

We asked leading CTOs about their companies' big data policy and their plans to make further use of big data

# CTOs take on the big data challenges to improve services and revenues

**Can you describe what your company is doing with big data at the moment, and what it is planning for the future?**



**Enrique Blanco, Telefónica:** We are moving to become a data driven business, and it is our ambition to consider data insights for every single business decision we take

**Enrique Blanco, Telefónica:** Telefónica is using big data for optimising its current business, such as churn reduction, customer experience, upselling, and so on, and also for external monetisation, that is, to generate new revenues — such as our Smart Steps product. Telefónica is moving to become a data driven business, and it is our ambition to consider data insights for every single business decision we take.



**Ibrahim Gedeon, Telus:** We are working with the various government bodies which allows the sharing of user information and peering with various government services

**Ibrahim Gedeon, Telus:** Big data has been the buzz word for a while. We have technically decomposed big data into collection, enablement (storage and retrieval), analytics and presentation. We have enabled a single Telus data lake for everything and this has been in production for two years mainly, benefiting our consumer business and identity services. Our next step is business and more importantly leveraging B2B2C.

**Sameh Yamany, Viavi:** Given the intense competition that service providers are facing, there is increasing pressure to differentiate and to combat declining revenues. One of the advantages that service providers possess is the vast data that they have traversing their networks. This data can be used to create innovative new revenue streams.

We at Viavi have been creating a means to enable the analytics required for service providers to monetise this big data. We have solutions for location intelligence, service visibility, assurance, ethernet and backhaul transport, and video feeds that can enable the visibility needed for the analytics required for service providers to create new service offerings and sources of revenue. We are continuing to enhance this capability over time to enable customized correlations and aggregations depending upon the use case.

**What are the technological challenges in implementing and using big data in the company?**



**Sameh Yamany, Viavi:** The sheer scale of big data mandates that irrelevant data be excluded from the analytics process in order to produce meaningful and actionable insights

**Blanco:** One of the main technological challenges is that data sits often in different systems; in other words, there are still many silos. It is true however that since we have started to execute our big data strategy, no new silos are appearing and we are removing the existing ones.

Moreover, another challenge is the evolution towards real-time. Real-time data is expensive to obtain and use, as it needs to be real-time along the whole data value chain, from data ingestion to reaching our customers.

**Gedeon:** We have made a decision not to take a big bang approach but rather have the various relationships peer and interact through our services and identity delivery platforms. We felt that would allow the various technologies to evolve at their different rates and avoid massive investment in legacy systems. This however has forced us to write our own peering software that did not simply exist in from our vendor community. Noteworthy is leveraging policy on wireless/wireline and our real time rating.

**Yamany:** The sheer scale of big data mandates that irrelevant data be excluded from the analytics process in order to produce meaningful and actionable insights in a timely and cost-viable manner.

Given that there are many factors that influence a subscriber's experience, the sources of data that are required and the dynamic nature of those sources require systems that enable analytics to be open and flexible. Big data is slow and costly; the service provider challenge is to create "smart" data that allows them to gain insights and make decisions.

We at Viavi have developed analytics enablement solutions that are smart. Viavi's SmartAnalytics solutions capture the essence of an approach to big data that is different. Smart in this context means:

- Synchronized refers to the correlations across data points that are established
- Meaningful describes the resulting analytics, which must be immediately relevant and actionable to the application that uses them
- Adaptive means the analytics must be able to change to dynamically account for new data as well as for new needs by the downstream applications
- Real-time requires the analytics to be available less than 1 minute or less

We feel if data is collected, processed and correlated in an smart manner, then the linear relationship of data growth on operators' networks and the cost of assurance and analytics enablement solutions is broken.

**What are the business, social or regulatory challenges in implementing and using big data in the company?**

**Blanco:** Here we need to distinguish between internal use of big data for business optimisation, and external monetisation.

