



DATA ANALYTICS

Is there a pot of gold at the end of CSPs' data repositories?

- **ANALYST REPORT**
Heavy Reading analyst details how strategic analytics will help CSPs
- **TALKING HEADS**
Lucas Skoczowski explains why virtualisation is a business enabler
- **BIG DATA ANALYTICS**
Does focusing on revenue today impede profit tomorrow?



PLUS: Teradata buys Appoxee to enhance integrated marketing ■ Synchronoss Mobile Content Transfer exceeds one million devices ■ AsialInfo Hungary for success with new delivery centre opening ■ Location platform revenues to reach €470m by 2020 ■ Regional taxation issues addressed with update to CTI Group Analysis e-billing product ■ SingTel chooses Amdocs billing and customer care apps ■ Comverse to implement rich services and modernise messaging at Telekom Srbija ■ Read the latest news, opinion, blogs and features at www.vanillaplus.com



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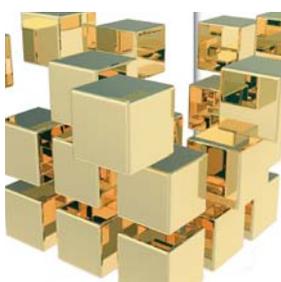
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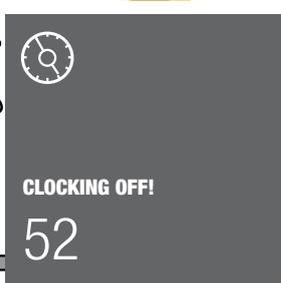
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Mobile's branding merry-go-round highlights that CSP's real value is network and service performance



The question of brand value is always an interesting one because the pace of mergers and acquisitions in telecoms sees branding occur with sometimes bewildering frequency, writes George Malim

If you were a UK mobile subscriber in the late 1990s you had a choice of joining BT Cellnet, One2One, Vodafone or newcomer Orange. Only one of those brands still fully exists with Orange poised to disappear from the high street as a UK operator brand.

Oddly, though, for the customer of the late 2010s, the companies behind the brands of 20 years ago will be largely unchanged. BT is in the process of re-entering the mobile market with an acquisition of EE, the Deutsche Telekom and Orange joint venture that brought T-Mobile UK – formerly One2One – together with Orange, the UK mobile operator. O2 UK, the former BT Cellnet operation, is likely to be sold to Hutchison Whampoa and merged with Hutchison's Three UK operation.

All this washes over me because I have never changed mobile operator. I'm too lazy to assess the options, I've never had an experience so terrible that I feel the need to change and I assume all mobile operators are pretty much the same anyway. In spite of my laziness, this year will see me join my fourth operator.

My mobile history began at One2One in 1997 which was Cable & Wireless owned. By 2000 that brand was replaced by Deutsche Telekom's T-Mobile brand. I wasn't a fan of the pink and grey colour scheme but I still stuck with it. Now I'm in the two green circles of EE and poised to end up, probably early next year, on BT's newly-branded mobile operator, which, looking at their domestic service branding, I expect to be called Infnite Infinity and have a fetching electric blue palette.

Confusion is forgivable. BT will own the businesses that were One2One and Orange, Hutchison will own the business that was BT Cellnet as well as it's own operator, Three. Only Vodafone remains unchanged in its ownership and branding from 20 years ago and rumours persist regarding a potential break-up of that business.

This all runs against the continued exhortations of the vendor community for CSPs to protect their brands by providing excellent customer experience management, to use advanced analytics to deliver a premium brand experience and to target users with brand-oriented offerings to generate new revenue from new propositions. The point of

these brand building activities is hard to grasp when the brand, by the current pattern, seems likely to be a competitor's brand in a few years anyway.

Two schools of thought are emerging surrounding this. One is that this convoluted swapping of brands among mobile operators is simply a shuffling of the deckchairs on the sinking ship of the mobile operator sector. The other is that it's not actually the brand that's important. Mobile users are savvy and extremely willing to switch provider when their contract is up.

The challenge then, isn't to have a slick brand, it's to provide an excellent experience that takes all thought of churn out of the user's mind.

Enjoy the magazine!

George Malim



George Malim, editor, VanillaPlus

What's on www.vanillaplus.com this month

Highlights on www.vanillaplus.com this month include our new NFV Hub which hosts our recent NFV roundtable discussion as well as a series of articles and opinions. In addition, George Fraser, the vice president for Europe, Middle East and Africa at CSG International is the subject of our executive snapshot. We also have new additions to our Troublticket series of comment articles and, as usual, all the latest news.

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Teradata acquires Apoxee to add to integrated marketing offering

Teradata has acquired Apoxee, a mobile marketing Software-as-a-Service provider. The addition of Apoxee to the Teradata Integrated Marketing Cloud is expected to complement Teradata's strategy to provide marketing solutions that help data-driven businesses deliver more individualised information and communications to their customers, based on the type of brand engagement experience those customers want and expect.

Terms of the acquisition have not been disclosed and Apoxee's solutions will be integrated into the Teradata Integrated Marketing Cloud beginning immediately, and quickly integrated with Teradata Digital Marketing Center.

Apoxee will accelerate Teradata Marketing Applications' growth in the digital

marketing space by providing a full range of mobile capabilities, particularly in the area of omnichannel marketing and real-time customer interaction. Teradata Digital Marketing Center customers will now be able to use a single solution to manage customer communications across email, landing pages, SMS, social media and mobile push. Teradata will also provide robust multi-channel campaign management and real-time decisioning for mobile as well as mobile marketing analytics. Future integration plans extend to Teradata Customer Interaction Manager and Teradata Real-Time Interaction Manager.

"By adding Apoxee's mobile marketing solutions, we're further helping our customers use data to know more about their customers' true preferences, and do

more to realize the benefits of individualised data-driven marketing," said Darryl McDonald, the president for Teradata Marketing Applications. "This investment underscores our commitment to continuously expand our capabilities in individualised digital marketing to benefit Teradata Marketing Applications customers throughout the world."

Itay Levy, the founder and CEO of Apoxee, said: "Marketers have recognised the strategic importance of delivering optimised customer experiences across channels, enabled by a comprehensive view of the customer, a centralised communication hub and coordinated messaging technologies. By joining forces with Teradata, we're helping marketers worldwide deliver the best customer experiences possible." 

VOSS and Soft-ex launch global strategic partnership to couple billing analysis with unified communications management

WidePoint, a provider of managed mobility services that specialises in cybersecurity and telecoms lifecycle management (TLM) systems, has announced that its subsidiary Soft-ex, a supplier of analytics and billing systems, and VOSS Solutions, a supplier of unified communication (UC) management platforms, have entered into a strategic partnership to integrate the Soft-ex Optimiser and VOSS UC management solutions into a platform offering.

The combined expertise of Soft-ex and VOSS is set to deliver granular visibility and billing insight, providing significant cost savings and improved efficiencies on infrastructure and performance to customers that use the VOSS UC management platform.

Mike Frayne, the chief executive of VOSS, said: "There are over 100 large global enterprises that are currently using the VOSS UC management platform, and we are very excited about the additional value

that the Soft-ex solution can offer our customers. We believe the Soft-ex technology can lead to real cost-savings, and it has already led to a number of exploratory discussions with some of our larger service provider customers."

The Soft-ex and VOSS alliance will be of particular interest to organisations that have the VOSS UC management platform in place either as a direct customer of VOSS or embedded in the Cisco Hosted Collaboration Solution (HCS) under the name of Cisco UCDM. The Soft-ex Optimiser solution collects call detail records from Cisco HCS and inventory data from the VOSS UC management platform to generate key invoice data analytics and intelligence.

Ian Sparling, the chief executive of Soft-ex, added: "We are delighted to be partnering with VOSS and delivering a stronger combined proposition and value-add to our joint customers. By taking the VOSS output,

we can now provide HCS users and resellers with much more data intelligence, and we can also provide a billing platform leading to a better customer experience."



Mike Frayne: Soft-ex technology can lead to real cost savings



Stephen Waldis:
Users view on-device content as more important than device itself

Synchronoss Mobile Content Transfer passes one million devices

Synchronoss Technologies' Mobile Content Transfer (MCT), a wireless content transfer system, has successfully transferred data for more than one million devices since its debut in June 2014, the company reports.

Synchronoss MCT is enhancing the user experience by providing an easy to use, peer-to-peer and cloud-based system that enables mobile customers to wirelessly transfer data and content such as contacts, photos, videos, messages (SMS/MMS), call records, music, and documents from one device to another

quickly and securely. Synchronoss MCT also works across networks and operating systems, allowing customers to easily switch their content between iOS and Android devices. Synchronoss MCT will also soon support both Blackberry and Windows Phone devices.

Synchronoss MCT enables mobile operators around the world to give customers an intuitive, branded experience that migrates important content from one device to another in a fraction of the time of hard-wired solutions. The Synchronoss MCT solution also features a cloud-based version of the solution that requires no additional hardware or wired connection for successful operation. When purchasing a

new mobile device or re-activating an existing device to a new network, consumers can start and complete a full data migration anywhere safely and quickly with just a Wi-Fi connection.

"Today, wireless consumers are upgrading to new devices faster than ever before and view the content on their devices as more important than the device itself," said Stephen Waldis, the founder, chairman and chief executive of Synchronoss. "Synchronoss MCT is giving CSPs improved service offerings while giving their customers the freedom and confidence to take their content with them to new devices regardless of the operating system or device type."

AsialInfo opens delivery centre in Hungary to support Telenor Hungary and other CSP projects

AsialInfo has opened its new European Nearshore Delivery Center (NDC). The NDC – which will support AsialInfo's increasing presence in Europe as the company begins a major joint project with Telenor Hungary – will be co-located within Telenor Hungary's Törökbálint HQ near Budapest.

The company plans for the NDC to be providing support services for up to eight European CSP projects by 2016.

Announcing the opening of the NDC, AsialInfo's European managing director, Alex Hawker, said: "Little more than one year after announcing our first major European project, we are now embarking on our second one, and at the same time opening up a major new delivery centre to support our customers and our expanding business."

At the ceremony to mark the official opening of the NDC, Christopher Laska, the chief executive of Telenor Hungary, said: "Last

year we celebrated our 20th anniversary, now we are preparing ourselves for the next 20 years: our new partner AsialInfo will help us further improve the Telenor customer experience. AsialInfo will employ dozens of Hungarian developers, thus keeping local IT talents in Hungary and contributing to the growth of value-adding industries. I am particularly pleased that they are moving into the Telenor House in Törökbálint, further raising our profile as a centre for excellence in telecoms."

NEWS IN BRIEF

Location platform revenues will grow to €470m worldwide in 2020

According to a new research report from analyst firm Berg Insight, the global market for mobile location platforms will show steady growth in the next few years. Total location platform revenues are expected to grow at a CAGR of nearly 11.5% between 2013 and 2020, reaching €470 million at the end of the forecast period.

Much of the growth is expected to come from the emerging commercial indoor location segment, while the market for location platforms deployed by mobile operators is maturing. Annual revenues for

GMLC/SMLC and A-GNSS servers, passive location platforms, as well as middleware deployed by mobile operators are forecasted to grow from €200 million in 2013 to €300 million in 2020.

"Mobile operators deploy new location platforms and upgrade existing systems mainly to comply with public safety and lawful intercept regulations that are gradually being introduced worldwide," said André Malm, senior analyst, Berg Insight.

These platforms can also enable commercial location-based services (LBS). He adds that a growing number of mobile operators are also deploying passive location methods that enable mass location of handsets without overloading the network. Mobile operators

are starting to explore opportunities to extract more value from location data gathered from their networks in areas such as network optimisation, customer experience management, mobile marketing and analytics. However, most consumer and enterprise LBS now use location data obtained directly from GPS or Wi-Fi in handsets and will therefore have a limited impact on location platform market growth.

"The commercial indoor location market is still at a relatively early stage and has not yet reached mass adoption," added Malm. "The market has suffered from a lack of cross-platform solutions and confusion among venue owners over which platforms and technologies to use."



Analysis e-billing from CTI Group to solve regional taxation issues

CTI Group has announced that the latest release of its Analysis e-billing system now has improved regional tax reporting for business usage. The latest update comes as a direct result of changes to tax reporting requirements within the telecoms industry across a number of regional markets.

Beginning in 2015, telecoms, broadcasting and electronic services will be taxed in the country where the customer resides or is registered. This applies whether the customer is a business or a consumer and

whether the supplier is based within the EU or outside. From a business perspective, it is either the country where they are registered or the country where they have fixed premises receiving the service.

