

SUSTAINABLE DIGITAL ECOSYSTEM: SHAPING THE FUTURE OF
CA PROFESSION IN THE GLOBAL ECONOMY

WEBINAR SERIES 2020

THE IMPACT OF ARTIFICIAL INTELLIGENCE ON AUDIT AND ACCOUNTING PROFESSION

(HARNESSING THE OPPORTUNITIES OF DISRUPTIVE TECHNOLOGY)



POST WEBINAR PAPER



CA
PAKISTAN

Organized by:
Digital Assurance and Accounting Board (DAAB)



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Chairman's Message

As you are aware, the accountancy profession is rapidly changing and reshaping as new technologies are increasingly impacting the business environments. In the current scenario, the accountancy profession needs to be ready to adapt to technology in order to stay relevant and deliver valuable services in a digital economy. Sensing the pulse with an upbeat mindset, the Digital Assurance and Accounting Board (DAAB/the Board) has kicked-off this series of activities including Webinar Series titled **"Sustainable Digital Ecosystem: Shaping the future of CA profession in the global economy"** with one of the most critical challenges of revolutionizing conventional accounting and auditing world with the inclusion of **Artificial Intelligence (AI)**!

I am pleased to share the post webinar paper titled **"The impact of Artificial Intelligence on audit and accounting profession: harnessing the opportunities of disruptive technologies"** which is quite pertinent to the prevalent unprecedented circumstances where economic recovery is around the corner. It has paved the pathway toward incubating sustainable digital ecosystem for the profession of audit and accountancy.

Foreseeing this reality, the Board outlines how the profession needs to think about a technology-driven future, and how it needs to work together with IT and Technology Experts to achieve this in practice.

I am extremely glad to see this document summarizing discussions & insights of the high-level discussions on practice and businesses, for the convenience of business and finance leaders.

Rana M. Usman Khan, FCA
Chairman
Digital Assurance and Accounting Board

ICAP'S DIGNITARIES

Inaugural Address



Rana M. Usman Khan

Chairman - Digital Assurance
& Accounting Board

Chief Guest Address



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Former President ICAP

Moderator



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1.INTRODUCTION:

Technology continues to change society at a rapid pace, and accounting and auditing are by no means immune. New technologies are increasingly able to mimic human activity, taking on repetitive tasks more quickly and accurately than people can.

The Board has kicked-off a series of activities including Webinar Series with one of the most critical challenges of revolutionizing conventional accounting and auditing world with the inclusion of Artificial Intelligence! The first webinar of the series titled **“The impact of Digital and Artificial Intelligence on audit and accounting profession: harnessing the opportunities of disruptive technologies”**.

We are still a long way from true AI where, in theory, computers can think for themselves. But AI is already good at automating repetitive tasks, increasing accuracy and efficiency, and discovering hidden insights and trends. It can automatically upload documents, understand entries and classify them in the right accounting codes. By automating administrative tasks, accountants can devote more time and energy on creativity — analyzing and interpreting the data to extract real value for the business and their customers.



