

Enterprise Case Study: Reducing customer churn with 750% ROI with ThoughtSpot

How a Global 100 mobile operator significantly reduced customer churn with search-driven analytics

Summary

Catalyst

Customer churn is an age-old problem for most industries, especially for ones with high competition, low prices or margins, and volume-based business models. Telecommunications, retail, and certain segments of the financial services industry, and increasingly software-as-a-service businesses, are prime examples of such markets where players invest significant resources in tracking, measuring, and understanding customer churn, so that they can manage it better. However, traditional churn analytics often focuses too narrowly on the "how much" and too little on the "why." Measuring churn accurately is not enough; effective churn management is only possible when companies are able to find out the root causes behind the churn – before it becomes a serious issue – and apply an agile, proactive approach to contain it. This case study sheds light on how one large provider successfully navigated this process through the use of search-driven analytics, and offers important "lessons learned" that can be applied in other industries.

Ovum view

The enterprise profiled in this case study is a global telecommunications provider and one of the key players in prepaid wireless phone services. To tackle the challenge of customer churn, this enterprise chose ThoughtSpot and its Relational Search Engine. The enterprise is using ThoughtSpot to bring together and analyze all of its customer, phone usage, and market data, from multiple sources, in order to analyze the effectiveness of its campaigns and identify the true reasons behind customer churn. Previously, teams across marketing, operations, and customer support had to wait months for reports from the BI team to answer these vital questions. With ThoughtSpot, these business managers can now do their own analytics through the power and simplicity of search. As a result, the enterprise recovered its costs in less than a year and went on to record a 175% return on investment in the first year itself, expanding to over 750% ROI in subsequent years. Ovum believes that this example will resonate across industries with CIOs and business executives who are trying to answer the ever-persistent question, "How do I understand my prospects and customers better, so that I can stay relevant to them?"

Key messages

- Extreme competition and shifts in user preferences have resulted in increased pressure on organizations to accurately and more quickly analyze the root cause of churn.
- The business chose an analytics platform that would help create a holistic analysis of data and provide self-service analytics capabilities to business users.
- Based on the ease of use, ability to handle multiple types of data with complex schemas, and self-service environment, the provider chose ThoughtSpot.
- Using ThoughtSpot, the provider was able to examine the detailed root causes behind churn in a very short time frame to provide prescriptive insights.

Key metrics

- Net present value of \$13.8m over five years.
- ROI of 175% in year one.

- ROI of 750% in year three onwards.
- Break-even in just nine months.

Table 1: ROI summary

Metric	Value
Present value of total costs for five years (TCO – five years)	\$2.2m
Present value of total benefits for five years	\$17m
Net present value if ThoughtSpot runs for five years as-is	\$13.8m
Return on investment	175% – Year 1
	662% – Year 2
	777% – Years 3 to 5
Payback period	9 months

Source: Ovum

Recommendations for telecommunications industry analytics practitioners and leaders

Have a plan to assess the ROI of your analytics solution

The key to calculating your return on investment is to understand the costs and benefits. Assumptions change the calculated costs and benefits significantly, so it is important that the person building the business case for analytics research tests their assumptions with their vendor(s) of choice. Vendor inquiry should include discounts on list price that the enterprise might get and the cost of new hardware (servers). If there is a preferred IT services provider, it will be worthwhile getting to know its "time and materials" rate for services such as deployment and training.

Internally, it is important to work closely with finance and human resources to ensure that the financial assumptions are accurate. Points of inquiry should include estimates of remuneration of employees, annual rate at which salaries grow, and the discount rate usually used for NPV (net present value) calculations. In addition, it is worthwhile to check with IT if internal deployment capabilities, including the presence of in-house resources for deployment, development of applications, and training, are sufficient to handle the deployment. If there is an internal chargeback policy in place, details of notional list prices for these services should be acquired.

Look for solutions that help avoid silos, not create them

Across verticals, we observe that medium to large organizations tend to develop siloed pockets of data and analytics. Each data silo typically serves a specific critical customer/divisional need (and is therefore its genesis), but the sum of parts does not help management see the "big picture." Silos create inefficiencies and increase analytical inaccuracies, leading to unnecessary risk exposure. An integrated analytics and data environment, while time-consuming and resource intensive, is the bedrock of successful analytical transformation. It is important that organizations ensure that they have considered integration upfront; focusing on solutions that can integrate data from multiple sources is critical to avoiding blind spots in analytics.

