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IT EUROPA PREDICTIONS 2016

2016 will be a difficult year to call for the European IT businesses – any of the usual linear progress in the IT industry in 2015 as a result of more powerful technologies was distorted by special factors such as cloud, security and the economic situation and its impact on dollar/euro pricing.

As a starting point we can take the economies: world economy forecast to grow 2.8% in 2015 and 3.3% in 2016 representing an 18% increase in the world wide economic growth rate according to the World Bank. But regional differences may make this less of a guide. Key indicator Intel reported that for the last couple of years the world economy dipped and so did sales of Intel processors worldwide. Intel overall guidance is for mid single digit sales growth. So the overall picture is positive, but this masks major changes in what customers are asking for, how they buy and consumer IT, and what this means for IT suppliers and their channels. There is also a clear difference in the IT requirements of enterprise and SMB customers, with the midmarket falling between the two.

THE ENTERPRISE STORY IS CLOUD WHILE SMB WATCHES AND WAITS

One difference in predicted growth depends on which part of the market you are addressing. If it is enterprise, then the story is cloud; researcher TBR says 54% of global enterprise respondents report using public cloud services, a market poised to reach $133bn by 2018. "The public cloud market is getting a boost from broader IT trends such as hybrid IT, brokerage and global demand," said TBR Senior Analyst Jillian Freeman. "As this next wave of enterprise cloud adoption moves toward large transformations from the C-Suite, professional services, integration and management are needed to address demand. The growing ecosystem of vendors around popular public clouds also helps fill industry and geographic gaps."

Jeff Denworth [pictured], SVP Marketing from CTERA told IT Europa: "CTERA's hosting automation platform partner, Odin (just bought by distributor Ingram Micro, reports IT Europa), reported this year that the market will continue to grow very quickly – where cloud infrastructure is growing at a CAGR of 15% b/w now and 2018, and cloud-enabled business applications growing even faster – at 25% CAGR – between 2015 and 2018. These growth rates are relatively consistent with the enterprise growth rates … the rising (cloud) tide will float all boats."

And the gap between the US and Europe? "The primary challenge is the concept of data stewardship. Since US-based companies offer the majority of cloud services, and the viability of these offerings is being challenged by the elimination of Safe Harbor protections and the US Government v. Microsoft case – there is now a vacuum that has been created in Europe where regulation and security policy has outpaced the availability of sovereign European services. The net result is that ISVs are being brought in to replace shared US-based services until the dust clears – where customers will option to deploy cloud services from within their own network (on or off premise) to avoid the confusion and scrutiny."

Ivan Medved [pictured], Business Development – AVHS, Axis Communications says "Businesses of all sizes are recognizing the efficiency and cost-effectiveness of cloud-based strategies for a variety of business applications, including security. Remote and mobile access to surveillances feeds and video analytics are important to smaller size business who are often resource constrained. Security-as-a-service is a popular emerging trend with small business who don't want tie up a lot of capital in security-related hardware. While enterprise will remain a far larger market overall, SMBs are far greater in number and this category represents a significant growth opportunity to apply cloud-based security implementations."

> **"THE PUBLIC CLOUD MARKET IS GETTING A BOOST FROM BROADER IT TRENDS SUCH AS HYBRID IT, BROKERAGE AND GLOBAL DEMAND."**

Some of the most secure and advanced hosting facilities are located in Europe so technology-wise Europe is at least on par with the US. As far as customer adoption, enterprise companies in Europe are generally at the same use level as their US counterparts (and certainly global companies operating in both places most often share a common infrastructure), he says.

But cloud is not the answer to all types of enterprise: the finance sector is behind as it suffers from limitations from an inconsistent regulatory framework and a lack of adoption of good practices which deters financial institutions from taking advantage of the benefits of cloud computing, says ENISA (European Union Agency for Network and Information Security).

> **"CLOUD COMPUTING IS CURRENTLY WIDELY USED IN SEVERAL SECTORS, HOWEVER, ITS ADOPTION IN THE FINANCIAL SECTOR REMAINS LOW."**

Cloud Computing is currently widely used in several sectors, however, its adoption in the Financial Sector remains low. ENISA engaged financial institutions, national financial supervisory authorities and cloud service providers in a study to analyse the slow uptake of cloud services and provide possible explanations related to the speed of adoption of these services by the financial sector.

This study identified several causes for this slow uptake, including: inconsistent regulatory guidelines on cloud deployment, and concerns about security and data privacy jurisdictions across EU Member States. For example, almost half of the Financial Institutions surveyed have not developed a cloud risk assessment even though they are aware of specific risks associated with Cloud Computing. Furthermore, although NFSAs are also aware of the risks of cloud computing, they are insufficiently informed about the security measures implemented by service providers at all times. CSPs have difficulties offering services to Financial Institutions due to differences in security and privacy requirements across EU member states, such as the implementation of privacy requirements that are the responsibility of national Data Protection Authorities (DPAs) and not of NFSAs.

