

January -March 2023

FINTECH

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Mr. Abdul Rahim Suriya FCA, FCMA

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Ms. Hina Usmani, FCA



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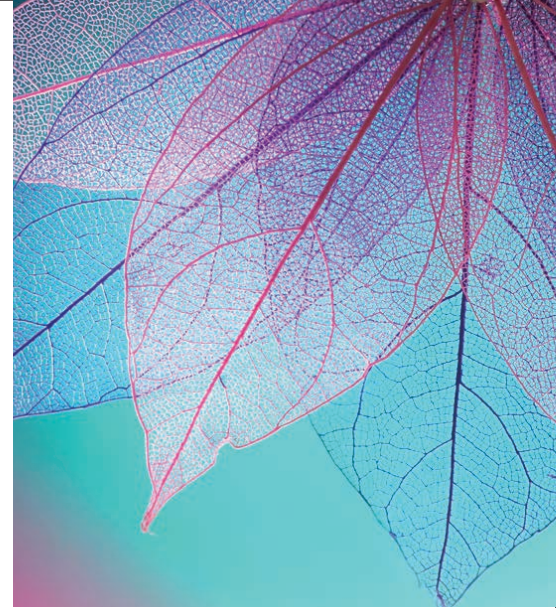
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Inside

**Message from
President ICAP**

Mr. M. Ali Latif, FCA

04

**Message from
Chairman MARCOM**

Mr. Husnain R. Badami, FCA

05

COVER STORY

Transparency in Reporting

Mr. Abdul Rahim Suriya FCA, FCMA

What is Financial Technology (FinTech)

Mr. Iftikhar Shahid, ACA

**Fintech and Family -owned
Manufacturing Companies**

Mr. Muhammad Faizan Arshad, ACA

**Digital Disruption in Finance
Understanding the Impact of Fintech**

Mr. Waqar Ahmed Khan, ACA

FINTECH

Mr. Muhammad Fahad, ACA

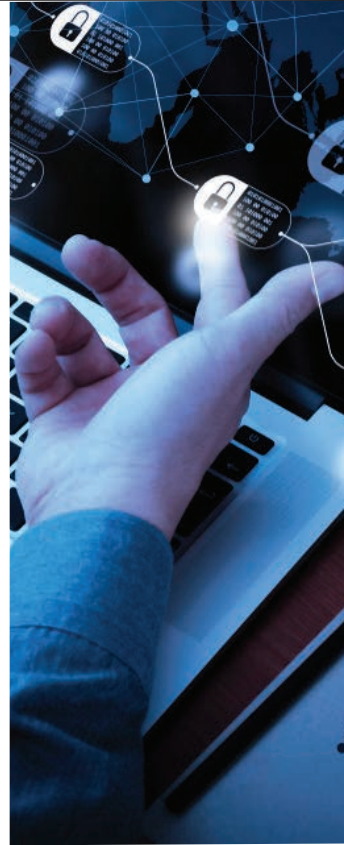
**Fintech Disruption: Navigating the
Changes in Financial Industry**

Ms. Farheen Shahzad, FCA

FINTECH

Mr. Adnan Mehmood Khan

06	FINTECH	26
	Mr. Muhammad Javed Nawaz	
11	Fintech, Double Edge Sword and a solution to the Bad Sharp Edge	29
	Mr. Safdar Ali, FCA	
14	FinTech – an ultimate global economy. Where Pakistan does stand on FinTech?	32
	Syed Imtiaz Abbas Hussain, FCA	
16	FinTech: To build Digital bricks along Analogous brook by Fin – Tech	35
	Mr. Khizar Hayat, FCA	
18	FinTech in Audit and Assurance	41
	Mr. Muhammad Sannan Jalisi, ACA	
20	FINTECH	44
	Mr. Raeel Muhammad Rafique, FCA	
23	How is 'FinTech' Impacting Our Lives?	46
	Mr. M. Asad Mirza, ACA	



FINTECH

Mr. Muhammad Faizan, ACA

Fintech - A blessing in disguise!

Mr. Usman Farooq, ACA

Fintech Insight

Mr. Mubeen Akhtar, ACA

SUCCESS STORY

Developing the Accountancy Profession - Female Chartered Accountants in Pakistan: a Success Story

Mr. Naeem Akhtar Sheikh, FCA | Ms. Hina Usmani, FCA

TECHNOLOGY

Technological Advancements and Accountants

Mr. Asif Ali, ACA

What is Web3? – Next-Gen of Internet and its impact on Fintech

Mr. Shaikh Farhan Abbas - ACA

Artificial Intelligence (AI) and Machine Learning (ML) in Finance

Syed Atiq Ur Rehman, FCA

48

50

52

54

57

60

63

DATA ANALYTICS

Data Analytics Test based on Benford's Law: A must Tool for Audit, Accounting & Fraud Investigation

Mr. Jamal Abdul Nasir, FCA

BUSINESS

Amplification of online Settlement in Stock Market /Money Market After 1992 Scam

Mr. Ahmed Faraz, FCA

Synopsis - Investment Opportunities For Provident Funds Within Applicable Legal Framework

Mr. Shoaib Ahmad

OTHER ARTICLES

Bridging the Regulatory Gaps

Mr. Waqas Ahmed, FCA

Petrochemicals are all around us

Mr. Ahmed Faraz, FCA

Adoption of IAASB's Quality Management Standards in Pakistan

Ms. Farheen Mirza, FCA

65

68

71

73

75

77

Message from President ICAP

As the world's technology continues to evolve at a rapid pace, so does the way businesses operate. The emergence of financial technology, commonly known as Fintech, has transformed the financial landscape and is fast becoming an integral part of today's businesses.

