KIRTANE & PANDIT

Data Analytics and Business Intelligence

Process Management - Accounting of onsite/ offshore for Indian and Overseas Companies, Experienced in Manufacturing, Hospitality and leisure industry; handling large assignments of Financial Accounting, Reconciliations, MIS, Payroll, Fixed asset management, Inventory management, costing and virtual services to SME segment and Virtual CFO services for Indian & International Companies.

CA. Shripad Kulkarni

B.Com., F.C.A.

Practice Head : Process Management & Outsourcing

shripad.kulkarni@kirtanepandit.com

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Introduction

The Business Environment (Climate) is constantly changing and it is becoming more and more complex. Organizations, public and private, are under pressures that force them to respond quickly to changing conditions and to be innovative in the way they operate. Such activities require organizations to be agile and to make frequent, quick, strategic, tactical and operational decisions, some of which are very complex. Making such decisions may require considerable amounts of relevant data, information and knowledge. Processing these, in the framework of the needed decisions, must be done quickly, frequently in real time, and usually requires some computerized support.

Traditionally businesses have been capturing data from internal accounting and operations like CRM, payroll, inventory. But in the digital age external data like website traffic, social media feeds etc. have become equally critical.

Data Analytics can be defined as a science that analyses raw data to draw conclusions about the information contained therein.

Business Intelligence (BI) is a collection of methods and resources for turning unprocessed data into knowledge that can be used for business analysis. Organizations can utilize BI to assist various business choices, including finding new business prospects, streamlining internal processes, and gauging performance.

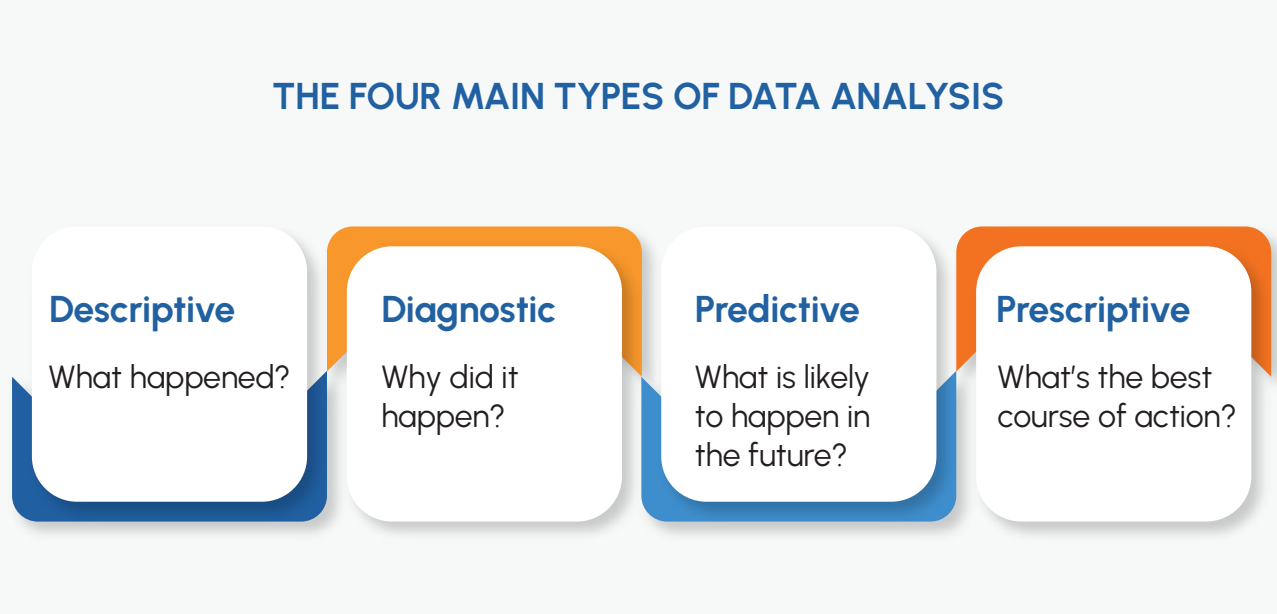
What is Data Analytics?