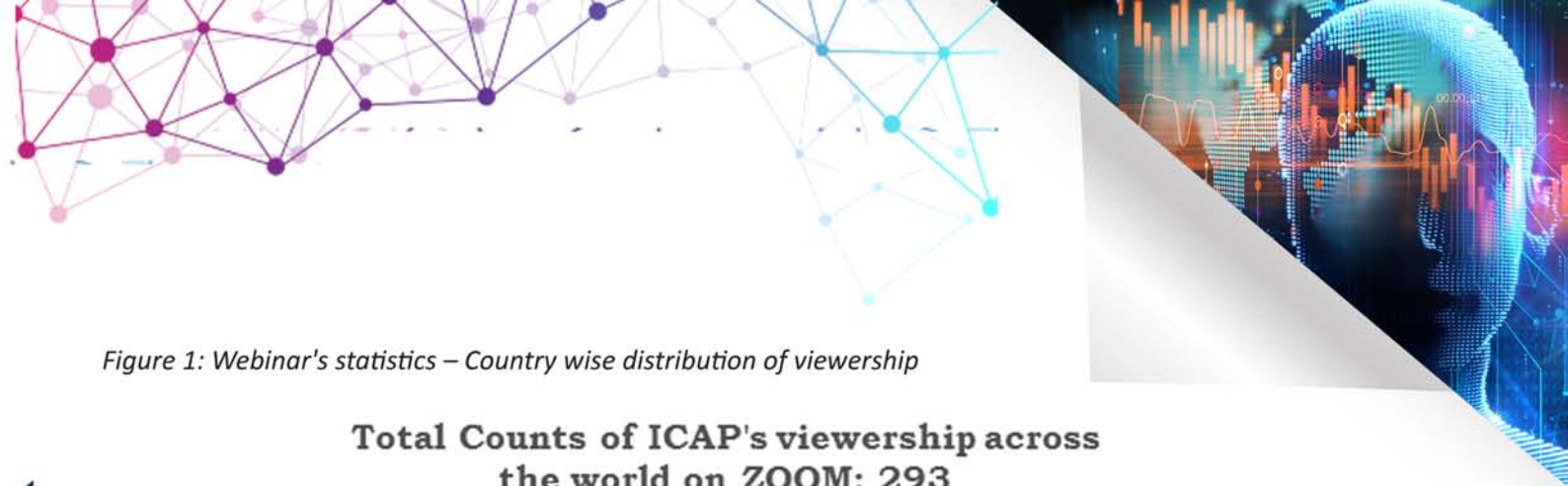


Figure 1: Webinar's statistics – Country wise distribution of viewership

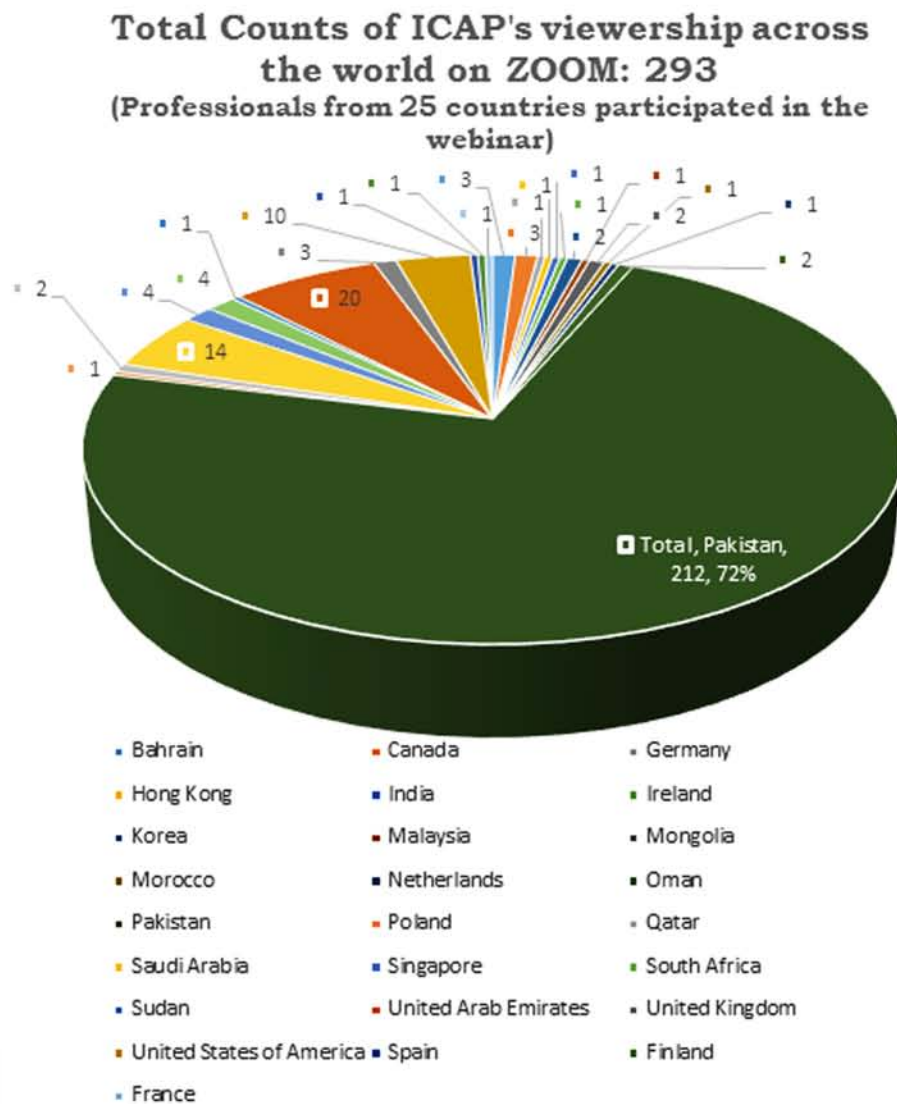
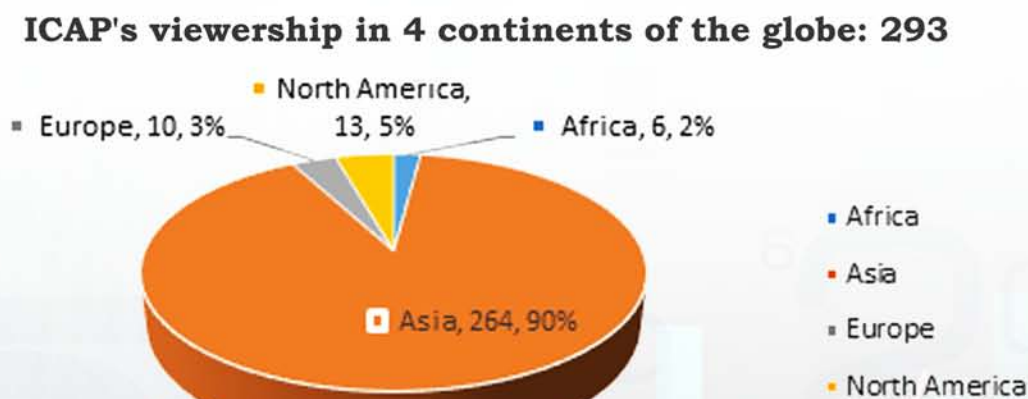