Chartered Accountants need to be at the forefront of this technological evolution. Fintech presents a plethora of opportunities for Chartered Accountants, ranging from process optimization to financial reporting and analysis enhancement. By integrating Fintech, businesses can cut down costs, enhance efficiency, and provide top-notch quality services to their clients.

In this edition of The Pakistan Accountant, our aim is to explore the significance of Fintech for Chartered Accountants and demonstrate how it can serve as a value-added tool for our esteemed members. To achieve this, we have curated a collection of articles contributed by our esteemed members, shedding light on various aspects of Fintech and its relevance in contemporary times. Moreover, we intend to showcase some of the latest Fintech innovations being implemented in the financial industry and inform our readers about their potential applications. We are confident that this issue of The Pakistan Accountant will assist our readers in comprehending the pivotal role of Fintech in today's fiercely competitive business environment and encourage them to consider its adoption for enhanced efficacy and service delivery.

Happy Reading!!



Mr. M. Ali Latif, FCA
President, ICAP

Message from Chairman MARCOM

In this dynamic world, businesses are constantly evolving, and financial technology (Fintech) has emerged as a game-changer that is fast transforming the financial landscape. As Fintech continues to gain momentum, it has become imperative for Chartered Accountants to stay abreast of the latest trends and incorporate Fintech in their practice to remain competitive.

Fintech presents a plethora of opportunities for Chartered Accountants, including streamlining processes, enhancing financial reporting and analysis, and improving efficiency, all of which can lead to cost savings and better service delivery to clients.

The significance of Fintech lies in its ability to transform the financial landscape and provide innovative solutions to traditional financial services. Fintech has the potential to disrupt the traditional financial industry by offering new and improved ways of delivering financial services to customers. This includes using technology to improve efficiency, reduce costs, and enhance the quality of service provided to clients. Fintech also offers opportunities for financial inclusion, as it enables access to financial services for underserved communities and those who were previously excluded from traditional financial systems. This can help promote financial stability and economic growth.

We are confident that our readers will find this edition of The Pakistan Accountant enlightening and informative, providing them with a comprehensive understanding of Fintech's pivotal role in today's competitive environment. It is our hope that this issue will encourage our readers to adopt Fintech in their practice for enhanced efficacy and service delivery.



Mr. Husnain R. Badami, FCA
Chairman - Marcom Committee



Transparency in Reporting

Mr. Abdul Rahim Suriya FCA, FCMA

The Evaluation Committee

The Evaluation Committee is a sub-committee of the Joint Committee of the Institute of Chartered Accountants of Pakistan (ICAP) and the Institute of Cost and Management Accountants of Pakistan (ICMAP) and, has been giving the Best Corporate Report (BCR) Awards since 2000. The Awards aim to promote excellence in corporate reporting accountability, good governance, and transparency by the entities through the publication of timely, informative, factual, and reader-friendly information.

Transparency

Good corporate governance helps to build an environment of trust, transparency, and accountability necessary for fostering long-term investment, financial stability, and business integrity, thereby supporting resilient business growth.

Transparency is a means to strengthen governance. Transparency builds trust and promotes accountability and lack

of transparency results in distrust and a deep sense of insecurity.

The United Nations considers transparency an important factor in measuring good governance. The International Federation of Accountants (IFAC), defines transparency as the process of making information accessible to the general public. The International Financial Reporting Standards (IFRSs) help increase the quality, comparability, and transparency of financial information. IFRSs foster transparency and trust in the global financial markets.

To maintain transparency in a business, it is essential to disclose both positive and negative aspects, and complete disclosure is warranted. As my friend Mr. Abdul Rauf Essa rightly points out, telling half-truths is akin to lying and does not suffice. However, it is concerning that many organizations do not reveal transparent information in the true spirit, opting instead for a tick-the-box approach. As aptly expressed by Douglas Flint, the Finance Director at HSBC, "What I find frustrating about much of the governance around financial



reporting now is there is an implication that nobody would tell the truth unless there was a rule that required them to do so". Trust, confidence, transparency, and accountability toward the stakeholders can be established with the support of good governance and good corporate reporting. Communication through annual reports enables the companies to achieve these important objectives. Stakeholders especially investors equate high-quality annual reports with high-quality management. Under the current scenario with uncertainty and speculations prevailing, it is one of the most important documents for investors' investment decisions.

Corporate Reporting is now not limited to financial information. It has broadened its focus to cover key strategic, social, governance, and environmental risks, long-term business sustainability, and other non-financial matters.

As per Corporate Governance Regulatory Framework issued by SBP on November 22, 2021, for Banks/DFIs, it is emphasized that the board should play a lead role in establishing corporate culture and values, overseeing control functions, and ensuring transparent disclosure of information to relevant stakeholders.

