

Harnessing the Power of Data Analytics for Assurance and Compliance



The modern era of accelerating digital disruption requires Chartered Accountants (CAs) to become effective knowledge workers by updating their competencies and skill-sets to add value and remain relevant. Rapid digitisation has resulted in transformation of most of mission-critical enterprise data into digital form. CAs must learn to harness the power of technology enabled by data analytics to provide not only traditional assurance and compliance services but also innovative IT-enabled services. This article provides an overview of impact of technology on enterprises and CAs and outlines what is data analytics and what are its benefits. Key features and functions for using data analytics for performing various types of assurance and compliance assignments are also explained. Read on...

Overview

In the early days of computerisation, the focus of enterprises was on connecting business processes with Automation to Accounting whereas the

focus of (CAs) was on connecting Automation to Assurance and Analysis. In this digital age, the focus of enterprises is on connecting business models, business processes, delivery Platforms and services to online/real-time automation to compliances and analysis whereas focus of CAs is on primarily connecting this automation of information systems to perform assurance, ensure compliance and provide value delivery of various services.

When data takes digital form, it brings with it inherent risks of access, availability and security.



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The good news is that human intelligence of highly-skilled professionals such as CAs becomes more relevant to mitigate risks and implement right level of controls. The need of the hour is to get empowered with new technology skills to be future-ready. CAs must learn to chart their destination in this new digital age by complementing domain knowledge with technology skills.

Impact of Technology on Auditors

We are living in the knowledge age which is shaping the knowledge economy. The pace of growth is accelerated by increasing power of new-age technologies and innovative platforms and models. This knowledge era of dynamic digital innovation requires increasing application of thought to technology to create innovative digitised services. Earlier, businesses embedded technology but in modern enterprises, technology embeds business as all mission-critical business processes, organisation structures, policies and procedures and compliance requirements are embedded inside and facilitated through technology. We are seeing how Tech-enabled enterprises such as Ubers, Amazons, OYOs and many others with their innovative information systems have digitised tangible assets with their attributes of availability by connecting supplier to customer without owning any of these tangible assets.

CAs as knowledge workers of digital economy must constantly update their competencies and skill-sets in tune with the rapidly changing digitally empowered business environment to provide traditional assurance and compliance services. CAs play a pivotal role as evaluators of digital data for providing assurance, verifying compliances and are facilitators of enterprise growth through digital transformation. Hence, working knowledge of data analytics can empower CAs to access and analyse this vast repository of digital information.

Technology and GST Compliances

Government and regulatory agencies are giving a rapid push to digitisation which mandates the need to use technology to ensure and verify compliances. We have recently witnessed implementation of GST which is the biggest reform of compliance automation in terms of scope, size, regularity and level of interaction between the Government and tax payers for the business transactions.

Technology is the edifice which facilitates the implementation of GST in India not only for the Governments but also for various stakeholders who must comply with the law. This has caused a mandatory paradigm shift for all stakeholders including tax payers and professionals to use technology to interface and interact with the GST Network.

The GST law is complex in its various manifestations and requires understanding and interpretation of law to ensure compliance. This has created new service offerings for CAs. However, CAs must look beyond interpretation of law to implementation and compliance of GST using technology as IT is the backbone for ensuring successful compliance of host of regular compliance requirements. Understanding how to use right software tools is the key for success as GST is a transaction-based technology driven compliance which requires matching of credit at various stages until it reaches the end user. The GSTN is both a 'Business to Business' and a 'Business to Government' data exchange and the triangulation of Business records of supplier and buyer with GSTN in GST compliance makes it imperative to use automation. There is an imperative need for reconciliation of various types of transactions of different stakeholders at periodic intervals. All these reconciliations are of data which is in a digital form, which can be performed effectively using data analytics. CAs play a very critical role in facilitating continuous compliance and providing assurance for their clients. For providing these services, the GST data available in digital format in various technology platforms must be accessed and analysed. This analysis of digital data can be most effectively performed by using power of Data Analytics.

What is Data Analytics?

