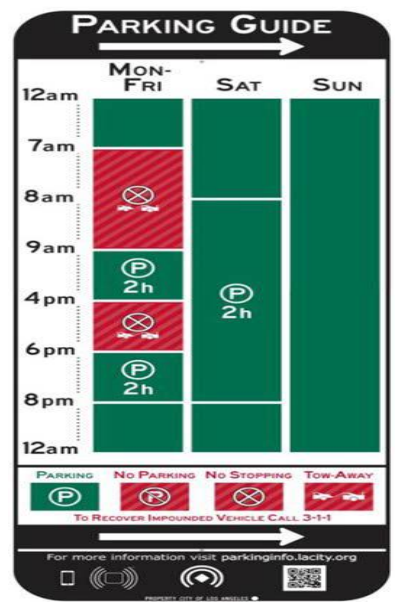


How Data Analytics is Disrupting the CPA Profession

Leah Donti, CPA, CMA, MBA
Nov. 15, 2022 12:45pm – 1:35pm
Welcome!



Real Life Analytics



What is Data Analytics?

- The science and art of **discovering** and **analyzing patterns**, identifying **anomalies**, and extracting other **useful** information in data through **analysis**, **modeling**, and **visualization**.
- Data analytics is the use of raw data to produce insights or conclusions that can be acted upon
- **Audit data analytics** are data techniques that can be used to perform risk assessments, tests of controls, substantive procedures, or concluding audit procedures.

What is data analytics comprised of?

1. **Data Connection**
 - ▶ Connect directly to source systems
2. **Data Transformation**
 - ▶ Think 'Automation'
 - ▶ Prepare, blend, and analyze data from multiple data sources
 - ▶ Construct repeatable workflows with an audit trail
 - ▶ Automatically refresh the workflow when your data changes
3. **Data Visualization**
 - ▶ Examination of raw data to allow for conclusions to be made
 - ▶ Reach insights by readily displaying factors and highlighting anomalies
 - ▶ Help quickly interpret data and "manage by exception"

Why Data Visualization?

- **The wall of data**
 - *“Critical facts that lie hidden in data can only be seen in a picture.”*
- **Stephen Few, Signal, 2015**
 - *“The greatest value of a picture is when it forces us to notice what we never expected to see.”* - **John Tukey, 1977**
- Data visualization allows us all to see and understand our data more deeply. That understanding breeds good decisions.
- Without data visualization and data analysis, we are all more prone to misunderstandings and missed opportunities.

Questions Data Analytics can Answer for Auditors:

What are significant transaction classes?

Are there unusual transactions?

Is cutoff reasonable?

Are transactions recorded and processed timely?

What periods may have greater risk?

What groups or invoices may have greater risk?

Data Analytics – Example 1

- **Company Profile**
 - The business is a wholesale distributor and sells widgets to retail stores.
 - Payment terms of 30 days.
- **Data Used**
 - 1 year of J/Es, reconciled using the opening trial balance plus the sum of all the current year J/Es to generate an expected closing trial balance. The expected closing trial balance is compared to the actual closing trial balance to determine the completeness of the population of J/Es.
- **Objective of Analytic**
 - To obtain support for revenue recognized by tracing sales to A/R, and then tracing to cash.

Example 1 cont'd

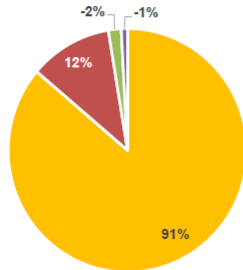


- **Sales Cycle**
- **Expectation is that all sales will be recorded to A/R, which will all be received in cash within approximately 30 days.**

Example 1 cont'd

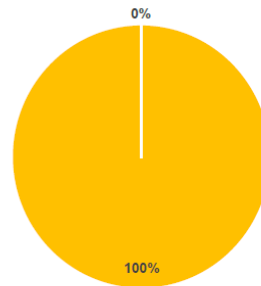
- **Scenario 1:** Real world example where not all of sales are booked into A/R, but taxes, allowance for doubtful accounts, and allowance for returns reduces the amounts booked to A/R.

