Transforming Data Insights into Business Value with Big Data Analytics

Intel partners with Flytxt and Netweb Technologies to deliver one of the largest Big Data Analytics deployments for a leading telecom service provider in India

The telecommunications industry is a melting pot of data. The steady growth in the number of users coupled with the advent of multiple smartphones and their complex features and abilities has led to the existence of voluminous and widely variable data, all conceived at high velocity and scattered across departments and business units.

One of India's leading telecom service providers sought to establish market leadership and deliver customer satisfaction by providing personalized and contextually relevant offers to their customers in real-time.

Flytxt Analytics platform leveraging high performance Intel® based servers from Netweb Technologies running Hadoop* clusters brought an entirely new dimension in the way the telecom service provider could utilize the full power of data available with them to enhance customer experience and increase revenue.

Challenges

• **More real time than near-real-time:** Obtaining insights in real time, at the velocity in which data is generated, and then using these insights to take decisions in real time, was a major challenge for the telecom service provider. The latency between the subscriber initiated event to insight and then to action needed to be minimized greatly. Legacy systems struggled to meet this requirement and hence the telecom service provider could not respond to the customers' needs within the window of relevance.

• **More relevant than categorized:** The telecom service provider generated huge volumes of subscriber data at various sources. Up to 4 terabytes of data were generated in a day, and these data had to be analysed for taking instant decisions. Processing such voluminous and varied data to generate insight for decision making presented a daunting challenge, in terms of technology and the time involved. This in turn meant that offers were not always relevant to subscribers and specific marketing needs like churn prevention and margin optimization were not met.

• **Closing the loop - gratification in real time:** The telecom service provider had disjointed systems for data processing, campaign execution and rewards gratification. This meant a long delay between target generation to campaign execution to call-to-action to gratification.

Intel has taken a leadership role to bring Hadoop* to enterprises, enabling scalable, cost-effective analytical solutions in the market. Our ecosystem partners like Flytxt are a great example of how we are accelerating the solution for faster adoption across enterprises.
Solutions

- **Flytxt**: NEON, a Big Data Analytics Platform and Revenue Enhancer Application - based on an Intel® Architecture-based real-time, fully integrated Hadoop® platform, powers the client's real-time contextual trigger-driven marketing campaigns.

- **Netweb Technologies**: Flytxt's Big Data Analytics Solution was deployed on highly resource-intensive Netweb's Tyrone servers powered by Intel® Xeon® processors.

- **Intel**: Hadoop® clusters based on Intel® Xeon® E5 processors and Intel® Ethernet 10 Gigabit Converged Network Adapters.

Impact

- **Enhanced Customer Experience**: Response time to customer events reduced from 24 hours to 30 minutes.

- **High Conversion Rate**: 5.9% incremental conversions of subscribers month-on-month.

- **Maximized Migration to Higher Value Base**: 55% of the customers moved to higher-value recharge segments.

- **Rapid Growth in ARPU**: Target customer base clocked a net ARPU growth of 18.9%.

Why Big Data Matters

Data is exploding at an astounding rate. Billions of connected devices - ranging from PCs and smartphones to sensor devices such as RFID readers and traffic cams - generate this flood of complex structured and unstructured data.

Unstructured data is heterogeneous and variable in nature, and comes in many formats including text, document, image, video, and more. A critical component in the telecommunications industry, unstructured data is growing faster than structured data. As a new, relatively untapped source of insight, unstructured data analytics can reveal important interrelationships that were previously difficult or impossible to determine.

Big Data Analytics is a technology-enabled strategy for gaining richer, deeper, and more accurate insights into customers and the business, and ultimately gaining competitive advantage. By processing a steady stream of real-time data, organizations can make time-sensitive decisions faster than ever before, monitor emerging trends, course-correct rapidly, and jump on new business opportunities.

Spotlight on Flytxt

Flytxt is a leading provider of Big Data Analytics powered solutions with a focus on enabling mobile operators to derive measurable economic value from subscriber data. The company offers customer experience, revenue management and insight monetization solutions as well as consultancy services. Flytxt solutions are deployed with leading operators across APAC and EMEA, serving more than 500 million subscribers; generating around $350 million incremental revenue for operators till now.

