**Problem 1 – Segmentation of the customer base**

**Problem description:**

* To extract and describe stable customer segments, in order to design marketing promotions for the segments, reduce the outflow, and increase sales in an increasingly competitive market (Decathlon);
* To estimate the outflow of customers by the segments and transitions of customers between the segments;
* To propose how to work with the segments to increase sales and retain customers.

***Note***

*It is necessary to take into account certain misuses of the goods, e.g.:*

* *Not everyone who purchases baseball bats is playing baseball; some just keep them in their car.*
* *Not everyone who purchases snowboard jackets is a snowboarder; the majority is just wearing them every day.*

**Assumed data:**

* Receipts (full price, retail price, discounts (retail, bonus, etc.), store, time);
* Customer data (name, gender, address, birthdate);
* SMS communications;
* Counts of views of goods on the website;
* Bonuses awards and withdrawal;
* Goods attributes (goods catalogue);
* Extra goods attributes (Internet store catalogue) – after discussion.

**How do we evaluate the success of solving the problem:**

* We discuss and evaluate the adequacy of the extracted segments and compare those with our approach to segmentation.
* We evaluate the tools to extract segments from the usability and performance points of view. These tools potentially might be used within SM.
* We send test SMS and e-mails and compare the response to the personalized and impersonalized messages of the target group and the control group.

**Problem 2 – Optimization of a budget for mass SMS campaigns.**

**Problem description**: Four to eight large-scale federal SMS campaigns take place every year, each of which involves sending SMS to all customers who made purchases in the last year or two. By default, two messages are sent to each customer: in the beginning of the campaign and three to ten days before the end of the campaign. The overall results show that campaigns are efficient both for active customers (who made purchases in the last year) and for the passive customers (who made purchases one to two years ago), but there is a room for further optimization:

* Optimization of the budget for the SMS campaigns;
* Reduction of the number of SMS sent to a single customer;
* Increase in the efficiency of communications and the response to them.

**Assumed data**:

* Receipts (full price, retail price, discounts (retail, bonus, etc.), store, time);
* Customer data (name, gender, address, birthdate);
* SMS communications, counts of views of goods on the website;
* Bonuses awards and withdrawal;

**How do we evaluate the success of solving the problem:**

* After receiving the model, we send SMS to the suggested customer base and to the standard customer base (purchases in the last two years). We then evaluate optimization of the budget and potential losses due to some customers will not receive SMS messages.