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THE LAST WORD ON NETWORK OPERATOR STRATEGY FROM AROUND EUROPE

The digital user:

Keeping operators relevant in the era of transformation

Gemini Waghmare,
CEO UXP Systems

UXP SYSTEMS SPECIAL PROMOTION

SPECIAL REPORT: DIGITAL TRANSFORMATION

Featuring exclusive survey, the need for cultural change and the tech challenges

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The Top 100 brands, two CEOs and one digital transformation report

For the second year running, European Communications is delighted to bring you the Most Valuable Telecoms Brands ranking, in partnership with Brand Finance. The 2017 list reveals a new global number one, while a certain Germany-based telco has maintained its status as the leader in Europe. Alongside these rankings, plus the Top 10 most valuable vendor brands, Brand Finance's Vladimir Dimitrov gives us the lowdown on the movers and shakers, plus who to look out for over the next 12 months.

This issue's C-suite section features the CEO of Sky UK and Ireland, and the CEO of Vodafone Global Enterprise. Sky has launched its first mobile offering in the UK, and Stephen van Rooyen is full of optimism about its potential. "It's a big market, laden with opportunity for a late entrant such as ourselves to shake it up – because we have created something modern and different, compared with what's available from the legacy players," he says. At Vodafone, Erik Brenneis is into his first year as head of the operator's division that looks after multinational corporations. He explains how he is going to push the company to focus on fixed, IoT and cloud services. Part of his approach involves retraining. He says: "I've started a massive training programme for our 1,000-strong sales team with a special focus on selling other things than mobile."

This leads us nicely onto this issue's special report, which is all about one of the most talked about topics in the industry – digital transformation. We asked operators across Europe to define what digital transformation means in the context of their organisation, who is in charge, as well as what the easiest and hardest aims to achieve are. The answers to these questions and more can be found alongside analysis of the cultural and technology challenges that exist.

Digital transformation is certain to be discussed at Mobile World Congress, where many of you will be reading this. The GSMA has gone for the strapline 'The Next Element' this year, which could well be the title of a Netflix series. Reed Hastings, Founder and CEO of the video on-demand giant, will let you know if it is in his keynote. He is joined by likes of Vice Media Co-Founder Shane Smith and Vivendi CEO Arnaud de Puyfontaine as the kings of content make their presence felt at the show. As usual, you will be able to read all the news plus exclusive interviews on eurocomms.com and @eurocomms.

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The Evolution of Digital Identity
UXP Systems' User Lifecycle Management (ULM) powers Digital Identity as a strategic service for operators, providing user-level entitlement and identity management across all service types. Traditional SSO and IAM solutions no longer cut it in the digital world. The entire lifecycle of each user must be managed across all services and all devices in order for companies to differentiate themselves from digital providers, leading to stronger and more profitable user relationships that last a lifetime.
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Opinion

Telecoms can learn from the music industry when it comes to data protection
By Tobin Ireland, Co-Founder and CEO at Smartpipe

Q&A

TalkTalk Business COO Duncan Gooding
Duncan Gooding was promoted to the role of Chief Operating Officer at TalkTalk's enterprise arm in January. He discusses his plans, including legacy systems and the IoT

Feature

2017: Good news in store for content, G.fast, bad for Ericsson, security
'Tis the season for predictions for the year ahead, so the team has picked through the multitude of forecasts that have come into European Communications and chosen some of the most pertinent.

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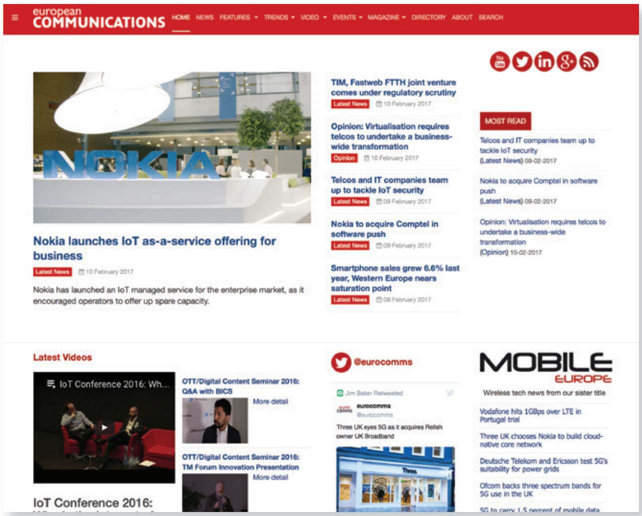

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UXP Systems: Keeping Operators Relevant in the Era of Transformation

A major sub-plot of digital transformation, as played out regularly in these pages, is that traditional communications service providers are struggling to compete with modern internet players.

The idea that they face a future as utility pipes, unless they urgently upgrade their internal infrastructure, is raised by the industry, as both a rallying cry and a warning, to the point of cliché. In most cases, the sense is to rip it up and start again – that the systems are too old and the culture is too entrenched.

Certainly, it is rare that anyone offers a solution that allows legacy systems to persist. But Canadian firm UXP Systems reckons to have such a thing, a leg-up for communications providers, and a get-around for their tangle of legacy systems.

The company has developed a software layer, or a 'User Lifecycle Management (ULM)' platform, that sits above operators' existing BSS / OSS systems and allows their users to connect to their products and services with a 'digital identity', much like a telco-version of an Apple ID.

Single, extensible digital identity

This digital ID, this gateway to content and services, is a major differentiator for over the top (OTT) players, says the company's Founder and CEO, Gemini Waghmare. "The experience is completely centred around you, the user. Your digital ID, your settings, the mix of services you use – it is all about you," he says.

"With the likes of Apple or Netflix, the average person, as a digital user, has a completely frictionless experience. They create an account, they trial the service and make purchases. They can engage on any device, at any level, connecting to a range of cloud services, and it is all highly personalised."

The user experience is consistent with any OTT, he notes, and consumers' expectations have been raised as a consequence. By contrast, cable companies and mobile network operators have traditionally worked with customers via a billing relationship alone and promoted manual and disjointed interactions at each touchpoint.

There has been little to distinguish one user's experience from another's, bar the name at the top of the bill each month, and the data they've used and the numbers they've dialled. "Telcos were only set up to support a single account," says Waghmare. "They didn't need to recognise users, or manage a family hierarchy, or enable different favourite channels or video bookmarks."

UXP Systems' prospering ULM platform changes that. It enables operators to serve customers with a single digital ID, which, in theory, works as a bespoke sign-on for any services they use, from any device.

The solution is unique, he says. Cable & Wireless, Liberty Global and Vodafone Group have all backed it. The company is poised to clean up in the market, he reckons, and raise up the operator community along the way.

Seamless user experience

Waghmare started UXP Systems with "a ragtag team" of colleagues from the BSS/OSS industry six years ago. At the time, Apple had just released its first iPad; its Family Sharing application on iTunes was still on the drawing board. Netflix, and the whole concept of on-demand video streaming, was very new, still.

"It was clear that consumer expectations were changing dramatically, and that, in our industry, operators' back-office systems were not up to the task," he says.

The problem is that the telecoms industry's systems are deeply entrenched. They have been developed over many years, according to changing circumstances – and changeable management strategies, vendor partnerships, buying patterns and consumer attitudes.

"The consumer behaviours that dictated their systems a decade ago are completely different to consumer behaviours today," he says.

UXP Systems figured there was a better way; that its "ragtag" of systems engineers could isolate their existing BSS/OSS systems, and develop a software platform to orchestrate digital journeys above all of the underlying systems of record, for such functions as user on-boarding, access, sharing and personalization.

"Everyone else was saying how the telecoms industry needed to rip it all out, and put new systems in, if they were to transform their businesses. We felt there was an opportunity to create a system of differentiation on top, which allows digital engagement with every single user," says Waghmare. "Central to that was giving the individual user an identity, something that hadn't been considered a strategic platform for operators before."

Expansive engagement layer

This digital ID provides an expansive "engagement layer", he says, which renders the user relationship as "purely digital", suddenly. Telecoms providers can enable any user linked to a billing account to connect to any service, from any connected device, leveraging the same underlying records management systems.

This last point is important, and a basis of operator constraints trouble to date. Most operators have multiple service and technology silos, and most of these have their own way to facilitate access for customers, he explains. Over many years, they have developed with different SSO authentication capabilities, using different, hard-coded solutions in each case.

"It is not uncommon for the same user to have different access credentials within each silo, from the same operator," observes Waghmare. UXP Systems provides a horizontal user management layer that traverses each service silo, enabling the operator to provide federated access across all of them.

> "Operators are finding that many of their traditional rules no longer apply in the digital world"

"The same billing systems will bill for services, the same customer management system will hold the customer records. We are just overlaying a digital engagement layer so communications service providers can manage the lifecycle of every digital user in the household," says Waghmare.

Digital identity is the start point, he argues, and the common denominator for an operator to 'go digital'.

Once this dynamism is established in the back-end, communications providers can engage more coherently with existing and prospective users about their services, which stands to have a direct impact on the success of their new innovations, whether they are around premium digital services or smart home applications.

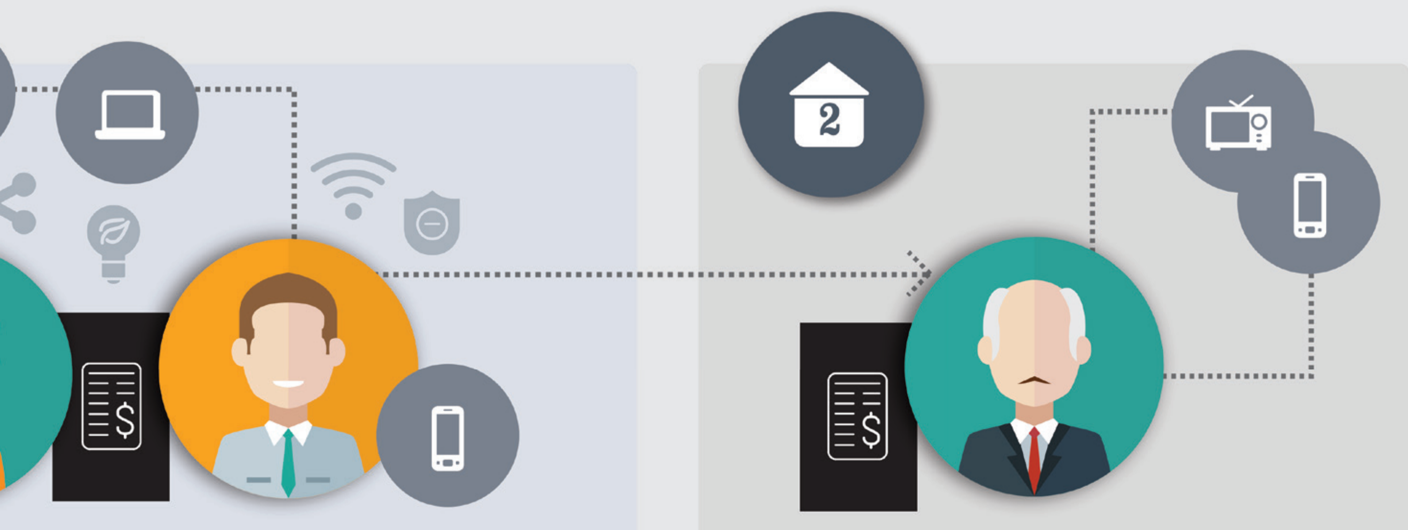
Unified user experience

Waghmare says digital identity can help operators who are struggling to maintain a unified user experience across traditional TV, bundled with VOD options, and external cloud services like Hulu or Netflix, for example.

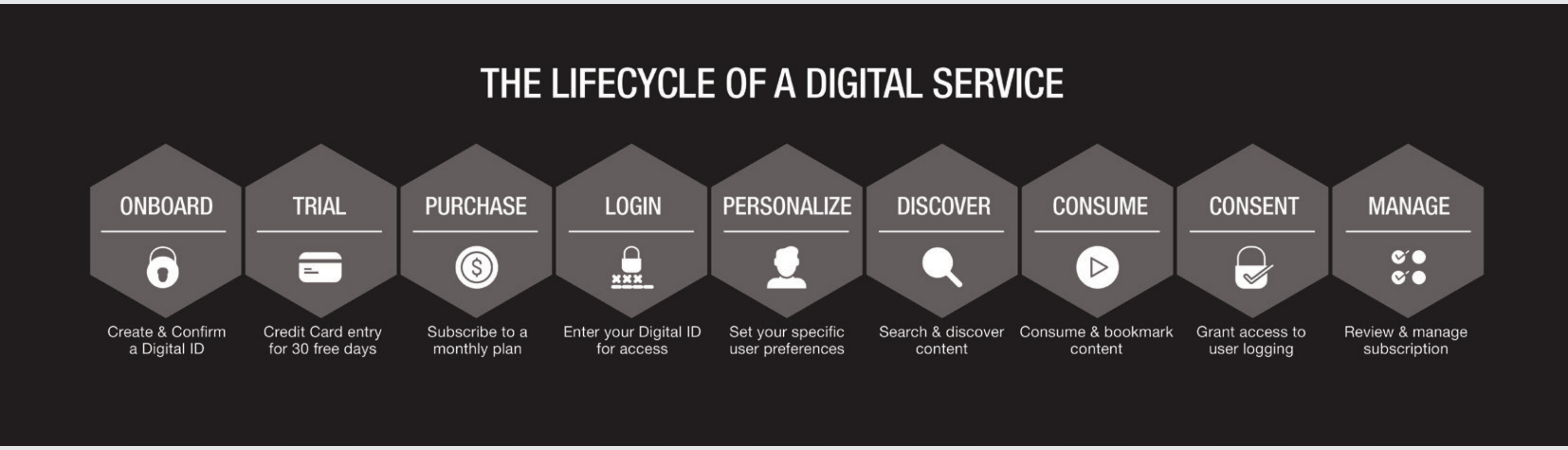
"Here, the user experience across these multiple services is critical, and needs to support and be personalised to every user in the house," he says.

He runs through some of the work UXP Systems has done with Cable & Wireless. The cable firm launched "over two-dozen" third-party digital services in 18 months using a single instance of its ULM platform, he says. ULM abstracted BSS / OSS from 14 different operating silos. "We are bringing great agility and time to market," he says.

Fifty percent of new user profiles Cable & Wireless has signed during the period have been with "secondary members of the household or non-customers", who do not hold billing relationships but are valuable members of the user base.



