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Analyze the Future

CASE STUDY

The Path Toward Pervasive Business Intelligence at Ferrari North America

Sponsored by: Tableau Software

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SUMMARY

The trend toward evidence-based decision-making is taking root in commercial, non-profit and public sector organizations. Driven by increased competition due to changing business models, deregulation or, in some cases, increased regulation in the form of new compliance requirements, organizations in all industries and of all sizes are turning to business intelligence (BI) and data warehousing (DW) technologies and services to either automate or support decision-making processes.

An increasing number of organizations are making BI functionality more pervasively available to all decision makers, be they executives or customer-facing employees, line-of-business managers or suppliers. IDC defines pervasive BI as follows:

Pervasive BI results when organizational culture, business processes and technologies are designed and implemented with the goal of improving the strategic and operational decision-making capabilities of a wide range of internal and external stakeholders.

Despite the fact that the term Business Intelligence was first coined in 1958 and the first BI software tools emerged in the 1970's, BI is not truly pervasive in any organization. As organizations identify more stakeholders who can benefit from improved decision-making capabilities, they are choosing to deploy BI and thus come increasingly closer to achieving pervasive BI. For organizations struggling with changing organizational structure and culture, business and IT processes and technologies, several lessons can be learned by examining the best practices organizations employ on their path toward achieving pervasive BI.

METHODOLOGY

In 2008 IDC launched a global market research project with the goal of uncovering best practices in expanding the use of BI and analytics processes and technologies. The research project was underwritten by eleven competing BI software, services and hardware providers. The project methodology, which was developed by IDC and contributors from Boston University School of Management Information Systems department included both a survey of over 1100 private and public sector organizations in 11 countries and in-depth interviews with 22 of these organizations resulting in a series of case studies on best practices in achieving pervasive BI. One of the organizations interviewed was Ferrari North America.

ORGANIZATION

Ferrari North America (Ferrari NA) is a wholly-owned subsidiary of Italian automaker, Ferrari, S.p.A, which is owned by Fiat S.p.A. Ferrari NA is based in Englewood, NJ and employs almost 100 people tasked with supporting automobile distribution and sales in the U.S., Canada, and South America. Ferrari NA also provides after-sales support to its authorized dealer network and conducts marketing, customer service, sales and technical training, and warranty administration. Maserati, S.p.A, another wholly-owned subsidiary of Fiat, is co-located with Ferrari NA in the company's NJ office. It employs about 50 additional people tasked with supporting the sales and marketing of Maserati-branded automobiles.

Ferrari NA and Maserati NA operate a shared IT department that supports all the IT needs of both organizations in the Americas region and which is independent of their parent company. In the interest of brevity, the combined Ferrari and Maserati NA IT organization will be referenced in the remainder of this case study as Ferrari NA.

SITUATION OVERVIEW

Business Drivers

Like all organizations that took part in IDC's research project, Ferrari NA was influenced by both external and internal factors that triggered a need to re-evaluate its decision-making processes and the supporting BI and analytics technology architecture. In the case of Ferrari NA, these business drivers were both strategic and operational.

Strategic

Ferrari NA is an organization that employs people in roles with few, if any, redundancies in responsibilities. It relies on each and every employee to make decisions that directly impact a portion of their business. Without adequate intelligence on which to base these decisions, Ferrari NA was taking on additional risk and missing opportunities for growth. Ferrari NA's limited sales volume and customer base leaves little room for error in executing its strategic plans with precision.

Ferrari NA determined that its past method of extracting data manually from the company's custom-built transactional applications was not generating the timely, precise information that would best benefit the company. It examined key processes where BI technology and improved decision-making processes could be applied to result in the greatest impact to its strategic goals. The company needed a solution that would allow for its users, each one with unique responsibilities, to conduct ad-hoc queries and analysis as well as to access pre-formatted reports. As it sought a BI platform to support its strategic goals, Ferrari NA identified that the features of primary concern to future success included flexibility and ease-of-use, requiring minimal or no training.

