Best Practice Insight

Customer analytics case study: T-Mobile Austria

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This report examines T-Mobile Austria's use of Portrait Customer Analytics Solutions to underpin the company's customer churn reduction efforts and optimise its campaign marketing initiatives.

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## Case study key facts

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### Current Analytics & Information Management goals

The company leverages analytics to support marketing and sales in their customer retention efforts. In particular, it is used to help accurately predict which subscribers are likely to defect and to use these customer insights to optimise marketing communications to help prevent high value customers from defecting.

### Current approach

In 2007 T-Mobile Austria started a project to rationalise the number of customer analytics software suppliers it was using for its customer retention initiatives. The project was primarily driven by the need to decrease software costs, reduce reliance on professional services for predictive model development and improve service levels to the business for analytic requests. As a result of a detailed evaluation project, Portrait Customer Analytics Solutions was chosen as the preferred solution for customer analytics.

The predictive analytic software is used by a small team of Customer Insight (CI) marketing analysts who leverage it to build, test and deploy customer churn models. To improve the accuracy and performance of these models, T-Mobile Austria is also leveraging uplift modelling techniques that help the company predict the difference that an action (such as a mailing) can make to the behaviour of a customer. This insight is used to streamline their customer retention efforts by helping to predict which subscribers will react positively to specific retention efforts as opposed to those that will not. Similarly, the CI team works closely with segment managers and the campaign management team to assist in the data selection process for outbound marketing campaign programs.

### Outcome

Through their implementation, T-Mobile Austria has been able to actively reduce churn rates within its subscriber base by 2.4% as well as improve the accuracy of targeted marketing campaigns.

The move to a preferred customer analytics supplier has also helped T-Mobile Austria reduce its overall customer analytic software costs, significantly improve the turnaround for analytic requests and has lessened its dependency on external consultants.

### Analytics & Information Management tools and suppliers used

*Portrait Customer Analytics; Portrait Uplift Optimizer and Portrait consulting services.*
Company background

As a subsidiary of Deutsche Telekom AG, T-Mobile Austria provides network access, communications and value-added services to its subscriber base across its mobile network. Like other mobile operators, T-Mobile Austria faces a highly competitive and fast changing landscape fuelled by voice price erosion, rising regulatory pressures and high market penetration. In 2006 the company acquired the Austrian mobile communications operator tele.ring for 1.3 billion Euros as part of the company’s strategy to seek new ways to grow revenues, increase its market share, and look for areas within the business where it could rationalise and reduce costs. The acquisition boosted T-Mobile Austria’s customer numbers by 50% assuring it of the number two position in the market behind Mobilkom Austria. As of January 2011 T-Mobile Austria had a customer base of 3.6 million subscribers.

Project background

High levels of market saturation, low barriers to switching providers and the increased cost of acquiring new customers made it necessary for T-Mobile Austria to focus their customer relationship activities on reducing customer churn. The company, like many other mobile operators, recognises the benefits of an effective customer retention strategy in building and maintaining a long term and profitable relationship with its customers. As part of this work T-Mobile Austria employs customer analytics software to help identify subscribers that are likely to defect, those that are profitable to retain, and to understand what steps are necessary to prevent those high value customers from defecting.

In 2007 shortly after the company’s acquisition of tele.ring, T-Mobile Austria started a project to rationalise its customer analytic technology platform with a view to moving to a single environment and consolidating its IT suppliers from two down to one. The project was primarily driven by the need to decrease software costs and reduce the reliance on, and cost of, external consultants, as a large part of the predictive modelling process was outsourced to a third party. After a three month trial of various providers T-Mobile Austria chose Portrait Customer Analytics as its preferred solution for customer analytics. It was Portrait’s experience of the Telecommunication industry, together with its lower software costs and ease-of-use characteristics that were the deciding factors for selecting Portrait over other solutions.

Implementation characteristics and status

T-Mobile Austria is a long-standing user of analytic software having first introduced customer analytics at the company over 11 years ago. Today the Customer Insight (CI) team, which is part of marketing, leverages Portrait Customer Analytics Solutions to support the marketing and sales organisation in their customer retention efforts. While the company uses Portrait for other analytic projects including tariff model simulation where the company models the impact of mobile tariff price changes on ARPU, the main thrust of the CI team effort is around churn scoring and uplift modelling.

In particular the CI team is responsible for developing churn models that analyse pre- and post-pay subscriber data to determine the causal factors that put a customer at risk of churning. A series of predictive models take into account behavioural factors associated with churn and these insights are used to identify those high value subscribers that are most likely at risk of defecting. The model provides results in the form of a churn score for every subscriber (for example 0 for a low probability of churning and 1 for a high probability of scoring). These scores are subsequently deployed in downstream operational systems and are used to inform marketing actions designed to stem revenue loss by preventing high value customers from leaving.