Managing user relationships is a lot more complex for operators in the digital era: robust identity capabilities are critical



As operators grow their portfolio of premium and cloud services, they need to master the lifecycle of how users interact with each service

Underlying, its ULM platform has certain other major features and characteristics, too, beyond just digital identity. It enables cloud-ready, standards-based identity management, with authentication layers like OIDC, SAML, SCIM, and Mobile Connect.

It is also open and modular, making it easy to set up third-party services, consistent across all channels, and to swap out and upgrade as required. It also introduces greater capabilities around the collection and analysis of user data, attended by user-managed privacy capabilities.

"Privacy is starting to get really big for us. Europe's pending GDPR is leading the rush – and it is the fact that the management of privacy has to be conducted at the user level that positions us so well. A privacy dashboard so each user can manage his/her own privacy and consent settings is where we're headed and we're working with a number of European operators on this since it is such a natural fit for ULM," he says.

Mobile industry appetite

The operator community has been quick to take notice of UXP Systems' proposition. The company established European offices in the Netherlands and Romania a year ago, after it secured work with Vodafone Group. The deal with Liberty Global followed. The profile of these customers, especially compared with its own youth and stature, is a testament to the value of its solution in the market, he suggests.

"We want to own this market, of course, and there's no one else doing it. We are working with Vodafone Group and Liberty Global, which are, respectively, the largest wireless and largest cable groups on the planet. And, at the end of the day, companies of their size don't usually work with companies like ours. We move in different social groups, right? There's no reason they should go with us, unless our solution is perfect for them."

Similarly, the company's relative growth rate is another marker of its position and trajectory, he says. "The operator market is consolidating. Larger vendors are either shrinking or holding steady, and we are growing fast."

Indeed, the company's approach, to synthesize old systems motors under the hood into a progressive digital BSS, is unique, says Waghmare. UXP has filed patents on its ULM platform, and has the market to itself, he suggests.

"The closest thing we've seen is operators trying to isolate their underlying systems and custom-build – either with partners or alone – something that bridges the gap between their legacy systems and the digital user. And we haven't seen one succeed yet."

The company is in "hyper growth mode". It raised £5 million in Series B funding last year, from cable pioneer John Malone, Chairman of Liberty Global, and business tycoon John Risley, a non-executive director of Cable & Wireless.

"We have very supportive shareholders, from the industry. And we have built up our capability, fortified the resources, and continued to expand in Europe," says Waghmare.

Indeed, it has just signed with Telia Company. Its run rate for new business is only really dictated by the market's turning circle. "It just takes operators a while to move their ships around, sometimes. We're adding a major customer each quarter, on average, which is quite special," he says.

It has its sights set on Asia next. "It is very important our implementations are successful from the get-go, and that we are able to support massive volumes of scale. We have gone about it the right way, and are fully focused on expanding in Europe and making a start on Asia too," Waghmare.

He returns to this idea that the traditional operators are losing ground to OTT players, and suggests, in fact, their future can be assured if they get the basics right, starting with digital identity. "This is a significant transformation for operators, as they look to the future. They're finding that many of their traditional rules no longer apply in the digital world. We're betting on the fact they can and will be successful during this transition, and will ultimately come out as leaders in the digital economy."

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The C-Suite

Interviews with senior execs from Europe's top operators

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Sky UK & Ireland CEO wants to reap what he has sown

Sky launched a mobile offering in the UK this January, capping a whirlwind 12 months during which it reimagined its overall proposition as well as its place in the market. James Blackman talks to Sky UK and Ireland CEO Stephen van Rooyen about its "most ambitious year"

Sky's sideways move into the UK's £15 billion mobile market had seemed like a certainty for years. The confluence between fixed and wireless broadband technologies, and between the smartphone and the set-top box, has been well mapped, and Sky looked to have the brand, billing relationships, and content portfolio to make it an exciting jaunt.

Why, then, has it taken it so long to get into mobile, and why was its final launch so muted?

The company's UK and Ireland Chief Executive Stephen van Rooyen says the opportunity for progressive operators to bring new ideas about service and content is now greater than ever. Sky, with its place in the home already, is poised, he says. "The path to innovation is richer for us than it's ever been," he says. "And the only way we are ever going to win is to innovate beyond what people expect."

He bats away a question about its lateness, and the dominance of a few brands in a commoditised market. "The market is fundamentally changing," he says, offering up Apple as the classic history lesson in tardiness in the tech sector. "Not that I'm comparing us, but, you know, Nokia and BlackBerry had it sewn up. Here we are, 10 years later, and no one's talking about them."

He zooms out. "It's a big market, laden with opportunity for a late entrant such as ourselves to shake it up – because we have created something modern and different, compared with what's available from the legacy players. So it's exciting, but it's only a starting point."

A most ambitious year

Van Rooyen has run Sky's UK and Ireland business since March 2016, having headed its marketing, sales and digital operations for two years previously, and joined from Virgin Media all of a decade ago.

So far, his time in charge has covered at least three quarters of the company's "most ambitious year", characterised by a flurry of new launches and left-turns. It is a period that has also seen Twenty-First Century Fox offer $14.6 billion for the 61 percent of Sky it does not already own.

The deal with Fox, agreed in December and pending regulatory approval, is the elephant in the room, here; Sky cannot say much, beyond making polite noises about its continuing shareholder support. Its developing strategy, and the proof points around it, are up for debate, however, and have been brought into relief by the company's latest results, for the six months to the end of December.

UK operating profits have slumped 18 percent (to £620 million) in the period, and group income has fallen by nine percent (to £679 million). Sky put the slide down to additional Premier League costs, which finished £314 million higher. In the end, slicker business functions enabled it to hit a £200 million "synergy target" six months early, and the delta to 2015's operating profit was just £65 million.

But churn was up by 1.4 points, to 11.6 percent. Van Rooyen says the business has "splayed" during the past year to pursue complementary paths, including mobile provision and internet-based TV, and do better by its customers – because of its position in the market, and its need to please.

"[Our customers] don't pay a licence fee, and we don't own spectrum. We have to convince our customers, week in and week out, year in and year out, to put their money with us. They need to know that we are there for them – as the technology evolves, and as their viewing habits change."

You can hardly accuse Sky of a poverty of ambition (its £4.2 billion bill for Premier League rights is 70 percent up), or a lack of ideas. It sets the pace for the rest of the UK television market, says van Rooyen.

"You have to keep up with us in this market. It has been that way for 10 years; every time we've had a chance to raise the bar, we've done it," he says. More than this, it has upped the tempo, even despite its high-energy traditions. "This has been our most ambitious year in terms of our delivery schedule," he says.

Its whirlwind 2016, kicking off with its flagship 'next-generation' Sky Q box, is worth reviewing, momentarily. Sky Q, now the de facto choice for anyone taking new Sky gear, confirms Sky's promise of anytime, anywhere, anyhow content; customers get a better integrated EPG, more storage and recording options, multi-screen viewing, and the ability to save shows to watch later, on mobile.

Those taking premium packages have also been able to get their kicks in 4K ultra high-definition, and content itself has been rejigged too. Sky Movies has been rebranded as Sky Cinema, with more premieres and on-demand content, and a free sports channel, Sky Sports Mix, has brought a taster-menu, and some live action hors d'oeuvres.

Sky Store, meanwhile, has established itself besides longer-established digital retailers; van Rooyen predicts it will overtake iTunes as the UK's leading video retailer before the year is out. "Three years ago, it wasn't even in the race," he says.

More symbolically, for a company that started in satellite TV, Sky has made good on the promise of its NOW TV streaming pass, with the introduction of a contract-free triple-play bundle, called NOW TV Combo, incorporating its OTT content with unlimited broadband and a range of call packages.

> "[The mobile market] is laden with opportunity for a late entrant such as ourselves to shake it up"

Now TV has "come of age", says van Rooyen; as a "pay lite" proposition, it addresses an untapped market of 11 million households. "Its rate of growth has been pleasing, and as a product it has been resilient," he says.

Hunting for fibre subs

In a further step away from its roots, the company said last month all of its Sky Q content will be available in 2018 without the need for a satellite dish for the first time, over a broadband connection only. It is a direct response to the new market dynamics created by the likes of Netflix and Amazon Prime.

Sky is building a European TV production studio, and has 100 original series slated for production in 2017 – around twice the number Netflix put out last year. It claims it has more subscribers to its six-month old Box Sets service, already, than Netflix has in the UK.

The company is drawing new business, even as customers have increased choice. UK revenues climbed five percent, to £4.3 billion in the second half of 2016. But van Rooyen says there is space for anyone with an innovative streak and superior service. "This isn't a zero sum game. It's not about winners and losers," he says.

"If we've learned anything over the last five years, since Netflix has been in the country, it is that – we are a much bigger company, delivering bigger profits, and Netflix is a bigger company as well. I don't think we're even really at odds with each other, even if we offer, in some cases, quite complementary things."

Sky's developing interest in broadband access technologies sets it apart from these brands, clearly. As well as mobile, it is looking to upsell fibre, for instance. "Combining fibre with SkyQ makes the proposition a knockout," says van Rooyen.

Sky reckons two-thirds of new prospects want fibre; as yet, fibre penetration within its base remains "quite low". It retains a watching brief on UK regulator Ofcom's continuing debate with Openreach about its proposed separation from BT, Sky's UK nemesis in the provision of broadband access and media content.

"We go where the customers are, and we compete in a moving market. Fibre is becoming increasingly important to our customers. But, there is a real tax on it,

levied by Openreach. We have to find the right balance between these unattractive economics and customer demand," says van Rooyen.

But Sky Mobile is the biggest adventure of van Rooyen's reign. So far, the company has played only a single hand, but one van Rooyen says marks it out already from the other players at the table.

More to come from mobile

"We haven't showed everything yet; this is not what it will be, ultimately. But what we've produced already is different," he explains, making reference to its promise Sky Mobile customers can rollover their unused data for a period of three years. "We've said you own your own data – you've paid for it and it's yours. There's no legacy business that would do that."

It has a few other early points of difference: customers with Sky TV do not have to pay for UK calls and texts, and subscribers can change their airtime package each month, and also sync and view their TV box content through their phone. "No else does that," he repeats.

For now, van Rooyen does not want to allow competitors the "headroom" to respond right away, nor to make a rod for itself by "promising cut-price deals and all those sorts of things". He says: "I'd rather ensure the network and systems and capabilities are fit for purpose. Then, as we always do, we will innovate for the benefit of our customers, and hopefully our own growth."

That innovation will happen around this confluence between the smartphone and the set-top box, he suggests. "In the fullness of time, beyond tariffing and packaging, your personal device becomes an extension of your living room device," he says. "That is where it starts to get really interesting."

Is an MVNO the correct vehicle for such vaulting innovation? Van Rooyen says piggybacking on O2 UK's network is favourable: the deal it has struck affords it a high degree of control, and the "network economics" of spectrum ownership and infrastructure building do not necessarily stack up if you want to differentiate on "technology, innovation, packaging and bundling".

But even in the most high profile cases, MVNOs have been niche operations, with particular marketing expertise for narrow customer segments. Is this really a bigger opportunity for Sky? "Yes, sure, MVNOs in the UK haven't really made a splash, but they haven't had a massive base to sell to, nor a track record of doing so," he says.

Even comparison with Virgin Mobile is wrongheaded, he says; it has a "restricted footprint", and "different priorities". He states, generally: "Our financial capabilities, and also our innovation credentials, distinguish us. Our ability to cross sell, and our track record of cross selling, and our track record for service, I think, is probably the standout in the market place."

But for now, as he says, Sky Mobile will double down on its early hand. The mad rush of activity of the past year must necessarily slow down, as the business looks to make its new inventions and ideas resonate, and sell. "We don't want to go, now, and launch another platform, doing something else," he says.

"It's been an incredibly busy period. My objective is to make sure we grow with what we already have."

He adds: "Our aim is to have something for every customer – and for every customer to have something. Which is why we have innovated with everything from Now TV right through to Sky Mobile; it means we have quite a broad canvas with which to address the market." ec


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Vodafone Global Enterprise CEO: We will leverage the IoT to sell other services

Eight months into his reign at the helm of Vodafone's multinational business division, Erik Brenneis discusses his plans to drive it forward with Marc Smith

Erik Brenneis needs to update his biography on Vodafone's website. The CEO of the UK-based operator's Global Enterprise arm is, apparently, busy learning Italian.

Journalists tend to pick up on such details, particularly when one of Vodafone's main rivals – BT in this case – has just announced a massive accounting scandal at its enterprise-focused Italian opco. Sadly, rather like BT's corporate governance, Brenneis' bio is behind the times.

"I'm not learning [Italian] anymore," he says. "I was when we took over [connected car company] Cobra in 2014. But I froze it at a level where I can order a pizza in a restaurant."

Understandably, Brenneis doesn't want to be drawn on the debacle unfolding at BT Italia but he is happy to point out that Vodafone Global Enterprise (VGE) has a more upbeat story to tell.

As part of its announcement that a writedown of its Italian subsidiary had widened to £530 million, BT noted that its outlook for the international corporate markets had deteriorated.

But Brenneis says: "I don't have the same view. The geographical mix and product mix [that VGE has] gives us a growing business now and I expect to have a growing business over the next few years as well."

Results for the six months to September 2016 – when revenues at VGE grew 4.3 percent to €1.6 billion – back up this optimism. However, the following quarter's results, which were unveiled after this interview took place, suggest BT was not far out. Vodafone did not break out VGE's results for the three months to December, but did warn that the division experienced "slower growth… reflecting increased competition in India and customer losses in UK fixed."

The UK, where Vodafone is partly reliant on a public sector customer base that is cutting back amid continued austerity and the uncertainty surrounding Brexit, is clearly a concern moving forward.

The IoT's strategic benefits

Understandably, Brenneis is keen to point out the performance of Vodafone's IoT division, which is part of VGE. Given he moved into the VGE hotseat in July 2016 after leading the IoT business for more than six years, this is perhaps understandable. Brenneis' legacy there is assured, with Vodafone regularly ranked as the world's leading IoT telco.

The challenge at VGE – a "bigger" job with "huge potential", according to Brenneis – is evolutionary. “There’s no need for a revolution,” says the CEO. “We will build on our strengths. Our heritage is mobile but… my mission is to transform the organisation into one that is known for any communication need – mobile, fixed, IoT and cloud.”

With his old IoT colleagues delivering stellar growth – revenues rose 17.2 percent to €355 million in the six months to September last year, while the number of IoT connections hit 49.1 million at the end of December – there must be a temptation to give them a more prominent platform. The CEO promises there will be no special treatment handed out, but says the IoT does offer strategic benefits that will help the rest of the business.

