The Connected Business

Wednesday May 28 2014

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Marketers are all over the shop

A flurry of technology is vexing advertisers but it is vital to make the right decisions, writes *Emily Steel*

Illustration: Øivind Hovland

It is enough to make anyone's head spin. Rocket Fuel boasts that its artificial intelligence delivers real-time advertising results. Millennial Media vaunts its cross-screen targeting capabilities. Criteo pitches its ad personalisation technologies. Rubicon Project touts that it has engineered one of the largest real-time, big data solutions for advertising.

The companies are among hundreds – if not thousands – that have emerged in recent years selling marketing technologies sometimes designed by actual rocket scientists.

They launched and solicited billions of dollars in funding on the bet that they could strike it big by streamlining the process for creating, buying and selling ads across a proliferation of digital devices – and then instantly measure the effectiveness of marketing campaigns.

The flurry of marketing technology start-ups was meant to transform the art of advertising into an organised science. But the opposite occurred.

"It is confusing for a lot of people," says Quentin George, a digital advertising veteran who left a big ad company to start Unbound, a consultancy to help marketers sort through the new ad technology landscape.

"They don't know what they don't know. Even if you paraded 10 companies in front of them, they have no framework for knowing which company is better than the other."

Marketers report being more perplexed than ever before amid the proliferation of media and new technologies, along with growing uncertainty about whether or not digital marketing delivers business results.

Only a third of marketers believe that their companies are highly proficient in digital marketing, according to a recent survey by Adobe, the software company. Marketers express uneasiness about personalisation and targeting technologies, advertising across a mix of media, social media and mobile marketing – and ultimately, how to measure it all.

Yet two-thirds of marketers said that companies would not succeed unless they had a digital marketing strategy, the survey found.

"The issue of fragmentation is the big problem for all of these guys. The underlying value of each ad goes down. You can't even tread water then," says Rett Wallace, chief executive of Triton Research, which analyses new tech firms. "Marketers' budgets don't go up because the fragmentation does."

The broader uncertainty becomes more vexing as marketers devote a larger share of their advertising budgets to digital media. Global digital ad spending is expected to surge 15 per cent this year to $138bn, representing about a quarter of total ad spending, according to research firm eMarketer. By 2018, digital is expected to capture about one-third of advertising budgets worldwide.

AOL, the internet company, is putting more emphasis on its ad tech business. The group has pointed to a so-called "technology tax" as adding to the broader turmoil and threatening to hold back the shift of ad dollars from traditional media, such as magazines and television, to digital outlets.

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Digital advances drive functions together and lift IT spending

Management Ecommerce , analytics and mobile apps are forcing CIOs and CMOs to co-operate, says *Stephen Pritchard*

Marketing and IT may have their differences, but they have a growing amount in common, too. Both suffered budget cuts during the recession, with their activities seen as optional, rather than essential.

"Both functions are [considered] discretionary spending," says Jennifer Beck, a vice-president at Gartner, the technology analysts. "People think: if the numbers don't look good, let's cut IT and marketing."

More recently, both areas have seen renewed growth. Spending by marketing departments on technology – from apps to social media and "big data" – is one of the fastest-growing areas of corporate technology. But much, if not most, of it is being managed outside the IT department.

This has led to suggestions by analysts that the chief marketing officer will spend more on technology than the chief information officer.

Projections by Gartner suggest this point will be reached by 2017, although as Ms Beck points out, this does not mean that the CMO will be taking over the CIO's role. The jobs are, and are likely to remain, very different.

"The CMO is a very creative function, despite the fact that it has become more data driven, but CIOs like a more disciplined approach," she says. "CMOs and digital marketers are big risk takers, and digital technology allows them to take greater risks, for example by experimenting in social media."

Other analysts suggest, though, that while marketing technology spending is growing rapidly, it is doing so from a low base. "CMO tech spending is 0.1 per cent to 0.3 per cent of revenue, against an IT budget of 2 to 3 per cent of revenue. It is growing, but would have to grow very quickly to make up that difference," cautions Shvetank Shah, executive director at CEB, the business advisory group.

"It is a myth that CMOs want to run IT," he adds. "What CMOs are interested in, is rapid experimentation." Marketers want to test ideas, and hand those that work on to other departments, such as IT, sales, or operations, to scale up and run.

Nonetheless, marketing now accounts for some of IT's largest projects. Anita Chandraker, head of IT delivery at PA Consulting Group, says: "With the rise of digital channels, a lot of marketing-led IT spend is identifying customer needs, and predicting what customers are going to do."

Adobe, the creative software company, now spends more on digital than any other form of marketing, and not just because the company also makes digital marketing tools, says Ann Lewnes, chief marketing officer.

"At Adobe, 74 per cent of our marketing spend is on digital," she says. "Last year, our second largest IT programme was our marketing programme," notes Gerri Martin-Flickinger, CIO.

IT involvement, though, is essential if marketing projects are to be effective.

Five years ago, Thomson Reuters' intellectual property and science division introduced a marketing automation platform. Rather than relying just on an email system, the software brings together online activity as well as email responses and leads from events such as trade shows.

"It transforms how we are doing marketing. We can communicate more efficiently, and effectively," says Kim Yeatman, director, marketing operations.

As critical is the way the marketing system integrates with other business software, especially the company's customer relationship management (CRM) application.

"Our platform synchronises data with CRM, which is maintained by the technology team. It is a two-way sync. CRM is the system of record," says Mr Yeatman.

It is analytics and ecommerce, however, that are really driving marketing and IT closer together. CMOs and their teams might be comfortable developing mobile apps, or managing social media and content marketing, but these are often discrete areas of operations.

Once systems start to share data with core business applications, as they will if they want to draw on operational data, projects are far more likely to need the support of IT.

Some mobile apps, too, fall into this category: mobile apps may have started as purely promotional, or as a shop window. But if they involve mobile shopping, or mobile banking, then operations, IT, security – and for physical goods, the supply chain – will need to be involved. This is something marketing is unlikely to be able to support on its own.

And analytics projects will, inevitably, need access to business data, as well as offering the potential to pass data back to other business systems.

"We are looking at big data, in terms of being able to bring in disparate data sources, and give tools [to marketing] to turn that into useful information," says Jolyon Ingham, CIO of building supplies company Grafton Group, and a member of the Corporate IT Forum Advisory Group.

"In terms of what marketing is looking for: analytics is the key. It's about driving that capability . . . I do see marketing and IT working more closely together."

This is prompting marketing departments to become more technically-minded, but also IT to become more familiar with the tools that marketing departments need to use.

"It does change what IT does," says Brian Whipple, global head of Accenture Interactive. "The marketing and sales technology that exists today is still fragmented. There are fewer people on the IT side who have grown up with this technology; a lot of folk in IT are not familiar with marketing tools. These have grown up on the CMO side."

But, he says, IT will "skill up" to meet the demand.

What matters less, though, is who owns the budget; in fact, digital initiatives are now so important to many businesses that funds are allocated at board level. Even where they are not, marketing and IT are increasingly likely to pool resources.

