UNLOCKING JAPAN
Why Asia’s digital pioneer is now embracing global technology trends
Japan’s adoption of digital services is an anomaly in the marketplace. On the one hand, it leads the way on global trends, while on the other it rarely embraces those beyond its shores. It has long been considered the most technologically advanced country in the world: it launched 3G in 1999 and was using mobile internet while the rest of the planet was playing Snake on their Nokia 3310s. The technology being pioneered was for the Japanese market alone, though, and suffered from a “walled garden” effect while the rest of the world adopted smartphones and connected technology systems.

However, the landscape has changed, and this issue of The Review takes a close look at Japan’s evolving digital ecosystem. With the rise in popularity of the iPhone, and the habit of paying for content from its i-mode days, Japan is now the biggest app market in the world. That, and its familiarity with contactless payment systems, make it one to watch for NFC payments.

This issue also explores how the user experience is the biggest driver for technological advances. Marie Austenaa of GSMA notes that the username and password login process has had its day, because it requires too much effort from the user; Microsoft’s Dave Coplin explains that the way we use technology in the workplace should be more dynamic and interactive, in a similar way to social networking sites; and EZ-Link CEO Nicholas Lee notes that customer expectations of mobile payments are driving change for contactless card payments.

The user experience is also driving the use of mobile phone networks for delivering health messages to remote areas. This simple solution is not only supporting healthcare workers, but it is saving lives.

Don’t forget to keep up with The Review’s sister website, /review (review.gemalto.com), where you will find exclusive articles and videos, – and please enjoy the issue.

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 Winning ideas

We want to know what you think – that’s why we run a reader survey with every issue of The Review. Visit review.gemalto.com/survey and follow the instructions. As a ‘thank you’ for completing the survey, the following people received prizes: Olga Diaz received a Sonos Wireless speaker, Hans Chewdler received a Sony wireless camera lens and Jonathan Bye received a Pebble smartwatch.
Technology is supposed to be a leveling force that enables everyone to contribute. It shouldn’t be exclusive.”

DAVE COPLIN, MICROSOFT UK

Read more on page 12

Mobile coupon boost

The number of mobile coupon users is expected to rise from 560 million to 1.05 billion by 2019, according to a new report. Juniper Research claims that a boost in retailer engagement with the various mobile channels will be behind the increase. Its findings are published in Mobile Coupons: Consumer Engagement, Loyalty & Redemption Strategies 2014-2019.

Dr. Windsor Holden, the author of the report, explained that retailers integrating mobile coupons with loyalty programs will be a significant development, as will the increasing accessibility and cooperation of the companies providing the technology. MMS coupons are expected to cease, and NFC will begin to adopt a more prominent role. “While NFC has failed to achieve traction this far, the emergence of a cloud-based secure element through HCE [host card emulation] is likely to stimulate greater integration into wallets,” Dr Holden told contactlessintelligence.com. “We believe that this in turn will provide the visibility that should encourage brands to run campaigns using the technology.”

However, HCE does not offer the same level of security as dedicated or embedded secure elements so it needs to be complemented by other secure credentials such as dynamic tokens. The research also showed that the use of mobile coupons is helping push customers toward certain retailers and manufacturers. A lack of point-of-sale redemption technology is apparently the main hurdle preventing it from catching on.

Download the report at juniperresearch.com/reports

Batteries not included

Researchers at the University of Washington are developing gadgets that send data over Wi-Fi, but do not need batteries or any external power. The devices instead take energy from the Wi-Fi, TV, radio and cellular signals already present in the air, recycling existing waves rather than creating their own.

This affordable, power-free technology means that the internet could be made available in parts of the world where it does not already have a significant presence. It could also be deployed cheaply and easily around the home to help control heating systems. The researchers have also created versions that can power LEDs, motion detectors and other small devices.

The development coincides with the launch of an ultra-low-power microchip design from Virginia-based start-up PsiKick. Said to consume between 1% and 0.1% of the power of similar microchips, it can also use energy from other sources, such as a small solar panel, a thermoelectric material that absorbs body heat or a device charged by movement.

It could also be used in conjunction with an antenna that collects ambient radiowave energy. In this way the microchip is similar to the energy-free gadgets. The latter only has a range of 65cm, but did reach 2m in some tests. Low energy consumption products are definitely on the way.

You can find out more at psikick.com
Smartphones as hotel keys

A quiet digital revolution is taking place within the hospitality industry, allowing smartphone users to interact with hotels in new ways. Guests can now check in using their handsets or choose a room aided by floorplan schematics and photos flashing up on the screen. They can even use the device as an alternative to a door key. Hilton Worldwide is looking to introduce all of these facilities to its hotels shortly, as is the Four Seasons.

To some, the traditional hotel check-in experience is lagging behind that of airlines, where customers are able to make all kinds of requests online and avoid having to stand in lengthy lines. Hotels also need to engage with Millennials – the generation born between 1980 and 2000 – that has barely experienced life without the internet or smartphones.

The idea is not without its critics, however. Many agree that while the ability to select rooms electronically may appeal, a lobby clerk or concierge might also be able to add that personal touch by recommending a room where guests won’t be disturbed by nightlife or road noise, for example. The kind of useful information that isn’t available via the smartphone.

Keeping tabs

The ability to track your child and have direct contact at all times may give peace of mind to some parents. Consumer electronics giant LG has a new device, the KizON, that allows moms and dads to do just that. It recently went on sale in South Korea, with plans to release it in the US and Europe.

The KizON is a colorful wristband for children that is equipped with Wi-Fi and GPS. Using this technology, parents can check on their child’s whereabouts using their smartphone. A "One Step Direct Call" feature is also included, allowing kids to press a single button to dial a pre-programmed number. Likewise, parents can call the KizON, which has a built-in mic that turns on automatically if the call is missed or not answered within 10 seconds, allowing them to snoop.

But for some, the idea is a step too far. Reynol Junco, Associate Professor of Education and Human Computer Interaction at Iowa State University in the US and a fellow at the Berkman Center for Internet and Society at Harvard University, told npr.org: "It's a device that engages our fears about society, and I think it sends a message that the world isn’t safe. The world is both happiness and doom, but that lack of safety has always been there."

Presumably, the device would also not go down well with lawmakers from Massachusetts, Illinois and Texas, who in November 2013 introduced the 'Do Not Track Kids Act'. Some believe that children have a right to their privacy, including San Francisco lawyer Stephen Roberts, who in 2008 wrote: "Children do have privacy rights, just like adults, although even the most important constitutional rights of children may be limited because of their minority status."
DIGITAL DIGEST

Mobile operators are increasingly realizing that they have to work together”
MARIE AUSTENAA, GSMA Read more on page 32

The intelligent office
You arrive at work and the coffee machine automatically makes your favorite drink; you walk into a meeting and everybody instantly gets your LinkedIn details. This scenario could soon be a reality thanks to Robin, a start-up based in Boston in the US. It is developing small wireless sensors that companies can place around a building, giving them the ability to track an employee and simultaneously let each person know where their colleagues are.

The software uses Bluetooth LE, with information shared between the handset and the transmitter as required. When an employee enters a room, their presence is handled accordingly, with different settings for meeting rooms and kitchens, for example.

According to Robin’s co-founder and CEO, Sam Dunn, the technology is already in use at newspaper publisher News Corp in New York. Dunn sees no issues with privacy, comparing the use of Robin to creating a Facebook profile.

Similar systems are in development elsewhere, says Burcin Becerik-Gerber, Assistant Professor of Civil and Environmental Engineering at the University of Southern California. She is working on using similar technology to track firefighters and victims in building fires.

