

# Impact of Business Analytics in Empowering Strategic Business Decision-Making



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*The core of an organization's competence and sustainability is to ensure the acquisition of relevant data and derivation of business critical intelligence for expedited decision making. As a business leader, one must find ways to acquire all the data points that are accessible, pertinent and prevalent. Business-relevant information makes it more data driven than a scenario driven organization. There is a decisive need to leverage business analytics and utilize the technological innovations in this digital era, to effectively augment and accomplish an organization's strategic plans.*

**Keywords:** Business Analytics, Strategy, Competence, Sustainability, Decision-Making

## 1. Introduction

Organizations have started capturing data not only from traditional data sources like enterprise resource planning systems, customer relationship management systems but also from specialized systems like machine data, logistics, material movement, spatial systems, network logs and much more.

There are distinctive ways to derive value out of the different types of datasets as per user or company's requirements. The datasets can be bucketed majorly in to three categories like structured data from online analytical processing systems, semi-structured from flat files, excels and unstructured datasets from social media, mobile devices, network devices. This mix of different datasets and the information derived from them can be ably used to enlightened decision making process. These inputs are vital for taking strategic decision in all spheres of making a business more competitive and at the same time, sustainable in the every changing trends.

The macro and micro economic factors play a most important role for making strategic business plans. Especially the product based companies are more reliant on changing dynamics of consumption patterns, economic situations, trends, import or export duties, financial policies, among others.

From the business owners or leader's standpoint, the role played by business analytics and the traction it brings for the execution of strategic plans are of paramount prominence. The supporting nature of relevant data and the factual value proposition that aids the decisions cannot be overlooked.

## 2. Approach

The paper discusses the power of business analytics and the impact it has on the enterprise's decision support system for its continued growth and competence. It also discusses the need for processing huge datasets, informed decisions based on combination of data from multiple data source and the requirement of software products, trends and techniques with analytical capabilities.

## 3. Business Analytics and Relevancy of Data

There are different means and ways to capture the data points inside an organization. The different aspects of a business like finance, quality assurance, industrial engineering, research and development, manufacturing, planning and allocation, inventory management, customer relationship management, and other streams of business are in constant need to input data and that is crucial in managing the day to day work. The efficiency of the operations can be enhanced and streamlined based on the accuracy, relevancy and completeness among others.

As per Frank Ohlhorst, there are 4 dimensions that refer to the primary aspects of big data. These dimensions are defined as follows,

- "Volume. Big Data comes in one size: large. Enterprises are awash with data, easily amassing terabytes and even petabytes of information.
- Variety. Big Data extends beyond structured data to include unstructured data of all varieties: text, audio, video, click streams, log files, and more.
- Veracity. The massive amounts of data collected for Big Data purposes can lead to statistical errors and misinterpretation of the collected information. Purity of the information is critical for value.
- Velocity. Often time sensitive, Big Data must be used as it is streaming into the enterprise in order to maximize its value to the business, but it must also still be available from the archival sources as well.
- These 4Vs of Big Data lay out the path to analytics, with each having intrinsic value in the process of discovering value."<sup>1</sup>

The growth of enormous amount of data in the current digital age, has to be effectively managed to bring out a relevancy, reliable content and business effective data points for improved decisions. The strategic decision made during the beginning of the year and other planning cycles of an organizations must have factual inputs.

Data sources for an organization has grown enormously and it is no longer restricted to enterprise resource planning, customer relationship management, human capital management and similar kinds of data sources. The data can flow from internet transactions from an ecommerce website, mobile device using an application, networking devices, sensors, actuators, microcontrollers, digital media and social networking sites and much more.

#### **4. Deriving Insights and using it for Strategic Decision-Making**

When it comes to gaining valuable insights and applications “sophisticated analytics can substantially improve decision making, minimize risks, and unearth valuable insights that would otherwise remain hidden. Such analytics have applications for organizations from tax agencies that can use automated risk engines to flag candidates for further examination to retailers that can use algorithms to optimize decision processes such as the automatic fine-tuning of inventories and pricing in response to real-time in-store and online sales”<sup>2</sup>.

The authors go on to add “Providing readily accessible big data tools and analytics can allow commercial, nonprofit, and individual third parties to create new value for the public sector in a variety of ways. These could include feedback on services, insight into better management practices, and suggestions for improving new and existing programs.”<sup>2</sup>

Manufacturing sector has been leveraging the tools and techniques available in the market to deliver automated operational setups for shortening their production time and increasing their outputs. Manufacturing companies have been leveraging the use of sensors, actuators, information from programmable logic controllers in the machines to capture the data on an on-going basis. The improvisation and enhancements in this age of connected factories has grown exponentially and the need for big data adoption has grown multi-fold. “For example, big data can help manufacturers reduce product development time by 20 to 50 percent and eliminate defects prior to production through simulation and testing. Using real-time data, companies can also manage demand planning across extended enterprises and global supply chains, while reducing defects and rework within production plants.”<sup>2</sup>

Also another case where “Organizations are continuing to make investments in analytics to meet the growing demands of the user community for more robust and usable analytic solutions. In analyzing Nucleus ROI case studies on analytics, we found the average returns from analytics have been increasing, reaching \$13.01 for every dollar spent in 2014 from just \$10.66 in 2011.”<sup>3</sup>

#### **5. Huge Data Processing Engines**

Huge datasets can be cumbersome, establishment of data relationship can take time. Business analysts, functional and technical professionals spend more time for data preparation, transformation and additionally the processing times of huge data can be time consuming. While the time spent on data analysis can be limited due to the long throughput time for obtaining the meaningful data.

