

A portrait of Mary O'Neill, a woman with short blonde hair and blue eyes, wearing a black jacket over a white top. She is smiling slightly and has her arms crossed. The background is plain white.

CEM

Can CSPs avoid a race
to the bottom on price?

■ ANALYST REPORT

Heavy Reading says CSPs with good CEM are outperforming their competitors

■ TALKING HEADS

Mary O'Neill puts network integrity at the heart of CEM

■ CSP INTERVIEW

Colt's head of customer experience on exceeding expectations

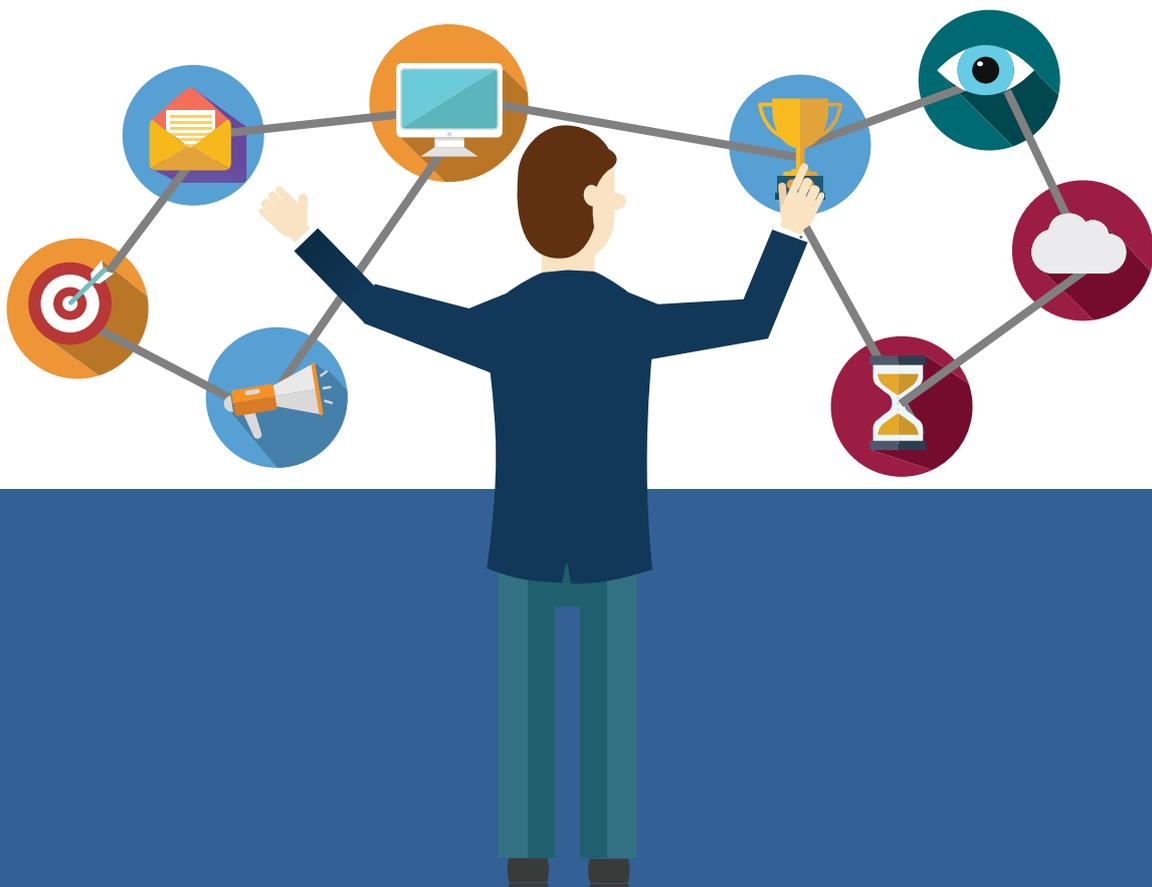


PLUS: Redknee completes Orga Systems deal ■ Netscout finalises US\$2.3bn Danaher telecoms business purchases ■ JDSU network and service enablement units spun off and rebranded Viavi Solutions ■ Sigma Systems updates order management product ■ Comptel launches Monetizer product ■ Vimpelcom makes beeline for Amdocs ■ Ooredoo Global Services chooses Empirix to assure wholesale quality ■ Mats Granryd announced as new GSMA director-general ■ Read the latest news, opinion, blogs and features now at www.vanillaplus.com



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The Insight contains a VanillaPlus-commissioned report from analyst firm Heavy Reading and includes features and interviews to help you gain an understanding of how efficient CEM can both generate new revenue and reduce operational expenses

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Nick Booth just wants to watch the game in peace



How can CSPs' talk of omni-channel avoid becoming an omni-shambles?

Communications service providers (CSPs) seem to have enough trouble managing the customer experience when it is confined to a single channel so how will they cope in an omni-channel world?

Without exception, everyone I and the VanillaPlus editorial team have spoken to during the course of preparing this issue has a story about a bad customer experience with a CSP. That won't be news to regular readers but what is significant is that these stories involve failures that occur across multiple CSP channels.

Typical stories involve complete lack of integration between retail stores and online purchasing, no call centre awareness of what is deployed in a customer's home, receipt of irrelevant or unavailable offers and, my favourite, a customer being sent an unrequested femtocell to a location where there was no need for it.

All of these stories have varying impacts on the CSPs involved. Not being able to complete a transaction started online and having to start again in a physical store is irritating, not being able to complete a transaction in a physical store is cause to shop elsewhere. Being sent and charged for equipment you don't want is cause to change CSP.

The stakes are high and getting higher for CSPs and they have all been working, often with

inappropriate existing systems, to try to create an integrated customer experience that brings all their customer channels – and other channels such as social media – together. They want to provide great experience regardless of the channel involved but their history is one of failing to deliver great experience using a single channel.



George Malim, editor, VanillaPlus

This issue addresses the significant challenges involved for a CSP in moving from not being particularly good at CEM in an individual channel to becoming excellent at CEM across every potential customer touchpoint. Omni-channel could be an omni-shambles but CSPs have the opportunity to be omniscient and omnipotent if they get it right. Their customer data and their support teams will surely outperform the virtual care offered by web companies and OTT providers but they must achieve full integration and total consistency across all channels.

Enjoy the magazine!

George Malim

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Redknee welcomes Orga Systems employees as acquisition completes

Redknee Solutions has announced the closing of the acquisition of Orga Systems. Redknee had previously announced its intention to purchase Orga Systems on 23 June, 2015.

“We are excited to welcome Orga Systems’ employees and customers to Redknee. We look forward to building long-term relationships together through our customer-for-life approach to the market, by engaging our employees and partners to create innovative and market leading solutions,” said Lucas Skoczowski, the chief executive of Redknee. “With support from our customers, this acquisition further accelerates Redknee’s strategic plan realization and creates one of the best positioned real-time monetisation and subscriber management software companies in our space.”

The completion of this acquisition increases Redknee’s market share and

strengthens the company’s technology and expertise across the communications, automotive, energy and transportation sectors. The combined company has a comprehensive product suite addressing real-time monetisation and subscriber management, catalogue and order management.

Orga’s highly skilled team across Europe, the Middle East and Africa (EMEA), the Americas, and Asia Pacific will join Redknee, broadening its global reach.

The acquisition of Orga Systems broadens Redknee’s market share with customers across the telecoms and non-telecoms industries. Orga customers include América Móvil, Astelit, Avea, BMW, Telecom Italia Group and Meralco Philippines. The acquisition further solidifies Redknee’s position in its existing markets and provides the foundation to pursue additional opportunities within the Internet of Things (IoT).



Lucas Skoczowski:
Deal accelerates Redknee’s strategy

JDSU renamed Viavi as Lumentum spun off

Viavi Solutions, formerly JDSU, has completed the spin-off of its Communications and Commercial Optical Product business segment.

With the spin-off complete, JDSU’s Network Enablement (NE) and Service Enablement (SE) businesses have been renamed Viavi Solutions. Its optical security and performance products businesses are

now called Lumentum. Viavi began trading on the NASDAQ Stock Market on 4 August 2015 under the ticker symbol VIAV. The JDSU ticker symbol was retired from trading at the close of market on 3 August, 2015.

“This is an important milestone as we mark the successful completion of the spin-off,” said Tom Waechter, Viavi’s president and

chief executive officer. “Viavi is poised to capture the opportunities created by the industry’s transition to new network architectures and the need for increased network and application visibility. We believe that the spin-off will improve Viavi’s agility and increase focus, allowing us to accelerate our progress and deliver for our customers and shareholders.”

NetScout completes Danaher telecoms business purchase

NetScout Systems has completed its acquisition of Danaher Corporation’s Communications Business.

The transaction was valued at US\$2.3 billion, based on the issuance of 62.5 million shares of NetScout common stock, which closed yesterday at US\$36.89 per share, to Danaher’s shareholders. Acquiring the Tektronix Communications, Arbor Networks and parts of the Fluke Networks businesses from Danaher

Corporation accelerates NetScout’s strategic progress by enabling it to offer a broader range of service assurance and cyber security systems.

“This acquisition represents an important milestone for NetScout that enhances our ability to drive value for customers, stockholders, employees and other stakeholders,” stated Anil Singhal, the president and CEO of NetScout. “With a broader range of market-leading

capabilities and technologies, as well as more extensive, global go-to-market and distribution resources, NetScout will be better positioned to capitalise on the many exciting opportunities we see to further expand our customer relationships around the world. We welcome over 2,000 new colleagues to NetScout and collectively, we are looking forward to realizing the company’s potential in the marketplace.”



Sigma Systems updates Order Management product

Sigma Systems has announced that the latest release of its Sigma Order Management software application is now generally available.

Sigma Order Management has been designed to seamlessly work with and be driven by a completely externalised enterprise catalogue. Sigma Order Management's approach to using the catalogue to drive order decomposition and validation and to dynamically derive orchestration strategies for order fulfilment

greatly reduces order fall-out and time-to-market for both new product and service launches and order delivery, the company claims.

The latest release adds functionality that continues to make the system a key tool for emerging digital service providers. "The latest version of Sigma Order Management capitalises on the platform's innate awareness of the enterprise's portfolio and the broader BSS/OSS ecosystem," said Catherine Michel, the

chief strategy officer and vice president of products at Sigma Systems. "Our customers look to Sigma for advanced product innovation across our portfolio to solve their critical business challenges – Sigma Order Management certainly delivers on that expectation." 



Catherine Michel: Latest version delivers on customer expectations

Oracle Communications simplifies design and delivery of network services to support NFV and business agility



Doug Suriano: Release accelerates design agility and provides support for the latest network technologies

Oracle Communications has released a new version of its operational support system (OSS) suite to help CSPs rapidly and agilely design services spanning physical and virtual networks. The suite is also designed to help streamline the operational delivery of customer orders – including high-growth B2B and wholesale orders – enabling CSPs to

capitalise on the opportunities of a network function virtualisation (NFV)-driven communications world.

With the upgraded OSS suite, Oracle Communications continues its focus on simplifying and automating the service design and order fulfilment process, regardless of order size and complexity, or the type of network on which it is delivered.

"As CSPs continue to standardise and virtualise their networks, agility in service design and automation in service delivery have become major focus areas – which is

putting a spotlight on OSS to rapidly launch and efficiently deliver innovative services on an increasingly dynamic network," said Doug Suriano, the senior vice president and general manager at Oracle Communications. "This release of the Oracle Communications OSS suite accelerates design agility, provides support for the latest network technologies, and further simplifies network-based B2B service delivery in practice, supporting our commitment to delivering innovative OSS solutions in an increasingly virtualised communications world." 

NEWS IN BRIEF

Mahindra Comviva unveils Smart Policy Controller 5.0

Mahindra Comviva has introduced its latest version of the Smart Policy Controller version 5.0 to help CSPs reduce the capex/opex requirements for managing data traffic and significantly increase the ROI.

The new version is capable of handling over 100 million subscribers on a single server and supports convergent data plans. Single subscriber identification will allow subscribers to have one data plan that can be used across multiple networks such as 3G, LTE, Wi-Fi, fixed broadband and Wi-MAX regardless of the number of devices.

Zunder Lekshmanan, the head of messaging and broadband solutions at Mahindra

Comviva said: "As CSPs are offering multi network services, there is a surge in demand for flexibility and scalability of policy control function to meet the dynamic and evolving needs from growth in data traffic. Our new Smart Policy Controller version is created keeping in mind the business needs, offering differentiated and contextual services with the best in class user experience."

Comptel launches Monetizer product

Comptel has announced Monetizer, a business policy and charging toolset to enable digital and communications service providers (CSPs) to innovate and design rich service offers instantly. With Monetizer, CSPs can create, configure, launch and modify

dynamic, contextual packages – and profit from consumers' data usage.

"Customers love what they can do with their data services, and they will continue to consume more of them, so long as CSPs can create options and provide them rapidly," said Kari Onniselka, the executive vice president of Intelligent Data at Comptel. "Monetizer enables just this. With it, digital and communications service providers can quickly cut product development and design time, and rapidly roll out myriad different service and monetisation options, including shared accounts, Over-the-top (OTT) content bundles, sponsored services, roaming data packages and time-based app access, to meet consumers' unique requirements and efficiently generate revenue." 



VerisCRM

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Veris CRM from AsialInfo offers a unified customer experience across all channels, including social apps



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AsialInfo

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Chris Williams:
System delivers context-sensitive advice

Vimpelcom makes beeline for Amdocs

VimpelCom, which trades under the Beeline brand and is one of the largest communications service providers (CSPs) in Russia, has successfully deployed an Amdocs customer management system to improve call centre agent efficiency across the country.

Part of a five-year maintenance and support contract announced last year, the deployment integrates more than 40 third-party applications into one customer relationship management (CRM) system for

Beeline's customer service agents. Using purchasing, service and support processes, it enables care agents to deliver more accurate responses and resolve more issues on the first call, resulting in fewer calls to Beeline's call centres from its 59 million mobile and fixed-line broadband customers throughout Russia.

"This complex project involved the integration of more than 60 user interfaces into a single user window in a very short time period," said Vladimir Savkin, the CIO of VimpelCom. "This has resulted in an integrated customer management solution that enables our more than 15,000 agents

in eight time zones to provide the highest levels of service that we are committed to, while also significantly increasing operational efficiency."

Chris Williams, the head of global marketing at Amdocs, added: "Amdocs customer management delivers context-sensitive advice and also provides a streamlined, process-driven user interface to guide the service agent in real-time, as the call is happening, to allow them to provide the best possible customer experience, no matter how complex the enquiry."

Ooredoo chooses Empirix to assure wholesale service quality

Ooredoo Global Services (OGS) has selected a service assurance system from Empirix to monitor the quality and availability of its wholesale services. OGS was established as the wholesale arm of Ooredoo in 2014, to offer a single point of contact for wholesale carriers looking to access the global networks of its operating companies, and continues to extend its range of international partnerships to position itself as a leading exchange for voice, data, capacity and roaming services.

OGS selected the Empirix service assurance monitoring solution to gain

visibility into the international connections providing carriers with access to its voice and 2G/3G roaming services. With Empirix, OGS has uninterrupted visibility of network performance and service quality, as well as the ability to proactively identify potential issues before they negatively impact customers. This flexible system is capable of adapting to new technologies and innovative new services; OGS plans to extend the Empirix system's coverage to a recently announced LTE roaming service.

"Ooredoo Global Services aims to become the premium partner for wholesale carriers

looking for connectivity in the Middle East, North Africa and Southeast Asia in the near future, and we are actively looking for partners who can enable us to achieve this leadership position," said Yousuf Al Kubaisi, the chief executive of OGS. "We plan to provide more advanced services to our clients, and believe that a centralised monitoring solution and a state-of-the-art service operation centre, powered by Empirix, will be instrumental to assist us in our journey to provide the highest standard of quality of service to all our customers."

NEWS IN BRIEF

TalkTalk modernises operations with CSG International

TalkTalk Group, one of the United Kingdom's broadband, landline, TV and mobile providers, has selected components of CSG International's Total Service Mediation and Wholesale Business Management Solution (WBMS) suites. TalkTalk will deploy the latest version of CSG Intermediate, CSG Interconnect including Dispute Manager, and CSG Route, replacing a combination of bespoke systems as well as a previous version of CSG Route.

"CSG has been a trusted business partner for a decade. They have in-depth knowledge of not only TalkTalk but the UK market and its regulatory intricacies," said TalkTalk's chief technology officer, Gary Steen. "Using this integrated solution will speed our time-to-market for new products and minimise our risk in the process. It brings the modernisation we need to address new opportunities and our growth as an operator."

Sri Lanka Telecom goes live with NetCracker products

NetCracker Technology has announced that Sri Lanka Telecom (SLT), the national backbone operator in Sri Lanka, has gone live with upgraded NetCracker Revenue Management, Interconnect and Mediation solutions.

The upgraded NetCracker Revenue Management solution will provide Sri Lanka Telecom with a number of unique benefits, including rapidly responding to evolving market conditions. Sri Lanka Telecom will also be able to create a seamless, end-to-end revenue management process and accelerate time-to-market for new services, bundles and agreements.

"Our longstanding partnership with NetCracker validates the comprehensive functionality of its cutting-edge BSS offerings. I believe these Revenue Management, Interconnect and Active Mediation solutions will enable us to personalise customer-centric offerings and

improve customer satisfaction. Combining our business expertise of over 150 years and implementing modern systems and processes ensure that our customers are able to harness the full potential of our product portfolio by enabling more value additions," said Dileepa Wijesundera, the Group CEO of Sri Lanka Telecom.

As part of the upgrade and to ensure a seamless transition, NetCracker delivered a range of professional services, including data migration to move critical information onto the new NetCracker platform.

Loh John Wu, the vice president for Asia Pacific at NetCracker, added: "An agile and responsive BSS environment is important for communications service providers around the world to develop leading-edge strategies and long-term revenue streams. We look forward to supporting Sri Lanka Telecom's endeavours in the evolving digital world by providing it the next-generation, integrated solutions it needs."

Empirix Customer Experience Solutions Deliver Real ROI



Empirix provides next generation solutions that enable communications service providers to understand end-to-end customer experience and proactively assure quality of that experience. Empirix Customer Experience Solutions empower providers to:

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REDUCE VOLUME OF ESCALATIONS

NETWORK ENGINEERING/ OPERATIONS



MINIMIZE MEAN TIME TO REPAIR (MTTR)

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www.empirix.com





VanillaPlus Hot List: August / September 2015

The Hot List below shows the companies informing us of recent contract wins or product deployments.