Read more about the report at: tinyurl.com/pagoxuh

SNAPSHOT

NFC PAYMENTS ON LONDON UNDERGROUND

1.6 million journeys have been paid for using contactless payment cards since Transport for London began accepting them on 16 September

April 2014 was when trial testing of the NFC contactless card payment service on all trains in and around London began

500,000 customers’ handsets are expected to use EE’s free Cash on Tap mobile contactless payment service app for London travel

65,000 bus journeys a day had used a contactless payment in the run-up to the London Underground launch

825,000 passengers have already used NFC contactless card payments for London buses, a figure that is expected to increase with the Underground now included

Egypt’s smartcarbs
A new smartcard system in Egypt is being used to aid the distribution of subsidized bread. The aim of the system is to reduce wheat consumption, fight corruption and alleviate government waste and foreign services. Trials of the smartcard began last year.

Bread represents nearly two-thirds of Egypt’s annual US$5 million food subsidy costs and the government can use the cards to monitor the distribution of the bread. A similar system is in use for other subsidized goods, such as rice and sugar.

Egypt is the world’s largest importer of wheat, buying around 10 million tons a year, so there was no limit in the old system in terms of how many loaves of subsidized bread citizens could claim. Now, each card holder will receive five loaves per family member every day. The Egyptian government hopes to reduce this over time, and any citizen taking less is able to claim rewards. The smartcard carries such information as the number of family members and points earned.

Subsidy cards are given to anyone in Egypt whose monthly income is below 1,500 Egyptian pounds (US$209). In recent years, the country has experienced a noticeable decline in wheat consumption.

Read more about the report at: tinyurl.com/pagoxuh

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The rise of augmented reality

Augmented reality is defined as a type of technology that superimposes a computer-generated image on to a user’s vision of the real world, providing a composite view. Think of a device such as Google Glass, where information from the internet or a smartphone can be projected into the wearer’s line of sight, and you have one of the best-known examples of augmented reality.

Augmate is a New York-based augmented reality platform looking to optimize the technology for industry use, including warehouse and manual worker training in its list of examples. Founder Pete Wassell told techcrunch.com: “What we’re working with is a more reasonable set of checklists and overlays that can help a worker do their job. There’s upwards of a 30% efficiency increase in time on task when information is in your field of view.”

Wassell cites a worker being directed to an item or kept informed of live stock updates while they are away from the warehouse. A manager would be able to see what each member or staff was working on, and where they were up to on the task concerned. Manual-like instructions could even be projected for staff when working on a particular item.

Calculations could be handled by the technology, and there would be no need to carry paperwork or guidebooks, as all the necessary information would be called up on the device. Wassell also believes that, with human interaction playing a key role, augmented reality can help to keep such manual work in the remit of people and avoid it being handed over to automated systems.

Event calendar

Gemalto regularly participates in trade shows, seminars and events around the world. Here’s a list of those taking place in the next few months.

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<th>Date</th>
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<tr>
<td>Nov 2-5</td>
<td>AFP Annual Conference</td>
<td>Financial Services</td>
<td>Washington, D.C., USA</td>
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<tr>
<td>Nov 2-6</td>
<td>Money 2020</td>
<td>Financial Services</td>
<td>Las Vegas, NV, USA</td>
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<td>Nov 4</td>
<td>Automobile Business Club</td>
<td>Automotive</td>
<td>Paris, France</td>
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<td>Nov 7-9</td>
<td>International Myanmar ICT Exhibition</td>
<td>Telecoms</td>
<td>Yangon, Republic of the Union of Myanmar</td>
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<td>Nov 11</td>
<td>Prepaid Summit: Europe 2014</td>
<td>Financial Services</td>
<td>Milan, Italy</td>
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<td>Nov 11-13</td>
<td>Africacom</td>
<td>Telecoms</td>
<td>Cape Town, South Africa</td>
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<td>Nov 13-14</td>
<td>Smart Mobility World</td>
<td>Smart Cities</td>
<td>Turin, Italy</td>
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<td>Nov 14</td>
<td>AWS Re:Invent</td>
<td>Cloud</td>
<td>Las Vegas, NV, USA</td>
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<td>Nov 19</td>
<td>Women in Payments</td>
<td>Financial Services</td>
<td>Atlanta, GA, USA</td>
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<td>Dec 2-4</td>
<td>3rd Border Management Conference</td>
<td>Govt. Programs</td>
<td>Bangkok, Thailand</td>
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<td>Jan 20-22</td>
<td>Mobile Money and Digital Payments</td>
<td>Financial Services</td>
<td>Jakarta, Indonesia</td>
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Find out more at augmate.com
Payment technology now goes beyond simply providing a transactional service. The insights that these platforms deliver offer unprecedented opportunities to enhance customer relationships.

The development of electronic payment systems has moved into overdrive recently, with businesses now able to gain an intimate understanding of consumer behavior from the information provided by their purchases.

Philip McHugh, CEO of Barclaycard Business Solutions, says: “Data drives relevancy, which then drives consumer purchase. Electronic payments can provide valuable insight and data analytics, which can help provide improved personalization, relevancy and timeliness of the products and services offered to consumers.”

Moreover, the use of these systems on smartphones and tablets has further connected retailers with consumers. Having the ability to make fast and efficient contactless payments is a service that will benefit most retailers. Mobile payment technology brings a new sales channel that is always on and generates masses of useful data.
 DATA ON A GRAND SCALE
“The Big Data era brings the analytics of the now,” says Karthik Krishnamurthy, Associate Operations Manager at Cognizant Technology Solutions. “Real-time insights about each customer are based on advanced statistical analysis and machine learning techniques on very large datasets of granular payment data. The granular data lays the foundation for mass personalization in lieu of the old segmentation methods. As each customer’s response is processed, it is analyzed to provide inputs about campaign effectiveness, brand loyalty, changing spending habits and profit or loss.”

Businesses seeking to understand consumer behavior through electronic payment insights must, however, behave with integrity. New customer-tracking technologies such as Localz and Viewsy need to be placed into context.

Developing a more integrated approach to consumer management via their electronic payment

42% of UK consumers believe they won’t need a wallet or purse by 2025
habs is all well and good, but Erik Engellau-Nilsson, Chief Consumer Business Officer at the payment provider Klarna, warns: “Mobile devices provide rich consumer behavior data, but it’s not something to ‘exploit’. Retailers need to give the highest level of respect to consumer data, with privacy and permission-based standards followed. Many consumers will be happy to get a tailored in-store offer on their mobile, while others don’t want you to know anything about them. Any data strategy should find the right balance between these customer segments.”

PAYMENT PATTERNS
In the age of entrenched online shopping habits, consumer practices are shifting to an omni-channel approach, whereby all channels are used indiscriminately in the search for the best price and the least friction. Customers are combining online purchase with in-store pickup or returns, in-store browsing with online price comparison and payment using multiple types of mobile devices.

Sameet Gupte, Senior Vice President and MD Europe, Virtusa, comments: “Electronic payments make the interaction with a business a far smoother, quicker and more convenient experience for customers. Tapping into that by implementing electronic payment methods can have a real payoff. For example, Starbucks claims that more than 10% of its in-store sales are driven by its mobile wallet app, which is a real electronic payments success story.”

Ralf Klinkenberg, General Manager of predictive analytics software company RapidMiner, adds: “Analytical processes can be used to build predictive models from which we can determine, for example, whether customers will be more impulse-driven, spontaneous buyers or more planned, organized and possibly more price-sensitive buyers. As well as seeing what the trigger points are [such as holidays, sporting events, pay day], where an abnormal surge in activity is detected, we can also understand and optimize future stock control based on when and where customers prefer to buy.”

