CASE STUDY – DETECTING OUT-OF-SHELF & OUT-OF-STOCK GOODS

COPLER

Client Retail & FMCG

Customer request Large retailers face ponderous losses of revenue due to lost sales. According to studies, around **20%** of lost sales occur due to absence of good on a shelf. Absence of good is frequently caused by problems in supply chain along with issues due to human factor.

For detailed analysis data we collected sales data from last two years from a Top-Tier retailer (**5000+** shops in CIS + Europe). We pursued two goals: to develop an alerting system that should signalize us about potential good unavailability in short-term period, so it could be transferred to a staff and merchandiser, and to classify goods depending on their risk at being unavailable according to historical analysis.

After **12** months we achieved a **81%** average of alerting predictions precision, and the multi-factor risk system for goods which considered volatility, liquidity, supply frequency, etc.

Our services provided
Team of 12 Engineers and Data Scientists:
- Technology stack: Data Science, BI, DWH
- Scikit-learn, xgboost, and lots of Python libraries (self-crafted and not) for predictive analytics
- PostgreSQL (migrated to Cassandra due to increased volumes of data) for DWH
- Apache Spark for multithread data processing

Results
From a business angle, the following results were achieved:

- **C**lient increased its revenue for 3,5% for first six months after deployment of our solution
- **P**roject capitalization increased in 11 times and it was successfully sold