

Leveraging Network Data for CEM

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Network data is both a blessing and a curse for network operators. It is a challenge to collect and store, and an even bigger challenge to sift through and correlate customers' data with data from other sources, including other networks or clouds. The payoff for doing so can achieve two things service providers need and which are tightly linked: improved customer satisfaction and better informed decisions about network investment.

Companies at the cutting edge of technology have a particularly difficult time maintaining customer satisfaction. The speed of innovation presents challenges in product marketing, pricing, delivery, customer education, demand, service complexity, support and network planning. Too often fierce competition forces them to over-promise and under-deliver, and severely limits profit margins. In turn, this drives their need to be increasingly efficient and wise in building capacity to meet demand and quality expectations.

For communications service providers, reliable connections and good coverage are the fundamentals of providing good customer experience; poor or no service is the ultimate bad experience. Nothing angers customers like not being able to do what they want, where and whenever they want to do it. Operators clearly have understood this.

What Service Providers are Saying

Last year, TM Forum's Insights Research conducted in-depth interviews with 18 service providers, convergent and wireless, from all over the world to understand how service providers are viewing customer experience. Some 94 percent of respondents identified the main driver of customer experience as being to increase customer satisfaction, replacing cost reduction by a substantial margin. It had been the top criterion since the Forum started to survey customer experience in 2008. As service providers said, they are turning their focus to differentiating themselves and improving long-term profitability; both are perceived benefits of good quality experiences.

▶ Next the respondents said they believe customers rank price and coverage (now and two years' time), as the joint-first most important aspects of customer experience. Capacity slid down the rankings, but perhaps this is perhaps a poorly understood term from the customers' point of view, and has been replaced by quality as the third most important attribute, particularly data quality. In fact, quality accounted for the attributes in slots three, four and five as they distinguished between device/service, data and voice. So in aggregate, quality is a top attribute for customer experience.

Keeping customers happy, though, is beyond what the industry describes as experience, which is real-time and cumulative. It differs from customer satisfaction, which is broader and less volatile. One bad customer experience may not negatively affect a customer overall, but prolonged dissatisfaction, based on continuing poor experiences is disastrous.

The ideal is to prevent bad experiences – and therefore dissatisfaction – but the way the industry addresses this at the moment is immature: It is typically piecemeal, and too cumbersome and slow to be effective. There is recognition of this in the industry and a collaborative initiative is underway to develop best practice in the form of a Customer Experience Maturity Model. The goal of customer experience management is customer engagement. This means how the customer has been treated, based on the sum of each customer's experiences (or engagement level), over the whole time they've been using a product or service, and in the context of what other products and services they use.

Getting to this level involves an intricate combination of pre-defined metrics, data collection, correlation and action – both pre-emptive and reactionary – and network data. Already, in theory, networks can be managed and monitored and made to respond fast, sometimes in real time. The network also generates the data that allows service providers to glean far greater insight and detail than a customer satisfaction survey. It could be used to remotely tweak a service to meet a customer's immediate need or monitor performance as they consume a service to ensure it is meeting their expectations. The practice will take more work.

Clearly identifying the source of problems, assessing their short- and long-term impact, prioritizing actions and investing to deliver maximum benefit to customers is essential. According to performance data collected by Actix from eight mobile networks from four continents, featured in its *2013 State of the Radio Access Network* report, 80 to 85 percent of customer experience issues occur in the RAN, and only in only 15 percent of network locations.

The report also showed that in areas of congestion, poor data performance is perceived as a bigger issue than voice, particularly if video streaming is not possible. This is an

issue in most networks, as it is often the case that 5 percent of locations carry more than 50 percent of the total traffic, resulting in congestion.

It is especially worrisome for network operators whose customer base is adopting smartphones at an increasing rate each year, given that each new generation of smartphone adds 10 percent to 20 percent to the data consumption per subscriber. Further, 85 percent of these smartphone connections are for data purposes only. Voice accounts for only 15 percent, so in congested areas it doesn't matter much if phone calls are going through; 85 percent of users will be having a bad experience.

As network operators roll out LTE or grow other parts of their networks, having the right network performance data is crucial. What is the right network performance data? It is a combination of network availability, capacity, throughput, location, time-of-day, customer identification, usage profiles and customer segmentation, which begins to sound a lot like a big data requirement.

Finding the Hidden Issues

There also is a hidden data traffic issue of which customers are unaware, with devices or the apps on them automatically initiating seven out of 10 data sessions, Actix found. The continual polling for updates, up to 10 connection requests per hour from each social app such as Facebook or Twitter, puts an additional strain on capacity, even if each request generates only 50kbps of data.

On the other hand, this gives operators the opportunity to monitor these sessions for failures and can help them identify issues before a user is aware of them. Identifying an issue, however, is not enough. It is important to know who is having an issue and for how long. It is important to know if they are high-volume, high-value customers or occasional, low-value users who get sent to the back of the quality-of-service line. Of course this 'low-value' user might also be the elderly relation of a high-value business customer; an added complication.

Different systems in different departments store data which impact customers' experience, in different formats. Different departments use different extraction tools to access it, making integration and synchronization difficult if not impossible for what needs to be a real-time solution. It also is a problem of ownership, responsibility and governance of the data. Deciding if the customer service lead or IT is in charge of coordinating the full view of the customer and evaluating their experiences can be contentious.

This is an operational issue because the network data holds the key to getting as close, physically, to the actual experience and the ability to react in real time. IT can also combine and correlate the data into something that is actionable, based on what is already known of the customer. ▶

- ▶ Another huge barrier identified by respondents in TM Forum's survey is end-to-end control. Controlling customers' experiences across multiple networks, over-the-top providers and unofficially supported devices is bound to become a bigger issue as services and applications become increasingly fragmented. The multi-cloud environment poses a new challenge to exerting the kind of control over the experience that will be required.

Respondents to TM Forum's survey singled out active buy-in and participation from top management as the single most important factor to operators succeeding in taking a data-centric approach to customer experience management. It has to be cross-functional and enable the sharing of data, which means someone upstairs has to ensure inter-departmental priorities and rivalries don't derail the initiative and that everyone uses common best practices. Besides, top management will need the insights for their decision making.

Data management was the second most important success factor according to the same survey. It's importance may have risen because of its enormously growing volumes and complexity. Once process, practices and algorithms are established to leverage the data, it may be a good idea to reinstate project governance to the

second spot it held the previous year, and perhaps even the first.

Close Surveillance Required

Data-driven customer experience programs will require constant and close surveillance to ensure the greatest benefits are being derived while the greatest care is being taken with customer privacy and performance concerns.

Use cases for customer experience management through network data analytics are going to get increasingly complex, with customer and network data dispersed across different clouds and different content or app providers. It will be hard to track performance, let alone the performance of individual's products and services.

Data is both part of the problem and part of the solution to doing this successfully. Service providers are starting to get a handle on the volume and complexity of data being generated, but an important factor in determining experience will be consistency. To deliver consistent quality, there must be consistency in the metrics used to determine that quality.

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