Revenue upside for marketing with Nokia Advanced Consulting Services predictive capabilities

White paper
Introduction

Communications service providers (CSPs) are facing serious challenges maintaining sustainable revenues and increasing the loyalty of their existing subscriber base. These issues are being exacerbated by the on-going global COVID-19 pandemic, as the traditional approaches to driving new revenues, using direct marketing to increase retail store sales, are no longer effective and more people are turning to digital channels to meet their needs.

At Nokia we believe that the best way to address these sustainability problems is to embrace your customers' digital shift and transform traditional marketing models with the adoption of AI/ML capabilities. By adopting AI/ML capabilities CSP’s will gain a better understanding of their subscribers’ digital interests and behaviors that will enable automated, tailored offerings. This will provide the basis to grow sustainable revenues and increased loyalty to the CSP brand.

Our experience is that CSP marketing organizations are asking themselves:

1. How can we offer the right product/service at the right digital moment for our customers?
2. Are the traditional models and inputs really helping to predict the loyalty and churn behavior of digital subscribers?

Let’s take two examples:

**Example 1:** Traditional customer segmentation is done by individuals or teams of highly skilled business analysts (varies with the size of the CSP). They mine data from the available business information (BI) tools to create segmentations manually. This approach is not sustainable as it requires many trained people and is time intensive. There are limits to the amount of data that can be analyzed, and the approach results in large, static segmentations that do not capture the intricacies of what makes customers unique.

**Example 2:** Typically, CSPs analyze churn and retention using models that do not integrate all the necessary data points of the customer journey. These models are perceived as black boxes in terms of the output, and they lack causation, which restricts them to executing generic campaigns that rarely address the customer’s reasons for churning.

Given the current digital shift, now is the perfect time for CSPs to take full advantage of the vast amounts of customer data available on big data platforms and introduce the predictive and automated capabilities of AI/ML to provide the necessary agility, efficiencies and automation to achieve marketing goals. Success will enable the CSP to realize business value from campaign efficiencies, improvements in campaign hit rates, increased revenue, and reduced churn, while also lowering customer acquisition costs.

Therefore, in this white paper we will evaluate two specific AI/ML use cases for marketing:

1. Digital persona (clustering).
2. Churn reduction and retention

Nokia has deployed these use cases with multiple operators, providing real-world insights on the typical pain points of operators globally and the real issues that surface when deploying these AI/ML use cases for marketing.
The challenge

CSP challenges can be split into two main areas:

1. Gaining a good understanding of what is needed to create digital personas to grow new business opportunities, and what are the factors that should be focused on to maintain loyalty and reduce churn. CSPs need insight into the market and industry trends such as gaming services that require high speed and/or ultra-low latency.

2. Understanding what the current maturity of the organization is to take advantage of these ML opportunities. Specifically, does the CSP have the right skill set within the organization to drive ML use cases, are the processes designed in a way to drive automation and do the current platforms in place provide the needed capabilities?

Challenge 1

Nokia’s global experience on churn is in line with that of other industry experts in showing that subscribers are becoming more sensitive to the CSP’s data speed and service availability. These factors are having a bigger impact in the digital era with more tech savvy subscribers, so that not being able to perform seamlessly in online gaming or having very bad quality for family zoom calls increases the risk of churn. It is more than ever imperative that CSP’s have models that help predict the subscribers that are more sensitive to these types of issues.

In addition to improving loyalty, CSPs also need to be more proactive in identifying new business opportunities. To accomplish this, Nokia believes the focus should be on creating unique digital personas that ensure more meaningful and innovative campaigns to subscribers — thereby helping the CSP stay relevant.

Challenge 2

CSPs are facing a myriad of challenges in transforming their traditional ways of working to take advantage of AI/ML capabilities. This insight is based on Nokia’s experience implementing predictive solutions, including AI/ML, with CSPs globally.

Table 1: Typical challenges facing CSPs on moving to predictive operations

<table>
<thead>
<tr>
<th>4 P’s area</th>
<th>Churn</th>
<th>Digital personas</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>• Limited AI/ML skills and capabilities</td>
<td>• Limited AI/ML skills and capabilities</td>
</tr>
<tr>
<td></td>
<td>• Lack of knowledge on data models and KPIs specifically in the telecommunications domain</td>
<td>• Lack of knowledge on data models and KPIs specifically in the telecommunications domain</td>
</tr>
<tr>
<td>Processes</td>
<td>• Processes are manual and not well implemented or tracked</td>
<td>• Processes are manual and not well implemented or tracked</td>
</tr>
<tr>
<td>Platform</td>
<td>• Black box with little or no understanding of the inputs or outputs to make informed actions</td>
<td>• No ML capabilities in place; clustering is typically manual, time-consuming and segmentations miss the value of having targeted persona campaigns</td>
</tr>
<tr>
<td></td>
<td>• Low accuracy</td>
<td>• Data feeds are typically from CRM and billing CDRs, which lack network insights</td>
</tr>
<tr>
<td></td>
<td>• Data feeds are typically from CRM and billing CDRs, which lack network insights</td>
<td>• Data feeds are typically from CRM and billing CDRs, which lack network insights</td>
</tr>
<tr>
<td>Performance</td>
<td>• No defined business metrics in place to track the effectiveness of implemented actions – only done on request</td>
<td>• No defined business metrics in place to track the effectiveness of implemented actions – only done on request</td>
</tr>
</tbody>
</table>
The solution

Nokia Advanced Consulting Services provides a team of experts with extensive industry experience and knowledge of best practices to support CSPs in their effort to seamlessly transform to predictive operations with the goal of building digital personas.

The typical Advanced Consulting Services methodology for working with a CSP on this journey can be summarized as follows:

**Value based consulting**

The Advanced Consulting Service team works with the CSP to understand its business objectives, for example, churn reduction or clustering for persona definition.