ENISA advises that financial institutions, national financial supervisory authorities and cloud service providers should co-operate to develop a consistent regulatory framework for the secure adoption of cloud computing based on widely used good practices and standards, financial institutions should develop and implement a risk assessment approach to cloud computing and integrate it with existing corporate risk management processes and service providers should do their utmost to enhance the transparency of their service offerings and comply with any regulatory provision and widely accepted good practices and standards in the area.

We will see how much progress is made here in 2016, but a lot will be subject to security issues and EU work on data and compliance.

THE CUSTOMER IN 2016:
BIG DATA GETS ESTABLISHED, CLOUD BECOMES THE NORM

Professor Michael Feindt, founder of predictive analytics firm Blue Yonder: "My prediction is a year of predictions - data analysis focus will change from analysing historic information, to predicting what will happen in the future on a continual on-going basis. Business can learn a few lessons from the scientific community here, and they will learn that a fast database cannot deliver a predictive solution. It is a means to hold huge amounts of data, but to analyse huge amounts of data, learn new relationships, train predictive applications and to construct algorithmic automated decision-making machines running in real-time, it needs scientific, business algorithms. It is only recently that commercial applications are catching up with science. 2016 will be the year that more and more decision-makers will understand the difference between a database and a predictive application, and market research analyst Gartner shares this same opinion as well."

Businesses which have not yet started looking at predictive and algorithmic strategies face a bleak future, he says. "As well as the rise in algorithm application, we will see a better understanding of big data analytics. IoT is taking off. Products such as Google's driverless car, smart phones and connected household appliances all produce more and more data. This data needs algorithms to make sense of it and deliver on the promise big data has tantalised us with. These would allow the prediction of outcomes and would automatically make decisions based on those predictions. Artificial Intelligence (AI) moves forward.

This means that data scientists will be in high demand by human resources and Data-as-a-Service (DaaS) will be popular The skills of a proper data scientist have long been recognised in the banking and finance sector and 2016 will see this recognition and requirement spread to other sectors. Some companies will undoubtedly create their own departments for it but for others it will be more logical to buy in the services of data scientists with creditable business knowledge from supplier organisations.

> ## "MORE CLOUD COMPLEXITY AMONG CUSTOMERS WILL MEAN MORE OPPORTUNITY AROUND CLOUD OFFERINGS IN 2016."

Allan Krans, Practice Manager & Principal Analyst at researcher TBR says 2016 is a key year for cloud: "More cloud complexity among customers will mean more opportunity around cloud offerings in 2016. 2016 will mark a turning point in cloud adoption and the opportunity for vendors in this space. No longer will the market be dominated, in market share and in the minds of customers, by vendors delivering only stand-alone public cloud services. Customer ability, skill and desire to use cloud solutions that blur across public, private and hybrid options will accelerate adoption of more complex, heterogeneous and integrated cloud use cases starting next year. This changing customer behaviour combined with more mature offerings and services from vendors will result in Cloud 2.0, the second phase of cloud maturity, in 2016.

Or, as IDC puts it: By the end of 2017, two-thirds of global 2000 enterprises will have digital transformation at the centre of their corporate strategy.

Several organisations have identified digital dexterity as a mark of potential in this new world. Capgemini Consulting in a study with MIT Centre for Digital Business, reveals that, so far, few companies have successfully used digital technologies to evolve their organization into truly digital businesses. The report found those that did were twice as likely to be reporting industry leading growth, profitability and customer satisfaction than their competitors.

A small cadre (7%) of leading organizations exhibit a digital-first and dexterous mindset; they have fully digitized operations, are able to quickly self-organize, detect emerging trends and hold significant experience and skills in digital technologies.

The majority of companies are still in a transition phase trying to cope with the instability between the new and the old organisational models. Many (56%) are in the 'initiating' phase, just starting the shift and slowly building their digital competencies, while a significant number (21%) are in the 'engaging' pase and well underway with transition, with various digital capabilities in personalizing customer experience, simplifying routine tasks and enabling collaboration within and beyond an organization's boundaries.

16% of organisations are 'stalling' says the study, without any significant digital capability and grappling with its possibilities, inflexible and unable to respond to emerging trends and customer needs.

How firms are progressing to become digital organizations
Source: Capgemini

THE IT INDUSTRY IN 2016

Moving on to how these customers buy their IT, 2016 will see further major changes in vendors and channels, with legacy vendors facing a bleak future unless they take major steps. In its 2016 forecast report, IDC states that "by 2020, more than 30% of IT vendors will not exist as we know them today." In other words, nearly one-third of today's vendors will be out of business, stripped-down shells of their former selves, or combined via mergers.

Even the cloud providers themselves will be subject to consolidation according to researcher Forrester: The major public cloud providers will gain strength, it says, with Amazon, IBM SoftLayer, and Microsoft capturing a greater share of the business cloud services market. Despite excellent technology and scale, Google will only begin to develop momentum in large-enterprise business in 2016. it says.

And cloud also provides new challenges for channels: survey data revealed by the SANS Institute shows that there are more issues that cloud providers face in keeping their customers happy, with a lack of visibility into operations the biggest bugbear for clients.

The report, entitled 'Orchestrating Security in the Cloud', spoke to 485 IT professionals and found lack of visibility was cited by 48% of respondents as a problem. A lack of virtual machine and workload visibility was selected by 46% of those polled, while vulnerabilities introduced by the vendor which resulted in a breach were a pain point for 26% of respondents.