“Compared to other products, the IoT gives you the closest relationship with customers,” Brenneis says.

Citing car manufacturers, he says CEOs want to talk to you if you’re embedded in the car.

“You can form a partnership and then sell mobile and fixed services,” explains Brenneis. “If you just want to sell them mobile services the CEO doesn’t want to know.”

Naturally, VGE cannot rely on this approach alone. The CEO says the business is “massively pushing” fixed-line services.

“We will work closely with product management teams, opcos and use the key assets that we have, such as Cable & Wireless and Kabel Deutschland,” Brenneis says.

VGE claims to have the largest fixed network in the world for enterprises, covering over 65 countries directly.

“For more than 80 percent of our customers we can put together a very convincing fixed offer if they want global connectivity,” says Brenneis.

He says the remaining 20 percent includes, for example, a Chinese or Brazilian customer who only wants to connect offices in their respective countries. “We would not even attempt to compete here,” says Brenneis.

Work to do in the cloud

With mobile, fixed and the IoT covered, is it the emerging cloud business that is VGE’s weak link?

“From a perception point of view some people might think that but it is because they compare apples with pears sometimes,” says the CEO, referring to the fact that VGE does not compete in the public cloud space. While rivals including Deutsche Telekom have made a play in this most competitive area, VGE is focused on selling private clouds and bundling in public cloud services from the likes of Amazon as part of a hybrid cloud solution.

Brenneis admits that there is “work to be done”. He says: “I agree, we’re not viewed as major cloud player and we need to do more.”

The opportunity seems clear, at least according to analyst reports. Research house IDC, for example, predicted spending on private cloud infrastructure was set to grow 11 percent to $13.9 billion in 2016. Nokia, meanwhile, published a report in January this year that found that “most” large enterprises can save a minimum of 25 percent on their IT costs over five years by moving to a private cloud.

Amid such positives, Brenneis is confident cloud can become a substantial part of VGE’s business. He says: “Customer surveys show that over half want to buy a cloud service with connectivity. We need to be in it – it’s all about execution.”

As part of this, Brenneis is targeting his commercial team. He says: “I’ve started a massive training programme for our 1,000-strong sales team with a special focus on selling other things than mobile.”

Channelling UK cycling supremo Dave Brailsford, Brenneis adds: “There are lots of incremental steps… it’s about continually getting stronger.”

The cloud business looks set to get a boost in February by the arrival of Dell and HP veteran Brian Humphries. The exec takes over as Group Enterprise Director, meaning he sits above Brenneis, with a brief to oversee all of Vodafone’s B2B activity from SMEs to multinationals.

Announcing his impending arrival in December, Vodafone Group CEO Vittorio Colao said: “Brian has extensive and diverse international leadership experience and a strong track record in driving market share growth.”

Says Brenneis: “He’s a great manager. We will profit from his knowledge, especially on cloud.”

Humphries’s background should also mean he will be able to offer a different perspective when it comes to how Vodafone positions itself. When asked what the biggest challenge to VGE’s growth is, Brenneis says “perception lags capability” when it comes to the market knowing what the company has to offer.

As he enters his eighth year as a Vodafone employee, the VGE’s new chief executive could perhaps do with some fresh perspective. But longevity has its benefits as well – Brenneis reveals he has got his dream job at Vodafone.

“If someone would have said ‘You can choose any job’ I would have picked this one,” he says. VGE’s new boss might not be able to order more than a margherita in Italian, but if he can make the company as successful overall as the IoT business he left behind then he will have the pick of the country’s best restaurants.

The 'self-driving telco' – putting intelligence into action

Amdocs introduced its new machine-learning platform, 'aia', at Mobile World Congress in Barcelona. European Communications caught up with its CMO, Gary Miles, to discuss the future of intelligence-powered telecoms

"In 10 years' time, people will be reluctant to choose a human doctor". It is the kind of remark that engenders both great hope and deep ambivalence about the rise of machines.

It is just that machines are very good at retaining and processing information, and will bring improved efficiency and accuracy, as well as extreme logic, to roles traditionally held by humans, in medicine, just as in every field. It is the same for this market, Miles says. "Machines won't replace people in telecoms, but they will play a more active role."

Miles, Chief Marketing Officer at Amdocs, says telecoms, with its rush towards technological convergence and industrial consolidation, can gain more than most sectors by leveraging the transformative impact of AI. "Things are changing at a crazy speed in terms of core technology capabilities and now it is time to drive these changes into operation," he says.

He points to AT&T's purchase of DirecTV and planned move to acquire media giant Time Warner and Verizon's recent run of acquisitions in the Internet space. "The communication and media industries are merging. It is a very dynamic space with major impacts on traditional providers. AI will play a very important role," he adds. But this is not just passive observation, on his part; it comes with a warning.

Communications service providers that are not immediately proactive about their data intelligence could vanish. "Those that don't move in this direction will find their market share and profitability sliding, and, in an industry full of M&A, it is not such a long road to find yourself a part of a bigger organisation," he says.

Introducing 'aia'

For Amdocs, the new era of intelligence is not just about providing insights and analysis, but "intelligence in action", which affects business processes. He points to the industry's move towards software-defined networking.

Amdocs' big data and machine learning expertise is being built into the "fabric" of its commercial network virtualisation solutions, he says, and is coming to life in works such as its recently-announced OpenECOMP open-source project with the Linux Foundation, in which AT&T as well as Amdocs has contributed the code.

Miles explains the role of AI in telecoms in terms of three elements: the customer-facing aspects, around proactive and real-time customer care and marketing; network operations, where more elastic network maintenance raises response times and performance; and finally, the real-time data flow that feeds both these functions, and will work as a springboard for future innovation.

Ultimately, Miles sees a vision of a "self-driving telco", where business strategies and decisions are informed by live data intelligence, and processes are automatically optimised and executed. More than this, network performance, customer experience and business revenues are improved, as internal machines learn to make better decisions and take better actions at every turn.

"With machine learning, working with chatbots and natural language processing, costs are already being driven out of the call centre. These same systems can improve up-selling and cross-selling. And all of these things are enabled by putting intelligence into action. This effectively defines the self-driving telco," explains Miles.

He adds: "Is it about talking to consumers, or is it nudging care agents with the right offer and the right decision? It's both. Is it helping network people plan? Yes. Is it helping the security operations centre foresee attacks and things happening in the darknet? Yes. It is all of the above."

At Mobile World Congress, Amdocs showcased its new 'aia' intelligence platform, which will have increasing influence over all of its software propositions for the communications and media markets. On the show floor in Barcelona, aia is running chat interactions for customer care and marketing applications. At the back of the booth, for operators' eyes only, it is showing off certain other network features, designed to give service providers a competitive edge on rolling out intelligent, virtualized networks.

To date, Amdocs has signed "about 30" customers who are using its big data and machine learning solutions, including Telefónica and Vodafone. Miles says aia, powered by some of the world's "best in-class machine-learning engines", is designed to bring both experience and continuous learning to communication service providers.

"In today's environment of open systems, it is critical to work with an ecosystem of partners and machine learning technology that can bring the agility needed to win the market," says Miles.

Customer care

Miles explains the use cases for data intelligence in telecoms in the context of digital transformation. "It's a two-sided coin," he says. "There's the intuitive customer experience side, which must be intelligence driven, and the real-time operational and automation side of the coin, which is about moving the data and intelligence in real-time between a CSP's organisations and systems."

This makes aia a powerful proposition, especially when coupled with Amdocs' experience in the communications business. It can pull data from any business support system, software-defined network or internet data source into Hadoop and then process huge amounts of structured and unstructured data. Effectively, it is a real-time operational system for analysis and reporting, as well as customer engagement across a range of applications.

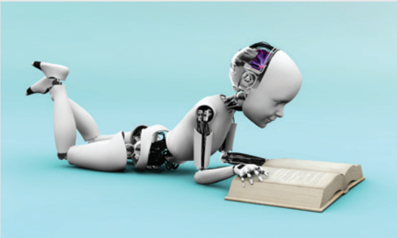
Amdocs says that, over time, hybrid data stores based on Hadoop and RDBMS, feeding machine learning systems like aia, can replace expensive, batch-based relational data warehouses, which are simply not as effective for communications companies wanting to engage in a real-time digital environment.

"Customer experience is ultimately our focus, whether it is impacted by better functioning networks, smarter personalised marketing or faster care – these processes can work better when machine driven," remarks Miles.

With machine learning, operators can rise above some of the inherent clunkiness of existing care and marketing systems, which customers often recall with frustration, by making their systems more agile, and their solutions more appropriate. "No one wants to wait in queues, and get transferred between experts. Consumers hate marketing spam," says Miles.

Machines are always available, he says, and can take their cues instantly from reams of data and touch-points. With the right inputs, they can respond in the real-time flow of a customer journey, anticipate ahead of time, and make offers that resonate.

Ultimately, such intuitive learning of customers' habits and preferences will impact upon customer satisfaction, even on net promoter score (NPS) measures.



Dynamic capacity planning

Machine learning will also improve customer satisfaction by delivering better connectivity, says Miles. "That's one of the major things influencing the customer experience. We know that. It comes down to dynamic capacity planning and network management."

He adds: "As we move to software-defined networks that sit in the data centres, instead of some kind of appliance-based hardware and software bundle, we need to understand where the flow of traffic is going, based on historical patterns, predictive patterns, and then be able to shift capacity, or virtual service sets and virtual functions.

"Instead of building networks for high peak periods, service providers will be able to spin them up dynamically to provide better network services in the right locations at lower price points."

It is just one example of the kind of efficiency savings afforded by in-built machine intuition, says Miles. He references predictive maintenance to reduce truck roll to homes and radio towers as another, reducing resources and inventory in tandem, and network security as too, where machine learning plays a part in cyber protection.

But many telecoms providers are installing AI solutions that are either "half blind, or offline", he warns, which fail to show where the customer is on their journey. The success of data analytics depends on its sources, and the number of them – the bigger the data, the sharper the insight, and the more profound the potential learning.

As with any entrenched business sector, which is looking to transform, business culture and structural silos can hinder progress. "Data needs to flow across, and then come out to the consumer, and eventually return to the P&L."

How soon, then, before we have a real, live self-driving telco? "We believe the self-driving telco is here, as long as it's using the right AI solution of course," says Miles.

Returning to his very first point, the Amdocs CMO notes: "A lot of telcos want to be communications, Internet and media companies. If you look at who's most active in the AI space, it's the Internet players – Google, Facebook and the others. They're investing huge sums, and making acquisitions, and attracting top talent," he explains.

"It is their competitive weapon, and for any global player like that, every percentage point of a percentage point makes a difference. It is clearly working for them. The relevance of AI to the telecoms industry is very, very real, and operators understand that. The question is how soon they act on that knowledge, and how the industry as a whole can move at a faster pace."

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Amino boxes clever as it heads to the IP/cloud future

The rise of the "connected consumer" – who expects TV content anytime, anywhere on any device – presents challenges to fixed line and mobile operators alike. Here, Donald McGarva, CEO of Amino, details how operators can best respond to this key industry trend and prepare for all media and services to be delivered via IP, on demand from the cloud

Amino is probably best known as a set-top box company. How are you responding to the changes and challenges in entertainment service delivery?
"It's a very exciting time in our industry – and for Amino. We think the future's clear – and so do our customers – in that all media and services will be delivered via IP, on demand from the cloud to any device, anytime and anywhere.

"Our challenge is to ensure we're aligned with that market direction. We've been building on our 20 year heritage in IPTV software and hardware development, and broadening our offering to include new hybrid TV devices together with end-to-end cloud TV and IoT solutions to address the needs of mobile and cable TV operators.

"We already work with several European operators – specifically on IPTV deployments – but increasingly to help them deploy TV services to other connected devices such as mobiles, tablets and smart TVs. Beyond this, we're also offering an easy to deploy Internet of Things offering – our Fusion™ home monitoring camera – that can be marketed to an operators' entire broadband customer base, not just TV subscribers.

How does Amino differentiate itself in this competitive market?
"One of our key differentiators is that we extract maximum value from an operator's existing assets, including already deployed devices in consumers' homes.


Donald McGarva, CEO of Amino

Using our software expertise, we can help deliver a unified next generation service across all platforms.

"This ability to take on complexity and provide a solution is a real differentiator in our market. We've built up an excellent track record working with likes of Cincinatti Bell in North America and PCCW in Hong Kong, where we've deployed our Enable™ software platform across a full range of new and legacy devices to deliver 4K UHD services.

"IPTV has been our business for many years so we have very deep software integration expertise and experience drawn from working with operators since the late 1990s. Whether it's a complete "green field" deployment or complex tier one operator integration, our team has supported many innovative service launches. Plus, we're nimble and flexible – and really responsive – and that's also a key differentiator."

Which customers do you work with?
"We work with numerous operators in Europe including Vodafone, Tele2 and regional operators who have built out IPTV services on the back of investments in their broadband networks. Increasingly, we've seen mobile operators move to a quadplay offering as well – and have worked extensively with DNA in Finland on their mobile TV service rollout.

"Beyond Europe, we have numerous customers in North America and are expanding rapidly in Latin America which has become one of our key markets. We're also seeing encouraging growth in the Middle East and have been working with PCCW in Hong Kong.

"We're now starting to see fixed line and mobile operators coming to us looking for solutions, for pure 'mobile TV' solutions but also to support their quadplay ambitions."

How do you see the future?
"Customers are now recognizing us as a trusted guide to the all IP/cloud future. Operators are transforming their core business to IP and our ability to maximize the value of their existing assets while creating compelling new entertainment experiences to multiple devices is a really exciting proposition.

"We look forward to continuing to create disruptive software and hardware solutions that support next generation services on all platforms."

CellMining: How can operators predict and prevent churn?

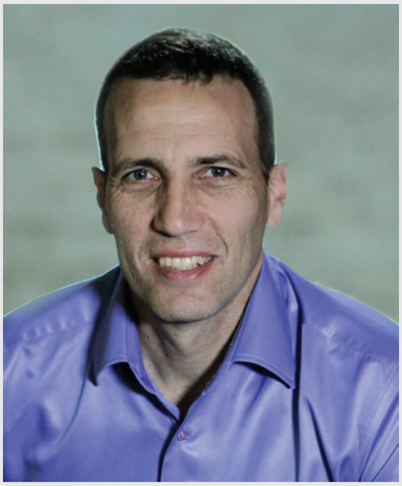
Measuring and improving customer experience (CX) has become one of the most important business priorities of the 21st Century, and in no sector is this more crucial than in the mobile communications industry. Customer experience management (CEM) systems in use today analyse data from as many sources as possible to benchmark the quality of the user experience. They use this data to produce graphic visualisations of 'customer journeys' or 'customer maps' that give insights into how satisfied subscribers are, and which aspects could be improved.

