by the animal to monitor its food and water intake.

"When an animal's habits change it is often a sign it is sick," says Mr Mounier. "If you have a herd of 250 cows in front of you it can be vital to know quickly which one is unwell so the rest don't catch it." He adds: "It's quite a good example of machine to machine communications."

"People often don't understand what that means but with our product it is very clear in people's minds how it works."

In Groningen in the Netherlands, another example demonstrates the kind of

savings that can be made with sensors connected to a wireless network. The city council saved €92,035 after it installed public bins that could send a text alert when they were full. The council reduced labour hours and petrol costs by only sending trucks out to bins that needed emptying.

It is becoming increasingly possible to connect almost anything via a wireless link to the internet. According to Berg Insight, wireless analysts, there were already 47.7m mobile phone connections linking machines to other machines in 2008, and this is expected to grow to 187m by 2014.

Remote monitors have been in use for years in industrial settings but connected machines are spreading to a number of other industries and coming within reach of ordinary consumers. Ford, for example, recently teamed with AT&T, the telecoms operator, to put wireless connections in its electric Ford Focus vehicles.

"These will allow owners to monitor the charging of the car, locate charging stations and preheat or cool the car remotely before they get in. Similarly, power companies are starting to transfer their customers over to the so called "smart grid", where home electricity supplies are connected to the internet and monitored remotely in real time by the electricity companies. This could usher in

an era where more and more domestic appliances have online links.

"People talk about machine to machine connections being about your fridge ordering more milk. But realistically it is more likely to be about power use. If the freezer is connected to a smart grid, monitoring the electrical network, it can start freezing in the middle of the night when electricity prices are at their lowest," says Matt Hatton, director at Machina Research, which advises companies on machine to machine communications.

'If you have a herd of 250 cows in front of you it can be vital to know quickly which one is unwell'

"It is not really a new thing, it has been around since the 1970s with industrial automation. But today it is starting to be a very diverse group of sectors that are adopting it," he says. "When I was at the annual Consumer Electronics Show in Las Vegas five or six years ago there was not that much of interest out there for me as a telecoms guy," Mr Hatton says. "This year, everything was about connected TVs, connected fridges, connected scales."



On track: hauliers can find better routes for vehicles

Getty

Part of the reason machine to machine networks are starting to take off is that telecoms operators, seeing call rates plateauing elsewhere, are seizing this as a growth opportunity.

Medria charges about £3,000 for heat sensing equipment, plus a monthly fee for processing data and a subscription for text messages, paid to a local mobile phone operator.

"This is a big opportunity for the mobile phone companies and the data charges are often sold at a higher price than in the rest of the market," Mr Mounier says. "You would be lucky to pay five or six euro cents per message, while in the consumer market people are on unlimited bundles of messages."

In many cases the efficiency gains of machine to machine systems are easy to see. Haulage companies can track vehicles and route them more efficiently. Some of them are also testing out insurance schemes where their vehicles are tracked in return for lower premiums for careful drivers. When cows are impregnated at the optimum moment, their milk yields are maintained at a higher level.

But in other cases savings can be hard to quantify. "It could be an alarm that notifies you when something is wrong – if a machine suddenly gets too hot," says Katja Ruud, analyst at Gartner. "That one warning could be very valuable if it avoids a disaster."

Ms Ruud and Mr Hatton both point to healthcare as an area where vast savings could be achieved. The GSMA, the mobile phone industry body is trying to encourage companies to develop mobile systems to help diabetics monitor blood sugar levels and reduce the number of people being hospitalised for insulin shock. Monitoring of other medical conditions, such as heart disease, could also save lives and cut care costs.

The Connected Business

Smartphones set to take role as shopping advisers

Customer services Janina Conboye finds companies are increasingly targeting individuals with offers and information

Once when you walked through a city centre at night and glanced at enticing store window displays, your desire to consume ended there as the shops were shut.

Mobile devices are changing this. Even though the store doors are still closed you can scan a smartposter in those same shop windows and purchase that coat or kettle with a few clicks.

This is just one example of how companies are increasingly supplying customers with information and offers via mobile devices to increase sales.

Mobile devices have the ability to personalise a service and target a customer in a way a shop assistant you do not know cannot. A shop assistant knows nothing about you, while the apps and services on your mobile or tablet device do.

Near field technology (NFC), which is helping bridge the gap between the virtual world and the bricks and mortar of high streets everywhere, means your smartphone, like your bank or

credit card, has a sim card that can store payment information within apps such as Google Wallet, which can also hold various store cards and vouchers.