As per G20/OECD Principles of Corporate Governance, the corporate governance framework should ensure that timely and accurate disclosure is made on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company". A transparent Annual report helps in achieving this objective.

Award ceremony – update

Best Corporate Report (BCR) Awards

The Best Corporate Report Awards competition is the benchmark for transparency, corporate governance and excellence in financial reporting in Pakistan. This competition has brought a tremendous improvement in the overall presentation of annual reports of the companies in Pakistan. I am pleased to claim that the disclosures made in annual reports of Pakistan are at par and even in some cases better than disclosures made by the companies in developed world. All Public Interest companies including listed, unlisted, public-sector companies, mutual funds/ assets management companies and also Not-for-Profit Organizations (NPOs) are encouraged to participate in this competition and recognize the importance of quality corporate reporting as a part of good corporate governance.

For the year 2021 the winners of the Best Corporate and Sustainability Report 2021 Awards were announced in a ceremony held on September 27, 2022 at Karachi Marriott Hotel. The presence of the former President ICAP, President ICMA Pakistan, Mr. Shehzad Ahmed Malik and the council members and Former Presidents of both the Institutes graced the ceremony.

At this occasion Mr. Sirajuddin Aziz, Senior Banker & writer was the Guest of Honor and the guest speakers were Mr. Wali Zahid, a C-level Coach and CEO Skill City and Mr. Tariq Alexander Qaisar who is renowned Architect, Filmmaker and Environmentalist. The event was attended by CEOs, CFOs and senior executives of the winning companies and senior business executives of corporate world.

The BCR award winners list for 2021 is available at websites of both Institutes:

<http://www.icap.net.pk/bcsra/winners-list>

https://www.icmainternational.com/bcsra_winner_list.aspx

Mr. Sirajuddin Aziz, presented his talk on "Transparent Corporate Reporting is an Essential Element of Good Governance". An excerpt from his talk are as follows:

"Transparency in corporate reporting is critical to balance the role and conflicts that may exist or arise between the three verticals of 1) Entity's Management, 2) Board of directors and 3) Shareholders. Formal contracts are easier to report but it is

the presence of informal arrangements or contracts that create complexities in candid reporting. The route and flow of information between Management and the Board is a first step towards establishing governance standards in reporting. The intrusion of Board into operations of the company can create a Chinese wall, with the Management, which in such situations lead to management becoming shy of sharing critical information with the Board.

Financial Reporting is meant to reveal, not conceal; it is not meant to mask or hide. Neither should financial reporting be a cobweb, where the analyst can lose in the maze of information. Transparency means easily understandable, coherent, clear, candid, and forthright information."

Sustainability Report Award

The Best Sustainability Report Awards, first launched in 2011, aims to create awareness in the corporate sector about sustainability/ESG reporting and promote responsible reporting by entities covering the economic, environmental, and social performance of the business. It is noted that companies are now focusing on sustainability reporting as an imperative part of corporate reporting.

According to a study, by the year 2030 with a population of 8.3 billion people, we will need 50% more energy, 40% more water, and 35% more food. We as responsible businesses have to act now to remain sustainable when the resources become scarce. Hence the concept of sustainability becomes more and more important for our future generations.

ICAP's role in promoting Sustainability Reporting

The concept of sustainability has gained significant importance globally. In the last few years, the need to address climate change and nature loss has gained momentum. Pakistan is one of the most affected countries of climate change majorly due to the devastating effects of floods, in the recent past. To make a better and sustainable Pakistan, all stakeholders, including regulators and corporates have to take timely and effective measures for promoting, developing and adopting best international practices for sustainable businesses and economy. In this regard, ICAP is aware of its role and responsibilities in promoting the developments in the area of sustainability reporting and auditing.

The Accounting Standards Board (ASB) of ICAP has formed a working group to consider the international developments in sustainability reporting. It is pertinent to mention here the issuance of two draft IFRS Sustainability Disclosure Standards (IFRS Sustainability Standards) issued by the International Sustainability Standards Board (ISSB) on which ICAP submitted its comments. Further, awareness seminar on draft IFRS Sustainability Standards was organized in which all regulators including, SECP, SBP and PSX were taken on board. Moreover, recently ICAP has also issued a publication 'Update on Sustainability', which aims to update

ICAP members and other stakeholders about key local and international developments and initiatives in the area of sustainability including, regulatory regimes, corporate sustainability reporting standards, assurance standards on sustainability, carbon trading schemes, and endorsement of the work of ISSB.

ICAP publication and resources can be accessed at: <http://www.icap.net.pk/publication-guidance>

The BCR criteria

Annual reports of the participating companies are adjudged through a transparent evaluation process based on evaluation criteria known to the participating companies. The evaluation criteria are reviewed every year to ensure that it is aligned with the international best practices.

The criteria further aim to promote integrated thinking within the organization considering both financial and non-financial information. The BCR criteria draws inspiration from the 'Content Elements' (disclosures) of the International Integrated Reporting Framework (IR) and brings the quality of financial and governance reporting in Pakistan to par with global best practices.