For a consumer this means the country where they are registered, have their permanent address or normally live. This is a substantial change from prior EU taxation rates which were based on the location of the supplier; hence the new EU legislation sees taxation migrating from the place of purchase to consumption.

Trevor Davis, head of products at CTI Group, said: "This latest version of our Analysis solution now delivers a higher degree of granularity of taxation for telecoms services allowing business users to complete tax filings accurately across all the regions in which they operate and bill. Many service providers currently use billing systems that neither recognise nor detail taxation, therefore our solution ensures that they can now offer their business customers a highly relevant and distinctive value-add service which will ensure they remain competitive and compliant." 

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Eli Gelman:
Amdocs will deliver a single, integrated system

Amdocs to implement new billing and care apps at SingTel

Amdocs has been selected by SingTel, for a business transformation project in its key markets of Singapore and Australia.

SingTel will use Amdocs' technology to enhance and differentiate its customer experience. Billing and customer support for retail, enterprise and government customers will be migrated onto a single platform, giving SingTel a holistic view of its customers. This will lead to greater customer satisfaction and

efficiency in customer engagement and productivity for the group.

"At SingTel, customers are at the centre of everything we do. We are retooling our systems and processes to deliver a seamless and intuitive customer experience," said Wu Choy Peng, group chief information officer at SingTel. "With this solution, we will have a single view of the customer relationship and make service recommendations to our customers."

Amdocs will deliver a single integrated solution based on its customer experience systems product suite (CES 9.2) that will

consolidate support across all businesses and networks. This will be rolled out over three years.

"Amdocs is committed to delivering business innovation and value to service providers in Asia Pacific," said Eli Gelman, president and chief executive officer of Amdocs. "The award of this business-critical project is a testament to that and further exemplifies our strong, longstanding relationship with the SingTel Group and their trust in us to successfully deliver on their most strategic projects, delivering true innovation, across multiple areas, that will help people communicate more effectively."

Telekom Srbija selects Comverse for rich services and messaging modernisation

Telekom Srbija, which serves Serbia, Bosnia and Herzegovina and Montenegro, has selected Comverse to modernise its messaging platforms, enable IP Communication, and lay the foundation for monetising future rich communication services (RCS).

"As the regional leader, Telekom Srbija aspires to improve the lives of our subscribers by being first to introduce advanced technologies that address their constantly evolving needs for communication, information and

entertainment," said Filip Bankovic, the CTO at Telekom Srbija. "Unification of all value-added services (VAS) in a single virtualised environment is a springboard to delivering a superior experience – including compelling new services and capabilities that our subscribers can now find here instead of seeking OTT alternatives."

Aashu Virmani, the vice president of products and go to market at Comverse, added: "Spanning more than a decade, the longstanding Comverse-Telekom Srbija partnership has celebrated numerous

notable achievements, and we are now looking forward to utilising innovative best-fit and future-proof technologies to reach exciting new milestones together. The proven maintenance and methodologies of Comverse support services will help ensure gains from streamlined operations are optimised and long-term."

Comverse is collaborating on this project with TERI Engineering, Comverse's long term regional partner and reseller. TERI Engineering will provide front-line project management and maintenance support.

NEWS IN BRIEF

BT Compute adds BearingPoint Infonova R6 platform to cloud service

Management and technology consultancy BearingPoint has agreed a contract with BT for the implementation and use of its Infonova R6 platform to enhance BT's data centre colocation and cloud services portfolio which includes storage offerings as well as software applications from third parties, across multiple countries, with the appropriate language and currency.

BT's Cloud Compute helps CIOs build pay as you go cloud solutions with high levels of quality, security and service delivered from BT. It is available in 20 countries across five continents and is used by multinational companies from a variety of industry sectors.

Neil Lock, the vice president of BT Compute at BT Global Services, said: "This agreement with BearingPoint enables us to further improve our cloud platform by adding new services such as Apps from BT and BT Compute Storage. Those are now available

to our customers through a single point of control within our Compute Management System, helping CIOs orchestrate their cloud resources and thus realize the possibilities in the cloud."

Andrew Thomson, director for Infonova R6 Solutions at BearingPoint, added: "As an end-to-end full business lifecycle multi-tenant platform, R6 has been designed to enable compute and other technology product bundles for cloud services and beyond. In the first instance, this allows BT to deliver to their customers' sophisticated IT and cloud requirements."

Astellia to lead network and business performance for Aircel

Astellia has signed a multi-million dollar agreement with Aircel, one of India's largest mobile operators with a subscriber base of more than 75 million.

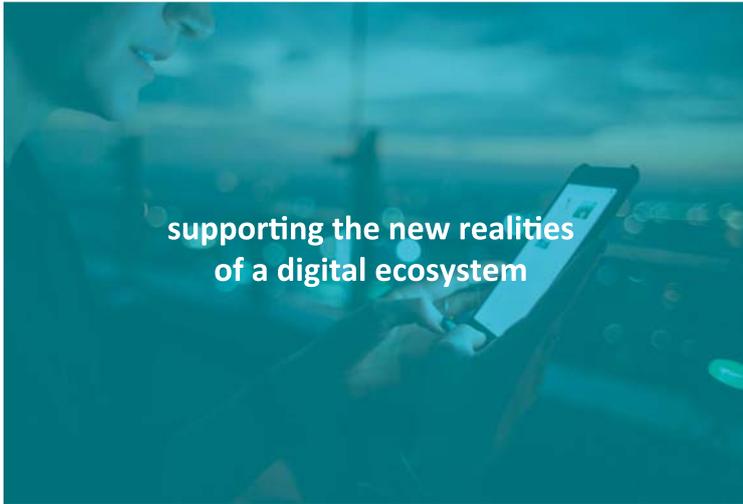
Under the deal, Astellia has deployed its Nova suite for the optimisation of Aircel's 2G

and 3G radio access and core network resources. It allows Aircel to detect impediments that may cause network quality degradations and take promptly corrective actions, thereby ensuring the availability and efficiency of the network. Through this network optimisation, Aircel will be able to further strengthen its opex and capex strategies.

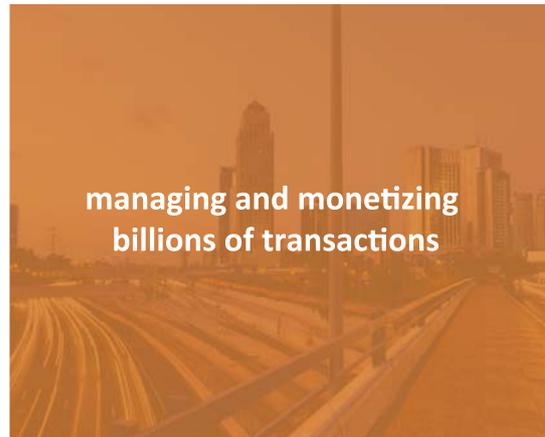
Astellia will use customer analytics to help Aircel understand and predict customer usage trends, optimise existing data plans or introduce new ones, address churn and optimise ROI on infrastructure investments.

"With fierce competition in the Indian mobile market and the frenzied adoption of smartphones, consumers are becoming increasingly discerning in terms of service quality. We have teamed up with Astellia to get an increased visibility into our network performance to offer enhanced customer experience and improved operational efficiency. I am also expecting revenue uplift based on customer insights and bespoke solutions coming out of the Astellia stable," said Sameer Dave, the CTO of Aircel.

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VanillaPlus Hot List: February / March 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	Singtel, Singapore and Australia	Amdocs to implement new billing and care applications for business transformation project in Singapore and Australia	1.15
Amdocs	Vodafone Hutchison, Australia	Deployment of Amdocs self-optimising networks system to help free up 4G spectrum and manage peak traffic	12.14
AsialInfo	AIS, Thailand	Advanced Info Services (AIS) launches new service to prepaid customers using AsialInfo's Veris real-time convergent charging and billing product	1.15
Astellia	Aircel, India	Astellia selected to lead network and business performance initiatives at Indian CSP with more than 75 million subscribers	1.15
Bearing Point/ Infonova	BT, UK	Implementation and use of Infonova R6 platform to enhance BT's data centre collocation and cloud services portfolio, including storage and software-as-a-service offerings	1.15
Centina Systems	C-Spire, USA	C-Spire to deploy Centina NetOmnia suite of systems for service assurance including real-time end-to-end network visibility	1.15
Comarch	BASE, Belgium	Comarch selected to implement next generation management platform to improve network performance visibility	12.14
Comptel	Telenor, Norway	Comptel wins €8m order for Comptel Fulfillment software licences. Four-year contract builds on existing relationship	12.14
Comptel	Telefónica, Chile	Comptel Fulfillment selected as part of Chilean CSP's quad-play transformation project	12.14
Comverse	Telekom Srbija, Serbia, Bosnia and Herzegovina and Montenegro	Comverse selected to monetise CSP's messaging platforms, enable IP communications and lay the foundation for monetising future rich communication services (RCS)	1.15
CSG International	DST, Brunei	DST consolidates wholesale business and interconnect operations using CSG Route and the latest release of CSG Interconnect in expansion of 15-year relationship with CSP	1.15
JDSU	Softbank Mobile, Japan	JDSU xSIGHT Customer Experience Assurance system chosen to optimise the scale and quality of experience of LTE services	1.15
NetCracker Technology	RCN, USA	NetCracker Next Generation Revenue Management system deployed in upgrade at US-based provider of internet, TV, telephony and business communications services	1.15
NetCracker Technology	Blue Ridge Communications, USA	Multi-year renewal for NetCracker Revenue Management licences to support Blue Ridge's pay-TV, on-demand, high-speed data and voice services	1.15
Openet	eircom, Ireland	Openet delivers prepaid 4G data offering for CSP's Meteor brand to ensure prepaid 4G availability before the Christmas period	12.14
Redknee	Omantel, Oman	Multi-year, multi-million dollar contract agreed to operate Redknee Unified converged charging platform in support of Omantel's LTE network	12.14
Redknee	Vodafone, India	Deployment of latest release of Redknee Unified Charging and customer care solutions to support customer base of 170 million users	1.15
Sigma Systems	Tiscali, Italy	Sigma Systems successfully deploys Sigma Provisioning across Tiscali's entire triple play offering	12.14

Redknee supports Vodafone India data subscribers with real-time charging

Redknee has announced it is supporting Vodafone India to deliver the benefits of real-time charging to its pan-India active prepaid and postpaid data subscribers. Vodafone India is using the latest release of Redknee Unified Charging to boost its data subscribers' adoption and enhance customer satisfaction.

In addition, Vodafone India will use Redknee's customer care solution to provide advanced customer care and self-service on web and smart devices, and engage with them using their customers' favourite social media platforms. This significant solution upgrade highlights



Lucas Skoczowski:
Vodafone India will use Redknee Unified Charging to boost data adoption

Redknee's expertise to enable tier one CSPs with innovative, real-time solutions to support their next generation network investments and deliver superior support to customers.

Vishant Vora, the director of technology for Vodafone India, said: "Vodafone India operates in one of the most competitive markets in the world where the use of data is growing. Redknee's converged charging solution's is pivotal to Vodafone India's ability to effectively drive customer loyalty and generate new revenue. With Redknee's solution Vodafone India

can provide personalised data services and differentiated tariff and price options to enhance the customer experience."

Lucas Skoczowski, the chief executive of Redknee, added: "We are extremely pleased to support Vodafone India's data growth strategy with our end-to-end, real-time Redknee Unified platform. Partnering with this tier one service provider demonstrates Redknee's capability to deliver greater scalability and flexibility to monetise new revenue streams. The accelerated adoption of 4G/LTE services and rise in mobile broadband in the APAC region validates the growth opportunity for Redknee to expand the presence of our integrated charging, billing, policy management and customer care platform."



Francois Van Zyl: CSPs looking for help as they seek success with SMS

Francois Van Zyl to drive Anam's growth in Africa

Anam Technologies, the A2P (Application to Person) revenue assurance solutions provider for mobile operators, has appointed **Francois Van Zyl** as regional director for Africa. With 19 years experience

in the telecoms sector, Van Zyl joins Anam Technologies from his role as a managing executive at South African mobile operator **Cell C**.

As the A2P and enterprise messaging market continues to demonstrate substantial growth, with Juniper Research forecasting that the A2P SMS market in Africa alone is set to be worth \$60 billion by 2018, Van Zyl will be instrumental in driving Anam's business development and growth strategy across Africa, whilst working closely with key partners across the region.