A popular CEM metric is the NPS (Net Promoter Score)—an index calculated from customer responses to a standard telephone or online questionnaire. This score quantifies the customer's perception of how good the service is, although in reality this is a qualitative attribute.

> "Virtual NPS technology can realise the ideal of automatic churn prediction"

The CEM teams then look at the network KPIs that have been experienced by each customer, and which might have influenced the survey response, and correlate these with the score.

CellMining doesn't believe this approach is as effective as it could be. "NPS results can be influenced by many subjective factors that have nothing to do with network performance," says Omer Geva, president of CellMining. "Soft metrics such as call centre responsiveness and retail outlet performance



Omer Geva, President of CellMining

are constantly surveyed, but these are nowhere near as important to the customer as their negative experiences with the network. The major objective should be the ability of the network to meet subscriber expectations for voice and data call fulfilment. Real pain points like low quality VoLTE calls, slow video streaming, or frequent dropped connections when travelling, may not show up on current CEM systems. If there's no realistic feedback and no service improvement, then the customer may become just another churn statistic."

Subscriber experience insight

CellMining has built its integrated CEM-SON solution around its unique Behavior-Based Network Analytics technology, which analyses Call Data Records (CDR) to generate actionable insights. It displays the performance against various network KPIs in real time on a dashboard called the Subscriber Experience Hub.

Unlike conventional NPS, CellMining's solution allows CX to be monitored on a continual basis. Using CX insights derived from CDRs can uncover previously invisible issues—for example a whole group of subscribers who are being forced to use legacy technologies like GPRS for data—when satisfaction surveys may not show the reason that these subscribers give negative scores. RF optimization teams can then steer these subscribers onto the more advanced technology networks to improve their data session experiences. Another example is the growing use case of VoLTE call quality compared with Voice over WiFi—both separately and in transition—where CX insights derived from CDRs can uncover undetected quality issues.

It is believed that the CDR-derived KQIs (Key Quality Indicators) are a more reliable indicator of customer experience than the more subjective satisfaction scores and NPS data, which are limited by being based on just a small sample of subscribers at a single point in time. NPS can also be skewed by a recent one-time event, which may not even be directly related to network performance.

In a recent trial with a Tier 1 European operator, CellMining cross-referenced its CDR results with the NPS and satisfaction rating responses from those same subscribers, and demonstrated a remarkably close statistical correlation with the customer satisfaction scores.

Predicting and avoiding churn

This new 'Virtual NPS' technology, which fully automates the correlation of NPS data with real key network quality indicators (NQI), can make the ideal of automatic churn prediction a reality. CellMining's approach uses precise quantitative metrics to characterise real-life subscriber experience on the network and to drive an automated system for predicting and preventing churn.

"In addition to driving informed network improvement actions, the CellMining

Subscriber Experience Hub can actually provide the operator's marketing and CX teams with market-wide churn prediction," explains Geva. "Our Virtual NPS approach is based on advanced mathematical models that correlate existing NPS and satisfaction ratings with both standard and proprietary key quality indicators (KQI) from the mobile network."

"Our subscriber experience analytics accurately segment customers, allowing MNOs and MVNOs to drive increased ARPU as well as to establish business priorities for network engineering tasks. Device and handset analytics also provide valuable insights that assist marketing teams during handset introduction campaigns."

Success stories

The effectiveness of CellMining's technology is evidenced by a recent operator wins. They have closed a series of contracts with mobile operators in different countries: the most recent one is with MegaFon in Russia, who selected CellMining after rigorous and lengthy selection process during which products from several leading SON vendors—including network infrastructure vendors—were trialed on the operator's network.

The SON-CEM solution is underpinned by some unique module options that offer further capability to increase operators' profitability. Highway mobile experience analytics provides the ability to map network quality on travel routes against adversely-affected subscribers, mobile device types, and cell sites.

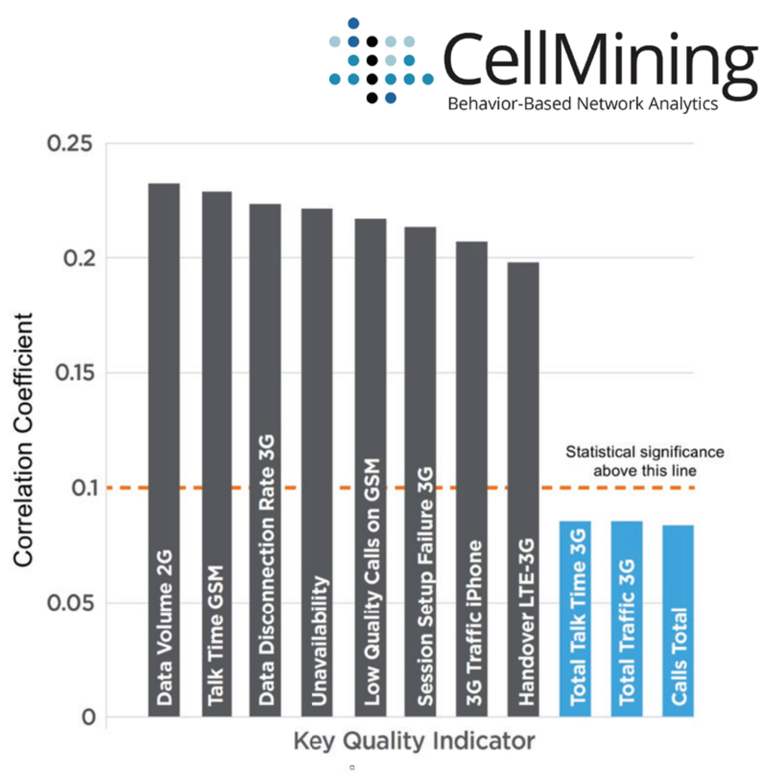
One of the most interesting options is the new Energy Saving module, which gives MNOs the opportunity to save on energy costs by offering controlled cell power-down while ensuring that customer experience is not put at risk. CellMining's Energy Saving module develops an accurate set of user profiles that can be used as the basis for informed energy saving decisions. By shutting down and powering up RF power amplifiers, based on sophisticated algorithms that track subscriber usage patterns day and night against multiple network parameters, smart energy savings of between 6% and 12% can be achieved without any impairment of user experience. This helps MNOs to significantly reduce their operational costs and to become more 'green'.

Proactive care or reactive problem solving?

The mobile network infrastructure represents the MNO's most valuable asset, as well as its largest investment. It is the most influential shaper of the customer experience, yet paradoxically is the least-measured and least-benchmarked part of the customer journey. Most MNOs have built their CEM systems, and continue to implement and modify their business processes, based around the softer customer metrics that are conventionally surveyed. Parameters such as probes and trace data from tools in the Radio Access Network (RAN) are then used to reconstruct calls and data session problems – an effective remedy for individual customer problems, but impractical as a systematic technique for implementing a real-time CEM system.

Closing the CX loop using deep network analytics based on real-life subscriber experience data is the only way to ensure that the root causes of low customer satisfaction—the technical issues that degrade network performance for individual subscribers—are effectively addressed. As 5G and autonomous cars start to become a reality, and with the IoT paving the way towards a smarter, more connected world the demands on the network are growing exponentially. There is now an even greater need for technology solutions that maintain a seamless experience in the face of this data explosion.

With features that ensure an exemplary mobile experience under these challenging user scenarios and the ability to minimise OPEX with smart energy saving, CellMining's solution empowers the operator to achieve the best return on its network investment, maximising profitability while retaining customer loyalty.



Statistical correlation between network KPIs and NPS

MTN Cyprus : Poised to become Number 1

European Communications: Looking back to 2016, how would you describe MTN Cyprus achievements during a rather challenging year for most operators in Europe?
Philip Van Dalsen: Despite the fact that many European telecom operators experience flat or declining revenues, MTN Cyprus seems to belong to a small group of operators who continue to grow significantly for the last consecutive years. 2016 turned out to be one of the most successful years in our history, both in net revenues and EBITDA. Notwithstanding the increased competition, our base grew by a healthy 10%, continuing the trend of the last couple of years, and indicating that we are doing something right. We continue to enjoy the trust of the most dynamic age group (14-45), in which we have the biggest share in Cyprus. Last December, we saw a remarkable increase in the number of people who decided to port their number to MTN Cyprus. The addition of MTN TV made us a full Quad player, while our investment in the B2B market and the acquisition of an ICT firm aim to drive our revenues from ICT services higher.

What are the key challenges and opportunities for 2017, and how have these influenced your business strategy?
As Cyprus continues to recover from the recent crisis, the telecom industry remains a critical force for growth and innovation across multiple sectors of the economy. The crucial question for an operator is how to capitalize on connectivity and mobility that seem to have become entrenched in our lives. I believe we must seize the opportunity to increase our revenues by exploiting existing trends, such as the growing smartphone penetration, by achieving the digital inclusion of the elderly, and by investing smartly in creating new revenue sources. One thing is for sure: our 2017 strategy will bring

MTN Cyprus CEO, Philip Van Dalsen

MTN Cyprus closer to its long-term target: to become the #1 choice of Cypriot consumers and turn Cyprus into a regional ICT hub. Let's face it; Cyprus is the only stable part in the entire region. We can, and should, capitalize on that too.

Could you be more specific regarding your plans? In which areas do you plan to invest more in 2017?
Well, what makes a telecom operator successful is, among other things, their ability to continue to invest and take risks despite rapid changes. Cyprus is a relatively small market, so we do not have the luxury to make wrong decisions regarding investments, campaigns and partnerships. We lack financial buffers which could absorb the impact of poor decisions so , we are very much in detail without losing our agility and our speed. In 2017, we shall make the biggest investment we have ever made, as we wish to continue to focus on providing data and voice services that are reliable and affordable. Capacity upgrades, 4G coverage expansion, specific 4.5G trial sites and broadband everywhere are among our roll out plans for 2017. Regarding 4G coverage in particular, we aim to reach the average of other developed markets. This is what our consumers demand.

How else do you plan to secure and expand your revenue base?
As said, in 2017 we shall explore all likely sources of new customers, by further penetrating key market segments. We aim at expanding mobile and broadband data usage. New offerings, like our "Broadband in a Box" (a substitute for ADSL) will help our customers turn mobile data into a fully fledged home broadband service minus the need for a fixed line. We have introduced MTN IPTV and OTT and will launch Smarthome services. With connectivity increasingly transforming the way companies do business, we intensify our efforts to address the business market, focus on the quality of our network resources, on the experience of our people, and most importantly on our excellent customer experience.

Do you think that regulatory changes could pose as a threat for the European Telecom Market in 2017?
The European mobile industry has grown dramatically by virtually any measure. As operators we have to be able to continue to invest and take risks despite the rapid changes. This is not always a given if I look what's coming out of Brussels regarding regulation. We must make sure that consumers are able to enjoy advanced services and innovative technologies. We all seek ways to remain competitive and relevant. Any change in the regulatory framework has to aim at improving the way Europeans consumers connect. Policy makers need to implement changes that will not curtail the operators' ability to invest in the next generation technologies.

THE

Most Valuable Telecoms Brands

2017

European Communications and **Brand Finance** showcase the most valuable telecoms brands in the world in 2017

Deutsche Telekom has T-Mobile US to thank for European success, as AT&T moves ahead of Verizon

European Communications discusses the facts behind the stats with Brand Finance Consultant Vladimir Dimitrov

European Communications: AT&T has displaced Verizon as the world's leading telecoms brand. What did it do right and what did Verizon do wrong?

Vladimir Dimitrov: AT&T's acquisitive growth in South America and Mexico follows its 2015 takeover of DirecTV. It has been rewarded with continued growth in brand value and an increase in market share.

The decision to acquire DirecTV made a lot of sense giving AT&T access to some high-growth markets and the ability to bundle their services. Although 45 percent is a considerable increase in brand value over one year, it is worth mentioning that the main reason for that was the rebrand of DirecTV, which is now brought under the AT&T umbrella. Having said that, the brand has now become a much more important part of the AT&T business, comprising 24 percent of the total enterprise value compared to only 19 percent last year.

Looking at the relative performance against Verizon it is important to note that AT&T brand is not very far ahead of Verizon in terms of strength. What is more, customers seem to be equally satisfied with both brands and with rumours of potential deal between Verizon and Charter Communications it is too early to draw any conclusions.

Deutsche Telekom maintained its position as the top telecoms brand in Europe. How did it manage to increase its brand value by 10 percent?

Similarly to the AT&T case, Deutsche Telekom is proving the point that overseas expansion has been a more successful strategy for telecom carriers as opposed to staying focused on their local markets. The 10 percent increase in value came largely as a result of higher revenues and increased market share in the US market. In the third quarter of 2016, the brand added around 969,000 postpaid subscribers, dwarfing both Verizon and A&T who added only 200,000 and 450,000 respectively. The success of the Binge On service seems to be one of the key factors behind this massive customer acquisition rate in 2016. What is quite surprising is the fact that Deutsche Telekom achieved all that not only without sacrificing its bottom line margins, but by improving them considerably over the last year. Globally the strength of the T-Mobile brand has not changed much over the last year, remaining an AA+ rated brand.

Which other European telcos stood out for their performance and why?

One of the top European performers this year was SFR whose brand value increased to $5.8 billion, thus registering 44 percent growth. The rebranding of Numericable to SFR as well as the introduction of some SFR channels have had a positive impact on the brand. In spite of the slight loss of market share in its main market, analysts are optimistic over future revenues. On top of that, consumers' perceptions of the brand, or what we refer to as brand equity, have improved considerably thus increasing SFR's brand rating to AAA-.

A brand that followed a similar strategy was Ziggo, which was chosen as the main Liberty Global brand in Netherlands, while the UPC brand was dropped. Similarly to SFR and BT, Ziggo introduced a number of branded sport channels adding more content to its offering. Meanwhile the partnership with Vodafone created a quad-play giant in the country, enabling them to challenge the dominance of KPN.

Two of the continent's big names, Vodafone and BT, saw their brand values slip 22 percent and 38 percent respectively. Why did they perform so badly?