Using analytics to find probable causes for churn

Setting the business context

Telcos are facing a challenging time: the market is oversaturated with communications service providers and new entrants such as ISPs, cable operators, and OTT (over-the-top) players, leading to high customer churn. To combat this, telcos must be able to differentiate their service offerings or face becoming a non-fixture in the lives of consumers. Over the past several years, telcos have made significant investments in collecting and storing customer and OSS/BSS data, but little investment has gone into using all the data they possess for practical business applications. The primary reason preventing telcos from building an extensive data-driven analytical framework is that data continues to be highly complex and disparate, and some legacy BI tools struggle to handle the scale and maturity of these complex data architectures. Large telcos typically run complex webs of promotions and programs spanning hundreds of campaigns with interconnected resources and outcomes.

The company for this case study is a global telecommunications provider and one of the key players in prepaid wireless phone services. Founded two decades ago, its phones are sold in hundreds of thousands of retail locations worldwide. As a mobile provider, the vendor faces a number of challenges – increasing churn, constantly changing customer preferences, global competition, and increasing fraud, to name a few.

Of these, churn was the biggest and most immediate problem that the organization needed to focus on. The business realized early on that simply knowing the numerical churn value was not proving helpful. Instead, it wanted to understand the root causes behind churn, so that it could better retain customers and explore customer behavioral patterns through analytics. The churn problem was especially pertinent due to the prepaid nature of its business, where there is very little knowledge of who the customer is and what he or she likes, as opposed to postpaid businesses where operators know a lot about their customers. While prepaid businesses do not struggle to recover dues (which is a big problem in the postpaid world), keeping the customer for a longer amount of time is a gargantuan task. The siloed nature of operations, and therefore, siloed data, compounds this problem. For example, marketing might design promotions based on handset subsidies to a particular user segment, to later find out that historically that particular segment comprises the most active churners.

The provider had a dedicated customer retention department comprised of a team of data analysts who spent significant man-hours compiling diverse data sets and mapping out complex schemas manually so that the brand managers could understand the underlying causes for customer churn. This was not a scalable approach. The company determined that to collect, collate, and analyze all the data manually would take more than a quarter, by which time the data would be outdated. Also, doing this manually would make the data inherently error-prone, damaging stakeholders' trust. The provider needed a technology solution that would automate parts of this process, saving time and helping it slice and dice the data in any way that it wanted. Also, it wanted to empower business users across the organization to access, visualize, and mine different data sources for insights – such as subscriber usage, marketing campaigns, network data, and Point of Sale (POS) history.

Understanding the existing architecture

The provider, whose current analytics systems were outdated and very poorly used, had a variety of technologies in-house, catering to different parts of the business. Mainly, the company built its analytics stack from IBM and Oracle offerings, with associated infrastructure. IBM Cognos was used

as the primary presentation layer, with IBM DB2 on the data warehouse side to store OLAP cubes. However, these were very old deployments (circa 2003) and had not been updated, which resulted in them being static and unresponsive. As a result, adoption and usage were poor. The organization also had pockets of usage in line-of-business teams (for point tools or Cognos), along with some heavy usage for analytics in the customer retention department (extensive SQL queries on a 12TB data warehouse) plus a few datamarts. They were also using IBM Campaign (formerly Unica Campaign) for campaign management. The customer retention department also used SAS to a limited degree.

The unmet needs of the business led it to try out new solutions. There was wide recognition within the business that new technology would have to be inherently scalable and flexible (to incorporate all types of data with complex join types), fast to deploy for accelerated time to market, and possess the ability to blend data silos together.

