How to use internal and external data to realize the potential for changing the game in handset campaigns

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ABSTRACT

Telecommunication industry is the fastest changing business ecosystem in this century. Therefore handset loyalty programs are the key to keep customers. However, these handset campaigns have great fraud and payment risks if the companies do not have the ability of classifying and assessing customers properly according to their risk propensity.

In order to solve this problem, risk management departments have to predict risky customers and then integrate risk scores and all information into one real time decision engine for optimized handset application vetting. After an assessment period, SAS Analytics platform and RTDM was chosen most suitable solution as it provides a flexible user friendly interface, high integration and fast deployment capability.

After completion of the project, %13 of all handset sales was concluded via RTDM in just 3 months. Other benefit of RTDM is 24% percent cost saving in external data inquiries.

INTRODUCTION

This presentation will focus on transforming data to knowledge, how to realize the potential in handset campaigns and how to execute strategy in real time. You will get an insight and experience to find an answer to following questions:

- Are we capable enough to transform the data to knowledge, strategy and execution?
- How much of our data are we able to harvest for decreasing bad debt while increasing revenue of handset campaigns?
- How can we manage the project and design the systems to get maximum from the data?
- How can we integrate external data to improve handset application vetting process?
- How do we classify our customers properly?
- How do we decide which handset campaigns offer best works for which customers?

REALIZING THE POTENTIAL

Predictive analytics and big data are becoming one of the most fundamental and hot issues in business. Since, proper and timely knowledge is the key for realizing the potential and building sustainable and successful business. However, before defining business objective and building a system for extracting knowledge from huge data, we should understand dynamics and trends of business ecosystem. For this reason, this section will start by clarifying business ecosystem that we want to be successful.

BUSINESS ECOSYSTEM

Before explaining how to use analytics and data for creating value, it is very important to understand under which conditions we are managing business. Therefore, in following paragraphs you can find some statistics about Turkey and telecommunication business.

Turkey offers a growing and competitive market for operators with its 75 million population and 83 % mobile penetration ratio.

- Turkey's GDP at constant prices rose 2.1% year-on-year in 2Q14, reflecting the economic slowdown. In the previous quarter GDP increased 4.7% year-on-year.
- Broadband penetration continues to grow and it was 44.52% of households in 2Q14.
- The growth in the number of 3G subscriptions accelerated in 2Q14. Total 3G subscriptions rose 4.7% quarter-on-quarter, with 2.4 million net adds in the period. Turkish operators added 8.1 million 3G subscriptions year-on-year in 2Q14.

- Turkey has a young population, with an average age of about 30. There is therefore strong potential for growth in the consumption of data and handsets. Data usage is expected to be the heavier content as smartphone and tablet penetration grows.
- Mobile revenues will continue to grow, driven by the rise in smartphone penetration and data consumption that will be mentioned in next pages.

Statistics	2Q14
Population	75,779,918
Median age	29.77
Urban population (%)	74.17%
Households	21,034,271
% of households with fixed broadband	44.52
GDP ($bn)	1,278.78
GDP per capita ($)	16,874.93
YoY GDP growth (%)	3.83
Monthly mobile ARPU ($)	10.34

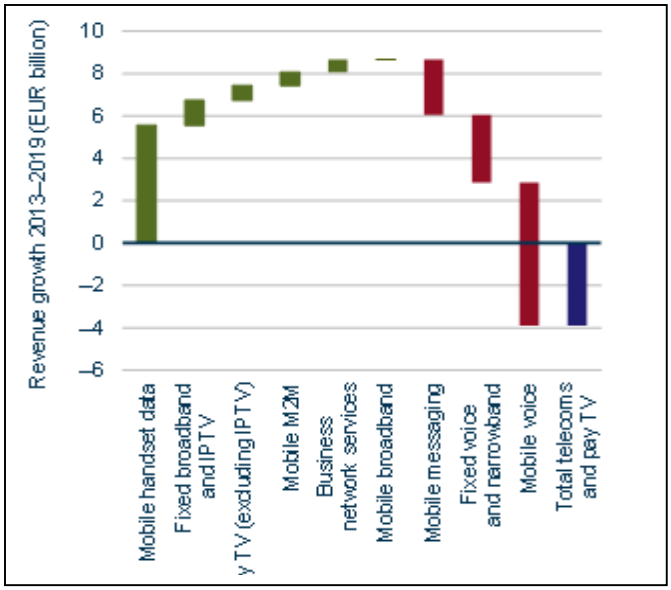
Notes: GDP statistics are based on purchasing-power parity.
Sources: Ovum, IMF, World Bank