Operational

Ferrari NA's historical BI process involved extraction of data from transactional applications into static reports or export to spreadsheets for further data manipulation and formatting. This process was time consuming and error prone and diverted the time of employees with other responsibilities. The process resulted in latency in information delivery to decision makers and prevented ad-hoc analysis and drill-down into data. Furthermore, it required significant software retooling efforts when requests for viewing data by new dimensions came to the IT department. For example, when a new sales region was

defined, dealerships had to be manually reassigned to these new regions and historical data had to be recalculated manually before new analysis could be performed.

Ferrari NA's limited IT resources meant the company needed a tool that was inexpensive to acquire and maintain and could be implemented without the need for external consultants. Its developers did not have experience with many of the commercially available BI platforms. Ferrari NA needed not only to develop an ad-hoc query and analysis system but one that could also support the requirements of its finance department that had established methods for comparing actual versus budgeted financial performance metrics based on structured reports. Building a data warehouse and online analytical processing (OLAP) cubes to generate these finance reports would have required expertise the IT department did not have.

SOLUTION

Towards Pervasive Business Intelligence

To address its BI and analytics needs, Ferrari NA embarked on a path toward pervasive BI that would require changes to the organization's culture, technologies, and business and IT processes.

Organizational Culture

Ferrari NA has had an information oriented decision-making culture, but end users had become accustomed to using spreadsheets they received from the IT and Finance departments. Although these spreadsheets had limitations, they were used regularly and widely. Ferrari NA's IT group decided to address many of the BI issues by launching a process that would wean its users from the spreadsheets through a superior offering in terms of usability and flexibility that did not risk overwhelming users with an overly complicated and completely foreign interface.

Ferrari NA's independence from its corporate parent meant it had the ability to choose appropriate software tools for its users. Ferrari NA's IT department also had to contend with the possibility that other constituencies may need access to its business data in the future. For example, it could be tasked with providing intelligence to its dealership network, which is currently supported by a corporate-built, custom application that generates some reports. Ferrari NA decided to focus first on fulfilling the decision-support requirements of its employees, yet use technology that is flexible enough to react to future BI platform expansion plans.

Technology

While searching for flexible and interactive query, reporting, and analysis software, Sandro Levati, Ferrari NA's Director of Information Technology became discouraged by the complexity and cost of most of the available BI solutions. Given limited sources and lack of dedicated BI technologists in this group, Levati commented, "Our needs were relatively simple, so it was particularly disheartening to be presented with the huge consulting fees associated with the development of custom solutions that would be capable of accessing our data." The search for software eventually led Ferrari NA to Seattle, WA-based Tableau Software. After downloading a trial version and quickly aggregating data from several sources into a highly intuitive, visual, and flexible BI application, the IT group decided to purchase and deploy Tableau's BI software.

However, even though the simplicity, intuitiveness, and effectiveness of Tableau's offering was instantly evident, there was the technical challenge of extracting data from Ferrari NA's operational applications,

based on IBM DB2 database software on the iSeries platform, into the new BI solution. To resolve this issue, Ferrari NA deployed a product from Hit Software to perform hourly replication of the DB2 source tables into a Microsoft SQL Server operational data store, on which the company deployed the Tableau BI software. This approach also eliminated the need to build a traditional data warehouse, which the IT group felt would not provide sufficient, additional benefits to justify the upfront development and ongoing costs of maintenance and administration.

Business and IT Processes

Ferrari NA identified three primary processes that could be affected by an improved BI solution. These included:

- Retail Sales Analysis – Ferrari NA's primary operational requirement is to manage the sales of automobiles in the Americas. The IT group built a solution that supports real-time data aggregation without pre-built OLAP cubes and at the same time enables detailed analysis of granular data. The solution allows end-users to filter aggregates by dimensions that include among others time period, region or zone, dealership, and product model.