Focusing on results (rather than the underlying technology) is the only way to prove the value of any analytics solution. And it requires working with the organization's own data and showing results that matter to business users, rather than just explaining why the technology could be applied to their ends. ThoughtSpot's search-driven analytics solution impressed the organization with its ease of use. But the acid test for the purchase was working with two weeks of live churn data and presenting compelling insights. ThoughtSpot was able to exceed expectations on that front, which immediately placed it ahead of the other stack vendors. ThoughtSpot also edged out the competition because of its unique business model. Priced by data volume instead of user license, the mobile provider would be able to grow adoption internally without additional costs.

Bringing the strategy to life

The enterprise decided to standardize on ThoughtSpot, and prepared for a quick deployment. The first step was to identify how much of its data ThoughtSpot would need for analysis for the first few use cases – capturing the critical but low-hanging fruit first. Because ThoughtSpot is priced on data volume instead of license or concurrency, the provider purchased three appliances, in line with the volume of its data, with each box capable of handling uncompressed data volumes of up to 1TB, for a total of 3TB initially. Yearly maintenance was priced at a standard 20% of purchase price, and a number of 30-minute product orientations were offered as a part of the product price.

Outcome assessment

This deployment was speedy and achieved rapid adoption – over 120 users – within a few weeks. Instead of forcing a new tool upon noninitiated business users, the tool was initially offered as a complement to IBM Cognos. This way, business users could experience the benefits of ThoughtSpot without having to lose existing work. Slowly, the provider looked for champions in each business area and started orienting champions so that adoption was organic.

Using ThoughtSpot, the mobile provider was able to quickly measure the results of new and ongoing marketing campaigns, and begin to identify events causing customer churn. It was able to reduce the time to track campaign effectiveness and customer churn from over a month down to just a few days by giving marketers and customer service reps direct access to analyze their data. The solution also helped them to identify and optimize value-creating promotion opportunities across all retailers and digital platforms.

Presently, there are a number of proof of concepts running with other business areas to explore possible additional use cases for ThoughtSpot. Some of these include:

- **Marketing:** Marketers and brand managers running campaign-attribution analyses to identify the top performing campaigns across channels, brands, and segments to improve targeting and maximize lead-flow and campaign ROI.
- **Sales and retail:** Distribution managers performing inventory and supply-chain analysis to understand sales trends across product lines and regions, and reduce inventory shortages and stock-outs.
- **Customer care and operations:** Directors analyzing service cases across phone lines, carriers, and regions to identify the root cause of service issues faster, increase customer satisfaction, and reduce customer churn. They have also been able to quickly identify fraud patterns and decrease revenue loss as a result.
- **Finance and revenue assurance:** Analyzing brand and product line profitability to negotiate better contracts with suppliers. Identifying areas of revenue leakage faster and improving overall margins.
- **Loss prevention:** Correlating product usage to lost customers to identify churn indicators and reduce churn.

The organization is also focusing on orienting more business users, building more harmonized data sets (call detail records, or CDRs, are being brought back to identify patterns between calls and churn), with the ultimate goal of standardizing on ThoughtSpot as an enterprise-wide data analytics platform. Future plans include expanding usage in sales and marketing (campaign and advertisement dollars), helping other departments in channel, commissions, revenue recognition automation, and expansion to detecting and managing fraud.

ROI assessment

The following table summarizes the key metrics that show the effectiveness of ThoughtSpot's deployment at the provider.

