

BUSINESS GUIDE

Baseball and Business Intelligence

How to Hit a Home Run With Your Financial Data





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Read Time: 11 minutes

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The operational and financial data of a business is incredibly valuable. Unfortunately, many companies struggle to capture this value either because their data is spread across multiple systems, making it hard to access, or because they don't have effective analytical tools (or both). As a result, they miss opportunities to improve performance and grow their business.

Contrast this with Major League Baseball, where data is used to scout players, manage lineups and much, much more. Professional baseball teams not

only have access to vast amounts of real-time data, they also have powerful analytics solutions to help them make the most of it. This has literally changed the game, giving executives, managers and players the information they need when they need it. The results speak for themselves: better pitching, more runs scored and more wins.

Wouldn't it be great if working with business data could be just as easy as it is for major league teams?

With NetSuite Business Intelligence, it can be.

Table of Contents

Overview

Page 2

1 What Is Business Intelligence?

Page 4

2 Advanced Analytics

Page 6

3 NetSuite Business Intelligence

Page 9

4 Making Data-Driven Decisions

Page 11

5 Hit a Home Run

Page 12

What Is Business Intelligence?

Business Intelligence (BI) is a set of tools and techniques used to analyze financial and operational data. BI solutions transform this data by presenting it in ways that are easier to interpret. They give context and meaning to it, helping companies glean new insights, make better decisions and improve performance. In short, Business Intelligence unlocks the value in data.

The core components of a BI solution are reporting, key performance indicators and dashboards.

Reporting

Reports are an essential business tool that virtually every organization uses. They provide a convenient way to share information, track performance and communicate results. Reporting tools come in many forms, from standalone report writers to basic spreadsheets. Accounting and ERP applications typically include reporting capabilities as well, either as an embedded feature or, in some cases, for an additional fee. Most of these systems provide a handful of standard or “canned” reports out of the box. Pre-configured reports don’t always provide the information a company wants, however, so the best solutions make it easy to tailor these reports to the needs of the business. They also offer tools for creating custom reports, allowing companies to combine and analyze data however they want.

A Brief History of Baseball Analytics

As any fan knows, baseball is a game of numbers. From an opposing pitcher’s earned run average (ERA) to a leadoff hitter’s on-base percentage (OBP), performance metrics abound. No other professional sport captures more data or uses it as extensively as Major League Baseball. But this obsession with numbers isn’t something new. It goes back more than 150 years, before the majors even existed.

1859 – Journalist Henry Chadwick is credited with inventing the box score, providing a detailed record of player performance in each game. Later, he would add “base hits” and “unearned runs” to the list of baseball metrics.

1872 – The “batting average” is born, giving teams and fans a new way to evaluate hitting prowess.

1912 – Baseball’s National League begins tracking the number of earned runs allowed per nine innings. ERA eventually becomes the top pitching KPI.

1920 – Runs Batted In (RBIs) becomes an official baseball statistic.

Key Performance Indicators

Key Performance Indicators (KPIs) are a logical extension of reporting. But where reports include multiple data points, a KPI captures a single metric. KPIs display current performance in relationship to organizational objectives, allowing companies to track their progress against financial and operational goals. Individual KPIs can apply to a single department, like marketing or human resources, a specific process, such as tracking close rates, or the entire business. Accounting KPIs, for instance, might focus on metrics like days sales outstanding or accounts payable turnover, while a brand manager would pay attention to product margins.

Dashboards

Dashboards are a convenient way to view multiple data points at once. They provide centralized access to reports, KPIs and other resources, displaying information in a structured format that makes it easy to digest. They act as a starting point for monitoring performance, working with various data sets and performing other tasks. Dashboards are often standardized across an entire organization or department, but ideally they should be configured for specific roles so they only include details that are relevant for a particular job function. They should also be customizable by users to fit each person's individual requirements.

A Brief History of Baseball Analytics

1940s – Alan Roth, the Brooklyn Dodgers' team statistician, begins tracking "batting average with runners in scoring position."

1971 – The Society for American Baseball Research (SABR) is formed.

1981 – Sports Illustrated introduces the term "sabermetrics" to describe the increased use of computerized statistical analysis in baseball.

1990's – With one of the lowest payrolls in baseball, the Oakland Athletics turn to sabermetrics to scout young players. Using this approach, they eventually become one of the most successful, yet cost-effective teams in baseball.

1994 – STATS Inc. begins providing real-time performance tracking, updating player statistics as games are being played.

2006 – MLB Advanced Media rolls out PITCHf/x, giving TV viewers real-time pitch speed and pitch location graphics.

2015 – Major League Baseball deploys Statcast, an upgraded tracking system that gives teams centralized access to player performance data and KPIs.

2020 – MLB adds high-speed optical tracking and machine vision technology to Statcast. The upgraded system captures data with unprecedented accuracy.

Advanced Analytics

Advanced analytics are the next stage of business intelligence, extending the core capabilities of reporting, KPIs and dashboards by using today's computing technology to apply sophisticated analytical techniques to complex datasets. These techniques are designed to help companies solve their most difficult problems, analyze trends to discover the underlying drivers and even predict future patterns.