"Who pays is not important. It is how the programme helps our customers, or helps our sales," says Adobe's Ms Lewnes.

> 'Who pays is not important. It is how the programme helps our customers or our sales'

Sloping off: visitors enjoy the conditions at Vail's Beaver Creek centre

Vail Resorts Marketing and IT chiefs learn to ski in tandem

At Vail Resorts, chief marketing officer Kirsten Lynch is proud of the job her team does telling potential customers about the holidays the US ski resort company offers.

"But it's so much more powerful when our guests tell their own family and friends what a fabulous time they've had at our resorts," she says.

Increasingly, she adds, they do that through social media, so over the three years she has been at Vail Resorts, she has worked regularly with Robert Urwiler, chief information officer, to launch a string of digital services designed to help guests make the most of their vacation.

"We tend not to look at our work as a series of projects that require input from both marketing and IT," says Ms Lynch. "It's more about working together on an ongoing basis to address the company's strategic priorities."

Says Mr Urwiler: "What makes this relationship work is that we both respect each other's domain, and each other's expertise within that domain – but we don't stick to rigid boundaries in our discussions.

"We're not at all shy in weighing in with our opinions on each other's issues, challenges and opportunities."

Perhaps the most visible manifestation of their joint efforts is Vail Resorts' web and mobile application, EpicMix. First launched in time for the 2010-11 ski season, EpicMix uses RFID (radio frequency identification) chips, embedded in season passes and daily tickets, to track skiers' and snowboarders' progress around the company's 10 US resorts.

By collecting data through hand-scanning and automatic readers at turnstiles, ski lifts and on ski runs, EpicMix feeds back data to guests through their own, personalised portal, so they can see the number of vertical feet they have skied on a given day and the chairlifts they have ridden. They can also earn points and medals for their achievements on the slopes.

But more importantly, guests can opt to share this information with friends and family on Facebook and Twitter, along with photos of themselves in action, taken by Vail Resorts photographers located on the slopes, who identify them via their individual RFID chip.

EpicMix has been a big hit with the young and digitally-savvy audience of skiers and snowboarders who visit Vail Resorts each year, says Mr Urwiler. "That makes it fun for us, but it's also a challenge, because this audience does have high expectations and regularly interacts with other high-end brands all over the planet." By the end of every ski season, he says, he and Ms Lynch are already hard at work on enhancements to EpicMix for the next season.

For the 2013-14 season, for example, they introduced EpicMix Academy, which enables learners – both children and adults – who attend Vail Resorts classes to track their progress as certified by the company's ski-school instructors.

"The reason Kirsten and I are here, working together, is not to maintain the status quo, but to keep pushing the envelope," says Mr Urwiler.

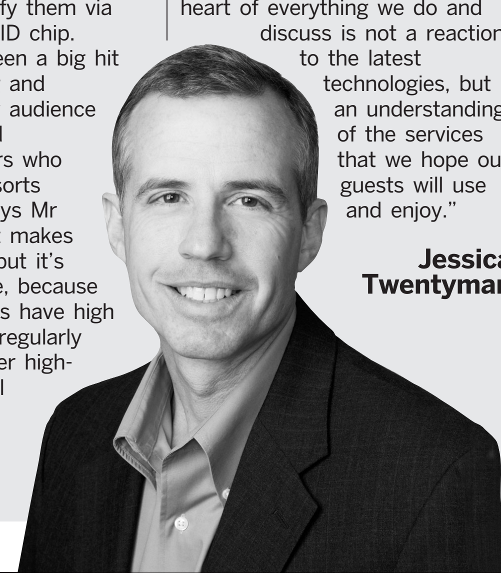
"I think some chief information officers tend to think of problems as technical issues.

"My advice to them is to get to build a personal connection with the chief marketing officer and get to understand new business opportunities.

"Build a consensus on what success might look like for your company."

Ms Lynch agrees: "Part of the strength of our relationship as chief marketing officer and chief information officer is that at the heart of everything we do and discuss is not a reaction to the latest technologies, but an understanding of the services that we hope our guests will use and enjoy."

Jessica Twentyman



Kirsten Lynch and Robert Urwiler: 'we respect each other's domain'

New role unites marketing and technology

Skills

Finding people with the right expertise can be difficult, writes *Paul Solman*

Fujitsu used to produce a print magazine for information technology executives, but the possibilities created by internet technology mean the Japanese group now targets them via its I-CIO digital platform.

"Technology has given us the ability to be very quick and personalised in reaching our customers," says Simon Carter, the Japanese company's executive director of marketing for the UK and Ireland.

"As big data comes alive, that ability to be able to use this great library of information and hone it down to what is important to customers will become very powerful."

There can be few marketing operations that have not been touched by digital technology. And, as Mr Carter suggests, many are only beginning to grasp what is possible with data analytics.

Yet as the marketing operations have become inseparable from IT, there is evidence that the skills of marketing professionals' are also evolving to create a new kind of role which marries marketing expertise with a high level of technological knowhow: the marketing technologist.

A report this year by Gartner suggests that 81 per cent of organisations now have the equivalent of a chief marketing technologist (exact job titles vary); another 8 per cent plan to add a chief marketing technologist in the next two years.

Businesses with revenues of \$500m-\$1bn have the highest percentage of people in this role, with the high-tech, communications and retail sectors leading the way.

Laura McLellan, vice-president of marketing strategy at Gartner, sees three main advantages in having such a person.

"First, companies with CMTs tend to have better processes to decide what to investigate and test, and to decide what works.

"Second, there is so much noise from software providers offering software to marketers that companies need an expert filter.

"Third, a CMT is the perfect way to build a bridge between IT and marketing."

The problem, however, is finding the right person to do the job.

The skills of the chief marketing technologist are fundamentally different from those of the traditional marketing professional, says Mara Swan, executive vice-president of global talent and strategy at ManpowerGroup, the recruitment company.

"Traditional marketing people are left-brain, creative, extrovert; they have an idea a minute," she says. "With market technologists, you are talking about a skillset that is left-brain *and* right-brain, much more analytical."

There is a shortage of professionals with that mix of abilities, recruitment experts say, and those businesses that do find a CMT are likely to have to pay a premium.

Deborah Op den Kamp, co-leader of the chief marketing officer practice at Russell Reynolds Associates, an executive search group, says there are two streams of people who are senior enough to be marketing technology chiefs but lack the combined experience that companies are looking for today.

The first group, she says, came up through the brands route and is unlikely to have been very digitally grounded, while the second started in the technology field but never had to have strong brand experiences.

"A very rare breed of person has both sets of experience," she says.

Companies looking for technologists will be faced with people who claim they are technologists but lack the range of skills, says Ms Swan.

"You hear marketing people say, I know social media, I know technology; but they don't understand how to use it to make decisions and for insight."

Until the job market catches up with the needs of the chief marketing technologist role, companies will have to look at other ways to cover it.

Michael Stull, vice-president of global marketing at ManpowerGroup, says: "There are a few companies that can find this talent and pay for it. But the rest are going to need to think about investing and developing those skillsets themselves."