Table 2: ROI study results

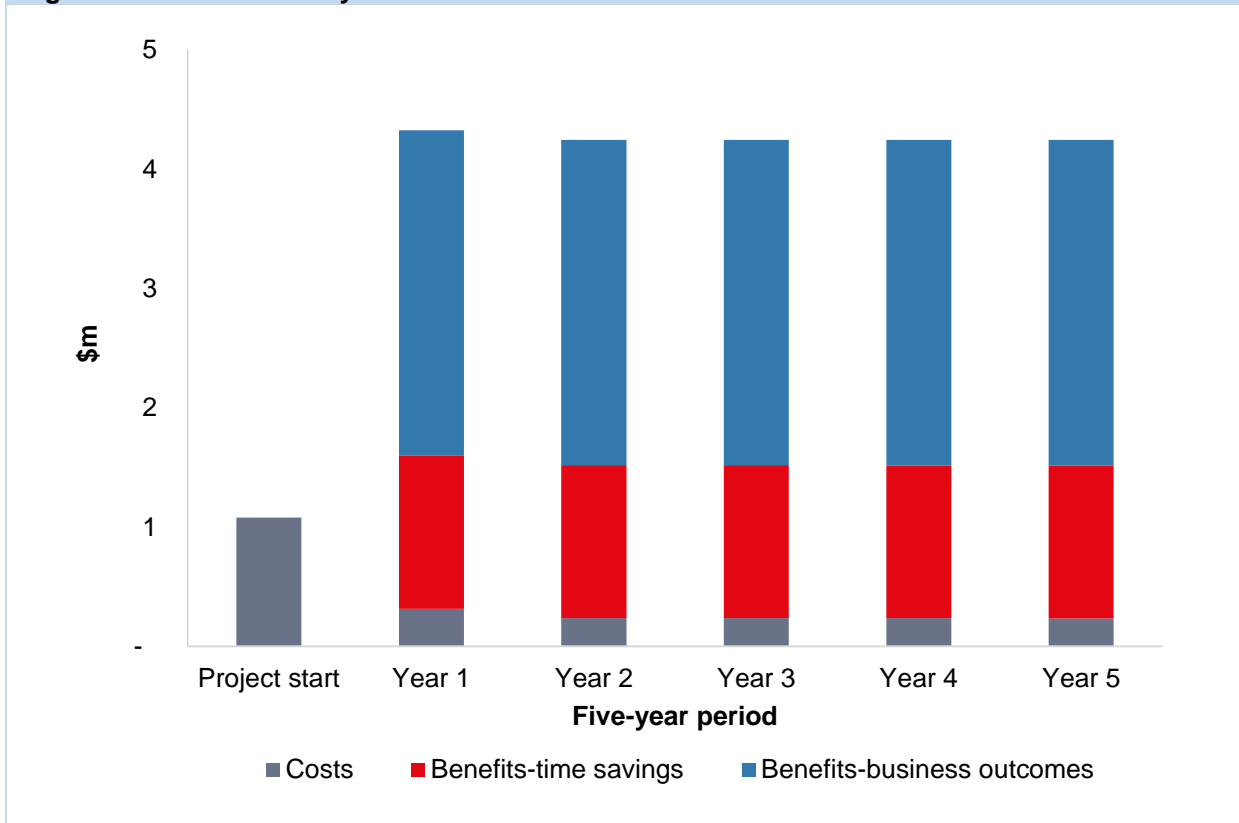
Metric	Value	Significance
Present value of total costs for five years (TCO – five years)	\$2.2m	If the provider has to pay all costs today in a lump sum and never spend another penny on ThoughtSpot for the next five years, this is the outlay.
Present value of total benefits for five years	\$17m	If the provider realized all the savings as a lump sum today that it would have realized over the next five years after deploying ThoughtSpot, this is how much benefit it would get today.
Net present value (NPV) if ThoughtSpot runs for five years, as is	\$13.8m	After consideration of all costs and benefits for the next five years, a positive NPV means that investing in ThoughtSpot will add this amount to company's savings and earnings.
Return on Investment	175% – Year 1	This relates to total profit (i.e. benefits less costs) as a % of costs, or the total % profit every year. It signifies that every \$ invested in ThoughtSpot will yield about \$1.75 in profit in year one. In the second year, every additional \$ spent on ThoughtSpot will yield \$6.62, and so on.
	662% – Year 2	
	777% – Years 3 to 5	

Payback period	9 months	This relates to the time it takes for the provider to break even (when expenses on the project is equal to its benefits), or the time it took for the provider to recover its original investment.
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Source: Ovum

Figure 1 maps the costs and benefits the provider witnessed as well as projected costs and benefits over an additional five years, resulting in a total of \$2.2m total cost of ownership over five years and \$17m total benefits, with a significant costs reduction after year one. Year two onwards, values are forecasted based on current year inputs and assuming that the provider does not add any new use cases or licenses for ThoughtSpot.