One in three respondents (33%) say they do not have enough visibility into their cloud providers' operations, while 40% admit unauthorised access to sensitive data from other tenants is a major concern with public cloud deployments. For the public cloud, denial of service is the biggest threat (36%), compared to malware for private cloud (33%).

Several large IT companies are in dramatic transition: IBM is one to watch as it unifies its disparate hardware, software and services messaging around a future built on cognitive computing

Cognitive computing, as defined by IBM, comprises systems that learn at scale, reason with purpose and interact with humans naturally. Core technologies include natural language processing, machine learning, probabilistic analysis and scalable computing. IBM calls cognitive computing the third age of computing, where the market moves past tabulation and programming to an era in which humans and computers collaborate to solve problems. With these heady messages, IBM generates significant opportunity among CEOs aiming to find an edge by tackling previously intractable research problems like the search for cancer treatments.

> **"MORE CLOUD COMPLEXITY AMONG CUSTOMERS WILL MEAN MORE OPPORTUNITY AROUND CLOUD OFFERINGS IN 2016."**

IBM will continue to provide its core hardware, software and services offerings, but cognitive computing was touted as generating the greatest and most differentiating value. With Watson's appearances on Jeopardy in 2011 and the launch of the Watson Health business unit in 2015, IBM successfully introduced the concept to the market, and the forum served to show how each line of business is aligning around and accelerating the growth of the new opportunity.

IBM's reorganization to centre on its strategic growth areas — such as cloud, analytics and cognitive computing — brings together experts from former IBM business units, enabling the company to reduce internal competition and promote unified, go-to-market pushes of high-demand solution sets incorporating hardware, software and services. This restructuring continues to benefit IBM and allows for further competitiveness and agility in an increasingly tough market to navigate.

We need to wait for the dust to settle around HP – now two businesses, and Dell/EMC. Oracle's recent major commitment to cloud will be worth watching for channel deliverables; this is a model with a large established customer base it does not want to lose or cannibalise. Cisco can be expected to continue to succeed as everything becomes networked, and it has a hand in all the major parts of this. It will be interesting to see how its plays its security strengths in 2016.

The threat they all see and are scared of is "commoditisation". Patrick Heffernan, Practice Manager & Principal Analyst at TBR say IT services vendors risk losing business, assuming they remain simple commodity brokers, if everything becomes "as a Service," paid for on a subscription basis and delivered through the cloud. "The persistent, slow growth of recent quarters, if it becomes the expected market baseline, may eventually force out the smallest and least-efficient vendors. Vendor strategies deployed in 2016 will determine which companies and strategies matter by 2019."

> **"IS THERE STILL A TENDENCY FOR CHANNELS TO WANT TO SUPPLY OLD TECHNOLOGY WHICH THEY KNOW BETTER AND CAN SUPPLY IN A TRADITIONAL SALES MODEL? "**

Channels in 2016 will see new roles for distributors, new channels opening up and new demands on resellers. David Fearne, Technical Director at Arrow ECS: "Ensuring end users achieve the outcomes they require is a crucial pressure from customers, one that is driving the channel forward. As technology goes from line of business silos to ubiquitous business tooling, the value to having more tools which are better integrated, secure, and on-demand is growing. However, this approach requires a fundamental re-think of the traditional IT department's role."

Understanding and examining every element of a full stack solution is no longer viable, he says. "In this new technologically advanced world, the channel is becoming more important than ever and this is increasing the pressure in return. Being able to consistently deliver outcomes is what elevates channel players from reactive to proactive - and makes the end results a truly valuable extension of a business' IT function."

Are channels moving forwards as rapidly as customers would like, or is there still a tendency for channels to want to supply old technology which they know better and can supply in a traditional sales model? David Fearne says end users are starting to adopt a bi-modal IT model. This kind of model boasts a core operation that supports the day-to-day business, but also an agile function that looks into and adopts new technologies to help maintain a competitive edge.

"The channel is facilitating the core function well as this has been the business model used for the last 20 plus years. However, channel players often disregard new technologies at the risk of disrupting existing business and IT models, " he agrees.

This behaviour can lead to disruptive technologies being introduced to the core IT function which the channel isn't actively adding value to. Instead, channel players need to be taking new technologies seriously and proactively suggesting solutions to their customers; acting as an outsourced agile function of the customers' business, he says.

"We have seen a shift over the past three years of more vendors moving to cloud and SaaS (Software as a Service). However, the channel's ability to pivot its business models to work with a wider range of technologies and commercial delivery models limits the way it can meet this demand."

These cloud and SaaS products often bring with them annuity revenue streams, which are difficult from a reseller perspective to work with as they cause a compensation or a cash flow issue. "Time and time again, we see sales people not wanting to see their pockets being hit by compensation plans stretching over years. But businesses don't want to or can't pay the commission for a long-term deal upfront, so the annuity products end up not being sold."

But this isn't the best situation if the most suitable fit for a customer is an SaaS annuity service.

