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### Automation and the Accounting profession

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# AUTOMATION AND THE ACCOUNTING PROFESSION



CLARENCE GOH, SEOW POH SUN AND GARY PAN

## HOW YOUNG ACCOUNTANTS CAN ADD VALUE AND THRIVE

Automation poses a threat to many of the tasks that are performed by accountants today. Certainly, many emerging technologies have already begun to perform tasks that have traditionally been performed by accountants. For example, advancements in cloud-based accounting software now make it much easier for small businesses to easily and accurately enter and edit financial information on their own without the input of accountants. Looking further into the horizon, newer technologies can now turn hard-copy receipts into a machine-readable format, encrypt them, and allocate them to an account without any input from a human. Such developments will continue to reduce the reliance of businesses on accountants.

However, rather than fear the coming wave of automation in the accounting profession, young accountants should embrace these new developments as opportunities for them to perform more value-added tasks and to expand their sphere of influence within their companies. Indeed, this would echo the sentiments expressed by Prime Minister Lee Hsien Loong at the recent G-20 summit in Germany, where he said, “When it comes to digitalisation and jobs, we must not yield to our fears and anxieties. It is wiser for us to be optimistic and work hard to make our hopes come true.”

## FIVE PATHS TOWARDS EMPLOYABILITY

Experts have identified the augmentation strategy as something that employees in the modern economy could use to navigate the coming wave of automation in the workplace. Rather than fight automation, accountants should instead consider how their skill sets can augment automation. In this respect, the article “Beyond Automation”, published in the June 2015 issue of Harvard Business Review, identifies five perspectives that employees can take to realign their contributions in an environment of rapid automation.

First, employees can *step up*, to perform tasks that cannot be performed by computers. This is especially so given that while computers are likely to be able to handle mundane bookkeeping and accounting tasks like record-keeping and data entry, they are unlikely to ever be able to perform tasks (such as strategy and planning work) that involve higher levels of abstraction.

The second perspective – *step aside* – recognises that not every employee will have the opportunity to step up to perform higher-level strategy and planning work which is typically undertaken by senior managers. In such instances, however, it is possible for employees to identify tasks within their existing job scopes that cannot be substituted by automation and to focus on these tasks while stepping aside to allow technology to take over those tasks that can be automated.

Third, when automation processes break down or when changes in the business environment lead to changes in a company’s automation needs, a human is required to *step in* to rectify the situation. We discuss how young accountants can embrace automation using the *step in* strategy in the next section.

The fourth perspective encourages employees to *step narrowly*. This approach involves finding a niche within the profession that would allow an employee to thrive amid ongoing automation.

Finally, the *step forward* perspective encourages employees to work towards developing the next generation of computing and automation tools. With rapid advancements in technology, many opportunities exist for employees to ride on these technological advancements to develop new tools.

	How you add value	Example
<b>Step up</b>	You may be senior management material - you're better at considering the big picture than any computer is.	The automation of mundane lower-level tasks frees up the accountant who can now use his or her creativity and experience to perform higher-level strategy and planning work, and use automation as a tool to achieving his or her goals more efficiently.
<b>Step aside</b>	You bring strengths to the table that aren't about purely rational, codifiable cognition.	The automation of many of the tasks traditionally performed by an accountant would allow him or her to <i>step aside</i> from those tasks, and to focus on other aspects of his or her job - such as stakeholder management, advisory, or other tasks that involve interpersonal interaction - which cannot be easily automated.
<b>Step in</b>	You understand how software makes routine decisions, so you monitor and modify its functions and outputs.	Even as automation becomes more widely adopted in accounting, computers are still going to need human input in order to meet the needs of the business. An accountant with the necessary skills can <i>step in</i> to rectify the situation when automation processes break down or when changes in the business environment lead to changes in a company's automation needs.
<b>Step narrowly</b>	You specialise in something for which no computer programme has yet been developed.	Mastery of XBRL, a financial reporting language, could help accountants develop a niche in an area that is poised to grow in importance as automation becomes more prevalent.
<b>Step forward</b>	You build the next generation or application of smart machines - perhaps for a vendor of such machines.	Emerging technologies in artificial intelligence and machine learning are particularly well-suited to developing tools and processes in emerging areas such as continuous auditing.

Adapted from "Beyond Automation", Harvard Business Review, June 2015



## HOW YOUNG ACCOUNTANTS CAN *STEP IN*

To thrive, young accountants must *step in* to use their skills to complement technology, and to add value to their companies. Young accountants who have the skills to facilitate the introduction and implementation of technology in accounting would play a valuable role in enhancing the efficiency of accounting processes and contribute in ways that are of strategic importance to their companies.

For example, continuous auditing – a new auditing concept which seeks to leverage on technology to proactively detect and look into exceptions as they occur (rather than react to them after they have occurred) – represents an area where auditors now have the opportunity to contribute by adopting the *step in* perspective.

With continuous auditing, technology is used to continuously and automatically monitor company transactions, compare their characteristics to benchmarks, and identify anomalous situations. When anomalous situations arise, alarms will be triggered and routed to accountants for evaluation and resolution. While the technologies used to monitor company transactions are already available, accountants will have a crucial role to play by *stepping in* and applying their judgement to select appropriate technologies to build robust continuous audit processes that meet audit objectives.

Another important feature of the continuous audit framework is its reliance on technology to identify exceptions in company transactions, and for auditors to certify the robustness of the continuous audit system. Here, auditors must understand the workings of the continuous audit system, and be ready to *step in* to ensure that continuous audit processes that have been put in place continue to provide the necessary level of assurance amid changing conditions.

Another area where young accountants have the opportunity to *step in* is in forensic analysis. As data analytics becomes more prevalent, the use of advanced analytical technologies to identify fraud is set to increase.

A recent article in *The Straits Times* reported on OCBC Bank's attempts to use artificial intelligence to detect fraud. Working with two financial technology firms, the local bank plans to use artificial intelligence to combat illegal financing by searching for information on individual profiles and mapping suspicious transactions to examine how they are linked, and to determine if they are fraudulent or illegal. Forensic accountants with the relevant skills and experience can play a crucial role to *step in* to complement the artificial intelligence to complete the fraud investigation.

The areas of continuous audit and forensic analysis represent just two areas where young accountants can build a thriving career by adopting the *step in* perspective. Numerous other areas of accounting are similarly faced with the prospect of increasing automation, and accountants should proactively identify relevant areas where they can *step in*.

## **PREPARING ACCOUNTANTS FOR THE FUTURE**

Automation will alter the work of accountants in the coming years. However, accountants will always have a central role to play in business. In order to continue to thrive, the profession will need to position itself to capitalise on the opportunities that automation will bring.

To equip young accountants with the skills to do so, universities will need to ensure that students possess skills that prepare them for accounting jobs of the future. In addition to providing a rigorous accounting-based education, universities should also teach skills that will allow students to navigate a future workplace where computers and technology are the norm.

Beyond that, employers must also continue to advocate and support their employees in upgrading their skills through regular training and education. This is especially important given that future developments in technology are likely to occur rapidly and require new skill sets to navigate.

Overall, young accountants have every reason to be positive about the automation that is occurring in the profession. Rather than fear automation, accountants should embrace it. They should see it as a positive development that frees them from performing many of the mundane tasks that they currently perform, and that allows them to redefine how they contribute to business.

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