Some companies are appointing combined teams to do the job, adds Ms Op den Kamp. "You cover all those skillsets in a team, as opposed to trying to find them in a single individual," she says.

Nevertheless, Matt Beck, vice-president of marketing solutions consulting at FICO, an analytics company, says he has yet to see widespread demand for marketing technologists.

"If you take an organisation such as a retailer or a grocer, I don't see somebody who is a deep technologist aligning themselves with the marketing function," he says. "I still see them aligning themselves with the technology function; that's where they would see their career path."

And Mr Carter at Fujitsu stresses that marketing departments will still need people who have basic marketing skills.

He says: "Click-throughs and Facebook likes are easy to measure, but the question I always ask is: 'So what, how much have you sold on the back of that?'

> 'There is so much noise from software providers . . . that companies need an expert filter'

On FT.com »

Video

Mobile payments 'poised for take-off' in US

Paul Taylor talks to Isis consortium chief executive Michael Abbott

ft.com/connected

Flurry of innovation leaves marketers all over the shop

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For every dollar spent on digital ads, as much as 75 cents is estimated to be spent on technology rather than the advertising space. The ratio is reversed when marketers buy TV ads.

Exacerbating the confusion is the growing threat of advertising fraud in the digital marketing business. Botnets, malicious software and other schemes are proliferating as scammers exploit the fast growing market.

More than a third of web traffic may be fraudulent, according to a recent report by the Internet Advertising Bureau, an industry trade group. That fraud costs internet and advertising companies as much as \$10bn a year in the US alone, according to industry estimates.

About a third of advertising agencies believe that the portion of fraudulent traffic on the web is higher than what the IAB reported, according to Strata, a company that provides data about ad buying.

Joy Baer, president at Strata, notes: "Ad agencies revealed an interesting dichotomy within the advertising industry; agencies are displaying high levels of confidence and are increasing their ad spend, while questioning the accuracy of reported web traffic numbers and the inflated [ad rates] they may command."

He adds: "Another interesting paradox was the optimism many agencies felt while considering rising ad costs a major concern."

That turmoil is forcing the world's largest advertising companies to race to build next-generation systems that will help marketers sort through the thousands of emerging technologies.

Indeed, when Publicis and Omnicom pitched their now failed \$35bn merger last year, executives outlined how a new advertising leviathan would lead the way in today's media and marketing world, which is increasingly dominated by technology.

John Wren, chief executive of Omnicom, said: "Publicis and Omnicom have the combination of both Mad Men and Math Men who are going to be required to win in the future." He was referencing the popular TV drama *Mad Men* that depicts the New York advertising industry in the 1960s.

The merger – which would have created the largest advertising company in the world by revenues – fell apart. But as it did so, both companies underscored their commitment to investing in technologies and systems that would help clients sort out the digital future.

"We were in great shape coming into this, and we will remain in great shape," Mr Wren said in a recent interview. "The key to remember is that it is really about the insights and not just about the data."

Some technology companies, such as AOL, are attempting to ease marketers' fears by building a one-stop shop for buying ads using these new technologies across TV, the web, mobile and social media. To help marketers better understand the performance of their ads across the various media, AOL recently paid \$101m for Convertro, an ad measurement company.

Convertro specialises in measuring the performance of marketing campaigns, from the moment a person first sees an ad until a product is bought. The tool aims to help marketers analyse the full scope of their digital advertising rather than the last ad a person clicks on before they buy.

> 'The key is to remember that it is really about the insights and not just the data'

Tim Armstrong, chief executive of AOL, said in a recent interview: "The industry now is on a last-click basis for measuring advertising. Over time, that will prove rudimentary. Convertro is an important and strategic piece of technology for our advertising stack."

Some industry executives say that among the flock of ad tech start-ups, advertising groups and big internet companies trying to persuade marketers to use their services, few are looking out for a brand's best interest.

"People will make claims about what their product can do or how a product does what it does that are inconsistent with the way it actually operates," says Mr George at Unbound.

"For a lot of marketers, it is really difficult when you have 255 companies each telling you how they can do anything."

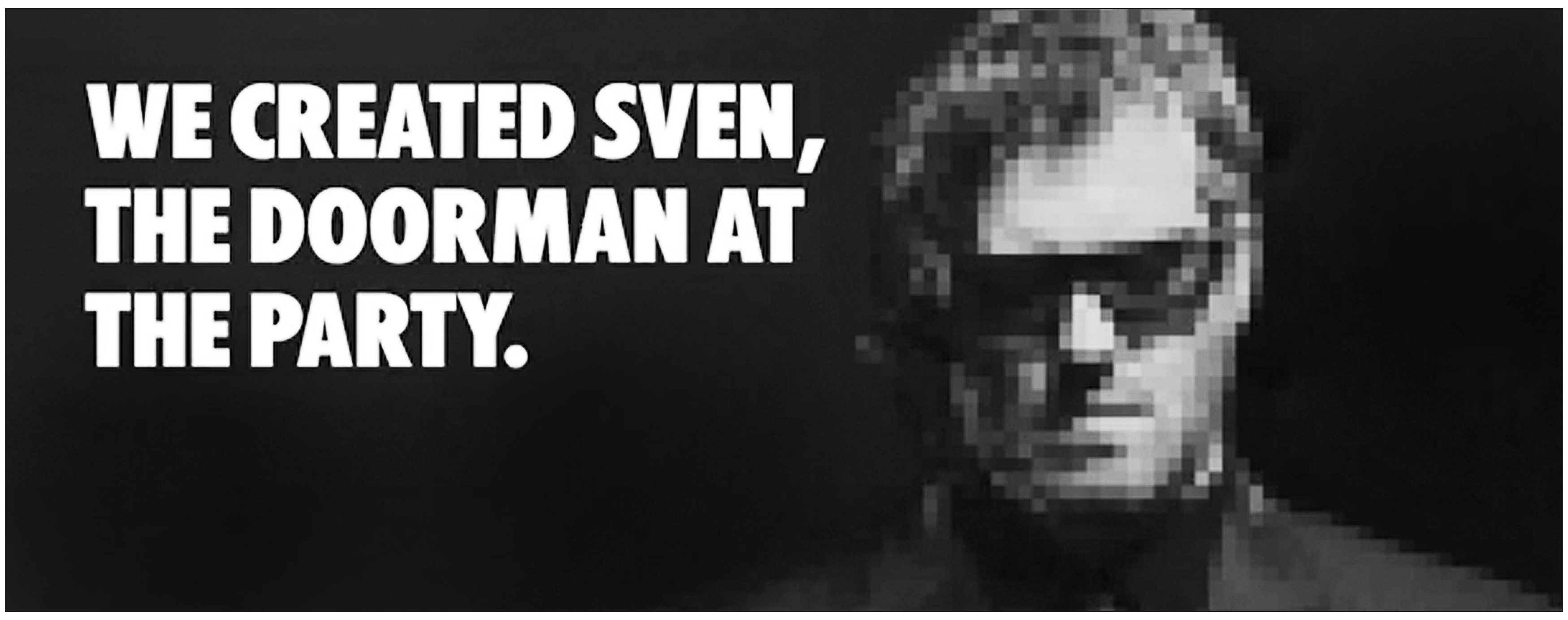
Mr George, who previously was chief digital and innovation officer at Interpublic's Mediabrands, started his new business to help advertisers and media companies decide which ad technology to choose.

