

THE GLOBAL VOICE OF
TELECOMS IT



TALKING HEADS

**Zain KSA and Netcracker
redefine customer
experience for the 5G future**



PLUS Rakuten Symphony conducts Robin.io acquisition • Netcracker Digital Platform launches • Orange and Vodafone unveil environmentally-friendly initiatives • Salam Mobile selects Optiva BSS • NTT DoCoMo powers SME marketplace with Beyond Now • Why hybrid working needs unified communications • The latest deals listed in the VanillaPlus Contract Hot List • Why slow and steady won't win the 5G race • Allot explains how to unravel consumer cyberconfusion • Business assurance is back on CSPs' agendas • Personalised marketing campaigns have you in their sights • Right to repair extends handset lives • Why edge requires a new approach to your IT • Latest news, features and interviews at www.vanillaplus.com



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There is no shelter from the stormclouds for CSPs

The clouds are gathering and storms are building but the omens don't look great for communications service providers (CSPs). Far from having the silver lining they're looking for, cloud looks to be becoming just the latest miss in CSPs' bids to find additional revenue streams to make sense of their vast infrastructure investments. Is it already too late to change the narrative?



George Malim
managing editor

If the topology of MWC22 Barcelona was anything to go by, the clock has already run down although others are clinging to the notion that they're a minute away from midnight. The big cloud providers were at the show but they were not taking up prime real estate on the exhibition floor. As usual, it was the telecoms industry paying the bulk of the cost for providing the space in which the cloud companies operate while the cloud providers confined themselves to more modest spending on meeting rooms and branding opportunities.

This suggests that while they see telecoms as necessary and want to be part of the industry's conversations so they can influence strategy, they don't see themselves as CSPs' equals and partners in creating the hyper-connected, cloud-enabled world. CSPs again will be stuck with picking up the bill for the essential infrastructure while others make the big margins on the services it enables. It's a re-run of every mobile innovation of the last 30 years. The CSPs build the network and invest the billions and someone else takes the service revenue, leaving barely enough of a return to justify

continued network investment and operation.

Forlornly, CSPs had held out the hope that they'd be partners on a firm footing alongside cloud giants in enabling services in the cloud and sharing in revenues from these. Some CSPs still appear to think they can still play themselves into the cloud services game and a few might succeed but most won't move quickly enough or be able to innovate and market new services at the pace and depth that web giants have proven they will.

There's a diplomatic line that cloud giants are walking because they need CSPs to make network investments so they don't have to themselves but the stark reality is CSPs will receive only scraps from the large cloud companies' tables. This leaves CSPs having to increase efficiency to remain viable but it's not possible to save your way to greatness. New revenues must come to CSPs for them to change the declining profits story that has dogged them for the last three decades.

Instead of seeking shelter, CSPs must storm at full force into the cloud services arena if they really want to take revenue share.

Enjoy the magazine!

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Rakuten Symphony to acquire Robin.io for multi-cloud mobility, hyper-automation and orchestration

Rakuten Symphony has agreed to acquire cloud technology start-up, **Robin.io** for an undisclosed sum. The addition of Robin.io's multi-cloud mobility, hyper-automation and orchestration capabilities to the Rakuten Symphony portfolio aim to allow the creation of efficient, consistent high-performance cloud infrastructure and operations, from edge to central data centre. Collaboration between Rakuten and Robin.io has been underway for more than two years, since Rakuten Mobile used Robin.io in production for the Japan deployment of what it claimed was the world's first end-to-end fully virtualised cloud-native mobile network.

"Edge cloud requirements are unique and critical as mobile operators transition to 5G," said Tareq Amin, the chief executive of Rakuten Symphony. "Robin.io's cloud capability is proven to be effective for the most demanding workloads in mobile and we believe it will allow Rakuten Symphony to safely accelerate cloud-native transformation for our customers and prepare the industry for the future. We plan to continue to invest into Robin.io's cloud-native portfolio of products to further advance our capabilities and offer the most advanced and highly integrated cloud platform mobile operators demand."



Tareq Amin, Rakuten Symphony

Adding Robin.io's portfolio for cloud-native deployment, lifecycle management and orchestration is set to allow Rakuten Symphony to deploy highly reliable, flexible, scalable, secure and resilient mobile networks built on the principles of open interfaces, virtualisation and interoperability. Together, the combined companies will also be able to deliver solutions for various traditional enterprise opportunities in areas of enterprise applications, data management, cloud and virtualisation. Following the acquisition, Partha Seetala, the chief executive of Robin.io, will take up the position of president of the unified cloud business unit of Rakuten Symphony. ■

Netcracker Digital Platform launched to help CSPs accelerate new business growth

Netcracker Technology has launched its new Netcracker Digital Platform to help communication service providers (CSPs) accelerate new business growth in the digital economy. CSPs are making significant transformation investments to deliver exceptional customer experiences. The challenge now is to make use of these investments to create new growth opportunities while driving significant cost efficiency and agility across the business.

With Netcracker Digital Platform, the company says CSPs can increase business agility to adapt faster to market needs, stimulate innovation to add value on top of the network and maximise profitability from 5G, cloud and edge technologies. The solution supports innovative monetisation models and immersive digital experiences and simultaneously accelerates business efficiency through intelligent automation, IT consolidation and extensive CSP digitalisation.

With the emergence of 5G core, MEC applications and network slicing, CSPs have an opportunity to monetise the network in new ways and form deeper engagements in the B2B and vertical markets. Netcracker Digital Platform provides granular levels of real-time charging for any service, partner or business model with support for in-slice and cross-slice charging.

"With Netcracker Digital Platform, we are delivering to the market what our customers are asking for, which is a way to utilise their significant technology investments and reap the benefits of 5G and the cloud," said, Bob Titus, the chief technology officer of Netcracker. "Our solution gives them the tools and services, along with support for rich ecosystems and strong security, for them to grow their businesses while becoming more self-sufficient and fulfilling their goals of evolving from just being telecoms players to becoming trusted technology partners as well." ■

NEWS IN BRIEF

Infovista unveils automated SSV system

Infovista has announced Automated Single Site Verification (SSV) to automate 5G cell site validation, saving time and cost for mobile operators deploying and testing new and existing multi-site 5G networks. The new automated 5G network testing solution reduces testing time and errors by only testing and collecting required service-specific testing key performance indicators (KPIs). Automated SSV enables automatic sweet spot selection by not only predicting where to drive and what tests to perform, but also which hot spots and critical areas should be tested and then autonomously conducting the network testing routine. This automation of network testing processes removes trial and error and significantly reduces the time to market of 5G. ■

Orange announces 2G and 3G sunset schedule

Orange will gradually phase out its 2G and 3G technologies from 2025 to 2030 across its European operations. The local context together with an analysis of actual network usage in each country has been taken into account in the phasing-out programme so as to ensure smooth migration towards an improved customer experience with minimised impact on customers.

As a result, the decommissioning of its 2G and 3G networks will take place in two phases: in France, where national 3G coverage is historically higher than 2G coverage, Orange will decommission its 2G network by the end of 2025, whilst 3G will be phased out by the end of 2028. For the other countries Belgium, Luxembourg, Poland, Romania, Slovakia and Spain – 3G will be switched off by 2025 and the remaining legacy technologies (2G) will be phased out by 2030 depending on each subsidiary's specific plans. ■



NEWS IN BRIEF

Syniverse offers cloud-native platform for enterprises

Syniverse is to provide a cloud-native platform to improve enterprises' customer experiences and accelerate their digital transformations. The new Syniverse Hyperscale Communications Platform is claimed to enable enterprises to elevate their digital transformation to feature rich messaging mediums via a range of global messaging and communication platform as-a-service (CPaaS) capabilities anywhere in the world, securely, and at hyperscale to address rapid volumetric growth in digital engagement services. ■

Salam selects Optiva BSS for new MVNO

Saudi-based telecoms provider **Integrated Telecom Company**, formerly ITC, has selected the **Optiva BSS Platform** to enable its new MVNO **Salam Mobile** to rapidly bring to market innovative digital services to the fast-growing consumer market segment. Through this partnership, Salam Mobile will deploy Optiva cloud-native BSS technology on its private cloud infrastructure.

The Optiva BSS Platform, an end-to-end, pre-integrated customer and revenue management system, allows Salam to quickly and cost-effectively conceptualise and introduce new digital service offerings to customers. The platform provides real-time billing, charging and fulfilment that will differentiate Salam Mobile offerings. ■

ETSI advanced mobile location standard now mandatory

Since 17 March all smartphones sold in Europe are required to comply with Advanced Mobile Location (AML) for emergency communications. AML was standardised in **ETSI TS 103 625** by the ETSI technical committee on emergency communications (EMTEL) in December 2019. It is already helping emergency services dispatch the needed resources efficiently in Europe and worldwide. ■

Orange and Samsung expand partnership to extend product lifecycle and enhance customer experience

Orange and **Samsung Electronics** have announced a series of new initiatives that expand their long-term strategic partnership to enhance Samsung Galaxy user experiences across Europe. The two companies will collaborate to reduce waste and extend the lifecycle of mobile devices; implement device and technology testing to prepare for the arrival of 5G standalone (SA), promote the Samsung Galaxy multi-devices experience and enhance the mobile customer journey with advanced digital services.

Together, the companies are working to reduce the waste attributable to Samsung mobile devices distributed by Orange by extending the lifecycle of a typical product. Orange will offer an extension on trade-in and the collection programmes on used Samsung devices and add a Samsung Certified Refurbished device programme through Orange channels.

Orange and Samsung are also preparing for the deployment of advanced 5G SA services. The collaboration will see the implementation of end-to-end testing of Samsung devices and technology such as network slicing and voice over Orange's 5G SA test networks. The process will explore new use cases made possible through 5G SA network capabilities to support both advanced industrial and entertainment-related services.

Orange and Samsung are also strengthening their collaboration to bring a connected experience powered by Samsung Galaxy devices to Orange customers. This multi-device approach will be deployed in Orange stores and online channels to support Orange's multi-service strategy, delivering an immersive and seamless mobile experience to end users.

Samsung will also deploy SIM-based personalisation of its mobile devices for Orange customers on a single mobile software configuration. Samsung's over-the-air personalisation service will facilitate the discovery and seamless installation of key Orange applications on eligible Samsung Galaxy smartphones regardless where the customers purchase their Galaxy smartphones. Finally, the two companies will progressively deploy eSIM activation to a wider range of Samsung devices connected to Orange networks.

Philippe Lucas, the executive vice president of innovation devices and partnerships at Orange, said: "This partnership closely mirrors Orange's core priorities, contributing to our goals to move rapidly to fulfil our circular economy ambitions and address consumer and societal demand for sustainable devices by pushing trade in and refurbishment schemes to extend product life cycles and reduce waste. Our close working relationship with Samsung is a great asset in realising these ambitions." ■

Vodafone announces circular economy plan to extend life of mobile phones

Vodafone has announced an initiative to extend the life of new mobile phones and encourage customers to trade in or recycle their old devices, helping the mobile industry move towards a circular economy that minimises waste and further reduces carbon emissions. Starting in European markets from spring 2022, Vodafone customers will be offered a comprehensive and convenient suite of services, including insurance, support and repairs for their devices. Vodafone will launch a new digital platform making it straightforward for customers to agree trade-in options for their existing phones.

Vodafone will also encourage customers to return any mobile devices that are at the end of their ability to function, and, wherever possible, will ensure that they are recycled responsibly or repurposed for social or charitable causes. In addition, Vodafone will begin to offer a wider range of high-quality, competitively priced refurbished smartphones at retail.

Vodafone and **Recommerce** have announced a strategic partnership for wholesale trade-in and asset management, enabling Europe's largest smartphone customer base to benefit from high quality, pre-owned devices at retail.



Alex Froment-Curtill,
Vodafone

"Vodafone has a leading role to play in developing and driving a circular economy for mobile devices that significantly reduces their impact on the environment," said Alex Froment-Curtill, the chief commercial officer of Vodafone Group. "We are a comprehensive, digital offering that makes it easier for our customers to extend the life of their current smartphone, or to buy and own a refurbished device." ■



BT selects Google Cloud as strategic partner for group-wide data and AI transformation

Google Cloud and **BT** have announced a strategic, five-year partnership to accelerate BT's company-wide digital transformation. The collaboration will involve BT using a suite of Google Cloud products and services including cloud infrastructure, machine learning (ML) and artificial intelligence (AI), data analytics, security, and application programme interface (API) management to deliver superior customer experiences, reduce costs and risk, and build new revenue streams.

BT is undertaking a massive digital transformation through its BT Digital unit, and this initiative includes creating a group-wide data and AI fabric as part of its cloud-first and AI-first strategy. Under the partnership, the two companies will help BT unlock hundreds of new business use-cases to strengthen its ambitions around digital offerings and creating hyper-personalised customer engagement.