Flytxt has won many industry awards and recognitions like Frost & Sullivan ICT Awards 2014 for Product Innovation Leadership in Marketing Analytics, Gartner Cool Vendor, NASSCOM* League of 10, CEM Excellence* Award for Middle East, Aegis* Graham Bell Award for Innovation in Mobile Advertising, BID* International Quality Award, Red Herring* Asia 100 and ISEE Cloud Computing Challenge. Flytxt has its headquarters in Netherlands, corporate office in Dubai and global delivery centres in Trivandrum and Mumbai. Flytxt also has presence in London, Kuala Lumpur, Lagos, Nairobi, Dhaka and New Delhi.
Riding the Big Data Wave. Addressing Big Challenges.

The client, one of India's leading telecom service providers, in their constant endeavor to stay ahead of the competition in the highly volatile and competitive Indian market was looking to ramp up their customer service platform, enhance the average revenue per user (ARPU) and reduce customer churn considerably. And with tight regulatory intervention and number portability options further intensifying the price competition in the market, the client stood in the cusp of great challenges and opportunities.

The Big Data challenges facing the client, who has a subscriber base close to 200 million, were gargantuan and can be gauged from the intimidating number of data being handled regularly including 3.5TB of data and 4 billion events per day, 200 million subscribers, 20,000+ data jobs, 530 million triggers, 7,000+ broadcast rules, 21,000+ tracking rules, and 14,000 tags/KPIs per subscriber.

The client was looking to refresh their current legacy system, which was struggling with the huge load of data, by implementing a cutting-edge real-time marketing system leveraging on the advantages of Big Data Analytics to enhance the customer experience and drive incremental revenue.

Integrated Big Data Analytics for Big Success

Flytxt, a leading provider of Big Data Analytics powered solutions, empowered their client to transform the way they provide customer satisfaction, positively impacting their business in a huge way.

Flytxt's multi-dimensional integrated Analytics framework addressed the challenges and complexities of new age information asset processing and accelerated sustained economic value generation from data for the client.

Flytxt Integrated Analytics framework enabled the telecom service provider do analytics faster, deeper, and in a more efficient and objective-driven way from a single easy to use interface, reducing the ‘data to decision’ time significantly.

Spotlight on Netweb Technologies

Netweb is a leading provider of High Performance Computing, Big Data and Storage solutions, and has been a trusted name for providing best-in-class solutions for almost two decades. Netweb Technologies has seven offices globally in India, Singapore, and South East Asia. Netweb Technologies provides best-in-class products that deliver solutions combining speed, reliability, and scalability with energy efficiency to deliver maximum ROI at lower TCO.

Netweb Technologies is widely recognized for its implementation of the PARAM Yuva II System, India’s fastest hybrid supercomputer till date and is also well-known for its out of the box, totally customizable solutions.

Netweb Technologies provides custom configured solutions for HPC environments and related applications for verticals that span across Pharma, Manufacturing, Oil and Gas, Animation R&D, Earth Sciences, Defense, Science and Technology in India and other developing economies around the world.

Fig.1: Flytxt's Big Data Solution Architecture
Hadoop* server clusters powered by Intel® Xeon® processors can enable near-real-time discoveries.

**Driving the Big Data Revolution. Making a Big Difference.**

Leveraging on their deep expertise in Big Data Analytics, Flytxt delivered an intelligent and powerful Analytics solution to capture the behavioural pattern of existing subscribers and provide relevant offers and deals tailored to the customer’s need.

With its Integrated, Multi-Dimensional Analytics Framework, Flytxt enabled the following capabilities for the telecom service provider:

- **Predictive Analytics:** Predict the propensity to churn, winback, purchase, etc.
- **Prescriptive Analytics:** Suggest best channel, offer, price affinity based on given business objective/context
- **Heuristic Analytics:** Behavioural customer segmentation based on marketer/expert/SME hypothesis and experience

This was made possible through the deployment of Flytxt’s Revenue Enhancer Application, a game-changing solution powered by NEON, which is a Big Data Analytics powered revenue and customer experience management platform for telecom service providers.

NEON’s rich set of applications enabled the telecom service provider’s marketing team to run a wide variety of real-time trigger-based campaigns in areas like loyalty and retention, churn management, usage and recharge stimulation, VAS marketing and product up-selling/cross-selling.