"The reason we are having this conversation is because digital marketing works," he says. "That is where the consumers are. If you do it right, there is tremendous upside."

How to get ahead in social media advertising

Digital campaigns

Facebook may no longer be cool but it is still a potential hot property for marketers, writes *Maija Palmer*



That's the spirit: still from YouTube video telling the story of Absolut Vodka's launch campaign in Argentina, which used WhatsApp

Social media have become an accepted part of a company's marketing efforts. Around 70 per cent of Fortune 500 companies have a Facebook page and 77 per cent have a Twitter account, according to a study by the University of Massachusetts Dartmouth Center for Marketing Research. The average company spends around $19m on social media a year, according to research group TCS.

But at the same time there is a creeping feeling of dissatisfaction – are those social media campaigns producing results? Nate Elliot, analyst at Forrester Research, sounded the alarm on social media advertising last autumn, saying that marketers were less satisfied with Facebook and Twitter advertising than many older forms of digital advertising, including email marketing.

So what should you do? How do you make social media marketing work better? Here are the key questions:

Is there a different social media platform I need to be on?
Maybe – but don't rush.

A number of new social media platforms are becoming increasingly popular with both users and advertisers, including Pinterest and Instagram. The latter, which is owned by Facebook, recently teamed up with Omnicom, the advertising agency, to start regularly showing ads.

Pinterest, the image-focused pinboard-style social network, is interesting, says Simon Mansell, chief executive of TBG Digital, the digital advertising company, "because even though the numbers are lower, people are on there in a buying mood".

Some companies are experimenting with new messaging apps such as WhatsApp and Snapchat. Absolut Vodka, for example, used WhatsApp, recently bought by Facebook, as part of a launch campaign in Argentina. Fast-food chains McDonald's and Taco Bell have used Snapchat to publicise new products.

There is also a growing number of "secret" social networks, on which users are anonymous. Sites such as Whisper, Secret, Truth and YikYak – are growing in popularity and may become areas for advertisers to consider. Whisper, for example, is open about the fact that it tracks users and is considering targeted advertising. Gap, the US fashion retailer, has experimented with using Secret.

However, Mr Mansell urges some caution. "They are very difficult environments and it is difficult to put adverts there without it seeming very spammy. It could work for something like a Groupon, but I don't see mass applications yet," he says.

Is it still worth being on Facebook?
Yes.

Many marketers are disenchanted with Facebook because only a relatively small percentage of their posts get seen by the target audience. A brand may have thousands of Facebook fans that have clicked the "like" button on the brand's page, but it is estimated that less than 13 per cent of them will see any message put out by the company. Facebook regularly changes the algorithm that determines what posts users see on the site, often resulting in fewer brand messages being seen.

But, says Mr Mansell: "Facebook is still the big reach vehicle. It is still the biggest app on mobile devices and gives you a Superbowl-sized audience that can be targeted with pinpoint precision," he says. "Top 100 advertisers still have to be there, that is where all the eyeballs are.

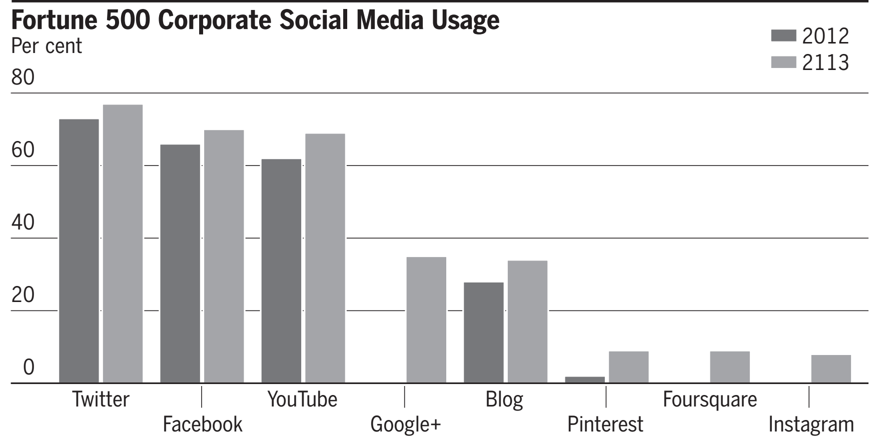
"Facebook is not cool any more. [Founder and chief executive] Mark Zuckerberg said it himself. Facebook has become just something that everyone uses to look at baby photos. But people have a lot of connection on there and use it to log on to other apps. It is not cool in the way that electricity is no longer cool."

But, says Mr Mansell, marketers might have to accept that they need to spend more money on paid promotions to increase their visibility on the site. "Organic" posts will not work as well any more.

Even if you do not pay outright for ads, a brand may still have to pay more to create really good social media content that gets noticed, says Christer Holloman, author of the Social Media MBA series of books. "Where before it was enough to post some text or a blog, increasingly companies will need to produce videos and infographics in order to be noticed."

Hang on – I have to spend more money?
Yes – and you are also going to have to get better at measuring the return on your investment.

Fortune 500 Corporate Social Media Usage
Per cent



Source: University of Massachusetts Dartmouth Center for Marketing Research

"I think social media marketers have been guilty of doing things at any cost, without looking at what the returns are. And while that may be fine when you are experimenting with different platforms, now that it is becoming a more established part of the marketing programme you are not able to get away with not measuring the effects," says Mr Holloman.

"If a company spent nothing two years ago, last year it might have spent £10,000 and this year £20,000. More people are starting to notice this expense and ask what the money is going towards.

"So marketers have to become more savvy about calculating ROI," he says.

It is not surprising, perhaps, that measurement tool vendors are a fast-growing sector of the social media industry. Social media analytics company Socialbakers, for example, recently completed a $26m financing round and said it had tripled revenues in the past year.

Jan Hammer, technology investor at Index Ventures, one of the backers of Socialbakers, says measurement tools are becoming increasingly sophisticated.

"We can now look at how a brand like Nestlé is doing vis-a-vis Kraft for German males aged 25-30 years old, on Twitter," he says. This, he adds, is starting to turn social media data into something on which action can be taken immediately.

What else could I do differently?
Listen more – and stop posting pictures of cats.

Gideon Lask, founder and chief executive of Buyapowa, the social commerce provider, says most of the world's top 100 retailers are still using social media mainly to broadcast messages out, and not to listen. Two thirds of companies, for example, were following just five people on Twitter for every 100 followers they had. "It shows that they are not considering it a two-way medium," Mr Lask says.