Using its digital assessment framework to assess the current maturity level of the relevant business units, Nokia does a gap analysis and proposes recommendations.

To help CSPs understand their readiness, Nokia uses maturity frameworks, which are analyses based on the four Ps of people, processes, platforms and performance. These frameworks help the CSP to evaluate the exact challenges and gaps it needs to overcome before it can realize the full business value, including campaign efficiency, improved campaign hit rate, increased revenue, reduced churn and lower customer acquisition costs.

The team then employs “To Be” process design and supports the CSP use case owners with training to understand the insights and develop next best actions. Business value realization, including measuring the improvement of a value metric (revenue, churn reduction) is based on a set of actions taken from the insights of a given use case. Recommendations for improvements required to deliver the business value are also provided.

**Telco data science model implementation**

Using existing infrastructure from either Nokia or third-party analytics frameworks, the team trains and applies ML models. It also analyzes and builds more valuable features and key performance indicators (KPIs) from available data sources, such as the network, billing and CRM systems. Customer workshops help to define the typical approaches for the chosen use cases; for example, how to define the business logic for predicting inactivity in a churn reduction use case.

The data science team will also build custom adaptations incorporating experiences and use cases taken from other projects to build custom KPI’s that are important and improve model accuracy. Models are built in a way that the CSP can easily understand the accuracy of the model, thus avoiding the black box issue. It is made clear why the data is being ingested and how insights are generated.
Case Studies

Figure 1: Defining and explaining the approach for digital persona analysis

Digital Persona Analysis using AI/ML capabilities is the task of grouping a set of objects in such a way that objects in the same group (called a digital persona or cluster) are more similar (in some sense) to each other than to those in other groups (clusters).

For clustering, it is equally important to understand what the data source (Fixed, Mobile, or converged domains) is and how the model provides stable clusters. This follows best practice, which aims at determining the optimal number of clusters to best describe the customer behavior. In addition, it is paramount to understand the uniqueness of the clusters so that marketing can implement contextualized campaigns. For example, it might be beneficial for marketing to identify customers in one cluster and create campaigns to move them to a more profitable cluster.

This use case is about using behavioral usage data as well as circumstantial CRM data, and customer experience data to arrive at a meaningful digital persona that CSPs can utilize to perform marketing upsell and cross-sell activities.

Figure 2: Defining and explaining the approach for churn analysis
**Churn Prediction** using AI/ML capabilities is the task of identifying subscribers having a high propensity to leave the CSP.

For churn prediction and reduction, causality is especially important as this makes identifying what actions should be taken to decrease the churn rate possible.

**This use case** is about using behavioral usage data (usage, quality, failures, mobility) as well as circumstantial CRM data and customer experience data in order to arrive at a holistic view of the touch points that have an impact on reasons for churn. Additionally, the model will provide causations — that is, what are the key metrics that are causing subscribers to churn — thereby allowing meaningful actions from the CSP.

**Business benefits**

The benefits of these two use cases are both qualitative and quantitative. Under qualitative benefits, the new digital personas identified allow marketing Customer Value Management (CVM) teams to drive more targeted marketing campaigns. They can use automated models that reduce the time to create and maintain legacy segmentation clusters. They can also improve the accuracy and effectiveness of campaigns. For example, rather than offering a bonus data bundle to retain a customer, action can now be internal to the CSP to resolve the underlying network quality issue.

Quantitative benefits include revenue improvements with new revenue generation or existing revenue retained, both enabled by more efficient campaigns. It is also possible to quantify operational improvements under either use case.

What our customers are saying:

“Big gain for us when we can predict close to 40% of actual churners in looking at the top 10% of potential churners. $1.6M of revenue upside annually.” MEA Marketing (CVM)

“We have been selling a pipe in the past, but now we can define targeted offers as per the interest of the customer.” MEA Marketing (CVM)
Conclusion

CSPs need to transition from generic campaigns to more personalized marketing methods while also including more customer-journey touch points to improve loyalty. Key to this process is the use of unique digital personas that will help to drive sustainable improvements in revenue and improve loyalty to the CSP brand. This means that the CSP needs a clear “To-Be” coherent blueprint of how to deliver the digital persona based on the gaps identified across the 4 Ps from the “As Is” assessment. AI/ML capabilities will play a key role with automation in driving the needed value.

The Nokia Advanced Consulting Services team has industry experts along with the needed experience to become a CSP’s trusted advisor and partner in this journey. Our experts can help them understand and contextualize these challenges and, more importantly, provide a detailed implementation plan to overcome any obstacles with regards to maturity readiness while also providing the needed execution capabilities. The implementation plan will cover the complete CSP use-case lifecycle including design, build, implementation, adoption and business value realization and look for continuous areas for improvement. This comprehensive approach is a key to success for CSPs to drive more loyalty and increase revenue in this competitive digital era.

Abbreviations

ACS  Advanced Consulting Services
AI  Artificial intelligence
BI  Business information
CDR  Call detail record
CSP  Communications service provider
CVM  Customer value management
KPI  Key performance indicator
MEA  Middle East and Africa
ML  Machine learning

About Nokia

We create technology that helps the world act together.

As a trusted partner for critical networks, we are committed to innovation and technology leadership across mobile, fixed and cloud networks. We create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs.

Adhering to the highest standards of integrity and security, we help build the capabilities needed for a more productive, sustainable and inclusive world.

Nokia is a registered trademark of Nokia Corporation. Other product and company names mentioned herein may be trademarks or trade names of their respective owners.

© 2021 Nokia

Nokia OYJ
Karakaari 7
02610 Espoo
Finland
Tel. +358 (0) 10 44 88 000

Document code: CID210514 (June)