Most companies are collecting loads of data all the time—but, in its raw form, this data doesn't really mean anything. This is where data analytics comes in. Data analytics is the process of analysing raw data in order to draw out meaningful, actionable insights, which are then used to inform and drive smart business decisions.

Data analytics helps you to make sense of the past and to predict future trends and behaviours; rather than basing your decisions and strategies on guesswork, you're making informed choices based on what the data is telling you. Armed with the insights drawn from the data, businesses and organizations are able to develop a much deeper understanding of their audience, their industry, and their company as a whole—and, as a result, are much better equipped to make decisions and plan ahead.

What are the different types of data analysis?

There are four main types of Data Analysis: descriptive, diagnostic, predictive and prescriptive.



Descriptive Analytics

This is the most basic type of analytics and deals with numbers. It provides 'what happened' by quantitatively analysing data using statistical methods e.g. sum, mean, mode, percentage, frequency etc. Various revenue reports, KPI Dashboards are some of the common examples

Diagnostic Analytics

Diagnostics tend to provide an answer as to 'why it happened'. While a revenue report may show the actual figure of decline in sales over periods, the diagnostic analytics will look into the patterns and deviations to seek root cause analysis and provide reasons for the decline in the sales. Diagnostics involve co- relating two different datasets.

Predictive Analytics

Predictive analytics is concerned with the future and comes up with answers as to 'what is likely to happen in the future'. Businesses use this to predict the demand for their products. While description analysis shows sales data over quarters/years, diagnostic analytics provide the cause for decline/increase. Predictive analytics will co-relate these data to external data like demographics to guess future sales.

Prescriptive Analytics

This is the most advanced form of analytics and comes up with recommendations as to 'what is the best course of action'. This requires huge computing power as it tries to work out multiple scenarios, predict outcomes for each such scenario and then recommend the best one. Artificial Intelligence and Machine Learning use prescriptive analytics.

Who are the users of Data Analytics?

Businesses

Businesses are using data analytics to improve operations, and strategize the future. Most modern e-commerce businesses are thriving only because of advance usage of data analytics.

Example: Netflix uses viewership data to recommend the shows you are likely to be interested in. More than that, it can use these large data to create its own content and direct it to the target audience, virtually guaranteeing success

Governments

Governments are using data analytics to predict major problems and ta ke pre-emptive action before they turn into crises. The areas where they are being put to use are natural calamities, defence, internal security, health care etc.

Example: The Government of Indonesia uses sensors and public complaints to predict flood-prone areas and expedite response.

Various scientific disciplines

Use of data analytics in scientific research cannot be overemphasised. Few examples:

- Use of satellite imagery to analyse and predict climate models environmental changes
- Use of patient data to prevent epidemics, reduce healthcare cost, improve timely healthcare

Tax Departments

World over, tax authorities are collecting more data, sharing data among various other government departments and are using this big data to increase tax revenue, enforce compliance and bring transparency in tax administration.

In India, with the introduction of GST, an era of 100% digital tax has begun. What started as monthly online filings moved to e-way bills and online invoice upload in real-time.

Here are a few examples of how tax administration is using data analytics in India

- GST Department has a full network diagram of each assessee. This is made possible by correlating information collated from income-tax and customs. This has made it possible to pinpoint firms who have resorted to fake bill usage, even if they have resorted to a complex web of firms to route these transactions. By Jan 2021, the department had detected over 7000 such cases of tax evasion via fake bills.

- The income tax department has started Project Insight and a dedicated centre called the Income Tax Transaction Analysis Centre (INTRAC). This centre uses data analytics in improving tax administration. Among other things, this project will use social media data of taxpayers and analyse expenditure patterns. This Rs. 1000 crore project is aimed at deterring non-compliance and improving tax collections.

Data Analytics - Advantages

The volumes, complexities and the variety of the data are increasing exponentially at all levels of the organisation. Analytics is the solution required to get the information of this ever-growing data, and various benefits can be derived on revenue, expenses, market share, and reputation.

- Better decision-making - The biggest benefit of using data analytics is the assistance it can provide in better decision-making capabilities, thus better enabling key strategic initiatives. Analytics plays an important role in driving business strategy.

