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Bouygues Telecom: The *Intelligent* Telecommunications Company

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Executive Summary

Quick – what do you think of when you hear "Telecom Company"? Old, stodgy, and inflexible or do you think innovative, forward thinking, and tech-savvy? When it comes to Bouygues Telecom, the latter description is right on the mark. The company is one of the few bright spots in an oversaturated mobile phone market in Europe.

Bouygues Telecom is the third largest telecom company in France with 10 million mobile customers, a market share of 20%, and annual revenues of 5.3 billion Euros. Not bad for a company founded only 16 years ago (1994). But to maintain their leadership status, the company had to fight off aggressive competitors for their profitable customers, reduce costs without harming service, and ensure optimal performance throughout the enterprise.

How did they do this? They had to convert mountains of data into usable intelligence and make it available to internal as well as external parties. This was no small feat – the company had over 300 data marts alone! Nor was it a single, once-and-done project. It would take the company over two years in effort as well as the creation of a sophisticated yet cost-conscious governance program to ensure a single enterprise view of the data with access to the analytics throughout the organization.

The Business Problem

Now that the European mobile market has reached saturation, the focus had to shift from acquiring new customers to hanging onto those really valuable ones. To do this, Bouygues had to get knowledgeable about their customers in ways not possible during the growth phase. Also the company had to begin focusing on its internal costs and performance, which also have significant impacts on customer retention as well.

Customer intelligence was a big part of the business requirement but there was a second requirement for intelligence that was quite challenging. The company has to support police investigations and legal obligations by supplying integrated call detail records (CDRs) in a near real-time fashion.

Unfortunately during the go-go years of growth, the company had satisfied individual needs for analytics by using a fractured and disintegrated architecture. This resulted in 3 or 4 data warehouses and well over 300 data marts or "sand boxes" for business users to access and upon which to experiment. While satisfying some of the needs of the business, the chaotic analytic environment caused massive debates over the "real numbers" and did not give managers and others confidence in their BI results.

To succeed in their quest to obtain "inside" knowledge about their customers and to satisfy their legal responsibilities, the company had to be able to share analytic results, BI, and key performance indicators throughout the enterprise as well to selected external parties. They needed confidence in the numbers they were generating and they needed more real-time data to allow manager to tackle problems more close to the time they occur.

These business drivers served as triggers to obtain consensus to rebuild their analytics environment into a sustainable and maintainable one. They chose to build an enterprise data warehouse (EDW) that consolidated their analytic data and then distribute or give access to the BI results and analytics to the various departments and external entities.

The Solution

The ultimate goal for the restructuring effort was three-fold:

1. To consolidate their analytic data into a single data warehouse,
2. To shorten the data latency to make the data closer to real-time,
3. To support the creation of temporary sand boxes within the data warehouse (the Data Lab) to provide fast solutions and quick answers to time-to-market question.

The implementation Process

The first step required that the company recognize that the conversion could not happen through one big project. This meant that the team had to arbitrate and prioritize the business requirements into workable projects – it would be foolish and highly likely to fail if they tried to do everything at once. They needed to develop a plan that would give them agility while ensuring strong governance for the EDW environment.

In 2007, Bouygues Telecom implemented a proof of concept with Teradata Corporation demonstrating the ability of the EDW to support marketing, CRM, sales, finance, fraud detection, and insurance revenue processes. The EDW had to not only provide data for the traditional strategic decision making processes but also near real-time information for daily operations and external requirements.

Marielle Vo-Van Liger, The Director of Business Intelligence and Customer Knowledge Stated that "Teradata is the world leader in data warehousing and provides the only solution enabling the development of an enterprise data warehouse with a 'Single View of the Business'."

Also Teradata's consultants brought a deep understanding of the Telco industry and provided continuous support and design advice during the implementation of the solution. Again Marielle Vo-Van Liger: "The Teradata consultants are really experienced; they work fast and always provide good advice."

In addition, Bouygues Telecom chose Teradata® because it needed an EDW technical environment with a proven integration and support for the other BI technologies in use including: Informatica, Oracle BI Enterprise Edition (OBIEE) and Data Integrater (ODI), Microsoft Analytic Services, SAS client applications, Siebel Analytics, as well as Teradata's Basic Query (BTEQ) tool.

At the same time, Bouygues began developing its governance process by establishing a prioritization process for BI services. To do this, the team had to understand the business value of each service but establishing the return on investment (ROI) for each service was too time-consuming and costly. Instead the company turned to a clever and innovative mechanism: each business unit was assigned 100 BI "chips" which they could use to "purchase" necessary BI services.