Prior to his role at Cell C, Van Zyl had more than ten years experience in managing and leading companies and developing sales channels across Sub-Saharan Africa in the telecoms market. Originally starting out in the chemical and process industry, Van Zyl moved into the telecoms sector in 1996, where he has held senior positions at organisations including Infracom, Likusasa and Webb Industries. Until 2001, he was the national operations manager responsible for business development and infrastructure for mobile operations in South Africa at **Infracom** before moving to Webb Industries as export marketing and sales manager for Africa. In 2008 he joined **LeBlanc Jasco** where he held positions across the organisation including divisional managing director of carrier solutions.

"Francois' wealth of experience in working with network operators in Africa is invaluable as we continue to drive our growth and capitalise on the opportunities available in the region. The A2P SMS and enterprise messaging space shows no signs of slowing down and as mobile operators in Africa look for assistance in managing and monetising this messaging domain, Anam will be there to provide the guidance to ensure they succeed" said **Louise O'Sullivan**, the chief executive of

Anam Technologies. "Francois has a proven track record in developing successful sales channels and business development in telecoms and is a real asset to the Anam team."

Van Zyl added: "I'm thrilled to be joining Anam at an exciting time in the A2P SMS messaging evolution. Increasingly mobile operators are turning to experts such as Anam for help and reassurance as they weave their way through the mobile ecosystem and seek success for their SMS offerings. The Anam technology, whether it is the revenue assurance or anti-spam service, is robust and already proven across global networks meaning that African operators can be assured they are getting best of breed technology. I'm looking forward to working closely with the Anam team and our partners in the region to make 2015 a success for Anam and the African telecoms industry as a whole."

CommScope appoints UK sales staff

CommScope has expanded its UK enterprise sales management team to support its growth and customer support in the UK. The appointments of **Bryn Jones** as sales director and **Peter Marsh** as sales manager will help deepen customer relationships and deliver systems to enterprises for CommScope in the UK.

Jones will be responsible for jointly developing strategy and coordinating channel, marketing and end-user sales activities. Jones has almost 10 years of experience with responsibility for sales and has been instrumental in developing CommScope enterprise and data centre sales in the UK as well as coordinating CommScope's data centre sales efforts across Europe.

Marsh, who will report to Jones, has almost 25 years of experience in sales and technical roles. He will bring this in-depth knowledge to maximise sales of CommScope enterprise solutions in the UK. As part of his role, he will be responsible for new business and the expansion of existing accounts.

"I am delighted to strengthen our UK sales team with these two appointments," said **Willie O'Connell**, managing director, Northern Europe. "Bryn and Peter have already contributed greatly to CommScope's success in the UK. As

CommScope continues to explore new opportunities to support enterprise network infrastructure needs in the UK, their wealth of experience and in-depth understanding of their customers will be invaluable."



Steve Newton: Applications and software defined network services will enable Aria to grow rapidly

Aria Networks appoints new CEO

Aria Networks has appointed **Steve Newton** as chief executive. Newton has already been in an executive role at the company for the past 12 months. He brings more than 25 years' experience in the telecoms sector. He was part of a management team that steered billing software specialist

Geneva Technology from product launch through rapid growth to an exit for \$700m.

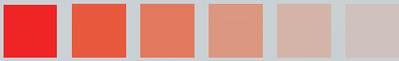
"Aria Networks is already working with many of the largest internet companies in the world," Newton said. "As user demand for data continues to grow exponentially, the software solutions provided by Aria Networks become ever more relevant to internet service providers, network and cloud operators. I am delighted to lead the company into a new era where our applications and software defined network services will enable Aria to rapidly scale."

Previous chief executive, **Tony Fallows**, is leaving Aria Networks to pursue a new opportunity, with the best wishes of the company.

New facility means new jobs at AsialInfo in Europe

AsialInfo has said it expected to employ about 180 staff at its new Törökbálint centre in Hungary within two years and is planning to recruit more than half the workforce locally, working alongside experts relocating from China.

The first local engineers have already been recruited for the new centre, which will be headed by AsialInfo senior director, **Chen Huaping**. Prior to joining AsialInfo, Chen was chief solution architect in the telecoms business unit of **Hewlett Packard**. He has extensive experience of both telecoms business and technical architecture with a track record of success in delivering major projects.



Virtualisation isn't a buzzword, it's a business enabler

VanillaPlus: Virtualisation is the buzzword of the moment. What is its impact on BSS and how will virtualised BSS deliver the flexibility CSPs need?

Lucas Skoczkowski: To me, virtualisation became a buzzword within the last year, but we've been engaged in this space for at least five years. For us, virtualisation is a reality and it addresses so many of the issues CSPs face. One of the benefits of virtualisation is that it has the ability to keep capital spending in line with revenue and it provides the flexibility to add or reduce computing capacity as needed, helping to serve customers well and keep costs in check.

In addition, from an operational perspective, virtualisation allows a vendor like Redknee to continue upgrading our customers with the latest version of our software. In telecoms, software upgrades have traditionally been slow and somewhat painful. But with virtualisation, if you choose to get upgrades continuously – for instance, every month or so – you can do so without a huge operational impact on your business.

Another benefit, from a business perspective, is that the CSP can go after new business opportunities without the heavy lifting that has been required from traditional BSS. Many of our customers have opted to use a software-as-a-service (SaaS) approach with their enterprise customers, utilising more agile BSS systems to enable new capabilities, such as energy rating, or to provide loyalty systems for retailers. That becomes very exciting

and different, enabling CSPs to think outside their traditional businesses.

Virtualisation is also great for smaller CSPs because of the cost benefits it provides and the flexibility it can deliver. It also has huge relevance for larger CSPs. In the last 12 months, Redknee customers such as Oi and Vodafone have used virtualised solutions to address their large, high value subscriber base. In short, virtualisation is for all types of CSPs. It's not just a buzzword, it's a business enabler.

VP: How is the Internet of Things (IoT) changing the market for CSPs and placing new demands on their BSS?

LS: The Internet of Things, as with everything in telecoms, is probably over-hyped for where we are right now, but in the coming years, we will see the business cases emerge. There are definitely more and more things becoming connected. For instance, at the CES show this year, Samsung said that all of its domestic appliances will be able to connect to the internet. The barrier now is really about human adoption, so I think the business-to-business market will be where we see the most growth in IoT and where we will see the initial return on investment.

From a CSP perspective, they have a choice. They can be a fundamental pillar in the IoT ecosystem or just a passive connector. Many CSPs we engage with today want to play a role beyond the bit-pipe provider and offer a platform for business interconnections. The increased



Lucas Skoczowski is chief executive of Redknee, having founded the company in 1999. In his years at Redknee, he has led the development of the company's product portfolio and created a global organisation. In addition, he has overseen the purchase of the BSS business of Nokia Siemens Networks.

A former Nortel executive, Skoczowski continues to drive the company's development of real-time BSS systems, for both on-premises and the virtualised telecoms environment as well as technology for companies in adjacent markets. Here, he tells VanillaPlus that virtualisation is a reality, the Internet of Things is an approaching opportunity and in a real-time, on-demand world there are attractive, new possibilities for communications service providers (CSPs)



deployment of platforms and sensors in IoT will create a plethora of new business models for the future.

The IoT drives tremendous volumes of data and CSPs have the capability and systems to process this data, so there's a natural role for them in IoT - if they want it. There is an impact on BSS as well, because IoT drives the need for enormous configurability and a more product-oriented approach. In contrast to legacy BSS, systems will need to be more agile and real-time.

VP: Why is real-time agility so important to billing? We've got this far without it, so why does it matter now?

LS: Real-time provides a lot more flexibility in terms of how CSPs can address the market. They need the flexibility and agility that real-time charging provides because OTT services are deployed much faster than CSP services. We're now seeing CSPs use real-time charging to interact with businesses and subscribers to improve the targeting of campaigns and create more automation in how businesses and consumers are experiencing a service.

Real-time allows you to respond directly to your customers in the moment, when it matters, while also using business tools to provide a constant feedback loop so ▶



Redknee continues to spend significantly on research and development – the R&D team is 60% of our organisation



Lucas Skoczowski,
chief executive of Redknee

you can be efficient in how you deliver services to different constituencies within your customer base.

Without the agility of real-time capabilities, the industry has to spend large amounts of money and time creating customised solutions to achieve the same end; now, with real-time BSS, it's slowly coming together. We have seen that some LTE launches have been the catalyst to accelerate the move to real-time.

VP: Customers interact with their providers across many different platforms and through many different channels. What challenges do CSPs face in enabling consistency and how is the industry making progress towards the connected customer experience?

LS: It has been an evolving challenge and one that will continue to be prevalent. As CSPs provide connectivity to more and more devices, the consistency of how the services are experienced across different platforms will become a greater challenge. We see big data becoming increasingly critical in this area, but actionable data will be even more important. As CSPs move beyond traditional communications, we see them partnering and delivering new services and working to create a better customer experience. One example is retail loyalty programmes, which use a points/rewards system across devices, businesses and platforms. This consistently creates more value for the consumer, but it relies on end-to-end systems to correlate all this data into actionable events or rewards points, and makes it available in real-time to the end-user.

Traditional BSS systems have historically lived in a more fractured or siloed environment, but integrated cloud-based systems are becoming available. CSPs can provide more interconnections using BSS systems that are open – and we will see that these are capable of far more than the monolithic systems of the past.

I'm really excited about moving service expectations beyond what has been a typical response/react situation, to taking more of a proactive approach to what can be offered to customers.

VP: How will Redknee develop to address these changed and continually evolving needs over the next five years?

LS: I continue to be excited about the opportunities I see. Redknee has a strong technology core that we've developed over the last 15 years. We've created this in order to address complex real-time needs in charging, policy and analytics, and we continue to build on this as we see the market evolve.

At Redknee, we see CSPs planning for their new roles in the digital ecosystem and we see our customers continuing to diversify. We're working with non-telecoms industry customers, as well as CSPs, and have done quite a lot of work to understand the requirements of other organisations.

Redknee continues to spend significantly on research and development – the R&D team is 60% of our organisation. I also understand the growing importance of business partnerships and see a real need to continue to improve how we approach and grow in this area. You can also expect to see us acquire companies that will help shape our organisation to be more responsive to where the CSPs will be in the future.

In five years, I believe Redknee's customer base will be comprised of 80% CSPs and 20% across other verticals, and we'll certainly be seen as one of the top three software platforms in the market. At the same time, we'll continue to build awareness so that we can be the platform of choice for connected businesses that use IoT platforms.

This goal puts significant demands on us as a company and ensures that we don't rest and sit back on our laurels. We've recently completed a deployment at Vodafone India, which was one of the most complex and demanding projects in the history of Vodafone Global. This was a challenging and daunting engagement, but it's really exciting to serve a CSP of that size - with over 170 million users.

I envision in the next five years that we will have built a business that is approaching US\$1 billion in revenue, and I believe we'll achieve this in great part through our virtualisation and cloud offerings. It will be a tall task, but we have the energy and the passion to get there, and to help our customers along their journeys to be successful. There's lots to do. 