- Marketing and customers - Data analytics assist in identifying and creating new product and service revenue streams. Marketing and sales groups invest in analytics helping them to tap new geographies, develop new business models, and generate higher revenues.

Data Analytics - Challenges

While there are huge benefits, the challenges in the implementation of analytical solutions are as follows:

- Overall business structure. Analytics is managed by a variety of functions within a company, and a wide range of functions benefit from analytics. More structure around coordination and alignment is needed to realize the impact and benefits of a company's data throughout the organization. Sometimes a lot of projects are done in silos by each function.

- Data management is a key barrier. A specific level of data management is required to make analytical projects successful. The GIGO principle applies everywhere. To get the best out of the project, proper data mining and data warehousing solution is required.

Data Analytics Tools

Data analysis tools refer to the software which enables the process of data analysis.

Broadly these tools can be classified as under -

- Spreadsheets
- Business Intelligence
- Audit Analytical Tools
- Programming languages
- Industry-Specific Tools

The Role of Data Analytics in Accounting and Finance

Advances in data analytics create opportunities for accountants and finance professionals to offer higher-quality services to their business clients in three areas:

- A broader and deeper perspective on the business's financial and other operations
- More accurate predictions of future market and industry trends
- Automation of routine tasks to improve accounting accuracy and reduce costs

Data analytics in accounting uses advanced techniques to help firms capitalize on the massive amounts of data they collect. The goal is to create value and growth by leveraging three emerging technologies:

- **Computing power** and cloud storage have grown tremendously. Datasets can be large and complex because services such as Amazon Web Services offer scalable processing and storage that expands automatically to meet demand.

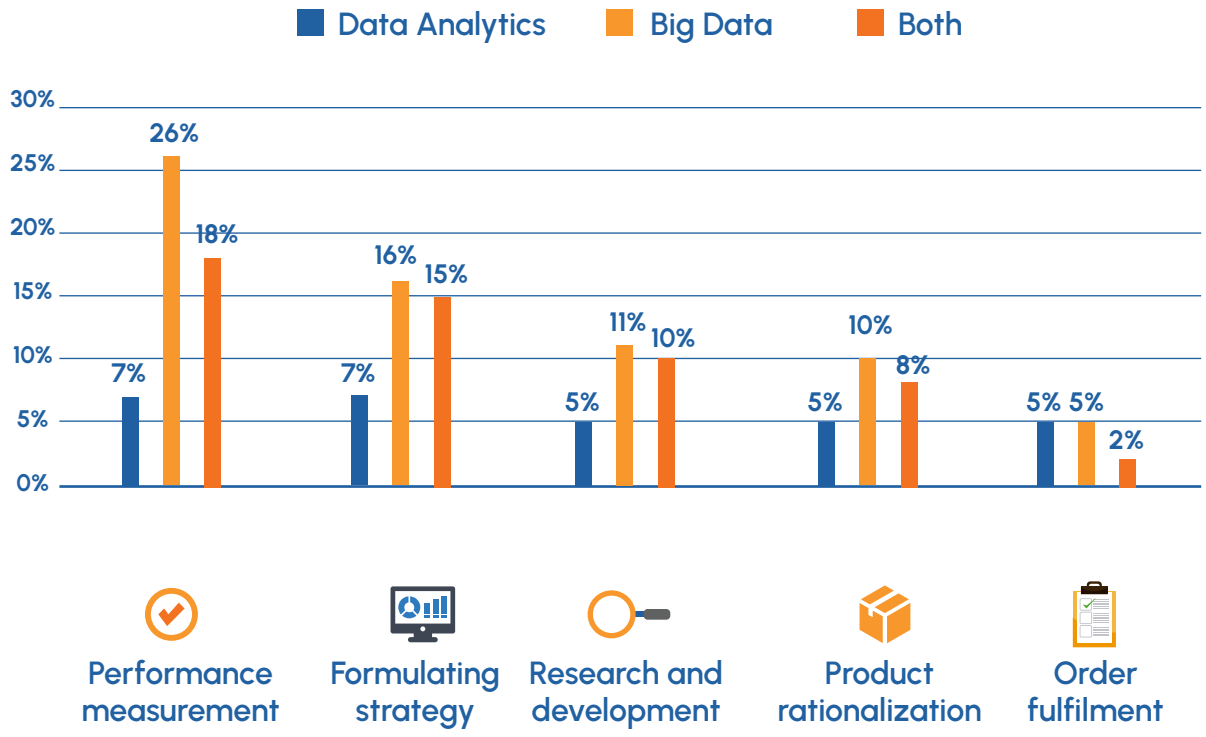
- **Data sources** such as internet service providers, social media platforms, mobile apps, government and other open sources, and sensors and other embedded devices are widely available.