Figure 2: Webinar's statistics – Continent wise distribution of viewership

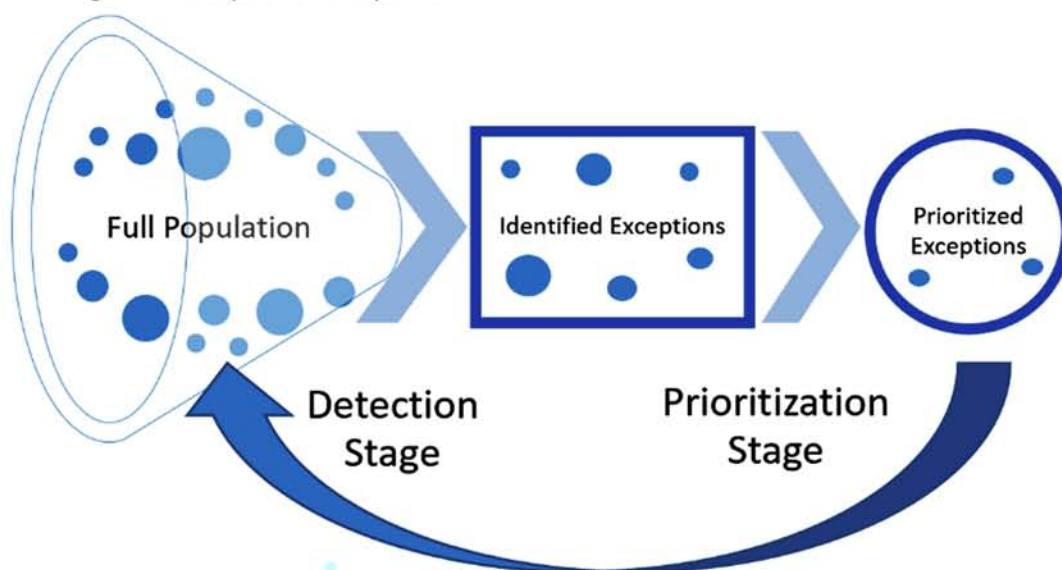




2. ARTIFICIAL INTELLIGENCE THROUGH A DIVERGENT LENS:

The accounting landscape in general, and auditing in specific, is changing due to the increased digitization of business processes. The amounts of data generated and collected increased tremendously, while the cost of storage and computational power decreased at the same pace. Information technology has become affordable and available, rendering its use ubiquitous. However, this change in landscape is reshaping the area of accounting and auditing. For instance, the large datasets, and Big Data availability, necessitate a different perspective of examining the data. Rather than analyzing a sample, current technology allows us to analyze the entire population of records, identifying exceptions, and focusing our efforts on these exceptions. This approach, which can in fact be conducted at a more frequent pace, is known as continuous assurance. In fact, this concept can be even taken further to help the human user (e.g., the auditor) process the large number of exceptions which is expected to be identified when analyzing 100% of the records. This eventually leads to the concept of Exceptional Exceptions (depicted in the figure 1) first analyzes the entire population, identifies outliers and exceptions, and subsequently prioritizes these identified exceptions in order of suspicious. Consequently, the human user is presented with a risk-based prioritized list of exceptions, enabling them to focus their efforts on the instances the present the highest risk.