"Our partnership with Google is one of a series of strategic moves that BT Digital



Harmeena Mehta, BT

is taking to help accelerate BT's growth and digital transformation," said Harmeena Mehta, the chief digital and innovation officer at BT. "This is a partnership that is deeper than just at the technology level. It will help digital as a whole supercharge BT and drive its return to growth."

Google and BT have already started working together on adopting Google technology, and plan to complete the core migration of data by 2023. ■

O2 Telefónica launches B2B services with MATRIXX Software on Google Cloud

German mobile operator, **O2 Telefónica** has become the first communications service provider to run **MATRIXX Software's** Converged Charging System on **Google Cloud's** Confidential Computing. The new service combines the flexibility and simplicity of MATRIXX for monetisation with the hyper-scalability and privacy benefits enabled by Google Cloud. In a first step, O2 Telefónica will use the new digital commerce platform for its digital B2B office solutions, followed by modern All-IP fixed-net, SD-WAN and 5G solutions in the future.

"We are on a mission to better serve Germany's dynamic and fast-moving enterprise market," said Mallik Rao, the CTIO of O2 Telefónica. "We combined the flexibility and configurability of MATRIXX and the scalability and privacy capabilities of Google Cloud. As a result, we are now able to offer our B2B customers unmatched confidentiality delivered by a highly configurable charging product running on a massively scalable public cloud platform."

Designed to enable better connection with value chain partners and improved personalisation for customers, O2 Telefónica's new B2B service enables the delivery of more valuable and innovative products and services. For O2 Telefónica, the need to ensure speed and agility made MATRIXX on Google Cloud the preferred



Glo Gordon, MATRIXX Software

option. By ensuring full encryption of data, the new enterprise offering from O2 Telefónica enables the business agility that partners need to better serve enterprise customers of all sizes.

"With the first launch of this new enterprise offering in the public cloud, O2 Telefónica has raised the bar on what's possible for telecommunication providers," added Glo Gordon, the chief executive at MATRIXX Software. "We've built our cloud native Digital Commerce Platform to enable the flexibility and agility that only the public cloud can provide. Working in partnership with Google Cloud's breakthrough Confidential Computing offering, we're honoured to support O2 Telefónica's technology transformation." ■

NEWS IN BRIEF

Etisalat Misr selects Ericsson to evolve BSS

Etisalat Misr has selected **Ericsson** to modernise its business support systems (BSS) in Egypt. The transformation will upgrade and modernise Etisalat Misr's BSS platform to support data and Voice-over-LTE (VoLTE) traffic growth, 5G readiness and Internet of Things (IoT).

The agreement will equip Etisalat Misr with a range of upgraded capabilities across all its business operations in the customer, product and service management domains and for customers, enterprises, partners, network technologies and events. The agreement will also secure capacity expansion for Voice-over-LTE (VoLTE) using Ericsson's Cloud VoLTE technology. ■

Beyond Now digital business platform powers DOCOMO SME marketplace

Beyond Now, an ecosystem orchestration and digital platform provider, is now providing **NTT DOCOMO**, Japan's mobile operator, with a partner orchestration hub for its newly-launched SME marketplace.

Beyond Now's Infonova Digital Business Platform is being deployed because its ecosystem orchestration and monetisation capabilities are said to make it simple for DOCOMO's partners, including NewsPicks + d, Relo Club and Meet In, to rapidly onboard and sell their solutions through the marketplace. This enables the CSP's SME customers to access a range of services such as remote sales, telecoms, labour management and subsidy support that will help them to improve their efficiency and productivity. ■



Zain KSA and Netcracker redefine customer experience for the 5G future

Zain KSA is an innovator of mobile services in the Kingdom of Saudi Arabia and has been at the cutting edge of 5G development and digital transformation for more than a decade. As a member of Zain Group, a pioneer of mobile telecommunications in the Middle East since 1983, Zain KSA is a key contributor to Saudi Arabia's national digital transformation programme and the ambitious Saudi Vision 2030. Zain KSA's dual focus on 5G and customer experience has seen it become among the largest telecoms operators and digital service providers in the region. Eng. Sultan Bin Abdulaziz AlDeghaither, the chief executive of Zain KSA, and Benedetto Spaziani, the general manager at Netcracker, discuss what the two companies are doing to improve the customer experience and accelerate 5G monetization

VanillaPlus: Please can you tell us a little bit about Zain KSA, its customers and its mission?

Eng. Sultan Bin Abdulaziz AlDeghaither: Zain KSA is a pioneer in digital innovation for mobile services. Our mission is to equip our customers – whether business, residential or government – with the latest technologies and innovations to redefine customer experience and enable the rapid, efficient and reliable development of businesses throughout our region. Our mission aligns with Saudi Vision 2030, a nationwide strategic framework to reduce

Saudi Arabia's economic dependence on oil by diversifying into health, education, infrastructure and a variety of industries and business segments.

We believe that 5G is the key to accomplishing these diverse goals. We want to deliver a fully integrated digital ecosystem of innovative digital services and products to become the digital service provider of choice in Saudi Arabia and to contribute to creating a digital economy and continue to support a digital community and benefit people in a hyper-connected world. This includes providing reliable support for the ►

SPONSORED INTERVIEW



In Saudi Arabia, we provide 5G coverage for 51 cities through more than 5,000 towers, contributing to bridging the digital gap and empowering our community

next wave of innovation, including IoT, robotics, artificial intelligence and machine learning (AI/ML), blockchain, big data, drones and augmented reality.

VP: Your 5G network has already helped raise Zain KSA's profile in the telecoms sector. Why has it attracted attention and given you such a large share of your domestic market?

Eng. Sultan Bin Abdulaziz AlDeghaither: We were actually amongst the first in the world to provide commercial 5G services on a large scale. In October 2019 we rolled out the third largest 5G network in the world, and the largest 5G network in the Middle East, Europe and Africa at the time; we have been expanding it ever since. We currently provide 5G coverage for 51 cities across Saudi Arabia through more than 5,000 towers, contributing to bridging the digital gap and empowering our community. We want to harness 5G and digital transformation to both increase our competitiveness and provide the myriad benefits of advanced technology to the people and businesses of our country.

Coverage is only half the battle when it comes to networks though. We have also made significant investments in network performance, reliability and speed. This has resulted in us ranking among the fastest networks in the world, as we were the first telecom operator to provide 5G Carrier Aggregation, supporting the highest internet speed ever recorded. We have received a lot of local, regional, and global recognition for these improvements, such as consistently ranking as a leader in 5G networks with the fastest download and upload speeds for our fixed and mobile networks as recognised by top international bodies such as **Ookla**, **Umlaut** and **Opensignal**.

In parallel, we pursued our strategy by vertically expanding our services and rolling out innovative solutions serving our adjacent markets, including enhancing our B2B offerings and tapping into digital entertainment.

We have also been actively ramping up our pioneering cloud capabilities and recently, Zain Cloud received the highest rating (Class C) for cloud computing services in the Kingdom from the Communications and Information Technology Commission. Our suite of cloud-computing products and services supports present and future needs for enterprise-level digital transformation by ►



Eng. Sultan Bin Abdulaziz AlDeghaither, Zain KSA



Benedetto Spaziani, Netcracker



Our cloud-based Netcracker Digital BSS will make the most of Zain KSA's advanced cloud infrastructure and provide a vital foundation for its digital transformation strategy

providing a reliable and flexible platform for deploying cloud infrastructures.

These technological breakthroughs and accolades translate into many practical benefits for both our B2C and B2B customers. Consumers can enjoy rapid music downloads, crystal-clear video streaming, innovative gaming and seamless social media experiences, while enterprises can take full advantage of greater efficiency, better customer experience and lower operational costs.

VP: How is Netcracker supporting Zain KSA in all of these endeavours?

Benedetto Spaziani: Netcracker is an ideal partner for Zain KSA because we share the same core values. Zain KSA has grown by leaps and bounds over the last few years by adopting a digital-first strategy and prioritising customer experience. Zain KSA teamed up with us to fuel greater digital transformation and business growth by creating memorable customer experiences through streamlined, powerful cloud-based technology. As a leading provider of billing and operational support systems (BSS/OSS) and customer engagement solutions, Netcracker has the extensive experience in drawing from innovation to deliver a personalised, real-time and digital customer experience on a whole new level.

VP: What growing pains have you encountered as your network expands and improves?

Eng. Sultan Bin Abdulaziz AlDeghaither: Excellence in customer experience is our top priority in everything we do. This goal inspires us to continue to seek innovative solutions to keep pace with our growing operations and future-proof our services. Our 5G network covers 85% of all major cities in Saudi Arabia, and that coverage rate is increasing every day. A network that large presents a variety of distinct challenges, but also provides the unique opportunity to pinpoint problems and solutions with the vast volume of customer data that it makes available to us.

With customer-centricity being one of our core corporate pillars, we apply data analytics to evaluate the journey of our B2C subscribers, to continue to offer them an unmatched customer experience, driven by best-in-class services and products that help them thrive in a hyper-connected world. This is why we continue to seek out partners whose values

align with our own and whom we can collaborate with in order to take the next step in our digital transformation journey.

VP: What were you looking for in a partner for your digital transformation and billing upgrade?

Eng. Sultan Bin Abdulaziz AlDeghaither: With all the expansion our network was undergoing, we needed to create solutions that would bring practical benefits to consumers and match the power of our 5G infrastructure. We wanted to adopt a powerful billing solution to transform our legacy BSS infrastructure into a truly unified and 5G-ready digital ecosystem. We were also looking for a partner with the technological capabilities and expertise to provide us with end-to-end support as we migrated our BSS infrastructure.

Netcracker was the natural choice for both of these requirements. One of the things that initially drew us to the company was its expertise. We found in Netcracker the reliable support that would accelerate our digital transformation in the telecoms industry. The full suite of pre-integrated solutions, precise delivery and extensive expertise offers us the chance to drastically improve customer experience and deliver new innovative 5G products for rapid and sustainable growth.

VP: How does Netcracker help Zain KSA to maximise returns from its 5G investments?

Benedetto Spaziani: Our cloud-based Netcracker Digital BSS will make the most of Zain KSA's advanced cloud infrastructure and provide a vital foundation for its digital transformation strategy. It provides a single platform for transformation and convergence across all payment types and optimises support for B2C and B2B customers. Zain KSA will enjoy a lower total cost of ownership (TCO) and accelerated time-to-market while its customers will be able to enjoy a premium digital experience.

We will also provide Netcracker Service Management and Orchestration, part of our Netcracker Digital OSS, to help sustain the impressive growth of the 5G network without worrying about additional complexity. When you are managing a network as comprehensive as Zain KSA's, the ability to simply automate services and provide vendor-agnostic support becomes essential if you truly want to make the most of what 5G has to offer. Netcracker Service Management and Orchestration also provides the ►



5G

At Zain KSA, we recently announced the launch of Saudi Arabia's first 5G standalone network as part of our commitment to creating the 5G future

foundation for many of the advanced 5G services that Zain KSA wants to offer moving forward, such as network slicing within Zain KSA's 5G core environment and across its entire network. Network slicing in particular presents many exciting opportunities for creating new revenue streams from 5G investments.

We are also helping to centralise customer data across all communication channels so that customers benefit from personalised management of their journey for a truly unique experience. A customer can interact with Zain KSA and its network in retail shops, e-commerce portals, mobile apps or whatever method they prefer and enjoy the same high quality of experience and personalisation. Finally, it offers targeted digital marketing. Standardised and impersonal promotions become precise targeted offers that take full advantage of rich customer profiles to truly engage on the individual level.

VP: What are your plans for 5G development in the future?

Eng. Sultan Bin Abdulaziz AlDeghather: The achievements that I have already mentioned are just milestones in our digital journey. We recently announced the launch of Saudi Arabia's first 5G standalone network as part of our commitment to creating the 5G future. Our existing 5G network integrates 5G components into the older 4G

infrastructure, but standalone 5G combines a 5G radio access network (RAN), a 5G network core and cloud capabilities to make a huge leap forward in the evolution of 5G technology. It offers many exciting new possibilities like network slicing that will revolutionise the digital experience. Also, we have recently launched 5G LAN, becoming the first operator in the MENA region to provide the technology that will provide businesses with a high-end virtual network fully reliant on our 5G standalone network. In addition, we continue to expand into adjacent markets. For example, in February of this year we announced the expansion of our partnership with **NVIDIA** to roll out GeForce NOW cloud gaming platform to serve regional markets.