- Service and Repair Order Analysis – Ferrari NA needed to better understand the status of warranty claims and repair orders. IT built a solution for end users to view key metrics such as the average cost per claim, average time a repair order remains open, and more. Using this solution, users can filter an aggregate by time period, region or zone, dealership or component. As a result, the company is able to better understand the relationship between the type of defect and the component that failed. The IT group also delivered a BI application to the logistics group, which is now able to monitor cars in transit from manufacturing to dealers using a dashboard.

- Cost Center Analysis – Ferrari NA's finance department conducts financial monitoring and performance planning based on department level data. Its reliance on manually constructed spreadsheet-based reports was overcome with a new solution built on Tableau Software's offering. The finance department is now able to support ad-hoc query and analysis requirements.

Ferrari NA employees have been used to operating in a culture that uses analysis to support decision-making, suggesting that any improvement to BI technology should have been welcomed. However, as in all organizations, there were some users who saw immediate value in the new BI solution, while others were initially resistant to change. Some users assumed they would no longer be able to quickly peruse the spreadsheets they were accustomed to and find the few data points of interest to form decisions.

To overcome the end-user skepticism, Ferrari NA's IT group sought to build support among a small group of users who interacted with data on a daily basis. Some of these power users had been responsible for generating the spreadsheets so widely used across the organization. Furthermore, the IT group recognized that it had to employ an iterative approach to new BI solution deployment.

To achieve its goal, the IT group started with BI applications for sales data analysis and initially redeployed most of the familiar metrics that existed in spreadsheet reports within the new BI solution from Tableau Software. As Ferrari NA's IT group began involving more end users in the design of the specific application, a sense of ownership emerged among these users and they began to extol the benefits of the new solution to the doubters around them. After creating a training video for end users and initial acceptance of the new BI interface, the IT group began to develop additional BI applications. Some of the power users of the new BI solution came up with new ways of looking at the data. Their analytic work prompted the IT group to incorporate new content into the BI applications.

BENEFITS

Ferrari NA had several requirements that needed to be fulfilled by the new BI solution. As Levati put it, "The first benefit we got from deploying Tableau Software was the ability to have dynamic and visual data in real-time, but the technology also fit our budget and allowed for in-house implementation and support." In other words, with the new BI solution Ferrari NA has been able to make substantial progress toward providing the right information to the right people at the right time using the right tools.

The Right Information

- Ferrari NA had users who felt they were getting the right information all along. This information was delivered via spreadsheet attachments in email messages by the IT or Finance department staff responsible for creating the reports. There was an implicit assumption that the data on the spreadsheets was the right information. The information consumers were unaware of the intelligence they were not receiving until a solution that could support ad-hoc query and analysis functionality was placed into their hands.

- Today, each user group is presented with granular data most relevant to them. The data and key performance indicators (KPIs) are presented through interactive dashboards, incorporating both visual and tabular views for trend and root-cause analysis, as well as performance management. Less reliance on disconnected spreadsheets has enabled end users to interact with information more visually, resulting in new insight and analytic discoveries.

The Right People

- Ferrari NA's IT group wanted to assure that all the business end users had access to appropriate tools to access and analyze their data. The main issue for the company was not the number of employees with access to a BI tool – they were already receiving such access through spreadsheets – but the need to provide a self-service environment that enabled end users to access reliable and timely data through an intuitive, centrally managed tool. Today Ferrari NA has a mix of power users and information consumers, including sales managers, financial analysts, supply chain personnel, service and warranty managers, and executives using the new BI solution throughout the company. The IT group is looking to further expand the deployment of the new BI solution to apply it to customer and vehicle data analysis for improved insight into the full lifecycle of a customer's relationship with Ferrari NA.

- Other new ideas being considered include providing access to the new BI solution to dealerships, Ferrari manufacturing, and potentially to other divisions of Fiat that could someday benefit from analyzing data generated at Ferrari NA. The independently owned dealers currently do share a web-based application with Ferrari NA that, among other functions, is used to provide some operational information to dealers. However, this constituency has requested improvements to the BI functionality present in the custom application. Prior to implementing a new BI solution, custom development that would've been required to fulfill such a request would have been impractical.