If your contract is not listed here email the details to us now marked "Hot List" <editorial@vanillaplus.com>

Vendor(s)	Client Country	Product/Service	Awarded
Amdocs	Mtel, Bulgaria	Expansion of existing managed services agreement with Bulgarian mobile operator under which Amdocs will take responsibility for all legacy and third party business support systems	7.15
Amdocs	Vimpelcom, Russia	Deployment of Amdocs customer management system to ensure call centre agent efficiency across Russia	8.15
Astellia	Digicel, Haiti	Astellia to extend monitoring of CSP's 2G network to its 3G network	7.15
CSG International	TalkTalk, United Kingdom	Selection of components of CSG's Total Service Mediation and Wholesale Business Management Solution suites	8.15
Empirix	Ooredoo Global Services, MENA & South East Asia	Deployment of Empirix system to monitor the quality and availability of its wholesale services	8.15
Fortumo	dtac, Thailand	Formation of mobile payments partnership for direct operator billing	8.15
NetAdmin Systems	NEAS, Norway	Deployment of NetAdmin OSS by Norwegian telecoms and energy company to automate broadband service management system	7.15
NEC & NetCracker Technology	Indosat, Indonesia	NEC and NetCracker selected to enable OSS transformation including development of comprehensive OSS system	7.15
NetCracker Technology	Robi Axiata, Bangladesh	Bangladeshi CSP goes live with NetCracker Revenue and Customer Management system	7.15
NetCracker Technology	Maxcom, Mexico	Addition of Discover & Reconciliation and Workforce Management systems to quad play provider's existing suite of NetCracker products	8.15
NetCracker Technology	Maxis, Malaysia	Deployment of NetCracker Resource & Inventory Management system plus upgrades to existing products including NetCracker Framework, Resource Management and Service Management	8.15
NetCracker Technology	Sri Lanka Telecom, Sri Lanka	National backbone operator goes live with NetCracker Revenue Management, Interconnect and Mediation systems	8.15
NetCracker Technology	AIS, Thailand	Multi-year renewal of NetCracker systems integration and professional services deal, including support and maintenance of NetCracker billing and rating systems	8.15
Procera Networks	Softbank, Japan	Deployment of Procera PacketLogic to enhance subscriber experience for Japanese CSP's LTE offerings	7.15
Syniverse	STC, Saudi Arabia	Agreement to enable STC to launch LTE roaming through Syniverse's IPX Network	8.15
WeDo Technologies	NOS, Portugal	Implementation of WeDo RAID Telecom software across quad play provider's entire business	8.15
WE/MOVE Technologies	Life:, Belarus	Deployment of ELF.Framework at Belarusian CSP	8.15



Rui Paiva: System will bring increased operational effectiveness while driving margin growth

NOS selects WeDo Technologies' RAID Telecom

WeDo Technologies has signed an agreement with NOS to implement its RAID Telecom software across the entire business. This represents a new direction for the CSP's approach to fraud management (FM) and revenue assurance (RA) on the cable side of the business, and an upgrade from previous iterations of

RAID for the mobile business; ensuring consistency across the company.

The new software deployment will enable NOS to create an enterprise-wide unified view of business processes by auditing data in its application environment, avoiding manual error-prone work and allowing analysts to focus on what matters. NOS has more than 3.7 million mobile users, 1.5 million television, 1.5 million fixed telephone and in excess of one million fixed

broadband customers. As a result of its 2013 merger, NOS needed to create synergies across the mobile and cable elements of the company to provide a consolidated RA and FM solution, having previously used separate systems from three different companies for mobile and fixed services. Based on its experience of using all three systems, NOS selected WeDo Technologies' RAID software to gather systems data and bridge analytics across various departments.

"In Portugal, service penetration for pay TV, fixed broadband, triple and quad play and mobile voice is continuing to grow significantly, and as a result of operators' presence across these different segments, market shares have been left unbalanced," said Ricardo Moreira, the Enterprise Business Assurance manager at NOS. "We needed a dynamic solution to help accelerate convergence across the full addressable market to create synergy between systems, while encouraging

innovation, productivity and operational efficiency. Having had a successful relationship with WeDo since 2005 on the mobile side of our business, we were confident that they were the right partner for the wider company."

Rui Paiva, the CEO of WeDo Technologies, added: "We're pleased to provide NOS with the advanced analytical tools required to streamline and simplify business processes across different areas of their business. The extended deployment of RAID offers a flexible, robust and unified Enterprise Business Assurance solution to provide real value for each customer segment and enable better alignment across departments. We look forward to building upon our working partnership with NOS to bring increased operational effectiveness and enhanced customer service, while driving margin growth, improving overall customer satisfaction and the delivery of both short and long term financial returns."



Mats Granryd: GSMA looking to connect the unconnected and embrace new technologies

GSMA appoints Granryd as new director general

The **GSMA** has announced the appointment of **Mats Granryd** as director general and Member of the GSMA Board. Granryd, who served most recently as president and CEO of **Tele2 Group**, will assume leadership of the GSMA on 1 January 2016.

"I am very pleased to welcome Mats Granryd as the GSMA's new director general," said **Jon Fredrik Baksaa**s, the chairman of the GSMA. "Serving more than 3.7 billion unique subscribers globally, the mobile industry has fundamentally changed how individuals, businesses and governments alike communicate, interact and conduct their everyday lives. However, there is still so much more to be done in extending the transformative effects of mobile and Mats is ideally positioned to lead the GSMA as we move forward in connecting the world."

Granryd joined Tele2 as president and CEO in 2010. Previously, he spent 15 years in a variety of roles at **Ericsson**, most recently as Head of Northern Europe and Central Asia. Prior to joining Ericsson, he was a management consultant in telecom strategies at **ARRIGO** and **Andersen Consulting**. Granryd holds a MSc. from the Royal Institute of Technology in Stockholm.

"I'm proud and honoured to be joining the GSMA at such an exciting time in the industry's development," said Granryd. "As Jon Fredrik noted, we have made tremendous progress in our industry's relatively short lifetime, but we have significant opportunities ahead of us as we look to not only connect the unconnected, but also deliver a vast range of new technologies, products and services that

will improve our lives and allow us to engage more effectively with our environments. I look forward to working with Jon Fredrik, the GSMA Board and our members in extending the positive impact of our industry for our customers worldwide."

Benamar joins as Astellia as chief operating officer

Astellia, a provider of network and subscriber intelligence for mobile operators, has announced the nomination of **Abdelkrim Benamar** as chief operating officer and new member of its Executive Committee in order to better support the company's expansion plans and continued growth.

He joins the organisation with a successful track record in various functional and management roles with a rich understanding of the telecomms market. Over the course of his 20-year career he has demonstrated leadership at multi-nationals such as **Alcatel-Lucent**, **Ericsson** and **Motorola**.

Benamar will strengthen Astellia's management team and will lead the effort to improve Astellia's commercial and operational performance with mutual benefit to the company and its customers. "I'm looking forward to being part of a company recognised for pursuing technological excellence and delivering value to its customers. I am excited to build on its strong foundations and accompany the organisation in its transformation," said Benamar.

"I am pleased to welcome Abby to our company. His appointment marks a new phase in our growth strategy. I'm confident in his character and his ability to deliver the same impressive results to Astellia than the ones he has achieved throughout his career." confirms **Christian Queffelec**, the chief executive officer at Astellia.

Neural Technologies appoints new expert for India and Africa markets

Risk management and analytics specialist Neural Technologies has announced the appointment of a new regional sales executive for India and Africa, **Nitin Madhavan**, who is based in Delhi.

Madhavan is an industry expert with a decade of experience in fraud and credit risk and control, specifically within the CSP and banking arenas, having worked for companies such as **Subex**, **iconnectiva** and **Standard Chartered** bank. He holds an MBA from Great Lakes Institute of Management, Madras and will work alongside Neural Technologies' COO and deputy CEO, **Luke Taylor**.

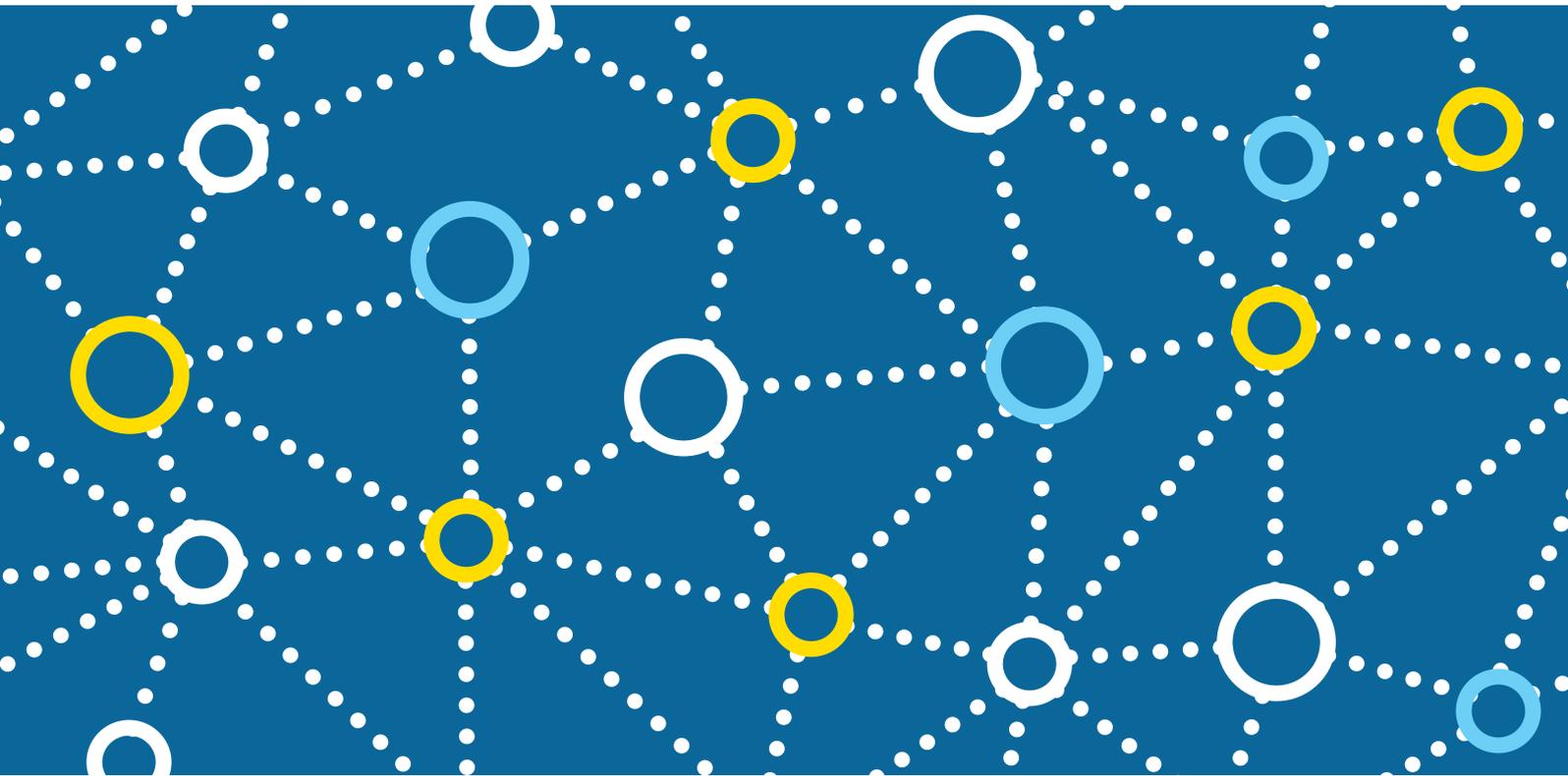
Taylor said: "We are pleased to welcome Nitin into the Neural team. Nitin's experience will be valuable as we grow in the Indian and African markets and his recruitment is further evidence of Neural's continual growth in this, our 25th year. We are continuing to hire at all levels."

Darragh joins CMO Software as chief executive

Jim Darragh, the former chief executive of **Ipanema Technologies**, which was recently acquired by **InfoVista**, has joined **CMO Software** as its new chief executive.

CMO Software focuses on Health, Safety, Environment & Quality (HSE&Q) and Governance, Risk and Compliance (GRC) solutions for corporations and regulators. Darragh will lead the business in capitalising on high growth and burgeoning international demand for CMO's best-in-class software solutions.

Darragh has previously served as chief executive of **Zeus Technology**, and as senior vice president at Riverbed Technology following the acquisition of Zeus by Riverbed in 2011. Darragh has also held senior management positions at major corporations including SAP, CA Technologies, and BMC Software. 



Viavi Solutions provides the platform to CSPs to assure the network and the experience

Paul Gowans is mobility marketing manager of Viavi Solutions, a new company established when JDSU split its business into two companies: Lumentum and Viavi Solutions. Viavi Solutions has been created as the new identity for JDSU's business in the test, monitoring, analytics and network performance markets. Gowans is excited by the opportunity to bring a new brand to market and set out the new company's proposition which incorporates a series of JDSU acquisitions including Agilent Technologies NSD, Arieso and Trendium. All of these, plus a wide range of other systems in the portfolio, are being delivered in a modular way as components in an end-to-end platform to assure service delivery and provide communications service providers (CSPs) with the insights they need to handle the challenges of new technologies and increased complexity

VanillaPlus: What are the reasons for separating JDSU into two companies?

Paul Gowans: I think it's to the benefit of both companies because each now has a clear focus and identity. The part that has become Lumentum is focused on commercial lasers and

optical equipment which have different customers and a different lifecycle to Viavi. Having a new brand and moving on from JDSU to address the end-to-end needs of customers is great. We'll continue to be in the business of delivering network and service enablement and we're able to invest with a clear focus. It's better for us, our customers and our shareholders. ►

IN ASSOCIATION WITH VIAVI SOLUTIONS



Paul Gowans: We've got the great strength of our organisation and heritage behind us but we can act like a start-up

VP: What are the challenges of bringing a new name to market?

PG: It's an exciting challenge that you don't often get to address. It's like being a highly capitalised start-up. We've got the great strength of our organisation and heritage behind us but we can act like a start-up. It's a unique position to be in. Viavi is all about the unique visibility we offer customers, end-to-end, through the service lifecycle. This allows CSPs to deliver an exceptional quality of experience and transform business performance.

VP: What has changed in the market to make establishing a new identity a better way to serve your customers?

PG: Technology cycles have compressed and have become more complex. For example, in mobile the transition from 3G to 4G was radically more rapid than from 2G to 3G. Each transition sees a compressed cycle and each time another layer of complexity is added – this continues today with carrier aggregation, MIMO, VoLTE and HetNets.

With new architectures a lot more aspects are cloud-based. Virtualisation is key for most CSPs delivering a much more flexible, on-demand infrastructure. SON (self-organising networks) are important for CSPs to optimise their networks with minimal touch. Video is a critical service and software-as-a-service is happening more. All of this means services and networks start to need to be more personalised for the user.

Our heritage is strong in terms of addressing these challenges. What JDSU did was to build on its already pretty extensive portfolio to achieve that. It bought Agilent Technologies NSD, Arieso and Trendium for assurance as well as Network Instruments. We've now got huge capability in these solutions and we are building this end-to-end open, modular platform that could be across the service provider, cloud and enterprise markets.

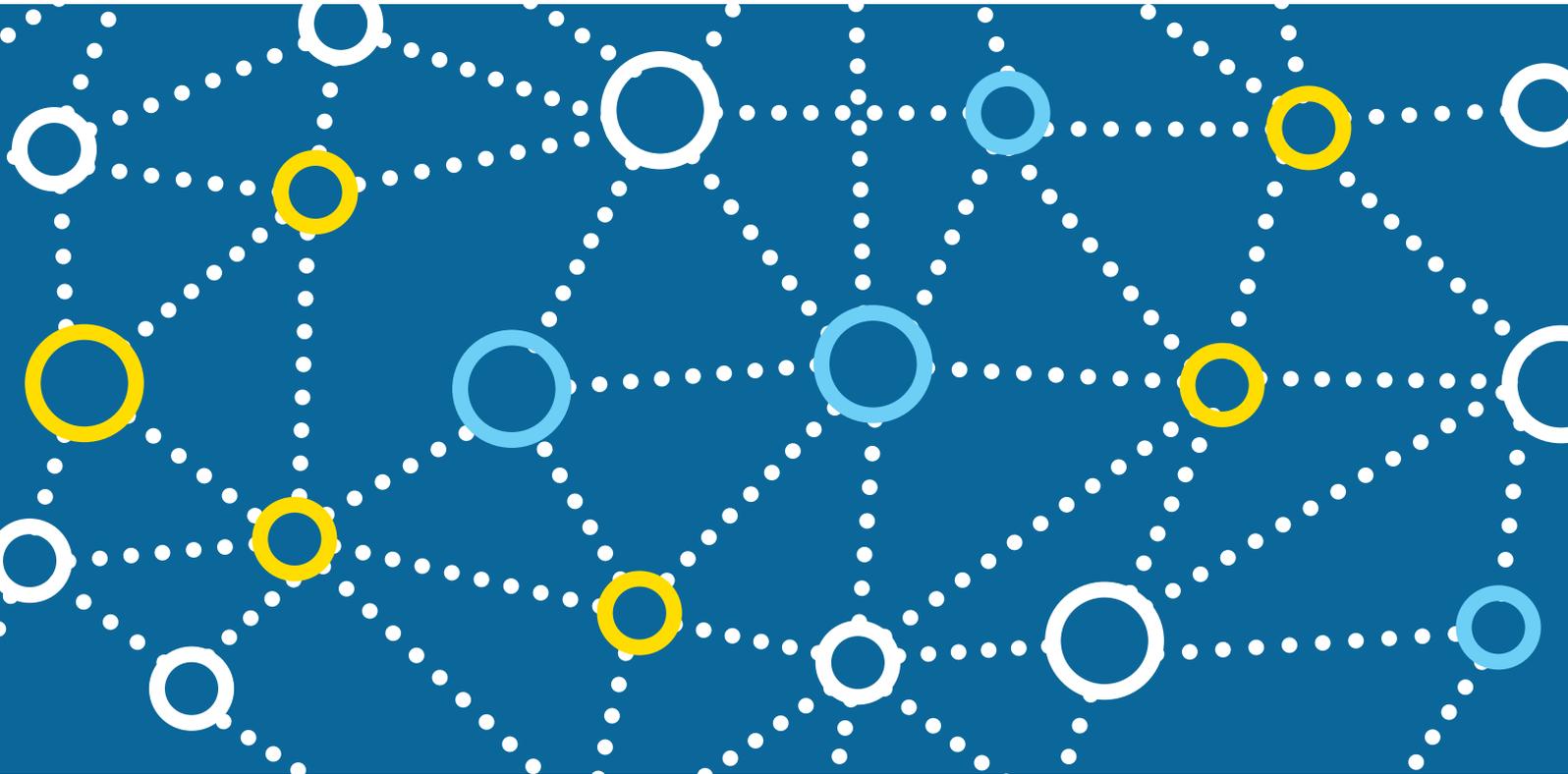
Viavi Solutions is focused on building that platform with a customer centric view, capturing events from access through to services. We're talking about where the customers are, what services they're using, what handsets they have and what their quality of service is so our customers can make decisions automatically in a virtualised environment.

VP: Is there a danger that the market will view this cynically as a simple re-brand?

PG: In some sense it is a brand change and customers may view it as that. It's true that the key solutions our customers depend on every day haven't changed. We still have xSIGHT for assurance and ariesoGEO for location intelligence in the Viavi portfolio for example. Those are key application suites that form part of the end-to-end full lifecycle plug in platform. If a customer today wants the xSIGHT or ariesoGEO app suite, they're not just buying a solution; they're buying components of a platform.