Table 1. Statistics of Turkey

		2010	2011	2012	2013	9M 2014
Mobile	**Mobile subscribers (active SIMs)**	55 274 000	59 017 000	61 270 000	63 125 000	65 428 000
	Mobile penetration (percentage of population)	75.0%	79.4%	81.6%	83.4%	85.9%
	Prepaid subscribers as a percentage of mobile subscribers	65.8%	61.2%	57.9%	56.0%	53.5%
	3G subscribers as a percentage of mobile subscribers	35.1%	53.2%	68.2%	78.1%	86.8%
	Mobile broadband subscribers (mid and large screen)	927 000	1 547 000	1 802 000	1 701 000	1 277 000
	Number of smartphone connections	3 856 000	8 530 000	13 200 000	20 751 000	27 547 000
	Mobile ARPU (TRY per month)	20.35	21.48	22.41	22.91	23.00
	EUR per month	10.21	9.24	9.70	9.10	7.85
	Mobile MoU (minutes per month)	191	219	242	256	270
Fixed	**Fixed voice lines**	16 481 000	15 603 000	14 350 000	13 550 000	12 740 000
	Fixed voice penetration (percentage of households)	65.7%	61.7%	56.1%	52.5%	49.0%
	Fixed broadband subscribers	7 069 000	7 504 000	7 789 000	8 325 000	8 630 000
	Fixed broadband penetration (percentage of households)	33.7%	35.2%	36.0%	37.9%	38.8%
	Fixed voice ARPU (TRY per month)	27.85	27.84	28.87	29.91	28.08
	EUR per month	13.97	11.98	12.49	11.88	9.59
	Fixed broadband ARPU (TRY per month)	28.98	32.56	38.22	40.11	46.61
	EUR per month	14.53	14.01	16.53	15.93	15.92
	Fixed MoU (minutes per month)	117	113	108	100	93
Revenue and GDP	**Mobile service revenue** (EUR million)	6 805	6 339	6 997	6 789	4 544
	Fixed service revenue (EUR million)	4 991	4 702	4 812	4 472	2 972
	Data revenue as a percentage of mobile service revenue	19.6%	23.3%	25.7%	28.7%	31.9%
	Broadband revenue as a percentage of fixed retail revenue	24.4%	28.6%	33.2%	36.0%	43.0%
	Nominal GDP per capita (EUR)	7,510	7,540	8,210	8,240	7,730

Table 2. Telecoms KPIs, Turkey, 2010–9M 2014 (Source: Analysys Mason, Economist Intelligence Unit,2014)

Turkey is a highly competitive market and operators have segmented it by offering packages including handsets for specific types of users to retain customers and promote data consumption. As a result of the competition in telecoms smartphone campaigns will increase in following years.



Mobile handset data will be the major part of revenue growth during the next 5 years, driven by smartphone take-up

Cheaper devices, targeted campaigns, handset subsidies, and voice–data packages will be crucial to reaching new smartphone users

Therefore, optimized real time decisions by using external data is vitally important for extending offers to brand new customers

Figure 1. Telecoms retail revenue growth by service type in CEE

(Source: Analysys Mason, 2014)

Smartphones will grow in line with global markets, tablet and PC sales are expected to grow in a faster pace compared to global markets.

