INTELLITEK SYSTEMS

Business Analytics Basics

Executive Summary

The Definition and Goal of Business Intelligence Software

Business Intelligence (BI) software takes the mass of information generated by a company's various operational data sources, integrates it, analyzes it, and presents timely findings in the form of reports, alerts and dashboards. These reports, alerts, and dashboards provide a more accurate, actionable view of a business than is possible without BI.

The success of a BI solution ultimately is determined by how well it helps both business and technical users throughout an organization meet their mission critical goals such as:

- Achieving or surpassing revenue numbers
- Finding opportunities to reduce costs throughout the organization
- Maximizing profitability by identifying the most profitable customers, products, services or programs

Questions Business Intelligence is Designed to Answer

A BI solution, with the right data and features, should be able to take operational data and enable users to answer specific questions such as:

- Which customers should I target?
- Which are my most profitable and least profitable marketing and sales campaigns per region?
- Where are the delays in my production processes?
- How are my company's key financial indicators trending?

Example of BI in Action: Sales Executive Using OASIS CRM

Many operational solutions have some form of reporting in them. However, that reporting functionality is often fairly limited-offering only a few dimensions of inquiry for only the data within that one system. In contrast, a business intelligence solution allows an executive to quickly and easily analyze that system's data across multiple dimensions, as well as supplement that data with information from other key sources, such as marketing and finance. Analysis and reporting is more robust and faster; it is also easier to follow up on interesting data trends. For example, a BI solution for sales data like the information found in OASIS CRM might include:

- Interactive Dashboards with graphs showing at-a-glance trends and key findings such as Leads to Pipeline to Revenue.
- Reports that cover such details as: Rep Activities vs. Pipeline Generated.
- Alerts that notify the executive on key changes to the pipeline or upcoming events/actions.

Why Other Solutions Cannot Match BI for Analysis and Insight

Important information may be found in every operational area of an enterprise: sales, finance, customer service, engineering, marketing and more. Enterprises have traditionally tried to use operational or spreadsheet applications to keep track of information, analyze the data, and present findings. Examples include:

Using an operational software program designed for a specific functional area (e.g. sales automation software, marketing software, or inventory management software.)

Exporting the operational data to Excel or a database for manual analysis

Operational programs and spreadsheets, however, were not designed to integrate, analyze or present data in large volumes or from multiple operational sources. As a result, organizations have been struggling with time-consuming and costly analysis approaches that are fundamentally limited and don't answer the full range of critical business questions required to manage a business effectively. This is similar to trying to drive a car at high speeds with only half a headlight working.

Traditional Enterprise BI Software

Business Intelligence solutions were originally delivered as traditional enterprise software that is, software solutions that are installed on your company premises, by your IT team or by 3rd party consultants, and managed by your IT team or consultants over time. The software is expensive, often requiring hundreds of thousands or millions of dollars in upfront costs. Implementing the software is also expensive; in addition to the cost of the people, it often requires additional hardware purchases for the software to work. The implementation period could be long and complicated. Maintenance and support costs are lower than upfront costs, but also can be expensive.

In addition to this, a single BI implementation might actually require the purchase and integration of multiple software components- software for extracting data, integrating data, storing it, analyzing it, and then reporting on it. This complexity is the driver of the time and cost.

Businesses highly valued the analysis that they could get from traditional BI, so they were willing to invest in the time, software, hardware, and human resources required to make it happen. But these high costs also made it difficult for anyone but the largest companies to buy it, and even then, this companies have difficulty expanding the solution to realize more value.

Overview of Business Intelligence Solutions.

The Five Stages of Business Intelligence.

Both traditional enterprise BI and SaaS BI involve the same five stages of taking raw data and presenting it as relevant, actionable insight to users. However, traditional enterprise VI software and SaaS EI solutions can differ significantly at each stage in terms of time and effort required. The five stages are:

The Data: Defining which data will be loaded into the system and analyzed.