Forcing the business units to rethink and prioritize their BI needs turned up several things:

- Several business units requested the same BI services. These were given a higher priority and deemed more valuable to the enterprise.
- Not all BI services were equally critical to the overall strategy of the company. The team obtained executive input and consultation that resulted in a ranking of the business units' BI requirements.

Between the chips and the rankings, the team developed a single list of prioritized projects. Fortunately this reduced the number of projects by almost 20%. This intelligent means of prioritizing BI services helped overcome many of the cultural and organizational challenges that stump many BI teams.

The next step for the BI team was to create a data model for the EDW. They started with Teradata Communications Logical Data Model and, working with the business units (Marketing, Sales, Finance, Legal, Revenue Assurance, and Customer Knowledge), were able to determine what data was needed for each project. The model gave the team a roadmap for understanding the importance and value to each business unit of each set of data loaded into the EDW. They also used the model to determine which independent data marts could be decommissioned.

Each successive project added to and used the data model to map back to the sources systems and to rebuild the ETL programs. The EDW became the ultimate source of data for traditional analytics, operational analytics, the police investigations, and more importantly, the Data Lab.

The Data Lab is another critical innovation for Bouygues Telecom. It provides each business unit with a private "sandbox" for creating experimental designs, one-time BI requests, and ad hoc queries. Once established, the BI analytic is funneled back into the EDW where it can be shared. IT monitors the sandbox activity to ensure satisfactory performance of strategic queries, efficient data loading, and economical reporting processes.

The final step in the Bouygues renovation was to support their CRM effort by connecting the EDW to their Siebel system. Now customer analytics are readily available to all front line personnel – customer segmentation data, next-best-product offerings, and campaign targeting information all ensure a superior customer experience.

Examples of Analytics

Bouygues Telecom now uses its BI environment to produce sophisticated customer-oriented analytics. Three examples of Bouygues Telecom's BI prowess include:

- Customer Churn – Business users now score customers churn using Teradata's in-database data mining capability. The full deployment of customer churn scores today takes only 4 hours instead of one week with the former systems.
- Operational BI – Bouygues Telecom also recently implemented Oracle Real Time Decisions for the Marketing group using Teradata as the data source. Now Marketers get analytic results to help make more actionable decisions in a near real-time scenario.
- Extreme Analytics on Big Data – Bouygues Telecom is able to better manage the growth of call detail records (CDRs) and extended data records (xDRs) now that they can analyze huge volumes of these records while preserving performance and response times.

Benefits

Consolidating independent data marts into a centralized environment really pays! Bouygues Telecom achieved a whopping 33% cost savings from its consolidation into the EDW. These cost savings came from the reduced maintenance and overhead from maintaining over 300 independent marts. Furthermore, the Teradata environment sustained linear scalability and remarkable performance even as the data volumes and number of users grew while its maintenance was much simplified.

And what about that long list of BI services? The team was able to create almost all, 88%, of the value that the business units requested. And in just 2 years of work!

More significantly, Bouygues was able to decommission 100% of its original independent data marts. The reduction in maintenance costs, increased consistency with analytic results, approval of the Data Lab, improved customer retention and satisfaction, to say nothing about the reduced technological burden of all those independent marts, means that Bouygues Telecom has achieved its goals and then some.

In addition, having the police investigations share the same platform as their internal Business Intelligence meant that both domains were using the same CDR data. This added-value proposition meant even more IT cost reductions. Their mantra now is:

"Store once and use many times while maintaining service level agreements for each application"

Intangible benefits include the increased access the business units have to more data upon which to base their analytics. The overall BI service has been greatly enhanced as well as the improved agility in the creation of new analytics. The ability of the business units to "self-serve" via the Data Lab has converted even the most devout doubters.

According to Marielle: "The Teradata platform keeps its promises in terms of linear scalability and preservation of performance as volumes grow and the numbers of users increase."

The Future

The BI team at Bouygues Telecom is now focusing on improving its BI operations by incorporating service level agreements and more supervision and advice. These will be used to improve overall data usage performance while remaining nimble in the storage of and access to more and richer data.

The next application area to tackle will be web analytics. The data is already resident in the EDW so it means simply that the analytics must be developed. It will give the Bouygues business units far more insight into their customers' behaviors and opinions of the company.

Summary

For an industry that has reached near saturation, Bouygues has managed to bring innovative and valuable competitive analytics to ensure the maintenance of its customer base. To survive much less succeed in such an environment is a great testament to ease of use and accessibility of their BI capabilities.

Telecos have massive amounts of data so the BI environment must perform under significant pressure. Teradata, along with its partners, have given Bouygues Telecom a significant advantage over their competitors. Their BI environment is set to support their analytical prowess for many years to come.