Data and Text Mining

Data and text mining are powerful components of most advanced analytics toolsets. The main difference between the two is how information is structured.

- **Data mining**, the discovery of information from data contained in structured databases/data warehouses, enables companies to generate insights from enormous amounts of your company's data. Often, businesses will compile all available business systems into a centralized data warehouse. If this data resides in a structured or organized table, data mining can help you find rich insights to fuel your strategies.
- **Text mining**, on the other hand, primarily deals with unstructured data. Today, more and more data is recorded in an unstructured format through articles, user comments, website text, support messages, etc. Historically, manually combing through this data for insights was incredibly inefficient. To fix this, Natural Language Processing (NLP) has been refined and packaged as software. NLP uses methods such as computer science, data science and linguistics to enable computers to "understand"

Metrics That Matter

Baseball team's and fans have dozens of KPIs at their disposal. Along with tried-and-true statistics like batting average, winning percentage and a pitcher's strikeout to walk ratio (K/BB), there are many more advanced metrics. Companies also have numerous metrics at their disposal, including standards like gross margin, days sales outstanding and cost of goods sold (COGS). And like baseball, there are many others that are worth considering.

Baseball Metrics

- **Batting Average on Balls in Play (BABIP)** – Measures a player's batting average exclusively on balls hit into the field of play, removing outcomes not affected by the opposing defense (namely home runs and strikeouts).
- **Defensive Efficiency Ratio (DER)** – Measures a team's defensive performance using the rate at which batters reach base when balls are put into play.
- **Pythagorean Winning Percentage** – Uses a team's performance over the course of a season to estimate the number of games it should win in the future.
- **Win Expectancy (WE)** – Estimates the probability of a team winning a particular game at a specific point in that game.

human language. This allows BI systems to sort through unstructured data to generate sentiment analyses, summarizations, text categorization and part-of-speech tagging, just to name a few.

Machine Learning

Data analysis has historically been a drain of employee time and energy. After all, reports and data visualizations don't just create themselves, right? Enter machine learning. Machine learning is a method of data analysis that enables the automation of some analytical model building. Similar to artificial intelligence, machine learning is centered around systems learning from data and using that knowledge to identify patterns, generate alerts and even make decisions with little human effort.

Predictive Analytics

Forecasts are commonplace in business meetings: "Our demand did not meet our forecasted numbers," or "our sales team feels confident in their quarterly forecasts and believes they might exceed expectations." These forecasts were used to help those companies develop business strategies using the data available to them. Historically, forecasts were completed in complex spreadsheets with data manually compiled from multiple business systems. Today's business intelligence platforms, with built-in predictive analytics, can drastically improve both accuracy and efficiency by quickly examining all data sets and generating predictive models to help companies strategize. As an added bonus, these systems, with up-to-date business data, can even refresh these values on the fly.

Visualization

Data on its own is difficult to interpret. Even the most well-built reports require careful review for proper understanding of the represented data.

- Win Probability Added (WPA) – Quantifies the percent change in a team's chances of winning a particular game from one play to the next.

Business Metrics

- Cash Conversion Cycle – Captures the average number of days it takes for a company to convert investments in resource inputs into cash.
- Current Liability Coverage Ratio – Indicates whether a company generates sufficient cash flow to pay its short-term debts.
- Free Cash Flow – Measures the amount of cash a business generates after subtracting operating costs and capital expenses.
- Return on Sales – Assesses the operating efficiency of a business based on the amount of profit earned for every dollar of sales.
- Sustainable Growth Rate – The maximum rate of growth a business can maintain without requiring additional financing.

Data visualizations, on the other hand, not only work to capture attention, but can also quickly convey information and help simplify complex concepts. Business intelligence platforms enable business to do just this—take complex reports and instantly generate visually appealing and easy-to-understand data visualizations. Most of today's business intelligence solutions allow users to quickly export even the most complex of data visualizations

directly to slideshows or PDF files—Gantt charts, scatter plots, heat maps and dual axis charts just to name a few. These visualizations can also be placed on dashboards for up-to-date tracking on your company's health.

Multivariate Analysis

Not all business decisions hinge on one or two data points. Often, the important questions require input from far more than two variables. In data analysis, whenever you have a problem with more than two variables to take into consideration, multivariate analysis can offer an answer. And

whenever you need multivariate analysis to offer that answer, business intelligence systems can lend a hand. Most BI solutions now include user-friendly methods for conducting these examinations. Multiple regression, the most widely used multivariate technique, is part of today's BI business forecasting solutions and can be used to keep your sales forecasts up to date around the clock. Marketing teams can also take advantage of multivariate analysis through included correspondence analysis, useful in comparing the effectiveness of ad campaigns.



CHAPTER 3

NetSuite Business Intelligence

NetSuite offers a wide range of BI and analytical tools to populate reports, monitor KPIs and visualize vital information on role-based dashboards.

NetSuite SuiteAnalytics delivers sophisticated business intelligence capabilities that enable companies to gain new insights and make more informed decisions.

NetSuite’s unified data model puts real-time information in the hands of every user across the organization. Whether speaking with a customer, processing an order, managing a project or preparing financial reports, users can get the data they need when they need it—without having to rely on experts or move between different systems.