Location-aware technologies, such as GPS, beacons or app check-ins, automatically detect consumers’ mobile wallets, providing relevant contextualized and personalized messages to them. This close relationship will only grow as these technologies become more commonplace, with consumers expecting to experience this level of interactivity with the retailers they visit.

FRICTIONLESS PAYMENTS
Will Jones, President EMEA at Monitise, says: “In February, Yankee Group predicted that the mobile economy is evolving at an even faster rate than
expected and that by 2017 it will be valued at US$3.1 trillion, US$200 billion more than the US$2.9 trillion it forecasted in October 2012.”

Barclaycard Business Solutions’ Philip McHugh concludes: “Consumers, through mobile technology, have been hugely empowered to view the best prices and shop where they want, when they want. In order to respond, merchants increasingly need real-time actionable data to ensure they provide consumers with the best products and services, at great value. They need a payment solution that allows their consumers to make a payment when they want and where they want. And the experience needs to be simple and instant. Supporting this will be the key for any current or future payment solution.”

The plethora of electronic payment options now open to retailers can be bewildering. The consumer behavior that this information will give to retailers will enable them to build supply chains that reach from the manufacturer to the shelf.

Starbucks claims that more than 10% of its in-store sales are driven by its mobile wallet app.

There have been a number of contactless payment systems, but none has yet moved into the mainstream. That could all change thanks to Apple and its move to equip the iPhone 6 with NFC capability via its Apple Pay initiative.

The move by Apple is significant, as NFC as a payments platform has lacked the support and drive that only a technology brand like Apple can deliver. Apple CEO Tim Cook says: “We’re going to start by focusing on payments, as payments is a huge business. Every day, between credit and debit, we spend US$12 billion. That’s over US$4 trillion a year, and that’s just in the United States ... 200 million transactions a day. That’s 200 million times we scramble for our credit cards and go through what is a fairly antiquated process.”

Apple is of course just the latest company to offer a contactless payment system. Many of these systems have been developed and promptly disappeared. There is clearly a desire for a universal contactless payment system: the Payments Council’s Pay Your Way in 2025 report concludes that 42% of UK consumers believe they won’t need a wallet or purse by 2025. Gartner predicts a 35% annual growth of the global NFC payment sector to 2017, equating to a market value of US$371 billion.

The level of insight that Apple Pay could bring is massive. Linking the payment system to Apple’s iCloud alone delivers more than 800 million accounts that retailers could target for their goods and services. But it’s the level of integration Apple seems to offer that is the most enticing. Its use of a tamper-proof, embedded security element within the iPhone 6 protects payment credentials. If consumers embrace Apple Pay, it could become a world leader in contactless payment services.

Clearly, all eyes are on Apple and whether it can finally convince a public that seems hungry for a mobile payment system that is fast, efficient and above all secure to adopt its fledgling platform in large enough numbers to reach a critical mass.

Find out more about Apple Pay: tinyurl.com/os2mbr8
When it comes to maximizing use of technology in the workplace, says Dave Coplin, we’ve only scratched the surface.
For much of the past two decades, most people accessed a higher level of technology at their workplace or school than they did at home. The adoption of home internet – and then home broadband – was expensive and took time. All the while, however, consumers had access to fast internet speeds at work and were using email and other exciting tools to communicate with colleagues. The home PC might have been something you used for an hour or two a day, or just at weekends, but the working world grew increasingly tied to the power of IT.

Over the past five years, though, the situation has flipped. Consumers have filled their lives with laptops, smartphones and tablets, carrying around in their pocket more computing power than a high-end PC of just a few years ago. And the things we can do with those devices have made technology in a corporate setting become dull, constricting and even inefficient.

“We’re at a place now where technology has become part of the problem of work,” says Dave Coplin, Chief Envisioning Officer at Microsoft UK (the job title, he explains, is tongue-in-cheek). “Everyone gets too much email and it’s a pain. But it was never meant to be like this – we’re just using technology in the wrong way.”

When human beings begin to use a new technology, they typically want to use it to simply replicate existing ways of working. But Coplin sees his mission as encouraging people to think differently about what technology can offer their professional or personal lives. And part of this is bringing more of the ways we use technology out of the office into the work context.

“[In your personal life, you’re not constrained by someone in the IT department],” he says. “You make mistakes and you learn from them and, mostly, enjoy the experience. Yet a lot of organizations are still in the ‘command and control’ mentality.” Changing this mindset...
Organizations have to become an intelligent organism – an organism that evolves and reacts to the environment around it.

Dave Coplin

Security
“From a technology perspective, it’s a really easy transition and the security questions are common to other things we face in society today. It’s the cultural change that’s really hard. If people abuse security, it’s not a technology issue, it’s a management one.”

Data
“Most organizations are sitting on data that could offer them a completely new revenue stream or business model. They’re beginning to see that, if they use data properly, it can help them do different things. Individuals should be looking inside the organization for more data that could bring about transformations.”

Education
“For me, the future world of work is about self-direction and self-regulation. Young people today are going to need a bunch of skills, and the tools they use will rapidly change. If all you ever teach people is how to use the tools that are available to them at the time, you’re not preparing them for the world of work.”

The inbox is a closed box. Every worker’s email folders contain information that is potentially valuable to a host of colleagues, but is kept private. Bringing some habits from social media – which people have positive experiences of using in their personal lives – into the workplace could help foster the kind of transformations that Coplin believes technology can bring about.

“The main reason to use social media is to share information – that’s the only reason you’re there,” he says. “But most corporations are a world in which knowledge is power, so your first position is to share nothing. The culture is changing, though, and it will ultimately create agility. At Microsoft, I can collaborate with every part of the business around the world – it’s easy and there’s no formality or introductions. It helps me feel really connected to the organization, and it’s these benefits that we need to get people to see and understand.”

Coplin notes, too, that the security implications for information sharing are no different from others already faced in society and that it is more an issue of how security itself is perceived. “From a technology perspective, security is easy. There are so many solutions for encrypting data and even mobile devices. If people abuse the security, it’s not a technology issue, it’s a management issue.”

It’s this cultural shift that he believes offers the greatest opportunity. “When organizations open up to all their employees, they give a voice to the voiceless.” When employees are engaged, they care about the job and about protecting the confidentiality of the data.

To support this cultural shift, he feels that schools have a significant role to play in building the next generation’s understanding of data privacy and how to use technology safely and effectively.

Alongside collaborating and communicating in a more social way, technology should also change where we work. “I’d like to see the concept of a purely physical place for my company being completely outmoded in the next 10–15 years,” Coplin says. “I commute from Banbury in Oxfordshire to London every day [a trip that takes between a 60 and 90 minutes], but why couldn’t I be going to a shared work hub in Banbury?”

He believes that shrinking fixed company office space, providing more shared work hubs and empowering people with the tools and culture to truly work flexibly will transform both workers’ output and their wellbeing.

“Flexible working is about allowing people to choose the best location for them to do the work that

THE WRONG MESSAGE
The problem with email, Coplin says, is that the inbox is a closed box. Every worker’s email folders contain information that is potentially valuable to a host of colleagues, but is kept private. Bringing some habits from social media – which people have positive experiences of using in their personal lives

“Organizations have to become an intelligent organism – an organism that evolves and reacts to the environment around it”
they have to do that day,” Coplin says. “Say I’ve got a lot of cognitive stuff to do, some writing, I might not be best working in the office, as it’s a noisy, chaotic environment. Maybe I need to find some quiet space where I can do my work without distraction. Likewise, if I need to collaborate with my colleagues, I should be in the office. If I need to be with my customers, I’ll go and see them. But flexible working should create a culture that allows individual employees to make those decisions every day.”

