CLOUDERA | Magenta ^T

DELIVERING CONTINUOUS CUSTOMER EXPERIENCE IMPROVEMENTS WITH BIG DATA ANALYTICS AND MACHINE LEARNING

>1 BIL

Billions of network events analyzed daily

Impact

- Ability to match network issues with customer pain points
- Machine Learning generated predictive analytics of customer experience
- Continuous customer experience improvements reduce churn
- Billions of network events analyzed daily

Magenta Telekom is a 100% subsidiary of Deutsche Telekom AG, one of the largest communications companies in Europe and the United States. Magenta Telekom provides telecommunications, TV and entertainment in Austria, has approximately 2,500 employees and 7.2 million network connections.

The telecommunications industry serves the entire population, from consumers to small businesses to large enterprises. Good customer service is therefore vitally important and with the industry dominated by large operators, relatively small issues can escalate and have a damaging impact.

Insight into customer experience is therefore vital for telecommunications companies and they must seek to pre-empt issues – whether technical or otherwise – to minimize the impact on customers. To this end, Magenta Telekom wanted to find a way of using the anonymized data generating from both customers and technical analysis to deliver a continually improving service.

Understanding Operations with Data Analytics

Magenta Telekom wanted to find a scientific way of understanding its customer base, their experience and how this correlated to technical issues on the network. With 7.2 million connections, this was no small task and involved a vast amount of data. The company had also been through recent acquisitions, multiplying the amount of data being generated that could have had the potential to overwhelm existing data processing.

The operator not only wanted to analyze the exponentially increasing amount of data, but also generated actionable insights to identify trends which were later utilized by the decision makers, thereby making a tangible difference to the overall business.

With ambitious business goals and a deluge of data, it was clear that Magenta Telekom needed to bring together its business leaders and data scientists in a way where they could communicate and generate transformative business results.

"As one of the biggest telecommunication service providers in Europe that continues to thrive thanks to its customer centric-approach, we undoubtedly have a lot of data to process and analyze," said Dr. Wasif Masood, data scientist at Magenta Telekom. "This presents both challenges and opportunities for us. We recognized that if we could put some scientific parameters around the data, we could generate insights that could empower our business leaders to put us head and shoulders above the competition."

Using Machine Learning to Preemptively Correct Issues

Magenta Telekom developed a system to analyze anonymized customers data in a way that could generate useful business insights. The first step was to understand 'customer life-time value' (CLV) to the business.

Secondly, the factors impacting customer likelihood to churn are considered; and this ranges from network issues such as throughput and packet drop as well as more qualitative considerations.

The third step is to project this into the future utilizing machine learning, with Apache Hive and Apache Spark, which incorporates Quality of Experience (QoE) measurements and factors that can not only decipher the reason for churn but also the correlation of this to technical factors on the network. Finally, by back tracking issues, data scientists can identify next-best-actions and ultimately mitigate the risk of churn; improving customer experience potentially before issues are felt by the vast majority of customers.

By using the Cloudera Data Platform (CDP), processing and analyzing the vast amount of data both now and in the future was not a problem. Magenta Telekom used the platform to process customer data that could indicate trends in why customers were deciding to move operators and where their experience may be sub-optimal. As data is collected from increasingly more devices, these indicators of customer experience can expand and be brought into the analysis, powered by CDP.

"The scale of data analysis we are performing to better understand our customers required a powerful system that could scale and adapt as we create more data sources and use technology to automatically act on those data insights. Cloudera was pivotal in allowing us to build an intelligent customer satisfaction model around our data that could directly improve the service delivered to our customers," continued Masood.

Creating a Powerhouse by Aligning Business Leaders and Data Scientists

Magenta Telekom can now analyze the anonymized data produced by billions of network 'events' which can provide insights into the issues being experienced by customers and allow the operator to invest in areas that can improve the experience of customers as fast as possible.

For the business, it is also able to increase performance analysis. Being able to project the number of customers impacted by an issue, the monetary value they represent as a risk to the business, and the insight into where investment needs to happen to correct these issues is invaluable. It allows customers to be retained and see continual improvements in the service delivered, giving the business healthier margins and more flexibility to invest in the next innovative service or technology.

"Business leaders and data scientists often speak a different language that can stand in the way of true innovation and progress. With sophisticated data analysis capabilities combined with a process of understanding the true applications of data intelligence, we were able to join the dots and drive real value for our customers. Whether it's investment in the network due to issues felt by customers or a better appreciation for the additional services that customers want to consider, Magenta Telekom has tapped into this insight mathematically and logically, giving business leaders confidence in the data and allowing data scientists to communicate business value. It has opened up the opportunity for the business to invest in not only keeping the lights on but generating genuine competitive advantage," concluded Masood.