The ETL: Moving the source data to the data warehouse. This can be complex step involving modifications and calculations on the data itself. If this stuff doesn't work properly, the VI solution simply cannot be effective.

Data Warehousing: Connects electronic data from different operational systems so that data can be queried and analyzed over time for business decision-making.

Analytic Engine: Analyzes multidimensional data sets found in a data warehouse to identify trends, outliers, and patterns.

Presentation Layer: The dashboards, reports and alerts that present findings from the analysis.

Turning Data into Insight.

Business Intelligence is the process of taking operational data and putting it to use in making informed business decisions. Business intelligence software takes massive information kept in a company's operational data sources, integrates it, analyzes it and presents timely findings in the form of reports, alerts, and dashboards. As a result, organizations have been struggling with time-consuming and costly analysis approaches that are fundamentally limited and don't answer the full range of critical business questions required to manage a business effectively. This is similar to trying to drive a car at high speeds with only half a headlight working.

The Goals of Business Intelligence.

The success of a business intelligence solution ultimately is determined by how well it helps users throughout an organization neither mission-critical goals, such as:

- Achieving or surpassing revenue numbers.
- Maximizing profitability by identifying the most profitable programs.
- Finding opportunities to reduce costs throughout the organization.
- Presenting overload on IT resources by making business teams more self-reliant.
- Enabling IT to service internal business customers faster and more efficiently.
- Creating a 360-degree view of customers.

A business intelligence solution enables business teams to understand the interrelationship of data generated throughout the organization, synthesize this into comprehensive analysis on results, trends, and likely outcomes, and understand the implications of this insight on business objectives.

Business intelligence users gain an understanding of what has happened, what is happening and what actions need to be taken next.

Questions BI Is Designed to Answer: A business intelligence solution, with the right data and features, should be able to take operational data and enable users to answer specific questions such as:

Sales and marketing questions:

- Which customers should I target?
- What has caused the change in my pipeline?
- Which are my most profitable campaigns per region?
- Did store sales spike when we advertised in the local paper or launched an email campaign?
- What is the most profitable source of sales leads and how has that changed over time?

Operational questions:

- Which vendors are best at delivering on-time and on budget?
- How many additional personnel do we need to add per store during the holidays?
- Which order processing processes are most in efficient?

Financial questions:

- What is the fully loaded cost of new products?
- What is the expected annual profit/loss based on current marketing and sales forecasts?
- How are forecasts trending against the annual plan?
- What are the current trends in cash flow, accounts payable and accounts receivable and how do they compare with plan?

Overall business performance questions:

- What are the most important risk factors impacting the company's ability to meet annual profit goals?
- Should we expand internationally and, if so, which geographic areas should we first target?

Example of Business Intelligence in Action- Sales Executive Using OASIS CRM.

Many operational solutions have some form of reporting in them. However, that reporting functionality is often fairly limited- offering only a few dimensions of inquiry for only the data within that one system.

In contrast, a business intelligence solution allows an executive to quickly and easily analyze that system's data across multiple dimensions, as well as supplement data with information from other key sources, such as marketing and finance. Analysis and reporting is more robust and faster; it is also easier to follow up on interesting data trends. For example, a business intelligence solution for sales data might include:

Sales Dashboards with graphs showing at-a-glance what is happening so that the proper action to be taken. Dashboards can include critical data such as: Sales to Goal, Sales by Region Versus Plan, Pipeline Trend to Goal, products sold by customer segment, and Time to Sell by Product Line.

Actionable Sales Reports that are generated automatically and cover such key issues as: Actual Versus Forecast by Product, Rep, and Region; Rep Activities Versus Pipeline Generated; Top 30 Customers by Rep, Demographic Profile of Closed Accounts Versus Accounts with the Most Activity.

Sales Alerts that notify the executive on key changes on upcoming events/actions.

Here's an example of how sales executives might use a business intelligence solution to help them meet their goals.