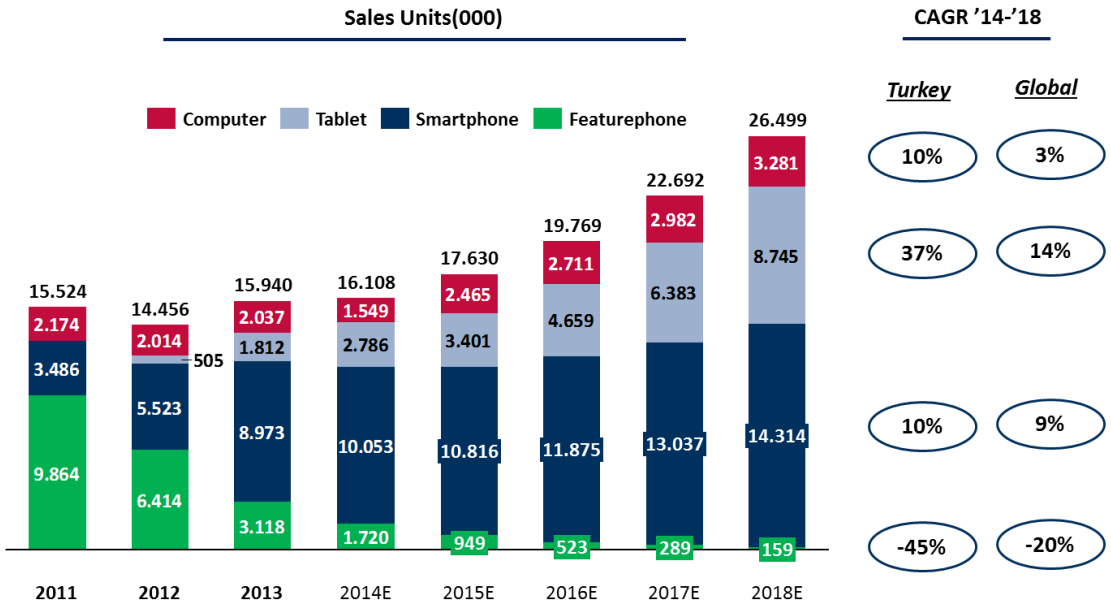


Figure 1. Device sales by types in Turkey and Global

Smartphone and tablet come into prominence for telecom channels.

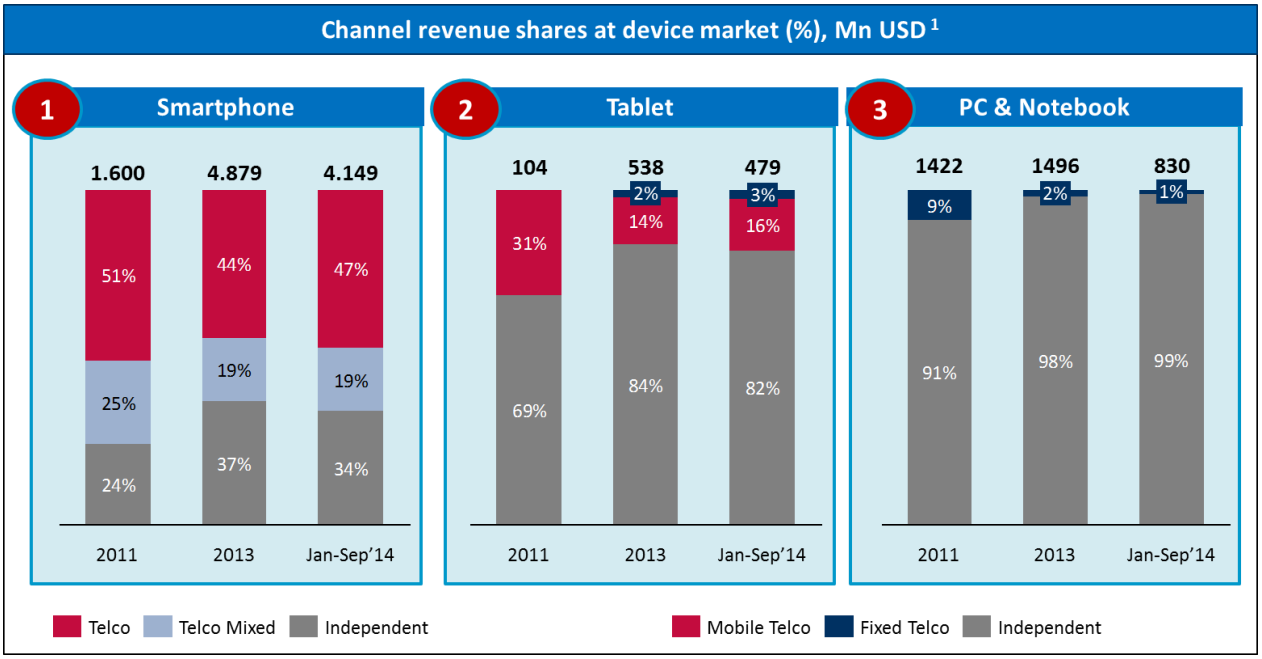


Figure 2. Channel revenue shares at device market

TRANSFORMING DATA TO KNOWLEDGE

Many companies have been storing petabytes of data for many years without realizing its great potential. Aim of data storage is to extract knowledge for better understanding of customers and making strategic decisions in short time. However, data collection has turned into objective instead of a tool in many companies.