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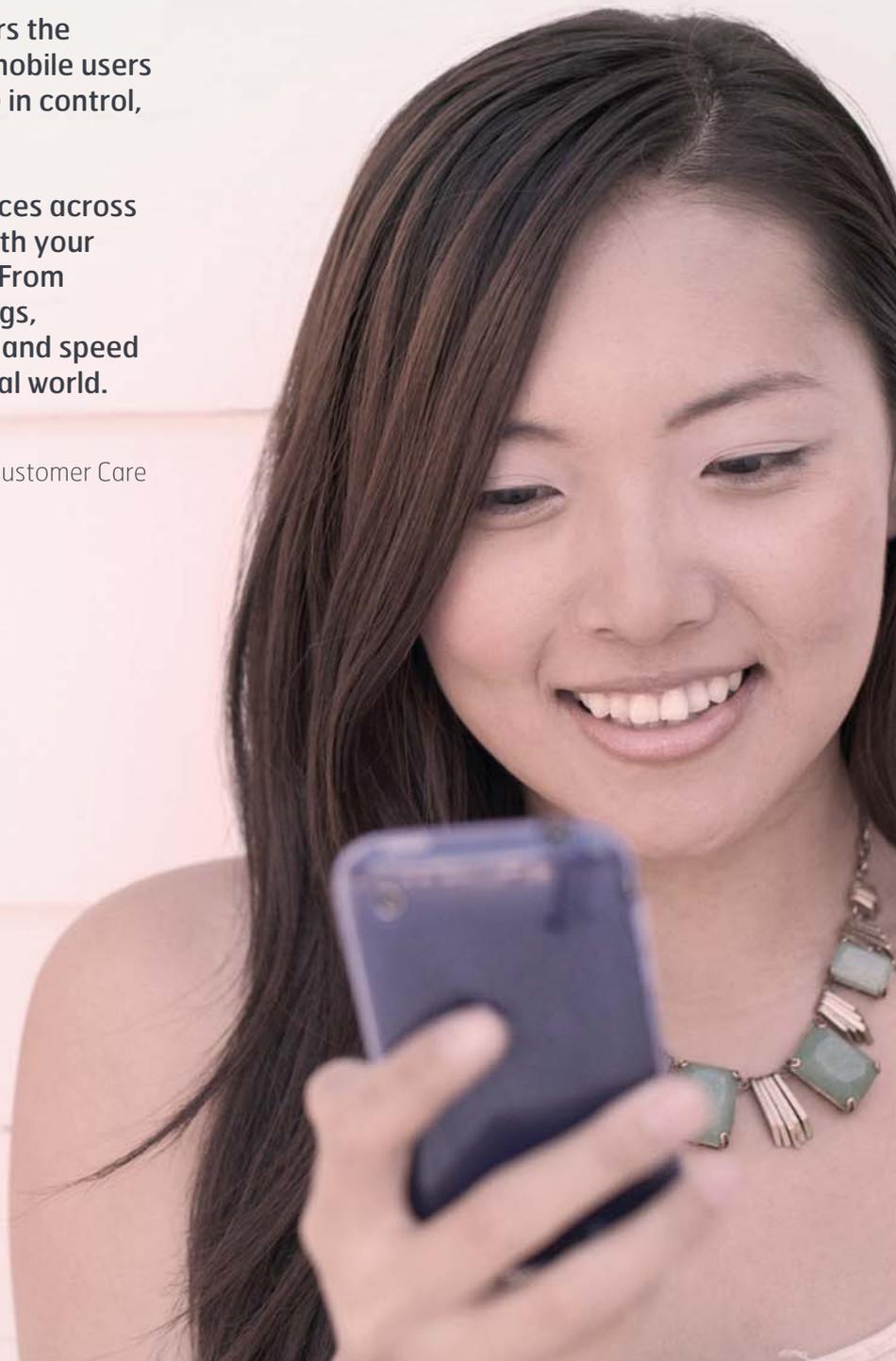
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From back office to front of store – welcome to digital commerce

At Mobile World Congress 2015, CSG International will announce an innovative digital commerce platform that will help CSPs to capitalise on the next generation of digital services and digital service provision. Here, Chad Dunavant tells VanillaPlus about the new CSG proposition and approach

“We’ve seen a steady untethering of the way content is being delivered to consumers”

Across the industry mobile operators are becoming media companies, and cable companies are becoming mobile providers and providers of content. They’ve become partners rather than rivals with over-the-top (OTT) providers and it’s not just communications service providers (CSPs) that want to win a slice of the digital services value chain.

That makes it hard to pin down what digital services and digital service providers (DSPs) are. Digital services are not defined by, or necessarily integrated with physical networks. A DSP doesn’t need to own a physical network to deliver its service – anyone with a service or product that is defined and delivered digitally can be a DSP.

So why is CSG International, with its extensive heritage serving telecoms operators and cable providers, targeting this emerging market with a new proposition?

“We’ve seen a steady untethering of the way content is being delivered to consumers,” explains Chad Dunavant, the vice president of product management at CSG International. “Cable providers, for example, have needed to enable access to content across a number of devices, not just the set top box. Services have to be delivered to different devices and different members of the household, maintaining a level of device ubiquity and access that is unmatched by OTT rivals.”

The customer experience has to compete with those offered by web companies and CSG has been working ►



to help all types of organisation rise to that challenge. What they've come up with is an enabling platform for a new breed of DSP rather than an upgraded idea of a traditional CSP's back office.

"It's not just about the traditional service offering or traditional service providers any more," confirms Dunavant. "We're seeing business transformations happen across all industries. For example, we've worked with the Cineplex chain of movie theatres to help them transform the experience users have. For their customers, going to watch a movie is no longer just a one-time experience. You go to the theatre but when the movie is released to buy, you can download it and access additional content."

Dunavant says the experience enables the theatre chain to extend the relationship with its customers beyond the one-time event. "It's not just about capturing the long tail though, it's about defending the existing business," he adds. "For people that might have waited until the movie was released to download it, and not gone to the theatre at all, there's now another option as today's theatre ticket becomes tomorrow's redemption token."

He adds that CSG has more than 20 tangible examples of helping companies in many different industries become digital service providers. A lot of that functionality is applicable to CSG's traditional customer base. For instance, a cable operator that wants to provide customers with the opportunity to buy content instead of rent it. However, the relevance extends far beyond CSPs.

CSG's new proposition, which will be unveiled at MWC 2015, encapsulates the concept of a digital commerce platform – bringing together a new digital back office and a consumer monetisation strategy – and draws some of its functionality from its widely used billing, charging and settlement products. However, this is far from a repurposing or a marketing wrap for the company's telecoms systems.

"That will be clear when we launch the solution at the show" says Dunavant. "We're not rebranding Singleview, this is a new platform we've been

building and executing on over the last five years. We've now added it to our BSS assets to create a new proposition."

"We recognised that it can't always be about full-scale BSS transformation so we created the concept of an integrated digital overlay to an organisation's existing systems," adds Dunavant. "This lets DSPs experiment with many new services easily and, as important, see them succeed or fail quickly, unencumbered by the need to invest for two years in developing billing for that unproven new service."

For CSPs and others, CSG is bringing a tactical proposition which has long-term strategic potential. CSPs can initially invest in an overlay to their existing systems that will include subscriber portals, a federated e-wallet that can integrate into existing order and billing platforms, functionality to support new device ecosystems, and an identity and rights management model, all delivered as a service from the cloud, and use this new platform to grow their digital businesses. They can avoid the cost, delay and upheaval of customising existing systems and enter new markets rapidly with the potential to extend their investment for future services and businesses.

"The challenge facing CSPs is how to monetise the digital experience and highly variable new digital services" explains Dunavant. "If you go back to a traditional billing approach, it could take six to 12 months of customisation work to address each new service. That's too slow."

With the CSP market splitting into two groups, Dunavant sees great potential ahead. "It's clear that there are two paths open to CSPs," he says. "They can become a utility and, if a CSP wants to go that way, we've got great technology to help them run leanly and efficiently.

"With our new proposition, though, we're focused on the rest of the market," he explains. "CSPs that want to take an alternative path and monetise a new suite of products and services will need a more nimble approach. We believe we can help them gain access to that DSP tier and we're looking forward to sharing our ideas at Mobile World Congress 2015."



Chad Dunavant,
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Ray Bariso is vice president of Ericsson's OSS/BSS business in North America – including strategy, marketing, solution and offer development and business management. He also leads Ericsson's OSS/BSS Global Engagement Practice Community. Prior to joining Ericsson, Bariso was responsible for managing Telcordia's Global Operations Solutions and Utility solutions business. Here he tells Vanilla Plus that big data and analytics are nothing new for communications service providers (CSPs). What is new is that the volumes of data involved have become far greater.

The good news within that volume is that CSPs can now use analytics to trigger changes in the network or systems to affect the experience that is in progress or to proactively engage the customer as a result of a previous experience. That is creating the capability to perform experience-based marketing.



Big data analytics enables CSPs to achieve experience-based marketing to the benefit of customers and the bottom line

VanillaPlus: With the tremendous amount of focus on analytics today across all industries, are communications service providers (CSPs) behind relative to IT providers and enterprises with regards to big data and analytics?

Ray Bariso: Actually, the truth is that CSPs and their suppliers have been utilising big data since the industry's inception. Certainly the definition of big has changed dramatically, but CSPs have always used a tremendous amount of data to manage their assets, secure their networks, meet SLA requirements, and perform other functions. Telecoms has used big data and analytics long before it was trendy – it was simply what was needed to provide network services. The big difference now is that CSPs can drive innovation and more value for their customers faster than ever before.

VP: Why do you think that is?

RB: It's because CSPs can become well positioned to monetise all that data traversing their networks. Big data has become much bigger. The communications industry has always led in terms of the volume of data that had to be managed, and that will continue. Instead of communications networks managing and generating gigabytes and terabytes, they're now required to manage and handle petabytes, exabytes and zettabytes. Given the innovation that is happening in the Networked Society, I wouldn't expect it to stop there either. So – the step-function increase in volume is a significant change and must be addressed by more capable tools and processes.

Other key differences are the format and sources of the data traversing communications networks. Data is no longer solely structured in rows and columns inside a relational database and stored in a data warehouse, but rather also comes in as unstructured data generated from

social media and other interactive sources. The sources are also very different now – it's on the move. We're in a highly connected – mobile – society, and all of these mobile devices that we have are generating tons of rich data that can tell us so much more about how to better serve the end user and better utilise our networks. This rich data is in motion – and that adds much more complexity to capturing, storing and understanding that data.

VP: You mentioned that more capable tools and processes will be needed to address these changes – can you be more specific?

RB: Sure – let's hit them one at a time. First, the tsunami of data must be managed as efficiently and utilised as effectively as possible. Costs for storing and processing must be optimised, business processes must be agile to quickly assess which data is important, and actions must be triggered based on data while it is still relevant – the clock will be ticking. Next, the platform and its tools must be able to ingest and process free flowing, unformatted data. Finally, in addition to the typical data at rest that we're accustomed to, an analytics platform must be able to capture and process streaming data and drive appropriate action through the integration of policy and OSS, within both physical and virtual infrastructure environments.

VP: So what are the characteristics of an analytical platform that CSPs should consider?

RB: I would say that first and foremost, an analytical platform serving the needs of today's highly connected mobile society must operate in real-time – in terms of capturing, processing and responding to the data. The platform also must be horizontal to cut across the typical vertical silos of network, IT and marketing data, and enable automated business processes at the ►

“...the truth is that CSPs and their suppliers have been utilising big data since the industry's inception”



“CSPs can set themselves apart if they can capture, manage and use both the data traversing their networks and the systems powering those networks better than their competitors”

organisational level, and not just the departmental level. It will also need to be open not only to accommodate varying sources of data, but also multiple vendors who understand what data is important and how to interpret it.

VP: How are CSPs responding today?

RB: We work with lots of different CSPs around the globe. Some offer many communications services to both enterprises and consumers, while others focus on a single service to one particular segment, so there is a lot of variation in terms of their needs and responses. In general, CSPs are surveying their existing analytical assets and capabilities, and evaluating what will serve them in the future. As I mentioned earlier, CSPs have been using analytics since the beginning, but these solutions were typically deployed to fulfill a specific purpose in a specific department, resulting in vertical stacks of business intelligence. CSPs understand that to best serve their customers they'll need to bring the data within those vertical silos together along with new sources of data into a horizontal platform so it can be utilised by the entire organisation efficiently and with as much automation as possible. So we're starting to see a transition away from analytical solutions that no longer fit the purpose either because they don't have real-time capabilities, they aren't horizontally integrated or they involve using older tools and technologies that are more expensive than what's available today.

VanillaPlus: What are the key use cases that are driving CSPs to enhance their big data and analytics capabilities?

RB: The typical use cases are network planning and optimisation of course, but they are moving way beyond that into using analytics for proactive care and for what we call experience-based marketing, including personalised offer recommendations in real-time.

VP: What do you mean by experience-based marketing for CSPs?

RB: A simple definition is the use of analytics to trigger changes in the network or systems to affect the experience that is in progress or to proactively engage the customer as a result of a previous experience. When real-

time analytics are integrated with real-time charging, policy, self-care and a centralised catalogue – this vision of experience based marketing becomes possible – and offers the operator the last remaining opportunity for differentiation – the customer's experience.

CSPs can set themselves apart if they can capture, manage and use both the data traversing their networks and the systems powering those networks better than their competitors. Add to that a deep customer understanding of what is valued in a communications experience – and create business rules that drive automated action to deliver that value profitably. The heavy lifting is in uncovering what customers truly value, and defining those automated business processes; you can't get that just by deploying a tool or a platform. This is the type of proprietary intellectual property that will differentiate CSPs. All competitors have access to the same tools, platforms and technologies – they're only limited by their budget. The long-term sustainable differentiation comes in the form of how they put them to work. We think experience-based marketing is a vision for how to put them to work. In fact, there was a study done by McKinsey in 2012 that found that more than 50% of service providers that employed customer level marketing achieved 10% or more improvement in their EBITDA performance.

VP: What's the future of big data and analytics?

RB: Do you mean after service providers have realized the vision and benefits of experience based marketing? Well – I'm not sure, since things are moving so fast. As our industry has in the past, this leap in capability will make us innovate the next cycle of capability even faster.

