

CASE STUDY

The Path Toward Pervasive Business Intelligence at Steak n Shake

Sponsored by: Cognos, an IBM company

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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 Steak n Shake.

ORGANIZATION

Founded in 1934 in Normal, Illinois, The Steak n Shake Company (Steak n Shake) is one of the oldest restaurant chains in the United States. The company is engaged primarily in the ownership, operation and franchising of Steak n Shake restaurants. Today, the company is headquartered in Indianapolis, Indiana and operates 502 restaurants in 21 states, including 66 franchised units. Traded on the NYSE under the ticker symbol SNS, Steak n Shake's revenues during its last fiscal year ending in September 2007 were \$650 million.

Most Steak n Shake restaurants are open 24 hours a day, seven days a week, and in addition to the core menu featuring STEAKBURGER™ sandwiches and milk shakes, offer a breakfast menu during breakfast hours. All Steak n Shake food is freshly prepared, cooked-to-order in view of the guest, and served promptly on china with flatware and glassware by a friendly team of wait staff. As of September 26, 2007, the company had approximately 22,000 employees.

SITUATION OVERVIEW

Business Drivers

Like all organizations that took part in IDC's research project, Steak n Shake 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 Steak n Shake, these business drivers were both strategic and operational.

Strategic

In early 2000's Steak n Shake found itself with the culture and BI technology infrastructure of a small company that was founded 75 years ago. Its BI processes and technology did not meet the requirements of the large, complex organization it had become. The company had maintained a status quo about many of its processes and systems, including those supporting decision making at the strategic and operational levels. The company found itself with a patchwork of disparate, stand-alone BI systems that contributed to a lack of consistent company-wide metrics. In addition, many of the manual processes of data collection, aggregation, reconciliation, and reporting were time consuming and error prone, resulting in information that was often not actionable for the company's decision makers.

The 2003 arrival of new executives, a CEO and CFO, both of whom came from outside the restaurant industry, ushered in a new period of focus on BI and a move from an experience-based to information-based decision-making culture at Steak n Shake.

Operational

Operationally, the primary driver to re-evaluate BI processes and technology was the need to provide restaurant operators with consistent and timely performance metrics, especially about their key controllable costs, such as labor. The company needed to provide managers with information to enable corrective action to be taken in real-time. For example, in the restaurant industry employee turnover of 200% is common and any metrics that can identify opportunities to better manage labor costs can have significant positive impact on profitability.

These goals were not achievable with disparate software tools such as hundreds of desktop databases and spreadsheets or the legacy reports that were printed on paper and mailed to all 500 restaurants. This process created a latency of several weeks between the time information was gathered and delivered, reducing its reliability and relevance.

SOLUTION

Towards Pervasive Business Intelligence

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

Organizational Culture

Although historically Steak n Shake did not have a strong information-driven decision-making culture, the company's managers were asking for more information. An executive mandate to introduce a new company-wide BI solution to address widespread decision-support needs was introduced in 2003. In fact, the support from the CEO and CFO continue to play an important part in the ongoing success of Steak n Shake's BI solution, which is internally named Insight. Rarely are there any funding issues for new IT components related to the Insight application.

The biggest change that had to happen at the company was a shift to a fact-based decision-making culture. To achieve this, the company set up a BI competency center (BICC). The BICC set out to create, for the first time, a BI strategy that involved everything from defining common performance metrics and developing methods for assuring a common understanding of all metrics, to the design of the technology architecture and selection of software. Selecting the right software was crucial to assuring broad acceptance of the new BI solution by an audience of relatively unsophisticated technology users, whose primary responsibility lay in running restaurants rather than analyzing data.

Prior to the creation of the BICC, the company made the first attempt at creating scorecards to expose performance metrics to its end users. The company adopted and modified an industry-standard performance management methodology and acquired online analytical processing (OLAP) technology, called PowerPlay, from Cognos, an Ottawa, Canada based software vendor, now part of IBM. The initial goal was to provide metrics such as guest satisfaction, sales by site, and labor expense, among others, to restaurant operators on a monthly basis.

Technology

However, it soon became clear that a necessary first step for assuring the success of the BI project was to re-evaluate end user requirements and gain better control over the company's data. After an extensive end user requirements-gathering process, the new BI project management leadership made the decision to first develop a DW to integrate and cleanse data from operational applications and then proceed with the development of scorecards, dashboards, and reports.

The BICC team built a DW based on database technology from Oracle. Today the DW holds about 1 terabyte of data, which is projected to grow rapidly at 1.5 – 2 terabytes per year as new transaction level detail data is extracted, transformed, and loaded (ETL) into the DW. For its ETL tool, the IT group selected Cognos DecisionStream (now IBM Cognos Data Manager). Only after the initial deployment of the DW was achieved did the company focus on end user query, reporting and analysis functionality.