Additionally, traditional channel players are seeing 'born in the cloud' companies that have no past history to compare to. However, end users who go directly to SaaS providers limit themselves by cutting out the value the channel offers. Instead, this can often be a very short-term gain and a very long-term pain for the customer, says David Fearne.

Which channels will grow fastest in 2016 then? Predicting channel growth is based on understanding which technologies are coming out of their disruptive, new phase, and becoming more mature and entering a mainstream stage: being adopted by mid to large scale end users. This highlights the new technologies that are safe to invest in. "For 2016, I expect both the Software Defined Data Centre (SDDC) and the Software Defined Work Place (SDWP) to be big growth areas for the channel. These two technologies will aid organisations in taking their first steps into the IT as a Service (IaaS) nirvana," he says.

By starting to implement flexible network technologies businesses can straight away become more agile and work much faster. And, thanks to Software Defined Everything (SDE) they can start to converge storage and compute. It also allows them to work more productively through enterprise mobility technologies delivered as part of a SDWP strategy.

Dieter Lott (pictured), Vice President, Business Development, EMEA, at Avnet Technology Solutions EMEA: "Mobile interactions are continuing to evolve. There's a massive shift in the mobile space with apps becoming the norm for any kind of customer interaction. Downloading apps is now a normal ask of customers. In 2016, this will open up new solution areas for channel partners as mobility moves more towards app-driven channel enablement where partners can communicate, receive and access information through easy-to-use apps."

Value-added distributors can help here by offering their expertise, he says, such as in mobile app development, to enhance the skills of their partners. In the vertical markets this is all the more essential as growth in those segments is driven by customer engagement which can be achieved through personalised experiences generated by the merging analytics, mobile apps and Internet of Things (IoT) data.

On top of this, the tech world is merging. There is strong synergy between IoT and mobility and this closed loop will become even more apparent into next year. Mobile is becoming just one of masses of applications in the IoT ecosystem, like social media.

> ## "WE'RE ONLY NOW STARTING TO SCRATCH THE SURFACE AS THIS VAST AMOUNT OF DATA MUST BE INTERPRETED TO GAIN ACTIONABLE INSIGHTS."

One of the trends leading into 2016 is that all third platform technologies are inter-related and one of the key strands is big data and analytics. Interconnected devices in the Internet of Things (IoT) are generating more and more data which, in turn, is forcing data analytics to become even more intelligent. "We're only now starting to scratch the surface as this vast amount of data must be interpreted to gain actionable insights," he says.

The danger is that data for customers investing in this area is being diluted through information overload. As a result, next year, there will be even more of a focus on gaining actionable insights to make the data practical and profitable. In 2016, there will be a renewed focus on data visualisation tools to present data in digestible chunks, on any device. This will open up more doors for industry growth and deliver greater rewards for those partners helping their customers improve business outcomes through data analytics, says Dieter Lott.

Internet of Things (IoT) opportunities are more difficult to grasp for the channel at the moment. The principle that 'anything that can be connected will be connected' uncovers vast opportunities for those willing to embrace this. The principle that smarter devices will drive smarter decision making is a core opportunity for the channel. "We've already seen movement in the secure storage of big data, for example. Every day we use technology to gather information, check facts and gain insight to drive revenue opportunities. For the channel and end businesses to take their data to the next level, it will need agile exploration, analysis and action."

Distribution can help by bridging the gap between Operation Technology (OT) in industry and Information Technology (IT). These two markets have, in general, been operating independently for many years. The opportunity for IoT is to bring them together – on a massive scale, he says.

The market for analytics software will open up for insights that are accurate and meaningful. The requirement to protect privacy and secure information will become even more critical too. This will also have an impact on the requirements for security, location data, secure cloud storage, asset tracking and management, and mobility. In the long-term, enterprise-focused IoT hardware and software in the manufacturing, transportation, warehousing and information sectors are where the real growth opportunities will be. That is the next layer of IoT to crack.

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MERGERS AND ACQUISITIONS IN 2016

Valuation re-setting will slow the M&A market in 2016, say researchers. Victor Basta, managing partner at Magister Advisors, said: "The S&P 500 is ending 2015 pretty much where it started. Yet all is not stable in the technology industry. 2015's extremism is setting the stage for a turbulent, and unstable, 2016." Another advisor, Regent, has pointed to a generally rising valuation for European tech companies (see chart)

Magister Advisors' key 2016 predictions for the global technology industry are that the vaunted IPO market will be distinctly quiet. Victor Basta said: "IPOs come in waves, and all signs point to a quiet sea next year. Interest rate rises coupled with macro/political uncertainty will give an already unsteady IPO market serious vertigo. Box, Theranos, and Square join a trend likely to continue. In fact 2016 will simply reflect years of poor tech IPO performance; since Facebook's May 2012 IPO, tech IPOs overall have returned only 7% in a period when the S&P500 delivered 60%. Public investors eventually tire of poor performance."