GSMA, the worldwide trade organisation for mobile operators, runs an NFC programme and is working with mobile operators and retailers so they can adapt to these sim-based phones and target customers with offers as soon as they enter a store.

James Heaphy, GSMA's NFC programme director, says: "If you go into a shop and tap your phone on an information point it allows data transfer and can target you based on your previous purchases."

He adds: "It also means you will get your voucher or offers while shopping, rather than at the end when you pay at the till."

Boots the Chemist in the UK, for example, may give you a paper money-off coupon when you spend a certain amount but it is easy to lose.

"Metro, the German group that owns Macro [cash and carry] is



"When I go on to the website it knows who I am: 'Welcome back Dan'"

already using these methods in its Macro stores," adds Mr Heaphy. Swipe yourself in and you will receive offers on the things you like.

The technology takes advantage of location services, sending information and offers to those who choose to opt in. Mr Heaphy says this means a store or chain can track the whole process, from where a voucher was scanned from a smartposter, say, through to payment for the product.

Retailers can then analyse more effectively who buys what, where and when and they also can more effectively aim at certain demographics with offers specific to them.

For example, Dan Wagner, chief executive of mPowa, the payment system provider, and an ecommerce expert, is a life-long customer of British chain Marks and Spencer. "I always buy my socks from there but a shop assistant won't know this while the website or mobile site does."

"When I go on to the site it knows who I am: 'Welcome back Dan'. It also knows what I like to buy so will target me with specific offers on the products I buy regularly. I like black socks, but maybe it'll offer 20 per cent off grey ones."

Mr Wagner believes retailers need to ensure their brand is accessible

High-fliers: BA aircrews have been given devices to help improve onboard passenger service

from any channel and then must target shoppers quickly with things they like.

However, once a retailer has got customers in its shop, on its website or using its app, it has to provide an easy experience for users.

This is where mobile payment devices are ideal. They allow shops to reduce the most irksome aspect of shopping: queues. Cutting queues means more money is being taken. NFC mobilises those taking the payments, so they can be made anywhere on the shop floor, and it allows contactless payments through your mobile.

Mr Wagner's mPowa has also developed a gadget that allows any retailer to take a card payment via a smartphone, which is helping to drive sales in smaller businesses.

"The mobile point of sale is a real catalyst. I think tills will become obsolete," he says.

Another approach is that of British Airways, which has armed its ground crews in New York with tablets. If you fancy an upgrade at the last minute a member of staff can instantly show you videos of the cabins and the services on offer.

Aircrews are also provided with tablets. "If staff in the air have access to customer information then they know exactly who's on board," says Chris Carmichael, BA's head of technical innovation. "Who is a gold card holder [in BA's Executive Club], for example, can we offer them an upgrade onboard?"

Through access to customer details, staff can tailor their services to individuals – a good experience means you will come back and more importantly, recommend them.

BA's tactic is to provide a slick experience – from purchasing tickets, to boarding the aircraft – through apps designed for all smartphones and tablet devices. "The aim is to keep it as light and simple as possible," says Mr Carmichael.

It has also launched its Perfect Day app, which provides detailed guides to BA destinations created by travellers. Anyone can use it to share information instantly and make recommendations that will hopefully lure more customers to book with BA.

Personal devices can have unintended consequences

Continued from Page 1

and connectivity. It is easy to rack up roaming costs, for example, by taking part in a video conference from your hotel room, says Barbara Nelson, chief technology officer of iPass. "People think they are working, so don't even consider it."

The company has partnerships with mobile network operators worldwide to offer WiFi access internationally via 1.2m hotspots in airports, hotels, coffee shops and trains. Costs are predictable at a monthly fee of \$40-\$50 per user.

Another common mistake, says Mr Owen, is failing to draw up a corporate policy that covers what people will be trying to do with their mobile devices and from where. A 2012 survey of 100 IT directors by Damovo in the UK showed 39 per cent of organisations had not issued mobile usage guidelines.

There is a surprising number of things to think about, says Mr Owen. For example, "a decision needs to be made about who owns a mobile phone number, because if salespeople give their numbers out to customers, contact could be lost if they leave."

Security concerns are another reason for taking control. IT departments must identify who is trying to gain access and apply appropriate security filters.