CSPs don't buy platforms, they buy solutions but with Viavi, each solution is part of a wider platform so ►

Technology cycles have compressed and have become more complex. For example, in mobile the transition from 3G to 4G was radically more rapid than from 2G to 3G



VoLTE is an end-to-end, person-to-person service with some specific impositions on the network in terms of latency

CSPs can scale up easily as their requirements develop. For example, ariesoGEO location intelligence has massive expertise in being able to capture billions of events, locating and analysing them. Yet the platform has unique capability in its middleware which we've taken and extended so it can support a capability such as event reporting as a cloud-based service, with our new solution RANAdvisor Rubix.

The platform, plug-in, modular approach gives our customers a unique approach to solving some of their more complex issues – improving their business top line with revenue diversification. Improving the bottom line by prioritising and resolving service-impacting problems. Enhancing customer loyalty – improving subscriber quality of experience at any connected touchpoint.

VP: Do you see VoLTE as a significant area in which Viavi can demonstrate its capabilities?

PG: VoLTE is an end-to-end, person-to-person service with some specific impositions on the network in terms of latency. People are concerned about the quality of service end-to-end and we have multiple solutions such as TrueSite for handset testing, xSIGHT for service assurance and ariesoGEO to capture location intelligence around the service.

If we take application aware data and quality metrics from xSIGHT and geolocate those with ariesoGEO you get application aware infrastructure down to building-level accuracy.

This isn't just for VoLTE calls; everything is now highly interconnected so insights are created into every call, every event and every customer across the whole network. Location intelligence tools have become application aware and link to other services such as Facebook or Twitter or YouTube.

I can get very accurate location information on a per application basis by putting these pieces together and creating a much stronger proposition. Previously a CSP had to be their own systems integrator to bring all these together but we are trying to help customers get away from that and capture data once and use it many times.

VP: The scale involved looks to be enormous as all the parts of a CSP seek out insights to drive their part of the business. How do Viavi's systems handle that scale?

PG: The capability of our solutions to handle the scale is crucial. We are virtualising our own infrastructures. For example, our ariesoGEO solution is processing up to 35 billion events per day across the network of one of our largest customers. That's eight times the number of Google searches per day.

The scale is huge but the point is you have to be able to handle it otherwise there is no point in just capturing the data. We have solutions today that can deal with that scale by capturing, analysing and delivering the unique visibility and insight to enable our customers to adapt to the ever changing environment, transform their business and thrive in their competitive landscape. 

A woman's face is the central focus, looking upwards with a thoughtful expression. Overlaid on her face are digital circuit lines and a network diagram. To her left, a stack of server racks is visible. In the background, a city skyline with prominent skyscrapers is shown. The overall color palette is a mix of warm oranges and reds, and cool blues and purples, creating a futuristic and high-tech atmosphere.

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JDSU Network and Service Enablement, Network Instruments, and Arieso are now Viavi Solutions.

VIIVI



How to build an experience-based pricing solution



Chris Yeadon is director of product marketing for Convergent Billing & Customer Relationship Management at Ericsson



Craig Schafer is a revenue monetisation consultant at Ericsson

Previous articles in this series examined how communications service providers (CSPs) have generally considered pricing off-limits as part of their strategy for profitable monetisation. This third and final article, written by Chris Yeadon and Craig Schafer, explores what is required to implement EBP in terms of OSS/BSS

In the earlier articles in this series we have looked at how experience based pricing (EBP) could potentially be a powerful strategic instrument for capturing value in the networked society. EBP is about breaking down a consumer's communications experience into individual chargeable components that can be packaged and priced based on context. The second article in the series discussed how this might look in practice, and explored the potentially strong position CSPs hold given their ability to control the customer experience from the core network to policy and charging-based packaging, billing and payments, and customer interaction.

This third and final article explores what is required to implement EBP in terms of OSS/BSS (Operations and Business Support Systems).

Deliver a valued customer experience

Some CSPs continue to see their value only in terms of the quality and performance of their networks. In reality, however, consumers increasingly take even the best connectivity for granted, and see apps, over-the-top (OTT) services and the features and functionality of their various devices as the most valued and important part of their experience. For CSPs to profitably monetise the exponential increase in traffic flowing over their networks, they must look beyond connectivity and begin charging customers for services according to context.

EBP is about addressing the needs of individual customer micro-segments with innovative package and pricing structures, and using context to dynamically set the optimum price for the experience sought by the customer. This approach dominates the video gaming

industry. Game pricing has evolved from charging a flat price for each game (based on its quality, complexity and graphic sophistication), to contextual pricing within the game after a relatively low initial purchase price. Once players are involved in the gaming experience, they are offered better functions, better weapons and better defences that can be purchased for additional payment, and even resold to other players at market prices. The value of each component is based on the experience and the player's subjective value of them – leading to new revenues and profits.

OSS/BSS: The enabler of EBP

Implementing an EBP-centric strategy will require a new mindset, one that recognises price as a strategic differentiator. It may also require a major transformation of OSS/BSS architectures. Specifically they will require an IT environment that is fully integrated from end-to-end, starting at the core network, through the service control, charging and billing, product orchestration and customer interaction layers, enabling the CSP to control seamlessly the entire customer experience. Crucially, it should also include analytical capabilities providing real-time insights about the customer profile, usage patterns and experience.

Successful EBP is not just about having all the right pieces. The key is linking them in a way that allows action to be taken instantaneously and intelligently in the context of the current customer experience.

The missing element

To realistically enable Experience Based Pricing, the Basic Architecture in Figure 1 needs one more key element: intelligence that can act across all layers to make them fully interactive. Analytics, for example, must affect, by

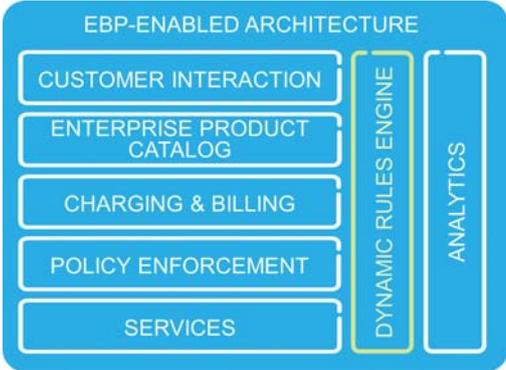


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rules, changes to prices, and know when to convey the change to the customer. Pricing changes and drivers from analytics, must intelligently update charging and billing, policy and the catalogue.

Fig. 1: Basic architecture towards EBP capability



This intelligence, indicated as a dynamic rules engine, must also address communication of EBP changes directly to the customer, and also with the customer relationship management system. This ensures customers have visibility into their subscription and related services and pricing.

Other vital elements to the EBP approach include:

1. Real-time charging, billing and policy

EBP is all about real-time charging for additional value components beyond basic connectivity for those consumers that want a different experience –this is where the sophistication begins.

Consider a customer that purchases a HD movie package but realises that his base-line data package does not provide sufficient speed to support it with the required experience. In such cases add-ons are available to purchase in advance at a pre-established price. However, if a customer impulsively purchases an add-on in the moment to watch a movie, the price could instead be set according to the availability of network capacity at that time. Their willingness to pay will be determined by their context at that specific moment.

A strong focus on experience differentiated packages will also require an integrated charging and policy control environment, which in turn is integrated with the policy

enforcement layer to ensure process duplication, reduction in errors and shorter execution time.

2. Real-time analytics

A key pillar of EBP is the ability to understand the experience the customer desires or requires. At a service delivery level, this requires correlating the quality of service (QoS) as perceived by the customer with the type of service or content being delivered. At a marketing campaign level, real-time analytics can enable a CSP to determine what kind of experience customers have had and create and target retention offers or proactive customer actions accordingly.

The analytics engine also needs to be integrated with the charging and policy control environment in order to trigger real-time notifications or service deliver actions. In practice, this means ability to enrich usage records, in real-time, with experience analytics insights.

3. Product management and orchestration

An EBP-centric strategy drives enriched product and service families with context-based pricing add-ons. For that reason, CSPs need a rapid point of configuration for products and services and a well-understood view of end-to-end product life-cycle provided by an enterprise product catalogue. The result is that CSPs can work faster and more dynamically in response to the constantly changing experience needs of the myriad services being created by an ever growing digital service provider ecosystem.

Capturing the value of the networked society

Customers are no longer simply just consuming connectivity, but a wide range of digital services provided by a growing ecosystem.

Strategies such as experience based pricing can enable CSPs to capture the value of the wider experience from customers as well as third-party collaborators. The CSP's ability to package, price, charge and bill, and support over-the-top services bundled with their own makes them an attractive distribution channel and can help establish them within the new digital value chain. This approach requires a new mindset, along with a transformed OSS/BSS environment. The latter includes real-time everything, from a dynamic rules engine to a central product catalogue, coupled with extensive automation.

Customers are no longer simply just consuming connectivity, but a wide range of digital services provided by a growing ecosystem



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Network integrity is the firm foundation on which all CEM is built

There is a lot of conversation about customer experience management (CEM) systems used to manage the customer experience and mitigate against the effects of increased network utilisation and wireless network congestion. However, many of these solutions are mechanisms to alleviate issues rather than curing them. Mary O'Neill, the chief executive of Nakina Systems, tells George Malim that, as communications service providers (CSPs) face heightened complexity as they roll out new technologies and virtualise their networks, ensuring the integrity of the network is the fundamental basis of CEM

VanillaPlus: What distinguishes Nakina Systems' approach to CEM from other vendors?

Mary O'Neill: Nakina provides network integrity assurance. Our solutions ensure network data accuracy by discovering and eliminating network and service configuration errors. Nakina helps customer experience by improving network quality by eliminating network and service configuration errors.

Many customer experience issues CSPs deal with trace back to network performance issues, the majority of which are caused by incorrect configurations within the service path. Our solutions understand how the network and services are configured. The associated analytics we generate supply other systems, including policy, OSS, BSS, orchestration and CEM with valuable and timely insights so the appropriate data-driven decisions can be made dramatically improving diagnosis and remediation times.

Typical CEM approaches rely on endpoint – user equipment or handset – information, performance monitoring information and probe data. But the network itself plays such an important role in service delivery and, ultimately, the customer experience. Holistic CEM strategies should not only provide real-time performance metrics but also analytics regarding the network configurations themselves, outlining mismatched network and service configuration parameters, alerting network operators to potential service impacting conditions or incorrect network configurations.

Extending network behaviour analysis to include security related events becomes increasingly desirable

and necessary as IP continues to proliferate and networks become virtualised. By correlating real-time service performance, network parameter changes, and network access events, CSPs can determine not only which configurations may have changed, but when and by whom, and understand potential associated network performance impacts.

Using our solutions as part of a holistic approach to experience management helps dramatically reduce network outages and congestion, improving the overall quality of the network and the resulting customer experience. We can also help customers to predict and refine network configurations to drive maximum network stability and performance, introduce new services, reduce customer churn and preserve revenue.

VP: Everyone's talking about CEM so what do you see as your main competitive differentiators and why do these give you an advantage?

MO: We help CSPs preempt network configuration-caused customer experience impacting issues. By assuring the integrity of the network in the first place, you essentially prevent customer experience issues from happening. This is important because more than 40% of outages are caused by some sort of network misconfiguration in the service path.

Scale is our key differentiation. Our systems collect and analyse data network-wide, for an entire mobile network, spanning multiple technologies and vendors. Some of the world's largest mobile service providers use our systems. Our strength is the ability to scan and analyse the entire network and pinpoint configuration errors, enabling CSPs to avoid experience-impacting conditions in the first place. ▶

IN ASSOCIATION WITH NAKINA SYSTEMS



Network configuration errors could be complex or very simple. For example, we've seen situations where a Cisco cell site router might be connected to an eNodeB from another vendor and interface is configured half-duplex and the other full-duplex. It's a simple setting, but when network traffic peaks, congestion and packet loss ensues. The end customer has no idea why, they just see slow application performance and dropped calls.

Ultimately it comes back to helping our customers protect revenue, reduce churn and introduce new services. It's also important to address issues that affect high value subscribers by pinpointing service-affecting issues.

VP: What benefits have your CSP customers seen by deploying your CEM solution? Are there any commonalities between those who embrace CEM and those who may be lagging?

MO: Obviously, for our customers one of their key metrics is customer churn. Churn rates remain high in many markets so being able to review and refine the network to achieve stability is important. Even though some of the customers that have deployed our system have the lowest amount of customer churn in their market, when I go to see them they want to talk about how to go further and reduce churn even more. They're very pro-active across the board.

From our work with some very large mobile service providers, we have seen scenarios in which incorrect network configuration errors create the potential to impact mobile signaling performance. Network-wide, this potentially impacts up to 40% of the ▶

Using our solutions as part of a holistic approach to experience management helps dramatically reduce network outages and congestion, improving the overall quality of the network and the resulting customer experience



Mary O'Neill: CSPs don't have to get into a situation where their network is overloaded and your customer has a bad experience

Today's siloed approach to experience management will need to evolve. An end-to-end service oriented view is needed

CSP's subscribers. Furthermore, the symptoms caused are transient in nature and only experienced under peak conditions – such as when subscribers are placing large numbers of calls or other network requests, making them even harder to isolate.

Exacerbating this is the inherent complexity of service provider networks. They are multi-vendor and heterogeneous in nature. For example, a CSP had been suffering from a network issue for some months. Subject matter experts from each equipment supplier involved said its equipment was correctly configured and working properly. In isolation, the configurations were correct but put together in a network, the configurations were incorrect for the services they were supporting. By being able to apply a service-aware context, end-to-end across the network, CSPs can eliminate those types of issues and really focus on improving the customer experience, rather than spending time and effort dealing with network configuration errors. We allow the CSP to focus on the root causes, not mitigating symptoms.

The great thing is what we do is highly measurable and therefore an attractive investment for CSPs.

VP: Where are you seeing the greatest demand for your CEM system?

MO: Our customers are facing a lot of competitive pressures, such as from over-the-top providers, which is driving them to significantly invest in their networks while trying to reduce costs at the same time. All of our customers are really going through a lot of difficult technology inflections as they implement their business strategies. They're moving from 2G to 3G to 4G and new 5G technologies, their introducing small cells and carrier aggregation to alleviate congestion issues. They're investing in NFV and SDN to reduce costs and accelerate new services. For them, it's about creating a differentiated experience.

The rate of change is profound and it's really hard for service, network and security operations teams to keep pace. As a result, network security – and more specifically privileged identity access management – is another major driver for our solutions. Security breaches almost always trace back to unintentional or malicious activity so controlling access and the network is becoming a greater requirement, and one that is vital to CSPs as they move to virtual networks and start opening their networks to host different types of virtual network functions. We secure access

to these networks, and can tell who accessed the network, what they did and when they did it. The correlated data delivers holistic view of what's happening on the network.

Where we can help CSPs is in automating their business processes.

VP: What are the most significant barriers to greater adoption of CEM solutions?

MO: CSP networks are intensely complicated by their nature and that's only going to continue and is likely to grow as virtualisation is introduced. NFV – and by association SDN – results in networks that are far more dynamic and fluid. Service chains can be complex, and the underlying network itself is constantly changing. Virtualisation introduces a range of new experience-impacting performance interdependencies. The instantiation of a new virtual function or a change in the configuration of the underlying server could have unintended consequences. Being able to discover new services and proactively audit network configuration data will be essential in order to achieve CEM strategies.

Today's siloed approach to experience management will need to evolve. An end-to-end service oriented view is needed. Understanding network configuration analytics along the service path so that it is contextual and service-aware, and has the ability to discover and correlate everything together to learn the topology, will be a key component of customer experience management. Siloes remain in the back office and they need to be bridged to enable a really comprehensive view to be created.

VP: What changes do you expect to see in the CEM market over the next 12-24 months?

MO: I think increased business process automation will be a significant change. We also need to change our definition of customer when it comes to the Internet of Things. Breaking down silos and getting all systems from order management to policy management to experience management will require more automation.

We're working with one of the largest cable providers in the US right now to do that. They're pushing the boundaries and it's really exciting. We're fortunate to be able to do this with them and we're really looking forward to taking this experience and making it available to our other customers.



The author, **Roz Roseboro**, is senior analyst at Heavy Reading

Introduction

The telecoms markets in mature regions have long been saturated and those in emerging markets are fast becoming so. To avoid a race to the bottom by forever cutting costs, CSPs have, in recent years, begun to pay more attention to the customer experience. Heavy Reading's research reveals that CSPs are starting to appreciate how customer experience management (CEM) can help reduce churn, provide opportunities to sell additional services and reap the benefits of having customers advocate on their behalf

Early adopters – those CSPs that have been practicing CEM for four years or more – are demonstrating that they are outperforming their competitors and that CEM does yield results. Challengers with me-too networks have been particularly interested and active here as a means of strongly differentiating themselves from established competition. However, incumbents in particularly competitive markets have also seen CEM as a means of responding to price pressure from new market entrants, enabling them to preserve a reputation for premium value.

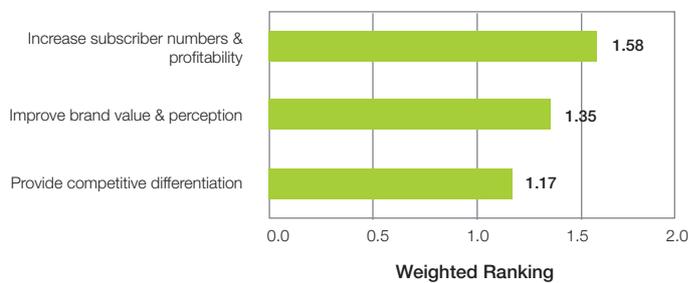
Fast followers have been hard on the early adopters' heels, but Heavy Reading research finds

that even mainstream adopters are now developing strategies for CEM. Their efforts may not yet be as pervasive across the organisation or supported with as mature CEM technology solutions as those of early adopters, but they are addressing CEM at a good time. Market understanding of this management discipline and how to measure customer experience (CE) is well established, so they can learn from the best practices identified by early adopters and benefit from the useful tools emerging from the TM Forum (TMF) CEM programme.

Our research reveals that the drivers for adopting CEM vary depending on a CSP's level of maturity:



Figure 1: **Top three factors influencing investment in CEM**



Source: Heavy Reading Survey of 118 CEM decision makers and influencers

- **Early adopters** are driven by the need to establish themselves as the leading brands in their market (outperformers), putting clear blue water between themselves and their competition where CE is concerned. Incumbents saw CE differentiation as a response to price pressure from new market entrants, enabling them to preserve a reputation for premium value. Challengers with me-too networks saw an opportunity to win market share by offering a highly differentiated CE not available from competitors.
- **Fast followers** realise that they need to catch up with the leading benchmark for CE in their market to improve subscriber numbers and profitability. Fast followers often have very similar key performance indicators (KPIs) to early adopters, but customer perception – voice of the customer – does not reflect this. They need to invest in CE to present themselves as a real alternative to the market leader, maximising their business potential.
- **Mainstream adopters** are gradually responding to the CEM strategies of leading competitors in order to maintain their business on a sound financial footing. They are mainly driven by the need to improve customer retention – churn

prevention – and to use CE data to refine how and what they sell to existing customers.