I do think that another area for the future of big data and analytics is the ease of use and accessibility – to the point where an everyday person is accessing an analytical engine to perform a task as they go through their day without even thinking about it. Concepts around visualisation of data and voice querying of data sets will make the insights more accessible to more people, driving even more innovation. Analytics has always been and will always be the lifeblood of communications networks – in the end, the more it is used by more people, the more growth there will be.



Intelligent, fast data to fulfill every need is what nexterday mediation will look like

Whether you're a car manufacturer, a utility company or a communications service provider (CSP), one thing is for sure: the amount of structured and unstructured data generated in your operations is only going to continue to rise dramatically. That data represents a great opportunity, writes Mikko Jarva



The author, **Mikko Jarva**, is chief technology officer for Intelligent Data at Comptel

Cisco estimates that mobile data traffic will grow at a compound annual growth rate (CAGR) of 61% from 2013 to 2018, reaching 15.9 exabytes per month. A significant contributor to this traffic growth is the Internet of Things (IoT); forecasts say that there will be 50 billion connected devices by 2020.

The growing amount of data and its inherent insights presents an opportunity, but right now a lot of that information is not being utilised to its full potential. Research from TeleTech shows that 95% of CSP businesses collect and store multi-dimensional customer information, but only 60% are able to transform it into usable form. In addition, while 30% are able to regularly identify value generation opportunities from it, only 20% are able to turn the opportunities into action. If data isn't integrated, analysed and acted upon across all sources, companies will never be able to unlock the true

example, someone who is about to hit a bandwidth cap while watching a movie will be more willing to top up their data quota at that exact time rather than three days later. CSPs need to make sure they don't miss out on that potential revenue.

To fully monetise data, organisations need to be able to have unfiltered access to it and be able to refine and analyse it in real-time. As customers' digital behaviours get more sophisticated, so too must the systems that process all of their transactions and interactions. Comptel's vision of Operation Nexterday will help bring this sophistication into companies' systems, so they align with and best serve, meet and respond to the needs of the cloud generation.

Intelligent, automated analytics

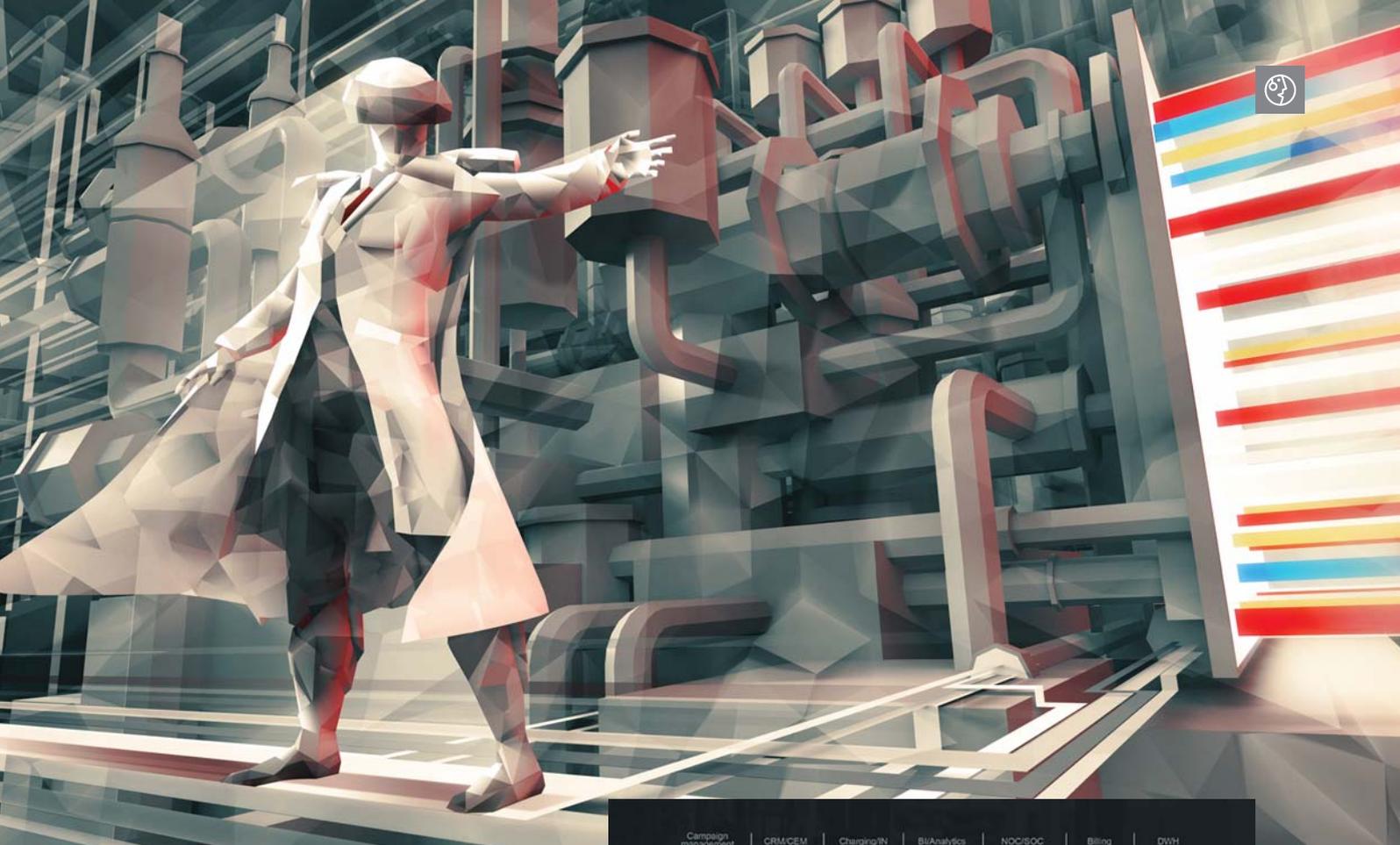
Gartner predicts that advanced, pervasive and invisible analytics will be one of the top ten technology trends of 2015. As data floods back-end systems, in order to reduce manual work, analytics-driven enrichment and automated decision-making will have to become the cornerstone for operations, customer experience and business growth.

Managing the expansive growth in information complexity, volume and speed requires that intelligent machine-learning algorithms are employed and automated. Machine learning can be used to identify patterns in data streams that can be then used for predictions or early detection of new signals – the two most important aspects of proactive insights.

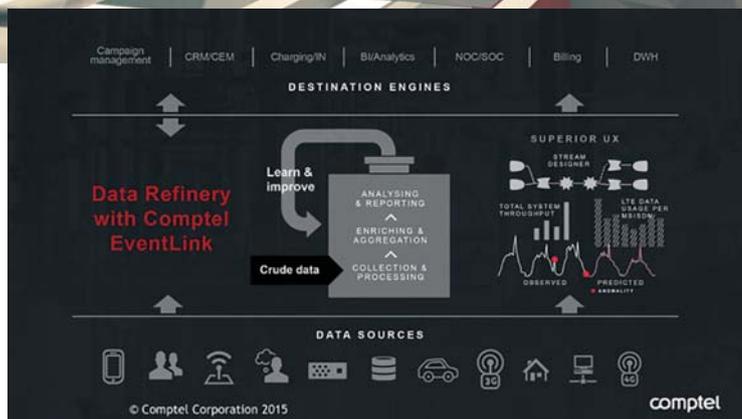
With an automated analytics layer that utilises machine learning, businesses will be able to gain proactive insight into operations through in-stream contextual intelligence. For example, such in-stream contextual intelligence can be used to detect and warn about emerging negative sentiment and topics in social media or predict future service degradation due to unusually high loads, so CSPs can proactively ensure an optimal customer experience. ►



potential of their customers or operations. Instead of analysing and acting on old big data, businesses need to start thinking about how to utilise streaming information in the moment, enabling them to quickly determine the immediate actions they should take and maximise their opportunities. For



Mediation systems have already evolved beyond collecting network data for billing and should expand to meet the needs of nextday. A nextday mediation platform should consist of a data processing layer that integrates information from every potential source such as customers, operations, locations, social media, apps, cars, houses and wearables, and offers in-stream contextual intelligence to drive the right actions, at the right times and through the right channels. But what will this new kind of in-stream contextual intelligence layer actually look like? And how will it work?



Data refinery: embedded intelligence

A data refinery takes the best parts from Comptel EventLink, Comptel's big data mediation technology, specifically its massive scalability and ability to integrate, aggregate and correlate virtually any data sources, and adds in machine learning, which enables in-stream pattern matching, anomaly detection and predictions. Machine learning is an iterative process, so the more data that is used for learning means that over time the better the results, such as predictions, become. A data refinery establishes an intelligent data mediation layer that can collect and analyse all data across all platforms, from mobile devices to networks and cars, and delivers insights and actions to appropriate destinations such as mobile applications, customer relationship management systems, network operations and campaign management systems.

Examples of such insights and actions include:

- A recommendation for a Netflix-tailored data package sent to a mobile application, when the customer is about to run out of data quota while watching a movie
- Upsell campaign triggers sent to a campaign management system based on customer affinity
- Early warnings on abnormally high cell utilisation levels sent to radio network operations

- A list of network elements most likely to have issues in the next 24 hours sent to network management systems
- A notification sent to fleet management systems when a connected car drives to an unexpected area

With such a multitude of potential uses, use cases and users, it's very easy for things to get complicated. Fortunately, a data refinery provides a modern, intuitive and clean user experience, which allows users to keep it simple, while building easily configurable workflows fast around different use cases. In the back end, a data refinery provides rich reporting capabilities on the integrated data streams, which enables the evaluation of the success of the deployed use cases as well as delivers insights for designing new ones.

With so much data coming through every business, it's critical for companies to have an intelligent data processing layer that can ensure no valuable information goes to waste. They must harness raw, real-time data across every possible source and turn that into business opportunities. An intelligent, automated and real-time data refinery is the logical next step – data is already everywhere, and only by enriching that information with analytics, can businesses make sense of it all. 

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Does revenue today mean lost potential?

Data analytics deployments by their definition are long-term projects but they need to be rolled out in a climate in which short-term ROI is required to gain investment. Jonny Evans explores how business cases be constructed that deliver the short-term gains necessary to receive investment approval



Mounir Ladki:
Budgetary environment remains challenging for most CSPs

Potential short term gains may seem attractive but when planning data analytics deployments, communications service providers (CSPs) should keep the long and medium term potential of the technology in mind, or risk losing a far larger pot of gold further down the line.

Caught between the competitive race to lower prices and soaring consumer expectations, there's a demand to deliver a near immediate return on investment. "The budgetary environment remains challenging for most CSPs, and investment proposals need to be fully justified to receive management and procurement approval," says Mounir Ladki, the president and CTO of **Mycom OSI**.

When creating business cases for successful deployments, advocates should push the message that these are not the same as old-fashioned business intelligence rollouts; these are root and branch technology solutions that enable and inform new business opportunities.

The challenge may seem huge: "Companies might be discouraged by the fact that their data is in a combination of legacy and new systems housed in various locations. They may think that a lengthy installation process or custom tool development is necessary to answer this question," explains Rupert Naylor, the UK vice president at **Applied Predictive Technologies**. "Organisations can use the large amount of data they now have available to run tests to determine the impact of each new business idea. [This] helps organisations determine cause-and-effect relationships between business actions and key metrics, and identifies opportunities to tailor and target those initiatives to improve ROI."

There is potential for fast return. "The positive impact of data analytics deployment should be seen fairly immediately, whether that's improving marketing performance, customer care or network optimisation," explains Matthew Roberts, the director of marketing for big data analytics and strategic innovations at **Amdocs**.

Gartner recently predicted that an average CSP could potentially generate US\$300 million a year in additional margins, including cost savings and revenue uplift, by

using data analytics.

CSPs can use data analytics technologies in numerous ways to address challenges such as customer churn, or to precisely address identified problems in capacity provision, enabling significant cost savings and improved service agility.

"It's not about how many petabytes or exabytes of data a CSP can store. It is about how much value can be extracted from these data records," adds Ladki.

For Chris Purdy, the CTO of **CENX**: "Data analytics can be used very effectively within CSP operations to drive revenue due to improved level of service with customer self-service portals for dynamic provisioning and real-time monitoring of data connectivity services."

Data will "typically include geo-location, demographic data, statistical models, as well as items calculated from a combination of external and internal sources, such as proximity of customers to the organisation's network assets," says Steve Farr, a product marketing manager at **TIBCO Software**.