Becoming the best digital service provider means more to us than just improving our business and profits. We want to provide each person and business in Saudi Arabia with the practical benefits of digital transformation. However, digital transformation is a vast and enormously complex undertaking that involves years of effort to complete. Enabling digital transformation to benefit the millions of people throughout Saudi Arabia on our own would be a daunting task without a reliable partner. We believe that our partnership with Netcracker will help us redefine customer centricity to inaugurate a new era of digital innovation in Saudi Arabia. ■

www.netcracker.com



Why hybrid working won't work without unified communications

As a result of the pandemic, the way people are working and collaborating has changed. Companies are incorporating hybrid working so that employees have greater flexibility in how and where they work. With 63% of workers now preferring flexible or remote ways of working, it is essential for business leaders to support this change if they want to retain staff and win top talent in the future, writes Giorgio Migliarina, the product and services director, at Vodafone Business

This move to permanent hybrid working means the way we communicate and collaborate needs to change. People need to be able to switch between the office, home or another location without any issues or unnecessary downtime and businesses need to be able to support that.

To navigate a distributed workforce and power an effective hybrid workplace, organisations must utilise technology to enhance communication between employees. Investing in technology that is specific to their business needs will help organisations to build an infrastructure that will support flexibility. And this means an infrastructure that's secure and reliable and able to connect staff and business applications around the world.

Take control of communications

Due to the pandemic, businesses needed to quickly adopt a variety of tools and apps to allow teams to communicate remotely. These tools for many businesses were patchworked together to get people up and running quickly in the short-term rather than approached with a long-term strategic direction. These quick fixes have worked up until now, but as hybrid working remains, organisations need to find a way of bringing these tools together in order for them to work effectively.

In the hybrid workforce, it is imperative that a company's infrastructure can support communication systems for their employees day-to-day. Transforming operations and the management of the communications infrastructure can be made easy through unified communications (UC). This connects

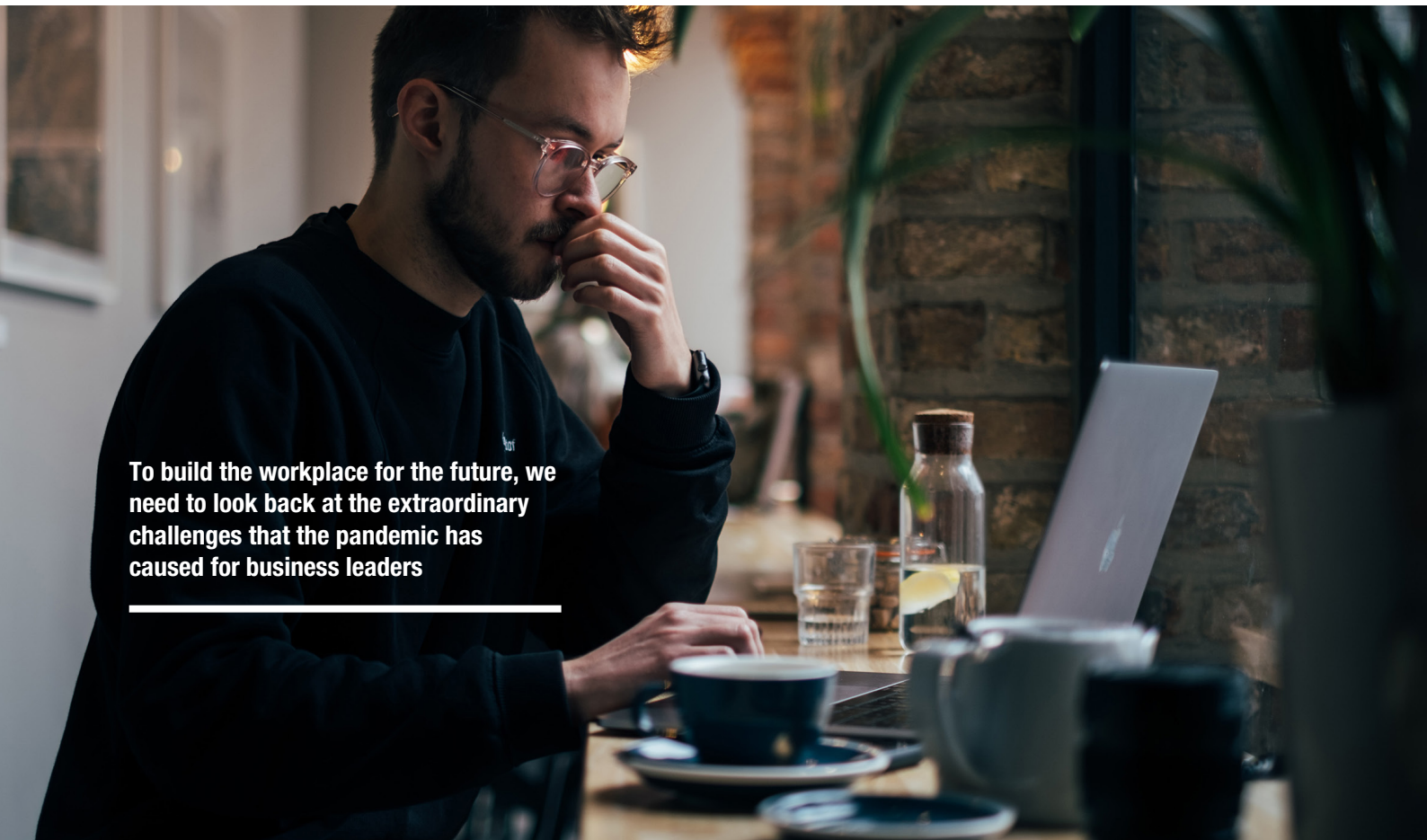
different communication systems and collaboration tools, bringing a mix of platforms together on one interface. This includes voice and video calling, messaging, integrated apps, file sharing and much more.

It's no surprise that UC systems are growing in popularity as they bring together globally dispersed workforces and simplify the employee experience. It's great for organisations that want to expand their global talent pool too, as it minimises the limitations of where employees are based enabling teams to connect despite location. As communication becomes less of a point of concern, collaboration becomes easier and employees can focus on getting the job done.

A more flexible solution for customers

Getting the best out of a UC platform means picking the right tools to increase productivity, reliability and mobility when working remotely or when on the move. Not only will this improve employee performance and motivation, it will also enable customer problems to be solved faster, improving the user experience.

Businesses can integrate their existing collaboration, CRM, contact centres and cloud-based applications simply and securely. With the platforms combined, customers can be redirected from one communication channel to another, receiving the service they expect, and organisations have a full view of customer service operations. Which can lead to improved services, unlocking new ways for them to operate and grow. ►



To build the workplace for the future, we need to look back at the extraordinary challenges that the pandemic has caused for business leaders

A mobile-first platform

By bringing together **Vodafone Business'** mobile approach with **RingCentral's** deep UC knowledge, we are able to combine all preferred modes of communication including team messaging, video meetings and cloud phone into a single intuitive app that is accessible on any device, anywhere. Everything works in sync, so the features can be run standalone or integrated with various business applications such as **Microsoft 365** and helpdesk services. The intuitive features and real-time analytics make communications systems easy to use, especially when boosting efficiency as it saves users time previously spent switching between devices that weren't connected to each other.

Vodafone's mobility and 5G capabilities give businesses more flexibility, choice and simplicity on features and subscriptions. These integrate easily with current infrastructure, giving users access to hundreds of application programme interfaces (APIs), a large developer community, and hundreds of integrations to mainstream cloud applications. So with our solution, third party integrations are easy to set up and can create a premium experience on any device.

While real-time and historic analytics, extensive call management, team collaboration and task management capabilities will pave new paths to productivity and engagement around the world. Unified communications is also helping organisations approach hybrid working in a way that will set them up strategically for the future.

Build the workplace for the future

To build the workplace for the future, we need to look back at the extraordinary challenges that the pandemic has caused for business leaders. Creating a new remote workforce culture will be critical to maintaining a healthy workplace and as more organisations adopt UC to help with remote management, the technology needs to focus on how to best support this way of working, while also enhancing the employee experience. There will be a demand for tools to not only be safe and flexible, but also inclusive and insightful. For example, there can be additional care for employee wellbeing as managers get better insight into employee performance.

UC will also help companies to explore how to be more socially conscious. It can be integrated with multiple communication platforms, and it is only a matter of time before it will be able to integrate with the Internet of Things (IoT). As IoT becomes more intelligent with advancements in artificial intelligence, there will be new efficiencies that UC leaders can start to look at including how to be greener.

Improving their UC strategy will help businesses to remain competitive in the market whether it comes to growing their talent pool or building relationships with customers, partners or suppliers. To ensure high-quality experiences, investments need to be made into communication tools, security platforms and applications. ■



Giorgio Migliarina, Vodafone



Vendor/ Partner	Client, Country	Product/Service (Duration & Value)	Awarded
A2Z Smart Technologies	SensePass	Alliance that enables customers to pay seamlessly with a digital wallet app.	1,22
Amdocs	Globe Telecom, Philippines	Three-year radio network optimisation services deal to accelerate 5G network expansion.	2,22
Amdocs	Vodacom Group	Partnership to create African Centre of Excellence to reduce time to market for 5G products and services.	2,22
Amdocs	Vodafone Turkey	Chosen to transform and automate the operator's testing activity in line with Vodafone's modernisation journey.	1,22
Amdocs	XL Axiata, Indonesia	Multi-year agreement with Amdocs to deliver new content and OTT offerings to customers.	2,22
Allot	Tier-1 telecom operator, Southeast Asia	Deal that selects Allot Secure to provide cybersecurity protection to SMB customers.	2,22
Aptiv	Wind River	Acquisition agreement to acquire Wind River for €3.78 billion for secure development, deployment, operations and servicing of intelligent systems.	1,22
BSI	Nuix	Alliance to strengthen global footprint in cybersecurity and data management.	2,22
BT	BAI Communications (BAI)	Multi-million pound contract signed to enable high-speed mobile, Wi-Fi coverage on London Underground.	2,22
Ciena	Vi	Alliance to accelerate digital connectivity and increase scale and performance efficiently.	1,22
CloudSmartz	LastMileXchange (LMX)	Partnership to help CSPs accelerate digital transformation and improve customer experience.	1,22
Comviva	IBM	Collaboration to power digital transformation for CSPs globally in the 5G and edge era.	1,22
Deutsche Telekom	Ericsson	Alliance to facilitate uniform international connectivity for latency-critical enterprise applications.	2,22
DZS	4-County, USA	Deal to help 4-County bring gigabit+ broadband, smart grid connectivity to rural Mississippi.	1,22
Eclipse Global Connectivity	Smiths Interconnect, ST Engineering iDirect	Partnership to deliver integrated airborne ISR SATCOM capability for military and government operators.	1,22
Ericsson	2degrees, New Zealand	Official launch of the 5G network with availability across certain parts in the country.	2,22
Ericsson	Cradlepoint	Deal extends SIM Management to cellular-enabled routers and adapters.	2,22
Ericsson	Digital Nasional Berhad (DNB), Malaysia	Setting up of a Network Operations Centre to gain operational insights.	1,22
Ericsson	du	Partnership offers latest 5G radio solutions reducing network energy consumption.	1,22
Ericsson	Mobily, KSA	MoU deal signed to expand 5G use cases in different industries in Kingdom of Saudi Arabia.	2,22
Ericsson	PLDT, Philippines	Alliance offers technology and advanced machine learning solutions to support environmental sustainability.	1,22
Ericsson	Siminn, Iceland	Deal to build telecom infrastructure and accelerate 5G expansion over a five-year alliance.	2,22
Ericsson	stc, KSA	Alliance to capitalise on the consumer and enterprise service offerings enabled by full 5G.	2,22
Ericsson	Universiti Teknologi Malaysia (UTM), Digital Nasional Berhad (DNB)	Collaboration to enable participation and contribution to digital economy, Industry 4.0 transformation.	1,22
Eseye	Armis	Deal to deploy connected devices using enterprise-class security and consistent, reliable cellular connectivity.	2,22
Eutelsat Communications	Marlink	Deal to extend global maritime partnership for GEO Ku-band satellite capacity	2,22
Eventide	Softil	Partnership deal to launch MCX recording solution for public safety operations.	2,22
Evolving Systems	PartnerOne	Completion of acquisition to provide better customer engagement, improved customer experience.	1,22
EXFO	Red Hat	Alliance to allow service providers to meet user expectations with critical cloud applications.	2,22
Google Cloud	Continual	Collaboration to make its cloud-native Mobility Experience Analytics available on Google Cloud Marketplace.	2,22
Google Cloud	Elisa, Finland	Partnership to accelerate Elisa's cloud transformation journey and work together on joint innovations.	2,22
Highlight	Cisco	Deal to provide managed service on top of SD-WAN technology and its underlying network.	2,22
Hughes Communications	Bharti Airtel	Joint venture to offer flexible and scalable enterprise networking solutions using satellite connectivity.	1,22
IBM	Sentaca	Acquisition to accelerate IBM's hybrid cloud consulting business, adding critical skills.	2,22
Infineon Technologies	Deeyook	Collaboration to enable precise location solution with low-power Wi-Fi chipset.	1,22
Infinet Wireless	ASTEL, Kazakhstan	Deal to build links between certain locations as an alternative for fibre-optic communication lines.	2,22
Infovista	Colt Technology Services	Deployment to deliver VoIP service assurance across the Colt IQ Network.	2,22
KT Corporation	Fujitsu	Alliance to test call connection during interoperability trials for open fronthaul.	1,22
Lantronix	Taoglas, Thales	Collaboration to connect data-dependent vertical industries, including Industrial 4.0, security and transport markets.	2,22