For its end user BI tool, Steak n Shake, purchased the Cognos 8 BI platform. The company began with its BI solution deployment in February of 2007 and by November 2007 deployed the new Insight application to about 2,500 users. As part of the process, the BICC team was able to consolidate seven previous reporting systems, plus many MS Access databases used for local report development.

As the BI solution has evolved, Steak n Shake has also begun using Cognos Query Studio and Cognos Portal Services. Various related Cognos BI tools now support a range of use cases such as standard

reporting, ad-hoc query, what-if analysis, drill-down, and export of information to MS Excel for those users interested in further slicing and dicing the data on their own. There are still some legacy systems that are being turned off as data is migrated into the data warehouse, but the majority of BI needs are being fulfilled using the new BI solution.

Business and IT Processes

The BICC team found it difficult at times to receive well-defined requirements from business users. To overcome this challenge, it used the technique of rapid prototyping to show end users existing and potential metrics in the context of their own data. Initially, the BICC team began by creating a list of all possible metrics and tried to align them with business goals. It soon became clear that this approach opened the possibility to having too many performance indicators. It was important for the company to focus only on the key performance indicators (KPIs) that were actionable. For example, if a KPI was not actionable on a daily basis, it was left off of the daily report. Similarly, if a KPI was 'nice-to-have' it was not included on any dashboards.

As part of the prototyping process, the BICC team, working with business users, produced pilot reports and established time intervals at which various reports, dashboards and scorecards would be updated. The BICC team also spent considerable time on the user interface. Given the wide range of technology skills of its business end users, the layout of reports, report menus, and the use of visualization and color schemes took on an especially important function.

All BI solution development, deployment and training was done internally by Steak n Shake staff. However, for the initial scope development and some initial report creation, Steak n Shake utilized help from a Cognos partner, Denver, Colorado based JCB Partners – a company with significant performance management experience in restaurant and retail industries.

The previously mentioned BICC, was established as an intermediary body between IT and business users. This represented a major change in how the company managed its processes. The BICC is a cross functional team staffed with 4 – 5 employees with various BI-related IT skills. The initial weekly BICC meetings were chaired by the CFO. However, over time the need for CFO participation decreased. Instead the BICC team now extends invitations to appropriate business users to create an expanded virtual team. For example, the company comptroller is invited to the BICC meeting if much of the discussion on the agenda relates to the BI requirements of the finance department. The BICC has also taken on the role of a mediator and a referee to resolve any inconsistencies in data definitions that exist across different departments.

The roll out of the BI solution at Steak n Shake was done through a staged approach. The goal was to provide new BI functionality first to operational areas that bring in revenue. Thus, the company started by delivering operational metrics to restaurant operators, managers, and general managers. This was done through dashboards and scorecards based on technology from Cognos. Having addressed the needs of its largest user base, the BICC team turned its focus on providing new BI functionality to executives. As the solution was extended to each new user group, the BICC team used the same metadata across the various reports, dashboards and scorecards to deliver information to all decision makers. The next stages of the roll-out involved district managers, directors of operations, and internal support staff such as finance, marketing, payroll, and operational labor analysts.

Following the initial deployment phases, the BICC continues to receive requests for new data, metrics, and reports. There is now an established process for evaluating business end user requests against data governance policies and for clarifying and prioritizing development needs.

To promote the new BI solution and assure its broad acceptance, the BICC team set up technology labs for conducting hands-on training at all the company owned restaurant sites and at the headquarters with business end users, including one-on-one training with executives. In addition, the BICC team conducts bi-monthly, 2-hour training sessions for the internal analyst community. These sessions include information sharing on newly available data and best practices in data analysis. Finally, there is also sharing of best practices across all business processes and supporting technology, including BI, at monthly general manager meetings.

BENEFITS

One of the biggest achievements of the BI project at Steak n Shake has been the creation of an environment whereby all managers have a much greater understanding of, and trust in, the data. When they see a metric they know what its definition and more importantly what needs to be done to improve the process or solve the problem behind the metric. Stephen Pruden, Director of Strategic Technology Services and former project manager for the BI solution said that "as a result of the new BI solution, including the establishment of common metrics and software tools, data has now become actionable." It is one of several examples that indicate Steak n Shake 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

- ☒ The new BI solution has enabled all end users at the company to view the same information (based on their individual role, responsibilities and user access rights), based on consistent definitions that utilize common metadata. In the past there were often disagreements about even such seemingly simple factors as what constitutes a region or how to define "sales", with finance, marketing and operations departments each having their own definitions and views. The new, common platform provides a repository for all data definitions and plays a key part in the overall data governance process.
- ☒ Having the right information has also meant the addition of new metrics and the ability to analyze data at a much more granular level than was previously possible. For example, when restaurant guest satisfaction indicators are down, managers can drill in to the KPIs to see whether the underlying cleanliness or customer-greeting scores have decreased. The combination of detailed qualitative and quantitative metrics captured at the restaurant level is now integrated in the DW and made available through the BI solution. There are also several new metrics about labor and marketing performance management. Analysis of data about product mix, market basket and marketing promotions performance changed substantially with the availability of the new BI solution. There is also historical data for trending analysis, with financial trending going back to 1986.