Frank Ohlhorst also adds, “For the decision maker seeking to leverage Big Data, Hadoop solves the most common problem associated with Big Data: storing and accessing large amounts of data in an efficient fashion.”<sup>1</sup>

There are scenarios where financial professionals are in need of data with a quick turnaround time, so they can analyze and report the enterprise data. They need analytical tools for bringing together data from multiple platforms, source systems and data that are in siloes. There are many challenges that finance professionals face when closing the books, including increasingly complex accounting standards, poor information flow outside accounting department, the use of outdated software platforms, lack of time to develop new processes, a desire to do things the way they have always been done. One of the most important activities performed by finance team in any of the organizations are the month end book closure activities in the enterprise systems.

With so many tasks and with little time it is extremely difficult for the finance team to complete the requisite tasks with quality and precision. The enterprise resource planning system keeps track of all transaction but unfortunately when it comes to actionable insights the system is found wanting for solutions. The reconciliation time for month end closure activities can be reduced from 2-3 days of process using the legacy approach, to only few hours with high speed big data processing engines that uses distributed file system to process huge datasets for expedited data outputs.

As the author goes on to describe the processes where “the manufacturing industry transforms raw materials into finished goods while making use of other inputs resources such as energy and water. Hence, it is only natural for the manufacturing sector to be invested in the optimization of input resources to identify opportunities to reduce raw materials, water and energy consumption, eliminate waste, and therefore improve efficiency, yield and adherence to sustainable practices.”<sup>4</sup>

With the rapid advancement of both in computing hardware and software there are various tools available in the market for business analytics. Big data analytics is the often complex process of examining large and varied data sets from data source systems to uncover information such as hidden patterns or unknown correlations that can help organizations make informed business decisions.

The Apache software foundation is a decentralized open source community of developers and big data aspirants. The software they produce is distributed under the terms of the apache license and is free and open-source software. Under apache open source platform big data tools like Horton works, HDFS, Ambari, Yarn, Hive, Sqoop, Spark, and Kafka are available.

These services and tools, other proprietary and licensed analytical tools will help in processing huge datasets of the organizations and expedite the process of deriving the meaningful insights with a quick turnaround time to support the decision making process.

**Table 1** Book Closure Accounting Activities by Module

Module	Activity
Accounts Payable	Complete all invoices, credit memos, debit memos, prepayment invoices for the period
	Run the payable approval process for all invoices
	Review the invoice on hold report - hold and release invoice untick on accounted
	Review the unaccounted transaction report
	Optionally run a payment process request at the month end
	Transfer all approved invoices and payments to the GL
	Review the payable to GL posting process after completion
	The sub ledger accounting program report generated by the create accounting program
	The posted invoices register
	The posted payment register
	Submit the unaccounted transactions sweep program
	Reconcile payments to bank statement activity for the period as described in cash management.
	Run mass addition transfer to asset
Accounts Receivable	Complete all transactions for the period being closed
	Review the unapplied receipt register
	Reconcile receipts to bank statement activity for the period
	Post to the GL
	Review the sub-ledger period close exception report and unposted transaction report
Asset	Complete prepare and post mass addition
	Complete Manual addition, adjustments, retirements
	Run depreciation
	Create accounting
General Ledger	Complete sub ledger interfaces to GL
	Complete recurring journals and journal reversals
	Complete mass allocation journals
	Verify any unposted journals and post all journal batches
	Run sub ledger period close exception report
	Reconcile all intercompany accounts and central process
	Run the consolidation process
	Run post all journals program
	Run "Close Process-Create income statement closing journals"
	Run "Close process-Create Balance sheet closing journals"
	Then Close the period.
Purchase	Complete PR, PO & releases, receipts and returns
	Identify and review un-invoiced receipts
	Run the receipt accruals
	Perform year end encumbrance processing

## 6. Summary

Technological innovations, rapid developments in the area of business analytics are driven by the need for robust, speed, secure systems for supporting the fact based analysis and data driven decision making in executing enterprise's strategic plans. To foster sustainable business requirements, develop new competitive advantages and innovate novel products, a business needs to make effective decisions in a timely manner. For this purpose, business analytics plays a vital role. The experience and knowledge of subject matter experts combined with data driven analytics can be a lethal combination in driving strategic plans to accomplish business goals, at an exponential rate.

## **7. References**

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