Organisations need to decide if they are going to let people download corporate information on to removable phone memory cards, or upload it via internet based services such as Dropbox. Such tasks can be performed using mobile device management tools



'Be prepared to invest': Glyn Owen, Danovo portfolio chief

from companies including Zenprise (Citrix), AirWatch, MobileIron and Good Technology. You can block the use of cameras or WiFi within areas of just a few feet, for instance, in research laboratories or in confidential meetings.

You can even agree a policy with network providers, so people cannot get past restrictions by switching

'If people want to play Angry Birds they can do so in a separate "container"'

from WiFi to 3G or 4G, says Avaya's Mr Moulton.

Another approach is offered by California-based VMware, which creates "virtual boundaries" or "containers" by way of the cloud. These focus on the way users gain access to applications irrespective of the device. You can even have separate phone numbers for personal and business use on the same handset, with separate bills.

Restrictions do not engender goodwill when people have brought their own devices to work, considers Brian Gammage, VMware's global chief market technologist.

"If people want to play Angry Birds they can do so in a separate 'container'." Adapting complex software applications for a range of mobile devices is problematic and can cause delays.

Apps to perform specific tasks offer a faster route, argues Marc Christophides, support services delivery manager for SThree, a global recruitment company. Apps are self-contained, easy to deliver and to administer remotely, says Mr Christophides. "They are quick to deploy, simple to use and, if they don't work, they can usually just be reloaded."

New apps at SThree can be approved and provided within 10 minutes, whether staff are in San Diego, Singapore or Sydney, says Mr Christophides. "And the moment someone leaves the company they can be remotely switched off."

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"For the first time, we can decide which promotions to run based on facts rather than gut feel."

Patrick Neeley
Chief Business Officer, Chickasaw Nation Division of Commerce



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The Connected Business

Marketers aim to tame mobile's final frontier

Advertising space *Jessica Twentyman* looks at how companies are keeping track of promotional campaigns in a complex environment

Every year, mobile advertising is forecast to enjoy a bonanza, and every year advertiser confidence and expenditure lags far behind consumer adoption of mobile devices. A study by research firm Berg Insight estimates that mobile ads account for about 1 per cent of worldwide advertising outlay, while consumers are spending around a quarter of their available "media consumption time" browsing the internet and using apps on smartphones and tablets.

Mobile advertising, nonetheless, represents a step in the dark. There is a vast oversupply of available ad space and not enough demand for it. This imbalance makes it hard for advertisers to understand where their ads might be best placed.

There are problems presented by mobile devices themselves. For an effective campaign, developers need to take into account the large number of handsets available, with different screen sizes, capabilities and operating systems. This means the costs of developing engaging, interactive mobile ads can seem high, especially to an advertiser with no guarantee of a return on their investment.

There is the challenge of understanding the audiences reached by a particular mobile ad campaign. While online advertising on a conventional PC or laptop uses cookies – code downloaded by a website to a visitor's browser – to track user behaviour and identify audiences, this is more problematic on mobile devices, as Andrew Frank, an analyst at research firm Gartner, explains.

Apple has set the Safari browser on its iOS-based products (iPhones and iPads) to reject third-party cookies by default. Mr Frank says unless users



Campaign trail: services such as those from Adfonic allow clients more accurately to track how successful their mobile advertising and promotions have been

change their phone settings, which is pretty rare, cookies will work on that device. He adds that Apple devices reject apps that access a device's UDID, an alphanumeric identification string unique to each iPhone and iPad.

With Android, there is more flexibility. Fragmentation of the market, however, with different devices running different versions of the operating system, makes it hard for developers to build a tracking mechanism to run across Android versions.

This makes mobile seem risky: a channel for which it is hard to build effective campaigns and harder still to measure their success. Advertisers and agencies representing them, find this off putting says Alex Rahaman, chief executive officer and founder of StrikeAd. His company provides a mobile demand-side platform, or DSP, which allows companies to buy advertising space in a more targeted way and track the success of campaigns. DSP, established in online advertising, is a way of connecting advertisers

looking for space with the large numbers of ad exchanges that, in turn, represent the many online publishers selling space. A mobile DSP, like the one offered by StrikeAd performs the same function but enables advertisers to pinpoint audiences by a number of characteristics: the type of devices they use, their operating systems, their mobile carriers, the time of day and, increasingly, their location.

Once the advertiser uploads their targeting criteria for a particular campaign, the DSP monitors a number of

ad exchanges where mobile ad inventory is bought and sold and, when a suitable ad space becomes available, bids on it. Because of the time this process takes – often milliseconds – this kind of buying is known as real-time bidding.