Data Analytics is a generic term for Computer Assisted Audit Tools and Techniques (CAATTs) and covers the collection of tools, techniques and best practices to access and analyse digital data. Data Analytics empowers auditors to use technology to audit digital data thereby giving access to 100% of the data and to analyse data to infer insights from information. Data Analytics enables auditors to optimise audit time and add value. Data Analytics involves real application of thought to data as data analytics can process

data to information but human intelligence with domain expertise is required to infer insights from this information.

Data Analytics is defined as the science of examining raw and unprocessed data with the intention of drawing conclusions from the information thus derived. It involves a series of processes and techniques designed to take the initial data and having sanitised the data, removing any irregular or distorting elements and transforming it into a form appropriate for analysis so as to facilitate decision-making. In simple terms, data analytics refers to the science of examining raw data with the purpose of drawing conclusions about that information. There are two types of professionals in the field of Data Analytics.

1. The Data Scientist whose focus is on use of various statistical techniques to data. He/she is involved in developing intelligent applications which help users to draw inference from data and not just Big data.
2. The Data Analyst whose focus is on drawing insights from data from a business perspective. He/she is a business domain expert who uses simple/easily available features of MS Excel, application software, querying tools, utilities or data analytics to access, analyse and interrogate data.

Developing functionality using power, speed and memory of technology, to access and analyse massive amounts of data is the job of data scientist. However, what query is to be run on what data and how to draw inference as applicable to real-life situations is the job of CAs/Business Analysts. Harnessing power of technology to achieve enterprise objectives is provided by the science of data analytics. However, the practical application with business perspective to achieve specific goals is performed with the art of data analytics.

Data Analytics and Assurance

Using Data Analytics for assurance requires understanding of business processes and application of relevant techniques to specific areas of control to identify conformances, deviations, exceptions and variances in the digital data being audited. For example, when data analytics is used to obtain audit evidence in a financial statement audit, it is used for:

- Discovering and analyzing patterns, deviations and inconsistencies, and
- Extracting other useful information in the underlying or related data through analysis,
- Modelling and Visualization for the purpose of planning or performing the audit.

Financial Statement Assertions can be evaluated by auditors by using data analytics on the relevant digital data. For example, financial data can be evaluated for:

- **Completeness:** Whether all transactions and the resulting information are complete.
- **Accuracy:** Whether all transactions are processed accurately and as intended and the resulting information is accurate.
- **Validity:** Whether only valid transactions are processed, and the resulting information is valid.
- **Authorization:** Whether only appropriately authorized transactions have been processed.
- **Segregation of duties:** Whether controls regarding appropriate segregation of duties and responsibilities as defined by management are working as envisaged.
- **Compliance:** Whether all applicable compliances are complied with, within the required time-frame.
- **Cut off:** Whether only the transactions for the period which they belong are accounted.

Examples of Data Analytics software

The value of Data Analytics is in what it brings through its effective implementation. Data Analytics can be performed using various types of software such as:

- **MS Excel:** Spread software of Microsoft has various features useful for auditors.
- **General Audit Software:** Add-in for MS Excel with specific CAAT functions.
- **General Audit Software:** Data Analysis Software with specific CAAT functions
- **Application Software:** Standard and Ad-hoc Reporting and Query features available

or specific functionalities designed for auditors.

- **Specialised Audit Software:** Audit software designed to work in specific software.

Benefits of Data Analytics

With digitisation, enterprises are moving from manual controls to automated controls. Auditors with the responsibility to review these controls cannot use manual methods. Hence, it is imperative to update audit tools and techniques to review automated controls. Data analytics enables auditors to leverage power of IT for providing better assurance with greater assurance by facilitating access, analysis and interpretation of relevant data as required. The key benefits of using data analytics is that it increases personal productivity of auditor as well as that of audit function thus adding value. Auditors can do more with less time using data analytics.



Fig. 1: Seven Key Benefits of using Data Analytics

Auditors can Use Data Analytics to Demonstrate Value

Data Analytics can be used for various types of assurance, compliance and consulting assignments. For example, in assurance assignments, the assurance process must include understanding of business processes, regulatory and compliance requirements, organisation structure and technology deployed specifically application software and format of digital data which is to be obtained and analysed. This is highlighted in the following diagram.