Allowing workers to make those decisions, he says, is crucial to them becoming more productive. Coplin sees a business world that relies too much on measuring process – hours worked, emails sent, timesheets completed – rather than output.

“To embrace flexible working, you really need to focus on whether the products were good and the customer was happy,” he says. “I’m measured on the outcome of my work, not how many hours I work. Once a year, I sit down with my manager and have a conversation about what I’m going to produce over the next 12 months. And then it’s up to me how I do that.”

It will be important, however, to make sure that these empowering trends are not restricted to executives and that they are something that people at all levels of an organization can have access to.

“Technology is supposed to be a leveling force that enables everyone to contribute,” Coplin says. “It shouldn’t be exclusive.”

Technology, he says, is best used to enable employees at all levels of a business to have their say. This could be via a mobile device or a terminal set up in a break room or common room, but the important thing is for organizations to open up opportunity for discussion with all employees. This kind of thinking, Coplin believes, will separate the successful businesses from those that struggle over the coming years.

“As we come out of recession, businesses can be disrupted at any point in time, so they have to be agile and thinking differently,” he says. “Organizations have to become an intelligent organism – an organism that evolves and reacts to the environment around it.”

And this is only going to happen if we use technology in a way that approaches its full potential. “We have people with an affinity for technology who are communicating in a sophisticated way,” Coplin says. “We’ve got a whole new generation of tools and technology opportunities. And we have a marketplace that is looking for more personalization and greater reaction from organizations. It’s down to the human beings to step up to all these things that are happening at the same time.”
As one of Asia’s digital leaders for many decades, Japan is now embracing several trends and products that have captivated the rest of the world.

A country that often seems to move to its own beat, Japan has long been an innovator in digital technology, though not all of it seems to translate smoothly to markets beyond its shores. People were surfing the internet, taking photos and paying for content on their mobiles in Japan long before anyone had begun calling phones “smart”. Near-field communication (NFC) payment systems have spread far beyond the country’s extensive public transportation network to become one of the most common ways to purchase a wide range of products and services. Meanwhile, companies from sectors including automotive, electronics and even industrial machinery are developing and deploying innovative machine-to-machine (M2M) applications.

NTT DoCoMo, Japan’s biggest mobile carrier, launched its i-mode mobile internet platform back in February 1999, when it was the most advanced system of its kind in the world. This was swiftly followed by rival platforms from competitors au and J-Phone (what is now SoftBank), and mobile internet was the perfect accompaniment to the long train commutes that are normal in Japan’s major cities.

Many of the functions that are now standard on today’s smartphones were gradually introduced in the early 2000s on the mobile phones created by Japan’s numerous electronics manufacturers. With handsets tied to and branded by the three major carriers, they were built to the mobile operators’ exact specifications. This interdependent relationship provided security for the manufacturers in terms of regular orders, but many analysts believe it also contributed to a lack of competitiveness globally. Handsets designed specifically to function only in one of Japan’s mobile-internet ecosystems had limited appeal outside the archipelago.
The average DeNA user logs on five times a day for seven minutes at a time.”

TOMOYUKI AKIYAMA, DENA
Like the handsets, DoCoMo’s i-mode platform also failed to catch on overseas. “DoCoMo had made this beautiful world and tried to take it outside Japan, but it didn’t work,” says Gerhard Fasol, CEO of boutique consultancy Eurotechnology Japan and veteran analyst of the domestic telecom industry. This “walled garden” model was also tried by other operators around the world, but ultimately, operator-controlled portals have been replaced by app stores.

Another early-adopted habit that has helped shape the digital landscape in Japan is paying for content. Customers have been willing to spend their hard-earned yen on everything from ringtones and games to emoticons and serialized novellas, particularly when it comes added to their monthly phone bill. And, with the spread of smartphones – which was a little slow in Japan, due to the advanced functionality of the feature phones – the market for apps has exploded.

Japan became the biggest app market in the world at the end of 2013, despite a population a little more than a third of the size of the US, which it removed from the top spot. Most of this is driven by games, and one title in particular: *Puzzle & Dragons*. The role-playing and puzzle hybrid generates millions of dollars a day in revenue for publisher GungHo, using the “freemium” model that encourages the user to purchase special in-game items.

There are multiple social mobile gaming platforms, including Mobage, which is run by the mobile service provider DeNA and targets older users who play in short bursts during commutes, lunch breaks and other down time. “The average DeNA user logs on five times a day for seven minutes at a time. It’s good for busier older people,” explains Tomoyuki Akiyama, a spokesperson for DeNA. “I used to sit on the couch and play Nintendo for hours when I was young, but now I’m in my thirties, I just don’t have time.”

**THE MARKET OPENS UP**

The rise of the smartphone in Japan is really the story of the rise of iPhone. It’s hard to overstate the change this has brought to the domestic handset market. Just as local handsets had minimal sales abroad, no foreign phone had ever had significant share in Japan. In the first quarter of 2014, more than one in three handsets sold in Japan was an iPhone.

While the popularity of the iPhone has helped expand the app market, it had actually hindered the development of mobile NFC payment, suggests Fasol. “Most of the feature phones were NFC-capable, whereas the iPhone and some Samsung handsets weren’t,” he says. The launch of the iPhone 6 and NFC availability should change things, however.

Contactless payment is already a massive market in Japan, driven by public transit cards such as Suica and Pasmo, both based on the Sony FeliCa technology that is also used in Hong Kong’s Octopus system. Use of the cards has spread from train station kiosks, vending machines and convenience stores to taxis, supermarkets and restaurants. While early issues with compatibility meant, for example, that travelers between Osaka and Tokyo found their transit cards didn’t work, these were largely resolved in March 2013 when the seven most frequently used systems were all made interoperable.

Despite hundreds of billions of yen already passing through a variety of NFC cards and devices, the security measures in place have so far been effective in keeping fraud to a minimum. “I’ve only
A messaging and social networking service featuring irreverent emoticons, Line was the unlikely child of disaster, born after the huge earthquake and tsunami of March 11 2011. Tokyo escaped relatively lightly from the earthquake. However, both mobile and fixed telephone networks were largely inaccessible to the tens of millions trying to contact each other for hours afterwards, as lines were kept free for emergency communications.

Internet-based messaging services, though, remained almost fully functional. Employees in the Japanese offices of NHN Corp, the subsidiary of a Korean internet and telecommunications company, realized the potential of a net-based messaging platform that would keep working even in times of disaster.

Line has spread faster since its launch in June 2011 than any other similar platform and already has 400 million users globally. Its main revenue streams are from the sale of message ‘stickers’ (emoticons), gaming and corporate accounts. The company is currently considering a US$10 billion IPO listing in Tokyo and New York.

Almost two-thirds of Japanese women in their twenties and thirties are reported to use Line every day, with many sending dozens of messages and stickers to friends and family. Miki Tanaka is one such user, who also updates her Line homepage with photos of everything from food and drink to her children’s sporting endeavors.

“It’s very convenient and I use it all the time, but the fact that you can see when someone has read a message can create difficult situations,” she says. “I get irritated when my husband doesn’t answer my messages when I know he’s read them.”

Read more about NHN Corp’s Line: tinyurl.com/aqrqjp6

heard of a few cases of fraud in Japan, and they’ve been fairly small-scale, like a guy in a railway company in Osaka who was clearing his friends’ train payments records from their cards,” says Fasol.

TRANSPORTATION AND TECHNOLOGY

Mobile technology is also playing a part in M2M applications, with the automotive sector widely seen as having the most immediate promise. One example is Nissan’s Leaf electric vehicle, which can communicate with handsets. Leaf drivers are able to remotely activate functions such as charging and air-conditioning, receive and answer texts in audio form, search for shops and restaurants, and automatically send out emergency messages if they are in an accident or run out of power.