Destination of Sales Journal Entries



- Accounts Receivable
- Allowance for Returns
- Taxes Payable
- Allowance for Doubtful Accounts

Destination of AR Journal Entries

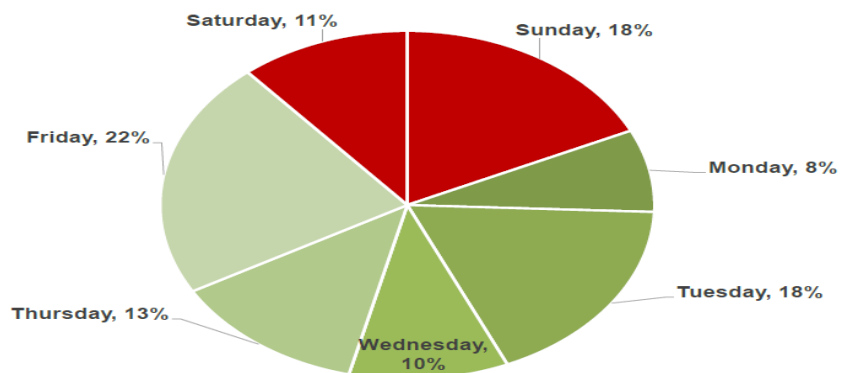


- Cash
- Other

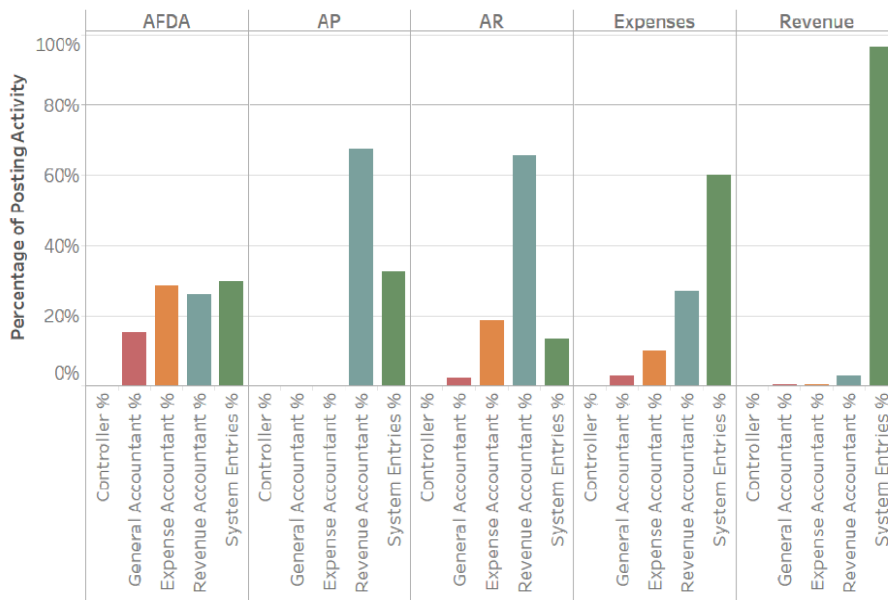
Example 1 cont'd Posting Trend Analysis

- **Scenario 2:** Assessing the posting trends for Revenue and AR/Cash by day of week to determine if the concentration of transactions matches expectations of client.

Posting Trends Analysis by Day of Week

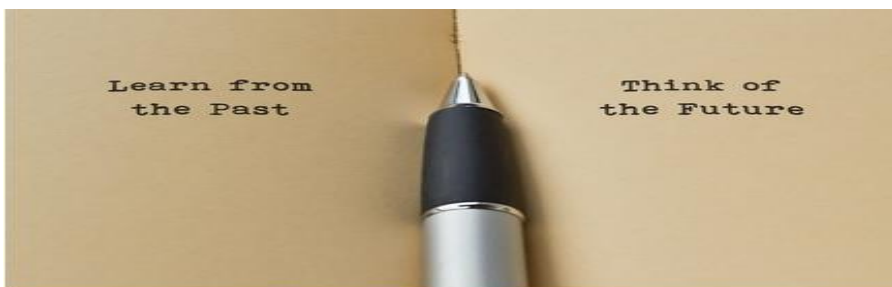


Example 1 cont'd - Preparer Mapping for J/Es



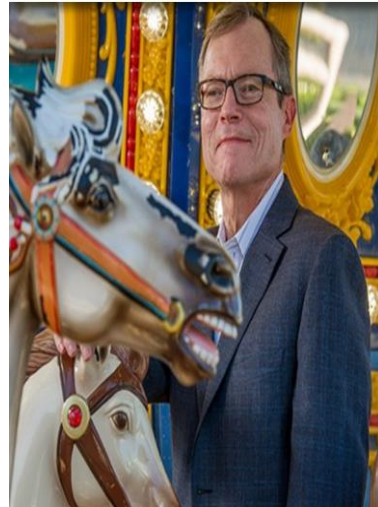
Big Data Implications for Accounting

- automate processes
- sift through volumes of data for abnormalities more efficiently and effectively than humans can
- Reshaping bookkeeping, financial statement audits, and reviews