The vast majority of the 150 unicorns (tech private companies valued at more than $1bn) are high quality, sustainable companies; and the problem is valuation not quality. As 2015 ends, the aggregate value of the unicorn class is half a trillion dollars. Fidelity's Snapchat write down and the Square IPO re-pricing are the valuation "iceberg tips." Applying a Square-like adjustment to the Unicorn stable implies a disconnect in the aggregate valuation of approaching $200 billion, says Victor Basta. "Since many unicorns are funded to their next round, not to break-even, we expect a large number to be re-valued lower during 2016/2017 as they are forced to raise money. This will hurt the Series B and C investors and founders in these companies more than anyone, as they get squeezed between original angels with low in-prices and last round investors with downside shareholder protection."

This implies that unicorns will raise less than they expect; layoffs are inevitable, he says. "Many unicorns have no choice but to begin managing to break-even, not to a next round or IPO. This means a hard look at staffing, and inevitably the weakest 10-20% of their workforces will be looking for their next job unexpectedly early."

TMT VALUATION TRENDS
M&A Transactions in Europe
source - *Regent*
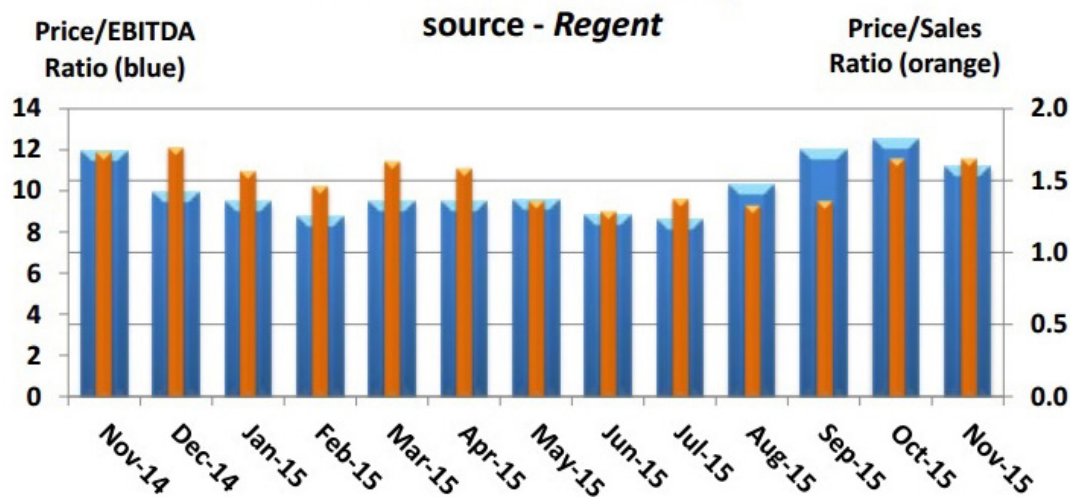
A unicorn (or two) could blow up in 2016 – Fab.com showed how to go from a $1 billion value to a $15m fire sale in 12 months. "While the story since Fab has been of successful exits like Twitter, WhatsApp, Tumblr and others, we believe at least one Unicorn from the e-commerce or FinTech sectors will follow Fab.com's "exit route" into bankruptcy, either during 2016 or shortly after."

> ## "WE EXIT 2015 WITH AN OVERALL FLAT BUT WORRYINGLY CAUTIOUS TECH MARKET. "

This financing chill could cascade down to the mid-tier. "Unfortunately market downturns are rarely contained, and the biggest losers of a decelerating market will be the "unicorn aspirants" aiming to raise $15-50m at $100-500m valuations. As IPOs go quiet and unicorns get marked down, these aspirants will only raise a fraction of what they seek, and will do so at lower valuations than their investors ever expected. If an aspirant hasn't already raised enough money to see through the next three years, they may well get caught in the storm.

This valuation resetting will quiet the M&A market temporarily – expectations take time to reset, and always lag reality. Many investors will not accept a new (lower) normal, until at least 9-15 months have passed. Meanwhile there will be an imbalance between seller price expectations and what buyers are prepared to pay, taming the M&A market while price expectations re-align. Ultimately though more reasonable expectations will drive even greater M&A activity into 2017-18

Finally, far fewer VCs will raise $100m+ funds in 2016. It has become relatively easy for VCs in the US and Europe to raise $100m funds these last few years, as their investments have been re-priced up repeatedly. A softening valuation environment inevitably causes LPs to rein back VC commitments, especially outside the US. Perversely, this will happen in 2016 even as VCs enter a far more attractive investment environment where quality companies will look for money at reasonable prices. Victor Basta concluded: "We exit 2015 with an overall flat but worryingly cautious tech market. We expect to exit 2016 with valuations having reset, greater instability, and the key tech companies and investors being far more cautious about where they place their bets going forward. In other words, 2015's reality distortion field should dissolve back into plain reality – and not a moment too soon."

OTHER HEADACHES IN 2016:
1 PERFORMANCE

App performance specialist Riverbed has revealed a major performance gap between the needs of business and IT's current ability to deliver. The importance attributed to application performance is universal – 96% of business executives agree that optimal enterprise application performance is critical to achieving optimal business performance. But almost 9 in 10 (89%) companies say the poor performance of enterprise applications has negatively impacted their work. It again spotlights the disconnect between IT teams and business executives - almost all (94%) of global execs have felt "in the dark" about why their apps are running slowly and how to stop it.

