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The Big Data Opportunity

By Monica Ricci

It is only natural that when Communications Service Providers (CSPs) think about "Big Data" stemming from their traditionally network-centric viewpoint, that their first thoughts are of the network. For many CSPs, Big Data means the need to manage extreme growth in subscriber data usage, carefully manage investments in expanded capacity, and ultimately find ways to process network records more efficiently to ensure that potential revenue leaks are plugged and profits maximized.

But Big Data is both a challenge and an opportunity that is receiving increasing focus across nearly every industry. And, many of these industries – health care, the public sector, and manufacturing to name a few – could hardly be called "network-centric." Yet the need to collect, interpret, store, share and gain increasing insight from data is common to them all, and CSPs would be best served to think outside the network when it comes to assessing Big Data strategies and the benefits that these can deliver

How Big is Big?

To understand the implications of the rapid growth of CSP network utilization across multiple dimensions, it is natural to begin by putting some quantifiable metrics around Big Data. To do this, let's first turn to the experts for guidance on how you might measure Big Data's size.

IDC predicts that the market for Big Data solutions – which includes networks, servers, storage, systems and services – across all global industries is growing at almost 40% annually. They forecast this market to reach nearly US$17 Billion in spending by the year 2015. Most importantly, this growth rate is 7 times that of the overall IT industry.

Others, including Forrester and Frost & Sullivan, use a common framework to describe data as "big" if it measures excessively in at least one dimension of Volume, Velocity or Variety. These dimensions are called the "3 Vs" of Big Data.

- Data record volumes must be growing rapidly – and we know this is to be a key concern for all CSPs, –
- or they must be collected and processed with increasing speed – that's the velocity, –
- or they must represent a growing number of transaction types – that's the variety

In reality, most Big Data problems are large in more than one of the dimensions of Volume, Velocity and Variety.

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This final citation is perhaps the most useful when it comes to a big data assessment of any part of your business or operations: McKinsey Global Institute, in a mid-2011 feature, described big data as ***anything that is outside of the operating parameters of the typical data-set.*** Think about any data-sets or operational processes that are well managed in your business today. Project your data volumes doubling

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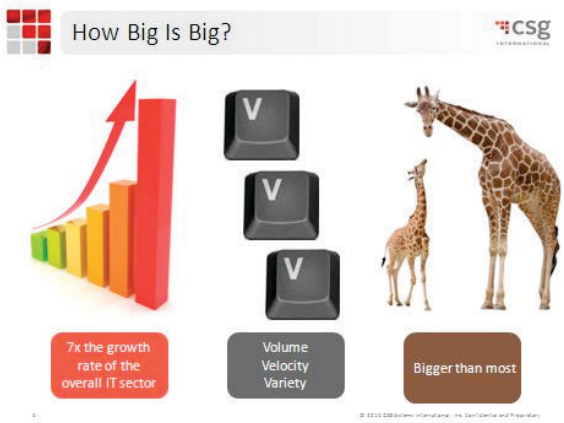
year over year. Forecast its complexity increasing substantially due to additional service information, location data or inter-relationships between users, content or preferences. Imagine processes needed to be executed in half the time. If your vision of this future highlights a point where your systems, your operations or your understanding of customer data hits a limit, then you've identified a Big Data scenario.

So really, "big data" is about managing ***rapidly growing*** volumes of ***increasingly complex*** transactions at ***accelerating*** speeds. To set the record straight, there is no specific metric for volume, variety or complexity that determines if data is big. If there is any consistent metric that is applied by multiple analysts, it seems to be that "big data" sets are those that are growing at the rate of 40-60% annually.

How Big are the Benefits?

CSPs can gain insight – beyond network management – from understanding the big data evolution and benefits from other industries.



In the health care industry, Big Data is associated with the growing digitization of medical records, dominated in volume by imagery such as x-rays and other scans that can be easily transported and shared among networks of providers, practitioners, insurance carriers and patients alike. The end result is faster and better-informed decisions about treatment, resulting in better quality health care for the individual and ultimately, healthier results.

