



Technology and Job Market Challenges for Management Accountants

By Research and Publications Directorate, ICMA Pakistan

Technology is becoming one of the biggest challenges for management accountants which, in the near future, is also going to impact their job market, more in the global context and may be to a limited scale in the local scenario. The Research and Publications Department of ICMA Pakistan has carried out a brief research to assess how technology is creating its impact on the functions and job market of financial professionals in general and the management accountants in particular. The intention is to broaden the vision of our CMAs so that they can align themselves with the global changes and become proactive in acquiring the latest technology tools and techniques to remain competitive in the market.

It would be more pertinent to begin with a very interesting insight report, recently released by the World Economic Forum (WEF) with the title of **'Future of Jobs Report 2018'**. This report provides a snapshot of job market of tomorrow and is based on survey of over 300 Chief human resource officers and top strategy executives from leading global companies across twelve (12) industries.

The WEF has coined the term of **'Fourth Industrial Revolution'** for the job market of tomorrow as many new jobs would be created and traditional jobs would be eliminated, primarily due to the significant transformation undergoing in corporate sector as a result of continued advancement in business analytics and emerging technology breakthroughs in artificial intelligence, robotics, blockchain, big data, Fintech and the Internet of Things. The WEF Report has limited the scope of its research to five-year period from 2018 to 2022 which is more relevant for companies interested in short term planning.

The WEF survey pinpoints four specific technology advances that would be dominating business growth during the next five years [2018-2022] which are (1) Big Data Analytics, (2) Artificial Intelligence, (3) Cloud Computing, and (4) pervasive high-speed mobile internet. The report has also classified job titles in categories of 'new roles'; 'redundant role' and 'stable

roles' in all industries in both 2018 and 2022. Let's have a look at all these role projections which would be quite interesting for Cost & Management Accountants (CMAs):

New and Emerging Roles

The below 21 new and emerging jobs are set to increase their share from 16% in 2018 to 27% in 2022:

- 1) Data Analysts and Scientists*
- 2) AI and Machine Learning Specialists
- 3) General and Operations Managers*
- 4) Big Data Specialists
- 5) Digital Transformation Specialists
- 6) Sales and Marketing Professionals*
- 7) New Technology Specialists
- 8) Organizational Development Specialists*
- 9) Software and Applications Developers and Analysts*
- 10) Information Technology Services
- 11) Process Automation Specialists
- 12) Innovation Professionals
- 13) Information Security Analysts*
- 14) Ecommerce and Social Media Specialists
- 15) User Experience and Human-Machine Interaction Designers
- 16) Training and Development Specialists
- 17) Robotics Specialists and Engineers
- 18) People and Culture Specialists
- 19) Client Information and Customer Service Workers*
- 20) Service and Solutions Designers
- 21) Digital Marketing and Strategy Specialists

*(Note: Roles marked with * reflects the fact that they might be seeing stable or declining demand across one industry but be in demand in another).*

Redundant Roles

The below **21** jobs expected to become redundant are set to decrease from 31% in 2018 to 21% in 2022:

- 1) Data Entry Clerks
- 2) Accounting, Bookkeeping and Payroll Clerks
- 3) Administrative and Executive Secretaries
- 4) Assembly and Factory Workers
- 5) Client Information and Customer Service Workers*
- 6) Business Services and Administration Managers
- 7) **Accountants and Auditors**
- 8) Material-Recording and Stock-Keeping Clerks
- 9) General and Operations Managers*
- 10) Postal Service Clerks
- 11) Financial Analysts
- 12) Cashiers and Ticket Clerks
- 13) Mechanics and Machinery Repairers
- 14) Telemarketers
- 15) Electronics and Telecommunications Installers and Repairers
- 16) Bank Tellers and Related Clerks
- 17) Car, Van and Motorcycle Drivers
- 18) Sales and Purchasing Agents and Brokers
- 19) Door-To-Door Sales Workers, News and Street Vendors, and Related Workers
- 20) Statistical, Finance and Insurance Clerks
- 21) Lawyers

(Note: Roles marked with * reflects the fact that they might be seeing stable or declining demand across one industry but be in demand in another).

As can be observed, the role of financial professionals such as accountants, auditors, financial analysts as well as accounting, bookkeeping, payroll and finance clerks would become redundant in next five years.