Figure 3: Exceptional Exceptions

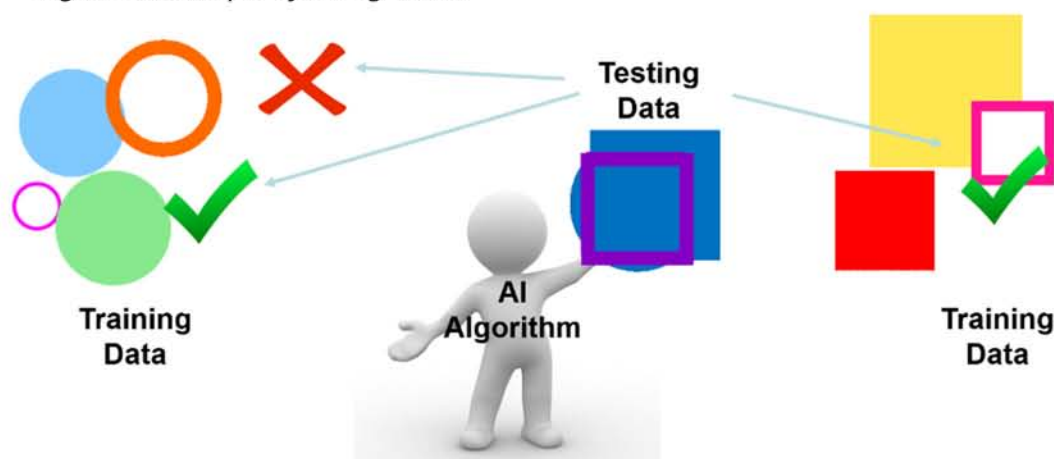




Other technologies that are affecting the accounting and auditing area include, but are not limited to, Artificial Intelligence (AI), visualization, drones, and Robotic Process Automation (RPA). To start with, AI is not a new concept. However, the increase in computational power and decrease in its cost made AI more practical for most companies. So how does AI work? AI is the concept of a machine mimicking human behavior to solve a problem or to learn. As an example, let's consider the problem of learning shapes. More specifically, how to distinguish between a circle and a square. Let's discuss how we can teach a child to differentiate between circles and squares. We show the child a certain number of pictures of each, with different sizes and colors, and every time we tell them whether it was a circle or a square. That is called the training phase. Once we believe the child learned the difference between the two shapes, we introduce new pictures and we ask the child to classify it. This is the testing phase. If the child answers correctly, it means they learned it. If they make a mistake, we continue training them. The same applies to AI in accounting and auditing. The algorithm is like the child: we train it using data that is labeled as circle or square, and then test it using new data.

More specifically, we use the training data to train the model, for example the previous year's transactions you were able to identify two types of transactions one of them is legitimate the other one is fraudulent. With the training data the algorithm understands the difference between a fraudulent transaction and a legitimate transaction. Now we bring in this year's new data and the algorithm would then predict whether this transaction will turn out to be a fraudulent transaction or a legitimate transaction. We evaluate the predictions and if we find that the algorithm flagged a certain transaction as fraudulent you find that it was legitimate this is another learning point for the algorithm (See figure 4).

Figure 4: Example of AI Algorithm



Visualization, on the other hand, gained its popularity from its ability to present data and analyses in a visual form which makes it easy to interpret. Moreover, it has the capacity of highlighting and exposing trends and patterns in the data, as well as outlier. In fact, we have seen numerous visualizations showing various information pertaining to the recent COVID-19 pandemic, such as the one below from Johns Hopkins University.

Figure 5: Illustration of the use of AI in term of Visualization

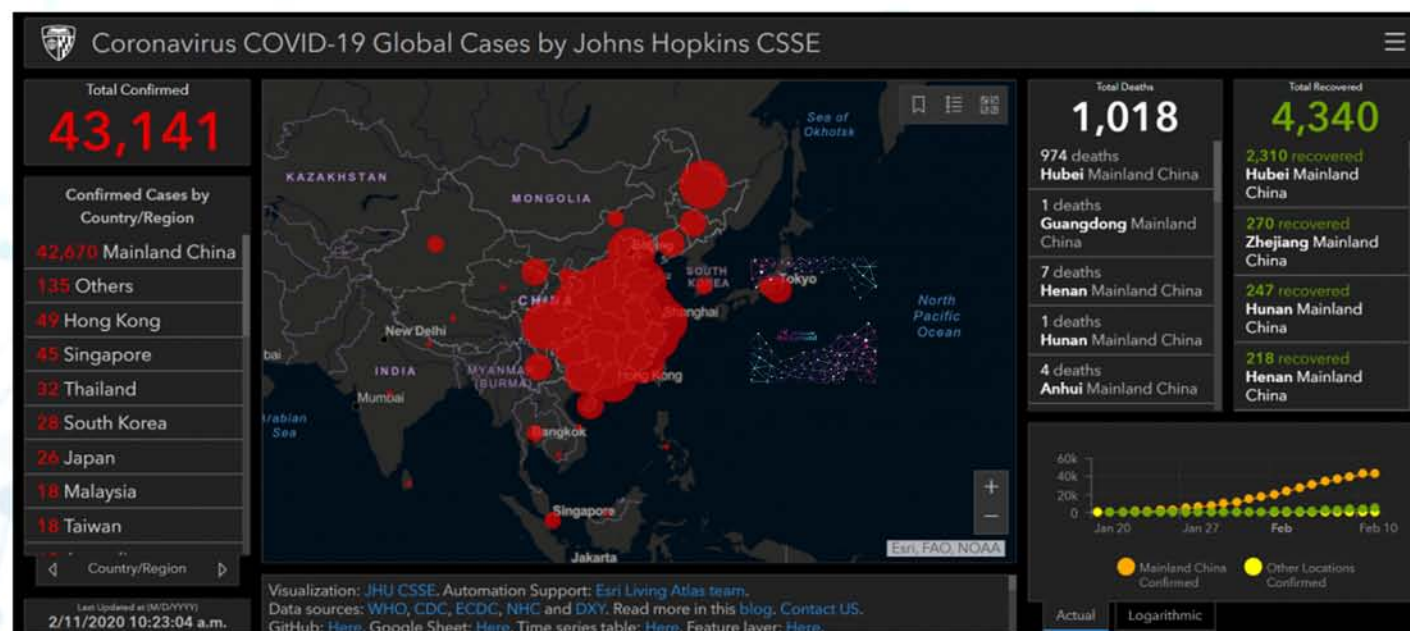


Figure 6: Example for the use of drones



Another emerging yet very promising technology is the use of drones, whether for evaluations, damage assessment, virtual visits, and inventory count. While this is still in a very early stage, several successful stories have been documented for such usage by companies and accounting firms.