Vendor/ Partner	Client, Country	Product/Service (Duration & Value)	Awarded
MATRIX Software	Google Cloud	Support for Google Cloud confidential computing to derive benefits of public cloud.	2,22
Mavenir	BAI Communications	Deployment to launch smart city project for the Sunderland City Council.	1,22
Mavenir	Qualcomm	Collaboration towards commercialisation of massive MIMO RU and DU for 5G mobile Infrastructure.	2,22
Netaxis Solutions	Anyroute B.V.	Acquisition deal to boost cloud credentials and SaaS portfolio in telecoms.	2,22
Netcracker Technology	T-Mobile	Deal extended Netcracker's BSS and managed services partnership.	2,22
Netcracker Technology	T-Mobile Netherlands	Upgradation supports growing customer base with Netcracker Cloud BSS speeding time to market.	2,22
Nokia	450connect, Germany	Deal to supply network technology for LTE450 critical infrastructure network.	2,22
Nokia	Alstrom	Deal to deploy private wireless to support safe, sustainable rail network in India.	1,22
Nokia	Alibaba Cloud	Alliance to enhance Alibaba Cloud's enterprise edge cloud capabilities to speed up digital transformation.	2,22
Nokia	AT&T	Collaboration to improve 5G uplink with distributed massive MIMO.	2,22
Nokia	Atos	Join forces to enhance businesses' digital applications with full private 4/5G networks services.	2,22
Nokia	Capital Online, Beijing	Deal to upgrade IP backbone network and provide reliable cloud services.	1,22
Nokia	Cellcom, Telia	Adoption of initial 5G edge slicing solution on live commercial network with Cellcom and Telia.	2,22
Nokia	China Mobile (CMCC), MediaTek	Alliance to achieve 5G standalone speed record using carrier aggregation technology in Shanghai.	2,22
Nokia	GlobalConnect Group	Alliance to demonstrate 600G transmission using PSE-V super coherent optics.	1,22
Nokia	GO Malta (GO)	Selected as sole strategic partner for a nationwide 5G RAN rollout in a seven-year deal.	1,22
Nokia	IP Telecom, Portugal	Partnership deal to deliver quantum-safe data centre connectivity.	1,22
Nokia	Kyndryl	Global alliance to help enterprise customers accelerate their digital transformations.	2,22
Nokia	Nordic Semiconductor	New approach to simplify IoT standard essential patent licensing.	1,22
Nokia	OIV, Croatia	Deal to deliver 5G SA industrial private wireless campus network.	1,22
Nokia	Rock Connect, Jamaica	Selected by Rock Connect to accelerate broadband services in Jamaica.	1,22
Nokia	SK Telecom, South Korea	Vendors collaborate on new virtualised RAN network in Korea.	1,22
Nokia	Tele2	Extends partnership to deploy 5G RAN in Estonia, Latvia, and Lithuania in a long-term deal.	1,22
Nokia	TREX Regional Exchanges Oy, Finland	Deployment of IP peering solution to upgrade TREX regional internet exchanges in Finland.	2,22
Nokia	US Department of Energy	Selected for ARPA-E funding to develop energy-efficient data center technologies.	2,22
Nokia	WINDTRE, Italy	Deal to deploy high performance optical backbone for WINDTRE.	1,22
Nokia	Zain KSA	Partnership deal to expand and enhance its digital infrastructure.	2,22
Nordic Semiconductor	Acklio	Use of SCHC in live NB-IoT network to optimize throughput, bring IPv6 to non-IP data delivery.	2,22
Nordic Semiconductor	Sennheiser	Deployment to develop a broadcast mode solution for consumer products.	2,22
Omantel	Optiva, Oman	Multi-year agreement to upgrade to a cloud-native architecture.	1,22
Optiva	Google Cloud	Multi-year partnership to accelerate their digital transformations, increase customer success.	1,22
Orange	SES, Senegal	Partnership deal to deploy African O3b mPOWER gateway in Senegal.	2,22
Orange Business Services	Mondelez International	Deal unifies global operations on a single, global platform.	2,22
Orange Cyberdefense	Microsoft Intelligent Security Association (MISA)	Alliance to monitor cloud and hybrid environments, and better defend from increasing threats.	2,22
ParkMobile	City of Clarksville, Tennessee	Service expansion to offer convenient, contactless parking payments.	1,22
Polarium	Telia	New pilot project to optimise network energy usage and contribute to balance the electricity grid.	1,22
Qualcomm Technologies	Hewlett Packard Enterprise (HPE)	Collaboration deal to deliver 5G virtualised distributed unit solutions.	2,22
Ribbon Communications	Beanfield Metroconnect	Alliance deal that deploys Ribbon Connect for Microsoft Teams Direct Routing.	2,22
Ribbon Communications	IPS	Deployment that expands long haul submarine data transmission capacity with Ribbon's IP optical solutions.	1,22
Ribbon Communications	NamPower, Namibia	Deployment of Ribbon's IP optical portfolio to enable use of high-capacity bandwidth reliably.	2,22



Vendor/ Partner	Client, Country	Product/Service (Duration & Value)	Awarded
Ribbon Communications	Telehouse	Selection of Ribbon's high-performance Apollo solution to power Metro Connect.	2,22
Robin.io	Lekha Wireless, Blue Arcus	Partnership deal to accelerate highly scalable custom carrier-grade network solutions.	2,22
Robin.io	STL	Deal that delivers core technologies to empower 5G stacks for enterprises.	1,22
Rakuten Symphony	Robin.io	Acquisition deal that enables creation of cloud infrastructure and operations, from edge to central data centre.	2,22
Samsung Electronics	Vodafone UK	Vendors switch on the UK's 5G Open RAN site, marking start of Vodafone's scaled Open RAN network architecture in Europe.	1,22
Samsung Electronics America, Amdocs	Howard University	Pact to deliver broadband connectivity to students, faculty and local residents traveling the university's campus.	2,22
Semtech	Lacuna	Joint initiative expands LoRaWAN coverage through IoT to satellite connectivity.	1,22
Software AG	GO, Malta	Partnership to provide enterprise customers with value-added solutions and services.	1,22
Subex	Ethio Telecom, Ethiopia	Collaboration to develop a new solution for 5G business assurance.	2,22
Syniverse	Verizon	Partnership to grow international roaming revenues, enable new roaming partner access.	1,22
TEOCO	ice, Norway	Selected TEOCO's ASSET 5G planning solution to deliver 5G services to ice's subscribers.	1,22
TEOCO	Software Synergy Inc (SSI)	Acquisition to bring SSI's configurable URS under TEOCO brand, complementing TEOCO's existing business analytics product suite.	2,22
Teradata	Telefonica Espana	Deal to migrate on-premises data analytics ecosystem to Vantage on Google Cloud.	1,22
Thales	ANWS, Taiwan	Deal to modernise airport surveillance systems in Taitung, Hualien and Songshan.	2,22
Thales	Mitsubishi Corporation	Deal to provide digital communications, supervision technologies to Metro Manila.	2,22
U.K. Digital Access Programme (DAP)	Dynamic Spectrum Alliance (DSA)	Partnership to advance connectivity, deliver digital inclusion in Brazil, Indonesia, Kenya, Nigeria, and South Africa.	2,22
Vindicia	Vimeo	Expansion deal with Vimeo continuing use Vindicia's services for subscription management and retention solutions.	2,22
Wyld Networks	TrakAssure LLC	Integration deal to provide terrestrial and satellite IoT connectivity for the supply chain.	2,22
ZTE	China Unicom	Vendors conduct radio composer trial in China's Shandong province.	1,22
ZTE	China Unicom	Alliance to jointly complete PoC of computing power network service scheduling.	1,22
ZTE	Ningxia Cable TV Network	Deal helps Ningxia Cable TV Network build high-quality 5G transport network.	1,22
Zyter	Qualcomm Technologies	Collaboration to provide applications and dashboard for 5G private networks.	2,22

Colt Technology Services selects Infovista KLERITY to deliver VoIP service assurance

Infovista, a global provider of network lifecycle automation, announced that **Colt Technology Services**, has selected Infovista KLERITY to deliver voice over IP (VoIP) service assurance across the Colt IQ Network. The KLERITY solution will deliver end-to-end visibility to Colt's international network across seven major locations in Asia and Europe.

Colt Technology Services is a provider of agile, high bandwidth connectivity solutions serving data-intensive organisations spanning 210 cities in more than 30 countries. Colt is a provider of software defined networks (SDN) and network function virtualisation (NFV). The deployment of KLERITY within a network enabled with the latest SIP encryption technologies will enable Colt to optimise the quality of experience (QoE) of its VoIP services in a marketplace where quality is a key differentiator, with KLERITY providing

detailed, real-time visibility into the perceived QoE and reliability of those services. This includes the ability to view how different user devices impact QoE, along with subscriber and user behaviour.

"KLERITY is the clear choice to support Colt's expanding VoIP market, because it enables us to visualise, and act on, a uniquely rich and real-time view of how these services are perceived by the users themselves," said Shane Sura, the vice president of network operations at Colt. "Its strong cloud-native platform has all the attributes we need to enable us to use automation and machine learning to deliver a best-in-class customer experience."

Faiq Khan, the president of global networks at Infovista, added. "I'm very proud that we have been selected by Colt to provide actionable, real-time



Faiq Khan, Infovista

intelligence into customer experience for its VoIP services. Colt is a recognised leader in NFV and SDN, with a network of more than 900 data centres globally. Our cloud-native KLERITY platform has been built from the ground up to provide the scalability, openness, interoperability and reliability that Colt needs to monitor customer experience for its VoIP connectivity services, even in a period of rapid business growth."



Slow and steady doesn't always win the race

In 2021, Ericsson CEO Borje Ekholm claimed "Europe is too slow with the roll-out of 5G". He also suggested this could impede the success of Europe's climate goals. While this could be true, the state of Europe's 5G rollout could have several other knock-on effects. Here, Hamish White, the chief executive of Mobilise, explores the reasons why Europe's 5G roll-out is lagging, and why catching up is so important

Hamish White,
Mobilise



According to the **European Telecommunications Network Operators Association (ETNO)**, Europe is falling behind the US and Asia when it comes to 5G development and roll-out. Although its 2021 State of Communications report found that the number of Europeans covered by at least one 5G network has doubled, reaching 24% in 2020, it's still not high enough. So, what's hindering Europe's 5G rollout?

Delayed spectrum auctions

Spectrum auctions enable governments to sell the rights to transmit signals over specific bands of the electromagnetic spectrum and are vital in the rollout of 5G bandwidths across the world. Competing applicants will all bid for a spectrum licence and the company willing to pay the most for the spectrum wins the licence.

But the COVID-19 pandemic has prevented auctions across Europe from going ahead. In August 2020, Ofcom announced the auction spectrum was postponed until January 2021 because of COVID-19 restrictions. It was then pushed back until March 2021. Currently, only 30% of the UK can access 5G networks, including Birmingham, Bath and Glasgow. And throughout Europe, there are many inconsistencies as Finland has auctioned all the necessary spectrum bands for 5G, while Poland, Portugal and Belgium are yet to complete any auctions.

The cost associated with these auctions can also impact the speed of 5G's roll-out. Governments can set starting prices so high that communications service providers (CSPs) can't afford to participate. Furthermore, governments can also inflate prices by limiting how much spectrum is made available, again meaning that fewer CSPs can afford to take part.

Global chip shortage

The impact of the global semiconductor chip shortage has been felt across industries worldwide including automotive, consumer electronics and appliances and telecoms. Like any industry, demand issues have a knock-on effect across the supply chain, and telecoms is no exception. According to the **Semiconductor**

Industry Association, around one third of all semiconductors made are for communications, which includes equipment such as routers and base stations. A shortage of these devices could cause a delay in gear procurements by CSPs, slowing down 5G network deployments and expansions.

The real divide

The digital divide refers to the unequal access to communication technologies, which is split into two divisions. The uncovered population lives in an area where there is no mobile network and they cannot connect to the internet, whereas the covered population lives in an area of network availability but cannot access the internet because of a lack of affordability or technology literacy.