Around a third of retailers are still putting out more silly posts – such as pictures of cute animals – than messages about their products and services. Mr Lask points out a Facebook post of a cute dog by retailer Sears: "Winter's nearly over! It's Friday! Hooray! Weekend! Here's a picture of a pug!" To which a disgruntled customer had replied: "Perhaps they should have sent the pug to repair my countertop stove. Probably would have gotten better service."

A few retailers, however, are finding new ways to become more interactive with their social media audiences.

Tesco, the UK supermarket group, for example is harnessing recommendations from social media influencers in a programme called The Orchard. Shoppers are invited to try out products and then recommend them to friends over social media and in person. The social media mentions are monitored and graded by Tesco and the better a shopper is at socially sharing, the more free or discounted products they are invited to try.

Brew Dog, the Scottish brewery, meanwhile, asked its social media followers to help it create a new beer, choosing the flavour, bottles and even the name – and then invited them to buy it.

"Of course it created a ready-made market for the product," says Mr Lask. "We call it co-buying."

@maijapalmer

Multitude of tools and platforms 'make job incredibly complex'

Interview
Blake Cahill
Head of global digital marketing, Philips

Understanding the technology is vital, as is judgment, writes *Jessica Twentyman*

Now that consumers have a wealth of online reviews, social-network conversations and price-comparison websites at their fingertips, almost everything about the way they consider and make a purchase has changed.

That, in turn, has huge consequences for how the modern marketing professional interacts with them, says Blake Cahill, head of global digital marketing at Philips, the electronics group.

For many years, he says, it was perfectly valid to view the "customer decision journey" as a funnel: customers started out with a large number of products under consideration and gradually whittled them down to arrive at a final choice.

Marketers' job was to target customers at a few, well-defined points along this funnel, with the aim of influencing their final decision.

Now, he says, the customer decision journey is more of a loop: once someone has made a purchase, they not only share their experience with others, but also with the brand itself. Since these conversations may result in further sales, the job of marketers is to listen, respond and take note of the feedback they're offered.

At the same time, those "few, well-defined points" that precede a purchase have proliferated wildly.

Mr Cahill says: "What makes this job incredibly complex now is the vast range of platforms and tools where conversations take place and the audiences that they can reach."

"Customers have always commented on products and services and influenced others to buy – but they haven't always done it on platforms where the whole world can see what they have to say."

Today, he adds, a whole range of mobile and social technologies move customers through the loop.

"As a marketer, if you don't understand those technologies well and how they're being used by relevant audiences, it's going to make it incredibly tough for you to do your job well."

This is the thinking behind Philips' Digital Command Centre, launched in March at the company's global headquarters in Amsterdam. Here, information about relevant online conversations is combined with data relating to the company's performance, and displayed across a bank of wall-mounted screens and desktop computers.

"Just standing there, watching the screens, is fascinating to me," says Mr Cahill, "but what's more important are the correlations that the team in the centre is able to make between a surge in online conversation about a particular product, for example, and the impact that has on orders at our online stores."

Not every company can afford to invest in its own command centre – but all marketers should at least be looking to build their own awareness of where pre- and post-sales conversations take place and how quickly the company responds to them, says Mr Cahill.

"We all tend to get a bit caught up in the technology side of the modern customer experience, because it's all so new, but what's more important is making sure that you're marketing at greater speed, and with greater responsiveness and greater accuracy.

"Part of the marketing skillset now is being able to use good judgment when it comes to applying technology to achieve those results."

In his 18 months at Philips, Mr Cahill says he has come to see that this is just as true in business-to-business (B2B) marketing as it is in business-to-consumer (B2C) marketing.

"For me, it's just as important that a city authority buying bulbs for street lighting has the same experience with Philips as a customer buying one of our airfryers for their home.

"That's the real goal – not the technologies we implement along the way."

Blake Cahill: marketers must listen and respond to customers

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Buying space takes leaf out of Wall Street's book

Programmatic ads

Automated trading systems have a big future but barriers are delaying adoption, writes *Emily Steel*

Even Hollywood could not have fashioned a better set to showcase the glitz and glam of the ad business. Actors, musicians and comedians mingled with marketing executives at dozens of posh Manhattan theatres and lavish party tents.

The occasion was the annual "upfront" market this month, where US broadcast networks attempt to lure marketers into committing tens of billions of ad dollars to the coming television season.

But one announcement – from Walt Disney's ABC – pointed to a new way of doing business that relies on technology and data rather than cocktails and conversations. The US broadcaster unveiled plans to start testing so-called programmatic technologies for selling commercial time for its online videos.

That means that marketers will be able to plug in to automated systems that mimic the technologies of stock exchanges for buying ad space instead of placing orders via telephone calls and fax machines.

Marketers can use the systems to target ads in real time at those who are most likely to be interested in their products, regardless of the TV programme. A new parent watching the same series as a college student might see an ad about a baby products retailer, while the student sees an ad for a hip fashion store.

The news comes as several other broadcasters including Comcast's NBCUniversal experiment with programmatic advertising. While it is still early days, some advertising chiefs predict that most ads – from television to the web and mobile phones – ultimately will be bought and sold through these technology-driven systems.

"We've always believed that everything that could become digital would," said John Wren, chief executive of advertising group Omnicom, in a recent interview.

Global programmatic ad spending is expected to surge in the coming years. Marketers will spend $34bn via programmatic systems by 2017, about double the $16bn predicted for this year, according to forecasts by Interpublic's MagnaGlobal. (The total global ad industry is set to reach $522bn this year.)

During a speech at the International Advertising Association this month, Rob Norman, chief digital officer at WPP's GroupM, outlined the tensions disrupting the advertising industry amid the adoption of more data and tech-based systems.

A series of barriers are holding back adoption of these new technologies by the ad industry, he said, including fears that reliance on data would eradicate creativity from the business.

There were also, he said, issues with online advertising fraud, and worries that corporations would abuse consumer data, that marketers are paying for ads that consumers never see, and that a focus on short-term results could hamper long-term business success.

Media companies, meanwhile, worry that the rise of programmatic technologies will force ad rates to tumble. Traditional publishers, such as the New York Times, have faced struggles trying to expand digital ad revenues, because marketers no longer need to pay top dollar to reach customers by advertising on the homepage or other prominent slots.

> 'We've always believed that everything that could become digital would'

Time out: Scott Bakula, star of TV's 'Quantum Leap', arrives at the CBS upfront afterparty this month Getty Images

In his speech, Mr Norman said that, for programmatic technologies to be adopted, advertising inventory must be digital. Other issues that must be resolved include the need for media groups to determine pricing guidelines to avoid undercutting their ad sales. Advertisers would need to determine the portion of their budgets they are willing to commit to programmatic ad buying. They must also understand better the costs of the technology systems and how these could be offset by better return on spending.

"The road to the programmatic future is rocky, but the destination is certain," Mr Norman said. "That certain destination is one in which all inventory that can be traded programmatically will be, apart from exceptional assets that will, as they do today, represent a discrete marketplace of the highest value."

Interpublic's Mediabrands group has set a goal of tapping automated ad buying technologies for half its media investments by 2016. The advertising group used these buying systems for about 8 per cent of its $37bn in global billings in 2013 and expects this to reach 25 per cent this year.

