CASE STUDY
The Path Toward Pervasive Business Intelligence at an International Financial Institution
Sponsored by: Tata Consultancy Services

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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 an international financial institution. Due to the company’s request to remain anonymous, IDC will refer to it throughout this case study as The Organization.
ORGANIZATION

The Organization IDC interviewed for this case study is an international financial institution. Details of the organization have been removed to maintain its request for anonymity.

SITUATION OVERVIEW

Business Drivers

Like all organizations that took part in IDC’s research project, The Organization 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 The Organization, these business drivers were both strategic and operational.

Strategic

It is no small task to support the BI needs of a vast organization whose employees are spread across hundreds of offices worldwide. The decision processes of these employees range widely depending on their business units and specific roles. The Organization's BI technology group realized that the key to supporting these varied needs depended on creating a self-service environment that would provide both standard reports and ad-hoc data access for analysts and managerial decision makers. The goal was to focus the BI technology group's resources on such centralized functions as data integration, data quality management, maintenance of key performance indicators (KPIs), and standard report creation.

In 2007 The Organization conducted an audit of its technology services suppliers and decided to shift to a new multi-vendor sourcing strategy. The goal was to utilize the most appropriate external systems integrators and consultants to support different key IT initiatives such as systems management and BI application development. These strategic drivers to shift toward a more self-service BI environment and to realign the technology services relationships were accompanied by related operational drivers.

Operational

To provide centralized BI support to a highly decentralized organization meant tackling the environment of disparate data sources, deploying easy-to-use, ad-hoc query and analysis tools, and operationalizing the management and governance of KPIs. The latter initiative was important to eliminate the dependence on a few employees with specialized knowledge of KPIs whose expertise would be lost should they depart from The Organization.

To meet its service level agreements with the business units, the BI technology group identified two related operational requirements that inhibited more pervasive use of BI assets. First, was the complexity of ad-hoc query and analysis tools. For example, users in some business units such as human resources relied solely on standard reports instead of taking full advantage of ad-hoc analysis functionality. Second, was the need to constantly build and maintain data aggregates in cube-based data marts. The BI technology group saw the latter requirement as a significant resource drain.
SOLUTION

Towards Pervasive Business Intelligence

To address its BI and analytics needs, The Organization embarked on a path towards pervasive BI that would require changes to the organization’s culture, technologies, and business and IT processes.

Organizational Culture

The Organization combines many characteristics of a bank, consulting firm, and a university. Although it is mostly associated with its lending arm, the organization also provides advisory services to governments. These services, provided by analysts, scientists, and engineers of The Organization, span industry sectors such as banking, transportation, tourism, environmentalism, and agriculture.

The primary BI technology group, composed of about 25 people, is responsible for supporting two institutions within The Organization with the focus on operations and finance business processes. There are also groups within The Organization that share the common BI technology architecture but are supported by localized IT. The data managed by the BI technology group is very diverse and highly specialized to individual business units.

One of the changes instituted by the BI technology group included centralized management of decentralized KPIs. The business groups are responsible for the governance of their own KPIs including the definition of metrics and data elements. However, the implementation, deployment, and ongoing technology support for such BI tasks is done by the central BI technology group. Each business group has full control over its data and is supported by dedicated data marts that are fed by the central enterprise data warehouse (EDW). The BI technology support is provided based on service level agreements that cover baseline costs with only major redesign projects requiring additional funding. This arrangement enables ongoing support and enhancement without constant price negotiation between IT and business groups.

It is clearly extremely difficult, if not impossible, to change the decision-making culture of a large organization such as The Organization or any other organization of similar size. However, major technology projects do present opportunities to re-evaluate processes for employee interaction with data.

Technology

In late 1990's The Organization migrated most of its legacy operational systems to SAP's enterprise applications (human resources application continues to be provided by Oracle Peoplesoft). As part of this process the decision was made to consolidate the number of disparate databases supporting reporting and analysis needs. At the end of 1999, SAP Business Information Warehouse (BW) was selected as the DW platform. As one of the early customers of SAP BW, The Organization experienced some growing pains during a period when SAP continued to enhance its BW product. One of the challenges was data staging, which had to be addressed initially by creating specialized tables in SAP R3 rather than BW. By 2004 the BI technology group felt it had achieved its goal of having most of the operational data, from the majority of applications supporting various business units, in the EDW. The creation of the EDW represented a major step toward enabling the BI technology group to support the reporting and analysis needs of end user constituents.
By June 2008, the centralized DW was about 1.5 terabytes and fed about 100 downstream data cubes and 400 operational data stores. The reason for the large number of cubes is the decentralized nature of The Organization. However, the issue of data aggregates management and lack of appropriate ad-hoc query and analysis tools remained. In October 2007, The Organization implemented SAP's Business Intelligence Accelerator (BIA) with impressive results. The Senior Business Intelligence Officer at The Organization said, "With the BIA, we are now getting rid of aggregates and are experiencing strong query performance improvements and IT process efficiency gains."

With the new DW platform deployed, The Organization needed to address the ad-hoc query and analysis requirements of end-users. For this it followed the recommendations of its primary BI consulting services provider, Tata Consultancy Services (TCS), which pointed to Business Objects as an effective tool for query and reporting.