For realizing the potential it is vitally important to build an analytics platform that is based on state of the art technologies. Analytics systems for extracting the key knowledge from data is getting vitally important driver for prediction and designing strategy. For those reasons, we have been using predictive analytics tools and real time decision engines to primarily minimize gap between available customer data, knowledge, strategy and execution.

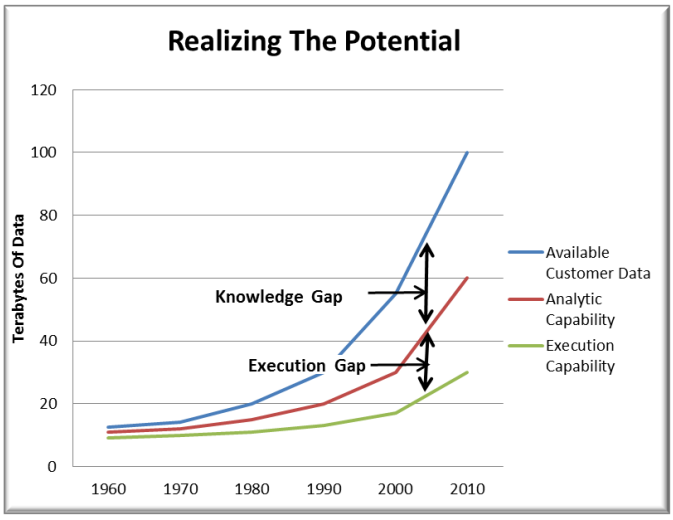


Figure 3. Growing data over years (Source: Gartner)

BUSINESS OBJECTIVE

Telecommunication industry is the fastest changing business ecosystem in this century. In an environment where boundaries are getting blurred and players are entering each other's domain, device proposition is a strong instrument for telecoms to differentiate. However, these handset campaigns have great fraud and payment risks if the companies do not have the ability of classifying and assessing customers properly according to their risk propensity.

Telecom companies managed the risk with business rules such as customer tenure for long years until launch of analytics solutions into the market. But few business rules restricts Telecom to sell handset to new customers. On the other hand, increasing competition pressure in Telecom and customers' increasing intention to buy devices in the next 12 months (see table 6) make it inevitable to use credit external data to sell handset to new customers. Credit Bureau data was a good opportunity to measure and understand the behaviors of the applicants. But using external data required system integration and real time decision systems.

For those reasons, we needed a solution that enables us to predict risky customers and then integrate risk scores and all information into one real time decision engine for optimized handset application vetting. After an assessment period, SAS Analytics platform and RTDM was chosen most suitable solution as it provides a flexible user friendly interface, high integration and fast deployment capability.

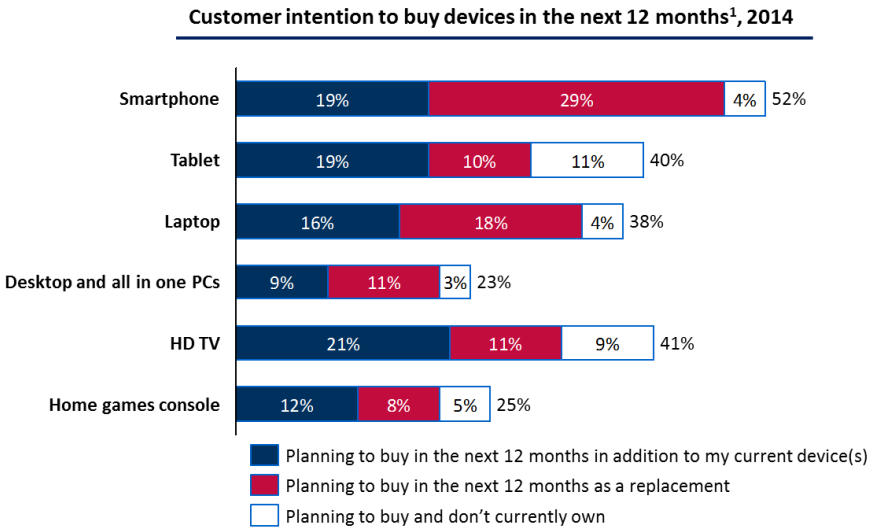


Figure 4. Customer intention to buy devices in next 12 months (Source: Accenture 2014 digital consumer tech survey)

PROJECT METHODOLOGY

PROJECT READINESS CHECKLIST

Before starting an analytical project it is very important to define main issues and KPIs to guarantee success of the project.