The Right Time

- Although Ferrari NA did not conduct a detailed ROI analysis following the deployment of the new BI solution, Levati highlighted that the IT group was able to measure the time savings to its staff from not having to manually develop reports on an ongoing basis. Also, Ferrari NA's deployment of Tableau has transitioned the company to a self-service query and analysis architecture that frees end users from having to rely on IT for each successive request for information.

- There is also a decreased need for end users to export data from static operational reports into MS Excel for further analysis because the new BI solution provides the necessary flexibility to perform ad-hoc analysis. Instead of accessing data through spreadsheets or static reports with their inherent latency, Ferrari NA's employees now have the ability to interact with their data in real-time, by accessing their personalized Tableau views and dashboards from the company's intranet, built using Microsoft SharePoint Portal, or through the Tableau desktop software.

The Right Tool

- An effective BI tool needs to provide a balance of benefits to end users and IT staff. With Tableau, end users have been given a tool that mimics their techniques for exploratory query and analysis. The BI tool's interactive, visual interface almost eliminated the need for any training. At the same time the IT group has been mostly freed from building custom reports. Instead, it is able to focus on managing data integration, data quality, as well as focus on its other responsibilities. The IT group was able to deploy the software on its own without having to use external consultants for data warehousing and cube development.

- Some of the technical roadblocks that Ferrari NA's IT group ran into were resolved quickly and at a low cost. For example, when developing the BI application for financial analysis, it became evident that Tableau does not support multi-dimensional analysis using the same method as software tools based on OLAP cubes. Ferrari NA was able to overcome this issue with a few development iterations. Levati said "With Tableau, if you see that something is not working you can 'play' with it and have the ability to make quick, iterative changes. The 'sand-box' environment encourages a trial and error process that would be prohibitively expensive with most other tools with which we had experience."

LESSONS LEARNED

IDC's goal in interviewing Ferrari NA was to identify best practices that other organizations can apply in their efforts to make the use of BI and analytics processes and tools more pervasive. Neither Ferrari NA nor IDC would claim that Ferrari NA has fully achieved the goal of having pervasive BI. Nevertheless, there are several important lessons that the Ferrari NA case highlights:

- It sometimes falls on the IT group to show business end users that "they don't know what they don't know" by making information available through appropriate BI tools that expose more granular data and at the same time enable high levels of interactivity through a visual interface. Working with a small group of initial business stakeholders, this approach can help organizations discover previously hidden trends that may lead to reevaluation and improvement of existing business processes. Ferrari NA identified three key processes and built improved decision support for the process participants.

- BI and analytics initiatives are continuous. Deploying a BI solution that can support future user groups or new BI applications can ensure that changing requirements and new opportunities can be addressed. Ferrari NA is evaluating the business need and feasibility to expand its deployment of the new BI solution to stakeholders such as dealers and its internal manufacturing group.

- Not every BI project requires the development of a data warehouse. Ferrari NA's business involves sale and service of low volume, high-ticket products. As such, the company does not need to manage very large amounts of data. That is not to say that the information needs of its decision makers are less complex than in organizations with more data. Ferrari has been able to fulfill the

decision support needs of its business users through the use of an operational data store and a highly flexible BI solution. A data warehouse may still provide value to Ferrari NA in the future, but it should not be viewed as a pre-requisite for launching or expanding a BI and analytics project.

- It is important not to underestimate the tendency of some employees to resist change even if a new and improved technology solution is deployed for their benefit. Ferrari NA's IT group employed a number of techniques to overcome resistance to adoption by some end users. These included video-based training, and identifying and involving a small group of initial users who were given a chance to experiment with, and explore, the new BI solution.

- With a limited IT budget and a lack of specialized BI technology staff there is even greater need to evaluate not only the initial technology costs but also the implementation and ongoing support cost of a software product. Ferrari NA was able to successfully deploy Tableau Software without the need for external resources, which kept the cost of deployment within budget.