Finally, Robotic Process Automation (RPA) has increasingly been adopted or at least explored in our domain. RPA is a software that has the capacity to automate routine and repetitive tasks, mostly of a rule-based nature. It runs application software in the same way that a person works with that software. Simply put, its interfaces directly with an application's user interface, emulating human interactions with that system. It is in fact this feature that allows it to function in a swivel chair manner, interacting with different applications, even with legacy systems. As long as the task requires little to no judgment, RPA can probably automate it. Examples of such tasks include logging in to websites and systems, opening, reading, and sending emails, extracting data, running analyses, fill out forms, to name a few. And despite the job security concerns many have regarding RPA eliminating their jobs, we see RPA as an assistant to the human user, where RPA would do the mundane low-value tasks, leaving the user with more time to address higher-value ones.

Figure 7: Visual Depiction of Robotic Process Automation (RPA)



What does all this changing landscape mean to the accounting and auditing professions? It means we have the opportunity to evolve and improve. We can and must take advantage of such emerging technologies in order to survive and even thrive! Failure to do so would put us at a significant disadvantage compared to other industries and areas. But embracing these emerging technologies and others, would turn us into super-accountants and super-auditors, capable of addressing the needs of not only today's market, but future ones as well.



3.IMPACT OF DIGITAL AND ARTIFICIAL INTELLIGENCE ON ACCOUNTING AND AUDITING

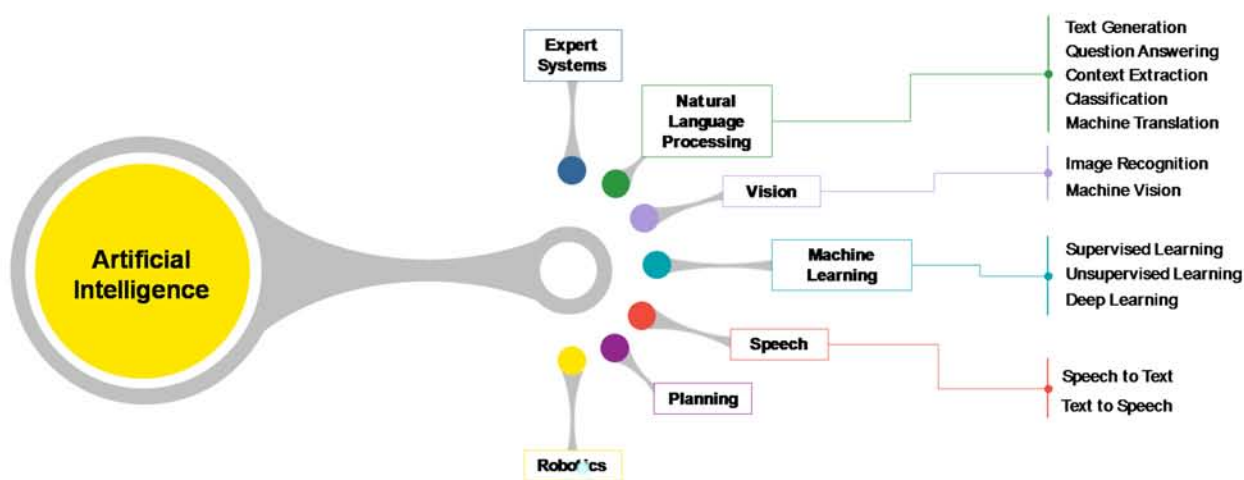
No one can deny this fact that in the 21st century, technology has transformed the way we live, work and communicate with each other. It is disrupting virtually every industry that exists, overturning old business models and creating new ones.

To understand the impact of Digital and Artificial Intelligence in the audit and finance profession, it is important to understand the forces that are driving the Fourth Industrial Revolution.

1. One of these forces is the explosion of data which is fueling digital disruption.
2. Another force is the acceleration of the pace of change which is bringing additional complexity in managing trust in an environment that is more and more uncertain.

The Fourth Industrial Revolution is being driven by a staggering range of new disruptive technologies that are blurring the boundaries between people, the internet and the physical world.

Advance computing capabilities is the first one, which has increase processing speed, brought in reliability and efficiency and then could storage. These have actually enabled us to analyse big data and perform advanced analytics through Robotics Process Automations (RPA).