- **A digital infrastructure** now exists that is based primarily on open-source software. Open networks make it easy for data specialists who have expertise in leveraging data to communicate with domain specialists who are experts in specific fields, including accounting and finance.

An overview of the results from a survey of accountants that examines the most common sources of big data for accounting firms and their strategies for implementing the technology

HOW WILL DATA ANALYSIS BE USED IN ACCOUNTING AND FINANCE?

As accounting and finance firms develop their plans for using data analysis, implementation will focus on several specific areas.



Source - Institute of Management Accountants

To Summarize

Data analytics is a form of business intelligence, used to solve specific problems and challenges within an organization. It's all about finding patterns in a dataset which can tell you something useful and relevant about a particular area of the business—how certain customer groups behave, for example, or how employees engage with a particular tool.

What is Business Intelligence?

Business Intelligence (BI) is a technology for business analysis that allows you to calculate key performance indicators and visualize their dynamics to optimize data-driven decision-making.

For accurate and timely problem-solving, a BI system needs high-quality data. All financial records received in the course of business activity are a key source of data, thanks to which, using the capabilities of BI for finance, you can get an idea about the business and use it to update financial indicators, optimize supply chains, and make more informed decisions on everything from marketing to mergers and acquisitions.
It often happens that Business Intelligence is confused with Business Analytics (BA), these are two completely different concepts.

Business Intelligence is about providing the right information to the right people at the right time and in the right way.

For example, a CFO can view last month's income and plan for the next month based on that. Business Analytics is more intellectual, as it's used to help carry out forecasting (it becomes possible to look into the future). That is, using BA, the financial director will be able to understand why the processes affected income in certain ways and will be able to build models to predict its change in the future.

BI system works as follows:

- **Data collection**
  Automatic download of data from company information systems such as CRM, ERP, and others

- **Data retention**
  The data collected are numerous and often large. They need to be stored somewhere so that in case they are needed, they are easy to find

- **Analytics**
  BI tools need to be able to pull data from the warehouse to perform these different types of analyses. They display key performance indicators (KPIs) and allow you to monitor the dynamics of their changes in real-time

- **Reporting**
  All of our data and analysis is useless if it doesn't get to someone who can make a decision based on it. BI should convey data and ideas in a way that people with less context can quickly understand and use them

Business Intelligence (BI) Tools

BI Tools are used to collect data from various sources. These may be structured data or unstructured data. The data may include accounting records, images, emails, etc. After collecting such a large amount of information from diverse sources, these tools permit running queries to find insights.

These tools also provide several methods to create reports, dashboards and other data visualisation for a meaningful presentation of information.

These five essential BI Tools can help discovering insights to make important business decisions –

Microsoft Power BI

Microsoft Power BI is a web-based business analytics tool suite which excels in data visualisation. It allows users to identify trends in real-time and has brand new connectors that allow you to up your game in campaigns. Because it's web-based, Microsoft Power BI can be accessed from pretty much anywhere. This software also allows users to integrate their apps and deliver reports and real-time dashboards. (Website - www.powerbi.microsoft.com)

SAP Business Objects

SAP Business Objects offers comprehensive reporting, analysis and interactive data visualisation. The platform focuses heavily on categories such as Customer Experience (CX) and CRM, digital supply chain, ERP and more. SAP is a robust software intended for all roles (IT, end uses and management) and offers tons of functionalities in one platform. (Website - www.sap.com)

Tableau

Tableau is known for its user-friendly data visualization capabilities, but it can do more than make pretty charts. Their offering includes live visual analytics, an interface that allows users to drag and drop buttons to spot trends in data quickly. The tool supports data sources such as Microsoft Excel, Box, PDF files, Google Analytics, and more. Its versatility extends to being able to connect with most databases. (Website - www.tableau.com)