5G is not just about faster connectivity. It brings many benefits that encourage economies to become more innovative and productive. Wireless technology is no longer just important for consumers and entertainment, it has become critical to how businesses connect employees and how schools educate pupils. And those without reliable network access become further disadvantaged, academically and economically.

Although the uptake of 5G in Europe is out of CSPs' hands, it's vital to ensure that when the time comes, they can transition to 5G with ease. To support organisations launching 5G services, **Mobilise** offers its customers the 5GTM a modular suite of end-to-end support services that help operators to smoothly transition from 4G to 5G. With the 5GTM framework, CSPs can have a head start in helping to close the 5G divide.

While the phrase 'slow and steady wins the race' may be correct in some cases, it doesn't apply in the case of Europe's 5G roll-out. It's obvious that changes must be made if Europe is to catch up with the United States and Asia. Though the delayed spectrum auctions and the global chip shortage is out of CSPs' control, they must do all they can to ensure they support the digital transformation of telecoms and the digital needs of customers. ■



How to unravel the consumer cyber confusion

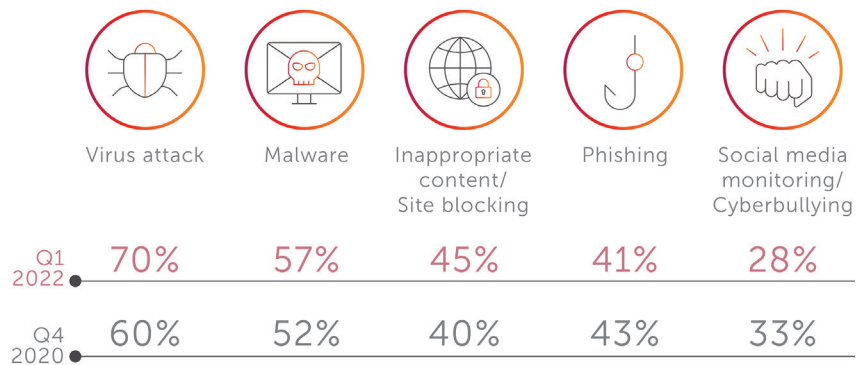
It has become an axiom that threats are on the rise. Along with the rise in threats has come a dizzying array of consumer cybersecurity solutions. As a result, consumers are paralysed and most remain unprotected, not installing a security solution on their devices. More and more internet-connected devices are also entering the home, making protection more confusing than ever. The few, technically savvy consumers that do install security solutions often need multiple solutions to cover their phones, tablets and smart devices – frequently leaving holes or overpaying for multiple point solutions.

As cyber awareness increases, consumers know that they need to be protected, but they don't know where to look. The continual increase in cyber threats creates an exceptional opportunity for communication service providers – who consumers see as a trusted advisor ►

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Phishing has also seen dramatic growth, skyrocketing during the pandemic as remote work and digitisation accelerated



Threats for which consumers have a security application installed
(Source: Allot Telco Security Trends H1 2022)

Cyber threats on the rise

This past year saw an exponential increase in threats, many targeting mobile and home devices. The [Zimperium 2022 Global Mobile Threat Report](#) reports that 30% of the known zero-day vulnerabilities discovered in 2021 targeted mobile devices, and there was a 466% increase in exploited zero-day vulnerabilities used in active attacks against mobile endpoints. Users can't even rely on downloading apps only from the official stores. In March 2022, it was reported that [100,000 Google Play users were infected](#) with password-stealing malware thanks to a decoy application.

Phishing has also seen dramatic growth, skyrocketing during the pandemic as remote work and digitisation accelerated. According to [Proofpoint's 2022 State of the Phish report](#), 83% of organisations said they experienced a successful email-based phishing attack in 2021, versus 57% in 2020. Many phishing attacks specifically target mobile devices. Mobile devices also serve as an attack vector when people click on a phishing link from their mobile email app. The report also noted that 74% of organisations faced smishing attacks – attacks that took place using text/SMS messaging as the main communication vector – in 2021.

While many consumers have an anti-virus solution for their mobile phones, there are other threats such as malware, phishing and more. Consumers remain, to a great extent, unprotected.

According to the [Allot Telco Security Trends H1 2022 report](#), conducted by [Coleman Parkes Research](#) in early 2022, among mobile subscribers that had a security app installed, 70% were protected against viruses but only 57% were protected against malware and only 41% were protected against phishing attacks.

This point is echoed by [a new report from TAG Cyber](#), "Most citizens still rely on weak antivirus products that are ineffective in protecting against ransomware, identity theft and inappropriate content."

The rise of the smart home

But it's not just mobile phones that are at risk. [Statista](#) estimates that there are now over 300 million smart homes worldwide. The average American family has access to more than ten connected devices, such as tablets, smart TVs, smart doorbells and security cameras. The rise of the smart home, powered by home internet services, gives rise to new threats and makes managing them more complicated.

Each additional device provides more attack vectors. Besides being a victim of attacks, some attacks will even turn the victim into an attacker. Botnets, frequently used to launch distributed denial of service (DDoS) attacks, are often launched from home security cameras and connected baby monitors. Other vulnerabilities have taken over security cameras and baby monitors to allow attackers to gain access to the audio and video streams. This is surely every parent's nightmare.

Unified policy management across multiple devices

With so many devices and so many threats, it's clear that consumers need to protect themselves. But the plethora of devices and growth in threats also make it difficult to stay protected. It is cumbersome and expensive to install endpoint devices on each household mobile phone and tablet. Each device also needs its policy managed separately. It's not only phones and tablets that need protection but also the rest of the smart home – and the average household does not have the capability or technical knowledge to manage this arrangement.

Despite their confusion, consumers – and particularly Generation Z and Millennials, the oldest cohort of which are now in their 40s – are increasing their usage of security products. In [IDC's August 2021 Consumer Digital Life Protection Survey](#),¹ nearly half of the respondents in this age group stated their need for security protection increased during the pandemic and nearly an equal percentage increased their actual usage. As the pandemic has accelerated digitisation trends and made hybrid work a norm, 40% of adult respondents also stated that they will increase their usage of security tools post-pandemic. ▶

[1] IDC Analyst Brief, sponsored by Allot, Consumer Digital Life Protection: Ripe Opportunity for Communication Services Providers, doc #US48835822, February 2022



It makes sense for the mobile service provider to provide cybersecurity as part of their offer



My mobile service provider should make it clear whether they are providing cyber protection or not



I expect secure connectivity to be a core offering from a mobile service provider



I trust my mobile provider to protect me from cyber threats

Consumers expect to receive secure internet (Source: Allot Telco Security Trends H1 2022)

Consumers don't know how to protect themselves. According to Allot's H1 2022 Telco Security Trends report, consumers are confused

360-degree protection is a must

Traditional home security takes an ad-hoc approach and is focused on securing endpoints. It does not take a holistic, 360-degree approach. But these products don't speak to one another, and policies are fragmented across devices and services. Unified security across a consumer's entire network is the only way to ensure complete security on all their network devices.

Consumers are confused

Consumers don't know how to protect themselves. According to Allot's H1 2022 Telco Security Trends report, consumers are confused. 57% of respondents that lack a security solution don't know which to select for their devices, while 40% don't know how to select a solution.

With internet connectivity everywhere – on devices throughout the smart home, on phones, tablets, smartwatches that are both at home, at work and on the go – protection is fragmented. Solutions that only protect you at home are insufficient when you are also working partly at home, in the coffee shop, and you are taking your smart devices with you wherever you go.

It is unrealistic to expect consumers to be their own CISO. Most consumers are not technically adept and certainly cannot keep up with the ever-growing threat landscape nor manage all their internet-connected devices.

CSPs are trusted advisors

Consumers expect their communication service providers (CSPs) to advise them about how to keep their network safe. Many also expect their CSP to keep them secure. According to IDC's Consumer Digital Life Protection Survey, 35% of 18-44 year old adults selected home broadband and wireless service providers as their most trusted source for home digital life protection.

According to the Allot Telco Security Trends H1 2022 report, 55% of respondents trust their mobile service provider to recommend the right security protection for them. They expect to get secure connectivity from their CSP. 58% of respondents think that their home router should be safe from threats right out of the box.

68% said that they are likely to subscribe to a service from their mobile service provider that provides security or content control on their mobile device and 65% stated that it made sense for their mobile service provider to provide cyber security as part of their offer. 62% expect secure connectivity to be a core offering from a mobile service provider.

CSPs are well positioned

While many CSPs have a well-developed managed cybersecurity business for large business consumers, there is a gap in offerings for consumers and small businesses.

Many respected industry watchers see a strong upside for CSPs. According to IDC, "market demand for consumer DLP is on an upswing and will continue to grow with changing demographics (i.e., a higher percentage of the population being digital natives) and increasing awareness among consumers of the digital risks they absorb in their daily lives. Moreover, IDC believes that with greater awareness, a higher percentage of consumers will explicitly take action to curb their risk. They will, in turn, seek the assurances of trusted technology providers."

Communication service providers have a strong foundation to expand their service portfolios into digital lifecycle protection and generate a dependable profit stream. TAG Cyber remarks that "The opportunity for telecom providers to offer a simple, clear package of cybersecurity protections for homes and families appears significant." IDC concurs, stating, "IDC believes communication service providers have a firm foundation to expand their service portfolios into digital lifecycle protection (DLP) and generate a dependable stream of profits."

CSPs already have established customer relationships and communication channels to exploit this opportunity. They can use their billing platforms to message customers about new offerings and highlight their expertise and investment in cybersecurity – such as the number of blocks or highlight recent threats. They can also use customer online portals and applications to inform their existing subscribers about their new security offerings. ▶

[1] IDC Analyst Brief, sponsored by Allot, Consumer Digital Life Protection: Ripe Opportunity for Communication Services Providers , doc #US48835822, February 2022



CSPs engage with consumers at critical opportunities in their customers' lives and are well-positioned to build brand loyalty. This includes household moves, mobile device purchases and service agreement renewals, as well as service-related issues. One of the critical challenges with marketing and selling any new service is reaching a potential user at exactly the right time. However, the CSP-consumer lifecycle is perfectly positioned to take advantage of multiple touchpoints to educate and grab subscribers when they are ready to buy.

IDC¹ writes that "leveraging their network infrastructure and home broadband routers as service delivery platforms, communication service providers have the means and motivation to expand their DLP offerings from which to grow average revenue per user (ARPU), carve out competitive differentiation, and strengthen customer loyalty." By partnering with a security provider, CSPs can take advantage of the significant potential. This is due to:

1. **Reducing churn** – 80% of respondents in the Allot H1 2022 survey said that they would probably or definitely switch to a new provider if they offered a security service. No, they're not bluffing – 42% of respondents switched service providers within the past three years.
2. **Increasing differentiation** – 64% of respondents said that service providers should make it clear whether they are providing cyber protection or not.
3. **Incremental revenue potential** – Partnering with a provider that operates on a revenue-share model, CSPs can reduce their initial risk, while taking advantage of significant upside potential.

TAG Cyber has created a sample business case for a small telecoms operator in the United States, noting that even small providers can increase their revenue by hundreds of millions of dollars annually after ramp-up. This can be done with a low initial investment from CSPs by partnering with a provider that offers zero or low-front costs, but rather is willing to share the risk with a revenue share model. ■

CSPs already have established customer relationships and communication channels to exploit this opportunity

Allot's SECaaS Solution

Allot is a leading vendor providing security-as-a-service to CSPs. Allot is a well-known and established player in the CSP market, providing advanced telecoms solutions that serve over one billion subscribers worldwide. Allot provides security-as-a-service solutions to CSPs, achieving up to 50% penetration with some service providers, and currently serving over 20 million subscribers globally. Allot is seeing increased interest in network-based cybersecurity solutions. CSPs are choosing Allot to provide their security services, having signed 11 deals in 2021.

These solutions offer zero-touch 360-degree protection, securing all devices through the home and mobile network, as well as providing endpoint protection when traveling off the network. No customer effort is required to provision security. No matter where the devices are located, security policies are centrally managed through a unified cloud-based management console, with no need for complex configurations across multiple devices.

Allot Secure unifies core-network-based security with endpoint and customer premise equipment-based (CPE) based security enabling CSPs to deliver branded, security services to the mass market. Allot Secure also protects the network user plane, detecting and mitigating both inbound and outbound DDoS threats. It also prevents connected IoT devices from launching malicious, reputation-damaging traffic through your network.

Customers are kept informed on how you've protected them, helping to achieve an ongoing perception of value and high customer satisfaction.