In the long term CSPs will eventually be able to create user profiles for customers in order to develop tailored services; even further down the line. "CSPs can enable new revenue streams from partners and third parties, such as advertisers, content publishers and social media by providing access to the valuable insights extracted from user data," says Neil Lilley, **Ericsson**'s OSS product marketing director.

From JIC to JIT

Part of CSPs' strategies should address requirements to reduce opex and capex and position themselves for long-term gain. "The long term possibilities of data analytics are that the CSP can move from a Just-in-Case (JIC) approach for managing capacity in their networks to a Just-in-Time (JIT) upgrade capability to significantly reduce capex and opex while still delivering quality user experiences," adds Purdy.

Additional opportunities may include:

- Providing CSPs with a deeper understanding of traffic trends to enable predictive deployment of virtual services. ▶



Neil Lilley:
CSPs can enable new revenue streams from valuable insights extracted from user data



Matthew Roberts:
The positive impact of a data analytics deployment should be seen fairly immediately



- Helping CSPs to understand app and content provider relationships as they become OTT service partners
- Enabling CSPs to offer appropriate analytics identified services to the right users at the right time, such as providing high quality video to travellers.



Rupert Naylor: CSPs might be discouraged by data being in a combination of old and new systems housed in various locations

To bring such opportunities in on time and on budget, while making good deployment decisions, CSPs should focus on what they want out of the analytics system, keeping costs down and the value proposition defined. “Combining this with cloud engagement will help keep the costs justifiable but also enable the transition between technical choices in the longer term,” says Fergus Wills, the director of product management at **Openwave Mobility**.

However, this is not a one-size-fits-all scenario. “There is no single solution that can address all the use cases, so interoperability is extremely important,” says Purdy.

Ladki urges caution. “A rushed decision made today may mean that a CSP is unable to use real-time analytics for customer experience management or to drive network planning and operations or to best support the smart world tomorrow,” Ladki warns.

Purdy points out that the best analytics solutions make optimal use of open source software, which keeps them interoperable and faster to deploy. Among many other things, good data analytics systems could enable efficient and reliable services, paying a loyalty dividend that, arguably, in this age of customer churn, may prove even more valuable in the long-term.

“It’s really important for CSPs to realise that data analytics isn’t about generating revenue, that’s only a small proportion of it. It’s about improved customer care and marketing, and more efficient networks and operations,” Roberts observes.

“It is all about the business case, and there is a strong business case here,” Ladki points out.

Nevertheless, decisions must be made carefully with interoperability and extendibility at their heart. “If the wrong technology is used then there is a high risk of rising costs and declining responsiveness – which is a negative spiral for any project,” warns Wills. 





CSPs handle data in motion to gain actionable insights

Communications service providers (CSPs) are starting to take advantage of new technology that enables them to analyse the sheer volume of their data, much of which is in motion. Data analytics tools are transforming CSPs' businesses by allowing them to gain actionable insights from their vast data sources, write Linda Austin and Neil Lilley

Service provider networks and systems, and other sources such as social media, produce vast amounts of data, much of which is in motion in this increasingly mobile world. Until recently the sheer volume of this data and added complexity of mobile data sources made it impractical to extract many of the key insights offered. Technological advancements, combined with the hyper-competitive and increasingly mobile world, are driving service providers to differentiate themselves by extracting and utilising this data more effectively.

To that end, many CSPs have begun making significant investments in big data analytics tools that handle not only data at rest, but also data in motion. However, CSPs should ensure that their efforts are focused on gaining actionable insights – rather than simple exploration – to maximise the value of analytics investments. CSPs can gain actionable insights and derive the maximum return on their big data and analytics investments by:

1. Implementing horizontal analytics architectures
2. Including real-time capabilities
3. Supporting specific use cases based on domain expertise
4. Adopting closed-loop action

Delivering data in real-time is insufficient unless there is a process to convert that real-time data into actions that drive value. CSPs need to make sure they are analysing the right data, converting this data into customer insights quickly, and making use of those insights across the entire organisation in order to create value for the business. This process is what we call the insights in motion framework.

Traditionally, CSPs have focused their analytics initiatives in one of three different domains – network, IT and business. Understanding all three areas, as well as the relationships between them, is essential to helping organisations use their data effectively. This framework looks at three key components:

- **Quality-of-Insights (QOI):** determining which information is relevant and where to get the data in order to create reliable insights
- **Time-to-Insights (TTI):** making sure the data is immediately available to generate actionable intelligence across the organisation
- **Return-on-Insights (ROI):** ensuring that the insights created will drive business advantages across the organisation. Understanding the potential business advantages from strategic intelligence is what determines the QOI

Recent and current investments in analytics solutions are still dominated by analytical silos; that is, analytics solutions focused on a specific type of data and supporting a specific application. Examples of such investments are probe solutions or CDR analytical tools. These vertical solutions are a natural evolution, using existing, but comparatively narrow, data sets. Taken one implementation at a time, vertical analytics solutions appear to require relatively low investments of time and expense. However, these economies disappear as more data sources become the subject of analysis, and as more internal users seek to develop applications that address their particular needs.

By contrast, horizontal solutions are designed to pull key data from multiple and diverse sources, perform pre-processing, and make this big data available to a variety of applications, each tailored to the needs of different users and use cases. These horizontal platforms lower investment of both time and money to incrementally meet the needs of various internal users and external partners.

Perhaps the greater drawback of vertical analytics solutions is that they miss many of the possible and useful insights that could be attained simply by including diverse data from multiple sources. In contrast, horizontal analytics architectures can correlate data from all possible – network and non-



Linda Austin is the director of strategic marketing at Region North America at Ericsson



network and physical and virtual – sources. For example, consider that probes can provide detailed insights into the quality of service that each individual customer is receiving. If that quality is inadequate, probe data typically cannot explain why. However, session events, performance metrics and other data sources can reveal the cause, even for an individual customer. A horizontal analytics platform can collect cause and symptom data from multiple sources, and correlate those metrics by customer identifier and session, creating a customer experience record that is valuable to several different use cases – such as customer care, operations, or marketing – and which cannot be derived from any vertical, siloed analytics environment.

Existing analytical deployments mostly consists of off-line – (batch) – tools. This approach can reveal patterns and trends, which can be useful for a number of use cases, including long-term capacity planning and customer segmentation. However, newer approaches make real-time analytics possible and practical, supporting many more use cases, such as pro-active customer care or real-time resource optimisation.

Consider targeted marketing, where many use cases can be supported by offline analytics. Robust, experience-based marketing can be supported if real-time capabilities are available and analytics are integrated with policy, a centralised catalogue and self-care. In this case, the actual, recent customer experience can be added to the customer profile, thus allowing a more appropriate offer – such as retention, cross-sell, or usage incentive – to be matched to the individual customer based on whether the customer's recent experience was below or above average. CSPs could even develop a Service Level Index (SLI) that weights recent experiences to better predict risk of churn as well as receptiveness to various incentives. According to McKinsey's 2012 article 'Using big data to boost marketing capabilities', more than 50% of telecoms companies that conduct Customer Level Marketing (CLM) projects achieve a 10% or greater improvement in their EBITDA performance.

Domain expertise is the secret ingredient for deriving actionable insights for service providers from big data. After all, most analytics tools are akin to blank spreadsheets. Just as a spreadsheet must be configured with formulas and formats to be useful, so too must big data analytics tools such as big data storage tools or complex event processing engines be configured with data models, business rules, thresholds and the like in order to support a given use case. In order to gain useful insights, you must know what data elements, in what combinations, and at what thresholds truly matter to the question at hand.

Primary customer research, network expertise and other knowledge guide the development of these rules.

Many CSPs still have manual analytical steps to support their business. Real-time automated analytics will enable closed-loop action, driving decisions efficiently. The greatest value is derived when big data insights are connected to business processes, thus enabling closed-loop action, where data drives insights and insights drive actions – network configurations, work orders, customer marketing offers, and so on – without human intervention. This 'data to cash' process is where the horizontal architecture, real-time capabilities, and tailored applications supporting specific use cases all come together to drive significant improvement in operations and customer experience, and ultimately return on investment. 



Neil Lilley is director of marketing for CEM and Analytics at Ericsson

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CSPs are finished with being passive – it's time to proactively manage the subscriber experience

Communications service providers (CSPs) are under attack from new and traditional competitors and at the same time usage of services is dramatically shifting. Thomas Vasen advocates that CSPs move from managing the service to managing the subscriber experience.



The author, **Thomas Vasen**, is subscriber experience evangelist at Procera Networks

Communications service providers (CSPs) are beset by challenges. Over-the-top (OTT) service providers are taking their revenues; customers perceive the handset manufacturers as the providers of their good experiences and as mobile markets approach saturation, growth opportunities only exist in competing for subscribers with other CSPs. This is causing customer acquisition costs to increase, as well as churn. That cycle is unlikely to decelerate so CSPs need to redefine how they approach delivering good subscriber experiences.

However, there still remains plenty of upside for CSPs if they can create and assure high-quality experiences for their customers. Higher quality results in higher usage, and with data consumption-based price plans now the norm that means more revenue for the CSP.

At times it seems as if CSPs have been stuck in a reactive mode. Traditional networks are static, service profiles are provisioned by the CSP in isolation and new offers are made through sales calls to customers. Rarely does a CSP contact its customers about their experience proactively. Typically, the customer needs to call in and complain if they're unhappy. When they do, the CSP's focus is on reducing the number of calls to support centres and in shortening waiting times not on improving the subscriber experience.

However, initiatives that result in fewer calls and more rapid call centre responses are of little value because 96% of unhappy customers typically do not complain. They just leave when it's time to renew their contract.

It's time for CSPs to become more proactive and leave their passive approaches in the past. What's needed now is automated action. CSPs need to behave more like OTT providers. For example,

Amazon automatically issues a refund when it detects the quality of video delivered over its video-on-demand systems is insufficient. Customers love this because they want the experience they receive to be acknowledged. The key to achieving this is to measure, manage and be aware of the device, location and content used to create a complete picture of the experience.

What's needed is a new approach that provides a complete loop comprising data collection that delivers the required perspective and insights needed to take the proper action.

In addition to a transformation in business model and competitive landscape, the telecoms industry is going through a technological shift. The services themselves are changing and so are networks. Traditional probe systems that have been the key tools to capture user experience based on signalling are becoming outmoded because the signalling data doesn't provide the level of insight required to assure the user experience.

All networks are migrating to internet protocol and with the introduction of LTE the circuit-switched network has almost completely disappeared from mobile environments. Even voice has become just another form of data.

This technological change is shifting the monitoring of user experience from the signaling plane to the user plane. With deep packet inspection (DPI) technology, full insights can be gained into the content being transferred from just a few central locations in the network and, with in-line deployment, the experience can be managed.

However, despite providing a sophisticated degree of insights, traffic management using DPI alone is not ▶



enough because the radio access network (RAN) perspective also needs to be added. With information about the original location of each of the packets, better informed and more balanced decisions can be made that enable effective management of the crowded access networks.

Once RAN monitoring is added to the insights provided by DPI, the magic can start to happen. For example, congestion control can be applied for the users located in a cell that is suffering congestion and it can be done in a service- and user profile-aware way. In this way, CSPs can eradicate congestion affecting key services such as OTT voice, including VoLTE or premium streaming video.

CSPs can now ensure a fair and consistent service is delivered for all subscribers. This is a major step

forward in comparison to passive probes that see only the details about the start and end of the session and contain no insight into whether the session delivered a positive experience. Furthermore, the duration of data sessions is making this type of insight irrelevant because some sessions can last for weeks.

DPI-based experience management is a far better approach because it enables the detection of irritating abnormalities – the issues that annoy users. Its value is further emphasised because DPI-based experience management systems are real-time and deployed in-line so action can be taken whether that's tuning a third party system – such as a video server – or managing the traffic in a band. It's that ability to take action immediately that makes the difference in a subscriber experience system. For CSPs, it means the days of being passive are over. 

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CSPs careful not to get swept away in the big data gold rush

All communication service providers (CSPs) have silos of data that could yield pure gold. Nick Booth warns that, in the rush to extract it, there could be a lot of casualties



Matthew Roberts: Data scientists are in high demand

To paraphrase one of the experts quoted below, there's gold in CSPs' data sets. The individual elements scattered about the storage landscape contain information on behaviour, tastes, location and demographics that, if combined by a marketing alchemist, could make CSPs richer than Facebook.

Gold, like big data, has many applications beyond sales. Both are vital components in making business systems run more efficiently, with gold being a component in computers and electronics to speed the accurate transmission of information. Gold has dental and medical applications – as indeed does big data, which provides the basis of the nervous system and immune responses of the increasingly organic and self-regulating networks of the CSPs.

