

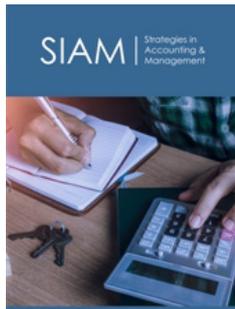
# Grooming Accountants of the Future

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## Opinion

Business enterprises are now operating in the fourth industrial revolution or Industry 4.0. As described by Professor Klaus Schwab [1], Industry 4.0 has introduced a range of new technologies that are combining the physical, digital, and biological domains. Schwab [1] suggests that the current industrial revolution affects all disciplines, economies, and industries. Advancements in technology, such as cyber-physical systems, artificial intelligence (AI), and the Internet of Things, can yield positive benefits for businesses and society. Marr [2] for example, advocates that these technologies can connect billions of more people to the web, significantly improve the efficiency of business organizations, and help regenerate the natural environment through better asset management.

A 2017 study by the McKinsey Global Institute reveals that technology and automation can increase global productivity growth by 0.8 to 1.4 percent annually [3]. Industry 4.0 has and will continue to change the employment landscape as advancements in robotics, machine learning tools, data mining, AI, and other technologies allow cognitive tasks to be automated Frey and Osborne [4]. Estimates in the McKinsey 2017 report show that half of today's work activities could be automated by 2055 [3]. For the accounting and auditing profession, the risk of automation is particularly high. Consider the following sound bites presented by Allan D Koltin, CEO of Koltin Consulting Group at The Advisory Board's Winning is Everything Conference (2017)<sup>1</sup>:

A. Mark Cuban (of Shark Tank fame), when asked what the next industry is to become obsolete, answered, "The accounting profession. They will be replaced by robots."

B. Barry Melancon, our fearless and awesome leader of the accounting profession, commented, "Over the next five years, up to 40% of all accounting work will be done by robots."

C. A Big 4 leader said earlier this year that, "By 2020, college campus recruiting at their firm (and possibly at all Big 4 firms) will be reduced by 50%. We just don't need that many accountants anymore!"

A recent academic work by Frey and Osborne [4] examine the susceptibility of over 700 occupations to computerization. They estimate that the profession of accountants and auditors have a 94 percent probability of computerization. The occupation of bookkeeping, accounting, and auditing clerks have a 98 percent probability of computerization Frey and Osborne [4]. Deloitte's 2015 report on the impact of automation on the Swiss job market reveals a similar outlook – the occupations of accountants, tax advisers, and related professionals require a high level of education but have a 95 percent probability of automation [5].

The Big Four auditing firms are already implementing AI and related technology initiatives that automate some human tasks. Deloitte developed a document-review platform that automates the process of reviewing and extracting information from legal contracts,

<sup>1</sup><https://koltin.com/pdfs/Koltin%20Top%2010%20Sound%20Bites%20of%20the%20Year%2012-15-17.pdf>

thereby reducing laborious human efforts [6]. In 2017, EY launched a global proof of concept expanding the use of drones in inventory observations. Audits of automobile manufacturers, for example, will use drones to conduct an automated count of vehicles at manufacturing plants<sup>2</sup>. As touted in its website, PwC has partnered with H2O.ai “to build a revolutionary bot that uses AI and machine learning to ‘x-ray’ a business, analyzing billions of data points in milliseconds, seeing what humans can’t, and applying judgement to detect anomalies in the general ledger<sup>3</sup>.” Finally, KPMG has developed a portfolio of AI tools called KPMG Ignite. Its document compliance assessment engine uses AI to automate the reading and review of leasing and investment agreements [6].