Figure 1: Costs over five years



Source: Ovum

Table 3 maps the costs and benefits the provider witnessed as well as projected costs and benefits over an additional five years, resulting in a total of \$2.2m total cost of ownership over five years and \$17m total benefits with a significant cost-reduction after year one. Year two onwards, values are forecasted based on current year inputs and assuming that the provider does not add any new use cases or licenses for ThoughtSpot.

Table 3 shows the ROI model inputs for costs and benefits, along with calculated results.

Table 3: ROI inputs for costs and benefits, with calculated results

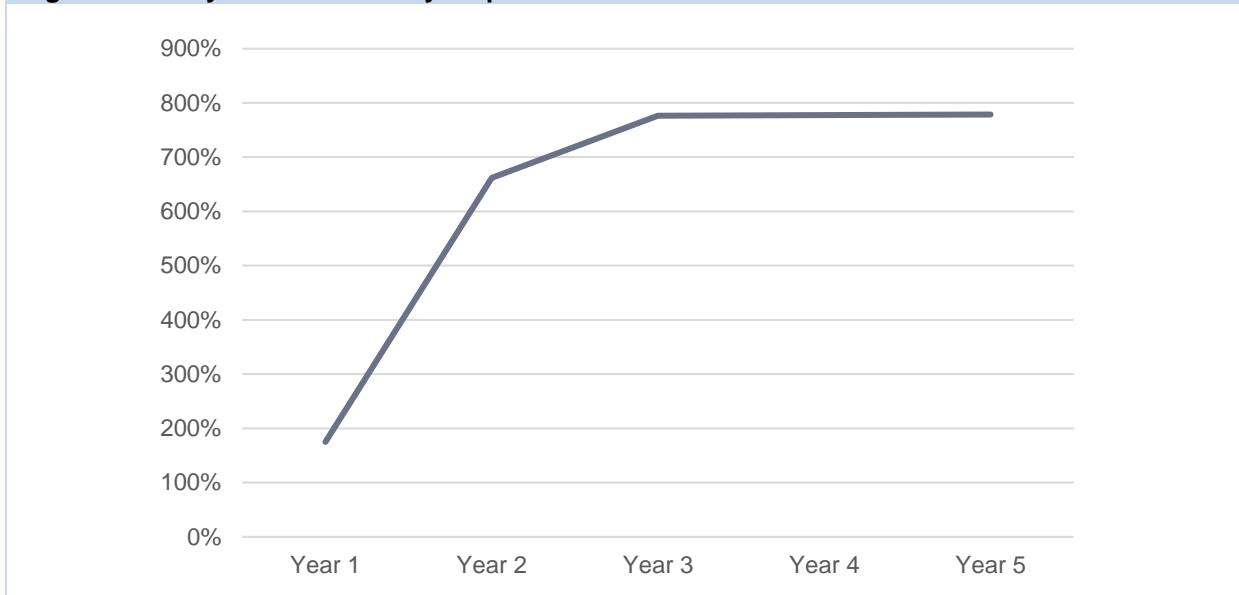
Costs		Benefits	
Inputs	Results	Inputs	Results
3 FTEs to deploy	\$2.2m in TCO over 5 years	120 marketing employees	\$1.3m time-saved benefits/year

25% of 1 FTE ongoing	Significant costs reduction after year 1	3 hrs. saved/week for data analysts	\$2.7m increased sales/year
2-month deployment time		1 hr. saved/week for LOB	\$17m in total benefits over 5 years
3TB ThoughtSpot system		1.1 million customer churn saved/year	
1TB/year expansion		3-day reduction in store replenishment times	
3 hrs. training/year			

Source: Ovum

Figure 2 shows how the ROI accelerates as ThoughtSpot is used over a five-year period.

Figure 2: Yearly ROI over a five-year period



Source: Ovum

ThoughtSpot deployment started paying for itself in less than a year

For the client, net cash flows (benefits less costs) from deployment turned positive in just eight to nine months from the start of deployment. In other words, savings per year from ThoughtSpot exceeded per-year investment in it from the first year. This was primarily due to benefits kicking in very early (almost immediately) and the provider choosing to go after a core use case that was a cause for significant revenue leakage. It is worth noting that Ovum worked with list prices and without any discounts. If discounts are factored in, cost savings, NPV, and ROI metrics could improve even further.