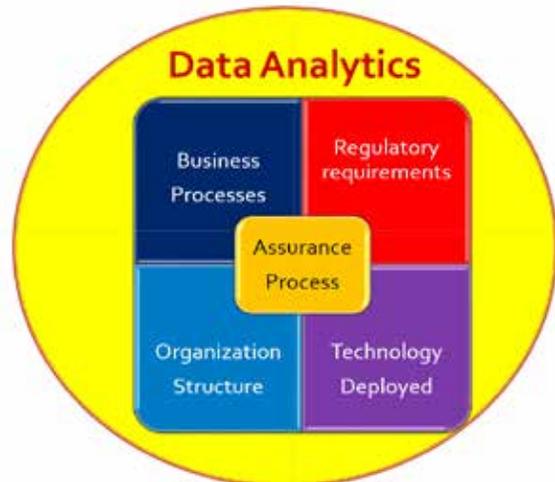


Fig. 2: Assurance Process for using Data Analytics

Using data analytics in audit planning stage requires the following steps:

- **What:** Prepare list of specific objectives that should be addressed by audit.
- **When:** Define the period covered in audit and obtain data for that period.
- **Where:** Define sources and format of data required for analysis.
- **Why:** Prepare the list of specific criteria to be applied for analysing the data as applicable for audit such as Tax audit, GST Audit, Internal Audit, etc.
- **How:** Prepare detailed list of different types of tests performed to meet audit objectives.

Data Analytics can be used by auditors for the following:

- Establish facts as applicable.
- Explore hunches as required.
- Obtain insights from data.
- Confirm hindsight from data.
- Validate foresight from data.
- Draw inferences from information.
- Provide report of practical actionable insights.

Examples of Specific Audit Tests

Given below are some examples of audit tests which can be performed using data analytics:

- **Limit:** Test whether data is within specific limits

- **Range:** Test whether data is within specified range
- **Reasonableness:** Test whether data is within reasonableness applicable for each group of data.
- **Duplicate:** Test whether data has duplicates and identify/list them.
- **Sequence/Gap:** Test whether data is in sequence and identify/list gaps in data.
- **Format:** Test whether data is in specified format & identify data which does not conform.
- **Outlier:** Test whether data is beyond specified boundaries of data based on no. of times of average or standard deviation.
- **Existence:** Test whether data exists in all rows/fields.
- **Consistency:** Test whether data is consistently following same structure.
- **Validity:** Test whether data is valid as per specified criteria.
- **Link/Relationship:** Test whether data has link with another table based on unique field(s).

Steps to Applying Data Analytics

The seven steps for applying Data analytics are listed here.



Fig.3: Seven Steps of Audit in an IT environment

Where can we use Data Analytics?

The Data Analytics Working Group of IAASB released a publication titled: “Exploring the Growing Use of Technology in the Audit, with a Focus on Data Analytics”. The following diagram highlights impact of data analytics on audit quality.



Fig.4: Impact on Audit Quality, courtesy IAASB

Key functions of Data Analytics

There are multiple types of data analytics software which have varied types of features. As stated earlier, it is not necessary to use specialised software, but auditors can use the reporting and querying features of application software deployed in the enterprise. However, general audit software can be applied for multiple environments and is designed for specific use of data analytics. The most common features of data analytics software are summarised here:

Curate: Refers to transforming data in a standard structure to be usable for data analysis as required. Curation of data ensures that data is formatted and purified for use in data analytics. This include specific functions for cleaning the data by removing specific characters (alphabetic/numeric), transforming data, deleting specific data, converting data format and transposing data.

Profile: Refers to the act of analysing the data contents to get an overall perspective of data. This helps in validating data at a macro level and assessing whether the data is correct and complete. This includes functions of overall statistics of data, searching, grouping or re-arranging data and specific functions for stratifying, summarising, classifying, aging, totals/count, Top/Bottom ‘X’ Records and highlighting data based on specific criteria.