Matt Seiler, global chief executive of Mediabrands, says the more marketers rely on technology to automate ad buying, the more time they can devote to developing big ideas and more creative campaigns.

Adoption has also been held up by the rise of a wild west of ad technology companies, each offering a different service to marketers for automating their purchases of advertising space. Some industry executives calculate that about 75 cents of every dollar spent on digital ads goes to the ad technology instead of the advertising space. That ratio is reversed when marketers buy ads for television.

As a result, big media and internet companies are rushing to develop systems that create one-stop shops for buying ads across television, the web, mobile and social media. One of the latest groups was AOL, which this year announced that it was rolling out a new streamlined system. In recent weeks, Comcast acquired FreeWheel, which inserts ads in digital videos, in a deal worth up to $375m.

Pavement artistry: augmented reality as used by Pepsi Max has the potential to transform advertising and marketing, say proponents

Advertisers extend their tentacles

Augmented reality The live overlay technique is in its early days but generating interest, writes *Jane Bird*

A woman waiting at a bus shelter in London in March was astonished to see through the end panel a burning meteor apparently hurtling towards her along the pavement.

Other people were treated to similarly surprising sights, including a huge tentacle emerging from a manhole to snatch a pedestrian, a trio of flying saucers and a tiger on the prowl.

The panel was not clear glass, as it appeared, but a screen showing live video of the street on to which the special effects were superimposed.

They were created for Pepsi Max using augmented reality (AR), a technology that can display computer-generated images on to smartphones, shop windows, virtual "mirrors", windscreens and wearable devices, such as watches and glasses.

It uses the camera and geographic positioning software embedded in these devices to capture and record the environs and what the viewer is seeing and doing.

AR has the potential to transform advertising and marketing, says Ori Inbar, chief executive and co-founder of AugmentedReality.org, a non-profit organisation. "It can turn any ad into a live experience, which is far more engaging for the viewer and also lets companies gather information and see how people react," Mr Inbar says.

Early versions were somewhat gimmicky, Mr Inbar says. But in the past year this has begun to change, with companies encouraging customers to use smartphones to scan advertisements that connect them to websites with advertising and marketing content that relates to their current activity.

"AR promises to fulfil the dream of every marketer, because you can sit on customers' shoulders and see how they are shopping, buying, using and interacting with products," Mr Inbar says. "This will help define, explain and improve products."

Companies will be able to understand where consumers are struggling and what they do not like, says Mr Inbar. "They can use this information to make products that are more appealing and create a far deeper and more powerful engagement with the brand than mere advertising."

One company trying out the idea is Net-a-Porter, the online fashion retailer. In February, it launched a glossy magazine whose pages readers can scan using a special app on their smartphones. This connects them to websites where they can buy the items pictured or discover more about them.

It is not just frivolous fun, says Sarah Watson, group mobile manager, but "adds value and improves the customer experience".

With a few taps of the screen, you can see a pair of shoes in different colours, make a purchase or watch a video interview with one of the designers, says Ms Watson.

Eventually, customers will be able to see themselves in the clothes. "We want to keep hold of customers and give them a more immersive experience," Ms Watson says. "Meanwhile, we can see which pages and items are most popular, and use the information to develop our business strategy."

AR must include something useful to be worthwhile, says Mr Inbar. He cites the TrackMyMacca's app, which lets customers research the ingredients of a McDonald's meal they have just bought by taking a picture of its box with their smartphone.

It combines the customer's location with McDonald's supply chain information to pinpoint the source of ingredients and details of individual farmers, bakers and fish suppliers.

Similarly, Ikea customers can point their tablet or smartphone camera at a piece of furniture in the company's printed catalogue to see how it might look in their room.

At the moment, most such implementations require people to download individual retailers' apps. This creates a fragmented experience for customers, who have to follow a lot of different steps, says Ms Watson.

"Once AR is built into phone cameras as standard, it will be more powerful and mainstream, enabling it to reach its full potential," she says.

The development of smaller, more stylish wearable AR devices will also boost uptake, according to Parvaze Suleman, head of customer experience management for Europe at Virtusa, an IT services company.

Having to point your smartphone at an advertisement in the street is inconvenient; you feel silly, he says. "When people can wear headsets that look like normal glasses, the technology will be adopted more widely."

Restaurants will be able to transmit ads direct to consumers wearing Google Glass headsets as they walk past, for real time advertising such as lunchtime deals, Mr Suleman says. "Ads can become much more focused, less random."

'When people are able to wear headsets that look like normal glasses, the technology will be adopted more widely'

The industry is experimenting with the technology and exploring how people interact with the real world to help develop a fresh approach, Mr Inbar says.

"It's like in the early days of cinema when the camera was used as if it was in a theatre pointing at the stage. Then moviemakers learnt to move the camera, pan and focus close up on the actors' faces."

AR should not distract people from the real world, he says. "It is very different from the usual screen set-up, or even virtual reality, which makes us ignore what's happening around us. AR should create a deeper engagement with where you are and what you are doing, and be superior to what you could do with a computer."

So what does the advertising industry think? Most agencies are holding back.

Carolyn Nugent, head of digital at Kinetic, a media buyer, says the jury is still out on whether customers will want to be alerted to local restaurant deals or shop discounts via overlays on their smart glasses.

Bhavin Pabari, digital strategist at Grey Possible, a digital advertising specialist, says the technology is not ready yet, "It requires too much effort for consumers and it can be prohibitively expensive, he says. "Brands think it's not worth it; they don't see the reward."

AR has not reached the tipping point where it becomes core for everything, as has happened with mobile phones, Mr Pabari says. "Brands have a lot to gain from being the first to crack it, and once that happens everyone will copy. But we aren't recommending it and our clients aren't requesting it."

Data brokers start to feel the net tighten

Privacy

Lawmakers and consumer groups urge US to bring in stronger regulation, writes *Emily Steel*

Acxiom already knows a lot about you and 700m-plus other customers around the globe. But the data broker wants to know more.

In recent weeks, the New York-listed company has struck a $310m deal to buy LiveRamp, a start-up that connects information about people in the bricks-and-mortar world – such as their political leanings and shopping habits – to their digital profiles.

Acxiom now tracks hundreds of details about individuals, and the tie-up puts the group on the path to creating consumer profiles in unprecedented detail.

Marketers can use those details to target and personalise ads on the web, mobile and eventually television and other digital devices.

The goal is to attain the holy grail of marketing: showing the most persuasive ad to the right consumer at precisely the time they are most likely to be swayed.

"Acxiom is, after all, a data refinery," Scott Howe, Acxiom's chief executive, said during a recent conference call. "We prospect the world for valuable raw data, refine disparate data points into cohesive data insights and then build standard pipelines to fuel all the supporting data-enabled applications."

Yet Acxiom came under additional scrutiny following its LiveRamp acquisition because of the start-up's ties to Rapleaf.

In 2010, Rapleaf faced a firestorm of controversy after revelations that it was breaching Facebook's privacy practices by buying information about users of the social-networking site.