Some of the other drivers cited include:

- Churn reduction/increased subscriber loyalty
- Subscriber growth prediction and trend analysis
- Customer intelligence acquisition
- Net Promoter Score (NPS) adoption
- Customer service improvement, including self-service support
- Product rationalisation and consolidation

Defining CEM

The academic sphere defines CEM as the means of creating advocates for an organisation's brand/product/service: turning customers from the merely satisfied to loyal and then, in today's social media-aware age, from merely loyal to active advocate. CEM is all about building an emotionally-weighted relationship with each customer. The more positive that relationship, the more trusted the CSP becomes and the more successful it is likely to be at keeping the customer's business, selling the customer further services over time and encouraging customers to promote the CSP and its products to friends and associates.

Heavy Reading defines a CEM system as one that collects data related to CE from multiple sources, models and analyses CE data and recommends actions on the basis of CE analytics. A handful of vendors are building telecoms CEM systems that span domains within the CSP organisation and attempt to provide an end-to-end picture of CE encapsulated in a single CE indicator (CEI). Others offer targeted solutions can help CSPs improve the customer experience without necessarily measuring the customer experience explicitly.

What has been crucial in the increasing adoption of CEM within the telecoms market is a growing awareness that CEM:



- **Is a management discipline** that applies across the organisation, including to both front- and back-office staff and processes. Everyone and every activity must be harnessed to the goal of serving the customer.
- **Requires senior level leadership** because of its cross-organisational remit and impact on the culture of the CSP.
- **Involves improving internal processes** with customer needs in mind. At a minimum, this means ensuring that each of the processes that customers touch during their lifetime with a CSP, referred to as touchpoints, provide best-practice CE. But CEM also affects support processes, such as human resources and IT.
- **Mandates listening to the voice of the customer.** The key factor that differentiates CEM from earlier process improvement programmes, such as Lean Six Sigma, is its incorporation of the customer view of organisational behaviour at touchpoints. CEM explicitly uses the customer's emotional perception of the service to target operational improvements, such as a better billing experience, capex investment in the network and employee training requirements.
- **Includes managing a high-quality network.** The network is the foundation of customer experience in a CSP context, and insights from the network are critically important to its management, at a predictable level of quality that customers will pay for.

Keys to making CEM a success

Because of its broad scope, implementing CEM is a long-term project and its cross-organisational nature can make it difficult to carry out. Changing a culture by overcoming inertia, convincing the skeptics and demonstrating a measurable CEM impact can take years. CSPs cite the difficulty of securing cross-organisational cooperation as the largest barrier to implementing CEM. Some CSPs try to reduce CEM into a single indicator – which may not provide enough insight to act upon – while others can be so overwhelmed with data and functionality that their CEM projects become too large to successfully implement.

Heavy Reading sees the following factors as being critical in getting the most out of CEM:

- **Inspirational leadership.** Visible CEO and senior level management support for a CEM programme is critical to its success. Some CSPs insist that senior executives spend time on a regular basis with front line staff so that they experience customer interactions first hand. They publicise this commitment to underline to employees and customers the importance of CEM.
- **Putting CEM in the right place for maximum impact within the organisation.** This is a fascinating topic as it varies so widely across CSPs. Early adopters have seen CEM evolve out of customer care or network operations departments into a business function in its own right. Mainstream adopters are often highly unsure where to place CEM, typically attaching it to marketing departments or business intelligence projects.
- **Tying CEM improvements together with cost reduction projects to strengthen the business case.** The CSP's challenge is to secure trade-offs between the requirement to improve CE and the need to reduce cost. It therefore focuses on projects where both are possible for a win-win outcome – and points out that it has yet to reach an inflexion point where it has driven out cost and can focus only on improving CE. This is likely to be the case for any CSP.

Factoring in the customer voice

Heavy Reading research confirms that most CSPs collect basic 'inside out' metrics such as network and service availability data, service usage data, first call resolution metrics, average call handling time and time/cost to resolve customer issue metrics. The collection of such metrics pre-dates any emphasis on CEM since they are equally applicable to cost reduction programmes and investment decision-making. Such metrics are often closely associated with CSPs' business intelligence and big data programmes.

But many CSPs score badly on capturing the 'outside in' view – the customer perception of their experience and how this affects perception of brand and willingness to recommend their

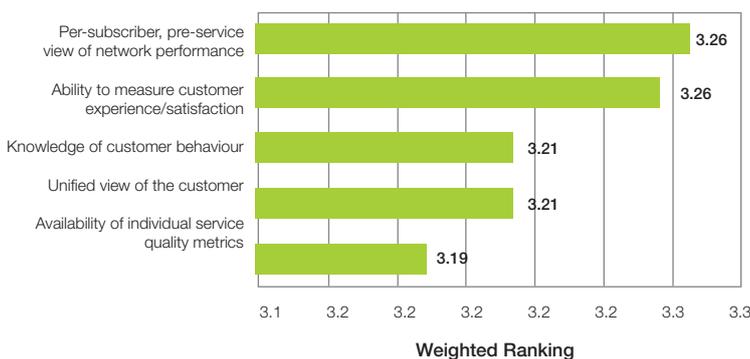


experience to others. Lack of measurement makes it difficult for CSPs to manage and influence the voice of the customer.

Most CSPs Heavy Reading has surveyed say they want to increase the frequency with which they measure customer satisfaction, and there is strong CSP interest in understanding and implementing NPS. Many recognise that improving NPS is a significant market opportunity for CSPs that get CEM right, given the low base the industry is starting from.

CSPs see the number, type and frequency of metrics capture as key to providing a better and more differentiated CE. They believe customer-specific metrics are particularly important, as Figure 2 shows.

Figure 2: **Top improvements needed to provide a differentiated customer experience**



Source: Heavy Reading Survey of 118 CEM Decision Makers and Influencers

Creating a metric for customer experience

CEM practitioners advocate the collection of appropriate metrics and are producing methodologies for implementing them. The TMF's CEM Metrics Framework gives a small taste of just how many measures the TMF CEM programme participants think need to be tracked – a significant number at near-real-time intervals. Drill down into

individual service assurance areas, such as HD video, and vendors have created multiple measurement universes crying out to be factored into the overall CE. The race is on among CSP and vendor CEM practitioners to identify the critical measures, correlations of measures and causes that really matter to CE.

While CEM data is not big data – many CEM practitioners argue that it needs to be extracted from big data and processed separately – it is still extensive enough that CSPs need a manageable way to visualise it. As part of its metrics discovery/algorithm development race, the CEM industry is looking for a single, per-customer proxy for the sum of the customer's experience of a particular organisation. This is known as a CE indicator or index (CEI), depending on whether it is a single measurement or the sum of multiple metrics.

There are several reasons why a single CEI is important:

- **Organisation-wide visibility:** A single indicator/index can easily be understood by anyone in the organisation so it changes the prism through which the CSP views what it does, according to one CSP. A single indicator is a powerful expression of the state of an individual customer's engagement with the CSP. Because the whole organisation can understand and buy into it, it can be used to drive the employee incentives and salary reviews that align all staff with CEM goals.
- **Neutrality:** a CE indicator/index is seen as neutral. Although metrics from different CSP departments may contribute to the index, it is not aligned with any particular department. It is as applicable to someone from network operations as it is to employees in sales and marketing. This means it is likely to be accepted across the organisation.



- **Support for benchmarking:** A single indicator/index can be the basis for benchmarking across all the operating companies in a CSP group, enabling both the parent company and each operating company to understand the state of CEM in different countries and local differentiators that need to be taken into account.
- **Customer-driven root cause analysis:** The CEI is the starting point for drilling down into constituent metrics to discover root causes of poor experience wherever these occur within the organisation. Customer knowledge can then be used to prioritise which causes are investigated and addressed first.
- **Proactive improvement:** Once root cause(s) are understood, the CEI can be linked to pre-emptive ways of avoiding problems in the future: for example, if the index slips below a certain threshold for a certain customer/customer segment, it could trigger device management, SON or policy control systems to remediate a poor user experience dynamically. The CE indicator can also be used to drive longer-term business cases for people, process or technology improvements. One CSP has proved statistically that making an extraordinary effort to fix a problem makes minimal difference to an antagonistic customer's likelihood to churn. It recognises that the best approach is to identify and stop the fault affecting other customers or to avoid it in the first place.

Contenders in the single indicator race

There are multiple contenders for the role of a single metric that summarises customer quality of experience (QoE).

The TMF and a number of BSS/OSS vendors are lining up behind a Customer Experience Index (CEI – or CEMI according to the TMF): a single overarching CE score for each customer. This score is the sum (index) of the CE across all touchpoints and the customer's outside-in perspective, at any given time. In other words, the CEI combines the subjective voice of the customer and objective operational metrics in a highly visual way.

Some CSPs argue that NPS, rather than a constructed CEI, can act as the 'single vehicle' the entire business can rally around.

NPS practitioners are building up an extensive knowledge base of outside in views that they are making available to their entire organisation and have gained empirical evidence of NPS's link with customer churn, revenue generation and/or product and service uptake.

Other companies are also developing service quality algorithms based on loss and delay. These are often limited to particular types of application. They may also be based on multiple average single-point measures rather than a rigorously composed and predictable metric. Certain SDN and network operating system vendors are working on autonomic network resource scheduling algorithms that aim to remove network contention and the delay it causes when they establish new virtualised network paths.

CSPs are beginning formally to model application performance across different network paths so that they can deliver differentiated application experience to enterprise customers at different price points. In the hybrid networks that Orange Business Services (OBS) creates, for example, enterprises can choose whether applications with different performance characteristics are delivered over the internet or its private MPLS/Ethernet network.

All these developments are giving rise to the hope that network performance management will become a science rather than an art, using algorithms to predict and control service quality in the first place – and by proxy, the user experience – rather than compensating for/fixing user experience failures once they have occurred.

Which approach will prevail?

Studies have shown that users' experience of the network is by far the single largest contributor to their perception of a CSP and their decision to remain loyal to it. CSPs are prioritising network and service quality improvements within their CEM programmes because CSPs realise nothing much matters if network quality isn't there. A single network QoE index that can drive network optimisation is highly valuable but many CSPs find it difficult to create or use because of the siloed nature of their network/service delivery organisations.

But what of CE factors that a CSP can't control, such as



experience of devices? Some argue that it is important for CEM reasons for a CSP to detect that devices are, for example, freezing video frames, even if it can't do anything about them. The fact that such issues are brought into a CEI means that CSPs can take action, if only to exonerate their networks.

This is a further argument for broadening the scope of a CEI, although an index that tries to model and reflect the universe of potential factors influencing customer perception may well be unachievable. Hence the TMF's CEMI validation programme and vendor assertions that their indices are the result of long experience of what really matters. Hence, too, some CSPs' adoption of NPS alone as a guide to CEM, avoiding the messiness of inside out metrics. Both of these approaches are

in their infancy and have a long way to go.

While the customer's voice is important and most CSPs measure it, there is skepticism regarding its suitability as a single indicator. "It's not clear how the customer voice moves and what drives it," according to one Tier 1 European incumbent CSP. "We can survey our customers over and over again, but this doesn't necessarily deliver a statistically meaningful result." Another CSP remarks, "You can provide the most reliable service ever, but if a customer is willing to take a hit for \$5 less, you can't do much about it." Interestingly, the European incumbent claims that its outside in scores lag the inside-out metrics, and that the business feels the impact first when it gets CE wrong.

Conclusion

CSPs recognise that CEM is a management discipline that: applies across their organisations; requires senior management buy-in because of the cultural change it brings; involves an internal process improvement programme that in part needs to be driven by listening to the customer voice; and is underpinned, in a CSP context, by strong network management, since the network is the primary contributor to CSP CE. Technologies and services such as VoLTE, 4G/5G, streaming video and mobile data/OTT will put additional strain on the network. This makes it even more critical for CSPs to keep a close eye on network quality so as not to jeopardise these emerging revenue streams.

CSPs have traditionally been poor at listening to the voice of the customer and using it to drive internal improvement. Adoption of an indicator such as NPS is a good step forward but can be misleading as the only metric guiding CEM. CSPs are also evaluating the merits of broader CE indices and new formalised (modelled) approaches to network performance management. The latter use algorithms to predict and control service quality in the first place – and by proxy, the user experience – rather than compensating for/fixing CE failures once they have occurred.

It is still early days for the CEM-driven CSP, although we expect their levels of understanding to continue to grow. The amount of data being generated by a plethora of devices will only increase, supporting demand for automated CEM solutions that can help them collect, process, and act upon it. The signs are, however, that early adopters will be taking the next steps toward process automation and CE analytics-driven customer service to maintain their market leadership and simultaneously drive costs down and customer satisfaction up.

About Heavy Reading

Heavy Reading, the research division of Light Reading, offers deep analysis of emerging telecoms trends to network operators, technology suppliers, and investors. Its product portfolio includes in-depth reports that address critical next-generation technology and service issues, market trackers that focus on the telecom industry's most critical technology sectors, exclusive worldwide surveys of network operator decision-makers that identify future purchasing and deployment plans, and a rich array of custom and consulting services that give clients the market intelligence needed to compete successfully in the global telecom industry.

www.heavyreading.com





Company summary

Accanto Systems provides advanced analytics solutions to CSPs in order to optimise the network and customer experience. Accanto's iCEM product suite analyses customer, network and handset-based data, turning network-centric monitoring into customer-centric operations and creating a single view of the customer across all departments. Accanto is headquartered in Finland and has more than 20 customers worldwide.

CEM credentials

Accanto focuses on the quality of experience of the subscribers. Its iCEM solution integrates data from a wide variety of sources across network technologies and vendors, and is able to monitor the quality of experience of every single subscriber's voice and data services. When combined with information about the customer and their expectation, iCEM is able to provide a detailed ranking of the customers and issues based on business value, and can therefore optimise the network and customer experience based on prioritisation of business value. Accanto helps CSPs move from traditional network monitoring to a more customer-centric approach by enabling them to follow every area, subscriber, corporate account and service in real-time. This gives them visibility of where their most important customers are suffering bad quality, and enables them make more informed investment and operational decisions. Accanto says its iCEM customers have seen reductions in churn and support call costs.

Key differentiators

Having originally been a network probe supplier, Accanto has a deep understanding of network protocols and operations. It is able to correlate network activity with other information including data from CRM systems and handsets to allow CSPs to see the subscriber experience and understand which KPIs have the biggest impact on customer happiness. It takes disparate types of data from multiple vendors' equipment and systems and integrates it into a single view on a common platform. It has defined and deployed a whole range of ready-made CSP use cases that enable the CSPs to immediately benefit from the knowledge, analytics, and optimisation recommendations that are in-built in to its platform. The Accanto iCEM platform is able to handle a huge amount of real-time and non-real-time information to monitor the quality of every subscriber for voice and data services. Its solution is able to dynamically segment the subscribers and can rank all customers based on correlated quality indicators, customer expectation, and customer value information.

Company summary

Empirix specialises in end-to-end network performance visibility with the ability to analyse customer behaviours by application in real-time. Empirix helps service providers, mobile operators, contact centres and businesses optimise processes to reduce operational costs, maximise customer retention and grow top line revenue.

CEM credentials

Empirix collects information on how individual subscribers are interacting with both the network and the services. Its solution sits with the technical support team to provide better insight into their customers. It aims to reduce the amount of time spent between a tech support agent and the customers, as well as provide the intelligence to allow a less-experienced technician handle most issues. Its solutions allow an agent to see the device, services and network resources a customer is consuming, and compare to the peer group to determine if it is a subscriber issue or a larger one. It can support customer-based alarms in real-time. It also helps reduce costs by being able to verify claims of poor service, avoiding situations where it compensates a subscriber when no compensation is due.

Key differentiators

Empirix's solution is able to support every subscriber in a network – scaling to hundreds of millions – at a granular level, rather than infer the experience based on a limited number of data points. Similarly, it scales horizontally so that 100-200 individuals can use the platform at the same time. Empirix has designed its solution to provide high performance, updating dashboards in five minute intervals, and 20 second response rates to customer queries. Because of its history with service assurance, probes and DPI (deep packet inspection), Empirix has visibility up and down the stack. It is able to see and collect applications and usage at the subscriber level. It can also drill down to get a technical view of the subscriber to help reduce MTTR (mean time to repair). It offers near-real-time dashboards that allow its customer to support short term SLAs which is particularly important in saturated markets where CSPs are competing on quality rather than price. It provides the visibility to enable CSPs to focus on its highest value customers, and prioritise issues accordingly.



Company summary

EXFO is a provider of next-generation test, service assurance and end-to-end service experience solutions for mobile and fixed network operators and equipment manufacturers in the global telecoms industry. EXFO's intelligent solutions with contextually relevant analytics improve end-user quality of experience, enhance network performance and drive operational efficiencies throughout the network and service delivery lifecycle. EXFO has a staff of approximately 1,600 people in 25 countries, supporting more than 2,000 telecoms customers worldwide.

CEM credentials

EXFO's Xtract solution focuses on providing comprehensive, end-to-end visibility of service experience to the network operations, planning and customer care organisations. This entails continuously collecting, correlating, analysing and visualising information from radio, core, backhaul and fibre networks, as well as from the devices themselves. Xtract contains three main analytical applications: service, subscriber and network analytics, which allow CSPs to operate and manage service quality and network performance, troubleshoot, plan capacity increases, confirm service activation, more quickly identify and respond to network issues, and suggest changes and new offers.

Key differentiators

Because of its long history working with Tier 1 CSPs around the world, EXFO has a deep understanding of network technologies and operations. It has built upon its expertise in fibre to now include 2G/3G/4G/LTE and Ethernet and has packaged this expertise as comprehensive portfolio of services included into its turn-key solutions. EXFO's Xtract analytics platform is able to process massive volumes of data from devices and radio, core, backhaul and fibre networks in real-time, providing a comprehensive end-to-end view into service experience. This is increasingly important for new services such as VoLTE, where Xtract is able to analyse control and user plane traffic as well as call quality information from IMS systems in real-time to fully understand the service experience.

EXFO provides predictable and transparent TCO with its open analytics platform, which allows CSPs or other third parties the ability to customise EXFO Xtract to better suit their needs, including adding dashboards and changing algorithms, without having to go back to EXFO.

Company summary

MDS is a UK-based provider of convergent real-time charging, billing and customer management products and private cloud managed services to the CSPs and wider digital services provider (DSP) industry. Its Customer Management Platform (CMP), helps DSPs launch new products and services quickly, bill for them accurately, and unlock new revenue streams to support business growth. CMP has been in production for almost 20 years and is used in 21 countries around the world.