In order to address disclosures regarding company's IT governance, new emerging technology development in the organization and cybersecurity risk, a new category in the criteria Technology, and Communication was added in 2022. From this year, a time of 50 days' time is allowed to release the financial results to stakeholders only in case of holding company who has listed subsidiary /subsidiaries) and a new ratio is added "Total Shareholder Return (TSR)" TSR indicates the total amount an investor earned from an investment including capital gains and dividends. It represents a commonly known figure of the overall financial benefits generated for stockholders.

The BCR Evaluation Criteria 2023 is available at the links of both the Institutes:

www.icap.net.pk/bcsra/bcr-criteria and
www.icmainternational.com/about_bcsra.aspx

Criteria for NPOs

There are separate criteria for Not-for-Profit Organizations (NPOs). It is estimated that there are approximately 10,000 functional NPOs in Pakistan. These NPOs receive substantial financial charity in terms of Zakat and Donations. However, generally, these NPOs lack transparency and do not publish proper annual reports. NPOs need to be transparent and should disclose to providers of funds how they used charity funds particularly Zakat funds. A separate criterion for NPOs is introduced to encourage Trustees to be transparent.

Recently the Accounting Standards Board (ASB) of ICAP has issued an Exposure draft for transparency of Zakat money received and its utilization which may be applicable for Financial Statements prepared for the year ending on or after June 30,2023.

Efforts by BCR Committee to enforce awareness for Corporate Reporting with Regulators:

1. Recommendation to SECP

- It is suggested to SECP to direct all Listed Companies, Public Sector Companies, and NPOs to adopt our BCR criteria for voluntary compliance in developing transparent annual reports.

2. Recommendation to PSX

- It is noted that PSX while announcing 25 - Top companies award, does not give much consideration to corporate reporting. Out of around 550 companies at PSX only 115 companies have participated in this competition. PSX recognition toward transparent reporting will encourage companies to be more transparent.
- The Evaluation Committee had been recommending to Pakistan Stock Exchange (PSX) to give some weightage to the winners of this award in the PSX criteria of the best-performing companies. We are confident that recognition by PSX toward Transparent Reporting will build TRUST among local and Foreign Investors.
- PSX Rule Book requires submission of Annual Report but it does not give guideline for contents of annual report. There is need to specify recommended contents of annual report.
- Since PSX is also a Listed Company and also a Regulator of Capital market, it is suggested to PSX to follow our BCR criteria for preparing its own Annual Report.

Summary of some stakeholders' views for strengthening governance through Corporate Reporting

Ms. Zahara Mavani

Legal Advisor (Additional Director) SBP

Transparency is a virtue that fosters accountability and integrity. In practice, it implies active disclosure i.e., not merely letting the truth be available; but rather realizing a higher level of responsibility for disclosure to every stakeholder. For listed companies, transparency enhances the market value and helps develop sustainable business models. In public sector entities, it strengthens democracy and reduces policy uncertainty; whereas in the case of NPOs, transparency is instrumental in establishing credibility with society and hence the survival of the organization.

The ICAP & ICMAP collaborated "Best Corporate Report Awards" have been a great initiative in encouraging corporate transparency and promoting international best practices.

Ms. Rubina Safir

Director Pak Data Com

Transparent policy document and accurate data presented by Public Sector Organizations will boost the confidence and will bear the fruits of compliance and cooperation from the public. Simultaneously private sector can use its transparent data and policy document as a basic tool to build confidence.

Similarly fudged data and hidden motives in the policy document of public sector Organization will destroy the image of the company.

Brigadier Doctor Muhammad Naeem Akbar Qazi

Ex DG Election Commission of Pakistan

Openness creates a sense of loyalty and will further strengthen business accountability which is important for the business development.

Mr. Rehan Rahman

CEO Feroze1888 Mills Limited

Transparency and better disclosure reduce the information asymmetry between the Management of the Company and specially the financial stakeholders amongst others including customers, suppliers, Government and employees.

Mr. Khalil Hashmi, FCA

CFO Synthetic Products Enterprises Limited

The companies which are using public funds either for commercial activity or for welfare purposes have a greater responsibility to keep their matters transparent. This will not only help them in creating a good image of them in the market but will also help in raising funds.

Ms. Asma Jan Muhammad, FCA

Accounting places transparency and accountability at the forefront. Transparency is essential for a company's board of directors (donors in the case of non-profits) because accurate and consistent financial reporting is the best way to maintain stakeholders' trust. The combination of social, ethical, and regulatory forces has increased the pressures for more transparency in legal, ethical, and reporting matters.

Mr. Irfan Amanullah, FCA

Senior GM & Company Secretary Attock Cement Pakistan limited

- Corporate reports are mode of communication between Management and the outside stakeholders who have direct or indirect interests in any organization. The annual reports must ensure that all the corporate actions of the company are verifiable, measurable and accountable.
- Transparency will bring genuine progress otherwise the system of distribution of wealth would be affected in any society resulting widening of gap between rich and poor.

Syed Najmul Hussain, FCA

Partner – KPMG

Transparency is the foundation of trust. Listed entities, Public Sector Entities and Non-Profit Organizations are the trustees of not only the public funds they utilize in their operations but also in offering their products and services. The directors/Trustees of these entities have legal, ethical and moral obligations to provide unambiguous, sufficient and understandable information to their stakeholders for them to evaluate the performance of these entities.