"The DSP figures out what works best for a particular campaign, based on when and where the ad was delivered: which sites, which locations, which handsets, which target audiences," Mr Rahaman says. "The DSP learns to answer the important ques-

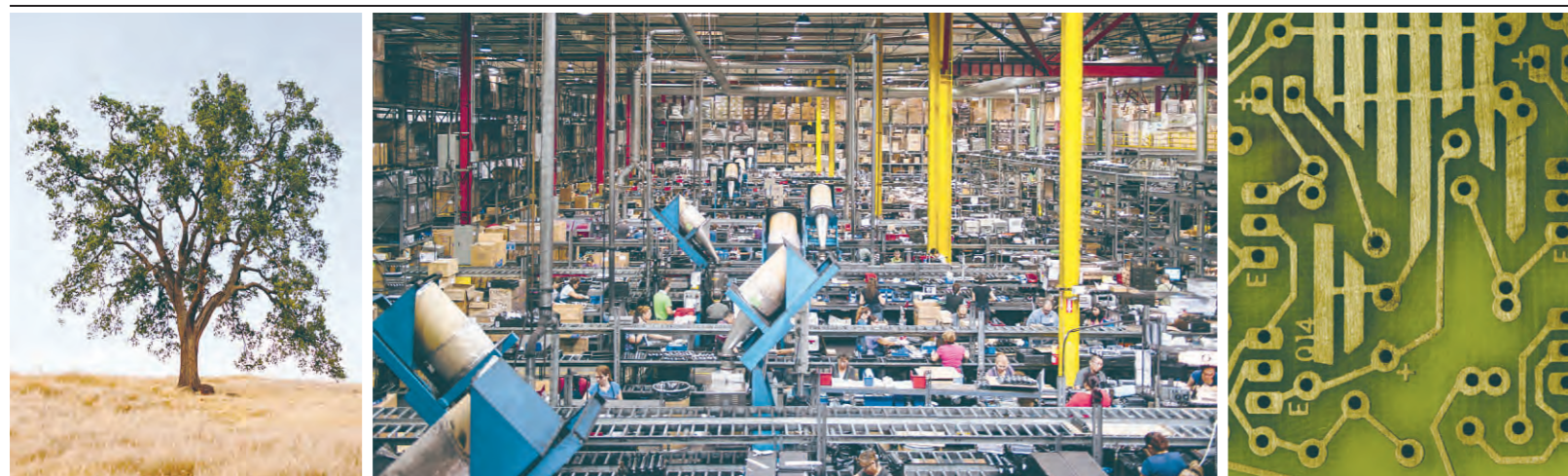
tions for itself: Did the ad work? Did the audience engage with it? Did they purchase a product, watch a video or download an app? Then we stop buying space in all the places a campaign doesn't work and hone in with laser-focus on the best places to buy ads for a particular advertiser."

This approach has enabled two-year-old StrikeAd to attract \$3.5m in venture capital funding and relocate from London to New York but it has lots of competition. Indeed, this is a rather crowded market, dominated by a crowd of start-ups, such as Tapad, EveryScreen Media and MediaMind.

Undeterred by the scramble, mobile ad network Adfonic launched its own DSP, Madison, last October. Wesley Biggs, its chief technology officer, says: "We had a crunch meeting with a large agency client that told us: 'We want to do mobile, our clients are asking us to do more and spend more but we can't unless we can see where the results come from.' The question for us was: 'Do we have the courage to embrace this disruption?'"

The mainstream advertising agencies that Adfonic works with in the UK – representing Warner Brothers, Peugeot, McDonald's and other brands – have campaigns on Madison or trialing the mobile DSP during 2013's first quarter, Mr Biggs says.

"One agency customer described getting hold of a mobile DSP as like having laser eye surgery. They could see the true performance of campaigns, tracked over time and that meant they had confidence in mobile as an ad channel for the first time," he adds. "For advertisers to include mobile in their major campaign budget lines, the industry has to give them the visibility and transparency they expect."



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Outsiders muscle in on monetary transactions

Payment systems

Banks face challenge from technology companies, says *Charles Batchelor*

The growing popularity of mobile payments is both an opportunity and a challenge to bankers, retailers and mobile phone operators.

Spotting the likely winners and losers is difficult but the next two to three years are expected to see a shake-out in this market as competing technologies and business models battle for supremacy.

The banks run the risk of outsiders gaining a foothold in their basic business of handling money transactions – as mobile operators already have in parts of Africa, for example – while the mobile operators face the prospect of other providers, such as banks and specialist payment services, gaining a cheap ride on their networks.