Hybrid IT is a big factor in this performance gap. Migrating apps to the cloud brings agility and cost benefits, but, with other apps still on-premises, it also brings complexity. The implications of poor app performance is having severe ramifications. Those business execs in the UK specifically, revealed how poor app performance has resulted in contract delays (36%), dissatisfied customers (31%) and missing critical deadlines (31%), says the Riverbed study. For UK execs, when apps were running slowly or stopped working, shadow IT increased, but morale decreased and productivity took a hit, it found.

OTHER HEADACHES IN 2016:
2 SECURITY

Researcher Frost says security will be the biggest issue in the ICT industry, driven by rapid adoption of cloud, mobility and the Internet of Things. But there is already a crisis of confidence in end users: consumers feel that businesses are not doing enough to ensure confidential customer details are safe, according to a new survey conducted by iStorage, a leading specialist in digital encryption and portable data storage. The data security survey of over 250 consumers, revealed that although nearly half of respondents do not encrypt their own storage devices, such as laptops and USB drives, 95% believe more can be done by businesses to ensure customer data is kept safe.

In the same survey, over 78% of the respondents stated that they are more worried about data loss following recent high-profile data breaches. The research conducted by iStorage also looked at consumer habits on data security. It revealed that four out of five respondents own a storage device which they keep confidential data on and almost a quarter of the respondents have suffered loss or theft from a personal device.

This year alone has seen multiple high profile security breaches including TalkTalk and Ashley Madison, with thousands of customers' details leaked onto the internet and the dark web. In the UK, the most important piece of legislation businesses must worry about is the Data Protection Act and the possibility of fines by the Information Commissioner (ICO). The ICO can not only issue monetary penalty notices, requiring organisations to pay up to £500,000 for serious breaches of the Data Protection Act, but can also prosecute those that commit serious criminal offences under the Act.

CipherCloud CEO, Pravin Kothari predicts a rise in senior security appointments (and budgets)

"Given the very high profile data breaches and security attacks on businesses this year, we will almost certainly see many more senior appointments with 'security' or 'risk' in the title. This will go hand in hand with an increase in security budgets, particularly in very large enterprises. For example, JP Morgan has already doubled its security spend to $500 million."

Breaches will see companies disappear, he says "Trust is fundamental to business. But security breaches break the bond between a company and its customers. Once this trust is broken, as in several major security breaches starting with Target, it will be very hard to rebuild.The Ashley Madison breach earlier this year put its IPO on hold, and more recently TalkTalk's in the UK resulted in a 15% stock decline, although it will be interesting to see how things will play out on the litigation front. With breach notification laws and the EU Data Privacy Regulation, we will see more companies being publicly named, shamed and financially penalised to death."

Regulatory focus on security, privacy and sovereignty will see cloud access security brokers (CASBs) come into their own. Companies will need to protect information across the entire IT stack and CASBs deliver the core technologies that secure data in the growing cloud applications stack.

The age of encryption will emerge, he says . Attacks on Ashley Madison, Sony and TalkTalk revealed that these companies simply fail to implement basic security procedures. Encrypting sensitive data would have protected millions of customers' information from a very public leak in Ashley Madison's case, and would have prevented embarrassing emails from ending at least one Sony executive's career. TalkTalk's CEO was quick to point out that the company was under no explicit obligation to encrypt customer data, and then its share price dropped immediately after its latest breach. Encryption will become a byword for security best practice.

Security is not being helped by the legislators: the ECJ's Safe Harbor revocation has left a bigger void than what any legal band aid can patch. After much haggling in 2016, DC, Brussels and the 28 independent EU data protection authorities (DPAs) will finally roll out a new privacy framework. The contentious history behind the first pact will certainly create delays in the negotiations, leaving companies to rely on proactive security tools to assure high levels of privacy for cross Atlantic data transfers. Organisations will take steps to limit exposure, including anonymisation of personal data, using encryption or tokenisation for data leaving Europe.

> # "THE INDUSTRY GAVE UP. THEY SURRENDERED AND TURNED TO POST-BREACH DETECTION AND MITIGATION BECAUSE THE HACKERS WERE WINNING. "

And the channel and security? Dieter Lott of Avnet: "The third platform" created by the rise of mobile computing, social media, cloud computing, and data analytics is impacting and accelerating business management and IT infrastructure around the world. Although this acceleration offers enormous potential, it forces critical processes, information and shared data to operate at stellar speeds, exposing them to huge security risks. In 2016, we'll continue to see advancements in security and networking solutions as an integral part of every data centre. To address this transition to the 3rd platform, next year, value-added distributors will need to adopt a broader security strategy to enable the channel by providing partners with a skill set in security and networking, to place security at the core of all their solutions."

PhishMe Inc, provider of phishing threat management solutions says that attacks will continue - phishing has been the number one attack vector for over five years and 2016 will be no different.

Rohyt Belani, CEO of PhishMe explains his thinking, "We, as an industry, have lagged in engaging employees to be a part of the organisation's security posture. For decades, enterprises have focussed on traditional security awareness techniques like computer-based training that simply don't work; they have no sustained impact on behavioural change. Focus will move back to prevention of breaches, rather than detection after the fact.

