

Data Analytics: The Wave of the Future for CPAs

By C. William (Bill) Thomas, CPA, Ph.D.

Data analytics is becoming a way of life for all of us. Figuring out ways to analyze “big data” and use it effectively is transforming the business world, including our roles as CPAs.

It Starts in the Mind

The advocates of data analytics call it “the analytics mindset,” but it really boils down to a process that has existed for many years, involving critical thinking and the ability to perform impactful research. Here are the steps.

1. Ask the right questions. Discern the issues facing your business. What solvable problems do those issues bring out? What do you want to accomplish with the data that are available? What would you like to know beyond the data that are available? Who are the stakeholders impacted by answering the questions? Formulate questions in such a way that answers can yield results that lead to an impactful decision.
2. Identify relevant and appropriate data sources. Gather the data and transform it into a usable format.
3. Apply appropriate data analytics techniques. This might require everything from simple sorting of the data to advanced mathematical or statistical analysis.
4. Evaluate the results and make a decision. Interpret results as you see them. Do they make sense to you? How might others view them? Be sure to relate the results to the questions that you asked and make a judgment as to whether the results of your research answered those questions or whether, in some cases, they raised new questions. Ask whether further analysis is required to meet the objectives raised by your original questions.

5. Communicate the results verbally and in writing to stakeholders in a way that will influence their judgment.

Can't I Outsource This?

Perhaps you're thinking that the above process is so specialized that it requires hiring a high-level IT professional or data analyst. Although this might be the right strategy for some complex questions, the point is that *mainstream business professionals of the future, including CPAs, need to adopt (or at least appreciate) the data analytics mindset.* With so much more data becoming available to us through use of technology, we all need to recognize its potential to do more for us and to adopt approaches to leverage it in a way that will add value to our businesses. Adopting the mindset is the first step on the journey.

How is Data Analytics Transforming Various Jobs in the Accounting Profession?

Data analytics is already having a significant impact on the accounting profession. Here are a few examples:

- Tax: Federal and state taxing authorities are finding new ways to collect tax data directly from companies and individuals in a real-time fashion and share it with other taxing authorities, creating more transparency and improving cash flows for taxing authorities. Major areas include transactions tax, tax reporting, risk analysis and monitoring, and transfer pricing analytics.
- Audit and compliance: Auditors can use data analytics to gain deeper insight into the risk profile of a company to better enable inherent and control risk assessments on audit engagements, and thus facilitate better audit planning. In addition, because of the proliferation of data analysis tools, audits are evolving toward the application

of audit procedures to entire populations (rather than merely sample items) and identification of transactions with unusual characteristics, thus permitting more effective interpretation of audit results.

- Fraud: Companies are using data analytics to develop more proactive fraud monitoring and detection techniques. Fraud specialists are using textual and sentiment analysis programs to scan emails and other corporate data for key words or phrases that might signal fraudulent activity.
- Corporate strategy and budgeting: Sophisticated predictive data analytics techniques are being used in making forecasts and projections. Companies are developing tools to analyze customer data at a more granular level through broader sources of data, including social media, online shopping carts, etc. This allows companies to create and market customized solutions based on individual customer profiles.
- Operations: A much larger and wider variety of data is being made available, revealing details of processes, identification of bottlenecks and creation of efficiencies that lower costs and improve profitability.

Training the Future Talent Pool

Transitioning to a data-analytics driven world requires training of the workforce of tomorrow. Colleges and universities across the world are developing new data analytics curricula and drawing from a talent pool that is cross-trained not only in business, but in science, technology, engineering and mathematics (STEM) areas. Business schools are trying to attract more students trained in these areas, and to develop MBA and other masters' degree or certificate programs to prepare them for the challenges of the world of big data. ■

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