The following triggers were utilized by the telecom service provider to maximize their customers’ experience:

- Recharge Trigger: Recharge for ‘n’ denomination, ‘n’th recharge of the day etc.
- Balance Trigger: Balance going below the threshold
- OG Call (Voice): First/’n’th minute call of the day
- Local On-Net OG Call (Voice)
- National Calling Outgoing (Voice)
- International Calling Outgoing (Voice)
- Roaming OG Call (Voice): Trigger on roaming
- SMS Count: ‘n’th SMS
- GPRS Usage, etc.

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*Fig. 2: Flytxt Integrated, Multi-Dimensional Analytics Framework*
With real-time marketing, Analytics driven decisions and actions were integrated into the business workflows in no time. This reduced the telecom service provider’s response time to customer actions from days to seconds. Closed-loop workflow also allowed the marketers to perform experimentations quickly to iteratively improve marketing effectiveness. For example, it allowed the operator to run A/B testing to choose the best campaign, creative, time and channel for a given segment.

**Powering Big Data Analytics with Powerful Hardware**

Netweb Technologies, a leading provider of Server, Storage and HPC solutions, played a critical role in enabling the solution and was a key driving force behind the daunting setup of a solution of this scale.

The powerful NEON platform, which powers Flytxt's intelligent solution, runs on Intel® Xeon® processor E5 v2 product family based Tyrone® Servers. Netweb Technologies was responsible for the end-to-end deployment of the hardware platform, including installation and support. The NEON platform operates on top of an Intel® based Tyrone compute nodes running two Intel® Xeon® processors E5-2609 v2, and 10GbE networking was used to support the high-performance compute requirement.

Netweb Technologies, famously known for creating India's fastest and largest hybrid supercomputer - the PARAM Yuva II System - ensured timely delivery, smooth setup, and 24x7 support and service, leveraging on their supercomputing expertise.

**Making Big Data Analytics Real**

Intel® Xeon® Processor-based Hadoop* server clusters with 10 Gigabit Intel® Ethernet Solutions acted as the main engine behind Flytxt's cutting-edge Big Data solution for the client.

Intel-based Hadoop* server clusters, which include a total of 130 servers split into 5 Hadoop* clusters and standalone servers, delivered the performance needed to handle large data sets with tightly integrated security features, scalability and management. Along with these, Intel provided irreplaceable practical guidance and training to aid in risk mitigation.

The Hadoop* server clusters based on Intel® Xeon® E5 processors and Intel® Ethernet 10 Gigabit Converged Network Adapters delivered the performance required by the client for their intelligent insights need - helping to maximize the client's potential, enhance customer experience and gain larger revenues.

**Delivering Maximum Business Value**

Flytxt's Revenue Enhancer Application was integrated over 14,000 business KPIs. These were used to slide and dice the whole subscriber base into granular segments. Subscriber profile and behaviour analytics-driven micro-segmentation allowed the marketers to define personalized and relevant offers for different segments of subscribers through churn predictions (demographics, Call/SMS/Data Usage, recharges, propensity scores, personas).

The Revenue Enhancer Application tracks billions of customer events to identify these pre-defined triggers, initiates sending of contextual offers automatically to subscribers, and also tracks for conversions and then passes on rewards depending on the event trigger identified.

Riding on this unique method of maximizing the power of Big Data Analytics to deliver the best experience to customers, this
innovative solution delivered tangible business benefits for the client that include:

- Huge reduction in response time to customer - from 24 hours to 30 minutes
- 5.9% incremental conversions of subscribers month-on-month
- 55% increase in upgrade to higher-value recharge segments
- 18.9% ARPU growth rate of target customer base

Find the solution that's right for your organization. Contact your Intel representative, visit Intel's Business Success Stories for IT Managers (www.intel.com/Itcasestudies) or explore the Intel.com IT Center (www.intel.com/itcenter).

Conclusion - Collaborating to Deliver a Best-in-Class Solution

The perfect collaboration of Intel, Flytxt and Netweb Technologies delivered a one-of-a-kind Data Analytics solution for the client. And for the first time ever in India, this solution helped a telecom service provider to bring together the power of 'real-time context' and 'in-depth subscriber intelligence' to send personalized offers to millions of subscribers.

Further, this collaborative endeavour ensured that the highly-complex and resource-intensive Big Data Analytics implementation was delivered in a record time of just 3 months.

To summarize, this solution helped deliver exceptional benefits in the form of increased revenue, enhanced customer experience, and maximized learning, in turn paving the way for a winning future.