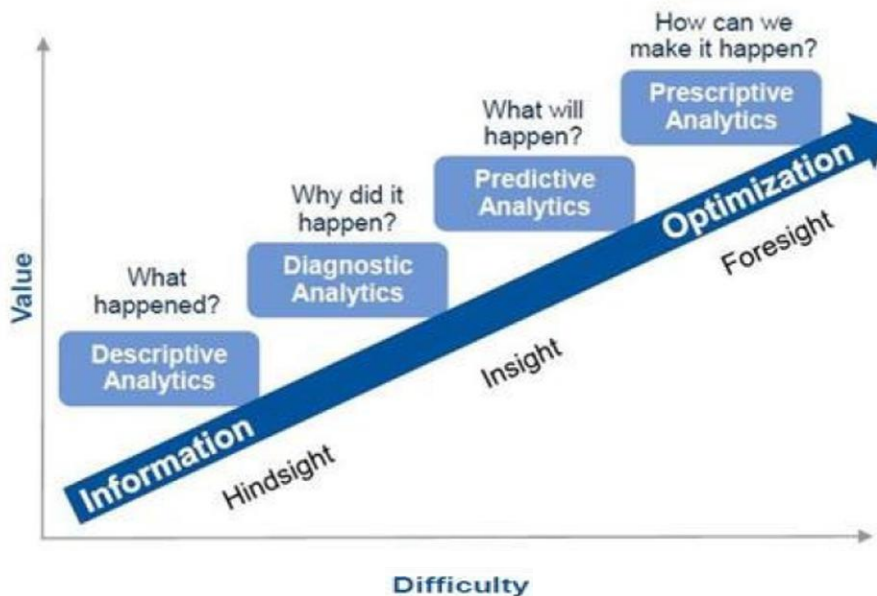


Apex Parks Case Study: AI in Finance

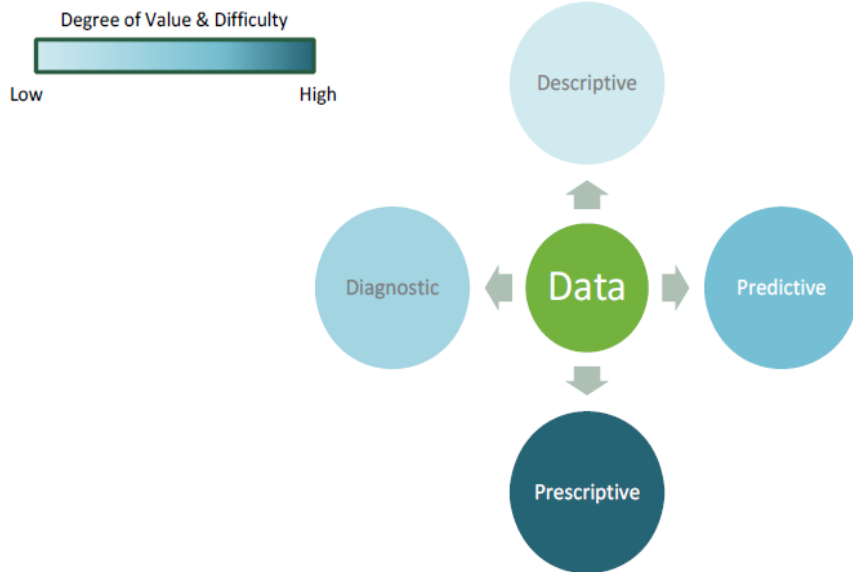
- Richard Fox, CPA, the vice-president of data science and analytics for Apex Parks Group, says analytics can help an organization get to the root cause of what is driving performance.



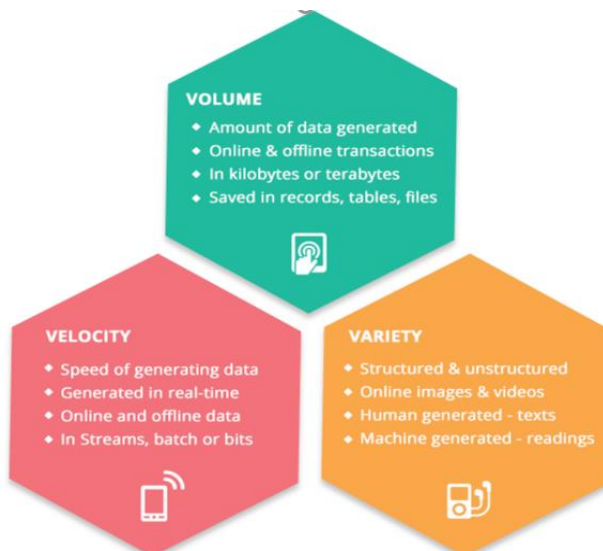
Types of Data Analytics



Data Analytics cont'd



The 3 Vs of Big Data



The phrase "big data" is often used in enterprise settings to describe large amounts of data. It does not refer to a specific amount of data, but rather describes a dataset that cannot be stored or processed using traditional database software.