The Warning. A sales executive is alerted to a key change in the pipeline, goes to the dashboards for an at-a-glance understanding of what is causing the change, and notices the region is suddenly behind on hitting its revenue number.

The Review. The sales executive reviews customized reports on the region and finds that the reps who are behind on reaching quota are focusing on products and customer segments that have longer sales cycles and lower probabilities of closing. The executive drills down in the reports to determine the segments and products which have the shortest sales cycles and highest probabilities of closing, to compensate for the shortfall.

The Action. The executive and the regional manager review the data and refocus the reps. This puts the reps in alignment with the more successful reps, as well as places the region in alignment with the more successful regions.

Why Business Intelligence Is Necessary for Analysis and Insight.

In this age of rapidly expanding electronic data, enterprises have found it increasingly difficult to efficiently and effectively leverage their data to meet business goals. Important information may be found in every operational area of the company: sales, finance, customer service, engineering, marketing and more. Companies have traditionally tried to use their operational software programs to both run operations and analyze the resulting data. Enterprises have tried to use operational software programs designed for specific functional areas (e.g., sales automation, marketing automation, inventory management, ERP, or financial services) or export the data to Excel or a database for manual analysis.

Examples of the Benefits of Shifting from Operational Application Reporting to Business Intelligence.

Even if all of the technical hurdles of operational system reporting were solved, operational teams simply need access to data from other operational areas in order to fully understand what has happened and what is happening, and what they should do next. Here are some examples of how combining information from multiple applications and functional areas can drive greater overall success.

Combining Marketing and Sales Automation Data to Increase Sales. A sales team with access only to sales force automation application data does not have a clear picture of the visits their customers make to the corporate website; the website data is owned by the marketing team. Adding the website information into the analysis to potentially alert sales to new opportunities or to the possibility that a customer is closer to making a purchase decision. Using the same example, the sales team may also learn how accounts they close generate sales to the website and whether the multi-channel activities generate more or less revenue from their accounts. The more sources of data with which the sales team integrates their sales force automation data (e.g., finance, support), the greater the insight they receive into account behavior and potential opportunities.

Combining Point-Of-Sale with Email and Website Analytic Data to Maximize Revenue and Profitability. Customers who buy in multiple channels (e.g., Retail and online) are worth more than single channel customers, according to the Nielsen Company. By analyzing only online data, a brick-and-mortar retailer's marketing team will not be able to understand how to drive multichannel purchases so as to maximize revenue and profitability. Using only their own data, marketing will not be able to answer such basic questions as:

- What is the optimal mix of online and retail store sales that provide the company with the greatest revenue and profitability?
- Which marketing programs most cost-effectively drive customers into stores?
- After purchasing, do store customers visit the website for add-on purchases? Which programs best incent them to visit the site and purchase?

For example, through using website and email analytics a company may find that low-price products are easiest to promote on the website and generate the most completed orders. So the web marketing team is enthusiastic about promoting low-cost online deals and petitions the VP of marketing for more investment along these lines.

However, when looking at a more comprehensive picture by adding in Point-Of-Sale (POS) store data, a business intelligence system's dashboards and reports may demonstrate the customer's desire to purchase seems to be satisfied by buying only the promoted low-cost product online. As a result, customers do not visit a store, where they are more likely also to buy higher-price, higher-margin products. The end result: lower enterprise-wide revenue and profit.

Further, analysis of reports may inform marketing the company maximizes revenue and profit if marketing promotes higher-priced items on the site and then uses email marketing to promote online add-on products to customers who make their initial purchase in the store. By looking at the entirety of information available with the business intelligence solution, the VP of Marketing can make smarter decisions about the types of promotions and marketing campaigns that boost enterprise-wide sales and profitability.

The Five Stages of Business Intelligence.

The five stages of business intelligence are:

The Data

- The ETL (Extract, Transform, and Load) Engine
- Data Warehousing
- Analytic Engine
- Presentation Layer
- Stage I: The Data.