CEM credentials

With CMP, MDS has moved decision-making to the customer, giving them visibility and control of their usage online and on-demand. Using an intuitive interface, users can select which services and payment methods best suit them. With easy to use real-time account management, they can purchase any service, day pass or package. Subscribers can decide and use the services on their terms. Using CMP, customers have reduced their operational costs, improved standards of customer care and helped grow their subscriber base and profits. MDS' managed service provides a cost efficient, fully assured alternative to in-house management. This also brings down the total cost of ownership, with one view of the customers that enhances their experience.

Key differentiators

MDS offers its platform via a scalable and effective managed services business or as a product licence, which is a unique approach to CEM. It has continually invested across its entire portfolio to offer real-time analytics, M2M, managed services, and multi-tenant solutions that customers needed to gain more insight and compete effectively. MDS has built its own tools, including executive dashboards which show usage, churn rates, update of new services for a deeper understanding of customer behaviour. It can also feed usage data to CRM tools such as salesforce.com and other external tools. CMP can also be used to present offers based on customer behaviour – an area MDS is increasingly focusing on with its customers. MDS has expanded its addressable market from its predominantly B2B, mobile-only origins to support consumer and multi-product offerings such as home phone and broadband services. Its managed service is underpinned by more than 50 SLAs that monitor over 200 pre-defined business processes, giving DSPs the confidence that their billing is taken care of.



Company summary

Nakina offers a suite of Network Integrity applications for managing, securing, and optimising physical and virtual networks. Nakina's applications are built upon its Network Integrity Framework – an open and modular software platform that abstracts network complexity, normalises multi-vendor management, and bridges the physical and virtual worlds for management and orchestration systems.

CEM credentials

Nakina's solutions assure network data accuracy and timely access to critical network data so that CEM systems can provide correct, data-driven insights. It enhances customer experience by improving network quality by preventing, detecting and correcting network and service configuration errors. CEM systems can correlate real-time performance analytics with the network configuration analytics Nakina provides to present a holistic view of the customer experience by incorporating a view from the network. When combined as part of a holistic solution, Nakina helps CEM solutions predict and refine network configurations to drive maximum network stability and performance at the lowest possible cost, reduce customer churn, preserve revenue and dramatically improve diagnosis and remediation times.

Key differentiators

Nakina's roots are in multi-vendor, multi-technology network management. All of Nakina's software solutions are built on top of the company's network integrity framework, an open orchestration enablement platform. The platform enables Nakina's solutions to scale across the largest service provider networks. All Nakina's network integrity applications including those that discover, audit, analyse network configuration accuracy and provide privileged identity access management, are built on top of this software platform. These solutions audit network configuration accuracy end-to-end along the service path, spanning physical and virtual networks. When paired with CEM solutions, service providers can isolate network configuration issues wherever they may be in the service chain, and rapidly identify the impact to specific customer experience. The solutions dramatically improve problem isolation, diagnosis and resolution response times. Nakina detects network security configuration vulnerabilities, and automatically applies privileged user access policies. Its systems augment the capabilities of performance management systems. By correlating real-time service performance, network configuration changes, and network access events, CSPs can determine not only which configurations may have changed, but when, by whom, understand potential associated network performance impacts and associated impacts to customer experience.

Company summary

Founded in 1999 and based in Dublin, Ireland, Openet is a leading independent supplier of real-time BSS (business support systems) to CSPs. Its software supports 600 million mobile telecoms users around the world and enables CSPs to monetise data use in real-time.

CEM credentials

Openet comes from a background of policy and charging, so is geared around the real-time consumption of services. It approaches CEM by focusing on increasing and improving customer engagement. Its solutions help CSPs offer its customers personalised offers that take into account the full range of understanding about network and subscriber behaviour. The aim is to enable CSPs to make offers relevant by considering the context, thereby demonstrating how well the CSP understands the customer's needs.

Openet's CSP customers have found that by tailoring personalised offers more quickly, they are achieving higher take-up rates.

Key differentiators

Because Openet is able to provide information in real-time, it gives its CSP customers the ability to create more personalised offers, rather than generalised blasts. Openet also understands the underlying network, so it can ensure that the offer is capable of being delivered at a particular point in time. Its solution handles access to the service, as well as the charging for it, providing a comprehensive view that makes it seamless across multiple organisations. It believes its long-term industry experience gives it an advantage over general IT solution suppliers who may not fully understand the complexity and culture of telecom network operations and customer care.



Company summary

Polystar helps CSPs simplify their CEM strategies and drive operational efficiency through real-time network analytics. Polystar's real-time network and customer insights uncover the data that yields valuable analytics and insights to CSPs. Founded in Stockholm in 1983, it has evolved to a global presence, serving customers in over 50 countries.

CEM credentials

Polystar's primary focus is to provide objective insights about subscriber experience during the usage phase of the customer lifecycle. Through real-time passive probes, its solutions capture all signaling related to subscriber activity and convert this to objective quality of experience data that can be analysed in Polystar's own tools or forwarded to third party systems. Polystar's own tools deliver real-time quality of experience data to network and service operations centres and customer care. In large CEM initiatives targeting the entire customer lifecycle, Polystar's solutions often supply enriched real-time and objective quality of experience data to third party systems, while its own tools are primarily used for in depth troubleshooting in second or third line engineering. The information collected spans all activities from connecting to the network, moving between cells, using OTT applications and the CSP's own applications, such as VoLTE and other voice and data services. Using Polystar's solutions, CSPs have found that support calls are resolved more quickly, and that there are fewer repetitive calls on the same complaint. In addition, CSPs have also seen improvements in network availability and service quality, including a reduction in the number of dropped calls and data sessions. Polystar's solutions may be used both to resolve and isolate problems and to guide the CSP to complementary tools. As a result, CSPs can become more proactive by identifying service degradation before failures occur.

Key differentiators

Polystar's solutions have the capability to collect billions of events, analyse them and present end-to-end insights in real-time, or forward them to other systems. It has built its entire solution in-house, rather than through the acquisition of external technology, leading to very tight integration of system components. Compared to other solution providers, Polystar believes its solution is more flexible in terms of being more easily modified and tailored to CSP requirements. The systems have, since inception, been built on standard hardware and software, making it easy to adapt to new technology shifts such as the introduction of network functions virtualisation (NFV). Expertise in signaling is an increasingly scarce resource and Polystar's in-house knowledge is much valued by its CSP customers. Polystar has invested heavily in its professional services team, which is designed to provide additional expertise to CSPs and help them capitalise more effectively on real-time insights.



Company summary

SysMech is a provider of software solutions for the telecoms industry. In 2010, it launched Zen, an application which enables CSP's to successfully optimise their networks and deliver true business value from big data. It has Tier 1 CSP customers across Europe and the Middle East.

CEM credentials

SysMech's Zen solution enables CSPs to look at CEM in line with the rest of their business by correlating CEM data with network and billing information. Zen allows customers to define scenarios and action that needs to be taken under those conditions. By using just one centralised tool for both network and customer data, visibility is increased, and standardised views, processes and reports can be achieved. The solution can manage across multiple domains, giving the CSP the ability to look at a particular service with certain customers at a certain point in time. Its customers have been able to correlate their network data with customer experience data, enabling them to see what changes are actually affecting the customer experience and perception.

Key differentiators

SysMech's main IP is around the ability to deal with data quickly, correlate it and provide actionable intelligence. It has designed Zen so people with little to no experience with big data can effectively use the tool. It has also partnered with Tableau to bring user-friendly visualisation, which, combined with its customised user interface, means users can build and manipulate their own reports and scenarios. Zen can take in data feeds from any domain, any vendor and any technology, giving CSPs an end-to-end view of the network, services and customers in a single application that can be used by people in multiple departments. It uses a patented correlation engine that enables proactive automation methodologies to support CEM, as well as other domains like fault and performance management. Zen was designed to reduce the number of clicks needed to accomplish a task, as well as be self-healing/managing.



CSPs focus on making omni-channel aspirations a reality

As communications service providers (CSPs) improve their approaches to customer experience management (CEM) by moving towards an omni-channel approach and exploiting contextual awareness, Dr Andy Tiller, the vice president of product marketing at AsialInfo, tells George Malim the advantages are well understood. However, while the technology is mature, the use cases are not established and CSPs also have barriers to surmount in terms of regulation

VanillaPlus: **Omni-channel customer engagement is seen as the key to delivering good customer service experience. What advantages does the omni-channel approach deliver?**

Dr Andy Tiller: The key concept is to create a better experience for customer journeys which involve multiple channels. For example, in a customer journey such as purchasing a new phone, upgrade or service, the customer will often want to switch between channels. They may browse online and put items in a shopping basket and then go to a store – with omni-channel they can carry on the process and complete their order in the store without having to start the process all over again.

Alternatively, they might begin the process with a Tweet complaining of an issue and receive a response to ring the call centre. When they do so, they'll typically have to inform the call centre agent of the problem and explain the situation once more, but with omni-channel, the agent can see the interaction history and carry on the conversation.

Omni-channel allows the customer to switch channels without starting again. It's aligned to CSPs' needs for a single customer view and the customer can also have a record of all their interactions.

Those are the basic features of omni-channel but there are sometimes sophisticated requirements as well from a CSP point of view. For example, user behaviour in other channels can affect personalised offers in a new channel. For example, if I respond to a campaign positively, perhaps by liking it on Facebook, an omni-channel system would push me a personalised offer related to the campaign when I log into the CSP's web shop. The connectivity of all the channels is joined up with analytics and personalisation.

A further benefit of omni-channel CEM to a CSP is that it enables them to see what the end customer sees and react to that. If a customer is struggling in a self-care environment, the agent can go in and do the task for them. For example, if a customer has a partially full shopping cart but can't find the right offer to complete their transaction, an agent can go in and assist them. ▶



Dr Andy Tiller: The next phase is the proper integration of Facebook, WhatsApp and WeChat into CEM channels



Usually the problem is that each front end channel has its own data and business process logic. We've essentially re-architected our CRM system so any front end can be plugged in

All of these things are typically still aspirations for CSPs today but there is a lot of activity and interest to create a true omni-channel customer engagement model.

VP: We've spoken about CSPs' own channels. How does AsialInfo see the omni-channel concept extending to other channels such as social media platforms?

AT: At AsialInfo we think CSPs' own channels are the baseline for them to introduce omni-channel but the next phase is the proper integration of social apps such as Facebook, WhatsApp and WeChat. Those are typically the customers' preferred ways of communicating, but they are not very useful for interacting with a CSP today. Social media is not really joined up at all to the single customer view and customers can't do a lot with those channels now. However, the social apps themselves are becoming quite powerful with their open APIs. It should be quite possible for a CSP to offer a full self-care application within a social media app.

We've essentially re-architected our CRM system so any front end can be plugged in. Usually the problem is that each front end channel has its own data and business process logic. The customer might work through steps one to three of a process in one channel, but if step four is different in a second channel they can't continue after switching channels; they have to start all over again.

You have to take out the data and business logic from the front end channel and accommodate it within a back end platform that supports all the front end channels. We've done that with our CRM product and we have integrated WeChat as a reference example, but you could integrate any social channel. The social channel then becomes much more useful. For example, you could receive a marketing message via WeChat after scanning a barcode on an advert, then start a two-way private conversation about it with an agent in the WeChat app. The conversation history is incorporated into your single customer view, so that you can continue the conversation with an agent in a retail store who already knows that you are interested

in the offer you saw in the advert.

The example works equally well with WhatsApp or Facebook. WeChat also has a payment capability, so a customer could top up their phone or buy a bolt-on package from within the app.

These third party social applications are going to become more capable and there's an opportunity, even a requirement, for CSPs to add these to their omni-channel customer engagement environment.

VP: Do you see CSPs remaining in control of the customer experience or could OTT providers start to wrest control of the customer experience from CSPs?

AT: I think CSPs will remain in control where they join those channels up to their single customer view and offer omni-channel engagement. The interactions are part of the customer record and if they're not joined up, they're not part of the record. I don't think it's the intent of the social application providers to steal the experience of ordering a handset or raising a troubleticket with the CSP, they've got other things in mind.

In this scenario, the social application companies are providing helpful tools. CSPs provide a lot of rich self-care features in their own apps but there is some evidence that people are reluctant to use them. It's much more convenient for users to have everything in one application than engage with a CSP self-care application separately from their preferred communications app.

VP: To what extent is real-time self-service empowering customers to personalise their experience? What challenges do CSPs face in enabling real-time self-service?

AT: Real-time self-service is what you do with these self care channels regardless of whether that is via a social app or through a CSP's own channel. Topping up or viewing your bill are generic self-service capabilities, but the challenge for CSPs is to personalise the experience more. For example, CSPs



might want to personalise a bolt-on package by enabling customers to decide how much they want to spend.

A good example of this is in our deployment at mobile operator AIS in Thailand. The CSP has just launched a smartphone application that lets customers do many things. For example, they can decide how much they want to spend on a bolt-on voice and data package and tune the mix of voice (minutes) and data (MB) to their preferred proportions.

These types of offering rely not only on an attractive front end but real-time capabilities at the back end. Similarly, if I've got some spare data in my monthly bundle, I might want to give it to a friend or family member. I should be able to donate that through a CSP's app (or even using a social app). There might be a convenience charge for that. I should also be able to convert unused resources, such as leftover minutes, to needed resources, such as data, if I want to – again for a small fee.

There are lots of examples of this type of personalisation that is attractive to users and all require a real-time response from the charging and account balance management system at the back end.

VP: How important is it for CSPs to have real-time awareness of their customers' context?

AT: Generally there's a strong focus now by CSPs on trying to understand customers' needs in real-time so they can pre-emptively support them. For example, if my data balance is about to expire and I'm watching YouTube on my phone, rather than send an automatic text saying I have a low balance a CSP can send a message saying click here for a YouTube day pass for €2 – yes or no?

That's a scenario people have talked about for some time but the technology to achieve it is now available. With complex event processing you can identify that the two events – low data balance and watching YouTube – are happening simultaneously for a particular customer, and then orchestrate a response to

that specific context, such as the YouTube day pass offer.

CSPs want real-time contextual awareness not only for the cross-sell and up-sell opportunities but to serve customers better. For example, a business customer might have had a few dropped calls in a short period of time. A CSP can respond by apologising for the poor network experience and credit the user with 100 minutes. The idea is to turn a negative experience into a positive one by pre-empting the customer's complaint. It's about delighting the user by turning around a situation which would normally upset them.

VP: What barriers exist in relation to CSPs utilising big data insights to create personalised offerings and target customers effectively? What are the regulatory factors and social concerns for CSPs to consider?

AT: The technology to enable this is readily available but the challenge is how to create the right use cases because you can certainly use the technology inappropriately and get the customer experience very wrong. You can upset customers if they feel they're being spied upon. Typically CSPs have concerns about what they're allowed to do under the law and regulations in their markets and what customers will find helpful as opposed to spooky. The technology is mature but the use cases are in their infancy.

We recently did some market research and found in a survey of 50 CSPs that the key barrier is the regulatory requirements rather than fear of upsetting customers by doing inappropriate things. CSPs feel they're in control of that but find the regulatory environment more challenging.

There is a lot of room for interpretation of what you're allowed to do and CSPs are concerned by that and typically interpret regulation very conservatively. CSPs feel they have not been allowed a level playing field in comparison to large internet-based competitors in this respect. They want to comply with the law but feel it should be clearer, simpler, and the same rules should apply to all players. 

CSPs want real-time contextual awareness not only for the cross-sell and up-sell opportunities but to serve customers better



Accelerate problem resolution and reduce operational expenses by using customer experience solutions

CSPs need to deliver insight into individual and group customer service quality, minimising operational expenses, accelerating problem resolution and optimising the customer experience, writes Graham Kunz



Graham Kunz, is a product marketing manager at Empirix

Most traditional service assurance solutions deployed by both fixed and mobile communications service providers (CSPs) focus on network troubleshooting and surveillance. These tools are primarily used by network operations and engineering staff to identify and resolve network-related issues and, while this model has been effective in the past, the time has come for additional capabilities.

The service assurance segment is evolving: CSPs now require solutions that provide greater levels of visibility not only into the network, but also into the services and vendor devices deployed in the environment. The real change, however, lies in the need for specific insight into the customer base as a means of understanding gaps in service or concentrated problem areas. This knowledge can empower CSPs to enhance their capabilities and reduce churn in addition to forming the foundation for proactive and highly focused marketing campaigns aimed at providing the right service to the right person at the right time.

New services drive differentiated customer focus

CSPs are also changing how they view and manage their customers. Previously, the services offered to each customer were limited. This was true even for mobile service providers: Just a short time ago, the services available to their customers did not extend beyond voice and SMS.

The explosion in mobile broadband and data, along with the availability of smartphones and other devices,

has changed all that. Customers now access a multitude of services each day: checking email, surfing the web, using video communications, downloading third-party applications for almost everything, and of course, engaging through a plethora of social media applications.

Along with the introduction of each new service or application, the underlying network transport and technology now permit quality of service (QoS) to be determined and implemented on a per-customer basis. With that, many of the world's leading mobile service providers are now competing more on service quality than usage amounts. For example, a customer can select a tariff or plan based on the data service speed – both download and upload – they require. The tariff is also linked with consumption, meaning a customer may have their speed downgraded or reduced if they consume more than their allocated data volume.

The introduction of such tariffs results in a number of revenue growth initiatives for service providers, which in turn requires a shift in the focus of today's service assurance solutions. These solutions need to evolve to address key aspects of customer care in order to better manage the customer base on both an individual and a group basis.

Legacy problem resolution

Traditionally, the vast majority of customer care issues would eventually find their way to Tier 2 or Tier 3 network operations and engineering teams before resolution. However, with the volume of issues dramatically increasing due to growth in available data services and proliferation of mobile device users, it will



be difficult to sustain this model and resolve issues in a timely manner.

In most cases, there may be multiple touch points involved in resolving a customer's issue as it escalates through the CSP in a series of steps, detailed below:

Step 1 - When the call is placed or made by the customer, the first responder is usually someone from customer care who has little or no technical knowledge. This person is normally restricted to traditional CRM solutions and customer billing information.

Step 2 usually involves the customer care operator passing the issue to technical support. This department usually has access to some form of service performance tool or application, but, again, has limited technical knowledge and so is often unable to quantify, never mind resolve, any issue.

As a result, a given issue may well involve **Step 3**, where technical support engages the customer again in order to better understand the nature of the issue. Even then, it is highly likely that technical support will have to then pass a large number of calls and issues to network operations and engineering for investigation and resolution, which is **Step 4**.

Accelerate problem resolution

Deploying an effective and intuitive customer experience solution in a customer service environment allows technical support or non-expert staff to troubleshoot basic customer-affecting problems, enabling them to resolve a higher percentage of customer issues and deliver better overall service from the customer perspective. This also results in an overall reduction in issue mean time to repair (MTTR), an objective of nearly all service providers as it reduces not only the operational expense involved in resolving customer affecting problems (Step 3), but also minimises potential revenue losses as part of a service outage. Furthermore, fewer issues or troubletickets are passed to network operations and engineering (Step 4), freeing up resources for complex issues such as improving network reliability and service quality.