The field of AI is very wide and contains multiple technologies, each with differing levels of relevance and effectiveness. However, if it is to be deployed for corporate reporting uses, AI needs to fit into a wider eco-system of the organization.

Following are general use cases:

1. OCR in accounts payable and Invoicing, with exceptions being dealt with by humans
2. OCR technology is also in use for contract scanning and implementation of IFRS 16
3. RPA to help process transactions into accounting system and consolidation, with journals, adjustments, estimates being dealt with by humans
4. Algorithms to help with ratio analysis and management information reporting creation, with interpretation and analysis being dealt with by humans
5. Use of DA in audit on entire population instead of sample and bring in effectiveness in audit
6. Use of RPA for repetitive and rule-based tasks to minimize human involvement and for bringing efficiencies

Audit is Burning platform in the 21st century. Multiple audit failures have attracted lot of attention of the regulators and investors. Secondly, pace of innovation and related emerging risks of material misstatement are driving auditors to change the audit techniques.

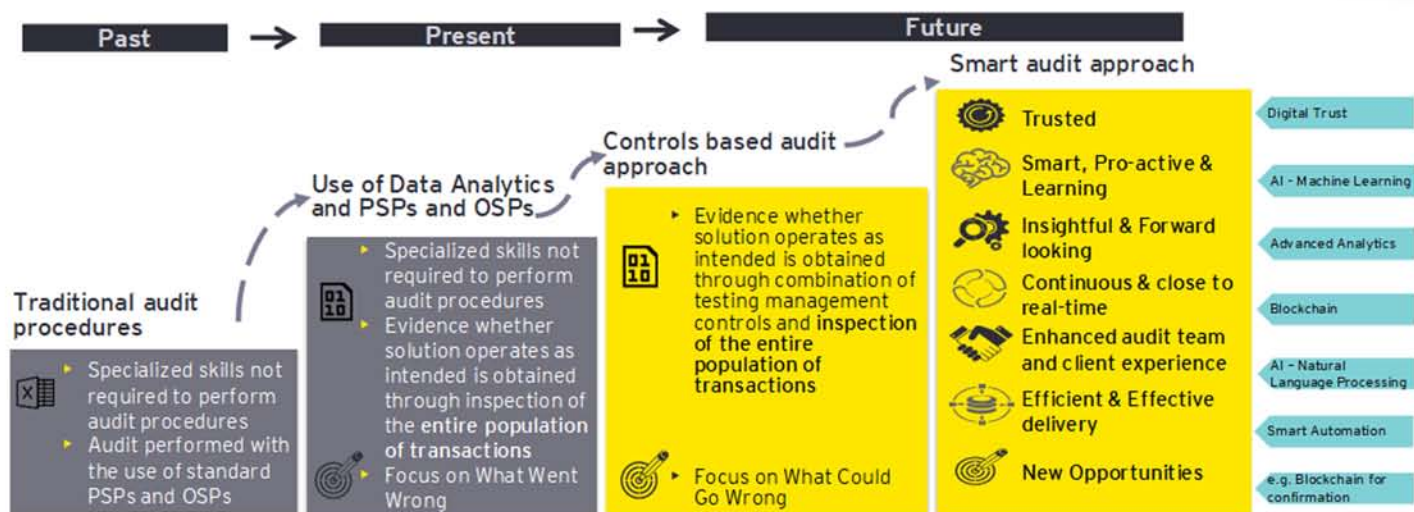
It is also important to focus on how audit strategies are evolving. Large-scale automation will allow more routine auditing tasks to be done by machine, freeing finance and audit professionals to focus their attention on more valuable tasks

Looking at the future of assurance, these technologies will enable auditors to be more agile in leveraging controls and forward-looking on the insights they can bring to decision makers. Assurance of some business processes could become more “continuous” and close to real-time.





Figure 8: Future of Audit Assurance



Big data and analytics are transforming the audit dramatically.

- Enhancing the auditor's ability to gather audit evidence from the analysis of larger populations, including enabling better risk-based selections from those populations for further testing by the auditor.
- Providing broader and deeper auditor insight of the entity and its environment, which provides the entity being audited with additional valuable information to inform its own risk assessment and business operations.
- Stakeholder expectations regarding the use of technology in the financial statement audit are evolving. Developments in technology, both within the financial reporting systems used to initiate, process, record and store data representing the information in the financial statements, and the tools and techniques available to analyze that data, are resulting in questions from stakeholders regarding how data analytics fits into the current risk based audit model.

Data analytics driven audit focused on obtaining sufficient and appropriate evidence over the entire population of transactions by performing procedures on the processing of transactions summarized in the account balances. Using data analytics, we focus on the transaction flow and obtain substantive evidence over the recording, processing and reporting that has taken place within that process without necessarily focusing on controls or performing sampling. In other words, we try to understand what has gone wrong.