To learn more about Allot's security services for CSPs, contact us at bspelman@allot.com

allot

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[1] IDC Analyst Brief, sponsored by Allot, Consumer Digital Life Protection: Ripe Opportunity for Communication Services Providers, doc #US48835822, February 2022



How CSPs can transform to assure digital services revenues

As CSPs enter a new era of their development, how can business assurance deliver the enterprise-wide transformation needed to remain competitive, profitable and innovate at speed, asks Ashwin Menon, the product head at Subex

Before the pandemic, every business had a digital transformation strategy – none more so than CSPs who could see how their enterprises needed to evolve rapidly to support customer demand

The environment that communication service providers (CSPs) have been trading within for the past decade has seen massive change. Legacy services have been replaced with new dynamic content-driven platforms that consumers demand. As CSPs look towards their post-pandemic futures, there's a shift away from revenue assurance (RA) to business assurance (BA).

Previously, CSPs had effectively used RA to interrogate their business systems to identify revenue leaks. A **RAG** survey report has indicated that out of the total operational leakage value, revenue and cost leaks are 28.5%, which is almost double the cost of fraud. This highlights a massive portion of leakage coming from non-fraud losses.

Over time, identifying the source of the revenue losses delivered tangible benefits to CSPs who could track individual customer events to reveal potential issues that may adversely impact their revenue streams. In addition, using data analysis enabled CSPs to build a sophisticated tracking system to reduce the revenue leaks they were experiencing.

However, it has become abundantly clear that RA has significantly diminishing returns. The telecoms market has transformed, and with it, increased competition has meant traditional RA systems could not recover the reductions in per-user revenue being experienced by CSPs. A new approach was needed. This need has resulted in BA, which is delivering new opportunities to CSPs.

Business assurance is an evolution of RA and

reflects a marketplace that has significantly changed. Where voice previously reigned supreme, today CSPs must offer a myriad of additional services and have become digital service providers (DSPs). In practice this means that legacy RA is no longer a purposeful fit. Instead, what is needed is a business-wide view of not just the CSP's systems and processes, but also a more comprehensive view of customer expectations.

Before the pandemic, every business had a digital transformation strategy – none more so than CSPs who could see how their enterprises needed to evolve rapidly to support customer demand. Post-pandemic, these plans are being re-drawn. What CSPs need is not only a detailed understanding of their business operations, but also, how each component, from billing to regulatory compliance, must be efficiently managed to protect and develop new revenue streams.

Utilising data

Today successful CSPs are data-driven businesses. The key is to connect what are often siloed data sources into integrated dynamic data sources that can be used to support new initiatives and innovation. However, using data as an asset offers even more fundamental advantages: enterprise resource planning (ERP) systems can be enhanced. For example, revenue accounting can become significantly more efficient and streamlined to reveal unearned revenue previously unidentified. And critical system components such as fraud management, margin assurance and financial integrity can all be transformed with BA. ►



The business case to adopt a data-first stance is now in focus. The **Harvard Business Review** reported that 89% of survey respondents say analysed data is essential to an organisation's innovation strategy. The tools needed to use this information are available and bring potentially transformative efficiency and enable innovations. For CSPs, understanding their business's goals and then using these tools to achieve them is a central foundation of BA.

Placing BA at the centre of innovation also supports customer experience (CX), a significant brand differentiator. According to research from **NTT Data**, over 80% of organisations agree that CX offers a competitive edge, with 58% of respondents stating CX is their business's primary differentiator. In this scenario, how these vital relationships are managed is critical. Here, the enterprise-wide reach of BA is vital, as BA systems connect business processes together to deliver seamless professional and outcome-driven services for customers.

Beyond revenue

CSPs realise that their market landscape is rapidly changing: how their business reacts to these changes means having an end-to-end overview of their business processes. This overview enables the identification and mitigation of risks, and of course, protects existing revenue streams and helps in developing new ones.

It's important to appreciate that BA is not another term for RA. The depth with which BA is connected to every business system from customer-facing

processes to supply chain requires a fundamental shift from established practices. For some CSPs, this is a difficult transition to make – but one they must complete to remain competitive in a marketplace that is rapidly evolving.

CSPs are constantly looking to improve their efficiency and remove risk. To create testing systems and scenarios that will help CSPs identify risk, they are increasingly adopting advanced automated systems such as artificial intelligence (AI) and more specifically machine learning (ML). Moreover, these same systems can also be utilised to help CSPs innovate and remain leaders in their market sectors.

AI will impact innovation across all the markets that CSPs are active within. Also, the burgeoning Internet of Things (IoT) space will become vitally important to CSPs. **Gartner** predicts that one-third of all companies will have implemented an IoT strategy that will include AI components by next year. Here, BA comes into its own to ensure CSPs have the systems in place to oversee and utilise these technologies.

To architect a prosperous post-pandemic future, CSPs understand that they must change. To orchestrate those changes, some CSPs will undergo radical alterations in how they operate. Business assurance is the key to potentially unlocking many new avenues of innovation and revenue. Where RA focused on revenue leakage, BA offers an integrated and holistic approach that CSPs can use to transform their businesses. ■

The Harvard Business Review reported that 89% of survey respondents say analysed data is essential to an organisation's innovation strategy



Uplift model to predict churn and deliver higher marketing ROI through targeted outreach

In today's competitive digital environment, digital service providers (DSPs) focus on targeting the right set of customers with personalised marketing campaigns. However, the different approaches to determine the right set of customers such as manual spreadsheet-based statistical modelling and outcome modelling have shown the following limitations:

- Randomised and inaccurate list of target customers
- Lack of granularity on which customers are most likely to respond to marketing campaigns
- Minimum marketing return on investment (ROI)

DSPs need to look beyond the traditional approaches and adopt machine learning (ML)-based uplift modelling to identify the right set of target customers. The ML-based uplift modelling enables DSPs to increase the uplift score and helps in gaining granularity in terms of which probable churners have a higher likelihood to respond positively to a personalised campaign, thereby improving marketing efficiency and driving higher incremental revenue, writes Prashant Maloo, a system architect at Prodapt

Determining the right set of target customers, who have a high probability to respond positively to a marketing campaign, requires using the right type of raw data input to achieve the feature datasets. These feature datasets must be engineered to obtain the most relevant and best features, which can then be used as an input into the AI/ML model.

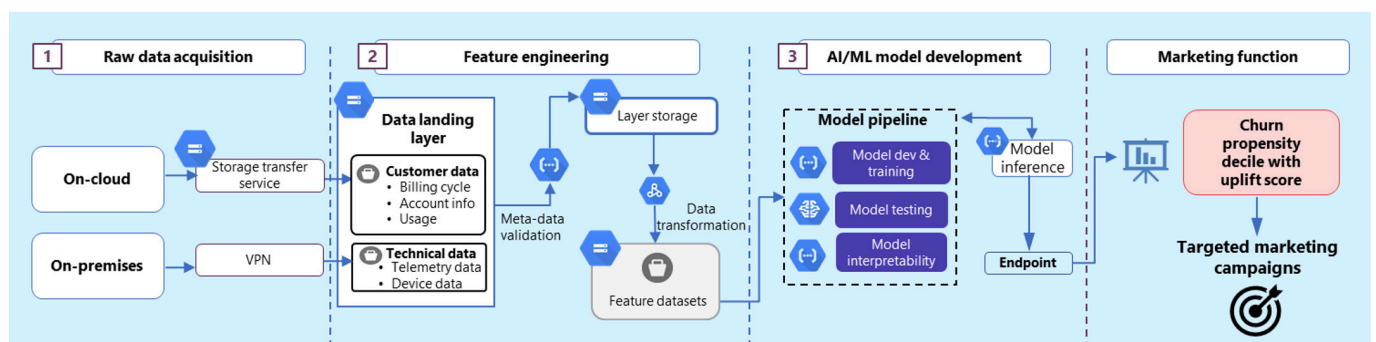


Figure 1: ML-based uplift model architecture

Developing a fully functional uplift model is a complex task and if not strategised and implemented correctly, can fail to provide the required granularity in the target list of customers. This article details the right set of enablers such as raw data acquisition, feature engineering, and AI/ML model development that are crucial for the successful implementation of ML-based uplift modelling. ►

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1) Raw data acquisition:

Select the best raw data to achieve accurate churn propensity and improved uplift

Acquiring the right set of raw data is the most critical step because it will help in determining the relevant feature datasets, which in turn will enable DSPs to achieve an accurate churn propensity output and a higher uplift score.

Recommendations

- Solution architects and domain experts should collaborate to decide on data aggregation strategies and finalise the type of raw datasets.
- Select the raw data based on the past 2-3 months trends. The historical trends depend on:
 - Customers' churn data
 - Active customers' feedback
 - Customer response from marketing campaigns
- Select the raw data having high influencing features such as distance between an active customer and churner, competitor footprint and hourly broadband usage.
- Perform metadata validation daily, as the raw data acquisition is a continuous ongoing process. Metadata validation tools could be built using Python.

2) Feature engineering (FE):

Utilise data science to process raw data and select the best features

The raw data, once obtained, must be engineered to get the best feature dataset. With feature engineering, the raw data is transformed into features that better represent the underlying issue to the ML algorithm, resulting in enhanced model accuracy.

Recommendations

- Use the FE model to ingest and analyse the raw data to obtain >3,000 features. The number of features may differ on a case-to-case basis depending on the type of raw data used.
- Execute the feature selection process using the AI/ML platform to select only the best 400-1,000 final features (out of 3,000 features).

- The most critical features for an effective uplift model are listed below:

- Active churners who are present within 30 meters from possible churner
- Ratio of competitor networks present closer to 200 meters of churners churned in 30 days
- Active churners who are present within 50 meters from possible churner and churner before last 15 days
- Probability of churning to competitor X
- Probability of churning to unknown competitors
- Downstream hourly broadband usage in MB
- Upstream hourly broadband usage in MB
- Power cycle detection
- Number of stations per interface (hourly)
- Broadband connectivity detection

- The whole FE architecture should be managed on a data orchestration and scheduling platform such as **Apache Airflow**, which allows the FE data pipeline to be triggered automatically bi-weekly or monthly.

3) AI/ML model development:

Increase the uplift score and target the right set of customers

The features, once obtained, must be fed into the AI/ML engine, which would enable the DSPs to sort the probable churners into deciles with the corresponding uplift score.

Recommendations

- Adopt multiclass classification-based AI/ML model, as a variety of features are analysed to predict the churn.
- Implement custom hyper-parameter tuning before the ML process begins, as it helps in testing different configurations when training the ML model.
- Implement **Kubernetes**, an open-source container-orchestration system, to automate the deployment and management of ML model.
- Run the engineered features through three ML algorithms:
 - i) Variance inflation factor
 - ii) Random forest algorithm
 - iii) XGBoost model
- These algorithms analyse and select the top features required to predict the churn propensity and increase the uplift.

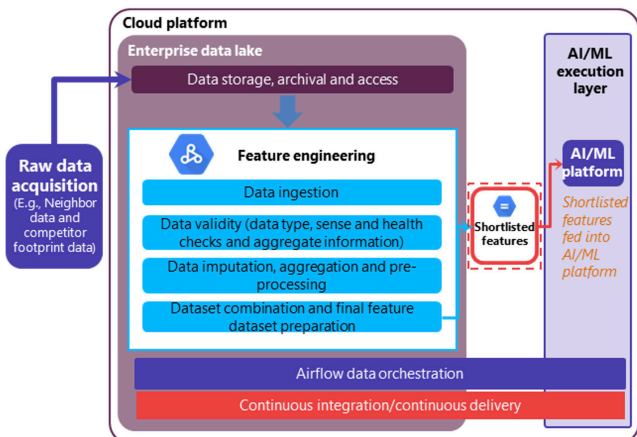


Figure 2: Feature engineering process

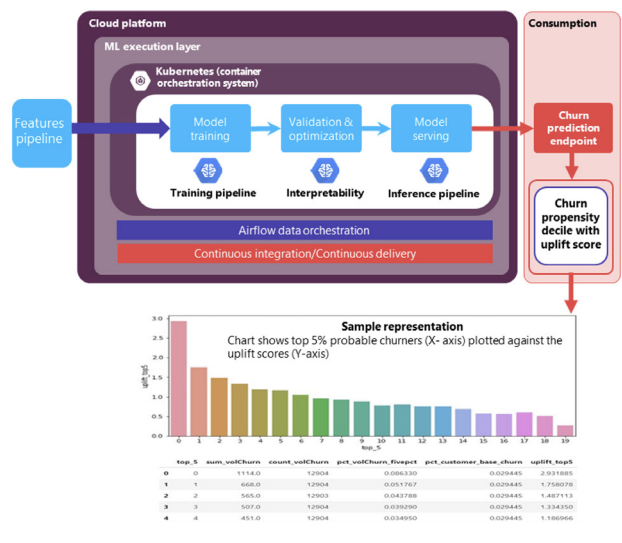


Figure 3: AI/ML engine to predict churn propensity

By embracing these enablers, DSPs can achieve a 10%-18% increase in their uplift score. Furthermore, the return on marketing investment for DSPs would also increase drastically. ■

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Take a bird's eye view of the global smartphone market

The global smartphone market is continuing to make steady progress following the COVID induced slowdown of 2020, even showing positive signs of buoyancy. As the new roaring twenties gathers pace, there are many reasons for optimism: two years on from the start of the pandemic, we are now more prepared for, as well as familiar with, online life and a connected ecosystem. We are also witnessing the further rollout of 5G and adoption in both smartphones and other products. Such developments are fueling demand for devices, old and new, and their related services, says Biju Nair, the executive vice president and president of global connected living at Assurant

We must, however, also take into consideration other dampening factors currently at play. The shortage of chipsets and other components continues to impede a number of sectors. While the smartphone sector is far from being the worst affected, this will remain a major disadvantage for the industry, as the shortage continues to exert a

negative impact on the production of new devices, at least for the time being.