The Empirix Customer Experience solution is

designed for use by a CSP's technical support staff. It accommodates evolving service provider environments and consists of a scalable platform based on the Empirix System Architecture. The solution supports fast retrieval of individual or customer group information, including analysis of related service experience. Support staff access customer information – including the device type being used as well as actual service experiences at a related location or locations – by entering basic customer details such as a phone number or by selecting a specific customer group. This information is displayed and summarised in a non- technical format, enabling analysis by technical support staff with no knowledge of how each service itself works, never mind the underlying network technology.

Service experience is determined by specific key performance indicators (KPIs) derived directly through each customer's interaction with both the network and related services they access or use. The KPIs available within the solution target:

- **Service Access** – Can the customer actually access the network and the required service?
- **Service Performance** – Once the customer has accessed the network – or, in the case of mobile, physically attached – and is using the service requested, what is their service experience for voice, SMS, MMS, and data?
- **Service Handovers** – In the case of mobile, can the customer move around the network without service interruption or performance issues?

By arranging the information in such a format, technical support staff can rapidly identify and diagnose customer-affecting problems. More significantly, they are able to determine if the problem is unique to the individual customer raising the issue or related to an issue impacting other customers who are in the same location or using the same service.

The solution also enables the same customer issues to be further analysed by more technical/expert staff by providing in-context drilldown into dedicated troubleshooting tools. As a result, CSPs not only have a more detailed insight into the customer experience, but they also gain accelerated problem resolution. 

Deploying an effective and intuitive customer care solution in a customer service environment allows technical support or non-expert staff to troubleshoot basic customer-affecting problems, enabling them to resolve a higher percentage of customer issues and deliver better overall service from the customer perspective

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Network tools should unlock better customer experiences

The proliferation of OTT services, streaming video and complex solutions such as VoLTE pose fresh challenges for communications service providers (CSPs) seeking to deliver good customer experiences, writes Jonny Evans

Whatever the OTT service a consumer uses, reliable, stable services are the most important factors for customers choosing a CSP

The expectation is that CEM network tools should unlock better customer experiences across this new value chain. “Policy control and policy enforcement is the driver for this as those functions and applications gather the data and then make policy decisions, based on that data. That can in turn help to control and manage the customer experience with good traffic management and prioritisation,” says Robin Kent, the director of European Operations at **Adax**.

Whatever the OTT service a consumer uses, reliable, stable services are the most important factors for customers choosing a CSP. **Amdocs** claims around a third of customers would migrate to other CSPs for better coverage or download speeds. So how can CSPs differentiate their offering while keeping the customer satisfied?

In the old days network performance was the key metric. Norbi Liron, the director of product management at **TEOCO** explains: “The old approach assumed that if there were no network performance issues, then every subscriber would be happy.”

These days customer data has become a significant

factor, including device or service data. René Tonon, the business development manager at **SysMech**, adds: “Subscribers interact with their device, and hence the network, significantly more often than other communication channels. Customer care teams need to be able to drill down on network performance data, network faults and planned network maintenance, in real-time.”

Neil Coleman, the head of radio access network marketing at **Amdocs**, emphasises that CEM is about more than just network performance. “Traditionally each aspect of the customer’s interaction with a CSP has had its own mini CEM for care, billing, retail and network,” he says. “What’s becoming clear is that treating these in isolation doesn’t change the game for CSPs. CEM has the ability to connect the dots across the CSP’s organisation, driving insights across the whole business.”

In an increasingly diversified environment people expect on-demand access to everything, and CEM can help deliver this. “When an understanding of network performance is combined with quality of service and customer quality expectation it creates a more comprehensive foundation for CEM, providing ►



Robin Kent: Network performance is the key criteria that users measure their experience by



Norbi Liron: The old approach assumed no network performance issues meant subscribers would be happy



Gerry Donohoe: CSPs must maintain relevance in the eyes of their subscribers and personalise the engagement



Jarkko Multanen: Both network data and network performance need to be considered



Mikko Hyvärinen: The end user does not know what causes problems and malfunctions

enough data to offer recommendations to a network operations department,” says Jarkko Multanen, the chief executive of **Accanto Systems**.

Gerry Donohoe, the director of solutions engineering at **Openet**, advocates greater personalisation. “To compete in the digital market place, CSPs must maintain relevance in the eyes of their subscribers and personalise the engagement, offering subscribers services and products when they need them. Real-time network data empowering network-oriented CEM systems is how CSPs can achieve this,” he says. “These must be able make fast decisions on how to achieve the best outcome and interact with the necessary network components to trigger the policy changes for each individual customer.”

This customer-centric vision demands deep insight into customer behaviour, satisfaction and needs. “When using any services, the end user does not know what causes problems and malfunctions. Typically, the end user thinks the issue is in what they see, for example, if using the Facebook application and there are issues, the end user will assume there are problems with Facebook. CEM is needed to fully understand where the problem lies,” explains Mikko Hyvärinen, the director for CEM and platform products at **Anite Network Testing**.

Today’s CEM solutions can access, analyse and act upon multiple data streams, such as OSS, BSS, device, DNS and more. “We believe that companies who build strong foundations based on flexible data services will be in a much stronger position to help customers enjoy and manage their digital lifestyles with minimal fuss,” says Chris King, the senior director of product marketing, network and analytics at **Oracle Communications**.

The network is still at the heart of CEM but CEM can

only be successful if network CEM is added to by inputs from all customer touchpoints. “Network-oriented CEM can support the management of experience in all other customer touchpoints, since customer quality and behavioural indicators can be best measured from the network itself,” says Anssi Tauriainen, the director of business development for analytics at **EXFO**.

Network CEM provides insights into subscriber behaviour, service usage and customer experiences, enabling the creation and fast delivery of new service offerings. “From a network perspective, being able to dynamically reconfigure the network to address poor experiences delivers the dynamic quality of experience CSPs now require,” Coleman says.

That’s not to reduce the importance of the network. This remains core to the experience. “Network performance is, and I believe always will be, the key criteria that users measure their experience and levels of satisfaction by,” said Kent. “Increasingly good data analytics feeding policy and traffic management applications are the foundation of maintaining that good network performance.”

So has network data, rather than network performance become the new foundation for CEM? In truth both are essential. “Both network data and network performance need to be considered,” says Multanen.

Digital transformation has spawned a complex reality in which “CSPs’ must understand the real end user experience,” adds Hyvärinen. With the network at its core, network CEM enables deeper insight into the complex interplay between all those factors that comprise the customer experience, such as network and device performance, application quality, place and more.

Today’s CEM solutions can access, analyse and act upon multiple data streams, such as OSS, BSS, device, DNS and more



Customer experience needs to move up a gear, smarter customer engagement is essential

All the talk is about delighting customers but how can communications service providers (CSPs) do that if they don't understand and communicate with their customers on a personal level, asks Barry Marron



The author, **Barry Marron**, is global vice president of marketing at Openet

Go to any telecoms conference or read any telecoms publication and it won't be long before you come across the words customer and experience. CSPs and vendors alike talk of delivering a better and consistent customer experience and delighting the customer. But how can you deliver a better experience if you don't understand and communicate on a personal level with your customers? When it comes to engaging with customers check out how Google, Facebook, Apple and Netflix go about this. They send lots of communications – they're personalised and mostly they're relevant and timely. And because they're relevant most customers don't see them as spam – and once they've got this engagement started then it's the main channel for care, sales and marketing.

CSPs could do worse that look at the level of relevance and engagement the leading OTTs and digital service providers have with their customers and take note as more competition could be coming from these companies. Already we're seeing Google launch Project Fi – a Wi-Fi first MVNO and almost every week we see rumours in the press about Facebook and Apple becoming MVNOs. Add in the proliferation of free Wi-Fi and it's fair to say that despite a contraction in CSP numbers, competition is more fierce than ever.

Competition for spend on digital services and even basic connectivity revenue (from OTTs, Wi-Fi first MVNOs and free Wi-Fi services) and the decrease in data ARPU are obviously not industry trends that CSPs warmly welcome. Add to the mix stories that are already starting to appear about congestion in LTE networks, which will force more network spending to

keep up with demand and you've got a perfect storm. But CSPs can fight back. They can ask some hard questions about the next level of customer experience and how well they really know their customers and how they engage with them. In this fight CSPs have many assets that can be used to differentiate themselves from the competition.

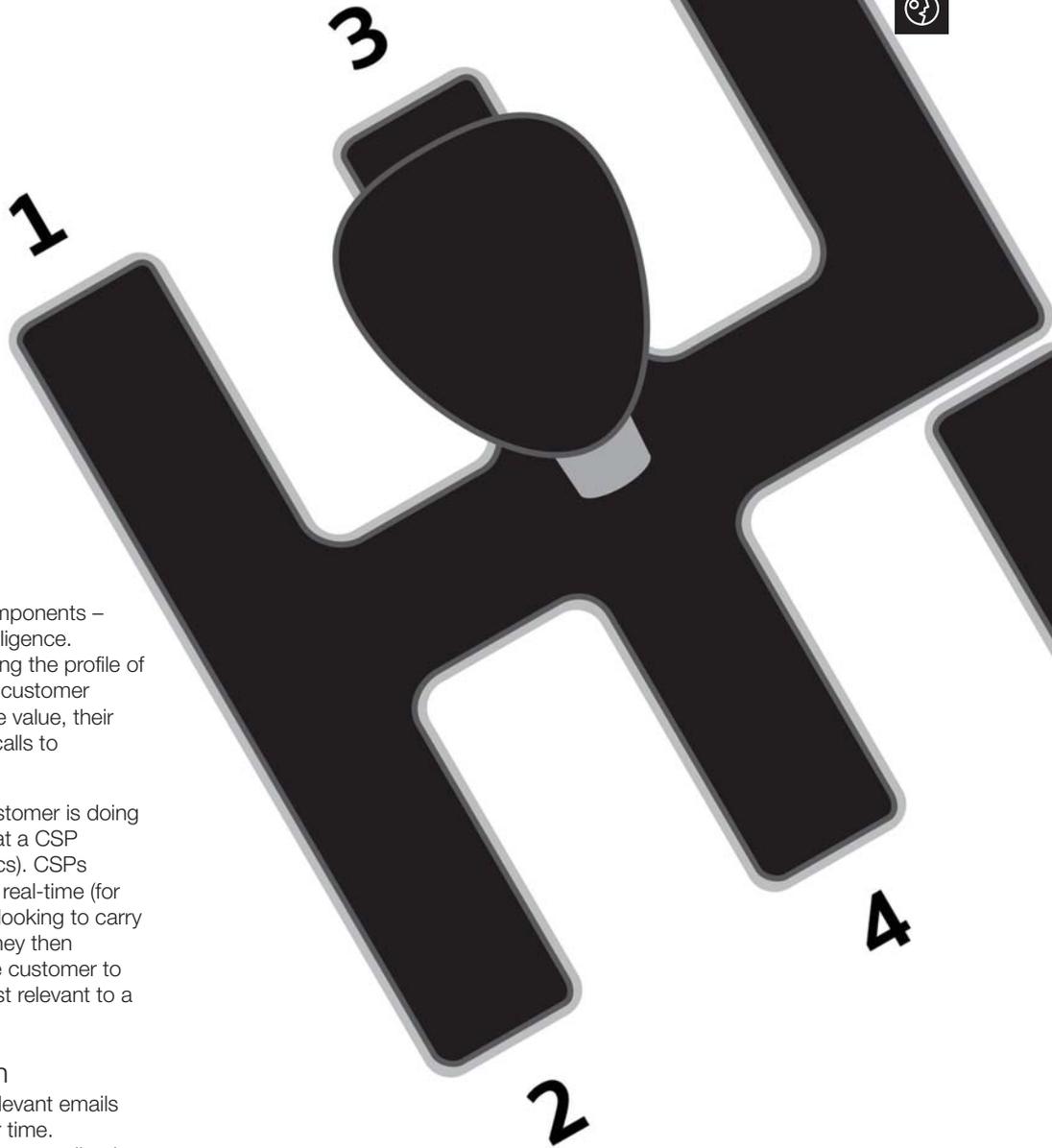
The customer base – CSPs' most important asset

CSPs have many assets that they can use and build upon in order to grow new revenue streams. These include monetisation systems and processes, service creation systems as well as the network. But it can be argued that the one main asset a CSP has is its customer base. One important aspect is that the CSPs have a regular payment pattern with their customers. Post-paid customers get a bill every month. Most pre-paid customers top up their balance more frequently than this. The ability to build on this regular payment process is key to ensuring that new business opportunities are monetised.

With this basic foundation CSPs can start better engaging with their customers. However, engagement needs to be relevant and to be so it must be personalised and timely.

Four key pillars of customer engagement

Relevant and personalised customer engagement needs to be built on four key pillars. These are: Visibility and Intelligence, Interaction and Personalisation, Service Development and Delivery, and Monetisation ►



Visibility and Intelligence

Business intelligence has two main components – historical intelligence and real-time intelligence. Historical intelligence is useful for building the profile of a customer. These profiles can include customer usage and spend patterns, their lifetime value, their propensity to churn score, any recent calls to customer care and others.

Then there is intelligence on what a customer is doing here and now. This is real-time data that a CSP analyses in real-time (streaming analytics). CSPs already collect customer usage data in real-time (for charging purposes), and now they are looking to carry out streaming analytics on this data. They then combine this with historical data on the customer to know what offer/communication is most relevant to a particular customer.

Interaction and Personalisation

People hate getting spammed with irrelevant emails that clog up their inbox and waste their time. Conversely people actually like getting personalised, relevant offers. According to research by Teradata and Celebris Research in 2015, 63% of consumers across every age group like to receive personalised offers.

The ability to know when to engage with a specific customer to make a specific offer requires the use of a combination of historical business intelligence and real-time streaming analytics. Looking at an example, a CSP sees that someone spends a lot of time streaming music and has a high churn propensity score, why not offer then one month free Spotify Premium (assuming the CSP has a partnership with Spotify), the next time they start listening to a streaming music service.

Service Development and Delivery

As CSPs look to increase relevance with customers through more personalised engagement they'll need to have a much wider range of offers that reflect the needs of an increasingly segmented customer base. Customers are demanding more services and in faster time. CSPs want to offer more value-based offers, tailored to suit various customer needs and capture maximum revenue from different segments. This means an increasing amount of offers that often need to be defined and launched in shorter timescales. In order to do this CSPs are increasingly looking towards a centralised offer catalogue.

By bringing customers more relevant choices with context-sensitive offers sent directly to their devices in real-time, CSPs can substantially increase sales conversion rates and avoid the risk of confusing customers with too many offers and options.

Monetisation

As CSPs develop more offers for an increasingly segmented customer base the ability to be able to quickly apply pricing and charging rules to a wide range of new offers is fundamental. There have been many well documented cases of CSPs giving services away for free dressed up as marketing offers, while the reason for this generosity was that the billing system couldn't charge for this new service. CSPs cannot be restrained by failures in billing systems when rolling out new products, services and offers.

CSPs have an opportunity to develop deeper relationships with their customers by taking customer experience to the next level to deliver smarter engagement and increase the relevance of the operator to the customer. This can drive trust, loyalty, upsell opportunities and profitability. In order to do this CSPs need to provide engagement that is personalised, timely and relevant. If they don't someone else will. 

The ability to know when to engage with a specific customer to make a specific offer requires the use of a combination of historical business intelligence and real-time streaming analytics

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The tools are available, it's the team work that's needed

Looking after the customer experience is a team game, which involves many different players with a multiplicity of skills. If you can harmonise them, you create a powerful force that exceeds the sum of its parts. If you don't they will work against you, writes Nick Booth



Mohammed Sha: CSPs still struggling with offering a seamless omni-channel experience

As communications service providers (CSPs) look to create an omni-channel for CEM, they need to introduce new processes, systems and skills into their businesses. "All CSPs want an omni-channel, but many are cursed with an ominous channel," says Guru Grewal, head of **Virtusa's** telecoms solutions department. Grewal's job is to help CSPs to harmonise their people, processes and systems so that everyone knows their position and their team customer experience management (CEM) formation keeps its shape. In CSP terms, that means that the people in the call centre have an almost telepathic understanding with the staff in the shops, the engineers in the field and the machines that automate responses.

For this reason, the management of all these players is a top down job. The former player-coaches – such as the chief technical officer or the marketing boss – are too involved in their own game to take a managerial overview. For this reason, the job of CEM is now run by someone upstairs – in a more directorial role.

"It is essential that the CTO and the CMO align their strategies to ensure that the customer is the overall champion," says Niamh Dundon, senior marketing manager at **Openet**. That alignment must come from on high, Dundon argues.

That means someone has to bash these heads together, says David Heaps, the senior vice president of corporate strategy at **CSG International**. "CEM needs to be driven from the very top of the organisation," says Heaps, "because the network is only one factor."

The job has become complex because there are so many elements involved, so CEM is no longer a project or a business division but a complete change of culture, according to René Tonon, **Sysmech's** business development manager. "Hanny Moneim [the head of customer care at Vodafone Egypt] recently explained at a CEM conference that it took over three years for the whole business culture to change at Vodafone Egypt."

Since the cultural elements – the people and processes – are possibly too complex to outline here, it might be worth examining the importance of harmonising systems. ►



other plank of their technical strategy invariably involves big data open frameworks – like Apache Spark – to give them the real-time processing of data.

So they have the radar, but will they really have an idea of what's going on out there?

If big data analytics can create a picture of the customer experience right down to the individual, then yes, says Di Piazza. In this case the CEM tools are essentially acting as the glue that holds all the services together. "Speed is of the essence. If there is a problem on the network, it needs to be found fast and other areas of the business – such as customer care – need to be informed," says Di Piazza.

Technically, the challenge is more straightforward, albeit ominous. There will be intelligence feeding in from smart devices and data from apps, sensors, RFID tags, internet browsing and social media. "The sheer volume and diversity of the contextual and signalling data available to a CSP has increased the CEM undertaking significantly," says Dave Peters, the CEO at **Emagine International**, which aims to provide the adaptive contextual marketing software to CSPs.

Whether companies have the right company culture to team-up and act as one will be another question.

Market analyst Gartner recently compared the CEM skills of CSPs and BT and EE achieved unenviable ratings. The ratings for the whole sector weren't generally brilliant.

CSPs aren't great role models when it comes to positive customer experiences, says Jennifer Fellows, the senior vice president of marketing at **MDS**. But they need to be. "In the new customer experience economy, they need to move their focus and involve customers up front in their product development. Today's millennials will champion the brands that take time out to understand what they value," she says.

To be fair CSPs have improved a lot, says Mohammed Sha, director of international marketing communications at **AsialInfo**. The trouble is, customers' expectations and requirements have raced past. "While investment in networks and infrastructure have helped, CSPs are still struggling with offering a seamless omni-channel experience," says Sha. "The good news is there's some innovative omni-channel technology coming on the market soon."