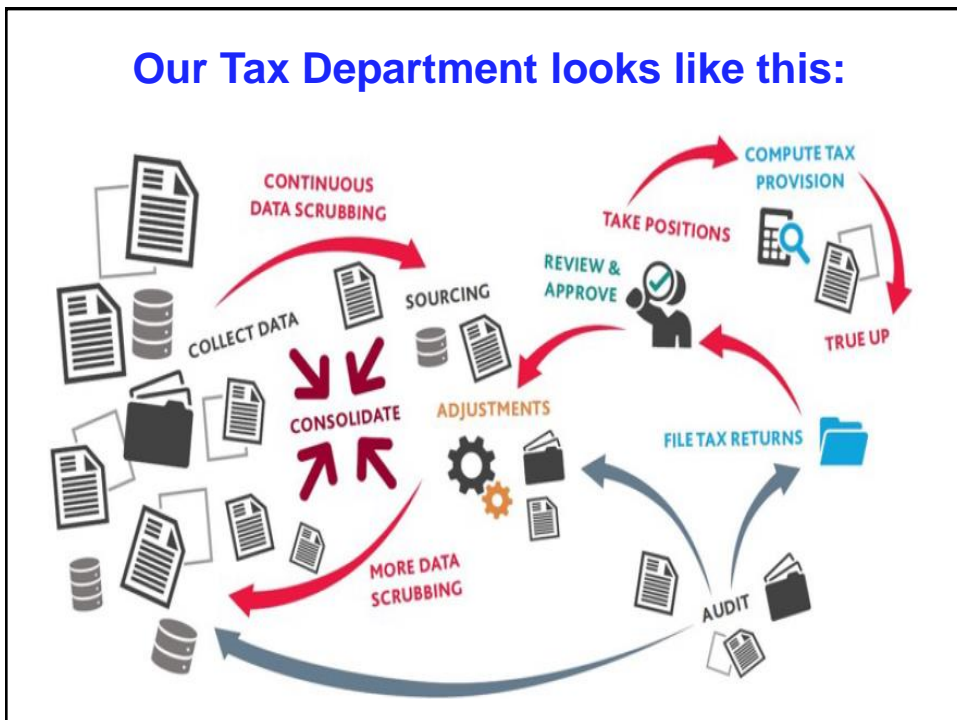
Source: Tech Terms

Source: Wishworks

What makes data management critical?

- ▶ Data is the life-blood of the tax function.
- ▶ Companies have to deal with multiple disparate source systems with reporting being done at different layers of granularity.
- ▶ Reporting requirements are such that multiple stakeholders may each want different perspectives on tax data, making data management essential to serving their needs.
- ▶ Data management is at the foundation of an intelligent tax function.

Our Tax Department looks like this:



Impact of reality in the tax function

- Resource constraints
- Lacking timely access to the right data
- Missing a seat at the table
- Overly focused on the day-to-day

Macro trends impacting the tax function

- Digital disruption
- Finance transformation
- Tax legislative changes
- Cost management
- Shifting talent demands

Why is data analytics becoming popular today?

Ease of Use

- ▶ SaaS tools meant for non-technical users to learn and adopt
- ▶ Tax department users can 'own' the technology and may not have to rely on outside resources for assistance

Economical

- ▶ Often these tools are already in use in other departments of the company so it may be as simple as inquiring and requesting additional licenses
- ▶ If not already in use, they typically result in reasonable costs

Speed to Deploy

- ▶ Depending on the complexity of the process, the time spent taken from use case selection to deployment may be around 4 –8 weeks

Accounting & Tax department goals driving data analytics

1. Short close cycle to deliver faster results to management
2. Develop improved standards and documentation for deliverables
3. Automate where possible to free up time for analysis and strategy
4. Balance the workload amongst Department team members
5. Organize and structure data to allow for improved insight
6. Mitigate financial statement and tax audit risk