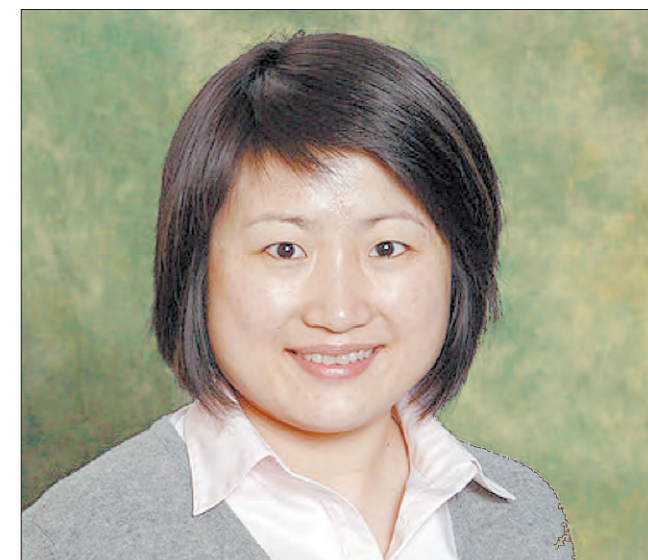
The challenge for retailers is to stamp their brand on the payment experience and to exploit the payment information to assist marketing and inventory management.

Jean Lassignardie, chief marketing and sales officer for global financial services at Capgemini, the IT consultants, says: "The growth of non-cash transactions has been faster than predicted over the past couple of years, though it is still small.

"It is not easy to see what will be the key technology to emerge or the key business model. We don't see one technology winning big time. A variety of standards will remain in use."

Despite the attention they attract, mobile payments account for only a small, if fast-growing, part of the money transfer market. They are expected to represent \$1,700bn or 4 per cent of global retail transactions by 2017, according to Juniper Research. Banks still account for most mobile payments: \$6.5bn of the total \$7bn in 2011, rising to a forecast \$15.3bn of the \$17bn total in 2013, according to Capgemini's World Payments Report. But banks are constrained by regulation and legacy businesses, and non-banks are seeking to develop niche markets, it notes.

Attention is focused on the competing claims of remote payment technology, using apps and web browsers, and near-field



Sandy Chen: networks are aggressively pushing NFC

communication (NFC), which requires a user to touch a reader with his mobile or hold it very close to a receiving device – typically within 4-20 centimetres to establish radio contact. NFC technology, used by Google's Wallet, is being heavily backed by the mobile operators, who see it as a way of maintaining control of the payment process and of the fees that are generated.

Opponents of NFC argue it is unnecessary – remotely configured devices can be held close to a reader if necessary – and that it is less convenient than a remote device that can be read

"This is a crowded space and there is a lack of common standards across the industry"

anywhere in a store, and which effectively can give a sales assistant freedom in the shop rather than leave them stuck behind a counter.

"The carriers [mobile phone networks] are aggressive in trying to push NFC technology," says Sandy Shen, global research director for consumer services at Gartner, an IT consultancy. "It gives them a vehicle to charge service providers and other application providers. If the carriers offer web-based services they will get intermediated out by the banks or the retailers."

Resistance from users of existing mobile technology is strong. David Marcus, president of PayPal, a pioneer of online payments, warned that NFC would make the shopping experi-

ence less efficient because it requires the user to go to a specific pay point in-store.

A fertile area of development for non-traditional providers of payment services is the small business owner. In the past they have been unable to accept credit card payments from customers because bank systems were aimed at larger retailers and charges were too high. But the past two years have seen several product launches aimed at this market.

NCR, a supplier of ATM bank cash dispensers and retail self-checkout terminals, last year launched NCR Silver, a reader the size of a small matchbox that plugs into a mobile phone, which allows small businesses to accept credit card payments.

Square, a San Francisco-based company, has built a strong position in this market since it launched a credit card reader for iPhones and Android-based mobile phones in 2010. The transaction fee of 2.75 per cent is similar to that charged by conventional credit card processors but Square does not charge monthly or set-up fees.

A competitor is iZettle, a Swedish company that has developed a similar device for attaching to a mobile. Jacob de Geer, co-founder, says the company's target market is the small business employing one to three people and handling up to five transactions a day, compared with the 30-50 transactions required by the bank-owned card processors.

"This is a crowded space and there is a lack of common standards across the industry," comments Ben Gale, NCR vice-president for western Europe. "It will play out over the next 18 months."