Acxiom stressed that it was buying LiveRamp, not Rapleaf, and that it complied with privacy regulations and guidelines. The company also is attempting to shed more light on its business, launching a service that shows consumers some of the information it has about them.

Susan Bidel, a marketing analyst with Forrester, the research company, said in a recent blog post: "While Acxiom is working hard to cement its reputation as a privacy-conscious data broker, it must still contend with legislators and regulators who are extremely critical of its business model.

"With this acquisition, the company is asking potential clients it has never worked with to trust it with massive amounts of personally identifiable information, to keep those data secure and manage how they are shared with a whole host of other vendors.

"While the marketing organisation might be excited about some of the opportunities this offers, we are not sure that privacy and compliance teams will be ready to take the leap."

Acxiom and other large data brokers are already under fire amid broader privacy concerns.

The US Senate Committee on Commerce, Science and Transportation and the US Federal Trade Commission have launched investigations into the largely unregulated industry. A debate is waging among lawmakers, regulators and corporations about whether the collection and use of data violate individuals' privacy and are cause for concern.

Consumer groups worry that people are unaware of data tracking and have little opportunity to stop it. They also fear lawmakers and regulators are struggling to keep pace with developments in the industry.

Some US lawmakers are calling for more regulation for the data-broking industry. One issue under the spotlight is how companies score individuals based on financial and health data and then sell that information without people's knowledge or consent.

"These scores offer predictions that can become consumers' destiny, whether they are right or wrong," says Pam Dixon, executive director of the World Privacy Forum, a non-profit research group. "Fair use of scores that consumers can see and correct is one thing, but secret scores can hide discrimination, unfairness and bias.

"Trade secrets have a place, but secrecy that hides racism, denies due process, undermines privacy rights or prevents justice does not belong anywhere."

Data brokers say they are unaware of instances where their data are being used to discriminate against people. The industry also argues that the data are used to show more relevant ads to consumers, helping pay for the media they watch and read.

Few laws exist in the US that protect the privacy of individuals' information beyond data that are tracked about children or information that could be used to make decisions about credit, employment insurance or housing.

Data protection laws in Europe are more robust and growing more stringent.

The EU has backed a "right to be forgotten", making it easier for people to remove personal information held by internet companies such as Google as well as newspaper publishers, catalogue systems and even public libraries.

Scott Howe: data 'refiner'

White-collar robots roll into schools, hospitals and offices

Automation

New tools can free humans for less mundane work, says *Hannah Kuchler*

A cross between a Dalek from the BBC's *Doctor Who* series and R2-D2 from *Star Wars* could help prevent the deaths of children in school shootings across the US, as robots move out of factories and into service industries.

Shiny and white, the autonomous guard robot patrols an area, using data from optical and sound sensors along with licence plate recognition to feed information to law enforcement authorities or private security guards.

Stacy Dean Stephens and his team at Knightscope came up with the idea after the Sandy Hook shootings at an elementary school in Connecticut in 2012. As a police officer in Texas, Mr Stephens thought law enforcement officers needed better technology.

"After Sandy Hook, all the analysis showed that if you were able to get officers inside the school to the subject just one minute earlier, as many as 12 lives could be saved," he says. "I wanted to look at how we would go about using technology to help achieve that goal."

The Knightscope K5 Autonomous Data Machine uses a combination of robotics and predictive analytics to determine when the police or a security company should be alerted to a threat.

Five feet tall and packed with sensors, it can carry more than a police officer can fit on his or her back belt and save them from the most "monotonous, boring and mundane work", Mr Stephens says.

The robot is being tried out on the campuses of Silicon Valley tech companies, which are more able to experiment than schools.

Knightscope has received interest not only from the education sector, but also from organisers of the upcoming Olympics in Brazil and Tokyo, large US security companies and other businesses from the Middle East to China.

The start-up is at the forefront of a new era in robotics, as smarter technology begins to creep into more white collar and even professional industries.

Erik Brynjolfsson, who along with MIT Sloan School of Management colleague Andrew McAfee wrote the recent book *The Second Machine Age*, says technology is being developed that could disrupt hundreds of millions of jobs.

He says that while the first machine age, the industrial revolution, replaced people's muscles with machines, the second is taking over cognitive tasks done by humans.

"It is going to have some similarities to the first machine age – there will be tremendous bounty – but there will also be very important differences," says Prof Brynjolfsson. "When you replace muscle work with machines, you still need humans to make decisions about what is to be done, making human work more valuable, but in the next wave it is not as clear whether machines complement or substitute humans."

Machines can now diagnose breast cancer better than humans, first-year lawyers have been almost replaced by legal discovery software and self-driving cars have a mental picture of the blind spots of every vehicle on the road and can see one slowing from further away.

'The biggest advantage is that robots are good for doing things that are dangerous'

Robots are often cheaper than humans, work longer hours and can be used to do less safe tasks.

Aethon, a Pittsburgh-based company, sells its Tug robot – a self-driving trolley – to hospitals, which use it to transport medicines, samples for the lab, meals, laundry and waste.

Aldo Zini, chief executive of Aethon, says hospitals obtain "nice hard dollar savings" with a 150 per cent return on investment over a few years. But he adds: "The biggest advantage is that robots are good for doing things that are dangerous or not very suitable for a human to do – wheeling a 500lb laundry cart, picking up infectious waste, transporting very expensive chemotherapy drugs."

But some robots come in less robot-like shapes. Blue Prism, a UK-based company that works for the back office of customers including Barclays and the Co-operative Bank, sells a robot that looks just like automated software. What makes it a robot is that it fills in forms and uses computer systems just like a human, without any extra changes to the IT platform.

Alastair Bathgate, chief executive, says robots can be trained to do the work of tens of thousands of back office employees.

Clients can still have a human answering the phone, but when they take down the details of someone's lost credit card, for example, they can pass the form-filling to a robot.

"This is not about a load of P45s [the form given to UK workers when they lose their jobs]; it is about reallocating costs," he says.

Robots, he adds, are not very good at apologising to customers, but are more accurate than humans at completing the paperwork.

For Illah Nourbakhsh, a professor at the Robotics Institute of Carnegie Mellon University in Pittsburgh, one of the most important things companies must think about when introducing robots is the effect on existing employees.

"When you add robots you don't take away all the people. Psychologically, it can have an impact on people's relationship with robots and management," he says.

"It introduces a whole new extinction dynamic."

This article has previously been published at ft.com/connected

Inkjets can make a splash in battle with laser rivals

Paul Taylor

It used to be easy to chose what type of printer you bought. Inkjets were for consumers while laser printers, with their lower cost per printed page, were for businesses. If you planned to print photos or marketing materials, you chose colour, otherwise black-and-white was fine. Most business had separate copiers, fax machines and printers.

But the rules – or at least guidelines – of the game have changed. Today, colour is often no more expensive than black-and-white, inkjet speeds have increased sharply and in terms of performance, the fastest machines are now on a par with some lasers.

And multifunction machines combining the functions of copier, fax and printer have become the norm in both home and office.