Oracle BI

Oracle BI is an enterprise portfolio of technology and applications for business intelligence. This technology gives users pretty much all business intelligence capabilities, such as dashboards, proactive intelligence, ad hoc, and more. Oracle is also great for companies who need to analyse large data volumes (from Oracle and non-Oracle sources) as it is a very robust solution. Additional key features include data archiving, versioning, a self-service portal and alerts/notifications. (Website - www.oracle.com)

QlikSense

QlikSense is a complete data analytics platform and business intelligence tool. You can use QlikSense from any device at any time. The user interface of QlikSense is optimised for touchscreen, which makes it a very popular BI tool. It offers a one-of-a-kind associative analytics engine, sophisticated AI and high performance cloud platform, making it all the more attractive. An interesting feature within this platform is its Search & Conversational Analytics which enables a faster and easier way to ask questions and discover new insights by way of natural language. (Website - www.qlik.com)

Business Intelligence in Finance

Business Intelligence (BI) in finance uses BI techniques and tools to support financial analysis and decision-making. This includes budgeting, forecasting, financial reporting, and performance monitoring.

In finance, BI is often used to:

Monitor Financial Performance

Monitoring financial performance refers to the process of using Business Intelligence (BI) techniques and tools to track and analyse financial metrics, such as revenue, expenses, and profitability. This is an important aspect of using BI in finance. It can help finance teams identify areas where cost savings can be made and new revenue streams can be generated. Example of how BI can be used to monitor financial performance:

- **Dashboards**
  Interactive dashboards that show financial indicators like sales, expenses, and profitability can be made using business intelligence (BI). Finance teams and other stakeholders like management and investors can use these dashboards to track financial performance in real time.

- **Financial reports**
  Business intelligence (BI) can be used to create financial reports that give specific details on financial performance. These reports can be used to analyse trends and patterns in financial data and to track changes in financial performance over time.

- **Budget vs Actual analysis**
  Analysis of discrepancies between budgeted and actual financial performance using business intelligence (BI) can assist finance departments in identifying differences and implementing corrective measures.

Budgeting and Forecasting

Budgeting and forecasting refer to the process of using Business Intelligence (BI) techniques and tools to predict future financial performance. This is an important aspect of using BI in finance. It can help finance teams create accurate budgets and forecasts, which are important for strategic planning and decision-making. An example of how BI can be used for budgeting and forecasting:

- **Historical data analysis**

  Analysis of historical financial data, including sales, expenses, and profitability, is possible using business intelligence (BI). Using this information, one can forecast future financial performance and spot trends and patterns in past financial performance.

- **Forecasting models**

  BI can be used to develop forecasting models that project future financial performance based on previous data and statistical techniques. These models can account for variables, including market trends, economic situations, and company-specific information.

- **Budget and forecast comparison**

  Comparing actual financial performance to planned and predicted data using business intelligence (BI) can help finance teams spot discrepancies and take necessary action.

Understanding Customers

Understanding customers is an important aspect of using Business Intelligence (BI) in finance. This refers to the process of using BI techniques and tools to gain insights into customer behaviour and preferences to make informed decisions about financial matters such as pricing, marketing, and product development. Some examples of how BI can be used to understand customers include:

- **Customer Segmentation**
  By analysing customer data, BI can divide clients into several categories according to their demographics, purchasing patterns, or other factors. To make appropriate financial decisions, finance teams might use this information to identify important client categories.

- **Analysis of Consumer Behaviour**
  BI can be used to examine consumer data and spot trends in consumer behaviour. Finance teams can use this information to better understand how customers use their goods and services and make decisions about enhancing the customer experience.

- **Predictive modelling**
  By analysing customer data, BI may be utilized to develop models that forecast future customer behaviour. Finance teams can use this information to determine possible client trends and decide how to modify their financial strategies.