Mr. Ebrahim Qassim, FCA

Company's auditors and management of PSX have responsibility to ensure transparency

Mr. Yasir Masood, FCA

Director & COO – Cherat Cement Company Limited

Transparency in financial reporting means to be open and honest and making adequate disclosures so that the stakeholders make informed decisions.

It is not necessary to disclose all business secrets which may hurt the business or interest of the shareholders. So, there is always a good balance when we try to ensure transparency.

Transparency improves the image of the company and increases the brand value. It can improve the stock exchange value of the particular company and can help in raising funds from the capital market as investors always prefer to invest in companies which are more transparent. It can help companies in borrowing as financial institutions also like such organizations. It helps listed companies in hiring good resources and keeping them engaged because every individual wants to work in a transparent organization.

We need to understand that in Pakistan most of the NPOs are working on personal goodwill basis and not as an institution. If we want NPOs to institutionalize then we should encourage them to be transparent. This will improve the governance in NPOs and will also improve the trust of donors.

Our regulators including PSX and other stakeholders can also play a pivotal role by giving recognition to such organizations which are following the higher standards of financial reporting and transparency, as it will automatically encourage others to start work in this area.

Mr. Wasif Khalid, FCA

Executive Director and COO – Mirpurkhas Sugar Mills Ltd.

In Emerging Markets like Pakistan, there is a dire need for firms to be transparent about their business and operations irrespective of the firm's structure – be it a private company or a listed, public-sector organization or a non-profit organization.

This could only be achieved through a clear, structured, and timely communication of both financial and non-financial information to relevant stakeholders.

Mr. Muhammad Shahzad Farooq, FCA

CFO ChildLife Foundation

Making relevant information readily available to all stakeholder is only possible by producing a comprehensive annual report. BCR criteria for NPOs covers strategy, risks and opportunities, governance, performance of the entity, organization outlook, stakeholders' engagement and CSR. Annual report, which is based on these factors, makes stakeholders aware of matters that are relevant to them whether it's a listed company or NPO.



Mr. Abdul Rahim Suriya FCA, FCMA
He is the fellow member & Former President of ICAP.
Currently he is practicing as partner in the firm Suriya Nauman Rehan & Co.



What is Financial Technology (FinTech)

Mr. Iftikhar Shahid, ACA

The use of technology in financial services has made it possible to automate and improve traditional financial products and services, making them more accessible and efficient for consumers. From mobile banking apps to online lending platforms, Fintech has created new opportunities for businesses and individuals to access and manage their finances. In this article, we will explore the impact of Fintech on the financial industry, the benefits and challenges it brings, and the future potential for this field.

Fintech has created new opportunities for businesses and individuals to access and manage their finances.

This Fintech revolution has led to the mobile payment apps, blockchain networks, and social media-housed payment options we regularly use today. However, the modern FinTech industry, as we know, it began to take shape in the early 2000s, with the emergence of companies that used the internet and mobile technology

What is Financial Technology (FinTech)

Financial Technology, commonly known as FinTech, is a term used to describe the use of technology to improve and automate financial services. This can include a wide range of products and services such as mobile payments, digital wallets, online lending platforms, and digital investment platforms.

Brief History of FinTech

Early credit cards in the 1950s generally represent the first Fintech products available to the public, in that they eliminated the need for consumers to carry physical currency in their day-to-day lives. In 1998, PayPal was founded, representing one of the first Fintech companies to operate primarily on the internet. This Fintech revolution has led to the mobile payment apps, blockchain networks, and social media-housed payment options we regularly use today. However, the modern FinTech industry, as we know, it began to take shape in the early 2000s, with the emergence of companies that used the internet and mobile technology to provide financial services in new and innovative ways.

The growth of smartphones and mobile technology has also been a major driver of FinTech innovation in recent years. In recent years, FinTech has also been rapidly expanding in the field of blockchain and crypto-currency, which is seen as the next step in the evolution of digital payments and banking.

How Does FinTech Work?

FinTech works by using technology to improve and automate financial services, making them more accessible, efficient, and cost-effective for consumers and businesses. This can be done in a variety of ways, depending on the specific product or service being offered.

Online lending platforms use technology such as data analytics and machine learning to evaluate the creditworthiness of borrowers and determine the terms and rates of loans. Digital investment platforms use technology such as

algorithms and data analytics to provide investors with real-time market data and investment advice. This allows individuals to make more informed investment decisions and manage their portfolios more effectively.

In addition, blockchain technology and smart contracts are used in the FinTech industry to record, validate, and authenticate transactions, as well as to create new forms of digital assets such as cryptocurrencies.