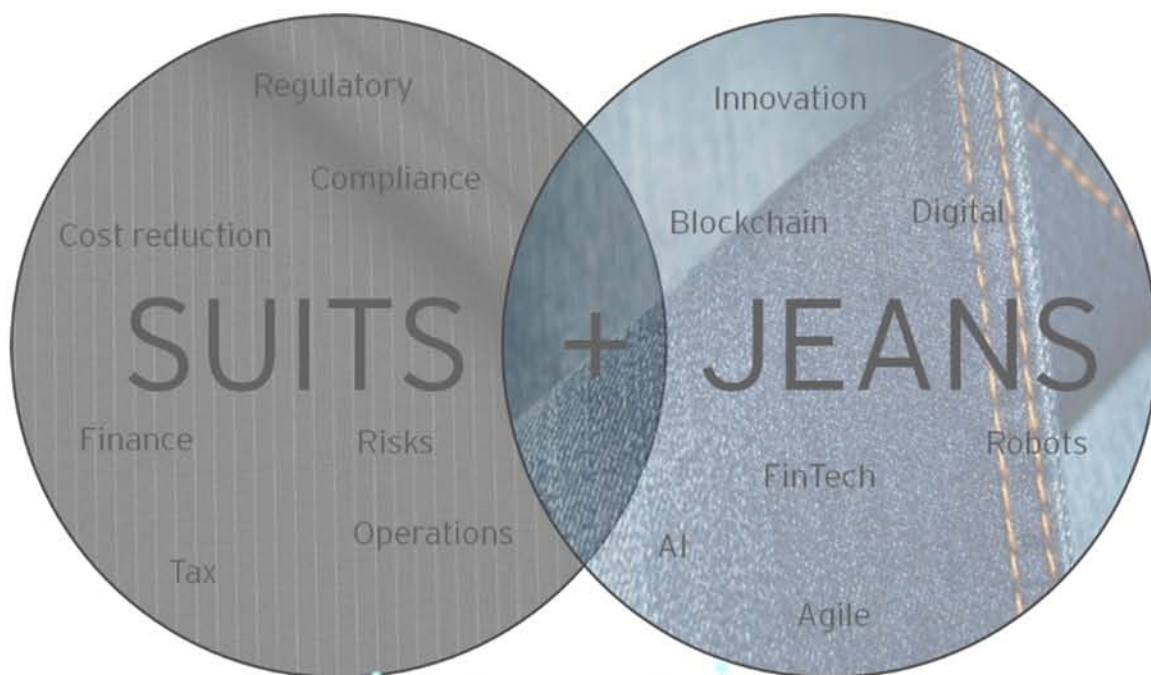
We carefully consider any risks not covered by data analytics over the transaction flow (for example, initiation and how the transaction gets entered into the system) and that remain within the period-end account balance (for example, cut-off). We obtain additional evidence to address those risks by either performing test of controls or performing other substantive procedures. We also consider adjustments that are made to the significant account during the Financial Statement Closing Process, and confirm that they are appropriate. In nutshell the data driver audit focused on enhanced quality. It brings:

- Confidence — feel confident in their financial reporting
- Transparency — gain on-demand visibility into their company's audit
- Perspective — see their business from a different perspective and anticipate and respond to trends, opportunities and risks

Digital audit tools help the audit teams:

- Better understand our client's business and processes
- Focus on the risks and issues that matter
- Identify relevant business insights

The below diagram depicts how assurance professionals of future will look like:





4. DIGITALIZATION OF FINANCE FUNCTION

All around the world, CFOs, financial controllers and treasurers are under pressure to create opportunity from complexity and Pakistan is no exception. Yesterday, a finance function reported the numbers, and today, there is a team that interprets those numbers, communicates them, and help shape the strategy around them. They rely on CFOs, treasurers, and controllers, to stay one step ahead. Organizations, and particularly CFOs, are being asked to adapt to the ever-changing finance landscape and to create innovative, low-cost and efficient working models.

Finance function has a much bigger role is strategic and operational decision making in organizations. Audit committees, investors and regulators are demanding greater accuracy, transparency and consistency in reporting. All this is actually putting finance people under the microscope like never before. Under pressure to streamline their financial processes, many financial leaders are considering investments in finance automation.