In 2010 in an effort to improve the accuracy and cost effectiveness of its retention campaigns T-Mobile Austria started a proof of concept project for “uplift modelling”. This technique differs from traditional churn modelling approaches because it attempts to predict how a subscriber’s behaviour will change as a specific result of a marketing action such as making a call, or sending a mail.
Uplift models differ and are often considered harder to develop than conventional models as they model the change in behaviour resulting from a specific marketing influence rather than modelling the behaviour of a subscriber who is subject to that same influence. The approach is designed to streamline and produce more accurate results from the company’s customer retention efforts by helping to predict only those subscribers that are expected to behave positively to retention activity, as opposed to those that might actually churn if they are exposed to the same marketing action. Another benefit of uplift modelling is it can be used to target campaigns based on the prediction of a lift in a model, rather than just measuring model lift after the marketing campaign. This is proving to be a valuable technique for reducing churn as well as reducing volume in campaign management targeting efforts. To assess the full effects of uplift modelling T-Mobile Austria ran its trial over a one year period in order to gauge the benefits of the software’s incremental targeting approach on churn reduction. The trial was a success and the results were used as part of the business case for purchasing the software.

Portrait’s professional services team are employed on an ad hoc basis by T-Mobile Austria in specialised analytic development projects. For example in 2008 the company used a small number of professional services days to assist in converting and bringing its churn models in house. Similarly the company is currently working with the Portrait services team on the development of the tariff model simulation project.

The approach

As mentioned previously, T-Mobile Austria has been actively designing and developing customer analytic solutions for over 11 years. Today a team of four data analysts form the core CI team and are tasked with working with both business and IT teams to understand business requirements, translate them into robust predictive models and deploy them within the data warehouse and downstream marketing and customer facing applications.

Strategy

While customer analytics itself is not be seen as a strategic activity it nonetheless plays an important and influential role in T-Mobile Austria’s efforts to improve customer retention, manage the customer base more profitability and improve marketing effectiveness.

Organisation and people

There are four full-time marketing data analysts working within the CI team. Their key responsibilities include data preparation, predictive modelling and deployment. Although not officially described as such the team acts in much the same way as a ‘competency centre’ working with the IT department, segmentation and CRM teams to drive customer analytic projects within the organisation. All CI team members are technically astute and have a good grasp of SQL and programming concepts. This is deemed a useful requirement for working on data extraction, data preparation and data quality work required as part of the analytic process.

Before Portrait was chosen as the preferred software solution, T-Mobile Austria employed two full-time equivalent IT programmers who were responsible for designing and developing predictive models. Part of the appeal of choosing Portrait was its ability to remove some of the programming elements and automate parts of the predictive model building process. This in turn had the added benefit of reducing the need to write and support as much code. One consequence of this development has been the company no longer needs a predictive analytics programmer. Instead responsibility for model building has passed to the CI team and a dedicated IT resource acts only as an administrator for the customer analytics environment. This shift in accountability for developing predictive models from IT to the CI team is seen as a key success factor in T-Mobile Austria’s customer analytics implementation.

What’s more, the ability of the software to support visual data exploration data has proved valuable to the CI team as it allows them to quickly identify data anomalies and bring this to the attention of the IT team.
Similarly the CI team works closely with segment managers to highlight trends and patterns in the data using Portrait’s real-time visual exploration and analysis capabilities. This is very useful during the data selection phase when both parties work together to simultaneously analyse millions of subscriber records and approximately 1500 data variables to determine what data is best to use for campaign programmes. This subtle but important shift in working practices is enabling business users to become more influential and involved in the customer retention process. Likewise this has given way to changes in how the CI team views its end-users, as marketing and IT are now considered ‘customers’ of the team. All parties involved see this as a significant improvement and step in the right direction, as a lack of communication between the developers and business users in the past has hindered development progress. T-Mobile Austria summed up some of these changes in our interview by acknowledging that the CI team and its use of predictive modelling software is helping bring customer analytics “nearer to the marketing people”.

Governance
T-Mobile Austria currently has around 7-10 regular models (as well as many ad hoc models) in production covering different T-Mobile brands, marketing treatment groups and customer segments. Although the company doesn’t have a formalised governance framework in place, they maintain a series of discreet checks and controls across the customer analytic environment to ensure the predictive analytic models are fit for purpose. For example, although there is no direct software support for model management within Portrait, the CI team tracks and monitors model population statistics on an ad hoc basis; if the team finds any discrepancies within the data it is able to manually trigger a model rebuild if required.

Ensuring the high quality of data during the data modeling and deployment stage is also deemed a priority for T-Mobile Austria. As a result, the CI team has built checks into the process to ensure the validity and integrity of the data. One way it accomplishes this is by manually kicking off the churn scoring process during a run. This then allows the team an opportunity beforehand to reconcile and check the reliability of the data before scores are deployed. Similarly certain parts of the source system data extraction process are subject to manual data quality checks as a way of ensuring that the data loaded into the data warehouse is trustworthy, accurate, complete and consistent.