At the heavier end of the vehicle spectrum, M2M applications have been deployed in the Komatsu firm’s construction and mining machines, which are sold around the globe. The data sent from the machines, including information on everything from battery health to oil levels, helps prevent delays in construction and road repairs due to machines breaking down. The big data sent back to Komatsu also created an unexpected by-product: an up-to-the-minute, frontline picture of the activity in crucial industrial sectors, through measures such as the number of hours the machines are active.

As Tokyo works toward hosting the 2020 Olympics, there are initiatives under way to create an infrastructure that will allow the seamless use of NFC technology from around the globe at railway stations, airports, ATMs, taxis and shops in the city where the technology first took root. Passengers on JAL, the country’s biggest airline, are already checking in and boarding flights using their mobile phones, the first service of its kind in the world.

With this extensive digital network, coupled with the public’s unflinching devotion to their mobile devices, Japan should continue to be one of the world’s leading digital countries.
RETAIL TECHNOLOGY

Whether it’s eCommerce or using touchscreens in-store to learn about a product, technology is driving retail around the globe.

AUTHOR CHRIS ANDERSON

50 meters

A mannequin that tells you what it is wearing and where you can find it in the store: that is the future according to UK department store House of Fraser, which is trialing VMBeacon technology in Aberdeen, Scotland. Consumers download a compatible app to their smartphones, and as they pass a mannequin equipped with a beacon, the relevant information will pop up on their screens. This can be shared on social media, or the item can be ordered online. It is said that the modified mannequins have a range of 50 meters.

Source: Marketing Week

Find out more at tinyurl.com/osc5yz2

US$395

The Left Shoe Company first introduced its foot scanning technology just over a year ago, and it has now become an integral part of its bespoke service. Installed at its store on Melrose Avenue, Los Angeles, the scanner uses motion capture technology, as seen in the movies, and records thousands of data points to create a perfect 3D rendering of your foot. With the style and material selected, this information is sent to the shoemakers in Portugal, creating footwear with the best possible fit. Prices for the custom shoes start at US$395.

Source: us.leftshoecompany.com

US$6,500

The first Bitcoin ATM machine has arrived in Manhattan, located at luxury store Flat 128 in West Village and costing US$6,500. The machine allows customers to deposit cash and buy Bitcoins, the software-based online currency, which users commonly access using “digital wallets” on their smartphones. Money can be deposited and turned into Bitcoins, but not withdrawn at this stage. Bitcoin is being adopted by some stores as a convenient transaction currency.

Source: New York Post

63,000 merchants globally accept Bitcoins as currency
Australians will make Aus$3 billion in contactless payments in 2015

Find out more at tinyurl.com/paras4z

90 minutes

Mumbai and Bangalore are the two cities chosen by online retail giant Amazon as the testing grounds for its Prime Air delivery drones. The US-based company has been working on unmanned aerial vehicles weighing less than 55lbs and traveling at speeds of 50mph, capable of carrying up to 5lbs – which covers 86% of the goods Amazon sells. An order could be placed online and delivered by the drone in as little as 90 minutes, although some have expressed concern over it crashing into buildings.

Source: Economic Times

1,85 trillion

Recent figures from China’s Ministry of Commerce show that the country’s online retail market is now bigger than that of the US. Its online sales totalled 1.85 trillion yuan (US$296.57 billion) in 2013, growing 41.2% from the previous year – three times the growth rate of China’s overall retail sales. The shopping total is 13% bigger than that of the US, which was US$262.51 billion in 2013, according to the US Department of Commerce, and grew 16.9%.

Source: Internetretailer.com

1,600

A Swedish start-up, Quixter, has developed the first retail payment system to use palm-scanning technology. Customers place their hand flat against the screen of a checkout-mounted device, and the last four digits of their phone number must also be entered to allow access to their bank account. Palm vein scanners have been used on ATM machines in various countries, but this is said to be the first to allow payment with your palm. Currently, Quixter is in use at Lund University, installed in 15 outlets, serving 1,600 customers.

Source: Wall Street Daily

400,000

Australian supermarket chain Coles has become the first retailer in the world to integrate contactless mobile technology with a reward scheme. The Coles Pay Tag is available to the company’s 400,000 credit card customers, allowing them to pay for shopping and collect FlyBuys points by tapping their phones at the checkout. The tag itself is a sticker that attaches to the back of the handset and contains all of the information related to the card. Transactions under AUS$100 are contactless, but paying more requires a four-digit PIN.

Source: News.com.au
While most organizations focus their IT budgets on guarding against hackers, threats from the inside shouldn’t be ignored.

Cyber criminals are increasingly sophisticated, seeking out the weakest links in companies’ digital security. But what if the weakest link is someone within the organization who, knowingly or unwittingly, opening the door to cyber criminals?

Any organization needs to safeguard its data, and one of the easiest ways to do that is to manage exactly who has access to that data. PwC’s Global State of Information Security survey, which polled 10,000 executives and IT directors from 154 countries, reported 117,339 detected security incidents a day in 2014, a 48% increase on 2013 figures – and that’s just the detected and reported attacks. What’s more, the results show that employees were the most-cited culprits of security incidents.

Companies should keep up-to-date lists of their privileged users – those with access to information such as HR, finance and customer details – and monitor their activity. Privileged access users (PAUs) should also receive training in security best practice, because most breaches occur due to human error.

However, some breaches may be malicious. The FBI’s 2014 report Employees with an axe to grind notes that some current or former employees take revenge on their employers by destroying data, obtaining customer information and purchasing unauthorized goods through customer accounts after remotely accessing company networks. In many cases, the FBI found that terminated employees installed unauthorized RDP (remote desktop protocol) software before theyleft the company to gain access to its networks.

There’s also a fair bit of finger pointing at other insider threats, such as third parties with trusted access to networks and data, including current and former service providers, consultants and contractors. It would be wise to limit access or, better yet, only allow supervised access. This is not because third parties are inherently dishonest, but because they may not value a company’s data as much as the company itself and aren’t likely to be as careful with it. The 2014 Verizon Data Breach Investigation report found that 88% of reported insider misuse incidents were due to “privilege misuse.” Moreover, 73% of organizations failed to block users’ access to sensitive data, according to the same report.

**WHO HAS PRIVILEGED ACCESS?**

The phrase “privileged access” implies that it is only senior executives who have access to the company’s sensitive data, but Gemalto’s white paper
To log in with a smart card ID, the administrator inserts the card into a special reader device on a keyboard, an attached reader in a laptop or a standalone reader. Once prompted, the admin enters a user-specific PIN. Once the PIN is accepted, unlocking the card, there is an encrypted authentication exchange between the user credentials stored on the card and the host system or the remote server. Removing the card ends the session.
Budget constraints and talent shortages mean that businesses fail to put in place those systems that match their needs.

MARK BROWN, EY

The Threat from Within also identifies PAUs as network engineers, IT security practitioners, IT audit practitioners, database administrators, systems administrators, application developers and data center managers. More worrying still, the Ponemon Institute’s Privileged User Abuse & The Insider Threat survey showed that 49% of companies do not have policies about how they assign privileged-user access rights, or even who has access.

Little wonder, then, that large-scale breaches are making the headlines with alarming regularity. US retail giant Target suffered a data breach earlier in the year, refusing to confirm whether the breach was caused by a weakness in the software (a default administrator login was allegedly used) or an insider. Worse still, Bloomberg Businessweek reported that the company’s own US$1.6 million security system had issued malware alerts three weeks before: “Not only did Target’s security team fail to act on the warnings, they had disabled a feature on the system that would have automatically eliminated the malware upon detection without any human intervention.”