As with everything these days, Brexit is at least partly to blame. The two main factors driving the drop in all UK brands this year were the depreciation of the pound against the dollar and the uncertainty around the whole referendum event, which impacted the discount rate we use for the UK market. This means that expected future earnings are more heavily 'discounted' to account for the risk of economic turmoil of one kind or another.

Leaving the external factors aside, Vodafone and BT did not experience any major changes in terms of brand strength over the last year, with both brands keeping their brand ratings at AA+.

Overall, how did Europe perform versus the rest of the world?

Following up the slight drop of 0.6 percent last year, European telecom brands noted a slightly larger drop of 4.5 percent. The overall decrease was largely due to the loss in brand value of UK telecom brands, which lost around 16 percent this year. Among the other European countries that also contributed to the overall drop in value was Sweden, which lost around $1 billion in value, falling 16 percent from last year. The drop was offset to a degree by the French and German telecom brands, which fared far better, increasing 17 percent and 10 percent respectively and adding almost $8 billion of brand value.

Compared to the rest of the world Europe was the worst performing region, followed by Africa and Oceania. The top performing regions were North America and the Middle East. In the US, the increase was mostly acquisition driven, while in the Middle East we saw more organic revenue growth coupled with improvements in strength of the regional brands.

Which brands should look out for over the next 12 months?

Charter Communications' merger with Time Warner Cable and the subsequent rebrand of the two to Spectrum has created one of the top pay-TV players in the US. The brand is currently ranked number 13 in our ranking. The low brand value proportion of the enterprise value (10 percent) and the relatively low brand strength suggest that there is still room for growth. Moreover, if recent rumours about a potential deal between Spectrum and Verizon turn out to be true we might witness some big movements at the top of the list.

Ireland's eir is another brand that we should look out for over the next year. The brand has had another very successful year and is on track to enter the top 100 on our ranking. The brand has adopted a similar strategy to some of the bigger players by launching eir sport channel. Similarly to Spectrum, the brand still lags behind in terms of brand strength and as a proportion of the total Enterprise value is still underperforming. ec

Deutsche Telekom toasts nine-year streak

Hans-Christian Schwingen (pictured), Deutsche Telekom's Head of Branding, was understandably delighted that the telco is the most valuable in Europe for the third year running. He said: "Since its relaunch in 2008, the brand has seen continuous growth in value, increasing by an impressive 309 percent."

Ironically, however, the former Head of Marketing at Audi is still looking upwards at an automotive company. Deutsche Telekom remains parked behind BMW as the most valuable brand in Germany.

Deutsche Telekom

Top 100 Global Telecom Brands

		Domicile	Brand Value (USD $ Millions)	Brand Value change (yoy)
1	AT&T	United States	87,016	45%
2	verizon	United States	65,875	4%
3	中国移动 China Mobile	China	46,734	-6%
4	Deutsche Telekom	Germany	36,433	10%
5	xfinity	United States	26,180	8%
6	vodafone	United Kingdom	21,831	-22%
7	orange	France	21,526	13%
8	NTT	Japan	21,165	16%
9	SoftBank	Japan	20,621	26%
10	NTT docomo	Japan	19,377	44%

Rank 2017	Brand	Domicile	Brand Value (USD $ Millions)	Brand Value change (yoy)
11	China Telecom	China	17,599	29%
12	au	Japan	16,919	32%
13	Spectrum	United States	15,738	n/a
14	BT	United Kingdom	11,439	-38%
15	Telstra	Australia	10,943	2%
16	Sky	United Kingdom	10,368	-6%
17	Movistar	Spain	10,065	26%
18	O2	Spain	9,719	18%
19	Bell	Canada	9,686	5%
20	China Unicom	Hong Kong	9,355	-10%
21	Sprint	United States	8,848	12%
22	airtel	India	7,722	34%
23	Telenor	Norway	7,163	15%
24	Rogers	Canada	6,898	58%
25	Swisscom	Switzerland	6,633	-4%
26	Telus	Canada	6,564	40%
27	Telecom Italia	Italy	6,492	4%
28	Centurylink	United States	6,412	2%
29	3	Hong Kong	6,367	13%
30	STC	Saudi Arabia	6,218	11%
31	SFR	France	5,808	44%
32	Etisalat	Uae	5,512	45%
33	Claro	Mexico	5,430	16%
34	SK	South Korea	5,233	8%
35	KT	South Korea	5,091	-3%
36	KDDI	Japan	4,656	42%
37	TeliaSonera	Sweden	4,614	-16%
38	Dish Network	United States	4,593	6%
39	EE	United Kingdom	4,377	-31%
40	Telkom Indonesia	Indonesia	4,335	65%
41	Virgin Media	United Kingdom	4,011	6%
42	Chunghwa	Taiwan	3,668	2%
43	Telcel	Mexico	3,552	7%
44	Frontier Communication	United States	3,486	133%
45	KPN	Netherlands	3,348	-13%
46	Optus	Singapore	3,316	-8%
47	Ooredoo	Qatar	3,104	48%
48	MTN	South Africa	2,975	15%
49	Viettel Telecom	Vietnam	2,686	-2%
50	Singtel	Singapore	2,625	9%
51	Turk Telekom	Turkey	2,620	11%
52	LG U+	South Korea	2,618	8%
53	Axiata	Malaysia	2,583	58%
54	Telefonica	Spain	2,469	83%
55	Wind	Italy	2,371	7%

Rank 2017	Brand	Domicile	Brand Value (USD $ Millions)	Brand Value change (yoy)
56	Zain	Kuwait	2,339	9%
57	Bouygues Telecom	France	2,259	23%
58	Shaw	Canada	2,253	47%
59	Proximus	Belgium	2,240	2%
60	Free Mobile	France	2,121	-2%
61	Vivo	Brazil	2,066	27%
62	Du	Uae	2,020	6%
63	Turkcell	Turkey	1,959	46%
64	Idea Cellular	India	1,946	-22%
65	PLDT	Philippines	1,854	5%
66	UPC	United Kingdom	1,808	-8%
67	Optimum	United States	1,697	52%
68	Telmex	Mexico	1,690	-6%
69	Tracfone	Mexico	1,651	-12%
70	UQ Communications	Japan	1,568	16%
71	Tigo	Luxembourg	1,558	-29%
72	Ziggo	United Kingdom	1,553	83%
73	Taiwan Mobile	Taiwan	1,550	18%
74	MTS	Russia	1,484	-59%
75	Ymobile	Japan	1,443	-12%
76	Maxis	Malaysia	1,369	27%
77	Mobily	Saudi Arabia	1,366	-21%
78	TDC	Denmark	1,321	-11%
79	Level (3)	United States	1,314	-6%
80	Globe Telecom	Philippines	1,295	16%
81	Windstream	United States	1,291	-3%
82	Beeline	Netherlands	1,264	-43%
83	DiGi	Malaysia	1,244	31%
84	TM	Malaysia	1,215	10%
85	Oi	Brazil	1,097	-24%
86	Far Eastone	Taiwan	1,093	25%
87	Megafon	Russia	1,089	-63%
88	BCE	Canada	1,076	38%
89	Vinaphone	Vietnam	1,040	-1%
90	Tele2	Sweden	989	-18%
91	HKT	Hong Kong	967	-14%
92	Elisa	Finland	963	21%
93	Kabel Deutschland	Germany	954	-7%
94	US Cellular	United States	947	16%
95	Telenet	Belgium	938	43%
96	A1 Telekom	Austria	936	3%
97	Reliance	India	924	-6%
98	Entel	Chile	921	-12%
99	Starhub	Singapore	850	6%
100	Indosat Ooredoo	Indonesia	844	51%

Top 100 European Telecom Brands

		Domicile	Brand Value (USD $ Millions)	Brand Value change (yoy)
1	Deutsche Telekom	Germany	36,433	10%
2	vodafone	United Kingdom	21,831	-22%
3	orange™	France	21,526	13%
4	BT	United Kingdom	11,439	-38%
5	sky	United Kingdom	10,368	-6%
6	movistar	Spain	10,065	26%
7	O_2	Spain	9,719	18%
8	telenor	Norway	7,163	15%
9	swisscom	Switzerland	6,633	-4%
10	TIM	Italy	6,492	4%

Rank 2017	Brand	Domicile	Brand Value (USD $ Millions)	Brand Value change (yoy)
11	3	Hong Kong	6,367	13%
12	SFR	France	5,808	44%
13	TeliaSonera	Sweden	4,614	-16%
14	EE	United Kingdom	4,377	-31%
15	Virgin Media	United Kingdom	4,011	6%
16	KPN	Netherlands	3,348	-13%
17	Turk Telekom	Turkey	2,620	11%
18	Telefonica	Spain	2,469	83%
19	Wind	Italy	2,371	7%
20	Bouygues Telecom	France	2,259	23%
21	Proximus	Belgium	2,240	2%
22	Free Mobile	France	2,121	-2%
23	Turkcell	Turkey	1,959	46%
24	UPC	United Kingdom	1,808	-8%
25	Ziggo	United Kingdom	1,553	83%
26	MTS	Russia	1,484	-59%
27	TDC	Denmark	1,321	-11%
28	Beeline	Netherlands	1,264	-43%
29	Megafon	Russia	1,089	-63%
30	Tele2	Sweden	989	-18%
31	Elisa	Finland	963	21%
32	Kabel Deutschland	Germany	954	-7%
33	Telenet	Belgium	938	43%
34	A1 Telekom	Austria	936	3%
35	FASTWEB	Switzerland	803	2%
36	Play	Poland	734	50%
37	Rostelecom	Russia	722	-57%
38	Freenet	Germany	686	36%
39	Sunrise	Switzerland	680	11%
40	TalkTalk	United Kingdom	652	-24%
41	Plus	Poland	603	17%
42	Mobistar	Belgium	563	15%
43	Liberty Global	United Kingdom	444	30%
44	Eircom	Ireland	441	64%
45	BASE	Belgium	426	27%
46	Drillisch Telecom	Germany	420	14%
47	SES	Luxembourg	417	31%
48	Yoigo	Spain	410	6%
49	Meo	Netherlands	406	37%
50	Nos	Portugal	387	25%
51	DNA	Finland	380	-15%
52	Inmarsat Plc	United Kingdom	292	-4%
53	Utility Warehouse	United Kingdom	283	-9%
54	Intelsat Sa	Luxembourg	282	-22%
55	PT Empresas	Netherlands	275	-4%

Rank 2017	Brand	Domicile	Brand Value (USD $ Millions)	Brand Value change (yoy)
56	Cyfrowy Polsat	Poland	268	27%
57	Colt	United Kingdom	263	-46%
58	Cosmote	Greece	262	11%
59	Jazztel	Spain	234	20%
60	Eutelsat Communications	France	230	-8%
61	OTE	Greece	206	5%
62	Bics	Belgium	200	12%
63	m:ts	Serbia	194	-23%
64	Yousee	Denmark	164	20%
65	Euskaltel SA	Spain	144	71%
66	Meteor	Ireland	132	-18%
67	Cellnex Telecom	Spain	131	21%
68	Kyivstar	Netherlands	116	-40%
69	Telekom Slovenia	Slovenia	114	-1%
70	Si.Mobil	Austria	81	12%
71	Teo	Lithuania	72	-31%
72	POST Luxembourg	Luxembourg	71	-10%
73	LMT	Sweden	69	-19%
74	Velcom	Austria	66	-10%
75	Telindus	Belgium	62	2%
76	Tango	Belgium	59	69%
77	m:tel	Serbia	58	27%
78	Netia	Poland	57	-20%
79	Kcom	United Kingdom	56	-32%
80	Sure	Bahrain	55	66%
81	M-Tel	Austria	52	-3%
82	Vivacom	Bulgaria	51	-20%
83	Gamma Communications PLC	United Kingdom	48	-16%
84	BH Telecom	Bosnia And Herzegovina	45	52%
85	Vip	Austria	45	-53%
86	Mas Movil	Spain	45	
87	Midas	Poland	44	4%
88	Fullrate	Denmark	42	23%
89	DigiMobil	Cyprus	38	-60%
90	Tiscali	Italy	38	-18%
91	Bashinformsvyaz	Russia	37	13%
92	NextGenTel	Norway	33	29%
93	GO	Malta	28	8%
94	Cytamobile	Cyprus	27	
95	Ice.net	Norway	24	37%
96	Scarlet	Belgium	24	-12%
97	KC	United Kingdom	20	-39%
98	Eurona	Spain	20	
99	MOTIV	Russia	18	-45%
100	Tattelecom	Russia	17	-59%

Top 10 Telecom Vendors

	Brand	Domicile	Brand Value (USD $ Millions)	Brand Value change (yoy)
1	HUAWEI	China	25,230	28%
2	CISCO	United States	20,734	8%
3	QUALCOMM	United States	6,830	65%
4	ERICSSON	Sweden	5,047	-47%
5	NOKIA	Finland	4,916	62%
6	ZTE	China	2,869	-4%
7	CORNING	United States	1,596	-14%
8	HARRIS	United States	1,321	10%
9	JUNIPER NETWORKS	United States	1,247	12%
10	中国通信服务 CHINA COMSERVICE	China	1,013	

Methodology

Definition of Brand
In the very broadest sense, a brand is the focus for all the expectations and opinions held by customers, staff and other stakeholders about an organisation and its products and services. However when looking at brands as business assets that can be bought, sold and licensed, a more technical definition is required. Brand Finance helped to craft the internationally recognised standard on Brand Valuation, ISO 10668. That defines a brand as "a marketing-related intangible asset including, but not limited to, names, terms, signs, symbols, logos and designs, or a combination of these, intended to identify goods, services or entities, or a combination of these, creating distinctive images and associations in the minds of stakeholders, thereby generating economic benefits/value."

However, a brand makes a contribution to a company beyond that which can be sold to a third party. 'Brand Contribution' refers to the total economic benefit that a business derives from its brand, from volume and price premiums over generic products to cost savings over less well-branded competitors.

Brand Strength
Brand Strength is the part of our analysis most directly and easily influenced by those responsible for marketing and brand management. In order to determine the strength of a brand we have developed the Brand Strength Index (BSI). We analyse marketing investment, brand equity (the goodwill accumulated with customers, staff and other stakeholders) and finally the impact of those on business performance. Following this analysis, each brand is assigned a BSI score out of 100, which is fed into the brand value calculation. Based on the score, each brand in the league table is assigned a rating between AAA+ and D in a format similar to a credit rating. AAA+ brands are exceptionally strong and well managed while a failing brand would be assigned a D grade.

