ARTIFICIAL INTELLIGENCE
THE NEXT FRONTIER IN AUDITING
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There’s a buzz in my industry right now unlike any other time in my 15 years as an accounting professor at the Villanova School of Business (VSB). Accounting is swept up in what some are calling the “Fourth Industrial Revolution”—the explosion of technology that’s changing lives and careers in immeasurable ways. Artificial Intelligence is quickly becoming integral to the audit process and as an educator, I couldn’t be more excited to prepare aspiring accountants for this new era.

New technology has been making its way into accounting for some time now, starting with the recent rise of data and analytics. In a piece I wrote last year for this publication entitled, “Data, Analytics and the Path to a CPA”, I described how rapidly improving technology and analytics empower accountants to take a more thorough look at the audit-relevant data. Gone are the days of examining only a sample of ledger data; today, accountants use analytics to examine the entire ledger of structured data more quickly and with greater insight into the organization.

Now many accounting leaders are looking ahead toward Artificial Intelligence to mine the vast universe of unstructured data—the legal agreements and other documents that are necessary to an audit but do not readily conform to a spreadsheet. Like past industrial revolutions, technology is creating efficiencies to dramatically alter the way accountants spend their time.

For those starting an accounting career, this environment offers tremendous career potential but for many, it’s hard to look beyond what’s on the immediate horizon. Recent college graduates want to pass the CPA exam sooner than ever before and it’s prompting some to find creative ways to complete the required 150 credits as undergraduates in lieu of graduate studies. While I commend the work ethic and ambition, I offer these students another perspective.

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The talent needs of the accounting industry are rapidly changing today. Faced with ever increasing competitive pressures in the audit space, leading firms need accountants who also understand data, technology and the broader business. There’s no better place to cultivate this kind of higher-level thinking than graduate school and those accountants that excel in these disciplines will be well-positioned to pioneer the changes ahead and succeed.

What Artificial Intelligence Means (to Accounting)

For those students who remain skeptical about technology’s impact on accounting, I show them the title of a recent article: “Alexa, Write an Audit Opinion”. Adopting
Intelligent Virtual Assistants in Accounting Workplaces.”1 Indeed, Artificial Intelligence (AI) is reshaping our industry considerably.

AI enables computers to apply human-like thinking, reasoning, and learning to expand our capacity for data in terms of quantity, speed and accuracy. It’s a broad term that encompasses Machine Learning, Natural Language Processing, Deep Learning, and a variety of other sub-specialties. While its application is very much in its infancy, AI will undoubtedly play a central role in the audit practice, given the rapid growth of audit-relevant data. From 2011 to 2018, over 1.2 billion people entered the financial system for the first time and each of them represent financial transactions not previously included in the system.2 These circumstances demand more automated solutions to ensure that auditors can provide the same level of assurance.

What’s more, accounting firms feel strained to streamline audit costs without sacrificing quality. Many are turning to AI to reduce human intervention and it’s a game changer. What once took days of auditors’ time can happen in a matter of hours—and the industry is only starting to tap AI’s full potential.

For example, EY uses Natural Language Processing (NLP) to analyze lease contracts and extract a significant amount of the audit-relevant data without human intervention. According to a 2017 report, “Pilots show that AI tools would make it possible to review about 70%-80% of a simple lease’s contents electronically, leaving the remainder to be considered by a human. With more complex leases (in real estate, for instance), that figure would be more like 40%, but as the tools improve, and the machines learn, it is likely that more complex contracts and data can be read, managed and analyzed.”3

KPMG leverages AI in a similar manner with commercial mortgage loan files and views NLP as something of a companion to auditors. “These capabilities will augment our auditors’ judgements and decision-making process and ultimately provide better, more effective audit evidence,” explains Bill Tomazin, Regional Managing Partner, West and Managing Partner of National Audit Solutions at KPMG U.S.4

Some have raised concerns that AI will minimize the need for accountants, but employers see it differently. While AI will reduce the time spent combing through monotonous documents and tedious tasks, accountants will spend more time on what deserves their attention. As PwC articulated, “Only human beings, such as an auditor, can tell the true story behind the data.”5

Preparing New Accountants for the Revolution

While the industry emphasizes the continued need for accountants, Artificial Intelligence will undoubtedly transform the role. It’s no longer enough to focus on audit standards, financial accounting, reporting, and taxes. According to Deloitte, “[Accountants] need to be savvy navigators of the new digital world, recognizing how and when to leverage technologies to im-
prove the quality and value of the audit.  