For internal use the main challenge is cultural, understanding the value of data. There are some changes, since we are now able to capture and store (digital) data we previously couldn't. But for using that data internally, we follow the usual procedures, which implies that we need to obtain customer consent, if we want to use personal data for other purposes we originally obtained consent for. Moreover, for several internal uses we do not need personal data, but anonymised, aggregated data is sufficient.

For external monetization we do see new challenges. Again we need to distinguish between two types.

1. external monetisation with individual, personal data, and
2. with anonymised, aggregated data.

In the first case, we need to obtain individual customer consent for the services — advertising, credit scoring, and so on. This is a challenge from a business perspective since the customer base that opts-in usually is significantly smaller than the full base.

In the second case for external monetisation, we use anonymised and aggregated data. While one might think that from a legal perspective there should be no issue with this, there is an ongoing legal and technical discussion about what anonymised data exactly is, and whether it is possible at all.

Recently a distinction has been made between personal, pseudonymised, and anonymised data. It is this discussion that creates challenges with regulators, and may result in polarized discussions in society. Since this is a new discussion, in our view all stakeholders are on a journey to better understand how privacy and data protection should work in the big data and digital era.

**Gedeon:** Telus uses opt in, and we have various national and provincial privacy oversight bodies that we adhere to. So far no issues. Our main partners have been the government of Canada and government of British Columbia. The other areas is health and the growth we see is wellness; reality regulated providers like ourselves are disadvantaged versus the OTT players such as Apple and Google in this case.

**Yamany:** There are many jurisdictions with a varying array of privacy regulations across the carrier landscape. The number one step taken by the ecosystem and industry is procurement of express consent regarding the access to or coupling of their data when a service is installed/accessed on a mobile device. In some jurisdictions, however, this one step may not be sufficient; service providers will have to plan the scope of use and the big data picture at the point of gathering.

Finally, some level of anonymization may be required. Viavi's analytics enablement solutions support these approaches and are flexible and open so that service providers have the power to create what they need for the jurisdiction in which they operate.

**What measures do you take to ensure the privacy and security of data about your customers? What standards do you apply to ensure these measures are adequate?**

**Blanco:** We take several measures. First of all, we use privacy enhancing technologies. Secondly, we use data governance to appoint data owners and data stewards, so it becomes clear who is accountable for the correctness and safety of data. Thirdly, we are introducing a code of conduct for all our employees so they know what they can and cannot do when working with data.

**Gedeon:** This question I assume is a follow up from previous, not so much big data as regulatory. We are working with the various government bodies which allows the sharing of user information and peering with various government services. Technically protected through encryption and a series of firewalls, we use Oracle's Sun ID for the actual implementation and use third parties to build the actual persona of an individual (UXP Systems and Grappa Systems)

**Yamany:** First, the systems we have to enable analytics are secured themselves to protect fraudulent access to streamed and/or gathered data. We also support flexible implementations of the solutions so the service provider is empowered to deploy in whatever required fashion the jurisdiction mandates. Finally, we support anonymization of data if it is required

**How practical has it been to use the data in your networks or systems to derive big data-type information?**

**Blanco:** It has taken us several years to extract, store and process the data for deriving "big data" insights. We have faced several challenges. First, network data usually sits in systems of vendors, and those vendors are not keen to give us access to the data for free as they know there is value in the data — even if we own the data. Second, data of the network was only used for network related aspect, and less for commercial reasons. When some data is incorrect, it may not be a problem for the network itself, but it is a problem if that data has a commercial interpretation. Then, we need to learn how to treat and analyze these new sources of data.

**Gedeon:** The difficulty has been in making the various data stores work together. Getting the 360 view has been a challenge but I believe we are underway.

**Yamany:** Very practical. We've helped customers achieve the monetization of their data. One can learn how Viavi's approach to real-time intelligence helped E-Plus/Telefónica Germany identify new revenue opportunities while reducing data volumes and cost. ■

CTOs answered further questions in this round table.  
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