In utilities, big data is largely associated with the roll-out of "smart grid" infrastructure that enables detailed meter data – meter readings every 15 seconds will likely become the norm – to be collected for a home or business's use of gas, water or electricity. Smart grid Big Data provides insight into optimal energy utilization, and enhanced monitoring and control, eventually down to the appliance level.

"I would argue that any service provider – not only mobile operators but broadband operators, ISPs, international carriers, cable and satellite providers – can derive opportunities from big data."

The manufacturing industry, as a final example, has perhaps always been focused on data, as companies have strived for decades to optimize supply chains and speed time-to-market for the design, assembly and distribution of products. But even a sector as data-centric as manufacturing can benefit from a renewed focus on both the technologies and the analytics processes that stem from today's Big Data evolution, such as developing an in-depth view of micro-segmented customer preferences to drive new product design and roll-out.

CSPs across the globe have been grappling with burgeoning network traffic for a while now, and the issues and implications are well understood, if not necessarily well managed, to date. But the opportunities from Big Data reach well beyond efficient management of network traffic. The analyst firm Analysys Mason recently wrote that they believe that mobile operators can derive the greatest opportunity from big data, because of three assets that they have in spades:

- the size of their subscriber base;
- the amount of data – current and historical – they have about those customers; and
- the diversity of that data, from usage records, financial history, payment options and preferences, mobile commerce activity, and location-based data from their movements throughout the network.

I would argue that any service provider – not only mobile operators but broadband operators, ISPs, international carriers, cable and satellite providers – can derive opportunities from big data. Big

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Data processes to capture information from as many sources as possible, aggregating data into comprehensive customer records, and applying analytical approaches to derive insight from this information, empower a CSP to better meet customers growing demand for content, portability of content across devices, and an enhanced experience that packages the collection of content and services tailored to each individual's – or his extended social group's – needs and tastes.

What's Big for the CSP?

Within a CSP environment, there are numerous processes that are both critical to, and derive benefit from, better data analysis and understanding. Beyond increasing network record volumes, big data about operational processes related to customer service, billing, and customer financial management – including Days Sales Outstanding (DSO), treatment and churn – enables the CSP to expand automation and drive efficiencies into business-as-usual tasks.

Further, Big Data is also about better understanding how and when a customer uses his service. This understanding will enable the CSP to better serve the customer, and will ensure that the CSP provides increasing value in an ecosystem where more and more content and services are coming from third parties. Customer records, usage records and billing records are used not only by the CSP anymore, but are often shared with external parties and partners in detail or aggregate fashion. This copying and sharing of data is another factor that both DRIVES the growth of record volumes AND benefits from better knowledge from analytics. Data-driven insights can lead to value-based price plans, high-performing advertising models, an enhanced customer experience, and data-driven decisions that improve operations across the board in a CSP environment.

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Just like the struggle to quantify "how big is big," the benefits of successfully deploying a big data strategy in a service provider environment are not always easy to define. But the benefits are big, too! McKinsey Global Institute, in that same 2011 report, estimates that location-based data alone will generate $100 Billion of value to CSPS in the next 10 years. Even more impressive is their belief that location-based services will generate $700 Billion in value to consumers and business users alike, who stand to gain measurable efficiencies in time and cost savings from things like smart routing during their commute, people tracking for both safety and social purposes, and geo-targeted advertising that brings together sellers and buyers with well-understood value that meets a want or a need. What strikes me is that we are all aware that these location data-driven services already exist today, and they can only improve in the future as the data that fuels them is better processed, better analyzed and better understood.

Heading in the Right (Big) Direction

The good news is that CSPs realize this already. A very recent survey of industry executives found agreement across the board: 91% believe that Big Data strategies should be a priority for every service provider. But only slightly more than half believed that their organizations were making big data a priority today, so there's a way to go.

Ultimately, the insights that are derived from big data strategies will increase a CSP's knowledge of both its own operations and of its customer base. This knowledge will enable the CSP to better direct its network investment, improve the efficiency of its operational processes, deepen its knowledge of its customers' behaviors and needs, and enhance customer experience and strengthen those customer relationships over time.

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