Like a live baseball broadcast, NetSuite’s SuiteAnalytics role-based dashboards put important details, such as KPIs and alerts, front and center. Dashboards can be configured by users to display information in a variety of ways, including

The screenshot displays the NetSuite Business Intelligence dashboard. At the top, there is a search bar and navigation tabs for Activities, Billing, Customers, Vendors, Payroll and HR, Financial, Reports, Analytics, Documents, Setup, Administration & Controls, Payments, A/R, Fixed Assets, and A/P. The dashboard is divided into several sections:

- Reminders:** A vertical list of tasks including '1 Bill to Approve', '2 Periods to Close', '9 Invoices Overdue', '14 Bills to Pay', '52 New Vendors', '2 Allocation Schedules due', and '1 Memorized Transaction due'.
- SuiteAccess:** Four colored tiles for 'Balance Sheet', 'Budget vs Ac...', 'Income Stat...', and 'Trial Balance'.
- Navigation Shortcuts:** A grid of icons for 'Executive Management', 'Sales', 'Inventory Management', 'AR and AP Reports', and 'Reports'.
- Key Performance Indicators:** Four line charts showing trends for 'SALES' (+13.5%), 'EXPENSES' (+3.5%), 'TOTAL BANK BALANCE' (+6.0%), and 'PAYABLES' (-3.5%).
- Revenue By Period Trend:** A large area chart showing revenue from July 2019 to January 2020, with a moving average line.
- Income By Period Trend:** A smaller area chart showing income trends.
- New Customers vs. Existing Cus...:** A section with filters for DATE and SUBSIDIARY, and a table showing customer counts.
- Table:** A table with columns for INDICATOR, PERIOD, CURRENT, PREVIOUS, and CHANGE, listing various financial metrics.

INDICATOR	PERIOD	CURRENT	PREVIOUS	CHANGE
Sales	This Month vs. Last Month	\$2,558,044	\$2,254,156	↑ 13.5%
Expenses	This Period vs. Last Period	\$2,080,215	\$2,009,253	↑ 3.5%
Revenue	This Period vs. Last Period	\$2,483,044	\$2,254,156	↑ 10.2%
Receivables	End of This Month vs. End of Last Month	\$2,783,013	\$2,824,808	↓ 1.5%
Total Bank Balance	This Period vs. Last Period	\$4,413,364	\$4,164,999	↑ 6.0%
Payables	End of This Month vs. End of Last Month	\$2,791,229	\$2,893,256	↓ 3.5%

NetSuite’s customizable dashboards give users access to the information and tools they work with most.

performance scorecards, trend graphs and report snapshots, as well as other formats. If more details are required, users can drill down from their dashboard to see individual records or transactions.

NetSuite Saved Searches are advanced queries. They provide a convenient way to perform detailed searches using various filters and display options, allowing users to comb through thousands or even millions of records to pinpoint exactly the data they want. Because they can be saved, these queries can be run over and over, providing real-time data whenever it's needed.

SuiteAnalytics Workbook provides more capabilities to create sophisticated filters with real-time visualizations. Data can be further analyzed using pivot and chart capabilities, with intuitive drag-and-drop interactions. Workbooks can be saved, shared and reused with content easily deployed in NetSuite dashboards as portlets.

The NetSuite Analytics Warehouse adds powerful BI capabilities like artificial intelligence and machine learning to deliver the insight, interaction and automation customers need to make smarter, faster decisions.

This built-in intelligence will empower customers with analytics to understand not only what's happened with their business, but what will happen in the future and how they can stay ahead of the competition and achieve better outcomes.

CHAPTER 4

Making Data-Driven Decisions

Instant access to data allows users to make the correct decision and provide accurate, impactful advice. Information is a great thing as long as the data is accurate and meaningful, and accessing it is not a hassle. Organizations of all sizes have been able to do amazing things using NetSuite to aggregate critical information in a unified data model.

The best predictor of company success is linking strategy to key business drivers. Leveraging NetSuite's reporting capabilities ensures that the execution of each company's strategy can be a reality. Deriving key metrics can be an intensive, resource-draining process with a manual approach, but it's simple in NetSuite.

NetSuite captures every detail of a business event, process and/or transaction. This data serves as the basis for key metrics that can provide insight into strengths and opportunities for improvement at any level, from the individual employee level to the company level.



CHAPTER 5

Hit a Home Run

Before you purchase a standalone BI tool, consider the complexity of implementing the application, connecting it to disparate systems and compiling and calculating the key metrics desired. In many cases, it can be more complex than implementing a fully featured cloud-based ERP system. Choosing NetSuite can effectively fill many needs with one deed by leveraging NetSuite's BI elements:

- Unified data model
- Mobile access
- Built-in, pre-defined and configurable BI

- Metrics, KPIs, reports, analytics and workflows
 - Available for all roles and industries
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If the goal is to engage the organization to improve performance and focus on key responsibilities, real-time feedback and constant monitoring of what matters most, then NetSuite is a home run.





ORACLE
NETSUITE

www.netsuite.com



info@netsuite.com

877-638-7848