Analyse: Refers to examining the data in detail to discover essential features by breaking data into specific components by grouping, identifying and reviewing specific features. This includes functions for identifying gaps/duplicates, unique, outliers, format, changes between two sets of data, sampling, filtering, split data and fuzzy match.

Investigate: Refers to observing or querying the data in detail. This involves systematic examination of data by making a detailed inquiry or search to discover facts and insights to be arrive at a conclusion. This includes functions for advanced analysis such as Pareto, ABC, Quadrant, Cluster, MIS, Statistical, Querying data; consolidate/collate data, Relative Size Factor, Benford Law and relating, comparing and joining files based on specific criteria.

Document: Refers to automatically documenting functions performed using data analytics software. This includes functions such as rerun, refresh, audit log, indexing, etc.

Utilities: Refers to the functions which complement

and enhance the use of MS Excel and are great time-savers. This includes functions for tagging data in rows/columns or files and protecting specific information.

Tools: Refers to specific functions for simplifying routine tasks which complement the functions of MS Excel by accessing larger volume of data in a faster way. This includes functions for navigating data based on rows/columns or files, hiding/unhiding and protecting specific information.

Top 20 Functions of Data Analytics

There are host of functions available in various types of data analytics software. However, some of the most common, popular and powerful functions are briefly explained here:

S. No.	Function	Brief Description
1	Harmonise data	Reformats the selected data (column headings, rows, etc.) automatically as per standard tabular format for performing data analysis.
2	Stratify data on Numeric, Date or Character	Groups selected data into different strata based on intervals.
3	Aging	Computes difference of selected two date columns and stratifies on specified intervals for computed date difference.
4	Summarize data	Groups each distinct value in a numeric column and displays corresponding count and sum.
5	Cluster or Quadrant Analysis	Displays data into specific clusters/quadrants as per the specified percentage for each category for selected two numeric columns.
6	Column Statistics	Displays column-wise statistics of numeric, date and character data.
7	Identify Duplicates/Unique	Displays all duplicate/unique records in the selected columns. Duplicates can be identified based on all fields to get exact duplicates.
8	Identify Gaps	Displays all successive numeric records whose difference is within the given interval.
9	Outlier Analysis	Displays records that are outside the specified boundaries based on specific criteria.
10	Date Sequence	Finds the difference between two successive dates.
11	Sampling:	Extract specific samples from the population based on specified criteria.
12	Split data	Splits the selected data into multiple tables based on specified values.
13	MIS	Displays the count, total, minimum, maximum and average of records for the selected period based on selected period of month, quarter, day of week, etc.
14	Pareto	Displays items in two separate categories as per the Pareto (80:20) rule/specific percentage given for each category.
15	Relative Size Factor	Displays the variation between highest value and second highest value in terms of difference and multiple (difference/second highest value) for specified numeric column.

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16	Benford's Law	Displays variance in patterns of numeric data based on Benford's Law.
17	Join Files	Displays records after joining data from two tables based on common/uncommon column values.
18	Consolidate	Displays consolidated count and sum of each distinct value in the selected column for selected set of tables.
19	Compare Files	Displays count, sum/difference of two or more similar columns from two different tables with options to see results of different comparison types.
20	Analytical Review	Displays the difference between values of two numeric columns in number and in percentage.

Conclusion

Data is the new Oil, but Analytics is the engine which empowers digital data for enterprises and CAs. Data Analytics provides the google maps for audit journey by providing overall macro perspective of data with option to navigate into specific area as required. Age old methodologies of audit cannot be applied to data of new age technologies. The new digital platforms and new business models require newer perspectives of analysing data. Data Analytics can empower CAs to exploit their expertise to effectively

enhance value of traditional services and create new services. Data analytics is a must-have capability for the audit function and is widely expected to become a big part of its future. The skill-sets of data analytics enable auditors to optimise the resources of Time, Knowledge, Skills, Competency and Intellect. Any digital information that is auditable is a potential candidate for using data analytics. We need to upgrade skill-sets to move up to new orbit in your careers. It is time to invest in learning Data Analytics to be prepared for the digital Future! ■