These are the key dynamics likely to affect the market in the immediate years ahead, but what are the other critical factors at play decisively shaping the global smartphone market? ►



Biju Nair, Assurant



Apple's concession on the right to repair

In an apparent U-turn from its previous stance, a change in direction that will positively impact the environment, **Apple** will allow user self-repairs for their devices: from early 2022 onwards, Apple will make some parts, tools and manuals starting with the iPhone 12 and iPhone 13 available to individual consumers in the US. It is then expected to be rolled out across Europe later in the year.

Many see this move as a positive development in the right direction, recognising that consumers must have more repair options. Apple has even indicated that it plans to incorporate increased repairability into its product design, presumably to make self-repairs more accessible. It is a welcome change in attitude and reflects consumer's increased awareness of sustainability issues.

Sustainability is a priority

As the recent COP26 summit highlighted, there is now an urgent need to find more radical solutions to the threat of climate breakdown. As a result, manufacturers, including the device OEMs, are getting serious about reducing their greenhouse gas emissions. In fact, many asset-intensive industries have pledged to take meaningful steps towards reducing – not simply offsetting – their impact, with better energy and resource management and more purposeful attempts to start influencing customer behaviour and changing expectations.

Simultaneously, consumers also wish to align themselves with more sustainable and socially responsible brands. A study by

Capgemini revealed 66% of consumers choose to purchase products and services based on their environmental friendliness. The eco ratings of smartphones, of which we are seeing in Europe and South America, are providing consumers with the knowledge and awareness of the brands embracing sustainable, ethical and transparent practices across their supply chains, from raw materials to manufacturing to fulfilment.

This in turn gives OEMs, carriers and retailers the opportunity to collaborate with consumers in the name of positive action. The successful organisations will be the ones that put social responsibility and environmental sustainability at the heart of what they do. With the rise of conscious consumerism, companies are actively striving to step up their investment in sustainable, transparent supply chains to reduce their impact on the environment.

Consumers embrace connected lifestyles

The COVID-19 pandemic has had a profound influence on the connected consumer experience and more and more people are acquainted with an environment that is permanently online and always connected. Consumers' relationships with their homes have changed more rapidly in the last 24 months than ever before. Looking ahead, many consumers will continue to explore new smart product categories that they hadn't considered in pre-pandemic times. In fact, the role connected technology is playing in their lives is now central to the way many individuals communicate, learn, work, receive their services such as healthcare and banking, and play. ▶



The good news is that C-band is continuing to be rolled out and will cover most major metro cities in the US

The last two years have forced homes to transform into on-demand work and education centres, entertainment hubs and fitness spaces. Technology is evolving to support innovations in the gamification of sports, entertainment and work. Artificial intelligence (AI), augmented and virtual reality (AR/VR), the metaverse and edge computing are already playing a major role in this transformation and this is likely to continue well into the future. When we combine that with an aging global population, the need for support is further exacerbated.

As we move forward into a more connected and automated future, there will be a huge opportunity for product and service companies to deliver the advanced support and protection offerings that are expected by a broader consumer base.

Monetisation of 5G

In the US, where 5G coverage blankets most of the region, carriers are launching C-band 5G which will noticeably improve data network speeds and provide for an increase in traffic. However, carriers have hit some roadblocks with the **Federal Aviation Authority** (FAA) over whether C-band poses a safety risk for planes approaching airports to land. After much back and forth between carriers, the FAA and airlines, there is an agreement to hold off for the next six months, turning on the C-band spectrum within two miles of many of the country's major airports.

The good news is that C-band is continuing to be rolled out and will cover most major metro cities in the US. This is critical for carriers as they seek to recoup their investment in 5G, with the faster networks providing a compelling reason for consumers to upgrade to 5G-enabled devices. 5G devices are making better gaming experiences a reality, and we anticipate that carriers will soon be partnering with cloud-gaming providers to deliver the latest games on a subscription basis or per minute.

As the semiconductor shortage continues to impede a number of key industries, OEMs are struggling to acquire the materials and components needed to keep up production for new devices

Network slicing will be another avenue for service providers to increase revenue. Different use cases will have different requirements of the network. For instance, stadiums will want to provide an enhanced customer experience by delivering enriched video streaming, while public safety agencies will require prioritised access to the network for their first responders, and real-time data processing will be essential for driverless cars. This can all be made possible by carving out the capabilities of the network to fit the specific needs of different industries.

The potential of digital twins

As communications service providers (CSPs) around the world are rolling out their 5G infrastructure, there is a real opportunity to explore digital twin technology as a means to optimise the network. The technology allows carriers to test a host of planning scenarios such as signal

interference, device traffic and security threats. Remote troubleshooting and maintenance are easier to perform as near real-time data provides the ability to be more proactive rather than reactive. And of course, digital twin technology itself is enhanced through the use of 5G and the ability to gather more data, quickly and with low latency. Adoption of such connected intelligence is also happening in the consumer world, where digital twins are being used to offer better support and improve consumer experience across their connected world.

Because of the advantage that 5G brings to digital twin technology, we can expect to see more 5G sensors added to a vast number of products to provide near real-time data to a digital twin. We see this being used for intelligent transport systems, aircraft maintenance, medical devices and in smart factories to name just a few.

As digital twin technology becomes more prevalent, 5G will be a key enabler.

Semiconductor shortage aids secondary market

Supply chains continue to struggle. The arrival of the Omicron variant added to an already complicated landscape and the semiconductor shortage in its own right is expected to last well beyond 2022. There are several reasons for this shortage. The demand for semiconductors; already pushed by innovation in several industry verticals such as automotive, connected appliances, and video gaming; accelerated during the COVID-driven lockdowns, as consumers increasingly relied on devices to work, study and keep up with friends and family. In addition, supply chain disruptions have kept materials from reaching manufacturers, preventing them from increasing output. Manufacturers have also been dealing with staff shortages and production bottlenecks as a consequence of COVID restrictions and disruptions.

As the semiconductor shortage continues to impede a number of key industries, OEMs are struggling to acquire the materials and components needed to keep up production for new devices. The chip shortage is pushing up prices in the primary market. However, with strong demand for pre-owned devices in the secondary market, trade-ins continue to be a key component in keeping new devices more affordable for consumers as they upgrade to 5G.

In spite of the ongoing pandemic, there is much to be hopeful for within the smartphone industry. 5G continues its rollout utilising and enabling the latest technologies; there is a strong focus on sustainability by OEMs, carriers and consumers; and trade-in programmes will continue to fuel upgrades while providing much needed, affordable, pre-owned devices to those that would otherwise not have access to new ones. ■



CSPs rise to the challenge of change

Our expectations of communications service providers (CSPs) are unrecognisable in comparison to what they were a few years ago. Before, all we wanted was reliable connectivity; but now, we are constantly looking for enhanced ways to consume content and interact online. And bringing the workplace to the home has added a new layer of importance to these services, as we seek providers that can support our work life alongside our home life, writes Andrew Walker, the global communications & media industry lead at Accenture

The past two years have shown us just how important telecommunications are to modern life and CSPs are finally getting the recognition they deserve. We continue to live through a period of flux and transformation, and as a result there are many more opportunities for growth and development amongst CSPs. Here are three ways the industry will continue to surprise and delight customers in the new year:

5G will go one step further in solving society's problems

5G has arrived on the latest handsets, but we haven't yet seen enough compelling evidence that this new technology is going to have a significant impact on our lives. To consumers, cellular network upgrades are starting to feel like small, incremental improvements, not worth the extra investment but that will all change when we see more real-life examples of how 5G underpins the way we live and work.

At home, superfast wireless is supporting the shift to remote work and enable sustainability in a totally new way by helping to make us more connected and productive. For small and medium businesses, it is creating new opportunities to engage customers through digital platforms, while for enterprise companies, it is enabling remote monitoring in industries like manufacturing, oil, gas and mining environments, saving time and protecting worker safety. In hospitals, healthcare professionals will get access to greater monitoring capabilities to improve patient care. All of this means greater efficiency, but also less strain on workers themselves.

In the year ahead, we will see more 5G use cases come to life, inspiring even more individuals and organisations to use its capabilities to solve societal challenges from sustainability to safety and security, as well as the opportunity to close the digital divide.

Metaverse environments will make room for more innovation

Virtual worlds are already well established. We are more connected virtually than ever before, and every single day, people put their headsets on and play games, talk and interact for hours on end with people all around the world. Clearly, the demand is there for people to find new connections beyond the physical world, and it seems increasingly clear that 2022 will be the year big tech makes an extended push toward these environments in new ways.

These virtual worlds will get even richer and more interconnected creating an unending need for secure, reliable, fast connectivity. CSPs will need to build out rapidly to capture share as these new applications and universes are created, to both continue to be the trusted partner, as well as to avoid inviting competitors into their territories who deploy new high-speed networks faster and who disrupt the market.

Engineers, developers, creators, policymakers and CSP partners are all planning to come together to build these new universes. We can expect to see this level of industry collaboration and cooperation unlocking significant innovation and encouraging a cross-pollination of ideas helping to take virtual experiences to the next level. As the

connectivity bridge into these worlds, CSPs will be crucial.

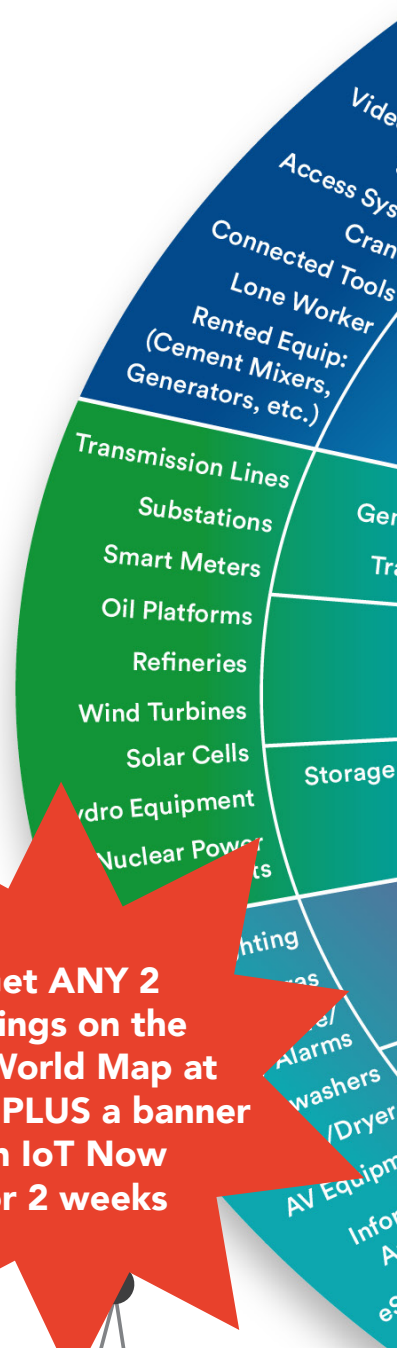
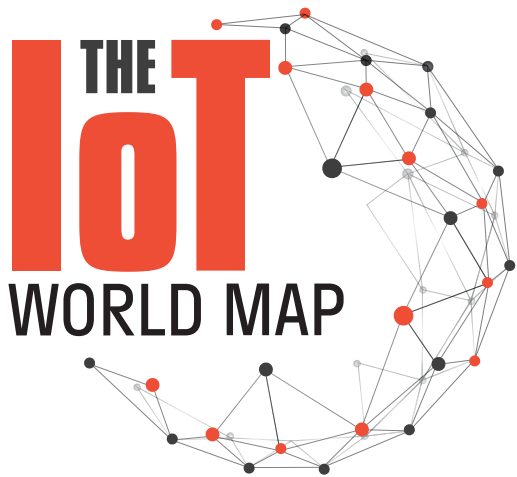
AI and analytics will transform the human experience

In recent years, CSPs have been shifting to the cloud and investing in artificial intelligence (AI) and analytics which is critical to providing a better customer, partner and employee experience. In 2022, more CSPs will be focused on transforming the employee experience.