"The industry gave up. They surrendered and turned to post-breach detection and mitigation because the hackers were winning," explains Scott Greaux, VP Product Management at PhishMe, "With average time to detection still over 200 days this approach hasn't worked either and I think in 2016 we will see the focus shift again. System infections will occur, and at the moment there's no silver bullet to change this, but we need to prevent these infections from translating to large data breaches. That means conditioned email users will play a key role, providing the timely and actionable threat intelligence thus minimising attacker dwell times, that will help prevent breaches in 2016."

It seems that criminals listen to the advice given to people about cybercrime and turn it around in a bid to thwart defences. The traditional wisdom was 'don't click links or open attachments from un-trusted sources.' In 2015, the increase in attacks targeting email is primarily about abusing those trust relationships. In 2016, other forms of trust are going to be under attack. Passwords stored in browsers, especially on mobile devices and 'Bring Your Own Device' phones and tablets will be a big target, he says.

OTHER HEADACHES IN 2016:
3 STAFF AND RETENTION

Developers are the scarce commodity and of of course, CIOs and IT departments can't do it on their own. They require an organization staffed with people capable of implementing the applications that will make the company a digital enterprise.

And everything about those applications will be different from traditional enterprise applications. They'll use different languages, different databases, different frameworks and different execution environments. In short, nearly everything will be new – and require a different set of skills from those appropriate to last-generation applications. IDC puts it this way: By 2017, over 50% of organisations' IT spending will be for third platform technologies, solutions, and services, rising to over 60% by 2020. Therefore, a brutal war for developers is expected as enterprise IT shops and tech companies battle for a limited pool of next-generation talent.

Will vendors have to spend more resources on channel training and especially sales training in 2016? Jeff Denworth, SVP Marketing from CTERA tells IT Europa: "The rate of adoption of next-generation products is only increasing - and the old guard is rapidly being disrupted by emerging players that are taking share very quickly. The resulting effect is that channel and sales organizations are becoming much more adept at on-boarding and embracing new technologies. The result, vendors do not have to spend more as the investments are really being made by the channel – partners who are proactively transforming their business(es) to take advantage of the opportunities caused by technology disruption."

Ivan Medved,Business Development – AVHS, Axis Communications agrees: "In the security and surveillance area, we see an increased focus on training as products get more sophisticated and use models evolve. For example, advanced video analytics technology which provides new levels of security as well as business intelligence information, require more in-depth training. Similarly, complex networks of cameras and supporting infrastructure need specialized training to design, install and maintain to work optimally. As security systems get more integrated with other aspects of the physical facility, additional training is required as well. These are areas of significant revenue and growth opportunity so channel partners are well motivated to want to expand their areas of expertise into new technologies."

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PUBLIC SECTOR IT: CLOUD AND MORE

Rates of adoption of cloud services in the public sector are increasing rapidly, but more care is needed when choosing migration partners to minimise recurrent issues. This is a key finding from new research into 'Cloud adoption trends in the UK public sector' from Cloud Services Provider Outsourcery and the Cloud Industry Forum (CIF).

Research conducted on behalf of Outsourcery and CIF aimed to determine the level of Cloud adoption among public sector participants. It found that 78% of public sector organisations have some form of Cloud-based services in use today, having risen from only 38% in 2010. In addition, there is increased depth of Cloud use within this sector, with 83% using two or more hosting solutions within their organisations, rising from 53% last year.

However, respondents also reported a number of challenges in moving to the Cloud. Commonly, the public sector has concerns regarding the complexity of migration and data sovereignty, at 44% and 41% respectively, alongside contractual problems or queries. These problems can often be traced back to the Cloud-migration partner, which can be remedied by a careful pre-procurement engagement that thoroughly examines all prospective Cloud suppliers.

Simone Hume, head of Public Sector at Outsourcery commented: "Complex migration routes, qualms with data sovereignty and contractual queries, while not denting adoption or ultimate satisfaction, are clearly causing some frustration and concern and there is a risk that this will result in organisations not realising the full benefits of a cloud solution. The issues we found seem to have a common cause in the partner chosen to work with, who either didn't meet an organisation's needs, or didn't fully understand or support its migration to the Cloud."

E-government is popular with the northern parts of Europe where most governments have already picked the low-hanging fruit of single-function 'fix my pothole' applications, and will need to stretch higher to deliver integrated, citizen-focused services, according to global analyst firm Ovum.

In the new 2016 Trends to Watch report on Government Technology, the analyst firm identifies a number of key trends that will impact the government technology market in 2016, including the idea that many agencies are moving past e-government, automating existing processes, and toward digital government, where new processes of government are developed. Cost-effective end-user analytics tools can make evidence-based policy achievable as "agile government" IT organisations require agile supporting business processes. Citizen identity is critical to seamless digital government services, however, and this runs into political issues.

Al Blake, Principal Analyst, Public Sector at Ovum and author of the report, said: "First-generation e-government initiatives focused on automating existing government processes. We are now seeing a shift to rethinking the business of government and linking processes to deliver a digital experience."