The Right People

- ☒ By mid 2008, Steak n Shake's BI solution had reached 3,000 end users, which according to Pruden, represents the vast majority of potential users. These include restaurant operators, managers, general managers, and executives. 97% of these users are information consumers, rather than power users or dedicated analysts, and therefore they either only view the data on dashboards or interact with it through intuitive, parameterized prompts. The company has found this software distribution approach not only functionally appropriate, but also cost effective. Other groups using the BI solution are internal auditing and IT itself. For example, the audit group uses the BI solution as part of the Sarbanes Oxley compliance process and the IT group uses system management reports to help administer user access rights.

- ☒ One remaining user group that is currently underutilizing the BI solution is the Steak n Shake franchisees. This is due to franchisees having their own operational systems. However, given the interest from franchisees to have greater access to BI assets and the company's interest in franchisee-related metrics, the BICC team is evaluating the possibility of extending the BI solution to franchisees over time.

The Right Time

- ☒ Providing information to decision makers at the right time can mean many things. Ultimately data must be captured and then made available to decision makers at intervals that match the specific business process requirements for such information. Steak n Shake now captures data from operational systems on a daily basis. The information is then made available to end users at daily, weekly or monthly time intervals, depending on whether the information supports operational or strategic decisions.
- ☒ The more frequent data capture is accompanied by a self-service BI solution that enables on-demand access to relevant information. One of the most tangible benefits to end users has been the efficiency gained due to the elimination of the need to access multiple systems to gain access to actionable information.

The Right Tool

- ☒ A BI solution must be able to address not only the needs of various end user groups but also those of IT in its effort to support ongoing BI needs of end users. With software from Cognos, Steak n Shake has been able to effectively allocate various BI assets such as static and parameterized reports, ad-hoc query, dashboards, and scorecards to users with different BI needs and technology skills. For example, without being BI software experts, restaurant operators can, through prompting, do quite a bit of ad-hoc analysis using reports accessible on the company's web based portal.
- ☒ At the same time, IT has been able to reign in most of the disparate technologies that existed in the company prior to the new BI solution. Centralized management and maintenance of both the DW and BI tools enables IT to respond rapidly to ongoing end user requests, while minimizing IT resources dedicated to these tasks.

LESSONS LEARNED

IDC's goal in interviewing Steak n Shake 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 Steak n Shake nor IDC would claim that Steak n Shake has fully achieved the goal of having pervasive BI. Nevertheless, there are several important lessons that the case highlights:

- ☒ Any new BI initiative that is designed to overcome existing shortcomings should not be viewed only as a technology replacement or enhancement project. Given executive support, organizations should take the opportunity to re-evaluate decision processes and performance metrics. At Steak n Shake the BICC team led the effort to establish common data definitions and new common metrics by which the company's performance could be managed on an ongoing basis. When the initial use of OLAP technology for a scorecarding application did not produce the desired results, the BICC team did not blame the technology, but rather established a new BI strategy and engaged more closely with the business end users to establish a set of actionable KPIs. In fact, the scorecarding application has gone through five iterations of changes to metrics, ways of grouping and weighting the data, and ways of displaying information.

- ☒ BI projects should be viewed as ongoing initiatives that require constant, iterative updates to deliver the right information to the right people. Steak n Shake launched its new BI project by focusing on operational employees, followed by executives and then various operational and support function staff. This staged approach allowed the company to gain broader acceptance of the new BI solution. Today the BI solution continues to be enhanced as new requests from end users are received.
- ☒ Yet, even with a staged and well planned deployment, the BICC team felt, in hindsight, that it had overestimated the amount of change that the company could go through. For example, the BICC team overestimated the ability of some users to navigate the reports, dashboards, and scorecards. To remedy this situation, the team focused on providing specialized training to troubled users and slowing down some deployment stages.
- ☒ The BICC team also learned that it could have waited longer to deploy the BI solution to executives who focus on strategic decisions that usually don't have immediate impact on the daily operational decisions of managers. The preferred method in the case of Steak n Shake would have been to complete the BI solution deployment to all operational managers and analysts before extending the solution to executives.
- ☒ Another lesson learned by Steak n Shake was the need to use prototyping in the requirements-gathering process. The BICC team found that relying only on interviews with end users was too abstract of an approach to achieving their goal of identifying and defining the most actionable KPIs. The prototypes were often done in MS Excel, but used real data to facilitate discussions with end users.

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