In other words, there's so much you can do with big data it's terrifying. It is literally causing panic in some companies. "Many departments are under pressure to boost their customer revenue and optimise their network and even to improve the customer experience," says Ravi Palepu, the head of telco solutions for management system vendor **Virtusa**.

The biggest mistake a CSP can make is to run all their programmes at the same time, says Palepu. First CSPs need to decide which of their ambitions – improving customer experience, boosting revenue,

improving operations or creating pro-active marketing – is their priority. "Running all the different streams in parallel will be counter productive," he adds.

Having decided on which seam of data is to be mined, the next priority is assembling the tools and the personnel.

Contrary to popular marketing messages, many companies have impressive data mining systems like **Hadoop** and **SAP's HANA**, but haven't worked out what they really want from the data sets, nor do they understand the domains or know what they want to do, says Palepu.

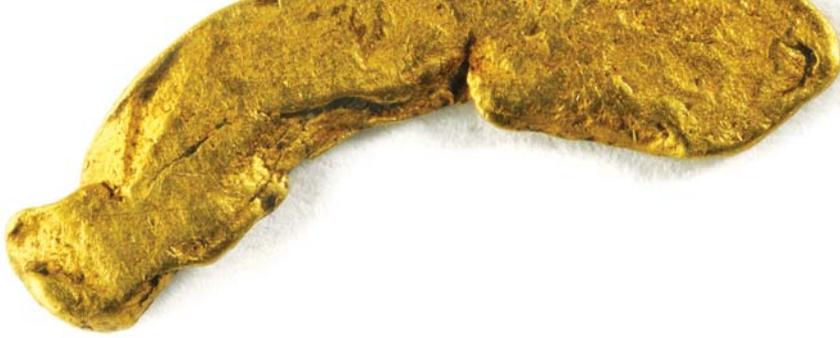
Too often CSPs lack the expertise needed as there's a small talent pool, says Matthew Roberts, director of marketing at **Amdocs'** big data analytics and strategic innovations division. "Data scientists are in high demand, particularly those with a telecoms specialism who can understand the data in context," he says.

Meanwhile, the staff charged with striking gold are having to blend data from different sources and make sense of it. "It's like a cocktail, blending different ingredients and you don't know what works until you've found the winning formula. The trick is to find it fast before you drown in data," says Roberts.

If it's difficult to find the staff for that ambitious deep ►



Ben Parker: CSPs must sift out the excess data to bring home the valuable nuggets



“When panning for gold, you do it in the river, sifting out the excess, and bringing home the nuggets – you don’t shovel all the soil into a truck to take back home and sort, that would be a waste of time and money”

dive into the data, why not create a more realistic target? While other CSPs are tying themselves up searching for the meaning of life in their data, it might be a lot more worthwhile going for some quick wins, according to Ben Parker, chief technologist for **Guavus**.

“When panning for gold, you do it in the river, sifting out the excess, and bringing home the nuggets – you don’t shovel all the soil into a truck to take back home and sort, that would be a waste of time and money,” he says.

Yet this is what many CSPs do when they take a store and query approach to data analytics. “By applying streaming analytics at the edge, sifting out the useless data and keeping the nuggets of gold, CSPs are better set up for success,” says Parker. The best way to immediately improve network operations, customer experience and revenue streams is to work on the data streams not the stored silos, Parker argues. It’s a more practical way of showing the top management that results are being achieved.

Another practical approach that CSPs – and the companies that promise to solve their big data problems – could take is widening the talent pool by making analytics easier.

Not many people can create the algorithms for interrogating big data, but why should they anyway,

asks Steve Bowker, the vice president of technology and strategy for **Teoco**. “Once the data has been interrogated with a specific use case others can make use of it,” he says.

Big data isn’t as scary as everyone makes it out to be, argues Andy Stuble, the vice president of sales and marketing at **SysMech**, which creates big data apps for CSPs.

“You just need to know what you want to get from the data,” says Stuble, “half the battle is asking the right questions.”

The idea that big data can only be understood and translated for practical use by data scientists is a common misconception anyway, says Mark Davis, **Citrix**’s senior director of product marketing. “Yes there’s a shortage of big data scientists but a new class of big data analytics platforms makes the insights more widely available.”

For big data’s benefits to be fully realized, more people need access to insight, which includes marketers and customer care organisations, who will want immediate and continuous use, Davis adds.

That may be true, but that leads to another intelligence conundrum: there are so many big data solutions out there. How do we make sense of them all?



Steve Bowker: Once data has been interrogated others can make use of it, too



Mark Davis: A new class of big data analytics platforms makes the insights more widely available



CSPs must capitalise fully on the surge of big data from new services, such as VoLTE - What do they need to do?

Robert Eriksson: The challenge with services such as VoLTE is to distribute the data they generate to the people and places where it will have an impact, in a way in which it can be understood, quickly and easily.



Everyone knows that the volume of data communications service providers (CSPs) generate is immense. The challenges of that near-overwhelming volume, though, are being addressed and the focus has turned to extracting useful information from the data. Analytics tools are being deployed and they go much of the way to enabling organisations to extract maximum value from their data

However, the tools alone are not sufficient. Analytics relies on asking questions of the data to generate insight and, given that CSP data is useful to many different teams and departments within the organisation, there is a real risk that non-expert users will find the analysis process difficult.

The need to obtain insight and capture value will grow more pressing with the increased focus on customer experience, the advent of VoLTE and the surge of data that this will create. Moreover, the ability to assure the experience the customer has when using the CSP's services and networks is crucial in order to minimise churn.

Robert Eriksson, director of customer experience management at Polystar, gives the example of a CSP that is deploying VoLTE: "CSPs have an edge on OTT voice services when it comes to the quality of the service. When deploying VoLTE it is important to be able to monitor and assure that the quality of the voice

service maintains the high level expected by users. At the same time, VoLTE is a complex technology that needs to work in some complicated scenarios," he explains. "The CSP has to pay particular attention to how all of those can work together. They must have the information they need to be able to assess network performance, service quality, predictive tasks, and have early visibility into any problems that may affect the perceived quality of the service."

The problem, though, is that one size does not fit all. It is not possible to have a single set of big data, and common dashboards to visualise it: such an approach would not suite the needs of all users within a CSP. Different teams have different needs for data - and different ways in which they need to visualise it. What is required is a way to adapt the data and the way in which it is visualised, so that different teams will be able to extract the maximum value from it.

In other words, CSPs need a means to short-circuit the analytical process to make function-specific data ►



available to the different types of user within a CSP.

“What Polystar is talking about is how the information that exists with CSPs’ big data can be directed to the people who actually need it,” adds Eriksson. “We are collecting huge amounts of data, we’re addressing how we can choose sub-sets of that data and then deliver it to the people and places where it will have an impact. We need to make this accessible, so that CSPs can assure their customer experiences and deliver new services securely and profitably.”

Polystar has developed a proposition that takes care of the capture, sorting and the storage of data from networks and services, so that it can be accessed and utilised by the different teams and departments within a CSP. “It has got to be made easy for each user to interpret the data,” says Eriksson. “We have to convert it into something that is relevant to them.”

That means a technology product on its own is not sufficient because it can’t know the operational priorities of a CSP business unit. For that reason, the Polystar proposition involves working with the CSP to understand what is relevant to it. “Which key performance indicators are required and how they should be presented can only be identified by understanding the underlying needs of the users. In turn, this can only be understood by working closely with the CSP,” says Eriksson. “It’s not about us giving you what we think you need or giving you everything we think you might want. Instead, it’s about us gaining an understanding of each customer’s priorities and tailoring the proposition for their specific situation. You can focus on doing your job, while we will interpret your needs and deliver the appropriate technical details.”

Polystar acknowledges that CSPs typically have similar key goals, which is useful when identifying areas in which to make data available to CSP teams. However, he points out that CSPs are not all the same.

“A greenfield LTE operator will be different from a CSP that has 2G and 3G and a new group of LTE customers to serve,” explains Eriksson. “What we offer is designed to support not just what we think matters but also what matches the needs of our customers.”

Polystar’s approach is to create solutions aimed at specific stakeholders within CSPs. The solutions provide the data that is relevant to different functions, and is visualised in a way that supports the workflow of the users.

The solutions already cover the majority of daily

needs, but for queries that demand a very high level of detail, Polystar’s system also provides drill-down capabilities to enable insight from the lowest level of signalling events.

Within that context, operations could be a specific user group that needs specific data to assure continuous network performance and consistent customer experience. To achieve this, they need powerful analytics tools adapted to their needs. Other groups can then use the same sources of data, but filtered and adapted to support their needs, such as customer care, marketing, and other functions. It’s inefficient to have each group analysing the complete set of data to obtain the insights required.

“Having the single platform that we offer enables the needs of different groups to be met in group-specific solutions without duplicating effort or the resources used,” says Eriksson.

It remains early days. “We’re only beginning to scratch the surface of the practical application of big data analytics but we have identified clear use cases and needs,” Eriksson adds. “This process will be iterative and we fully anticipate the use, to which CSPs put the data we present them with, will evolve dramatically.”

Use cases Eriksson identifies include:

- Analysis of near real-time data when introducing new services like LTE and VoLTE to provide insight into trends and provide predictive information to support network engineering and service operation centres (SOCs);
- Improving first-call-resolution and customer experience in customer care by providing information on the likelihood of specific types of problems;
- Supplying product management and marketing with actionable customer insights to identify user behaviour that could help in designing a new service, bundle or marketing campaign.

Those examples are only the tip of the iceberg when it comes to data analytics and Eriksson anticipates increased usage of data insights stimulating further demand. Use cases will proliferate and the number of groups needing data presented to them in a way that is readily accessible and understandable will increase exponentially as a result.

“As a telecoms supplier, we intend to support CSPs through the CSP’s entire LTE and VoLTE journeys to ensure they achieve significant returns on their investments in data analytics,” Eriksson concludes. 

We’re only beginning to scratch the surface of the practical application of big data analytics but we have identified clear use cases and needs

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Virtualisation takes centre stage for CSPs of all types

Virtualisation is at the top of communications service providers' (CSPs) agendas. It doesn't just affect network hardware, software and BSS in particular need to virtualise as well. Here, Mathias Liebe introduces Orga Systems' GOLD Convergent Charging and Billing Release 3.0 and explains why the system has gone virtual

Virtualisation is one of the hottest topics discussed in the telecoms industry today but in practice it is not new at all. During the past decade server virtualisation for x86 hosts has matured and won acceptance in the data centres, being used by more than 90% of all companies around the globe. Today, the amount of virtualised workloads exceeds the amount of workloads running on bare-metal.

But server virtualisation is just the beginning of the journey. Software defined networks (SDN) and network functions virtualisation (NFV) are now entering the IT landscape, changing CSPs' ecosystems and IT operations by pushing data centre automation and cloud-based services into the headlines. CSPs have to face a growing complexity and have to pro-actively manage their computing base in order to become as versatile and agile as the virtualised architecture itself. Therefore CSPs will need a scalable and robust billing system that can be deployed as an online charging cloud that is IT-based and supports virtualised network functions (VNF) such as policy control and real-time session management.

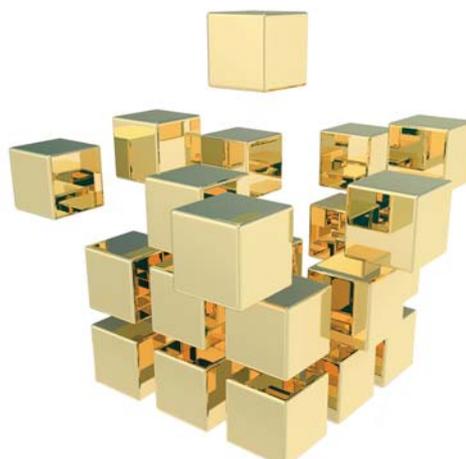
Tasks like balancing workloads, managing downtime or simplifying and extending disaster recovery have to be mastered; all of them being compelling attributes to operate mission-critical applications such as billing and charging on virtualised systems.

Virtualisation support for all revenue management functions

To support CSPs in applying virtualisation technologies, Orga Systems will launch a new release of its flagship product GOLD Convergent Charging and Billing (GOLD CCB) at this year's Mobile World Congress in Barcelona. In this context Orga Systems

initiated a comprehensive programme to qualify its GOLD product family for virtualised systems by working together with hardware and software vendors such as VMware, Red Hat and Dell.