The Technologies That Power FinTech

The technologies that power FinTech include a wide range of tools and platforms, including:

1. Cloud computing: Cloud computing enables FinTech companies to store and process large amounts of data in a cost-effective and scalable way.
2. Data analytics: FinTech companies use data analytics to gain insights from data, such as customer behavior, market trends, and risk management.
3. Artificial Intelligence (AI) and Machine Learning (ML): AI and ML are used in FinTech to improve risk management, fraud detection, and customer service.
4. Block-chain technology: Blockchain is a decentralized, digital ledger that is used to record and validate financial transactions.
5. Big Data: FinTech companies use big data to gain insights into customer behavior and market trends, which can be used to improve products and services.
6. Internet of Things (IoT): IoT technology is increasingly being used in FinTech, particularly in areas such as telematics and digital underwriting, to gain insights into customer behavior and risk management.
7. Biometrics: Biometric technologies like facial recognition, fingerprints, and voice recognition are being increasingly used in FinTech for authentication and security purposes.

How Safe is FinTech?

FinTech, like any other industry, is not immune to security risks and challenges. However, the industry is generally seen as being quite safe, thanks to the use of advanced technologies and security protocols. FinTech companies use various security measures to protect sensitive financial and personal information, including encryption, secure socket layer (SSL) certificates, and multi-factor authentication. These measures help to protect against data breaches, hacking, and other forms of cybercrime.

In addition, many FinTech companies are regulated by government agencies and are subject to strict compliance and security requirements. However, as with any industry,

FinTech works by using technology to improve and automate financial services, making them more accessible, efficient, and cost-effective for consumers and businesses. This can be done in a variety of ways, depending on the specific product or service being offered.

there is always the risk of security breaches and fraud, and it is important for consumers to be vigilant and take steps to protect their personal and financial information. This includes using strong passwords, keeping software up to date, and being wary of phishing scams and other forms of fraud.

Different Types of FinTech

FinTech encompasses a wide range of products and services, and can be broadly categorized into several different types:

1. **Payment and Transactions:** This includes mobile payments, digital wallets, and other technologies that enable consumers and businesses to make and receive payments electronically.
2. **Lending:** Online lending platforms, which use technology to connect borrowers with lenders, are a growing area of FinTech.
3. **Investing and Wealth Management:** This includes digital investment platforms, robo-advisors, and other technologies that enable individuals to manage their investments and financial assets more easily and efficiently.
4. **Insurance and Insure-Tech:** This includes digital platforms that help consumers purchase and manage insurance policies and technologies that enable the insurance industry to operate more efficiently and effectively.
5. **Personal Finance Management:** This includes tools and apps that help consumers manage their finances, including budgeting, savings, and credit management.
6. **Block-chain and Crypto-currency:** This includes the use of blockchain technology to create new forms of digital assets, such as crypto-currencies, and to improve the security and transparency of financial transactions.
7. **Regtech:** This refers to the use of technology to comply with regulatory requirements, such as anti-money laundering (AML) and know-your-customer (KYC) regulations.
8. **B2B FinTech:** This refers to the technology used by financial institutions to improve their internal operations and client services such as Artificial

Intelligence, Machine Learning, and Distributed Ledger technologies.

FinTech Impact on the Finance, Accounting, and Related Fields

FinTech is having a significant impact on finance, accounting, and, related fields. Some of the ways in which FinTech is impacting these fields include:

1. **Automation:** FinTech is automating many traditional financial tasks, such as accounting and bookkeeping, which reduces the need for manual labor and improves accuracy.
2. **Digital transactions:** FinTech is enabling more digital transactions and record-keeping, which makes it easier for businesses to track and manage their finances.
3. **Data analytics:** FinTech companies are using data analytics to gain insights into customer behavior and market trends, which can be used to improve products and services.
4. **Block-chain and smart contracts:** Block-chain technology and smart contracts are being used in FinTech to record, validate, and authenticate financial transactions, which improves transparency and security.
5. **Fintech companies are helping financial institutions and accounting firms improve their services and reduce costs by leveraging technology.**
6. **Fintech companies are also providing alternative financial services to individuals and small businesses that may not have access to traditional banking services.**
7. **Fintech is also playing a role in the development of new financial products, such as digital assets and crypto-currencies.**

Overall, FinTech is having a transformative impact on finance, accounting, and related fields by making financial services more accessible, efficient, and cost-effective. As a result, many financial institutions and accounting firms are embracing Fintech to improve their operations and services, while many finance and accounting professionals are seeking to gain new skills and knowledge to stay relevant in the industry. And remember, FinTech is an ever-evolving field, so continuous learning is essential to stay updated.



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Fintech and Family -owned Manufacturing Companies

Mr. Muhammad Faizan Arshad, ACA

Family-owned manufacturing companies have been around for generations and have built their reputation on the quality of their products and their commitment to their customers. However, as the world becomes more digitized, these companies are facing new challenges.

Fintech, or financial technology, has been a buzzword in the business world for the past few years. It is the intersection of finance and technology and it is revolutionizing the way we think about and use financial services. One industry that has been slow to adopt fintech is family-owned manufacturing companies. However, as technology continues to evolve and

consumer demands change, it is becoming increasingly important for these companies to explore and implement fintech solutions.

Family-owned manufacturing companies have been around for generations and have built their reputation on the quality

Overall, Fintech is helping family-owned manufacturing companies by providing them with new tools and resources that can help them grow and thrive in today's rapidly changing business environment. By adopting these solutions, these companies can better meet the demands of their customers and stay competitive in a rapidly changing market.

of their products and their commitment to their customers. However, as the world becomes more digitized, these companies are facing new challenges. Customers are demanding faster delivery times, more personalized products, and more transparency in the manufacturing process. These demands can be difficult for family-owned manufacturing companies to meet without the help of fintech solutions.