The costs of insider cyber-sabotage can range from US$5,000 to US$3 million. There’s the value of stolen data, the cost of technology services, establishing network countermeasures, legal fees, loss of revenue and/or customers, and the purchase of credit monitoring services for employees and customers affected by a data breach. So what else can organizations do to avoid such breaches?

Whether by accident or by design, many PAUs exercise nothing but a username and password protocol. This is both inefficient and unsafe, with employees regularly choosing obvious combinations, writing them down to jog their memories and sharing them with other colleagues. Every domain, jump server and remote connection has an associated unique ID and password, resulting in possibly thousands of passwords. The logistics of monitoring these for every PAU is impossible, as is the task of coordinating the revocation of an individual’s access privileges due to resignation or termination of employment. The thousands of username and password combinations used every day are also targets for malware and spyware.

The Ponemon Institute says that system and human errors account for 64% of breaches, and 62% of employees think it is fine to transfer corporate data outside the company. So, with

The Ponemon Institute says that 62% of employees think it is fine to transfer corporate data outside the company.

PRIVILEGED ACCESS USERS IN THE ENTERPRISE

384 billion
a year in corporate losses can be directly tied to privileged user fraud.

11,698
Total incidents of insider misuse in 2013.

88%
of which were due to privilege misuse.
a simple username and password system, and a lack of data security education for employees, cybercrime has been made even easier.

**SIMPLE SOLUTIONS**

Multi-factor authentication systems are the key to better security, and smart card devices offer a solid solution. Equally important is the ability to assign specific levels of access based on a person’s role in the company. The multi-factor authentication needs to be quick and efficient, too, as senior executives and IT administrators alike will lose patience with an onerous and time-consuming process.

Smart card devices enable an employee to log on from wherever they are working. The cards use a processor and software independent of the PC the employee is using and the card is therefore able to secure and accept user credentials. As these are isolated from the PC and each login uses a response exchange, users are protected from threats on the end user device or the network. The smart card authenticator takes care of establishing an encrypted secure session, and all the PAU has to do is remember a PIN. PAUs can continue to work with the tools they are familiar with and the whole system is quick, simple and secure.

Mark Brown, EY’s Director of Information Security, notes that in addition to the assertion that 96% of businesses are unprepared for a cyber attack, there is a further consideration. “While businesses are faced with a rising number of security breaches, budget constraints and talent shortages mean that they fail to put in place those systems that match their needs,” he says.

Again, the smart card is a clever solution: it has the advantage of being easy to deploy and manage and is cost-effective. With data breaches increasingly occurring from within, and the costs of breaches rising, organizations would do well to invest in better PAU management and authentication.

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**5 TIPS FOR MANAGING PRIVILEGED ACCESS**

1. Before implementing any privileged access controls, first take a look at your current situation: the potential risk to the organization and possible roadblocks to effective management of privileged access.

2. Access to information assets should not be granted to every administrator. Only those who have a valid business need should be provided with access.

3. Do not grant anyone permanent access to any resource. It should be on an as-needed basis for the amount of time needed.

4. Implement tools and reporting to monitor any inappropriate granting of access rights and any violations of policy.

5. Frequently monitor and improve how access rights are granted and revoked. This is especially important as new technology, such as mobile enterprise applications, is adopted.

Source: normanmarks.wordpress.com

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Who is a privileged user?

<table>
<thead>
<tr>
<th>Role</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data center manager</td>
<td>73%</td>
</tr>
<tr>
<td>Application developer</td>
<td></td>
</tr>
<tr>
<td>System admin</td>
<td></td>
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<tr>
<td>Database admin</td>
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<tr>
<td>IT audit practitioner</td>
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<tr>
<td>IT security practitioner</td>
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</tr>
<tr>
<td>Network engineer</td>
<td></td>
</tr>
</tbody>
</table>

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Who do privileged users access?

- 49% of companies do not have policies for assigning privileged user access rights
- 88% say Edward Snowden has either caused significant or some increase in their organization’s level of concern about insider threats
- 73% of organizations fail to block PAU access to sensitive data
- 2% of organizations have policies that block PAU access to sensitive data
- #1 problem in delivering and enforcing PAU controls is the ability to keep access-change requests

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A convergence of services in mobile devices means it is not business as usual for EZ-Link, the Singaporean company providing contactless transportation payment, ticketing, ePurse and more.
In 2012, EZ-Link was part of a Gemalto-led consortium in Singapore that launched a variety of payment services using NFC tap-and-pay technology. EZ-Link Chief Executive Officer Nicholas Lee readily admits that mobility is something that his company has to catch up with, despite the bread and butter of its business still coming from transit.

In the works are plans to grow eCommerce usage by turning smartphones from being a rival device to a complementary one, he says. Having worked on the ez-link card for 14 years, he believes the challenges give rise to new innovations.

What are the big trends affecting contactless card payment in general and your company in particular?

There are three big trends. The first is this convergence of services into mobile devices, whether it’s a tablet or smartphone. You have mobile apps where people can pay for things, update their details or reload the value of a stored value card. These are popular, as people would rather do it themselves than have you do it for them.

The second trend is the growth of eCommerce. There has been phenomenal growth over the years and it’s impacting the way we use contactless payment. The ez-link card used to be used solely for transit and retail, but now we are also looking at eCommerce.

Today, you can put a “card” into different devices, like a SIM card, and use the phone to pay in eCommerce. In Singapore, we have introduced a top-up service [of the ez-link card] via an NFC-enabled phone.

The third trend is open loop acceptance. London has an open transportation system, where commuters can pay via a contactless Visa or MasterCard credit card. So, they are taking away the cost of having to issue one special card for people to pay for transportation. And tourists can use their own cards to pay too.

In Singapore, we have worked with credit card companies to issue MasterCard and American Express cards that are tied to an ez-link purse, with stored value inside. This way, users don’t have to carry so many cards.

What is EZ-Link doing to answer these challenges?

Mobility is something we have to catch up with to meet customer demand. Apps on mobile phones that let people look at transaction history or receive alerts – this type of customer engagement is important.

We can also turn the phone into an ez-link card, or use it as a terminal. It’s a good opportunity. We have introduced mobile apps to turn the phone into a top-up device. We spend so much on physical top-up terminals – there are now 4,000 in Singapore – so why not let people top-up themselves on the phone? So far, this app has got 100,000 downloads. The number of transactions is small, but it’s growing.

EZ-Link is also keen to get into eCommerce. On a website checkout page, we can include a payment option that lets you scan a QR code through your phone. Then you pay by simply tapping your ez-link card on your phone via NFC. This essentially transforms your NFC mobile phone into a personal payment device for our ez-link cards and it’s a great way for us to get our cards into the eCommerce space. For small transactions of US$8 to US$16, our card will work well. We are talking to a few eCommerce sites now.

How does your organization use mobile technology?

I communicate with staff through social media. We have a private Facebook group, where we share information. For example, I shared my trip to China recently, when I was in a delegation that was led by the [Singapore] Prime Minister. Staff are kept updated like that. At town hall meetings, people fall asleep if you’re boring!

What security measures are most important?

When it comes to data security, we have strict guidelines from the authorities. Everything on the PC is encrypted. Internal audits on systems and processes are carried out frequently. It’s important, because we carry a lot of cardholder information.
Mobile technology is changing the way both rich and developing countries access healthcare and medical information.
At the time of writing, west Africa is in the grip of the worst outbreak of the deadly Ebola virus recorded since it was first identified in 1976. The current outbreak is exactly the kind of pandemic global governments have feared for decades: it kills between 50% and 60% of all infected patients, has no known cure and is threatening to spread through the transit networks.

