



Brendan Brady CPA, ACCA and Chartered Tax Adviser. Brendan is Partner in the firm **Brady & Associates**, a general practice and tax advisory firm. www.bradyassociates.ie

Accountancy and the Bots

In this article, Brendan Brady looks at the reality of what Artificial Intelligence can actually do and how it can propel innovation in the Accountancy profession.

The advent of double entry bookkeeping was considered one of the greatest advances in the history of finance. Even though some people still struggle to understand the difference between a debit and a credit, the concept hasn't changed since its inception which was over 500 years ago. However, as the old axiom goes, when things change they tend to do so gradually and then suddenly.

Bill Gates previously described Artificial Intelligence (AI) as the "Holy Grail". In a separate widely-reported 2017 interview with Quartz, Gates suggested that when human roles are replaced by robots there is an argument that robots should pay tax. Gates pointed out that when a human worker earns \$50,000, that income is taxed. So, if a robot does the same thing, why not tax the robot?

The interview prompted a lot of debate. Many commentators agree that while robots can't pay tax themselves, businesses could be taxed for replacing human workers with robots. Advocates of such a tax say it could combat inequality and that the revenue raised could be put to good use supporting workers in areas such as nursing homes and health care where human skills are invaluable.

Gates is not the only one thinking about how the advance of robots will impact society and work. In a paper published in 2013, Carl Benedikt Frey and Michael Osborne, of the University of Oxford, suggested that almost half (47 percent) of all jobs are at risk because of automation. Such jobs include white collar occupations like accounting, auditing, market research analysis and marketing.

Ever since General Motors introduced the first industrial robot in the 1960s, robotic hardware has taken on more and more tasks that were previously carried out by

human workers. Initially, this was mostly in the manufacturing industry but now robots are used in many other sectors. It is estimated that there are 1.7 million robots worldwide. These include self-driving cars, drones, robots used in industry, farming, entertainment, and many other areas. The legal profession, always very resistant to change, appears to be one of the last bastions to tech disruption. However, services like Courtsdesk in Ireland and LegalZoom in the US are replacing traditional legal services such as writing a will and IP protection. As accountants, we've already seen the introduction of products like Xero, Sage and Receipt-Bank which have effectively replaced the role of the traditional bookkeeper. Taxi drivers will ultimately lose out to self-driving cars while medical procedures and surgeries are increasingly being performed by mechanical robots.

How does this affect accountants?

AI for Accountants

Tidings of Artificial Intelligence (AI) replacing standard accounting tasks have been mooted for years. In a 2018 article from Forbes.com, they cited that in their upcoming research report on the future of accounting that they expect to announce that accounting, payroll, and audit tasks will be fully automated using AI-based technologies by 2020.

However, rather than seeing the replacement of the accountant, what we are witnessing now is the reality of what AI can do rather than what it was originally expected to do. Where AI enables better insight from data, it helps human experts make better decisions and augment the services that accountants are already providing.

Bank reconciliations

Who wouldn't want to leave a bank reconciliation to a robot? With the exception of a few diehards, the days of clients bringing boxes of bank statements to their accountant to be typed up by a bookkeeper or junior are over. Clients can export their transactions directly into a spreadsheet and the reconciliation is essentially done. Even in instances where clients hold onto their paper statements, these can be easily scanned and uploaded to an OCR tool for as little as 50 cents per page and within a day, a fully reconciled spreadsheet is produced. That's €50 for 100 pages. To put that in perspective, for a human to reconcile 100 pages in a day, they would need to type and analyse over 13 pages per hour.

If that's not enough to whet your appetite, apps like Sage and Xero can directly integrate with a clients' bank statement through a Yodlee bank feed. Rather than export and import a bank statement, the transactions feed directly into your accounting software. The software can then learn rules on which nominal account to post these transactions to and will even suggest matching sales and purchase invoices against bank payments and lodgements. For example, "bots" could tell and organize data that comes from the same source to various categories, thus if one has a monthly phone bill and a monthly payment for that phone bill from the same carrier, the bots automatically understand that these transactions are related and will suggest a match.

Invoice entry

There are already AI-powered invoice management systems available that can make invoice processing much more streamlined. Before apps like Receipt Bank and AutoEntry, accounting staff manually created and processed invoices from paper documents. Those documents were then manually entered into accounting systems for approval and payment. The Accounts Payable workflow can now be automated by software that analyses, recognises and exports data into a company's accounting system. They can even learn the accounting codes that are appropriate for each invoice.

Year End

The automating of these transactions throughout the financial year means that the time needed to prepare statutory year end accounts will be reduced since all the information is readily available and automatically analysed. Accounting software can post data from the different sources (bank, purchases and sales), consolidate and reconcile it. This will allow more time to be spent on advisory work such as tax planning rather than "ticking and bashing" and analysing excel spreadsheets.

Audits

Big 4 firms have been investing in the digitalisation of the audit process for a number of years. Instead of examining individual balances and requesting backup documentation, auditors will be able to use digital files and improve the efficiency and accuracy of audits. It will now be possible to audit 100% of a company's financial transactions instead of just a sample. Larger audits will become controls based and we will move away from the traditional and time consuming substantive approach of testing balances.

Chatbots

Chatbots are already used all over the internet to efficiently solve common questions from customers including when their accounts are due and more. How many times have we been asked "what expenses are deductible?", "Can I claim coffee as a business expense?", "What's the income tax deadline?". Chatbots can automatically answer these questions saving time and energy of responding to our ever-growing email inbox.

The Limitations

Notwithstanding the benefits of AI, the accuracy of the learning algorithms that are used in most of the solutions still requires improvement in efficiency to avoid errors and truly fulfil the promise of automation. AI still cannot replace the emotional intelligence humans bring to the job. Where staff were previously engaged in typing up bank statements or entering invoices, their time will now be spent analysing the work that has been prepared by AI.

Conclusion

Cloud solutions are now available to millions of users resulting in constant technological improvements. (Contrasting with older on-site software that was installed on hard drives and networks). The self-learning capabilities of cloud-based software solutions are constantly improving. These solutions essentially "learn" from their mistakes and do not make them again once humans correct them. Consequently, as clients are becoming more familiar with how to use these solutions, it invariably drives the cost of the standard compliance and accounting tasks downward as the perceived value of these services are being reduced because clients are now aware that these tasks are being completed by algorithms as opposed to accounting staff.

However, when machines take over these repetitive, time-consuming and redundant tasks, it will free human accountants to provide higher level and more lucrative services for their clients. Not only will they be more productive and proficient, it will allow accountants to handle more clients and deliver more value because they can provide actionable insight rather than just crunch the numbers. Ultimately, machines will be able to propel innovation in the profession.