One way that fintech is helping family-owned manufacturing companies is by providing them with access to new sources of financing. Traditional bank loans can be difficult for these companies to obtain, especially if they are not able to provide collateral or have a long history of profitability. Fintech companies, on the other hand, are able to offer financing based on a company's cash flow, which means that even small or newly established companies can access the capital they need to grow.

Another way that fintech is helping family-owned manufacturing companies is by providing them with new tools to manage their finances. For example, there are now fintech companies that offer accounting software that is specifically designed for manufacturing companies. This software can help these companies track their expenses, manage their inventory and create financial reports that are tailored to their specific needs.

Fintech is also helping family-owned manufacturing companies by providing them with new ways to interact with their customers. For example, some fintech companies are now offering e-commerce platforms that allow customers to place orders and make payments directly from their smartphones. This can save time and increase efficiency for both the customer and the manufacturer.

In addition, fintech is helping family-owned manufacturing companies by providing them with new ways to manage their supply chains. For example, there are now fintech companies that offer software that can help these companies track the location of their raw materials, monitor the progress of their manufacturing processes and keep track of their inventory. This can help these companies

improve their efficiency and reduce their costs.

Overall, fintech is helping family-owned manufacturing companies by providing them with new tools and resources that can help them grow and thrive in today's rapidly changing business environment. By adopting these solutions, these companies can better meet the demands of their customers and stay competitive in a rapidly changing market.

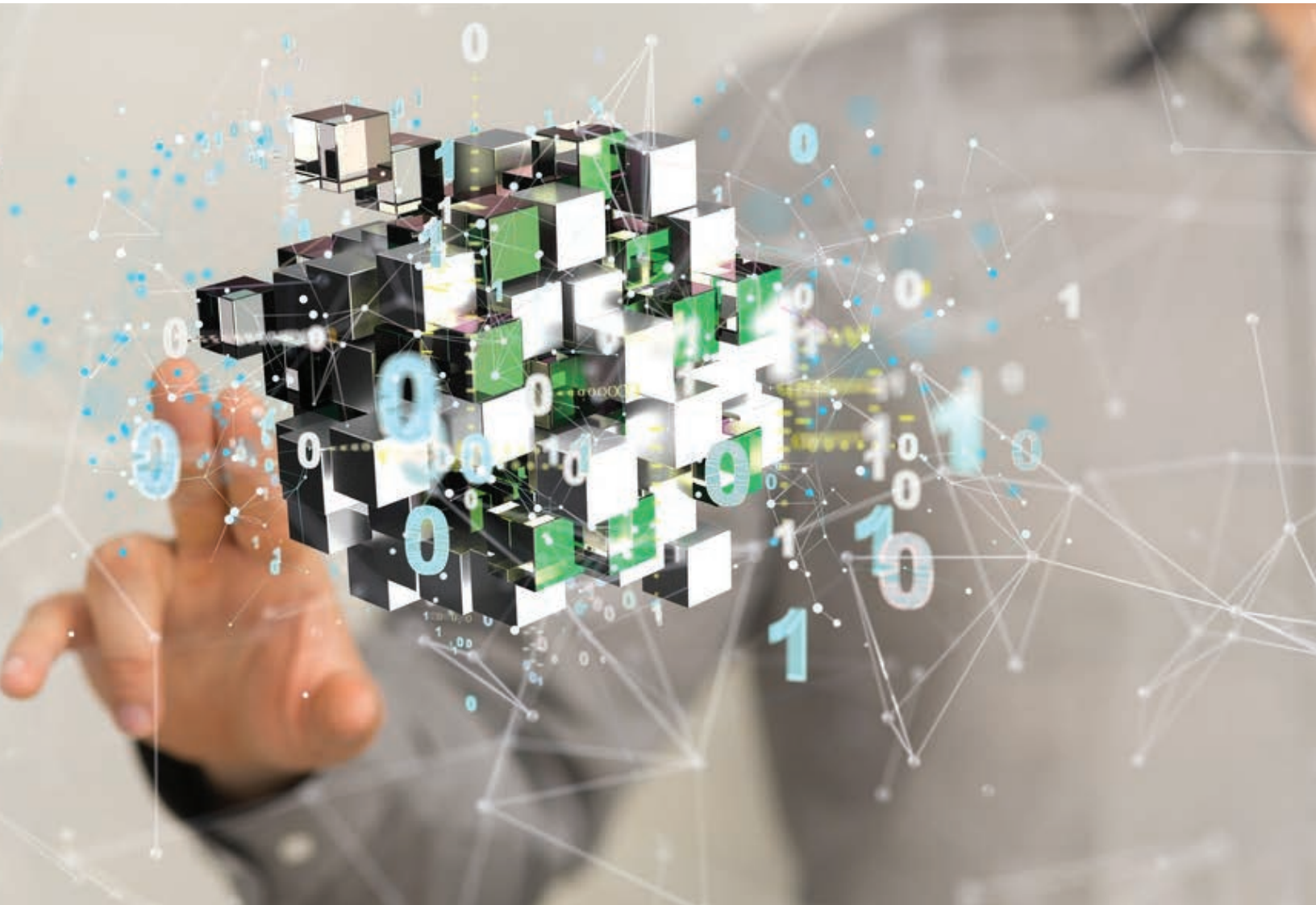
However, despite the benefits, there are also some challenges that family-owned manufacturing companies may face when implementing fintech solutions. For example, many of these companies may not have the technical expertise or the resources to fully implement and utilize these solutions. Additionally, some family-owned manufacturing companies may be hesitant to change their traditional ways of doing business, which can make it difficult for them to fully embrace fintech.