Jennifer Fellows: CSPs need to involve customers up front in their product development



Guru Grewal: Many CSPs are cursed with an ominous channel



Vincent Rousselet: Managing the subscribers calls for the capacity to adapt

Anyone taking an overview of CEM will need to join the dots between as many operational and technology systems as possible to get the fullest perspective on what customers are doing, says Vincent Rousselet, market insight vice president at **Amdocs**. "Outlook, VPN portal and Skype might be the daytime channel but it's Instagram, WhatsApp or SnapChat at home," he says. In other words, managing the subscribers calls for the capacity to adapt.

As CSPs review their technology options for tackling CEM, most are looking at software defined networking (SDN) and network functions virtualisation (NFV) to create service continuity, says Gabriele Di Piazza, the senior vice president of marketing at **Guavus**. The



CSPs must address the entire customer journey if they are to become DSPs

Communications service providers (CSPs) are transforming to become digital service providers (DSPs) but to do so they need to move away from the monolithic CEM systems of the past. Mark Edwards, the CEO of MDS, tells George Malim that CSPs are looking to address the entire customer journey by starting with a vision and working backwards to create the platform they need



Mark Edwards: Traditional systems take too long and cost too much to deliver the services customers want

The traditional CSP approach was to specify and deploy a series of systems to support customer experience management (CEM). These would involve an often-complex web of systems incorporating CRM, call centre applications, billing interfaces and many others. The complexity of these systems has made it costly and slow to implement alterations and launch new services, particularly those where the value of the service is low or non-recurring.

“A lot of the traditional systems are quite monolithic so it takes too long in terms of time to market to deliver the services that customers want,” says Edwards. “Not only does it take too long; it costs too much because these systems are just not agile enough. Apple and Google Play seem to have the one-time apps market with a model that works well. CSPs can offer more service-centric offers – not just content or apps – but services that have a recurring revenue stream and are tied to network-based service delivery.”

For CSPs to step up and offer these types of service-centric offers, they need to combine the different elements associated with customer experience. “They need BSS that are very agile and offer greater levels of personalisation and can be customised even by the

customer,” he adds. “CSPs need to provide greater levels of visibility of the bill to the customer in real-time and provide more agile web shops to deliver and offer services and allow customers to buy the things they want.”

That requires a change in the process and approach by CSPs. “The support side, rather than being centred around the call centre needs to be more self-care based,” explains Edwards. “Customers want that and it’s more cost effective for the CSP to provide self-care. The new approach is a combination of how apps and services are offered through the experience on the device, the flexibility of the billing system and self-care and the integration of all that in real-time.”

“A number of CSPs recognise this challenge and are making changes to introduce these components so they have a billing system that is more customer-centric along with much more adept service portals to allow greater integration,” adds Edwards. “Another key aspect is analytics because it’s critical for a CSP to have real-time actionable insights in order to offer the most relevant services to customers.”

CSPs are therefore looking at new approaches to CEM. “Service providers need to – and some are – thinking more about the customer journey and how



CUSTOMER JOURNEY

that experience is for their customers throughout the lifecycle,” he says. “They are starting to create a vision of CEM and work backwards from that in terms of the solutions they buy.”

CEM investments aren't just about increasing customer satisfaction, there is also a revenue angle that CSPs are pursuing. “Customers are satisfied when the service they receive is of a good quality but they're also satisfied when a relevant offer is made to them in a timely fashion,” says Edwards. “In the past, the whole process of service delivery platforms, which could be quite cumbersome, could mean the cost of delivery for services could be quite high. That presented a relatively high entry point for the costs of services and limited CSPs' opportunities.”

“With a more real-time billing capability and the other elements we've talked about, the cost to deliver or serve is significantly reduced and becomes a few cents versus euros,” he adds. “That opens up possibilities to enter into micro economies where services might have a short life.”

Edwards gives the example of offering a roaming bundle to travellers or pushing a short offer to a user while they are engaged in a specific activity such as if they're watching video and reaching the end of their data package. A simple push message could be sent saying: Video data upgrade €2 yes or no? In that

scenario, everyone wins because the marketing is not intrusive, the user gets to continue with their session and the CSP makes a little more revenue.

Such opportunities and models will proliferate as CSPs continue the transformation to become DSPs. “CSPs are trying to get into the business of offering more timely services,” confirms Edwards. “Users are willing to pay €2 a day or an hour for specific services when they need them but, to make the right offers, relevance and timing are key. You need information about the customer to know what they like, what their preferences are and what they've bought before. Even if it's aggregated information across a demographic, it still becomes extremely important.”

Edwards thinks CSPs' direction of travel is set towards this. “This absolutely is the evolution that needs to happen,” he says. “There are different stages of advancing to become DSPs and most CSPs recognise it's not about providing a data pipe, it's about understanding users' contexts in terms of their data usage and quality of service.”

He singles out the recently launched iD MVNO by UK electronics retailer Dixons Carphone Warehouse as a good example of a provider that looks more like a DSP than a traditional CSP and MDS is helping others on similar journeys.

CEM investments aren't just about increasing customer satisfaction, there is also a revenue angle that CSPs are pursuing

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EXPERT OPINION



The network is the true path to differentiation through CEM

To improve customer advocacy and loyalty, communications service providers (CSPs) are now looking to superior customer experience management as a key differentiator, writes René Tonon

There is no denying that customers now demand more than ever when it comes to the mobile experience. In this constantly evolving, multi-channel, multi-service world, in which mobile data consumption is insatiable, subscribers expect a consistent and reliable service across all devices, from all locations. And with at least two CSPs as a minimum in most countries, and as many as fifteen in places such as India and Canada, subscribers are spoilt for choice.

So what is it that affects the customer experience?

Customer experience can be defined as the entirety of all interaction a customer has with a company and/or

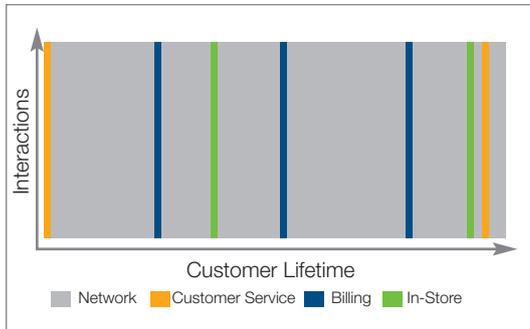
its products. In the telecoms space, subscribers interact with a CSP via many touchpoints, whether this is initially purchasing a handset and contract, during the setup and provisioning phase of their service activation, during the day-to-day usage of services, or via any form of customer service correspondence.

We all want our provider to deliver value for money and the latest handsets. We want the device to be set up correctly and quickly, easy access to online and mobile billing, and speedy and helpful responses from customer care if and when we need to call. It is unquestionably important to measure the entire customer journey. ►

IN ASSOCIATION WITH SYSMECH



Figure 1: The importance of network interaction



However, the average person will look at their phone a whopping 150 times a day according to a study by Nokia. Therefore the things that impact the user's daily satisfaction the most are surely consistent and reliable access to, and the quality of, both voice and data services. The interaction with a device and the network is in actual fact the overriding important interaction between the customer and network operator, visually demonstrated in Figure 1. And in effect, the one that can have the highest impact on customer loyalty and churn. This was proven in the '2014 Mobile Loyalty Audit' carried out by WDS, in which 4,000 users were asked what factors would make them switch network, with 'better network coverage' and 'better data speeds' coming out at the top with 48% and 43% respectively.

So to improve the customer experience and reduce customer churn, CSPs must pay the highest attention to the network itself; and be able to automatically correlate the quality of service with the customer experience, in order to prioritise efforts and investments.

CEM and network optimisation go hand-in-hand

CSPs already have access to vast amounts of data across the entire network: OSS, network probes and handset data to name a few. Historically network optimisation teams have simply worked to optimise the coverage to the highest number of people. Their performance has been measured based on statistics such as network reach, dropped call rates and cell handover. However they are going through a period of transition, and are beginning to correlate these traditional measures directly to CEM measures such as NPS (net promoter score), demonstrating the true impact of optimising the network. Of course there is no one-size fits all for customer experience; what is important to a pay-as-you-go customer may not be important to a contract, SOHO (small office/home office), SME or enterprise customer. It is critical that customer experience is looked at with the relevant segmentation in mind.

To successfully achieve this, CSPs are looking to tools, which allow them to correlate all of their data in one central application, and easily flag customer segments in real-time, enabling them to optimise the network to have the greatest impact on each customer type.

Upping the pace of customer experience management

Another critical factor in optimising the network performance, and in turn optimising the customer experience is speed. In the fast paced world we now live in, traditional methods for monitoring the network are no longer quick enough. For example, collecting network information using passive probes and archiving to a data warehouse for analysis hours or sometimes days later does not enable a CSP to rapidly identify and rectify performance degradation issues.

CSPs must look to new measures to enable them to react quickly and with specific focus to action improvements related to customers, which will have a direct impact on their experience and drive loyalty. Social media is a prime example as one of the few channels that can provide CSPs with near real-time insights into the customer experience, whether it is a single Facebook post, or hundreds of thousands of tweets. It does however come with a challenge, in the fact that it is highly unstructured, and must be processed in real-time.

How can CSPs manage all this information without increasing headcount?

Most CSPs now have subscriber numbers in the millions, making it impossible to correlate network data and customer data manually. In today's economy, a significant increase in headcount is unrealistic, therefore automation is key. To really make customer experience management a successful method for reducing customer churn, CSPs must begin to monitor trends and put automated actions into place. For example, if after five dropped calls, 95% of subscribers will contact customer care, CSPs can use this trend to introduce proactive automation techniques; When a customer reaches three dropped calls, an automatic alert can be sent to the customer care team, letting them know the customer is highly likely to get in touch, along with the reasoning for the dropped call rate. They can even go one step further and trigger an automatic SMS to the customer, apologising for the issue, and letting them know that it is being addressed.

It is clear to see that the network itself must play a key role in customer experience management, and CSPs must take a proactive approach in correlating their network and customer data. Automation is also key; enabling CSPs to optimise resources across the entire business whilst ensuring customer excellence is the top priority. This is even more important as some CSPs move towards quad play offerings, as a bad customer experience doesn't just affect loss of mobile revenue but potentially all other services too.

And for those CSPs that are not already embracing CEM? Well they are already behind the competition and now risk being left behind completely.



The author, **René Tonon**, is business development manager at SysMech

It is clear to see that the network itself must play a key role in customer experience management, and CSPs must take a proactive approach in correlating their network and customer data

www.sysmech.com



Build connections with customers that go beyond simply meeting expectations

In the first of a new series of interviews with communications service providers (CSPs), David Cox, the head of the Customer Experience Programme at Colt Technology Services, tells VanillaPlus how the provider of network, voice and data services to businesses of all sizes around the world, is pursuing a strategy of customer experience excellence

colt

Through extensive customer research, we have identified four principles of great customer service which we intend to apply to everything that we do

VanillaPlus: Does Colt see customer experience management (CEM) as a differentiator?

David Cox: Colt's vision is to be most customer-oriented company in our industry. Delivering an excellent customer experience is a centre pillar of our strategy; everything else hangs off of that.

VP: What CEM approaches have you taken?

DC: Our CEM is currently focused on two core streams. At a functional level, it's primarily about understanding pain points in the delivery of services and using direct feedback from the customers to drive

continuous improvement and make sure that we deliver against their expectations.

But we are also trying to build connections with our customers that go beyond simply meeting expectations. Our intention in the long term is to build a more significant connection with customers – what I like to call an emotional connection. In order to do that, we're developing activities which build towards the ideal customer experience. This is all about making sure we understand what really matters to our customers and what drives them at a personal and business level – and using that to define in very concrete terms what great customer service actually means. ▶

CONTINUED ON PAGE 52

EXPERT OPINION



CEM is too big a concept to deal with without a blueprint

Customer experience management (CEM) is a large and often poorly defined subject that covers a vast spread of needs from network engineering to the retail experience provided to customers. It's time for a CEM framework that maps use cases to business problems, Victor Donselaar tells George Malim

If you go to a CEM conference the scale of the CEM market is clearly demonstrated. You're just as likely to see a presentation aimed at network operations engineers as one that explores how to optimise the shopping experience at a communications service provider's retail outlets. The CEM arena has become so wide that it has become too large to address as a single system.

"The CEM market is huge and not well-defined," confirms Victor Donselaar, the vice president of business development at Accanto Systems, which is developing a blueprint to map out the different disciplines and solution sets encapsulated by the CEM tag. "RFPs are coming to companies like us from CSPs that are about net promoter scores (NPS) or billing or network operations or customer care or customer care agents. The scope is very wide and big CEM RFPs take a long time to respond to and typically nothing comes out of them."

"There isn't one solution that optimises your shopping experience and analyses your subscribers' voice and data quality so there's no point trying to accommodate both needs in one RFP," he adds. "It's not practical to have one RFP for something you can't buy. CSPs have different departments and CEM should be top of the agenda for all but they still have budgets to adhere to and CEM as a whole is not a budget item."

Donselaar would like to see the CEM arena broken down into a subset of solutions that map to CSPs' own structures, budgetary frameworks and needs, rather than CEM being used as an all-encompassing buzzword. He believes that by creating a blueprint, CSPs can launch viable solutions that help them improve the quality of experience for their subscribers. "Vendors have used CEM as a brand – we've been guilty of it ourselves," he says. "People use the CEM

term without defining it which is why we want to create this blueprint. CEM has become blurred and undefined but the intention of customer-centricity is there. CSPs know, for example, that there is a correlation between network quality and making the customer happy."

Donselaar says CSPs will take different approaches to CEM but admires the approach being taken by one of Accanto's CSP customers of splitting CEM into tools and processes by way of making the specification process more manageable. However, he warns that regardless of how CEM is divided, a complete set of solutions will be needed. "If you have the tools but not the processes, the customer is still not satisfied," he says.

The CEM blueprint therefore needs to take both tools and processes into account along with the different aspects of CEM from network engineering through to the call centre or the retail store. "In a typical CSP's network, there are multiple technologies and probing systems that all produce KPIs and valuable information to monitor the customer experience," says Donselaar. "We want to correlate this already existing but complex information, rank what customers are suffering most in terms of poor quality, and then provide actionable insight and analytics. The blueprint will be broken down into a few things you monitor that are directly linked to the network and can deliver customer experience improvements."

"If you look at CEM and the tools and data required, they're equally important," he adds. "The proposition should be a solution to a business problem, not just software that plugs a gap. In order to truly understand the customer experience, the CSP needs information delivered to them from a system that takes information from multiple sources. To achieve that, there is a whole process change required for CSPs. Our blueprint will provide much needed clarity to the market."



Victor Donselaar is vice president of business development at Accanto Systems

www.accantosystems.com

IN ASSOCIATION WITH ACCANTO SYSTEMS



CONTINUED FROM PAGE 50



We are living in a multi-channel world, so having multi-channel integration is absolutely critical

VP: How do you obtain feedback from your customers?

DC: We have three levels of feedback. One through our day-to-day interactions with customers – whether we're fixing an incident or delivering a new service. That tells us how we are doing across the customer journey and what pain points customers are experiencing.

The second goes beyond the day-to-day. We run a survey amongst customers on a quarterly basis – it used to be annually, but we have increased its frequency – to ask them about their relationship with Colt, so we have timely information about how customers perceive the services they receive from Colt.

Thirdly, we're trying to make sure we capture and use the ad hoc information we glean through interactions with our service teams, account managers and sales managers in order to build solid customer relationships.

VP: What does good customer experience mean to Colt customers?

DC: Through extensive customer research, we have identified four principles of great customer service which we intend to apply to everything that we do. The first is about reliability, about being absolutely rock solid, so that we do what we say we're going to do, everything works the way it's supposed to and customers can depend on us.

On top of that, the second principle is about ownership, about stepping up when it matters to the customer.

The third principle is about being open and honest with our customers. It's important to them that we tell it like it is – we don't just give them the good news. We strive for open communication both ways, and pay attention both when customers have good and bad things to say about us so that everyone knows exactly where they stand.

But at the very top, what pulls all of this together is always seeing things through the eyes of our customers. It's about empathy and standing shoulder to shoulder with our customers, so that we work in a way that delivers against their interests rather than putting ours first.

We're redesigning all of our activity across the customer journey to embody those four principles. We know that if we deliver across all of them we'll make a connection with our customers and really build trust in Colt as an organisation.

VP: Colt has changed from being a network provider to being a provider of a wider range of technology services to enterprises. With a wider portfolio, has it become more challenging to ensure you deliver great customer experiences?

DC: Obviously, the more complex and diverse your services are the more you have to take into account to develop and deliver great customer experiences. But by keeping to them and working them into everything we do, to a certain extent we can take out the complexity and deliver a seamless experience across our services, which aims to reflect a consistency every time the customer interacts with us.

VP: Do you see CEM as a means to up-sell and cross-sell other services to customers?

DC: The reason an organisation does this is to build a connection with the customer so that everything flows and is synchronised. Customers with a sense of loyalty and advocacy to an organisation stay longer and talk positively about it. That helps to create a differentiated experience so existing customers want to do more business with Colt and ultimately it helps to gain new customers as well.

As we deliver on those four core principles, we intend to build a sense of trust in Colt among our customers – and trust is the bedrock of business relationships.

VP: To what extent is CEM technology an IT investment priority for you?

DC: From a technology point of view, we focus on two types of investment. One is about gathering information, harnessing the voice of the customer and being able to measure current experience. More importantly, the second is about making sure Colt is harnessing the information and knowledge we have around our customers so that every time we interact with a customer we can really identify what matters to that customer and when.

VP: Within the CEM discipline, how important are multi-channel integration and service personalisation?

DC: We are living in a multi-channel world, so having multi-channel integration is absolutely critical. That said, the work we are putting in to improving the customer experience is not about us driving a multi-channel strategy. It's about us enabling our customers to interact with us in a way that works for them at any given moment. To a certain extent that is about service personalisation, so that they can work with us the way they want to, rather than us imposing rules.

As a business, we are not looking at customer experience as a project we are executing and which will be finished in a year's time. We are transforming ourselves into a service company with customers at the heart, and that is becoming the way that we operate. Providing a great customer experience is becoming part of our DNA and is increasingly the natural way in which we do business. 

Real-time data is the key to implementing effective CEM to support VoLTE deployments

Communications service providers (CSPs) are flocking to invest in CEM solutions in the belief that they can help to reduce churn and to make their networks and services more attractive to other users, boosting subscriber additions. Retaining and recruiting customers has become increasingly difficult, because today's subscribers are more discriminating and there are more choices available than ever, writes Mikael Grill

Delivering a better, richer experience through more effective CEM is now seen as a key contributor to future success. However, many of the available solutions seek to address different aspects of CEM, by solving specific problems that have been identified. Such approaches result in solution silos that do not support cross-departmental and organisational goals. They solve problems in one area, but do not deliver elsewhere.

It is crucial to recognise that CEM is more than a set of products. It is an orientation that spans all disciplines and affects the entire CSP organisation, as the customer relationship and lifecycle touches upon all departments and teams. Unless this key fact is recognised from the outset, attempts to enhance CEM practices will meet with only limited success and the creation of yet more disconnected silos.