Technology and infrastructure
T-Mobile Austria uses Portrait’s Customer Analytics and Uplift Optimizer for visual exploration, predictive analytics and churn modelling. The software (based on technology acquired from Quadstone) is designed to support interactive customer modeling and exploit the capabilities of multi-core environments. As such T-Mobile Austria recommends planning for plenty of system memory as Portrait’s analysis tools maintain their high performance by loading data into memory.

T-Mobile Austria employs a mixture of hand-coded SQL with an off-the shelf data integration tool for extracting data from its source systems into the data warehouse. This centralised data warehouse acts as a cleansed and consolidated environment for the company’s transactional data and feeds an automated functional data mart environment and an operational data store (ODS). The ODS is a high availability environment used as a feeder system for the company’s operational CRM and campaign marketing systems.

In contrast the company uses Portrait’s own ETL capabilities for extracting data from the warehouse into the customer analytics modelling environment. Subsequent churn scores are then exported from the Portrait environment within a ranked text file and transmitted back to the data warehouse via FTP, where they are deployed in downstream marketing and operational CRM systems.

The results
Since its inception T-Mobile Austria’s customer churn activities have significantly reduced customer attrition rates while also contributing to the increased effectiveness of retention programme such as mailing and retention calls. More recently the company’s trial of Uplift Optimizer has improved retention campaigns by reducing churn by 2.4% in addition to a double-digit reduction in campaign targeting volume.
By improving the accuracy of its targeted campaigns T-Mobile Austria has been able to focus on the incremental impact of its marketing efforts and the profitability of saving each individual customer. The company is now planning to expand the use of Uplift Optimizer to other areas of marketing.

In addition, the decision to use Portrait has enabled the company to realise savings on customer analytics software licenses and has significantly reduced the company’s spend on external consultants. Likewise T-Mobile Austria believes the Portrait command language used for data extraction and preparation is intuitive enough for other analysts to getting up and running very quickly, affording the CI team a degree of skills portability between analysts.

Equally, T-Mobile Austria has realised softer benefits from its customer analytics implementations. Working in partnership with end users the CI team has improved the response times for analytical requests; consequently these efficiency improvements have given the CI team more time to focus on higher value business priorities.

**Recommendations for Analytics & Information Management adopters**

In carrying out this case study, we asked representatives from T-Mobile Austria to share any recommendations they would offer other potential adopters of customer analytics. The following two points were highlighted in particular:

- **Centralise your analytics expertise within a dedicated team.** T-Mobile Austria found significant benefits from bringing together its customer analytics expertise within one dedicated group of marketing analysts. This team is responsible for liaising between different teams, performing data mining and modelling in response to business requests and assisting end users to increase their understanding and value from customer data. The team has a good reputation within the business as demonstrated by the increased levels of internal communication and cooperation it enjoys. Equally it has been successful in aligning communications between the marketing teams and IT – a situation that is proving particularly valuable when working through difficult marketing selections with segment managers and when identifying and resolving data quality issues with IT.

- **Be prepared for a degree of scepticism about the advantages of proactive retention.** While T-Mobile Austria’s customer analytics efforts have been successful in reducing churn, the CI team has still had to work hard to sell the benefits of predictive and uplift modelling as a method for reducing churn over more traditional approaches. In particular the team has been required to sell the benefits of proactive churn reduction, over more reactive approaches where customer retention teams attempt to retain subscribers during the cancellation process. As part of this education process the CI team has been required to build awareness of predictive analytics and clearly demonstrate the added value of a proactive retention approach. Being able to prove that churn modelling could make a difference to the profitability of a service inevitably led T-Mobile Austria to consider uplift modelling. This more sophisticated modelling technique has helped provide a more accurate prediction of success for customer retention activities and has subsequently increased buy-in from the business.
Best practice insights

T-Mobile Austria’s implementation provides a good example of how the right analytic talent can positively impact the uptake and success of analytic projects. It illustrates how both technical and business skills and expertise need to be brought to bear when leveraging analytics to solve business problems such as customer churn. We believe the right people can really make the difference between good and great results in analytic projects. Building high performing predictive models requires analysts to be skilled in conceptualising data relationships and applying sophisticated analytical techniques to solve business problems. However, the best analytics people also need to be well versed in explaining analytical problems and results in a clear and non-technical language to business managers by combining both in-depth quantitative skills with business knowledge and consulting skills.

Similarly from an organisational perspective, T-Mobile Austria has also demonstrated how working in a centralised analytic team alongside both business and IT departments improved the communication and business value of its customer churn projects. At the same time the responsive nature of the Portrait Customer Analytics solution allowed the CI team to work co-operatively with its internal customers in marketing and sales to visualise and explore customer data segments. In contrast, many organisations separate these functions where the analytical people responsible for preparing the data and building predictive models work separately from the business teams that need to interpret the results of model. One of the downsides of this separation is end users often struggle to link the results of a model to the business problems and challenges they face in a meaningful way. In good customer analytics environments technical personnel need to work closely with business users to ensure their work is correctly and easily interpreted, and that the user understands how the results impacts or presents an opportunity or risk to the business. This in turn plays a significant part in improving the success, co-operation and collaboration between all parties involved.