Going forward, auditors will spend more time at the intersection of accounting and technology (See Figure 1). While they will still investigate those anomalies that require the judgement only an accountant can provide, they will spend more time working with relational and non-relational databases. They will collaborate more with programmers on building algorithms behind the Machine Learning and the Natural Language Processing. Most importantly, they must visualize the data clearly and convey useful insights to the business.

This new paradigm demands advanced thinking and a more multi-disciplinary mindset from new accountants. With the continued growth of AI, auditors today must reach beyond accounting standards to acquire a broader skill set.

Employers share this point of view. “Auditors... need superior communications skills, deep industry expertise, and the ability to think critically and creatively while using technology to manipulate and analyze client and external data and find hidden risks and insights. They will also need strong technology skills and experience in key areas such as data analytics and visualization.”

In the past, I told my students there’s no better opportunity to develop this broader perspective than in graduate school. Now I tell them that there’s no better time for it because this technological revolution shows no signs of slowing down.

When we developed the Master of Accounting with Data Analytics (MACDA) at VSB, we decided to take an interdisciplinary approach that merged accounting with analytics and technology. We knew it wasn’t a matter of training accountants to be programmers; rather, they need a broader perspective to navigate their way around large pools of data with greater confidence.

That’s why analytics and technology are infused throughout the MACDA curriculum and not relegated to one or two classes.

We also believed that real-world examples and hands-on learning would emphasize the interconnectedness of data, accounting and the broader business. It allows students to exercise their professional skepticism and curiosity about the data while also considering the business implications. They also think about how to collaborate with data scientists, programmers and other disciplines to effectively integrate technology into the audit process to deliver greater assurance and more insights. Best of all, they graduate prepared to lead in this new era of auditing. As an added benefit, they can fulfill the credit requirement for a CPA, without sacrificing the quality of their undergraduate education.

We are only beginning to grasp the potential for Artificial Intelligence in our industry. Those entering accounting now will find vast potential to leverage data, analytics and technology in new ways to deliver the assurance and insights that the world needs from auditors and I expect that those prepared with the right mindset will be at the forefront of it all.

About the Villanova School of Business

The Villanova School of Business (VSB) undergraduate program is ranked #1 in the nation by Bloomberg Businessweek and its online specialty graduate business programs are ranked #2, and its online MBA program is ranked #13 by U.S. News and World Report. VSB has been at the forefront of business education since it was founded in 1922. Serving over 2,700 undergraduate and graduate students, VSB is home to five Centers of Excellence – the Daniel M. DiLella Center for Real Estate, the Elenore and Robert F. Moran Sr. Center for Global Leadership, the Center for Business Analytics, the Center for Marketing & Consumer Insights and the Center for Church Management – with each designed to foster innovative, cross-disciplinary research and applied opportunities for students. VSB is known for academic rigor; creativity and innovation; hands-on and service learning opportunities; a firm grounding in ethics; and an applied education that prepares students to become outstanding leaders and global citizens within the ever-changing, complex, and fast-paced world of business. For more, visit business.villanova.edu.

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THE VILLANOVA
MASTER OF ACCOUNTING
WITH DATA ANALYTICS

Designed with direct input from global accounting firms, the Villanova Master of Accounting with Data Analytics (MACDA) is an innovative program that integrates data analytics with other essential skills - valuation, risk, tax, fraud, and qualitative skills – to prepare students to become multi-dimensional accountants. Students become equipped with the skills needed to meet the real-world, real-time challenges of today’s accounting industry.