So, for example, the machine I use at home is a Samsung C1860FW colour multifunction laser machine that costs about $350 (around £275 in the UK) and is controlled via a 4.3in colour touch screen. In the office, we use a laser-based Xerox multifunction machine that serves the whole floor.

I was struck, however, by some recent research from InfoTrends. The research firm focused on the printer market, noting that, despite an influx of low-cost laser machines, inkjets are expected to account for 56 per cent of printers used by US businesses by 2016.

The research suggested that small and medium-sized businesses (SMBs) are looking to inkjet technology for their printing needs, because of the cost savings, improved speeds and added functionality that ink delivers.

So I set out to discover whether Hewlett-Packard's claim that inkjets could really rival colour lasers was justified. For the past few weeks, I have been testing one of the latest HP inkjet-based multifunction devices aimed at the SMB market.

HP's Officejet Pro 8630 e-All-in-One is one of three new HP printers that support printing from users' mobile devices including smartphones and tablets. The 8630 also supports HP's wireless NFC (near field communications) touch-to-print technology that enables users to print an image from an NFC-enabled mobile device such as a Samsung Galaxy smartphone simply by tapping it on the printer – a system I found worked remarkably well.

The 8630, which costs $400 and went on sale in the US and some other countries this month, includes an additional paper tray, colour cartridges and OCR (optical character recognition) software.

I found the 8630 lived up to its reputation for speed and quality – it delivers up to 21 pages per minute and 16.5 pmm in colour and uses five individual ink cartridges, which makes it more efficient than inkjets with a combined cartridge.

It also comes with an additional 250-sheet paper tray and can print on both sides of a sheet of paper at up to 10 ppm. Scanning is quick at up to 14 ppm and documents can be scanned to email, network folders or the cloud – just like the big Xerox printer at work.

Overall, I have been impressed with the 8630, which is controlled by tapping and swiping a 4.3in touchscreen and can be monitored remotely over the internet.

For comparison purposes, I have also been testing HP's Laserjet Pro MFP M127fw, a black-and-white laser machine that copies, scans, faxes and prints at up to 21 ppm. It costs $140 less than its inkjet companion at $260, but delivers similar performance for those who do not need colour.

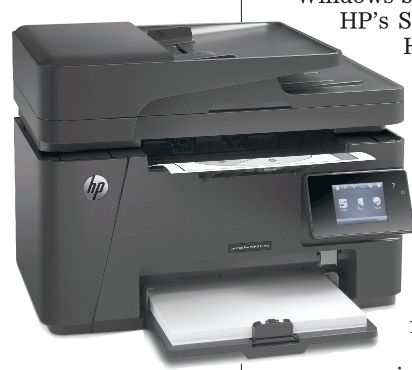
Like the Officejet Pro 8630, it supports wireless connectivity and printing from mobile devices, comes with a 35-page automatic document feeder and is controlled using a 3in colour touchscreen. As I discovered, it is also very easy to set up on a Windows-based machine using HP's Smart Install.

However it cannot match the 8630 when it comes to paper handling – it has a 150-sheet input tray – or "monthly duty cycle". While the 8630 is designed to handle up to 30,000 pages a month, the M127fw supports a maximum of 8,000.

Traditionally, laser printers were cheaper to run than inkjets, but that is not necessarily the case today.

HP says all its Officejet Pro printers produce high-quality colour prints for half the price of colour laser printers – a significant saving if your business involves printing documents with a colour component.

My overall conclusion is that modern inkjets such as the HP OfficeJet Pro 8630 can indeed rival colour laser printers and produce professional colour printing with laser-sharp text and vibrant images, and provide SMBs with a compelling alternative to a laser-based machine.



HP's Pro 8630 e-All-in-One (left) and the Laserjet Pro MFP M127fw (above)

Top picture: Dreamstime

Software shows workers the way to greener future

Environment

Tools such as Empower and Scrunch can encourage good practice, writes *Jane Bird*

Persuading employees to turn off lights and monitors when they finish work, and unplug phone chargers when not in use, can substantially reduce corporate energy bills as well as boosting a company's green credentials. But altering people's behaviour is difficult, as any manager will know.

This is especially true when you are a small department in a large organisation, says Steven Uden, head of citizenship at Nationwide Building Society. Software can help by showing people what they can do to cut carbon emissions, monitoring their behaviour and rewarding it.

His team of nine has the task of encouraging 16,000 staff across three administrative centres and 700 offices, to reduce the organisation's carbon footprint. To help achieve this he is using Empower, a cloud-based software application developed by The Carbon Trust, a UK government-backed advisory group.

"It will not influence somebody who does not want change," says Mr Uden, who has been piloting Empower for the past year. "But you can lower the barriers by showing people the small things they can do and letting them decide what action to take."

Empower gives staff "virtual tours" of their offices to show how much energy they could save by taking actions such as turning down a radiator, using the stairs rather than the lift, or switching off a monitor at night. They are encouraged to make pledges, such as "I will reduce energy consumption by 20 per cent."

Six hundred Nationwide employees have made 4,000 pledges, helping the company reduce its carbon footprint by 15 per cent since 2011.

One of Empower's most useful features is its interactivity, says Joseph Williams, technical and change manager at The Carbon Trust. "It lets employees give feedback and suggests ideas."

Most people are willing to do these things, Mr Williams says, "yet there is often a big gap between what they say they are prepared to undertake and what they actually do".

Using software to tackle green issues is much more affordable than paying for specialist consultants, says Luke Nicholson, director of CarbonCulture.net, a social enterprise.

"Software can be deployed on a large scale both in big companies and in small businesses that have tight budgets and little time to worry about their carbon footprint."

CarbonCulture.net has developed a program called Scrunch that helps organisations encourage staff to change behaviour by suggesting ideas to them, monitoring their response and rewarding them with bonus points for repeated good practice.

To sustain momentum there needs to be an element of fun, Mr Nicholson says. "Winners might receive recognition in the form of an award, or an environmentally friendly prize such as a bike." Once such software systems have been developed, they can be deployed across multiple locations at no extra cost, he adds.

CarbonCulture.net software presents graphs of energy use in a way that reveals fresh insights and helps make rapid improvements. One customer reduced its gas bill by 10 per cent within a few weeks.

Applications that help organisations tackle green challenges are in their infancy, but uptake is growing fast. Empower is used in schools, hospitals and local authorities, and is being translated into Chinese, Spanish and Welsh.

In future, organisations could use such applications in conjunction with social media to gather staff opinions, understand barriers and motivating factors, participate in online focus groups and co-ordinate activities such as car sharing.

Social media offer a high-profile way of reacting to feedback, says Mr Williams. "If people say: 'We can't cycle to work because there are no showers', their employer could respond live by introducing shower and bike parking facilities."

Environmental software lets organisations measure and analyse results, which is crucial to low-carbon practices being widely adopted. It can also pay for itself by cutting fuel bills and waste.

Empower, which costs from £5,000 a year, delivers an annual return on investment of up to 10 times this, Mr Williams says. It seems you can boost your green credentials and make money at the same time.