Financial Reporting

Financial reporting refers to the process of using Business Intelligence (BI) techniques and tools to generate reports that provide insight into financial performance and trends. This is an important aspect of using BI in finance, as it can provide finance teams and other stakeholders such as management and investors with greater visibility into financial performance and trends. An example of how BI can be used for financial reporting:

- **Financial statements**
  Financial statements, such as income statements, balance sheets, and cash flow statements, can be produced using business intelligence (BI). These reports give a thorough picture of financial performance and can be used to monitor it over time.

- **Customized reports**
  BI can provide details about a company's financial performance. The demands of various stakeholders, like management, investors, or regulatory agencies, might be catered to in these reports.

- **Report Automation**
  Financial report generation can be automated using BI, which can eliminate errors and save time.

- **Data visualization**
  BI can produce data visuals, such as pie charts, bar graphs, and line graphs, that aid in making financial data more understandable and useful.

Compliance

Compliance refers to the process of ensuring that an organization adheres to laws, regulations, standards, and guidelines that are relevant to its operations. In finance, compliance can refer to ensuring that an organization's financial practices and reporting comply with relevant laws, regulations, and standards. Business Intelligence (BI) can be used to support compliance by providing organizations with the necessary tools to monitor and report on financial performance such as:

Regulatory reporting

Reports required by regulatory agencies including the SEC, FDA, and IRS can be produced using business intelligence (BI). These reports offer thorough data on financial performance and can be used to verify adherence to accounting rules.

Audit trails

Audit trails can be beneficial in the event of an audit since they trace changes made to financial data and can be created using business intelligence (BI).

Monitoring for compliance

BI can be used to build automated systems that can spot and warn businesses of potential compliance problems. This enables organizations to act appropriately before a violation happens.

Reporting on compliance

BI can be used to create compliance reports that give specific information about compliance status and any steps to address compliance issues.

Risk Management

Risk management refers to the process of identifying, assessing, and mitigating potential risks that may affect an organization's financial performance. Business Intelligence (BI) can support risk management by providing organizations with the necessary tools to identify and evaluate potential risks and monitor the effectiveness of risk management strategies. An example of how BI can be used for risk management:

- **Risk identification**

  BI can be used to analyse financial data and identify potential risks such as credit, market, and operational risks. This can help organizations proactively identify and address potential risks.

- **Risk assessment**

  BI can be used to evaluate the likelihood and potential impact of identified risks. This can help organizations prioritize which risks to address first.

- **Risk reporting**

  BI can generate reports that provide detailed information about the status of risks and the effectiveness of risk management strategies. These reports can communicate risk management efforts to stakeholders such as management and investors.

Business Intelligence for finance allows to synchronize data not only for decision making, but also to minimize human error. So it allows to look into the past or plan ahead and analyse how things would have been in a different scenario.

Business Intelligence in Various Industries

Monitoring real-time analytics, utilizing powerful features and predicting the future is no longer a task of a designated data scientist but of an average business user as well. Here we will cover how BI can be applied in few industries.

Logistics

Logistics is one of the most complex industries that require constant data updates, accurate tracking of the supply chain and management of large-scale datasets that, often enough, need urgent attention. To make sure all the bits and pieces of the logistics sector function properly, you can utilize a logistics dashboard for tracking all your data and enabling you to derive insights within minutes. These dashboards, created with a powerful, yet simple, BI solution, will enable you to transform all your operations into a more effective one, and ensure development across the board

Healthcare

The massive healthcare industry is not an exception when it comes to collecting enormous volumes of data. Each healthcare professional that deals with analytical data to improve the performance of the facility needs a sharp eye, agility in their data management approach and the help of modern software. Turning to BI systems solutions for healthcare will not only decrease patients' waiting times, but optimize the quality of healthcare services across the facility. Scattered data between numerous departments can be easily consolidated into a unified healthcare dashboard, focused on important metrics crucial for optimal performance

Retail

Retail is an ever-changing industry that heavily relies on data to manage performance. Every retailer has the same goal: to increase sales and, ultimately, profits in order to stay competitive in this highly cutthroat environment. Modern business intelligence provides the right foundation to help retailers in their data management processes, ensuring updated information at any time so professionals can make fast but reliable and correct decisions. Business intelligence takes care of automation, visualization and analytics of your operations so you can have a clear visual representation of what's going on and where, hence, you can focus on why and optimize your operations. A retail dashboard can fully support you in the process