Approach
Brand Finance calculates the values of the brands in its league tables using the 'Royalty Relief approach'. This approach involves estimating the likely future sales that are attributable to a brand and calculating a royalty rate that would be charged for the use of the brand, i.e. what the owner would have to pay for the use of the brand—assuming it were not already owned.

The steps in this process are as follows:

1. Calculate brand strength on a scale of 0 to 100 based on a number of attributes such as emotional connection, financial performance and sustainability, among others. This score is known as the Brand Strength Index.
2. Determine the royalty rate range for the respective brand sectors. This is done by reviewing comparable licensing agreements sourced from Brand Finance's extensive database of license agreements and other online databases.
3. Calculate royalty rate. The brand strength score is applied to the royalty rate range to arrive at a royalty rate. For example, if the royalty rate range in a brand's sector is 0-5% and a brand has a brand strength score of 80 out of 100, then an appropriate royalty rate for the use of this brand in the given sector will be 4%.
4. Determine brand specific revenues estimating a proportion of parent company revenues attributable to a specific brand.
5. Determine forecast brand specific revenues using a function of historic revenues, equity analyst forecasts and economic growth rates.
6. Apply the royalty rate to the forecast revenues to derive brand revenues.
7. Brand revenues are discounted post tax to a net present value which equals the brand value.

Subex: Creating value for telcos in the digital world

The rise of the digital age has created a host of new challenges for network operators. It has brought intense focus on the need to enhance customer experience, improve the cost-effectiveness and adaptability of legacy operating systems, the suitability or otherwise of third-party digital product providers and new security concerns.

Amid all this, it can be a daunting prospect having to target and then exploit new revenue streams. But help is at hand in the form of Subex, which says it is helping operators meet these challenges and keep them ahead of the curve.

The company has already become a market leader in its core business – helping telcos to optimise their operations and to maximise their profitability by working with their existing OSS/BSS infrastructure on areas such as revenue assurance, credit and risk management, interconnect billing and settlement and network asset management.

Its traditional offerings include an integrated solution suite for revenue, cost and network analytics. Subex was the first mover in the asset assurance space to reduce network capex and a pioneer of a purpose-built Data Integrity Management solution designed to keep the inventory perpetually in-sync with the network. It was also first out of the gates to create the Revenue Operations Center (ROC) and a risk-reward share model for fraud management.

"Our solutions are aimed primarily at protecting an operator's revenue stream and optimising carrier to carrier cost," explains Vinod Kumar, COO of Subex. "On capex optimisation, we provide a realtime view into the assets of an operator and solve issues like finding stranded assets, optimising procurement and spares management."

Vinod Kumar, COO of Subex

Its services are offered as licensed solutions, software-as-a-service or increasingly end-to-end managed services. "Licensed solutions were the traditional offering but three years ago we began the managed services operation. About a quarter of our customers now prefer this engagement and we offer full spectrum of services; i.e. from providing operational consultants at one end to fully fledged outsourcing of services at the other," Kumar explains. "It is our fastest growing area."

Subex is also looking into how to secure IoT devices. "IoT is an emerging segment that exposes everything to external world and therefore the security concerns have become paramount," Kumar explains. "For our IoT offerings, we are seeing the traction in the verticals outside telecoms such as smart city, smart home, manufacturing and automobiles.

Embracing digital while mitigating risk

The "overburdening" move towards digitalisation is making this need for more change even more crucial. "Operators have no option but to embrace digital – both externally and internally. The external aspect of digitisation means launching new digital products and services. Internally, it involves digitising all internal operations, adopting virtualisation and software defined networks (SDN). That's a challenge to undertake new initiatives when revenues and margins are falling. It does not give the operator much breathing space," Kumar says.

"There is also the increased security and reputational risk that comes from digital products created along with third-party providers. The complexity of an operator's offering is increasing multi-fold and we are working with our key customers to bring in the required controls for these new services.

Kumar believes that fraud and security are getting increasingly linked in the digital age. He says: "The digital threats are real and many tier-1 operators in Europe, for example, have seen their networks brought down in the last few months by fraudsters. This has become a board level issue and operators are requesting our help to prevent such occurrence and put proactive measures in place."

Driving digital revenue growth

Subex describes one of the key offerings as partner management. Kumar explains: "We are becoming more of an enabler of an operator's digital business. Along with helping them to seize opportunities and to gain new revenues and customers, we also mitigate risk. Without proper controls on fraud, assurance and security operators just can't run digital businesses. Getting it wrong can see you lose reputation and customers and thereby destroying the enterprise. Fraud has moved from a financial risk into an enterprise risk."

He says that digital business needs a "robust set up" to enable them to on-board various partners without difficulty and at a significantly faster pace than they have done traditionally with voice partners.

"These new digital partners come with varying risk factors, quite different than traditional telco partners, and may not have a robust system for their operations," Kumar states. "You need sufficient controls to deal with these challenges and our platforms make it easy and provide end-to-end automated workflows from on-boarding to billing to settlements. It means that we enable the operator to respond to the growing demands of the market and roll out novel products and services on a continuous basis, while at the same time ensuring that they are better protected. Partner management is becoming the core of digital strategy and we have scaled our existing platforms, which are being used for inter-operator settlement by several tier-1 operators, to a complete partner management solution for end-to-end management of content partners and hence drive digital revenues."

Kumar adds: "Our experience with early digital adopters helped us to evolve our existing solutions to one that provides a comprehensive digital business coverage and create value for our clients."

Enhancing customer experience

Another area where Subex is driving an operator's digital transformation is improving customer experience through revenue analytics. "An important barrier for digital adoption is lack of transparency and clarity around charges for services," Kumar states. "As soon as we switch our smartphones, a plethora of applications start pulling and pushing data. If you are roaming, then you will be shocked at the data usage charge but do not know how and when the data got used. As a result, one defaults to 'all you can eat' basic packages or switching off the data services, which is a big opportunity lost for telcos."

However, Kumar suggests that realtime revenue analytics can bring transparency and help customers understand how their data is charged. "We believe that this will become a growing differentiator in customer experience and make subscribers feel more comfortable around operators' products," he says. "We will enable this transparency between operators and their customers through realtime revenue analytics."

> "We have strong customer base that includes three-quarters of the largest 50 telcos"

Another booming area is advanced analytics. "We have a lot of data from the work we do on revenue, cost and asset management, and constantly ask ourselves what else we can use this data for," Kumar states. "This effort led us to generating specific actionable insights for a variety of areas such as revenue enhancement, customer experience enhancement, improving cash flow and capacity management. There are issues that you can't solve with traditional analysis. For instance, finding social communities among your customer base and finding influencers within that community can be very beneficial to the operator. Once you have that you can specifically advertise or market relevant product bundles to those influencers who in turn will then promote them throughout that community. Operators can act on such insights to improve campaign effectiveness and thereby customer acquisition."

The COO says that similar models have been built in, which utilise data available in their core platforms. The accuracy of prediction and desired action suggested can be further improved by augmenting it from other systems such as campaign management.

Kumar adds: "We are deploying our advanced analytics solution ROC Insights to two of our clients. So far the results are very positive."

Looking into the future

Looking to the future, Kumar sees increased engagement with customers by helping them to drive digital revenue growth through partner enablement, improve customer experience through realtime revenue analytics while continuing with its core optimisation and assurance services.

"Like in any other area we do have competition. However, three key strengths set us apart. The first is our strong customer base that includes three-quarters of the largest 50 telcos. Based on our past good work, we continue to get opportunities to co-create new solutions and thereby help them get ahead of the curve." he states.

"Being a nimble and agile organisation, it becomes easier for us to carry out complex projects such as realtime revenue analytics, at a faster rate than anyone else. Our size allows to adopt the 'fail fast' culture which is very important when rolling out new innovative solutions for our clients." He continues: "Finally, we are blessed with a passionate and committed team that delivers a significant value to our clients."

Subex also points to the strength of its balance sheet as a reason for optimism in the years ahead. That means, Kumar adds, more freedom to invest and stoke new innovations to help customers benefit from the new digital age.

www.subex.com

Prontoly: Ultrasound technology has a key role to play in today's networks

Don't be too alarmed if you see the doors of a dolls house mysteriously open and its lights strangely flash on at Mobile World Congress 2017.

This is the sight awaiting those who turn up at the stand of Israeli tech company Prontoly which is pioneering the use of ultrasound to connect devices, improve authentication and help transfer data.

"We want to demonstrate how we can connect IoT devices much more quickly and easily than ever before," says CEO Benny Saban. "The doll's house will be a good example showing how just a mobile phone using ultrasound can move those doors and lights."

Prontoly has created what it calls the most advanced sonic software modems and a state of the art set of noise reduction and accuracy algorithms to allow person-to-device and device-to-device communication using sound. It covers a wide range of distances between zero and 20 metres.

"Sound is the lowest common denominator for most devices as either they already have speakers and microphones or these can be easily added on. Our mission has been to make sure that with as little intervention as possible all devices can talk to each other through sonic sound," states Saban. "There is no need for special expensive hardware and sound even works when internet and basic telephony are down."

Prontoly's solution is wrapped in a SDK which, Saban states, supports all operating systems thus allowing "multiple vendors across varied market verticals to embrace sonic interfaces as a data transfer solution".

He readily admits that sonic networks are unlikely to replace regular networks as they don't have the speed to pass hundreds of megabytes of information along their waves.

Benny Saban, CEO, Prontoly

However, he says they are ideal for transferring important and short pieces of data with the promise of high reliability.

It has identified three main uses for the technology including the authentication and verification of a person's ID.

"People log on to many websites every day from shopping to banking. You are asked for not just a password to identify yourself but also security questions asking for your dog's name or the need for a PIN to be sent to your mobile device or a SMS for each login," says Saban.

"It makes customers feel unwanted and is a business killer as it stops impulse purchases. Let's think about an online sale. The consumer and the vendor want the purchase to be fulfilled in a timely manner. With SMS they are both dependent on network stability or congestion. You don't want to bother your customer in this way, you want them to be authenticated without any user action being needed. If you add more clicks they won't use your site anymore. The less clicks the better."

Saban explains that all a customer needs to do this in this situation is hold up their mobile device containing its SDK to their laptop and they are authenticated by their bank or shop. "We send an ultrasound token over the waves which is a unique encrypted identifier per device, per user and per transaction. It also has a time limit to make it even more secure," he states. "This solution can also be used at ATM's or point of sale with fast purchase points allowing a customer to avoid queues."

The SDK can also be used in beacons in shopping centres helping location identification and data collection for operators.

Another use case is the seamless connection of IoT devices with each other with no need for initial pairing and the ability to filter based on distance and direction. Saban says sound is an ideal complimentary technology to Bluetooth or Wi-Fi IoT networks and it has clear advantages over other out of band pairing technologies such as NFC.

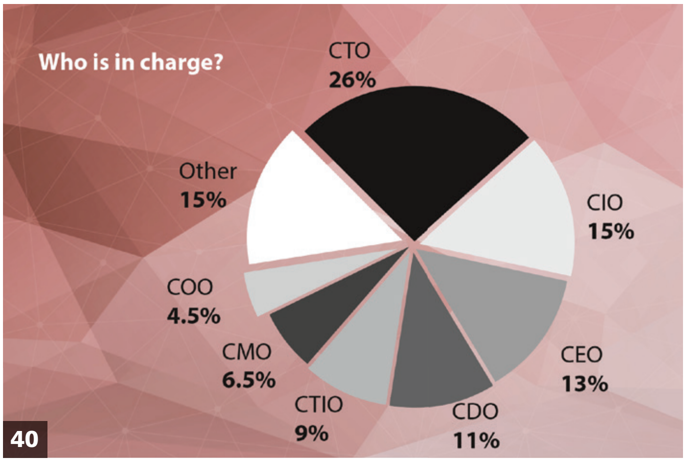
Sonic QR is another offering where, for example, a mobile phone customer watching a pizza advert on television will see it launch a takeaway application on its phone. If he or she is watching a music talent show, then the TV will communicate to the mobile using ultrasound to send more information about the artist.

"Mobile phone operators can see ultrasound as a complementary OTT solution," concludes Saban. "We are talking to several network service providers about value added services such as second screen, QR and how user experience can be improved. On a strategic level, we want our SDK to be embedded in as many applications as possible."

www.prontoly.com

Special report

DIGITAL TRANSFORMATION



Contents

Q1 Survey: From defining what it means to discovering that progress is harder than expected

European Communications' inaugural digital transformation survey took the temperature of the telecoms industry on the who, the what, the how and the why...

To kick off this survey, we decided to ask a very simple question: Define what "digital transformation" means in the context of your current project…

Just shy of 50 operators took part in our online research in January, and the answers to this first question demonstrated a wide range of views.

Let's begin with the briefest. To one respondent, digital transformation means "mainly NFV and big data", to another "OSS/BSS transformation" and to a third "new digital products and services". Only one was honest enough to hint at what it might mean to staff: "Faster, cheaper and less people," they said.

At the other end of spectrum, some respondents defined it in terms of all-encompassing change. "[Becoming] a forward looking digital company, improving operations [and] time-to-market," said one respondent. "The integration of digital technology into all areas of a business resulting in fundamental changes to how businesses operate," said another. According to one respondent, meanwhile, digital transformation "is a new way of working internally, a new way of interacting with the customers, paving the way for full convergence (IT/Networks/offerings/pricing/...)."

Several respondents focused on customers. "Full customer interaction online (selling and serving) plus all the main internal processes online/automated," said one. "Customers using more digital means in the contacts they have with us," said another. "Automation for reducing human errors, especially in terms of customer experience," wrote a third.