The introduction of VoLTE has exposed the fault lines in such disjointed approaches. VoLTE is complex, has many challenges and requires considerable expertise in order to ensure successful delivery. If it is to succeed, VoLTE really has to deliver on the promise of enhanced voice and multi-media service capabilities and performance. Looking ahead, there will be further profound and disruptive changes in network design with the advent of NFV – indeed, many VoLTE deployments are likely to be based on NFV solutions. Delivering effective CEM will be fundamental to the success of VoLTE investments and even more so as migration to NFV gathers pace. VoLTE simply must deliver the performance that CSPs expect, so that they really can capitalise on the predicted cost savings. This requires a truly multi-disciplinary approach to CEM that supports the entire organisation.

To achieve this, a unified approach is required. The key to this is the continuous availability of real-time

data from the network. If data is only available historically, then CSPs can understand why problems have occurred but do nothing to prevent them. The acquisition of real-time data from all domains in mobile networks, including VoLTE, is therefore of critical importance. Once available, it must be spread and shared throughout the CSP organisation to support CEM at all levels, providing the basis of a unified approach.

Polystar's Network and Customer Insight solutions provide the ability to capture, sort and present real-time data from VoLTE and other networks, such as 3G and 2G, as well as for other services. They provide the means to consolidate, correlate and present valuable information that delivers insight to support a fully unified approach to CEM. Uniquely, they do so across all network technologies, from VoLTE to GSM, enabling a truly end-to-end perspective of session and network performance to be derived.

These tools enable different users to access the information they need, based on a common source – whether through interfaces and dashboard, or via integration through the open API to third party solutions. What's more, our professional services team works with CSPs to ensure that data processing and information presentation is customised to the needs of each user group, from network operations and customer support, to marketing and executive management, as well as for the strategic requirements of individual CSPs.

It means that an effective, joined up approach to CEM can be adopted, using proven tools that are ready for the coming migration to NFV, helping make VoLTE deployments more successful. It clearly establishes a path by which a more active approach to CEM can spread through a CSP's organisation, driven by the absolute imperative of getting VoLTE deployments right, first time. 



The author, **Mikael Grill**, is CEO of Polystar Group



Network related end-to-end service experience analytics is the foundation for CSP-wide CEM

CEM is too big a topic for CSPs to digest in one bite. Anssi Tauriainen advocates CSPs start from subscriber, service and network analytics in order to establish a firm foundation for good customer experiences



Anssi Tauriainen:
We still see there are hundreds of different solutions and tens of different definitions for CEM

Any conversation about customer experience management (CEM) needs to start with a definition otherwise the conversation stalls under the weight of the breadth and disparity of the topic. Put simply, there's no single solution to address all the challenges and issues presented by achieving effective CEM.

"CEM covers all the different touchpoints between a customer and a communications service provider (CSP)," explains Anssi Tauriainen, the director of Analytics Business Development at EXFO "In addition to the network and traffic data it covers billing, marketing and direct interviews – whatever the interaction, it is covered by CEM."

That has created a complex and giant beast composed of different systems, solutions, processes and approaches to CEM. It's not hard for CSPs to lose their way or for vendors to inadequately explain their capabilities. "We still see there are hundreds of different solutions and tens of different definitions for CEM," adds Tauriainen. "It's a challenge to define a solution that covers all those interfaces because of number of interfaces, volume of data and complexity of analytics that should span over several domains."

"EXFO is not trying to address the whole umbrella definition of CEM," he adds. "We are focusing on end-to-end service experience quality, where we analyse customer experience correlated with service and network performance."

EXFO calls that subset of CEM, E2E-SX, (End-to-End Service Experience). "The basic idea is simply to understand how an individual customer experiences the services and uses them, and then find ways to improve or maintain that," says Tauriainen.

E2E-SX addresses key CSP service quality requirements within the concept of CEM. "For CSPs, the challenge is very much the same as it has been for several years," he says. "Traditional network management systems contain a lot of data on traffic and network information and use it to understand the experience of users but these are disconnected systems used by network engineers. Typical probe-based analytics systems cover only core network, leaving radio, backhaul and transmission network performance as a question mark. Other user groups such as call centres have no access to them."

"The lack of visibility into end-to-end experience means ►



that network and customer facing departments are making their decisions based on partial data,” he adds. “They only have the partial network quality information, or the feedback information from the customer interface – but not true end-to-end visibility.”

Tauriainen says that disconnect becomes a greater challenge with the introduction of new technologies such as all-IP networks, voice over LTE (VoLTE) and ultimately network functions virtualisation (NFV), where end-user services are provided by multiple synchronised physical or virtual sub-systems. “To manage the experience in for example in VoLTE, you need to simultaneously analyse the control and user plane data and tap into the IP Multimedia Subsystem (IMS) to understand what the quality indicators for the voice are and what experience has been provided,” he explains. “The challenge is getting bigger for CSPs.”

EXFO’s approach is to create a comprehensive, end-to-end view into the service experience. It achieves this with its real-time analytics platform which combines input from various sources to cover the whole service chain from subscriber’s device to service and back. Such data sources can include passive and active probing solutions, end-user device agents, geo-location based radio network

performance data, network elements and peripherals and backhaul and fibre network management systems. “This is what differentiates us”, says Tauriainen. “We have the solutions, knowledge and analytical capabilities to cover the whole chain.”

“Traditionally, the end-to-end picture has been used by network and service operations, engineering and planning teams and the second or third tier of customer support to assure services are up and running and the most efficient troubleshooting is enabled to fix any issues,” explains Tauriainen. “We cover the most complex part of the complete CEM challenge by focusing on the foundation: how customers are experiencing the service and how it can be improved. While doing this, we also produce valuable intelligence such as customer profiles, segmentation and behavioural data. This information can be further used in many other network and customer facing functions directly via APIs.”

Tauriainen sees that focus enabling CSPs to achieve results from this part of CEM. “We’ve seen big interest in the overall CEM area and now we can help by creating a solid foundation and even further by supporting success stories in creating customer offerings for new services and markets,” he says.” 

EXFO’s approach is to create a comprehensive, end-to-end view into the service experience

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05/10/2015

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Hot on VanillaPlus.com this issue



Barry Marron

Why CSPs need to emulate digital service providers

With the arrival of customer-focused digital service providers (DSPs) like Facebook, Netflix, and Google into the telecoms arena, CSPs are in serious

danger of becoming bystanders. To survive and even thrive, says Openet's Barry Marron, CSPs need to shift their attention from the bottom line, to a much more rewarding customer centric approach. To do this they must first start to measure themselves against the competition – in this case the DSP. These companies engage with mobile customers day in, day out and more importantly, customers engage with them. The main reason is relevance.

<http://www.vanillaplus.com/2015/08/26/10891-why-telco-operators-need-to-emulate-digital-service-providers/>

Will hybrid traditional/NFV solutions be a stepping stone to successful deployments?

According to one carrier, hybrid traditional/NFV solutions are not just important they are the only way forward. In part 4 of 'How to avoid NFV transformation pains' Jeremy Cowan talks to vendors and CSPs about the route to NFV. Senior network architect, Javier Benitez at **Colt Technology Services**, says NFV requires significant transformation and

communication service providers (CSPs) cannot realistically change all legacy networks overnight.

<http://www.vanillaplus.com/2015/07/28/10276-will-hybrid-traditional-nfv-solutions-be-a-stepping-stone-to-successful-deployments/>



Mikael Grill

Executive Snapshot

Mikael Grill, the chief executive of **Polystar Group**, bemoans authoritarian, clueless leadership and recounts a bizarre experience in a Japanese board room in our latest executive profile.

<http://www.vanillaplus.com/2015/07/28/10158-mikael-grill-ceo-of-polystar/>

Unlocking the real value of SDN/NFV: Moving toward business-ready, zero-touch Network-as-a-Service

Much attention has been paid to what SDN and NFV have done to change the potential of the communications landscape, writes Jennifer Faulkner, director, Business Services Solutions, Oracle Communications. We know it is revolutionary. We know it will be a long journey. But what we haven't talked enough about is where this revolution will intersect with what the customer wants. Because if we don't think first about why we're taking something from a hardware-

to a software-driven world, then doesn't virtualisation become more of a science project than a useful transformation?

<http://www.vanillaplus.com/2015/08/26/10885-unlocking-the-real-value-of-sdn-nfv-moving-toward-business-ready-zero-touch-network-as-a-service/>

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VanillaPlus NFV Roundtable PART 3 – NFV and SDN: Which comes first, the chicken or the egg?

This roundtable will explore the ways in which the technologies compliment and enhance each other and examine the following areas in greater depth:

- Can SDN and NFV in mobile enable better orchestration and dynamic provisioning?
- What the service chain provisioning benefits of deploying SDN and NFV are and whether that will make it easier to create applications in CSP and enterprise networks.
- To what extent a new network management model is required because of the provisioning and orchestration introduced by NFV.
- Whether NFV and SDN technologies are ready for CSPs. Are they reliable enough for CSPs to trust them to run their operations?

<http://www.vanillaplus.com/2015/08/26/10924-roundtable-part-3-nfv-and-sdn-which-comes-first-the-chicken-or-the-egg/>

More appointments to VanillaPlus Editorial Advisory Board



Aileen Smith

The VanillaPlus Editorial Advisory Board continues to add new members. We're delighted to announce that **Aileen Smith**, the head of ecosystem development at the Huawei Service Provider Operations Lab and **Laurent Leboucher**, the vice president of APIs and digital ecosystems at Orange have agreed to join the refreshed board. Further announcements will be made soon.



Laurent Leboucher

Aileen Smith is well-known in the industry with a successful career as an executive with industry giants such as **Motorola** and **Alcatel**, as well as her experience

formore than a decade in a variety of roles including chief operating officer and senior vice president of transformation at **TM Forum**.

Smith is currently a leader within **Huawei's** newly formed Service Provider Operations Lab where her area of key focus is the development of a digital services ecosystem to meet ever-changing consumer demands, along with the business models and process which will underpin the communications industry of the future. She holds an M.B.A., an M.Sc. in Computer Science, and a Bachelor's degree in Engineering.

Laurent Leboucher's role is to help **Orange's** business and technical teams to create innovative and efficient digital collaborations through open APIs defined with digital partners and other major

communications service providers and with a constant goal to promote standards.

Based in Dallas, USA, Laurent has 22 years of experience in IT and telecoms industry and has held various management positions within Orange from operations and innovation to IT and entrepreneurship. He is interested in open innovation, new services and business ventures and IT and business transformations.

Further board announcements will be made in the coming weeks and we are keen to increase our members from the CSP sector globally. If you would like to put yourself or a colleague forward please contact the editor, George Malim, at: george@vanillaplus.com

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DIARY

Upcoming events

**Network
Virtualization Forum**
15-17 September, 2015
Madrid, Spain
Organiser: IIR
networkvirtualizationeurope.com



**Service Delivery
Innovation Summit**
22-23 September, 2015
London, UK, Organiser: Informa
serviceinnovationevent.com

Carriers World 2015
**29 September
– 1 October, 2015**

London, UK, Organiser: Terrapinn
www.terrapinn.com/conference/carriers-world/index.stm



IPX Summit 2015
**30 September
– 1 October, 2015**
London, UK, Organiser: Terrapinn
www.terrapinn.com/conference/ipxsummit/index.stm

**Network Virtualization
North America**
5-7 October, 2015
Dallas, USA
Organiser: IIR
www.networkvirtualizationus.com

**Next Generation Pricing
and OSS/BSS**
7-8 October, 2015
London, UK
Organiser: Informa
nextgenerationbss.com

Self-Organising Networks
20-21 October, 2015

Berlin, Germany
Organiser: Informa
son-conference.com



Broadband World Forum
20-22 October, 2015
London, UK
Organiser: Informa
broadbandworldforum.com

LTE North America 2015
17-19 November, 2015
Dallas, USA
Organiser: Informa
americas.lteconference.com



Total Telecom Festival
**30 November
– 1 December, 2015**
London, UK
Organiser: Terrapinn
www.terrapinn.com/conference/total-telecom-festival/index.stm

**Carrier Network
Virtualization 2015**
**30 November
– 3 December 2015**
Palo Alto, USA
Organiser: Informa
carnetworkvirtualization.com





Are you scouting for a new customer experience manager

Millions of mobile contract buying decisions are influenced on Saturday afternoon. Shouldn't you be there, asks Nick Booth



The author, **Nick Booth**, is a contributor to VanillaPlus and a technology journalist

I'm in awe of the people who supply communications services but sometimes your technical genius makes you over complicate things. Legend has it that NASA spent millions of dollars trying to develop a pen that would work in space. Whereas the Russians just used a pencil. On another occasion, I saw an Innovation Conference lecturer run endless complicated online queries, in order to track down his lost iPhone. Meanwhile, his assistant asked at the café if anyone had handed in a phone. Guess who was more effective.

Sadly, this tendency for over complication is endemic. By the same logic, are we missing some obvious tricks in monitoring customer experience?

If you want to find out what customers think of their mobile service provider, there are much simpler and arguably more effective ways than ploughing through big data. Are you convinced by the revelations that come from machines? I'm not. It can only really work if people know the right questions to ask. I'm not sure data scientists are asking the right questions, because they are not the same types of people as the subscribers.

Surely, there are simpler ways of getting closer to the users. As a bonus, the people doing the research could wangle a free season ticket to their favourite entertainment arena.

To get an idea of how well the major communications service providers (CSPs) perform, we need to see them competing with each other in sports, music and dance. Every Saturday, there are bouts between the major suppliers held in public, at venues up and down the country. The public, it seems, all turn up to see which CSP is performing the best. They say they are football fans, but most of them seem to ignore the live drama unfolding in front of them. Instead, they spend the whole 90 minutes trying to capture stills and video clips and load them onto YouTube, Vine, Vimeo and every other social media platform.

Call me old fashioned, but I prefer to watch the game, although I seem to be in the minority. There's a growing portion of the population that only enjoys public events through the prism of a glowing screen. The same applies for all kinds of entertainment. Everyone seems more interested in filming their heroes and publishing the results, than simply watching the spectacle for themselves.

This madness can be useful however, as it gives CSPs great insight into their customers.

Take football as an example. After a game, in the pubs around the ground, on football club web sites and on social media, the fans will debate how the competition went. "I think O2 has got to be disappointed with that performance," Fan A will say, "to say it lacked pace is an understatement." Fan B, who'd been trying (unsuccessfully) to load a funny video of a weird looking away fan, will agree. "I think O2 needs to go into the market. I just couldn't hit the net."

Vodafone is great in London, its fans might argue, but away from home – in some of the more remote corners of the country – Vodafone's signal can go missing. There's an uncomplimentary song about Everything Everywhere and you really don't want to know how the 3 chant goes.

Suffice it to say, every week, there are mass social gatherings – at concert halls, sport grounds, political rallies, the occasional riot – and the performance of mobile technology comes under intense scrutiny. This is where people get to benchmark how well the mobile players are performing. If a fan can't load their video of a controversial incident, and their neighbour can, the first question they will ask is which service they are using. The next question will be about how much it costs and how much the mobile operator charges for a season ticket. OK, there's no evidence at all to back this contention up – not yet anyway – but millions of crunch mobile contract buying decisions are made on a Saturday afternoon.

Customer experience management is a team game so many group activities and team sports might give the CSPs a few insights into CEM. It's got to be a lot cheaper, safer and nicer than going down a data mine. 





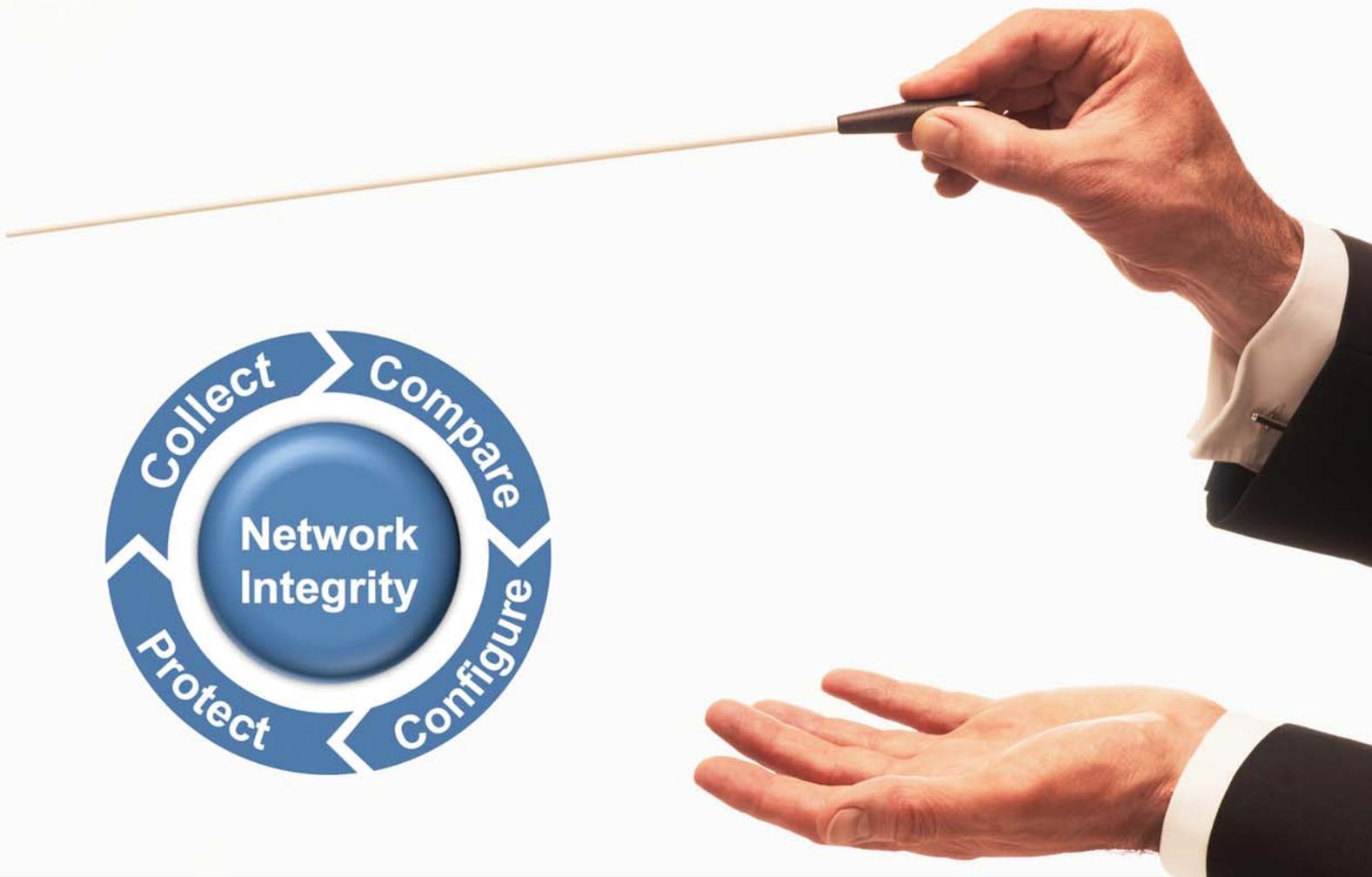
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