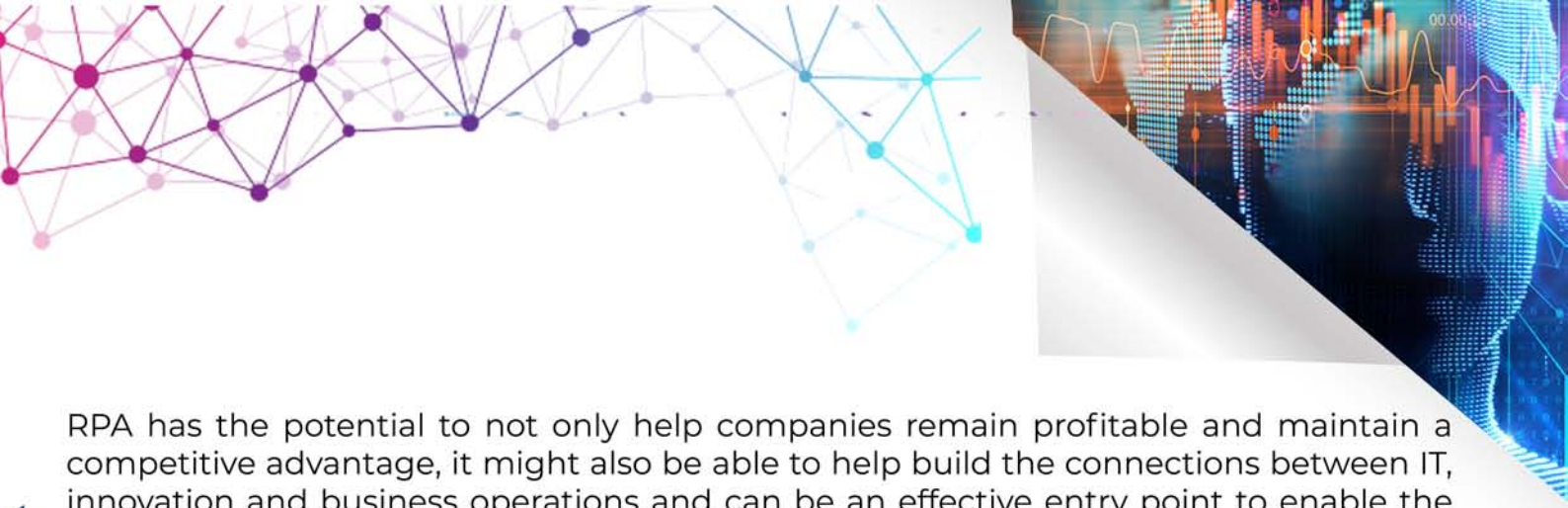
CFOs of 1950 would not recognize the role of today's CFOs, so imagine what it would be like in 2025? The future of finance profession is about creativity and innovation. Innovation is driven by technology. So Big data, agile analytics and cloud computing are already heling finance function to make decisions Faster, more accurately and transparent.

IT infrastructure are changing significantly and rapidly; financial analytics will be a standard competency in the finance function. Questions every CFO should ask:

1. How can CFOs embed innovation to deliver useful and timely insights?
- 2 How cognitive intelligence can be used to improve the performance of finance function?
- 3.How mobile technology help finance team, work smarter?
- 4.How can we utilize sophisticated data platforms?

Organizations, and particularly CFOs, are being asked to adapt to the ever-changing finance landscape and to create innovative, low-cost and efficient working models. With robotic process automation (RPA) playing an increasingly important role in driving efficiency and cost rationalization, embracing this disruptive technology is becoming a cornerstone on the CFO's agenda.





RPA has the potential to not only help companies remain profitable and maintain a competitive advantage, it might also be able to help build the connections between IT, innovation and business operations and can be an effective entry point to enable the adoption of further technologies.

Below are key finance functions and related processes where RPAs are being deployed in finance.

Accounts Receivable processing	<ul style="list-style-type: none"> ▶ Credit approvals & customer master file maintenance ▶ Order processing ▶ A/R – cash receipts processing & sending late notices via email
Accounts payable processing	<ul style="list-style-type: none"> ▶ Vendor set up and maintenance ▶ Automating the workflow processes and approvals ▶ Data entry and payments preparation ▶ Automating processing of payments and bulk payment files for journal entries to sub system
Operational finance and accounting	<ul style="list-style-type: none"> ▶ Automating pricing reviews based on customer contracts and pre-approved price lists ▶ Calculation and processing of rebates ▶ Downloading of detailed monthly sales data and calculation of commissions ▶ Creating files and emails to gain approvals ▶ Posting to detailed sub systems and General Ledger
Standard Journal entries	<ul style="list-style-type: none"> ▶ Creation of standard monthly journal entries using pre-populated templates provided by different business users ▶ Performing validation analytics ▶ Posting to ERP
Account reconciliations	<ul style="list-style-type: none"> ▶ Automating download of subaccount balances into preapproved format ▶ Upload detailed transaction data from various sub systems ▶ Perform data validation and basic research for exceptions ▶ Creating balancing journal entries to handle discrepancies
Financial Planning & Analysis (F,P&A)	<ul style="list-style-type: none"> ▶ Data capture and cleansing to support automated generation of regulatory reports ▶ Pre-populating complex annual reporting

5. FUTURE CHALLENGES

For audit firms, a host of challenges exist for the local market to adapt and catch up with the changing world:

- Investment requirements – Data analytics and robotic tools do not come cheap (particularly small to medium sized CA firms)
- Data Standardization and Completeness
- Changes in skill set required
- Resource availability – More reliance on data scientist and computer programmers
- Retraining and Reskilling auditors
- How regulators and audit oversight authorities view it?