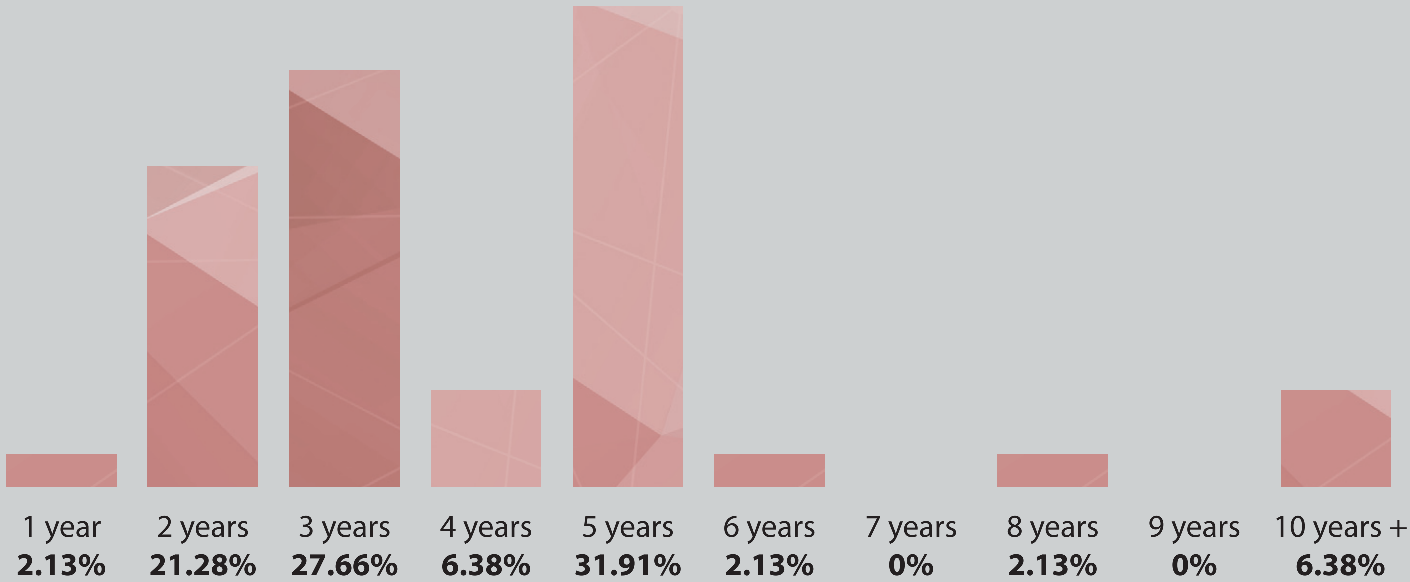
Cost-cutting was another recurring theme. Digital transformation is about "redesigning company processes to match the off-the-shelf software products selected, with the target architecture able to reduce opex and capex over the years," said one respondent. "Change the way of work toward automation by using emerging technologies in order to improve customer experience and reduce operational cost," said another. According to a third, it's about "driving efficiency and effectiveness in our supply chain".

> "The use of new technology to transform the customer experience and the cost to serve"

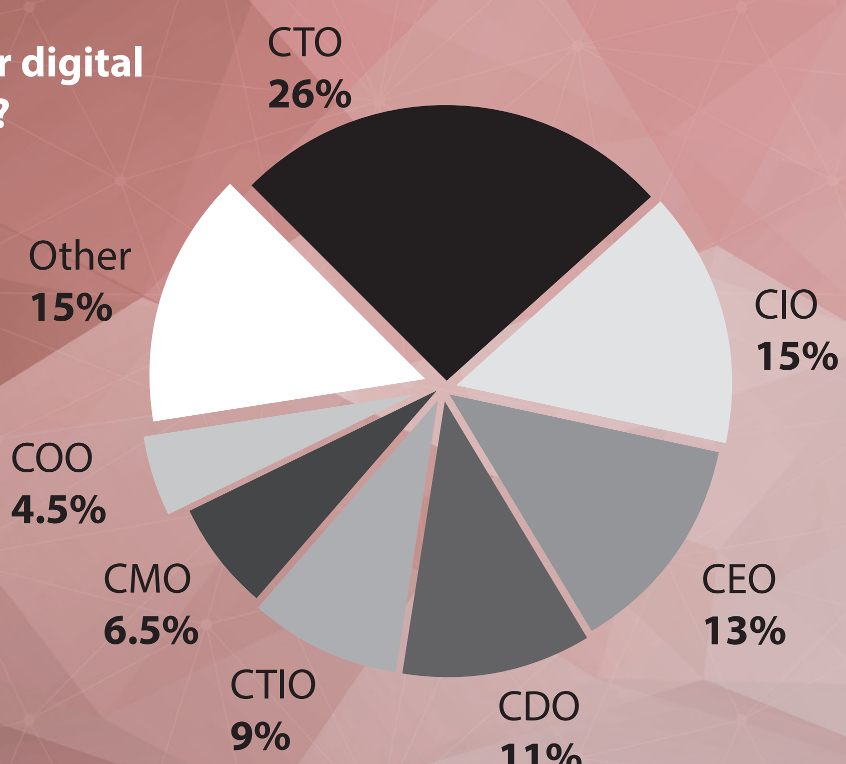
The importance of transforming culture as well as technology is a theme we address later in this special report. Respondent also touched on this. "Changing mindset, processes and systems in order to be able to compete in new digital environment better-by being faster, more innovative, build environment where we can experiment and fail fast only to try again," said one. "The transition from an old business model to new one focusing on digital services for customers and new revenue streams from partnership with third parties," said another. "Evaluating new and disruptive technologies against our or our customers' needs and transform those processes and ways of working where value can be generated," said a third.

Two respondents arguably summed up all the definitions in the most succinct fashion. Digital transformation is about "changing and adapting existing operation support business processes as well as legacy technology elements to be able to answer more demanding customer needs and main business stakeholders expectations," according to one. Another said: "Digital transformation has two principle meanings; the use of new technology to transform the customer experience (self serve, increased agility etc.); and the use of new technology to transform the cost to serve (automation, robotics etc.)."

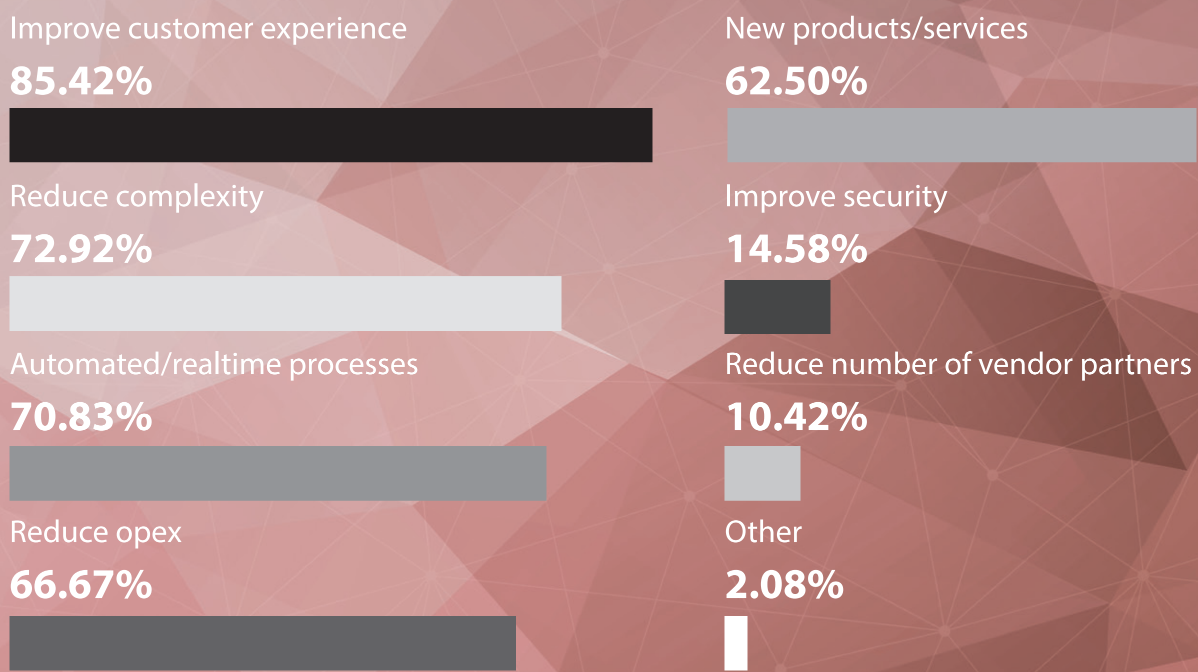
How long is your digital transformation project expected to last?



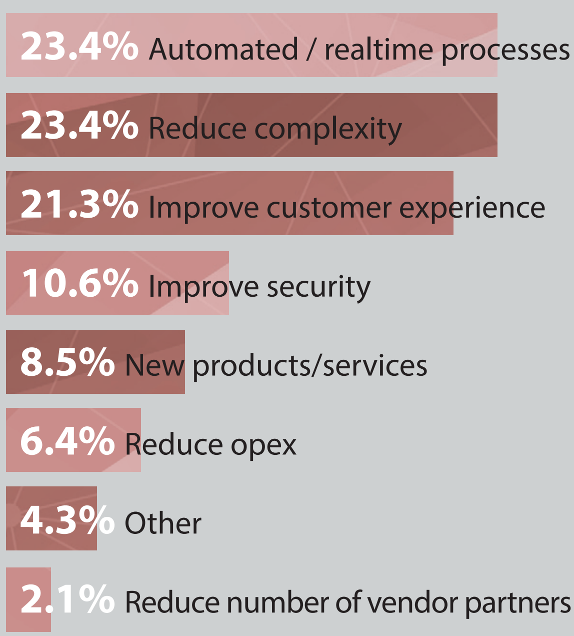
Who is in charge of your digital transformation project?



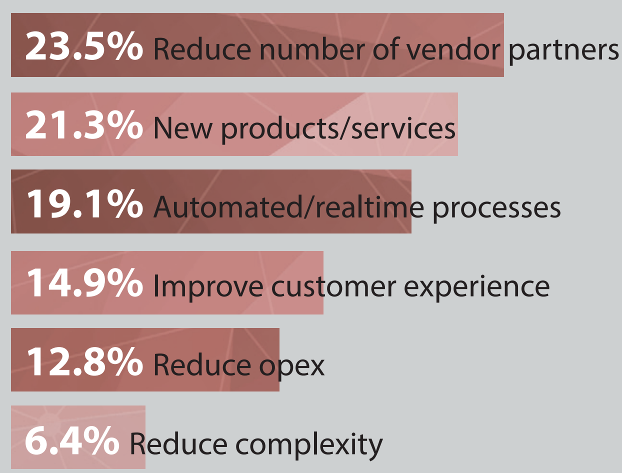
What are the key aims of your digital transformation project?



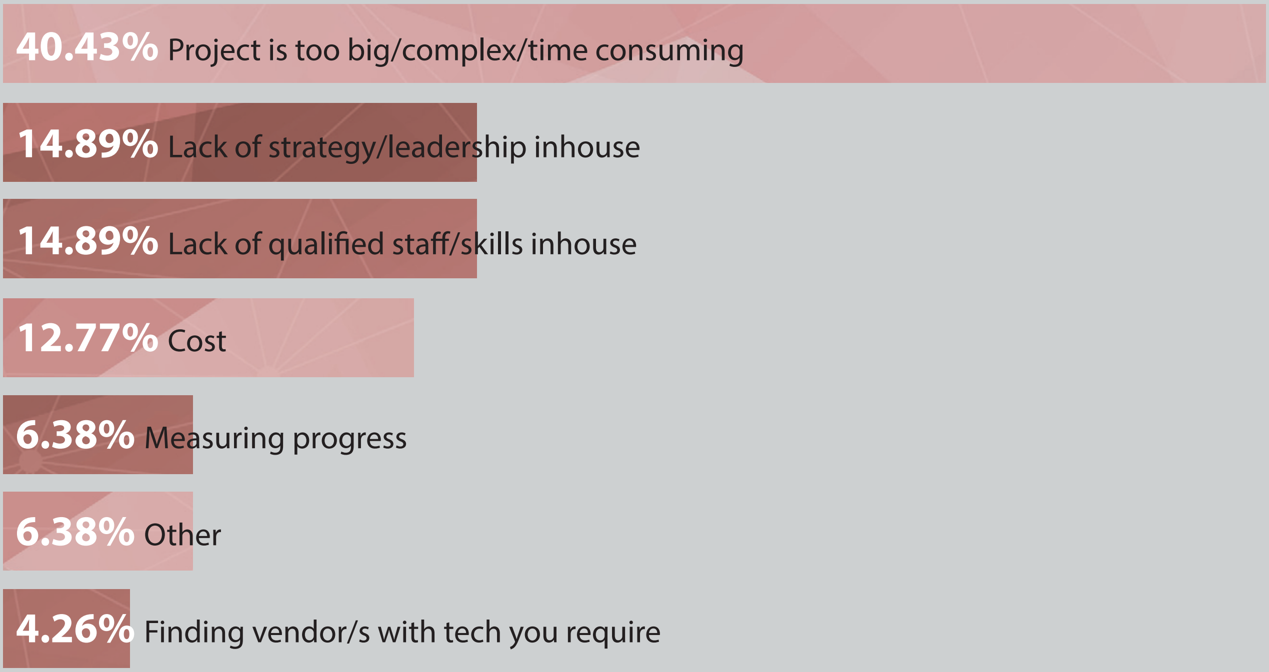
Which of these aims do you think will be hardest to achieve?



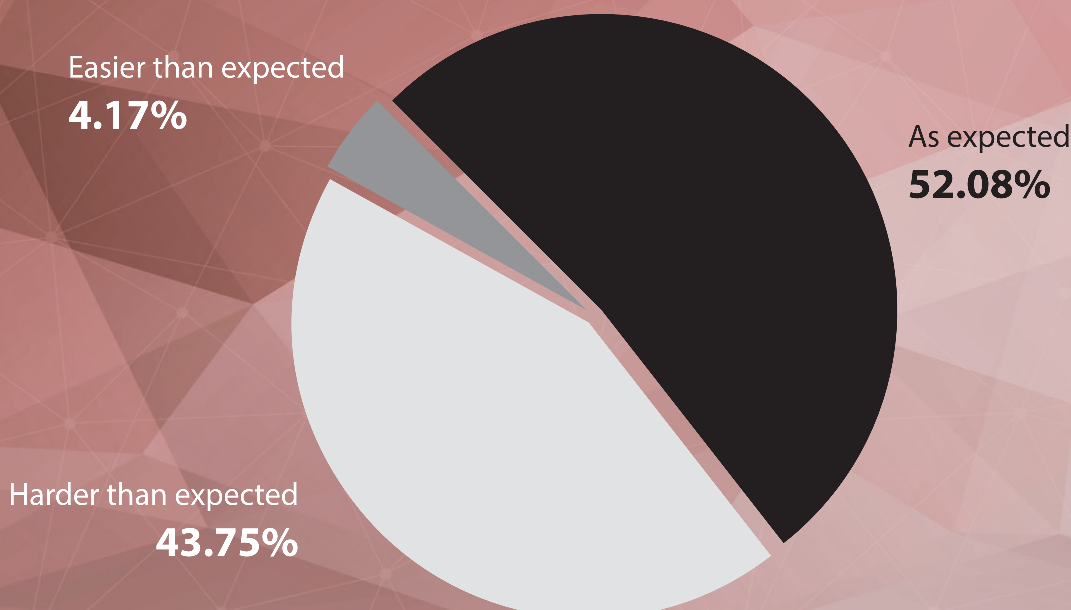
Which of these aims do you think will be easiest to achieve?