a) Strategic Focus:

- Strategic objective should be identified
- Related business goals should be listed
- Success criteria should be defined
- Success benefits should be quantified

b) Resource Commitment

- Available people should be reserved
- Clear data should be prepared
- Analytical tools should be available

c) Determine Analytics Strategy

- Commitment to a methodology
- Achievable data mining goal should be defined
- Initial project plan should be completed
- Clear analytics success metric should be defined

METHODOLOGY

In this project, we build a process that includes three main stages to transform the data into knowledge. These stages are data collection, predictive modelling and deployment & decision optimization.

a) Data Collection: We designed a specific daily updated data mart that connects internal payment behavior, demographics and customer experience data with external Credit Bureau data. In this way, we are able to turn data into meaningful knowledge for better understanding of customer behavior.

b) Predictive Modelling: For utilizing the company potential, it is critically important to use analytics approach that is based on state of the art technologies. We built nine models to predict customer propensity to pay. As a result of better classification of customers, we obtain satisfied results in designing collection scenarios and decision model in handset application vetting.

c) Deployment & Decision Optimization: Knowledge is not enough to reach success in business. It should be turned into optimized decision and deployed real time. For this reason, we have been using SAS Predictive Analytics Tools and Real Time Decision Manager to primarily turn data into knowledge and turn knowledge into strategy and execution.

WHY DATA MINING AND SAS PREDICTIVE ANALYTICS SOLUTIONS

WHY DATA MINING

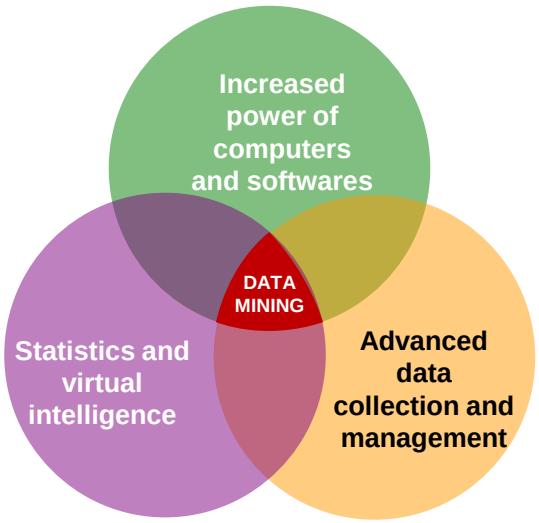
Data mining technology provides us methodology for obtaining high qualified knowledge that is extracted from hidden patterns in terabytes of data

Data mining is optimum combination of three key technology for sustainable success of companies

Data mining provides a powerful project methodology that ensures the success

Data mining provides the state of the art tools for prediction and quick executions

Data mining is the smart way of flexible and adaptable business analytics



Integration Of Three Key Technologies

WHY SAS

Defining vendor and tools in complex predictive analytics projects that includes modeling, business experience, and integration of many different platforms is the most important part in business decisions. We chose SAS analytics platform and real time decision manager for following capabilities:

- **Integrated End To End Solution:** SAS has an end to end solution architecture to support the entire analytical lifecycle, including interactive data exploring and visualization, model building, model assessment and monitoring model performance
- **Easy to use GUI:** The analytical power of SAS is delivered via an easy to use, drag and drop interface designed to facilitate model building capabilities of business users. Thanks to the RTDM user friendly interface, we can design and deliver decision trees in several hours
- **State of the art statistical and neural network modeling techniques**: SAS provides superior analytical platform of classical and modern predictive and descriptive modeling algorithms.
- **Advanced data preparation and exploration tools**
- **Business based model assessment, comparisons, reporting and management**
- **Scalability, Performance, and High Performance Analytics**: SAS is known for its ability to handle large volumes of data and lets the users to do their analysis and build their models in most efficient way
- **Flexible design and integration:** The customizable environment of SAS provides us the ability to add tools and include personalized SAS code. We run SAS decision engine in our handset activation process
- **A quick and easy way of building complex models**
- **Model Deployment, Assesment, Scoring and Monitoring:** SAS offers a more complete integrated solution which requires less steps and manual intervention to deploy and evaluate models.
- **Real time decision engine:** RTMD is the easiest way of designing decision trees and implementing them even in several hours
- **Consulting and Local Industry Experience:** SAS has local consultants in Turkey who specialized in data mining with deep local telco knowledge and data. This is one of the most important success factors in a complex predictive analytics projects

CONCLUSION

After implementing SAS RTDM and analytics platform, now we are able to assess customers properly and to sell handset even to our brand-new customers as part of application vetting process. As a result, while we are decreasing nonpayment risk, we generated extra revenue that is coming from brand-new contracted customers. In the first six months, %13 of all handset sales (47% is brand-new) was concluded via Credit Bureau Data. Other benefit of RTDM is 24% percent cost saving in external data inquiries that is mentioned in figure 6. Thanks to RTDM, Avea has become the first telecom operator which uses bureau data in Turkish Telecom industry.