Will AI and other Industry 4.0 technologies render the accounting profession obsolete? Technologies will not completely eradicate the accounting profession. The spring 2019 report by CPA.com about the rise of AI suggests that AI is not a replacement for humans but is fundamentally just a tool, which aids human work by making tasks more efficient, accurate, and less time-consuming. <sup>4</sup>Further, as stated in the remarks by Allan Koltin, “humans will always be necessary. For things like empathy, curiosity, passion, creativity, intelligence, innovation, and intuition. These things will never be automated or replicated.” Nevertheless, the nature of the accountant’s job responsibilities and the client’s expectations and demands for accountants will undoubtedly change and expand. Advanced technologies can certainly automate the collection and entry of accounting data. Technologies can even automate the process of transforming accounting data into usable information. Once the system outputs information, accountants can become more involved and add value. Specifically, accountants can leverage their communication skills to present and explain the information to the client effectively. Accountants can also provide value by helping clients solve business problems. Accountants of the future also ought to assume more of a leadership role in the business decision-making process. Accountants are in an ideal position because they understand accounting information and comprehend how accounting affects all other areas of the business. However, understanding the information is not enough. Accountants ought to demonstrate that they can use accounting information to generate business decisions and insights that are valuable for the client. In this regard, persuasion and influencing skills become key for the accountant. Not only does the accountant need to show that they can produce prudent business decisions, but they also need to be able to convince the client to take a particular course of action. In sum, there is an opportunity for the accountant to be involved in improving the business as opposed to just being a provider of information.

The Practice of Now 2019 report by Sage confirms that the role of the accountant is going away from the stereotypical image of a bookkeeper to a business advisor offering a broader set of business management services<sup>5</sup>. The Sage report also reveals that accountants need additional skills to remain competitive, such as relationship building, business advisory, and industry experience outside of accounting. For the external audit setting, Deloitte’s Audit of the Future Survey suggests that a majority of financial statement users, audit committees, and financial statement preparers agree that auditors should provide assurance on information beyond traditional financial statements<sup>6</sup>. In early 2019, Forbes reported about one of the first known cases of AI-enhanced investigations uncovering accounting fraud. California audit firm Gurseay Schneider LLP utilized AI-enhanced audit tools to go through over six million transaction records, ultimately finding over \$2.8 million in fraudulent transactions [7]. While AI can automate the review of massive data points and flag suspicious transactions, human judgment, understanding of context, and analyses are still required to verify a fraud event [7]. To embrace the challenges posed by Industry 4.0, accountants ought to develop the following competencies:

### **Accounting expertise**

Having technical skills in accounting will continue to be necessary. Accountants will still need to have a strong foundation of accounting knowledge.

### **Technology expertise**

Technology assumes a critical role in the accounting function and the general business environment. Reports suggest that accounting firms have begun hiring more employees with backgrounds in science, technology, engineering, and math (STEM). To remain competitive, accountants ought to develop literacy in various technologies, such as AI, business intelligence, big data, database management, the Internet of Things, etc.

### **Data analytics**

With the advent of Big Data, accountants should be proficient in data analytics. Such proficiency will give accountants the ability to examine the veracity and viability of data. Additionally, accountants should demonstrate the ability to analyze data in a way that creates value for decision-makers.

### **Business knowledge outside of accounting**

Accountants of the future will operate more as strategic advisors. They can provide value by helping clients use accounting information to solve business problems and make business

<sup>2</sup><https://www.ey.com/ro/en/home/press-release-ey-scaling-the-use-of-drones-in-the-audit-process>

<sup>3</sup><https://www.pwc.com/gx/en/about/stories-from-across-the-world/harnessing-the-power-of-ai-to-transform-the-detection-of-fraud-and-error.html>

<sup>4</sup><https://www.cpa.com/sites/cpa/files/media/resources/whitepapers/the-rise-of-artificial-intelligence-cpacom-report.pdf>

<sup>5</sup><https://www.sage.com/en-gb/blog/practice-of-now/>

<sup>6</sup><https://www2.deloitte.com/us/en/pages/audit/articles/the-future-of-audit-survey-and-innovation-report.html>

decisions. It would be fruitful for accountants to build knowledge in other areas of business, such as marketing, management, production and logistics, supply chain, etc.

### **Relationship building**

Accountants can maintain a competitive advantage by building strong relationships with clients. In this regard, accountants ought to work on improving their communication skills as well as critical thinking and problem-solving abilities. Accountants that can preserve high customer satisfaction will be the ones that thrive.

### **Continuous learning**

In this fourth industrial revolution, technologies will continue to advance and evolve. The advancement rate will likely speed up instead of slow down. Therefore, accountants must have the mindset to learn and adapt to new environments continuously.

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