After basic sanitation and hygiene, the most effective way of stopping Ebola from spreading is information: myths about it and mistrust of doctors have compounded basic infrastructure problems and kept it circulating in areas where it could have been controlled. “This is the first time an Ebola outbreak has occurred in West Africa,” says Aliou Boly, Program Manager for the International Federation of Red Cross and Red Crescent Societies (IFRC) in Guinea. “So there are a lot of misconceptions and rumors – that the disease is spread through the air, for example.”

In many parts of rural Africa – where Ebola has proved most virulent – there’s a relatively new information conduit that could become a lifesaving champion: the mobile phone. The latest figures from research firm Gallup suggest that 80% of households in sub-Saharan Africa have access to a mobile phone,
while a 2013 report from the World Bank found that fewer than 15% of rural households have access to electricity. It’s no surprise, then, that mobile health services – or mHealth – provide a cost-effective way to educate citizens and support healthcare givers.

In Sierra Leone, says Boly, the IFRC has deployed its Trilogy Emergency Relief Application (TERA). In 2010, Haiti suffered an earthquake that killed 220,000 people, left vast swathes of the population homeless and devastated the country’s infrastructure. Recognizing that the most efficient way to reach large numbers of people was by sending SMS messages to their phones, the IFRC began work on TERA with one of the local mobile operators. What makes TERA stand out is its ability to send messages to users in a particular geographical location. In Haiti, TERA helped organize the aid camps in which people sheltered, provided updates on nearby food and sanitation supplies and served as an early warning system for cases of cholera.

“In an emergency, unlike other systems, we don’t need people to subscribe to our notifications,” says the Red Cross’s Sharon Reader. “We can just get messages out to all of a network’s customers.”

**ACROSS BORDERS**

The GSMA, a global organization of mobile operators and related technology companies, believes there’s even more that can be done to promote good practice in mHealth. In 2012, it launched the Pan-African mHealth Initiative (PAMI) with the aim of promoting maternal healthcare and childhood nutrition using mobile phones.

PAMI has recently expanded to include a new mHealth program, Mobile for Development, under which the GSMA is bringing together partners such as Samsung, MTN, Hello Doctor and Gemalto to formulate and promote best practices and commercial solutions to some of the continent’s health problems.

As part of the initiative, people will receive mHealth and nutrition services through SmartMessage, an interactive messaging solution. This will simplify the relationship between patients and health stakeholders and give targeted nutritional and health advice via mobile phones. For this to happen, new mHealth services will need to be connected to vulnerable groups across the region, to send recommendations by interactive SMS or on dynamic handset menus. Allowing people to chat with a healthcare specialist through interactive SMS enables diagnostics, data collection and surveillance, plus health financing and health surveys that can be launched at national scale through mobile phones to gather information. It will also enable governments and healthcare providers to make appropriate decisions and brings a whole new dimension to the way healthcare services providers and patients could engage and communicate remotely.

“There can surely be no clearer illustration of the potential of mobile solutions to fundamentally change the expectations and outcomes of millions of people in sub-Saharan Africa,” comments Philippe Vallée, Chief Operating Officer at Gemalto. While such solutions grab headlines, at its heart the GSMA
In 2012, the GSMA launched the Pan-African mHealth Initiative with the aim of promoting maternal healthcare using mobile phones.
We’ve all been there, clicking through to access an online service on your PC or mobile device, only to be asked to enter a username and password that you just cannot remember. After entering the few possible options for each field – and failing to come up with the right combination – you give in and click the “forgotten password?” button. By the time it’s appeared in your inbox and you’ve entered the temporary password and set a new one (which you’ll probably forget), the reason you wanted to log on to the service in the first place has probably slipped your mind.

It’s clear that something isn’t working. The age of the username and password combination – the standard way in which we’ve all come to access so many parts of the online world – is coming to an end. The technology we use and the sheer level of our reliance on online services have outpaced the password, and users need a way of efficiently and safely authenticating themselves.

Marie Austenaa, VP and Head of Personal Data and Mobile Identity at GSM Association (the mobile industry association representing operators and other actors), believes that mobile ID will solve this problem: specifically, the Mobile Connect standard that the GSMA launched in February 2014. The standard brings mobile operators firmly into the heart of the authentication process, something that, as Austenaa points out, makes sense.

“You don’t need a username and password to make a phone call, you just click on the green button,” she says. “In the digital world, you need a username and password for every service you access. This is a problem that the end-user experiences and it’s something that the mobile operators have the assets to resolve, whether it’s through the SIM or mechanisms like the protocol USSD.”
"It always comes back to simplifying consumers’ lives – and the mobile operators have the assets to do this"
Mobile Connect allows users to access all kinds of digital services by using their mobile phone numbers for authentication. It makes performing everyday tasks – like logging into a website, paying with a credit card and checking your bank account – far simpler. By standardizing the ID process without passwords or code generators, an identity database is available simply by an individual using their mobile phone.

NO “I” IN TEAM
Putting the emphasis on the mobile operators to provide the authentication service, however, has required a shift in emphasis on their part. The biggest change is that they have to work together to increase interoperability in the market.

“If you’re the biggest newspaper or bank and you need to have an alternative mechanism for users to get recognized, you can’t just work with one operator,”
Estonia is one of the most digitally integrated countries in the world and launched its first mobile ID system back in 2007. In the Baltic state, citizens can use their mobile ID to do their taxes, pay for a driver’s license, register a new company and pay utilities.

Until 2009, however, only one mobile operator – EMT – offered mobile ID to its customers. After this changed and other operators began to offer the service, take-up rates rose quickly. In 2013, there were about 40,000 mobile ID users in Estonia, out of a population of 1.3 million.

Companies, such as banks, that have embraced mobile ID have seen the benefits. Swedbank, the largest bank in Estonia, told the GSMA that after its mobile banking app was made compatible with mobile ID, use of the app grew 200 times year on year; mobile ID users made up 38% of all logins.

Mobile ID is even transforming the way Estonians vote in national elections. After some years of pioneering voting using an ID card and reader combination, the country trialed mobile voting in 2011, removing the need for a cumbersome card reader. In those elections, 24% of participating voters did so electronically.

Criminals stole 1.2 billion username and password combinations from more than 420,000 websites

Austenaa says. “It’s only going to cover a small percentage of your customer base, so you need to have all the operators. If you could only send an SMS to a third of the subscribers, it would be useless. So the operators are increasingly understanding this and realizing that they have to work together to get an offering in the market. They’re not competing with each other on this one, but it’s taking some time for everyone to understand.”

There’s no problem, though, when it comes to the users. In fact, mobile ID is a case of the users demanding a new service from the mobile operators, rather than the more common situation where the big companies push new products onto the market.

Culturally, users are getting ready for mobile ID. According to a GSMA report, 40% of UK consumers have used a social media account to log in to other websites and 59% find mobile identity solutions appealing. The market is crying out for an alternative to username and password. The same report found that users tend to stick to the same “safe-looking” sites, so passwords remain unchanged or forgotten.

And, of course, passwords are vulnerable to hacking, as the world saw in August, when a Russian criminal group stole 1.2 billion username and password combinations from more than 420,000 websites. “The death of passwords is coming – they are a non-workable solution,” Austenaa says. “Using your mobile phone as authentication is much better – you’re confirming both something you have [the phone] and something you know [its password].”

GOVERNMENT ON THE GO

There’s a difference, of course, between authenticating a social media account – which could be a business or a persona and not necessarily the “real” you – and true identification for eGovernment services, such as paying a tax return or applying for a driver’s license. “Governments want to become much more efficient and studies show the huge amounts of money they can save by becoming more digital,” Austenaa says. “There’s a huge drive – eGovernment is here to stay. But they have to make sure they identify the users in a secure way. This all still relies on a fundamental infrastructure of identities in a state. You need a government to issue passports, driver’s licenses and ID cards. Then you digitize these physical identities and unlock them with Mobile Connect.”