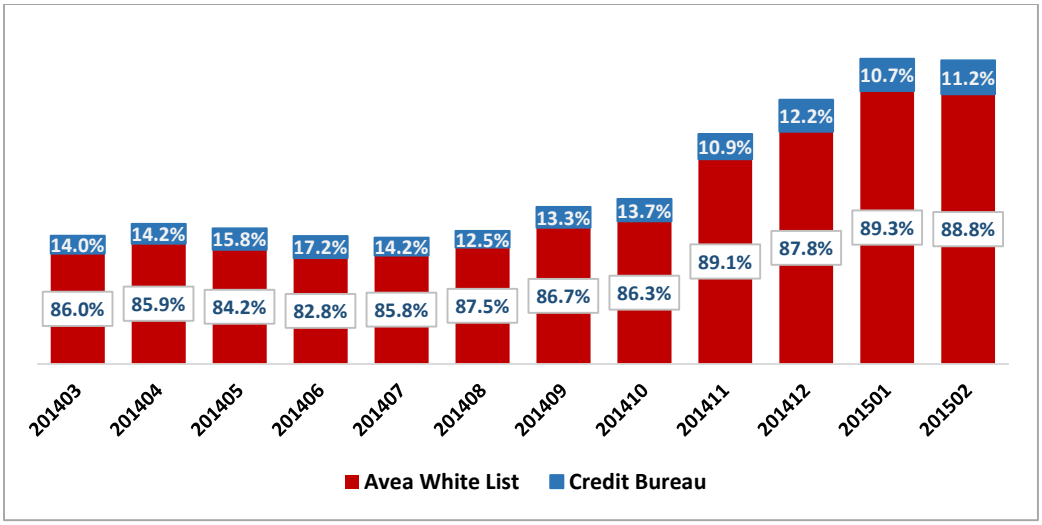


Figure 5. Monthly Handset Sales by Decision Type

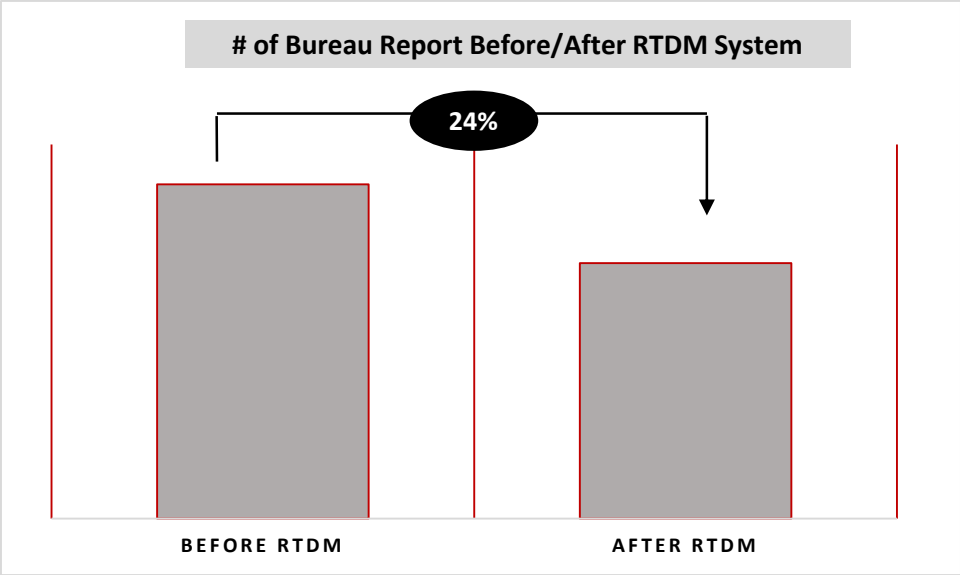


Figure 6. Number of Credit Bureau Reports

CONTACT INFORMATION

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