The first step in the BI process is to define which data will be loaded into the system and analyzed. A key issue to address at this stage is whether to define all of the data upfront or identify it on an iterative basis. Now it is possible for an enterprise or group to start with a subset of their overall data and add more and as they gain access to it or simply decide to include it.

Stage II: The ETL Engine.

The ETL Engine is the stage of moving the source data to the Data Warehouse. There are two key issues to address at this stage:

What type of data can be inputted into the system? The types of data business intelligence solutions can utilize should encompass any data that can be captured and a user wants to track. A business intelligence solution should enable enterprises or groups to upload files of large size and integrate with any solution that can export data such as:

- Data extracts from operational applications such as CRM or ERP applications
- SQL, Oracle, or other relational databases
- Flat file databases
- Comma-delimited files (the standard “generic” file format)
- Excel or other spreadsheets

Does the solution have automated data refresh? Optimally the solution has automated data refresh. Otherwise, the data will need to be uploaded manually. A business intelligence vendor should be able to help develop an integration plan and, directly or through partners, offer integrations services.

Stage III: Data Warehousing.

Data Warehouses connect and keep electronic data- either in one large system or multiple connected systems- so that the data can be retrieved and analyzed.

Stage IV: Analytic Engine.

Once data is in the system, the next step is to conduct analysis on it. Traditionally, this stage has required significant engineering resources to make the analysis work for the company's data warehouse. Now, business intelligence solutions can offer an automated approach to the analysis stage and move it online with an integrated OLAP Engine.

Stage V: Presentation Layer.

Interactive Dashboards. A dashboard is a set of high-level reports on key metrics, typically for managers. There may be multiple reports on a single dashboard, much the same way that a car's dashboard has multiple gauges and displays on it. With a dashboard, users can gain an at-a-glance understanding of key trends and metrics. Dashboards can be customized to work for anyone in an organization, from a sales rep or front-line operations manager to a middle manager or senior executive. An "interactive" dashboard allows users to take those dashboard reports and filter information to more deeply analyze trends and results, or to "drill down" into deeper and more detailed analysis of the data. That is, by clicking on the particular reports or results, they can explore more detailed information to find root causes of results.

Customizable Reports. These reports can present high-level findings as well as enable a user to drill down to find specific details. Most business intelligence systems either come with report templates and/or provide the capability to create and customize reports.

Alerts notifying users to changes selected as a key to meeting user goals. Alerts can be set to warn users on an imminent event, changes to data, or that new data needs to be entered into the system.

Summary.

Business intelligence solutions help organizations gain actionable insight from their business data in order to meet business goals. Most operational groups already have some way to utilize some information within their domain, typically through spreadsheets, databases, or the limited reporting available in an operational system. However, business intelligence solutions help to provide the greatest business insight, so they can easily analyze larger amounts of data, can integrate data from multiple areas of the business, are easier to use and update for complex calculations, and have a way of easily distributing compelling reports and dashboards.

Business intelligence solutions are available either in the traditional manner, as an on-premise software solution, or as an integrated SaaS solution. While powerful, traditional business intelligence can require significant upfront costs, with the implementations, and high resource demands for hardware and IT services. SaaS business intelligence solutions are a more modern and flexible approach, with significant value benefits. SaaS business intelligence can be implemented quickly, in weeks rather than months, and with lower upfront costs, and significantly lower resource requirements.

Business intelligence solutions are only growing in demand as available data rapidly expands and companies seek analysis and insight that can give them a competitive edge in any economic environment.

INTELLITEK SYSTEMS

Intellitek Systems was started July 7, 2008 in Fort Wayne, Indiana. The company was founded on the premise of delivering the power of ERP software to small and mid-market companies by maximizing customizability to meet the unique needs of SMBs while keeping costs low. Since then, Intellitek Systems has ramped up its marketing efforts and on-boarded 100s of satisfied customers.

Simplifying your business

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