Manufacturing

Our business intelligence by industry rundown wouldn't be complete without the manufacturing industry. Missing one essential information during a specific production stage can mean serious damages to the manufacturing company, where robust decision-making is a key element to successfully perform and outperform business goals and objectives. Many different parts need to work together perfectly to establish the best possible performance of the manufacturing sector, and BI can act as the prime source for structure and reliable solution to merge all relevant processes and eliminate any possible error. Through a manufacturing dashboard that consolidates important data through real-time analytics, has features such as immense interactivity and can predict what will happen in the future, manufacturing processes can easily be optimized and improved

FMCG (Fast-moving consumer goods)

The fast-moving consumer goods is another industry that has not been left unharmed with the advances of modern times. With more and more competition popping up every day, including big retailers and small sustainable businesses, FMCG companies have struggled to fight for brand awareness and to gain a place in new growing channels such as the e-commerce market. With such high competition, implementing business intelligence solutions can help FMCG managers to save money on inventory and supply costs as well as visualize patterns of consumers purchasing behaviours to give the best experience and products in this crowded market.

Business Intelligence Usage in CA Firms

It is observed that small professional firms continue to rely heavily on Microsoft Excel and to some extent, inbuilt tools within accounting software/ERP systems for data analytics. The use of data analytics is also limited to audit functions.

Whereas large accounting/consulting firms are investing heavily in adopting data analytics, artificial intelligence and machine learning. Such technology is being used across tax, auditing, consulting and risk management. For example, A large audit firm has an AI-enabled document review platform that can review and extract relevant information from contracts, reducing man-hours spent on this process by up to 50%.

While large firms are creating their own platforms for effective data analytics, small and medium firms have access to off-the-shelf solutions. As these tools and software become more affordable, tech-savvy chartered accountants have started using them to have an edge.

With the accounting moving in-line with the business process by implementation of the ERP systems, as the focus on Corporate and IT Governance increases, the issues around accuracy should go down. Also, the skill around checks and balances which was considered a premium one for the accountants could now be taken over by the computer. This makes analytical skills on the available data, a significant one for the professionals to acquire, so as to differentiate themself from the competition.

There is a growth in the number of businesses using data analytics, in the same way, an auditor would do. With the help of such tools, businesses can get more insights into risk and performance. In such cases, they would have greater expectations from their auditors for advice on potential risks. Without the use of data analytics tools, it will be difficult for the auditor to meet client expectations.

Use of data analytics is very necessary to enhance audit quality, find potential risks and communicate audit findings more effectively.

Small firms can leverage data analytics to generate insights from accounting data and provide value-added services to enhance their revenue.

Thoughts on Way Forward

As we can see, data points have influenced the business landscape and different technologies have changed the way businesses are run. This is evident from the wide range of sources providing inputs, different tools, applications and ERPs processing the data and wider reach of market made available for goods and services. With Technology becoming an imperative in the life of a common man, it is inevitable for businesses. While RPA, AI/ML, Deep Learning have been around for quite some time, we are seeing the emergence of Metaverse, ChatGPT, IOT creating some disruptions. Though DA and BI will continue to remain as business imperatives, how technologies would evolve is a matter of time. Along with Geo-Political scenarios, we can expect changes in socio-economic fabric globally. It would be an interesting story of space, pace and scale.

Overview of Kirtane & Pandit

Kirtane & Pandit LLP, Chartered Accountants (KPCA) is an Accounting, Auditing & Consulting firm with a widespread established network of financial experts across India. With the "Step ahead, Always" motto, we partner your growth journey with the delivery of sound financial solutions & value added approach.

With an extensive experience of 65+ years, we deliver a wide range of professional services in the areas of Assurance, Accounting & Advisory to listed & reputed companies from varied industries across the globe.

We are a registered member of PCAOB, SEC, USA & feature as an A category firm of RBI and C&AG.

6+ Decades of Experience

Operating across India with **7** Offices

30+ Partners

700+ Employee Strength

Client spread across **30+** Industries

Global Reach across **17+** countries

kpca@kirtanepandit.com | www.kirtanepandit.com