**Business and IT Processes**

To address the issue of having the right tools for the various user group, The Organization decided to re-evaluate its end-user BI strategy. To assist in this project, it turned to TCS. TCS was selected as one of two primary service providers to support The Organization's multi-vendor sourcing mandate. In addition to BI strategy development, TCS was retained to address all BI development and maintenance work. In addition, this systems integration and consulting firm also became involved in intranet, portal, and website, and other application development projects. The other vendor, EDS, was asked to support IT infrastructure management and the quality assurance stages of application development projects.

In November 2007, TCS' involvement with The Organization's BI initiative began with the end user BI strategy project focused on self-service reporting, ad-hoc query, planning, and strategy management. The Organization was highly appreciative of the strong BI experience that TCS' consultants brought to the 4-month project that resulted in several recommendations. One of these was to develop a new query, reporting and analysis system based on Business Objects software (in February 2008 SAP acquired Business Objects). The Organization's BI technology group believes that the new end user BI software, deployed and customized by a combination of TCS' on-site and off-shore staff, will provide many of its users with an intuitive interface for query, reporting and analysis. As an example, Business Objects Universes or the semantic layer, deployed on SAP BW based on the SAP BI Accelerator, will help in hiding the complexity of BW cubes from end-users.

**Benefits**

As the Senior Business Intelligence Officer at The Organization said, "the biggest bang we got for our buck was in centralizing information resulting in a single version of the truth. We are now well positioned to extend these benefits through a new end user BI environment that TCS will help us to develop and deploy." In other words, The Organization continues on its way to providing the right information to the right people at the right time using the right tools.

**The Right Information**

- Right information can have many characteristics including being accurate and complete. By deploying an EDW, The Organization has been able to provide BI support to processes such as lending, advisory services, procurement, travel, human resources, and finance. Furthermore, by deploying data marts for each of its disparate business units, the central BI technology group is able to assure a high degree of relevance of the data.
To provide a level of automation to the ongoing data governance process tasks, such as maintaining documentation about the meaning of KPIs, the BI technology group is evaluating technology for creating an intranet-based master data and metadata encyclopedia as well as an outlet for BI related announcements.

The Right People

A key goal for The Organization has been to provide all its employees with the information to make better decisions. In particular the BI technology supports two distinct groups of end user: operations and finance staff. The former are involved in any of The Organization's worldwide projects and have a need for performance metrics to evaluate lending and project management metrics. This user group represents 700 – 800 users, or about three quarters of the BI technology user base. The other quarter, or about 200 users, are financial analysts evaluating accounting-based metrics. Although many of these 1,000 users are located at The Organization's headquarters, they could be working from offices anywhere in the world. The IT group is currently involved in a project to migrate BI system access points to Citrix to improve BI software performance for remote offices with otherwise poor communication links.

Another segmentation of BI technology users is based on the type of interaction they have with the technology. 200-300 users slice and dice the data through standard reports, another 200 – 300 users can write their own ad-hoc queries. Others are primarily information consumers who rely on standard reports. The Organization is delivering tailored solutions to each of these groups.

The Right Time

The deployment of a centralized EDW and the SAP BI Accelerator have significantly improved query performance, enabling more timely access to information by end users. As an example, the Senior Business Intelligence Officer at The Organization mentioned that some queries that ran for 25 minutes now run in seconds.

The elimination of the need to build, rebuild, and maintain data aggregates has also allowed the BI technology group to allocate its resources more effectively, thus responding faster to ongoing end user requests.

The Right Tool

Right tools are often viewed only in the context of end user query and reporting software. However, in the case of The Organization having the right tools to support the DW architecture played a key role in the ability of the BI technology group to provide BI support to end user groups.

The BI project, led by TCS, will also move the organization a step closer to a centrally supported end user query, reporting and analysis software tool. However, in the short-term, it is highly unlikely that The Organization will standardize globally on a single BI tool.
LESSONS LEARNED

IDC’s goal in interviewing The Organization 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 The Organization nor IDC would claim that The Organization has already achieved the goal of having truly pervasive BI. Nevertheless, there are several important lessons that this case highlights:

- An iterative approach to BI technology deployment is key to gaining end user and management support as well as funding. The Organization did not launch immediately into all recommendations of the BI strategy project completed by TCS. The Organization started by consolidating its DW architecture and has since embarked on replacing end user BI tools that had insufficient features and functionality.

- One of the key issues for The Organization has been to find an effective balance between centralized and distributed IT support for BI functions. An important take-away from this case study is that the DW architecture is usually a strong candidate for centralized IT support, while data governance processes, where deep business knowledge is required, should include significant business unit involvement or outright business unit ownership. End user BI tool support often straddles the two end-points of a technology ownership spectrum: centralized IT and distributed business units. However, if there exists a robust data integration and DW architecture, the risk of and inappropriate end user BI tool deployment and support methodology is greatly diminished.

- Single-vendor procurement for both IT products and services is usually unrealistic and often not advisable. As the audit at The Organization indicated, a multi-vendor strategy increases the option to negotiate on price and helps allocate both services and tools with specific core competencies to appropriate projects (one-size-fits-all promises are rarely fulfilled by vendor).

- Historically, time-consuming management of data aggregates was almost a universal pre-requisite for supporting multi-dimension analysis. However, technology advances manifested in recent commercial product introductions have changed the options available to many organizations. In the case of The Organization, the BI technology group was able to eliminate aggregates, while improving the performance of multi-dimensional analysis.

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