The Big Data Explosion



Source: IBM

The Big Data Explosion cont'd

Zeta bites

- Doubling all the data every 18 months eg. emails, sales orders
- Big data compounds the raw data as it creates patterns to analyze it



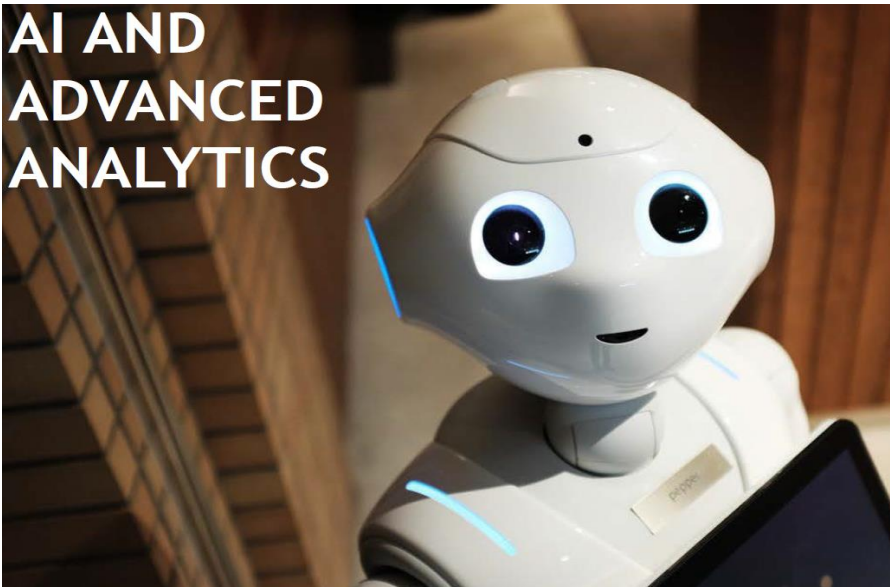
For years, Companies Have Used Data to Understand and Track Past Performance.



Now, the availability of **huge quantities of information**, combined with **the availability of tools that can sift through this data effectively**, are **changing the way businesses use information**.

- ▶ Prescriptive Analytics
- ▶ Predictive Analytics

AI AND ADVANCED ANALYTICS



Data Analytics Process



What is intelligent automation (IA)?

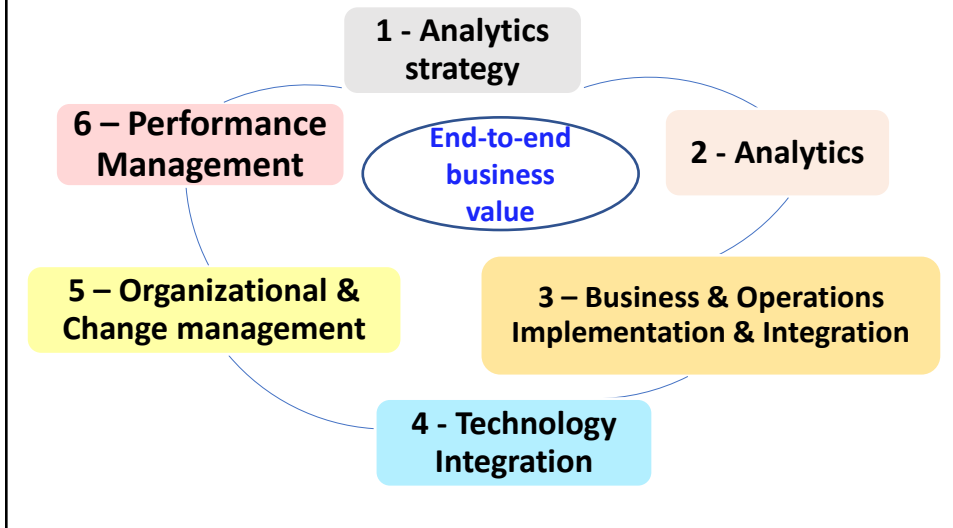
- is process improvement through redesign, enhancing underlying data system capabilities and exploring the use of innovative technology solutions.
- IA is realized when viewing a process with an **automation lens** to identify opportunities for enhanced efficiency and consistency with reduced manual effort.

Redefining Success



Today's Competitive Market

Realizing value from big data and analytics is an end-to-end process



Artificial Intelligence (AI)

- is the technology that can reason and learn from a task.
- AI processes mimic how a human would respond to an issue as evidenced by AI's work behind voice recognition platforms on Google, Apple, and Amazon devices.
- But AI can also be used to describe a family of technologies that have the potential to make improvements to future processes based on the results from past processes.