This includes the offering of a reference architecture and an operational concept to plan and operate all revenue management functions in a virtualised environment. While the reference architecture serves as a baseline for any CSP to plan his system environment, the operational concept will provide practical advice for integration and operation of the virtualised stack. With this approach and the release of GOLD CCB 3.0 Orga Systems tremendously enhances capabilities to support cloud services and NFV orchestration. 



GOLD CCB 3.0 product highlights include:

- a SID compliant data model to ease and speed up integration
- a full virtualisation support for all revenue management functions
- a comprehensive NextGen platform strategy aligned with latest VMware and Red Hat technologies



The author, **Mathias Liebe**, is director of product marketing at Orga Systems



The hybrid reality - Why the ability to master complexity is critical for NFV success

Communications service providers (CSPs) are about to enter a revolution that will transform their businesses through virtualisation. However, to realise the benefits they must master the complexities of the orchestration layer, writes Justin Paul

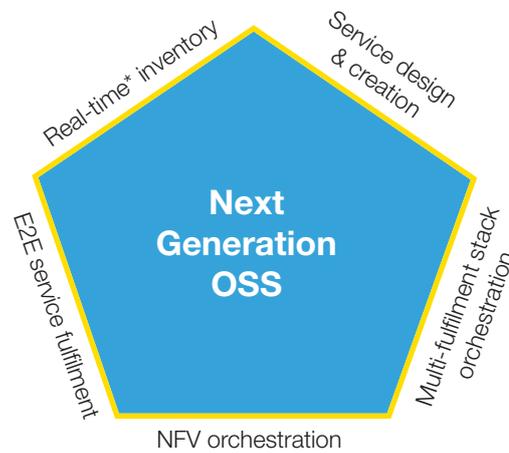


The author, **Justin Paul**, is head of OSS marketing at Amdocs

The telecoms industry is approaching a period of revolution that will change its world. The impact of network functions virtualisation/software-defined networking (NFV/SDN) will deliver significant benefits to CSPs in terms of business agility and reduction in operational and capital expenditure. Ultimately, this revolution will drive down the total cost of network ownership. However, to realise these benefits they must be able to master the complexities of the orchestration layer because without such mastery, the actual benefits of NFV/SDN deployments could be minimal.

NFV drives OSS transformation

NFV is highly disruptive. In particular, NFV will have a significant impact on the operational support systems (OSS) deployed today. OSS will have to evolve to support NFV introduction, and future OSS systems or next generation OSS must support a number of functions that are merely optional today. This means a significant disruption in the OSS market is inevitable over the next few years, with major vendors making significant investment in OSS development as they look to launch OSS for hybrid networks. For others, the advent of virtualisation will see an accelerated decline in their business, as their OSS becomes ►



*Note: Near real-time

increasingly unable to support the requirements of the new technologies. We will also see some new entrants to the market, but these typically provide niche NFV orchestration systems rather than providing the breadth and depth required of a next generation OSS.

Where are we in the NFV/SDN hype curve?

2014 was, arguably, the peak of the hype curve. Recognising the potential, many CSPs outlined their strategic vision to embrace NFV/SDN but now, a year later, there is also recognition that these technologies create significant operational challenges. Without doubt, the potential for NFV is huge. One use case I've discussed with many CSPs is the ability to spin up new Distributed Denial of Service (DDoS) servers in response to an attempt to disrupt a corporate organisation.

This is a great demonstration of NFV because it is simple and effective. The use case involves purely virtualised network functions (VNFs) which are instantiated based on a simple trigger. Unfortunately the reality is that 99% of the telecoms market is much more complex than this because of the huge installed base of existing equipment, some of which will remain operational for the next 20-30 years. Service providers need to accept that NFV/SDN will increase complexity while it runs in parallel with their existing networks. These hybrid networks, combining physical and virtual network elements, create a serious challenge to our utopian vision.

The best partner for the future networks journey

There are four main contenders in the NFV/SDN arena: cloud vendors, network equipment providers (NEPs), virtualisation specialists and operational support system (OSS) vendors, each with their own specific strengths and weaknesses. The NEPs have a strong affinity to the VNFs (virtual network functions) that replace their current physical network elements, while cloud vendors understand virtualisation at the server level, and many of the specialists provide best-in-class capabilities in niche areas. However, in hybrid networks, Amdocs believes that OSS providers are set to dominate with their ability to manage and orchestrate physical, logical and contextual networks. This is because these providers have experience and expertise in managing the complexity of today's multi-vendor, multi-technology networks, which puts them in the best position to manage these more complex networks of the future.

Evolution of OSS

The impact of NFV/SDN on our industry will be huge. At the OSS level we believe significant changes need to take place to realise the full benefits of these new technologies. Currently, OSS systems are not required to be real-time. They were never designed for a constantly changing network environment where standard computing platforms change functionality and parameters in response to planned and unplanned network events. This is a fundamental

change. In the future, networks will dictate how they are configured based on network performance. The advent of hybrid networks requires a different approach to OSS and is driving the development of next generation OSS to meet the needs of these next generation networks.

Emerging capability for OSS

The OSS of the future will have five key functionalities over and above those seen today. Firstly, OSS functionality will be focused on the rapid on-boarding of new VNFs and the agile design and creation of new services. Time to on-board and to design new services will be cut to just days, and service implementation to minutes or seconds. These processes will obviously have to cope with the complexity of hybrid networks.

Secondly, to support dynamic, ever changing virtualised networks, the OSS must work in near-real time and be able to recognise the changes to the network configuration as they happen. It must also provide visibility across all domains and vendors to ensure a holistic view to support fulfilment and assurance of dynamically changing services. Thirdly, the evolved OSS must be able to orchestrate not only VNFs, but also SDN controllers and physical systems. One of the important precepts of NFV is the ability to rapidly create new services, particularly in the enterprise domain. The fourth functionality is the creation and management of complex end-to-end fulfilment from order to cash across multiple service stacks.

The final functional area for next generation OSS is the ability to fulfil services. Service fulfilment has become more complex, and will become even more so in the future. Services themselves have become more complex, the fulfilment environments are more complex and the introduction of SDN/NFV requires fulfilment across hybrid networks. Strong service fulfilment capability is an essential functionality for next generation OSS.

Mastering complexity

NFV/SDN will deliver great benefits to CSPs who are able to overcome the operational challenges of managing and utilising these complex hybrid networks. While we see many worthy new entrants into the NFV/SDN domain, the vendors who are evolving their OSS are best placed to manage the complexity of hybrid network orchestration, because they can combine a solution designed for virtual networks with their experience and expertise in managing today's existing complexity.

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The Innovation City: Mobilising the IoT to transform your world

At Mobile World Congress (MWC) this year, to be held in Barcelona, Spain on 2-5 March, communications service providers (CSPs) and manufacturers will showcase the very latest services and devices in machine-to-machine (M2M) and the Internet of Things (IoT). Here, event organisers the GSMA preview the M2M and IoT highlights

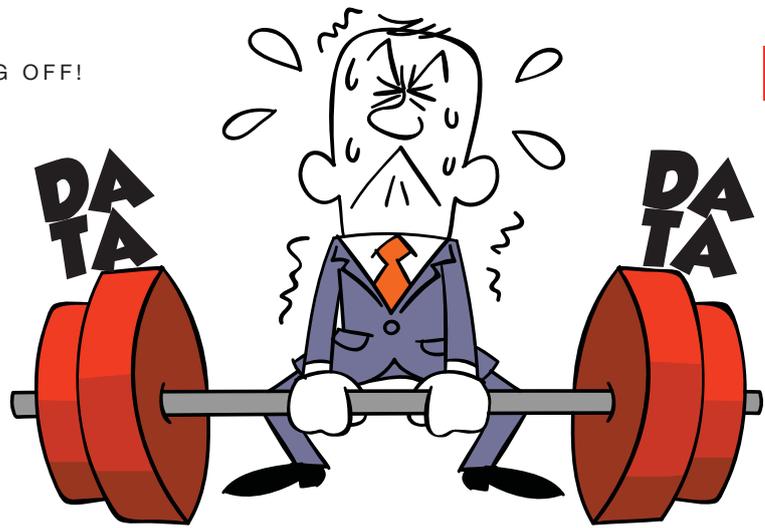
An essential part of the exhibition is the GSMA Innovation City, which expands upon the highly successful Connected City that has been a major feature of Mobile World Congress in recent years. The Innovation City is a virtual urban environment comprised of trains, connected cars, a café, a theatre, shops and even a dental spa. Exhibits presented by GSMA partners, AT&T, Jasper, KT Corporation, Oral-B, Sierra Wireless and Vodafone will demonstrate the most advanced mobile-connected products and services.

One of the central themes of this year's Innovation City will be transport. There will be various demonstrations of the connected car, including a more detailed view of telematics and diagnostics from a manufacturer's perspective. Much has been said in

the last six months about the mass market appeal of wearables, and at the Innovation City this year, there will be a wide-range of wearables and connected equipment available for any attendee to test and try. The goal of the GSMA's Connected Living programme is to accelerate the growth of M2M and the IoT. To achieve this, the programme aims to promote industry collaboration, appropriate regulation and create standards that will optimise network functionality. Last year, nearly 18,000 people visited the Innovation City, which is a great indicator of the power and interest in this showcase. We are keen to demonstrate the benefits that the Connected Living programme brings to the industry and invite all attendees of this year's Mobile World Congress to engage with us in our efforts to bring greater cooperation, technological advancement and new revenue opportunities to the IoT.



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Are we reaching the point where data has become just too big?

They're all saying that visualisation tools make big data come alive. Nick Booth is not so sure



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

The problems of both infographics and broadcast TV are to do with big, rich data

In this modern era of big data, there are many heart sinking moments brought on by the excessive use of information.

Infographics are one of the modern scourges of the information age. I can't be the only person in the world who feels a wave of anxiety whenever one of these visual interpretations is mooted. They're supposed to be quick and fun ways of graphically illustrating a complex point – but somehow they're not. Anything that's pre-announced as fun usually isn't. It's such a hard billing to live up to. But the creators of infographs always seem to make the subject even more confusing – to me at least.

There's nothing wrong with infographics, just the way people use them. Sometimes it looks like the author of the report has started with the intention of creating a pretty diagram, then rapidly tried to backfill the various fields with headings.

Typically, you'll be presented with a diagram resembling a biological deconstruction of flower parts. Instead of headings like stamen, sepal and stigma, the big data chart's regions have headings like customer data, supplier data and financial data. But there didn't seem to be any order in them, or relationship between the different entities.

Unlike the flower diagram, which gave some idea how of how, say, the nectary helps to enable the function of the flower's ovules, there were no such obvious relationships between the big data categories. It's almost as if, in haste, someone just put as many category names onto a chart as they possibly could.

It was ever thus, of course. I can remember presenting a report for a large UK telecoms company, which shall remain nameless. This company, which had recently enjoyed a near monopoly, was now facing competition for its channels to market. The pros and cons of the CSP's offering could have been summarised on a single sheet of A4 paper but the marketing boss didn't want that. So I had to make up 45 minutes worth of spider charts in order to pad out the presentation. These charts were created out of the values typed into the cells of an Excel spreadsheet. These scores were

themselves pretty random as the interviewees I was asked to quiz became so bored with rating so many attributes they just scored everything seven out of ten.

So we could have created a short, punchy memorable feedback report. It would have been more valuable to give each person one useful tip they could have put immediately into practice. But instead, thanks to a data binge, many of the sales staff dozed off and had to be resuscitated from a trance. And it wasn't my fault – well not entirely. Big data was to blame. In the wrong hands it can be lethal.

The tool of presenting big data actually made it harder to understand. This happens everywhere. With all the functions available on broadcast media, we should be entering a golden age of TV. Instead, I find most documentaries on telly unwatchable. The narrative is usually so ploddingly slow that it insults the intelligence and tests the patience to the limit. This is usually because the programme makers want to include every plot device available to them from the vast smorgasboard of televisual delights on offer. So instead of following the story of why and how rogue builder A ripped off pensioner B, we're forced to watch the presenter describing his journey of discovery and his preparations for the final confrontation scene. In the old, small data days, the smug ugly show-off would have been kept behind the camera, and his involvement in the narrative kept to a minimum. But not now. If you watch a consumer affairs programme, for example, you get the impression that the show is all about the presenters – and their journey.

The problems of both infographics and broadcast TV are to do with big, rich data. In each case, the user is given so many options for mining and presenting information that they have lost the plot. They feel as if they have to use them all, forgetting that the most important discipline in the information age is to make everything appear to be simple and clear.

I think some data austerity is needed. Or perhaps a data diet and some simple exercises. Otherwise we'll all get bloated, lethargic and liable to fall asleep at our desks.



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