To date, what has been the biggest challenge?



Overall, how would you describe the progress of your digital transformation project?



Shifting cultural gear

Digital transformation cannot happen unless the right culture exists within a telco. Sue Tabbitt looks at what this means in practice

Digital transformation is such a seismic shift that experts often highlight the need for a change of culture, of mind set, emphasising that this is at least as importance as any technology-based innovation. This includes appointing leaders with the right vision, and moving away from meticulously planned five-year roadmaps to a more fluid ability to adapt and innovate on the fly.

"The digital revolution is rapid, and large companies must be able to innovate and transform," says Cathrine Stang Lund, Communication Manager at Telenor. "To prepare the organisation, it is essential to build an entrepreneur mentality internally - not only for the departments that normally drive innovation, but for the entire company."

Telenor has developed a dedicated programme, Ignite, through which any employee with a great idea is given the time and resources to develop this into a prototype and product, she explains. "To encourage innovation in large organisations it's important to create a common language and culture for change and innovation," Stang Lund explains. "We do this through clear communication of strategy, and offering learning tools for employees to ensure more digital and agile ways of working."

The Norway-based operator recently used superhero monikers to highlight and drive the right kind of behaviour, in a campaign designed to pre-emptively address fear of change by dressing it up as something positive and fun. Employees nominated colleagues who they thought were going the extra mile and inspiring them in this work. "The important factor in this campaign was the peer-to-peer recognition, in contrast to the top-down recognition you normally see in companies," Stang Lund says. The winners were presented to the organisation with their own superhero alias and graphics.

Keeping the end purpose in mind is just as important as getting the whole company on board. Rogier Bronsgeest, Chief Customer Experience officer at Colt, a network provider to enterprises, notes that it should be about more than digital transformation for its own sake. "It's about delivering agility and flexibility, embracing innovation, reacting to changing market dynamics and connecting more openly with customers and suppliers," he says. "And all of this means a fundamental shift in the way the whole organisation does business."

> "What's being missed is the intrinsic value of the purpose being served"

Although most organisations have grasped that the cultural shift is just as important as anything to do with technology, they can find it hard to pin down what that means. "The term 'culture' is often used, but without being specific," notes Rob Bamforth, a telecoms analyst at Quocirca. "To my mind it is a shift from focus on 'plumbing' to 'purpose' and it stems from a change in attitude at the top."

As long as a telecoms service is viewed as a conduit for phone calls, data and so on, the focus will be on capacity, speed and cost, Bamforth explains. "What's being missed is the intrinsic value of the purpose being served." So at the highest level, the cultural shift is that from the sale of products, to the serving of customers. Its bearing on digital transformation is on the ability to increase customer responsiveness and provide new and better customer experiences.

So what does that mean in day-to-day terms? Devolving responsibility down to teams that are closest to the customer, and away from those at the top of a hierarchy, is one approach Bamforth says. But this is something organisations struggle with.

Is middle management the problem?

Andy Hicks, Research Director at IDC's EMEA Telecommunications group, believes middle management can be a sticking point. "One thing we hear surprisingly often when we talk to carriers is that the top management is committed to digital transformation, and the rank and file is actually pretty enthusiastic about it," he comments. "The problem comes at the middle management level, where people are putting brakes on the process. Who knows how much of that is conscious or unconscious, but it may be that this is a new kind of box-hugging, where you identify your job with a legacy function or a legacy process."

In theory, the telecoms industry is comparatively well positioned to move forward with digital transformation – in the UK at least. A recent report examining preparedness across seven industries found that people working for telcos scored higher than those in FMCG, professional services and media/marketing. But it is all relative, and the survey went on to reveal that this readiness primarily refers to CxOs having acknowledged the digital transformation imperative.

The temptation to see technology as the key is overwhelming. "Most telcos decide that what they need is a major technical transformation," says Richard Ullenius, VP of Managed Services at BSS software vendor CSG International. "But neglecting the role of people and processes can result in a lack of alignment between business and IT, and the processes necessary to help the organisation."

The digital era requires more than just an ability to provide digital services, he notes. "When we talk about a communications service provider (CSP) to digital service provider (DSP) transformation we are not talking about becoming a company that can now sell video content but rather a provider that is looking towards a digital business model."

Part of what's needed now is for people to see beyond their immediate roles. "Within all organisations, managing problems and tasks across the business - irrespective of functional silos – is increasing," says Colt's Bronsgeest. For example, the mindset of putting customers first doesn't just sit in customer services, he notes. Rather, everyone should be thinking outside the box - based on the fact that operators aren't only competing with other telcos now, but with transformed customer experiences being delivered in a host of other markets.

"Digitally-enabled organisations are naturally closer to the customer and need a sense of shared purpose - a common goal that pervades the whole business and provides the framework for clear decision-making at every point," Bronsgeest continues. "If this is not there, or if it is not built around the customer, it is simply not possible to empower your people - and if you cannot do that, then nothing is going to happen at internet speed."

Colt's own ambitious goal – to be the most customer-oriented business in the industry – implies a greater amount of freedom: people are encouraged to make the right choices on the spot, Bronsgeest says. "This mind-set will prove much more successful in creating transformation than a short-term financially orientated goal which doesn't allow for experimentation or innovation," he adds.

But is this something you can teach people, or can it be stressful suddenly having fixed parameters removed?

Leaders must be role models

Bronsgeest's view is that while retraining needs to be considered strategically, changing thinking and behaviour starts from the CEO down, so having the right person at the helm is critical. "You cannot simply build a digital department somewhere and expect it to succeed," he says. "Every member of a leadership team is expected to be a role model for the kind of thinking and doing we want to see everywhere." By this he means encouraging brave ways of thinking. "Ultimately it emphasises a 'challenger' culture within the organisation, and sends a clear message about the way employees are encouraged to interact," he says.

"Training alone is insufficient," says Maria Hudson, Senior VP and Head of Corporate Marketing at telecoms technology vendor Xura. "Without motivation, the new approach will not be adopted or become ingrained, and indeed the training may be ignored."

Digital transformation has a disruptive impact on employee career paths and raises concerns over being left behind to manage legacy platforms, she notes. As operators prioritise progress, they need to ensure the full cooperation of the workforce.

As infrastructures evolve towards virtualisation, and more of everything is digitally enabled and automated, employees' fear for their jobs is understandable and to an extent justified.

"The way you preserve your job is by switching your allegiance to boosting agility and designing new services," IDC's Hicks suggests. "As a carrier tries to construct higher-value services, it needs some employees to go out and become experts on those needs, and to bring together a partner ecosystem in that area."

Indeed, embracing new types of partnership is just as critical to digital transformation as any internal measures. "Culturally, telcos must learn how to embrace expert, innovative service providers and software companies as partners," comments Rafael Laguna, CEO of Open-Xchange, which provides email, collaboration, file and document management software for hosters, SPs and telcos.

"Historically telcos have learned to optimise the purchasing process and to seek efficiency and cost savings at every turn. That is not an effective way of embracing an innovative new business model. Working productively and creatively with a partner is a very different skill to squeezing suppliers for the best price. To do this operators should make use of their existing assets: access to end users, billing capabilities, customer relationship management, and so on, and find a partner that can complement them in an innovative way," Laguna says.

But retraining existing delivery groups rarely produces optimal results, he warns, suggesting that it can be more effective to create a strategic investment arm – as long as the right attitude has been instilled at a management level, so that the new approach is allowed to take hold. EC

In search of technological simplicity

Telcos can't get away from the fact that the technological changes digital transformation requires remain considerable and complex. Sue Tabbitt looks at what the industry has to say about how to minimise the pain

Although communication service providers must accept that digital transformation transcends technology, technological transition remains a significant part of the journey. Unless creative new services can be presented to customers at the right time, managed appropriately and billed for accurately, RoI will be at risk.

The IT vendor community cites the need for a more integrated and real-time BSS environment, with greater transparency, for managing customers, portfolios and billing, as a core requirement. But if we dig deeper, what does this mean – and what of the vast legacy commitments service providers have built up?

As an indication of what good looks like, Nik Willetts, CEO of industry body TM Forum, points to Telefónica in Latin America, which has started afresh with BSS across its operations in several countries in the region. It wants to offer a superior customer experience and accelerate the time to market for new product and service launches, supported by a new cross-channel CRM platform and optimised billing, rating, charging and provisioning capabilities. By standardising pre-integrated BSS platforms and associated business processes, Telefónica expects to be in a better position to exploit new opportunities from network convergence.

Netcracker Technology is the vendor working on the Spain-based operator's BSS transformation. Ari Banerjee, Senior Director for Strategy at Netcracker, says: "One of the challenges with the transition to digital business models is that they require very different structures for pricing, and customers expect very different consumption models. For example, with virtualised services you could be metering usage of very specific technology components on demand."

This needs to happen in the moment, often supported by real-time charging just to authenticate use. "The nature of the services is also dynamic, so how a service is priced and the price-per-consumed-unit may change in midstream," Banerjee adds. "This is very different from the more predictable, well-defined pricing and consumption models service providers supported in the past."

The trouble with most traditional BSS environments is that they are proprietary to a particular software vendor, which may not offer the full spectrum of new capabilities. Original systems are likely to have been put in to target a specific function too, whereas in the new paradigm they need to support a much more complex and dynamic set-up that extends across more than one function.

"Major challenges in the drive to upgrade operator IT systems are complexity and serious integration problems," says Jesper Rooth, Senior Manager for Solution Architecture at open source software vendor Red Hat. "Infrastructure is composed of inter-generational, siloed systems built up over many years, amounting to a spaghetti-like tangle."

Because the business as usual cannot be interrupted, and because historical platforms cost a lot of money to develop, a common approach is to keep running inflexible legacy systems side by side with more modern applications

– for example those created with cloud environments in mind. All of which adds to the state of chaos, which is becoming expensive to manage.

"Existing industry relationships are another thorn in many telcos' sides," Rooth notes. "In many cases operators are locked into multi-year contracts with traditional vendors. These decisions, which met requirements at the time, are now restricting them from choosing the technology that most closely delivers against their needs at any given moment, in what is a rapidly evolving market."

Digital fairy tales

Rooth argues that operators need more freedom now. "As market dynamics demand innovation, and are challenging telcos to develop new services and revenue generation models faster, telcos are realising that bigger is no longer better," he says. "Migration is proving a task too great for one single vendor to solve. Rather, they can look to collaborate with a variety of solution vendors - from network equipment providers to systems integrators to cloud vendors and other telcos. The future depends on participation - on communities innovating beyond the sum of their individual members."

Barry Marron, General VP of Marketing at Openet, takes a similar line. "Mega-vendors of today are still pushing digital fairy tales – they want to offer everything and supply all the kit to go with it. Unfortunately this sees operators signing five-year deals worth several hundred million dollars, on the promise that they will become 'digital' within that timeframe. But it's not that simple."

With technology evolving so fast, it can be difficult to predict what will happen in the next year, let alone the next five, he notes. "By the end of these digital transformation projects telcos still find themselves behind the digital curve and in desperate need of innovation." If operators are to become truly digital and begin to compete with over-the-top providers such as Facebook or Google, they need to focus on and be directed by what's coming up in the next 12-18 months, Marron insists.

To this end, he advises operators to invest in smaller, more agile and flexible projects that can be deployed now, whatever their legacy burden. He points to BT as having embraced this approach, with the deployment of an NFV-ready 'Evolved Charging Solution' - monetising its consumer mobile service, and accelerating its speed to market with the new MVNO venture. "As a result BT has become a true converged operator, offering a full quad-play capability," Marron says.

Developing a more "open" mind-set could lead to more innovative new application and service opportunities too. TM Forum's Willetts believes open APIs (application programming interfaces) are the key to 'unlocking the [digital] ecosystem', and the basis for new platforms and services.

> "Mega-vendors of today are still pushing digital fairy tales"

Carsten Brinkschulte, CEO of mobile technology vendor Core Network Dynamics, expects to see more operators following Orange's lead over next 12 months - sharing their core network APIs with third-party developers, to accelerate diversification and innovation with new applications.

"In 2016 we saw Orange and Proximus opening up their APIs to developers," Brinkschulte notes. "This is a smart move. It signals the start of mobile operators' transformation from phone service providers to more technology-driven infrastructure service providers."

Essential analytics

The cloud offers operators unprecedented flexibility to break out of existing dead-ends, or try out new options. BT uses Cloudera's Enterprise Data Hub to perform customer analytics, harnessing data scattered across multiple databases and legacy systems. This gives the UK-based operator deeper and more timely insight into customers' behaviour and preferences, in support of its digital transformation agenda. "They can process five times the amount of data in a fraction of the time previously possible," says Alex Bartfield, Cloudera's VP of Professional Services for EMEA.

Indeed, analytics is essential to operators' ability to understand how their services are being consumed, so that they can be more predictive and proactive and ultimately more customer-centric. "It's one of the mind-set changes operators need to make as they digitally transform," says John English, a Senior Project Director at application and network performance monitoring specialist Netscout.

"Decisions now go far beyond data plans, requiring insight into user behaviour, customer preferences, geolocation data and so on. Although most major players have big data lakes, they're not necessarily in a position where they can use these to ask the questions they really need to – such as 'What are the top apps being consumed at X event?' For this, data needs to be more accessible and consumable by large numbers of users."

Rather than having to wait for data scientists to write all the relevant query scripts, operators need to aim for some quick wins. English advocates starting with "fundamental" data, rather than trying to tackle everything in one go. "Figure out how to architect this, so teams can access the right data in near real-time – which they need to function at web speed," he suggests. Once operators have learnt how to structure the data so they can access and use it, they can start to expand what they're doing, repeating that success.

Ultimately, says Andy Hicks, Research Director within IDC's EMEA Telecommunications group, the technological challenges of digital transformation are "considerable". But he adds: "At least CTOs and CIOs are used to dealing with that kind of challenge." EC

European Commission extends privacy regulation to OTT providers

In January, the European Commission proposed new measures that would extend existing telecoms privacy regulation to all electronic communication providers. The rules will require OTT services such as WhatsApp, Messenger, Skype and Viber to implement additional user privacy protections and bans them from unsolicited electronic communications.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