Some countries, such as Pakistan, link identity to the mobile phone from the start, as the government now registers the fingerprints of everyone who buys, activates or renews a SIM card in store. But other states have to rely on other methods. In Estonia (see box, above), the Government encouraged people to go into operators’ stores with their passports and get a new SIM.

Estonia is one of a few countries (others include Turkey, Finland and Norway) that Austenaa identifies as doing “great things” in mobile ID. “It just makes it so much easier to do everyday things,” she says. “In Norway, for example, to log into a government portal and complete a tax return, you just enter a PIN into your phone.”

The Mobile Connect standard is designed to bring this kind of experience to as many people as possible, and major global operators such as Orange, Telefonica, Axiata and China Mobile are already signed up.

“We’re working in markets around the world, trying to join up the dots,” Austenaa says. “But it always comes back to simplifying consumers’ lives – and the mobile operators have the assets to do this.”
With the EMV deadline around the corner, the great card behemoth of the United States has begun migrating to EMV chip technology.

CHIPPING AWAY AT FRAUD
In May 2014, EMVCo revealed there were 2.37 billion EMV payment cards in circulation and 36.9 million EMV terminals active worldwide. That represents an increase of 120 million cards and 2 million terminals over the last 12 months. This figure includes the US, which is transitioning to this technology, a shift that is being brought about by several factors that include liability issues, security, fraud and consumer convenience.

“The major payment brands have set a liability deadline of October 2015, after which point liability for any fraud happening at the point of sale will pass to the actor with the weakest technology,” says Philippe Benitez, VP Business Development, Gemalto North America. The result is both banks and merchants are upgrading technology to EMV.

Recent research has shown that counterfeit card fraud dropped by 91% when France migrated to EMV in 2005, and the UK saw overall card fraud reduced by a third. EMV is not a buzz word, it’s a working solution.

The US is the last G20 country to migrate to EMV, and US travelers have faced acceptance issues internationally with magnetic swipe cards because of merchants’ worries about liability. Further concerns were that fraud was migrating to the US from overseas because of the weak security of such cards. The US makes only 24% of all card sales and is responsible for nearly 50% of fraud worldwide.

The 2014 AFP Payments Fraud and Control Survey highlighted how businesses in the US remain vulnerable, with 60% of organizations exposed to actual or attempted payments fraud in 2013 and 47% reporting that it was credit and debit cards that were targeted.

The data breaches that happen in the US make headlines. It is the country with the most cards in circulation, more than 1.2 billion, so breaches are huge and affect large numbers of consumers.

One of the leading US retailers, Target, recently had more than 40 million credit and debit card records stolen, along with 70 million other records with customer information that included addresses and telephone numbers. This breach inspired the retailer to speed up its adoption of chip and PIN technology, with the goal of having it implemented six months before the liability deadline arrives. As companies such as Target and other national retail merchants make the switch, what about the smaller banks and credit unions that are also preparing for this shift? Do they have an advantage over the bigger banks and institutions?

**CONVENIENT AND SECURE**

Perhaps not. After all, the top 20 banks in the US account for more than 75% of the cards in circulation and they have been moving full speed towards migration. In addition to chasing the deadline and maintaining customer loyalty, there is the question of customer understanding. With the rapid run towards contactless and EMV technology in the US, the consumer faces a learning curve and there is concern that this could inhibit uptake.

It is likely that people in the US will quickly learn how EMV works, after all other countries have successfully educated consumers. The main difference is that, instead of swiping and keeping the card in the hand, a customer “dips” their card into the EMV point-of-sale and waits until the transaction is complete. For contactless, the card never leaves the hand and it is a quick tap and go. Merchants and issuers are being advised to turn on contactless so they can reap the most benefits from EMV, data shows significant uplift in spend with contactless.

The introduction of EMV to the US is likely to transform the way payments are managed. It is not just securing plastic cards anymore; it is all types of payment. The hacker can take the information from the magnetic stripe bank card and encode that onto any magnetic stripe, even a hotel key. EMV uses cryptography to create dynamic data that changes with every transaction, so if information is intercepted by hackers, they cannot use it to create a counterfeit card. The data is useless to them. Fraud will likely migrate to the next weakest link, which is electronic commerce, because EMV does not secure eCommerce payments.
The smart TV is the next big thing in consumer technology, with 204 million expected to be connected in the US alone by 2017. Those who have already upgraded benefit from a wider range of content available. They can be pickier about what they watch thanks to the range of subscriptions, pay-per-view options and micro-transactions available.

Apps are a key attraction of smart TVs. The best revolve around the core experiences of consuming or enhancing content: tools such as Netflix, Pandora and YouTube all provide ways to watch or listen to more. In the US, tools such as MLB.tv and the NBA's Game Time improve content with live score updates, news and highlight reels.

The growth of alternative payment puts money in the hands of content producers and other parties, which could break the grip that networks and rights owners hold over entertainment. The media industry is going through a revolution: internet service providers, device manufacturers and social networks all have a stake in this new world. All of this is a boon for advertisers: with more data available about a household’s viewing habits, ads can be targeted with increased sophistication.

In the US, Parks Associates’ research has found that 34% of households with broadband have smart TVs, and nearly two-thirds of people shopping for televisions plan to buy connected hardware. Venture capital firm KPCB says that global smart TV shipments represented 25% of all TV purchases in 2012, but 39% in 2013. In France, a 23% share in 2012 grew to a mighty 80% in 2013, according to CSA.

**SMART CHALLENGES**

Smart TVs being able to perform to their maximum ability will rely on access to super-fast, reliable broadband. This is an issue in Europe and elsewhere. Neelie Kroes, the European Commissioner for the digital agenda, explained in a recent report that Europe “lags behind in providing... high speed networks” and that this situation is “not sustainable.”

For a smart TV to be most effective and perform multiple functions at once – such as streaming HD video, recording something else and communicating with multiple devices around the home – you need the bandwidth that’s going to be able to provide a seamless user experience. In this respect, the US is ahead of Europe. A recent study by University of Pennsylvania Law School found that 82% of American households enjoyed high-speed broadband, compared with 54% in Europe.

Giving people who live in rural areas access to the same speeds as city-dwellers is also a must.

**FUTURE HUB**

When these broadband speed challenges are overcome, smart TVs will form an integral part of a connected home that will become the norm. In the near future, we won’t need a bundle of remote controls. Instead, our smartphones and tablets will control the TV. This is already happening: LG has an app that is compatible with its TVs, and HTC has included similar software with its smartphones. Other third-party tools use infrared blasters to control televisions.

Tablets will also be used to provide second-screen experiences. Again, it’s a feature that has already begun to appear. Advertisers can salivate over these kinds of developments – imagine a second-screen experience that highlights products featured in shows, with links to purchase.

The development of smart TVs will see software broaden what’s possible. Skype is already allowing for communication through the TV, and Samsung has already set developers to work on building smart TV apps that can control other home appliances.

As other technologies play their part, NFC could be used to trigger the transfer of content between smartphones and TVs, for example. The smart TVs themselves could provide a big-screen experience for quick and easily management of all the household appliances.

So, when you can turn on the dishwasher without having to get up and miss a second of the game or movie you’re watching, you’ll know smart TV has arrived.
Providing secure, mobile access to Government services in Finland

The Finnish Government’s national eID scheme now incorporates Gemalto’s mobile technology so its citizens can access services on the move.
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