The 'great resignation' is impacting all sectors, and in a candidate's job market employers need to think about how they can make roles as attractive and rewarding as possible. CSPs need to show employees how their role can evolve, which could mean digitising manual tallying and mechanical activities.

As with 5G, carefully integrated technologies will bring greater efficiencies to businesses that go beyond productive performance and into employee support and collaboration. Less time spent on menial, time-consuming tasks should result in more engaging work, and consequently happier and more productive employees. This will ultimately mean these workers are better equipped to deliver an enhanced customer experience too.

The past two years have uncovered a lot about how people want to work and how they'd like to communicate and CSPs have kept pace. 2022 will be another year of great transition, but one in which the possibilities will expand beyond what seemed possible just a short time ago. Now that the industry has everyone's attention, it's time to showcase what's possible. ■

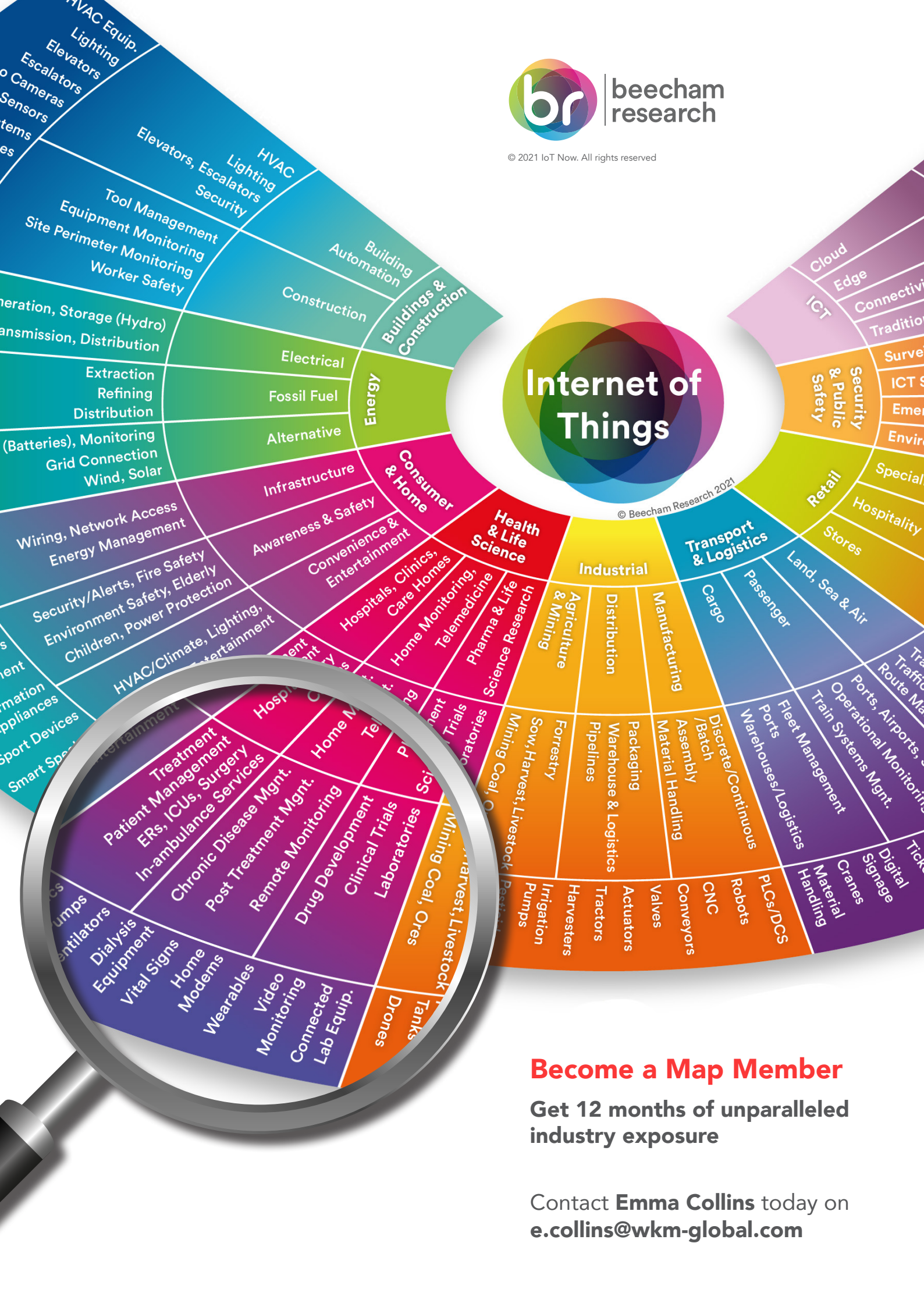


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Why edge requires a new approach to your IT

The promise of edge technology's ultra-low latency, reduced load on bandwidth capacity, real-time decision making, and ultra-reliable intelligent operations would make any CIO sit up and take notice. In fact, a recent Analysys Mason survey highlighted that 87% of operators consider edge computing to be a top strategic priority. New use cases like connected and autonomous vehicles, smart manufacturing, Industry 4.0, remote operations on oil rigs and in mines, and safe spaces and smarter cities, all require real-time decision making coupled with large data volume processing making edge the perfect solution to their processing needs, says Andreas Gabriel, the chief technology officer of Beyond Now

By combining 5G's increased speed with the additional latency reduction, processing power and lower costs of edge compute, companies can significantly improve the performance of their business applications to offer a better and ultra-reliable user experience. IDC predicts that by 2023, 70% of enterprises will run varying levels of data processing at the edge to accommodate and actualise these benefits.

But if communications service providers (CSPs) want to play in the edge market, they will need to collaborate with partners to build outcome-based solutions at scale for successful edge and 5G monetisation.

Edge is a partner ecosystem play

Enterprises are eager to jump on board and adopt edge capabilities, but they will want to partner with CSPs that can do more than just deliver connectivity. In an effort to reduce IT complexity for enterprise customers, CSPs can offer great value and unlock new streams of revenue by working alongside a range of partners to create solutions that solve unique customer challenges. And, according to IDC statistics, 72% of enterprises expect CSPs to provide edge solutions with a multitude of partners. This is where the ecosystem orchestration model comes in.

Co-creating with partners allows CSPs to gradually develop a growing number of solutions with an increasing number of technology partners and vertical specialists. ►



These solutions remove the complexity of needing to understand how to implement the advanced technologies that the enterprise must adopt to scale their business.

Establishing governance for your partner ecosystem

By shifting to an orchestration model, CSPs must also be able to deal with the complexity of managing several partners and customers at one given time. Certain industry verticals, especially manufacturing, can see tens, if not hundreds of potential use cases for edge technology and the good news is that most of these can be built on common components that already exist. However, when considering vertical industries like agriculture, transport and logistics, edge solutions will need to be delivered to an extensive number of partners.

The challenge is that it's not a simple supplier relationship. There may be parties like independent software vendors (ISVs) involved who want to create software on top of your solutions, all of them interacting with you through different commercial models. So, establishing a governance that manages the complex hierarchies of both partners and customers, especially when handling a variety of processes such as ordering, assurance and billing will be essential.

This allows CSPs to manage a catalogue of partners and partner solutions, to orchestrate the fulfilment and monetisation for solutions that involve multiple partners, as well as provide the required self-service capabilities and application programme interfaces (APIs) for allowing partners to quickly onboard and use the platform.

For CSPs advancing beyond connectivity offerings and developing business outcome-based solutions, adopting a platform business model will be critical in

managing this complexity and consequently increasing their attractiveness to partners. However, the IT complexity can be extremely daunting. And with such a large number of partners and customers to manage, CSPs will need to adopt a completely new approach to IT to ensure they can package consumable edge solutions at scale.

Ecosystem orchestration requires a new kind of IT approach

Current BSS/OSS environments are typically optimised for linear business models and are not ready for dealing with a complex partner ecosystem and a platform business model. Partners should be able to see the offerings of others so that they can package, re-create, innovate and publish new solutions for others within the same environment. And CSPs must deal with the processes in a hierarchical way.

Essentially, the ecosystem orchestration platform requires a new kind of IT that plugs in and extends the existing BSS/OSS environment. And the good news is that, by following the Open Digital Architecture (ODA), CSPs already have the correct corresponding APIs that can be built upon to create this required partner management capability.

The five to follow

Following an ecosystem orchestration platform will help CSPs manage this complex hierarchy. But in order to power business growth with edge and 5G, these are five key considerations CSPs must adopt across all partners relationships and business models:

- **Openness** – a shift from traditional IT and probably the most important element to consider. You need an open platform that allows partners to self-onboard, join the ecosystem and co-create with other stakeholders.

- **Speed** – manual processes are not going to work if you are dealing with a large number of partners. Any delays could spell disaster when contemplating industries like connected and autonomous vehicles, smart manufacturing and industry 4.0 use cases.
- **Commercial flexibility** – find an efficient way to handle the various business models amongst your various partners. Are you co-selling? Jointly selling? Are you using them as a channel?
- **Scalability** – self-service capabilities are essential with open APIs in place so that partners have the power to make the ecosystem work for them.
- **Efficiency and automation** – facilitating the rapid launch, sale and monetisation of new digital services in days or weeks, not months, making you more agile in the face of competition.

Providing a wide range of solutions through a system orchestration platform allows CSPs to quickly launch and monetise new business solutions for various verticals, all at scale and regardless of their individual business priorities. The ability to build outcome-based solutions is key for edge and 5G monetisation, and partners will be an essential foundation for delivering these complex services. Adopting a fresh IT approach will allow CSPs to effectively onboard new partners and enable them to manage this hierarchy of partners and customers at one time.

The gauntlet has been thrown down for CSPs to act fast and put in place the infrastructure and underlying capabilities to enable edge services. Managing partner solutions effectively with speed, openness and flexibility will be required to bring this to life. ■



While we have made every effort to ensure the accuracy of this listing, the current COVID-19 pandemic means that many events are changing timing, dates and locations. Therefore please check at the events' websites to ensure details are up-to-date before travelling.



TELECOM FRAUD & RISK MANAGEMENT FORUM AFRICA
22 April 2022 | Online

Telecom Fraud & Risk Management Forum Africa

22 April 2022
Virtual Event

<https://www.vanillaplus.com/event/telecom-fraud-risk-management-forum-africa/>

Telco AI World Summit

Telco AI World Summit

26-28 April 2022
Berlin, Germany

<https://www.vanillaplus.com/event/telco-ai-world-summit/>



DIGITAL TRANSFORMATION WEEK

Digital Transformation Week North America

11-12 May 2022
Santa Clara, California, USA

<https://www.vanillaplus.com/event/digital-transformation-week-north-america/>



Edge Computing Expo North America

11-12 May 2022
Santa Clara, California, USA

<https://www.vanillaplus.com/event/edge-computing-expo-north-america/>

5G EXPO

GLOBAL

5G EXPO 2022

21-24 June 2022

Fort Lauderdale, Florida, USA

<https://www.vanillaplus.com/event/5g-expo-2022/>



DIGITAL TRANSFORMATION WEEK

EUROPE

Digital Transformation Week Europe

20-21 September 2022

Amsterdam, The Netherlands

<https://www.vanillaplus.com/event/digital-transformation-week-europe/>



DIGITAL TRANSFORMATION WEEK

GLOBAL

Digital Transformation Week Global

1-2 December 2022

London, UK

<https://www.vanillaplus.com/event/digital-transformation-week-global/>

IoT at the Edge: Enabling the Real Time Enterprise



Shaping the IoT future

According to a recent IBM survey of 1500 senior executives across 22 industries in 11 countries:

- 94% expect to implement edge by 2025
- 81% expect edge to improve operations by 2025

According to recent Forrester survey of 207 decision makers, biggest benefits of edge are:

- For 31%, data does not need to be transferred
- For 27%, faster response avoids network latency
- For 27%, regulations require local control

This 100+ page, independent analyst report is the latest addition to Beecham Research's popular 'Succeed with IoT' series.

“Streaming all that data to the cloud has a cost. If we process it locally and only stream the valuable data that reduces costs.”

Chief Operating Officer
Edge Computing Virtualization and Orchestration



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IoT has moved away from the old model of processing all IoT data in the cloud, which limited its role to monitoring and reporting.

As a result, IoT at the Edge will transform IoT in enterprise operations – **towards the Real Time Enterprise.**

- What does this mean for enterprise use of IoT?
- What does it mean for use of IoT connectivity?
- What part does 5G play in this?
- What does it mean for security of IoT solutions?

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