Blake added that in most cases the technically easy options have been delivered, asking: "Does the world need any more 'fix my pothole' apps?"

While 'evidence-driven policy' has often been an aspirational goal, a number of technical developments are bringing it closer to reality. "The increasing availability of massive processing power, coupled with intuitive end-user interfaces and 'pay as you go' delivery offerings, puts analytical capabilities at the fingertips of policy-makers and planners that would have been unthinkable a few years ago. This is a real game changer," asserted Blake.

However, the report also highlights that responding to the demands of citizens and politicians for faster results requires organization-wide change. "There is not much point in having an agile IT unit if your procurement, recruitment, and budgeting processes still take months," said Blake.

COMMS AND IT GET CLOSER STILL

Most telecom predictions says that operators will drive down legacy costs while growing new digital service models, and this means more converged thinking. TBR for example says that in trying to do more with less, operators will push to become agile digital service providers

"Telecom operators are on a path to evolve from voice and data connection providers to digital service providers (DSPs). Rather than rely on subscribers alone for revenue, DSPs grow revenue by monetizing transactions for services delivered over the network. While some operators are building a revenue base as a DSP, the majority of their business still depends on winning subscribers," it says. Attracting and retaining subscribers become increasingly difficult as it becomes easier for subscribers to switch providers and saturated markets limit the amount of new subscriptions that can be obtained.

> **"THE REAL VALUE OF IOT LIES IN ITS ABILITY TO MAKE YOUR LIFE SIMPLER AND EASIER. THIS DOESN'T WORK IF THE DEVICES THEMSELVES ARE COMPLICATED TO USE."**

The Enterprise Communications Market will witness disruption from an emerging class of start-ups, says IDC, and these will include those majoring on IoT, a point picked up by other commentators.

Asit Goel, SVP, NXP says that service providers will usher in IoT. "In 2016 we will increasingly see service providers taking a leading position in rolling out the IoT. So far the IoT has only been available to consumers largely on an individual product basis and as a result uptake has been patchy. Once service providers get involved and consumers see the benefits from IoT-as-a-Service, we will really see IoT take off."

Telecoms companies for example are perfectly placed to begin offering IoT packages such as a 'smart' or 'secure home' providing hardware, software and support for a monthly cost, he says. As service providers become more involved in IoT security will become more of a focus, as they will need to not only protect consumers but also their own reputations.

The real value of IoT lies in its ability to make your life simpler and easier. This doesn't work if the devices themselves are complicated to use. This is why we will increasingly see technologies like NFC used in the IoT, he predicts. It's a very simple technology that consumers already use and is perfect for pairing products together with a single tap. For the same reasons voice activation will be a feature that technology companies will look to perfect and integrate into products so devices can be easily controlled by those with little technical know-how or ability.

IoT security will be visible to consumers, he thinks. One requirement of the new world of IoT will be to ensure consumers have the information they need to make educated decisions about the products they purchase. Companies will have to be transparent about the level of security their products and solutions offer but do so in a way that's easily understood. In the future IoT products will be sold much like bike locks are today, clearly marked with different levels of security. This way consumers can make clear decisions about how much security they need and how much they will be willing to pay for it.

CONCLUSIONS

2016 looks like being a very interesting year of transition for many in IT. Customers' needs are evolving, vendors are driven by the need to maintain margins, channels want to supply but not cannibalise existing solutions or customers. Skills shortages will be an increasing issue.

Key points:

- As economies recover, IT spending will rise, but this may get diverted into aspects regarded as essential such as security.

- Security issues will make headline news, so expect customers concerns to continue.

- EU legislation is moving at a snail's pace; we don't hold out much hope for change

- Channels will consolidate – driven by the need to raise capital to invest, lack of available skills, plus the wall of new money looking for a home through IPOs etc. But M&A activity may be quieter than for a while.

- Expect distribution to continue to expand its portfolios, especially in security, while fulfilling its role of recruitment and providing cloud management and contracts.

- Big Data will start to affect everyone, not just the obvious big data users and vendors; there is a real shortage of expertise here, however

- Watch for smaller IoT projects: While large transformative Internet of Things (IoT) projects grab headlines, an increasing number of IoT projects are smaller in scale, less expensive and less risky, says TBR. Wearables might finally come through as part of IoT.

- Analytics and big data will drive the market: for IDC, big data is only getting started. Today, only 1% of all apps use cognitive services; by 2018, half will. Essentially, analytics will be embedded in every application, used to facilitate functionality or convenience.

- Predictive Analytics will be big, but means high demand for IT-based business specialists able to define the rules which can encode the models

- Software-defined everything means hardware continues to be standardised, especially in data centres while software creation, APIs, embedded systems and mobile will set the pace. For an update on the situation among Europe's software business and who is winning this race, attend the European Software and Solutions Summit in April in London (**EUSSS.com**)

- As a result of software-defined everything and the enterprise move to the cloud, managed services will become the accepted model for many businesses and organisations. Who best provides these, with which management tools and administration, is a question that will remain open in 2016. Again, we recommend the Managed Services and Hosting Summit, in London in September (**www.mshsummit.com**)