Stable Roles

As per WEF Report, 48% of jobs as indicated below would remain stable over the 2018-2022 period:

- 1) Managing Directors and Chief Executives
- 2) General and Operations Managers*
- 3) Software and Applications Developers and Analysts*
- 4) Data Analysts and Scientists*
- 5) Sales and Marketing Professionals*
- 6) Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products
- 7) Human Resources Specialists
- 8) Financial and Investment Advisers
- 9) Database and Network Professionals
- 10) Supply Chain and Logistics Specialists
- 11) Risk Management Specialists
- 12) Information Security Analysts*
- 13) Management and Organization Analysts
- 14) Electrotechnology Engineers
- 15) Organizational Development Specialists*
- 16) Chemical Processing Plant Operators
- 17) University and Higher Education Teachers
- 18) Compliance Officers
- 19) Energy and Petroleum Engineers
- 20) Robotics Specialists and Engineers
- 21) Petroleum and Natural Gas Refining Plant Operators

(Note: Roles marked with * reflects the fact that they might be seeing stable or declining demand across one industry but be in demand in another).



These projections made by WEF in job landscape would certainly change the mind-set and hiring strategy of HR professionals in the global corporate sector and Pakistan would not be an exception. The continuing automation would lead to creation of new roles in companies as well as reductions in full-time workforce. This would also lead to changes in geographical base of operations and modification in value chains.

The jobs of accountants and auditors would become increasingly redundant due to their generally routine-based and white-collar roles and their susceptibility to advances in technology and process automation. However, this does not mean that the role and function of finance professionals would be eliminated altogether, rather this means that humans and machines would be working alongside each other and with continuous advancement in technology, more and more tasks, presently being carried out by accountants and auditors, will be automated and done by tools and machines.

The WEF survey predicts that the average task hours performed by humans would persistently go down from 71% in 2018 to 58% in 2022 and 48% in 2025. On the other hand, the average task hours performed by machines would go up from 29% in 2018 to 42% in 2022 and 52% in 2025.

Management Accountants of the Future

'Big Data' is gradually becoming the biggest ever challenge for the management accountants in the history of the profession. To cope up with this challenge, it is crucial for management accountants to make utmost effort to familiarize themselves with the development and trends in cloud-based Big data technology. They must take this challenge as an opportunity and prepare themselves to gain additional qualifications and skills in dealing with Big Data so as to avoid becoming obsolete in their respective organizations.

The current era of big data and business analytics have opened up new vistas of opportunities for the management accountants and they must groom themselves to become smart finance professionals who are in position to provide forward-looking insights to the management and provide strategic decision support to the boards. They must endeavor to transform their role to that of a trusted and valued business partner. However, to assume this broader role, the management accountants needs

upgradation in skills that is relevant to digital advancements taking place in present times.

The management accountants need to upgrade their technical and human skills to meet the future challenges in professional arena. The technical skills can be acquired from participation in trainings on data science; artificial intelligence; robotics; blockchain etc., whereas human or soft skills can be developed by focusing on creativity; originality; critical thinking; emotional intelligence; problem-solving, reasoning and leadership etc. They must also improve and enhance technical skills in analytical sciences like statistics and use of analytic software platform. The acquisition of these skills would definitely help them to broaden their perspective to harness all

organizational data and exploit management accounting tools and techniques to convert data into predictive insights. In this way only, they can be at vantage position to retain and consolidate their role in organizations and influence its strategic direction.

Performance management and variance reporting which are one of the core functions of management accountants are

going to undergo transformation. A more insightful understanding of organizational performance would replace the simplistic budget-to-actual variance reporting with the adoption of business analytics and artificial intelligence (AI). In this rapid changing scenario, it is imperative that the management accountants must build excellence in these technological tools so that they can combine the analytics and AI to play a more vibrant role in influencing strategic decision making by the management.

The management accountants of the future will be handling an infinite amount of data (big data), mostly well-oriented or real-time data from both structured and unstructured databases or new information channels (e.g. social media, mobile applications etc.) and integrate them to enable the management to make well-informed decisions. This would be quite difficult for the management accountants as they are especially trained and inclined to work with structured data, presented in shape of tables, excel spreadsheets and financial reports. They would need the capability and skills to have strong grip over massive financial and non-financial data available on cloud as well as other data formats so as to leverage them to add value to their organizations. It is interesting to mention here that by 2020, over 20% data will be in the 'cloud' which is ten times the amount of

data available today. The management accountants must also ensure that only high-quality unstructured data is collected for future processing so as to avoid 'information overload'.

To sum up, Big Data poses a serious challenge to management accountants in the near future for which they must prepare themselves in advance by learning advanced data analytics and tools. Only through adoption of new technological tools with specialization in their core competency of cost and management accountancy, they can be able to carve out their role in the future organizational set-up.

Big Data poses a serious challenge to management accountants in the near future for which they must prepare themselves in advance by learning advanced data analytics and tools