ThoughtSpot will start generating profits from the end of year one onwards

The net present value (NPV) for the provider was estimated to be positive even if ThoughtSpot was only used for one year. In other words, even if the system was used only for a year, it would still generate a profit. Usage beyond a year increased the amount of profitability that the system provided; in effect, beyond one year, the system could be considered an asset for the company. This can be

attributed to the fact that once the initial deployment costs are borne, costs decline substantially and benefits increase every year.

Expanding the number of users had a multiplier effect on ROI

The higher the number of users, the faster a company achieves positive ROI and NPV. The provider enjoyed a very short payback period because it deployed the solution to 120+ users and is looking to expand this even further. If the provider had just limited it to a handful of users, the time saved from efficiency would have been lower. Overall, we find that expanding deployments across more departments in the organization with more users has a multiplier effect, as each hour saved in a user's workday means an extra hour for all users (and more enterprise departments) that could be used for other activities.

Intangible benefits include trust in data and management efficiency

Apart from tangible benefits, the provider communicated immense value from intangible benefits of ThoughtSpot. Some of these were:

- **Governed source for trusted data:** ThoughtSpot's governance and security features allow BI teams to create curated data models that can be shared and reused throughout the company without rebuilding the same views over and over again. As a result, they were able to eliminate variability and uncertainty across users and departments. Implementing a central data quality initiative also lowered the cost of compliance. Auditable and validated data was also easier to audit and review and could be easily traced back to original sources to identify problems.
- **Management efficiency:** ThoughtSpot helped present a unified and consistent view of the entire business operations, which was invaluable to management for formulating strategy and making key business decisions. Overall, the provider reported higher management efficiency and faster decision-making processes (with exponential growth in the number of decisions that it could make in the same time frame), but these factors are usually not priced as a quantifiable benefit.

Lessons learned

Build consensus from the beginning

In large organizations, there are multiple stakeholders in various parts of the process who may or may not be directly affected by analytics platform decisions. As far as possible, changing analytical solutions and infrastructure should be seen as a large change management project and managed accordingly. In order to effectively prepare for and address change management, enterprises must identify and involve key stakeholders from project initiation. While the solution may be targeted at one department at inception, it will likely find its way to other departments in the future. It pays to think ahead and ensure that relevant stakeholders are involved before purchasing and implementing the solution. Doing so helps quickly identify and mitigate possible risks, including resistance to using the solution among some stakeholders. Moreover, enterprises must think about how to communicate the decision to implement a new solution and develop appropriate training programs for stakeholders.

After deployment, focus on driving engagement through extensive training and handholding. Push the self-service model to reduce the burden on IT.

Don't be afraid to go best of breed if required

While it may be tempting to build up an application stack from one vendor, single sourcing has some trade-offs. Vendor lock-in aside, buying into a stack solution sometimes leads enterprises to value application integration over feature and functionality, settling for good-enough to average functionality in some areas. This is not advisable for data-driven companies; settling for good-enough analytics may lead to poor insights and therefore poor decision-making, which could be detrimental to business interests. Instead, organizations should be open to best-of-breed strategies which look to empower businesses users and reduce the burden on IT, with a view to produce the most differentiated insights. However, it is also prudent to consider integration costs as a part of the best-of-breed project, upfront.

Appendix

Methodology

Ovum Enterprise Case Studies leverage in-depth interviews with key enterprise stakeholders as well as a review of any available documentation such as strategic planning, RFP, implementation, and program evaluation documents.

Further reading

How-To Guide: Enterprise Analytics and Business Intelligence, IT0014-003109 (April 2016)

2016 Trends to Watch: Analytics, IT0014-003065 (October 2015)

Data Management for Exploratory Analytics Vendors, IT0014-003067 (November 2015)

Ovum Decision Matrix: Selecting a Hadoop Platform, 2015, IT0014-003001 (April 2015)

Data Governance for Exploratory Analytics, Part 1, IT0014-003036 (August 2015)

Making the Business Case for Self-Service Analytics, IT0014-002990 (February 2015)

A Practitioner's Guide to Self-Service BI and Analytics, IT0014-002967 (December 2014)

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