Furthermore, there is also a risk to data security and privacy when implementing fintech solutions. As fintech companies gather and store sensitive financial information, it is important for family-owned manufacturing companies to ensure that their data is protected and that their customers' information is kept secure.

In conclusion, fintech is having a major impact on traditional organizations, including family businesses. However, by embracing technology, partnering with fintech companies, and leveraging their strengths, family businesses can adapt and stay competitive in the face of disruption. While the road ahead may not be easy, with the right approach, family businesses can continue to thrive in the digital age.



Mr. Muhammad Faizan Arshad, ACA is a Chartered Accountant working as a Supply Chain Controller at Packages Limited, utilizing his financial expertise to manage and optimize the company's supply chain processes.



Digital Disruption in Finance

Understanding the Impact of Fintech

Mr. Waqar Ahmed Khan, ACA

The financial technology industry, or fintech for short, is rapidly expanding and changing the way we handle our finances, as well as how financial services are provided and consumed. As a Chartered Accountant, it's crucial to stay informed about the latest fintech developments, despite being well-versed in traditional financial systems and processes. Fintech encompasses a wide range of technologies, products, and services, including mobile banking apps, online lending platforms, blockchain technology, digital currency, cloud computing, and artificial intelligence.

As a Chartered Accountant, it's crucial to stay informed about the latest fintech developments, despite being well-versed in traditional financial systems and processes.

For Chartered Accountants, FinTech can provide a range of benefits, such as improved accuracy and efficiency in financial reporting, better access to real-time information, and the ability to analyze and visualize data in new ways. In addition, FinTech can help Chartered Accountants stay up to date with the latest developments in the financial industry.

From Chartered Accountants' aspect, the application of Fintech is the use of cloud computing. Cloud computing allows Chartered Accountants to access data and services from any device, anytime, anywhere. This makes it easier to manage financial records and accounts, share data within the organization and with colleagues, and reduce the amount of time spent on manual processes. In addition, cloud computing can be used to integrate different financial systems, allowing Chartered Accountants to have a more unified view of their entities' financial information.

Another important application of FinTech for Chartered Accountants is the use of artificial intelligence (AI). AI can be used to automate financial tasks, such as data entry, data analysis, and reporting. AI can also help Chartered Accountants identify trends and patterns in data, which can be used to make better decisions and provide more accurate advice to stakeholders including the Board of Directors.

The use of FinTech is also becoming increasingly important for taxation and regulatory compliance. FinTech can be used to help Chartered Accountants stay up to date with the latest tax regulations, as well as to automate the process of filing tax returns. In addition, FinTech can be used to identify and flag potential areas of non-compliance, helping Chartered Accountants to ensure that their clients and entities are compliant with all applicable laws and regulations.

Another significant area of fintech is the use of mobile technology to provide financial services. With the widespread adoption of smartphones and the internet, an increased number of people are using their mobile devices to access financial services. Mobile banking apps, for example, allow customers to check their account balances, transfer money, and pay bills all from their smartphones. This has made banking more convenient and accessible for many people, particularly those in remote or underserved areas.

Fintech has also been a catalyst for the growth of digital currencies such as Bitcoin and Ethereum. These currencies operate on a decentralized blockchain network, which means that they are not controlled by any central authority or

institution. This has the potential to revolutionize the way we think about money and financial transactions, as it offers a level of security and transparency that is not possible with traditional currencies.

The use of fintech is also transforming the way people invest their money. The emergence of robo-advisors as well as other digital investment platforms has made it easier for people to invest in stocks, bonds, and other financial products. This has helped to democratize investing and has made it more accessible to a wider audience.

Despite all these advancements, the fintech industry is still in its pilot stages and there are many challenges that need to be overcome. One of the biggest challenges is the issue of trust. Many people are still hesitant to trust their financial information with a digital platform or an app, and this is something that fintech companies will need to address if they want to gain widespread acceptance.

For Chartered Accountants, FinTech can provide a range of benefits, such as improved accuracy and efficiency in financial reporting, better access to real-time information, and the ability to analyze and visualize data in new ways.

Another prevailing issue that needs to be addressed is the lack of regulation in the fintech industry. With so many new and innovative products and services being developed, it is important to have clear and consistent regulations in place to protect consumers and ensure that the industry operates in a fair and transparent way.

As a Chartered Accountant, it is important to stay informed and educated on the latest developments and advancements in the field of fintech. This will allow you to better understand the opportunities and challenges that the industry presents and to provide valuable advice and guidance to your clients. With the right knowledge and expertise, you can help your clients and entities navigate the complex and rapidly changing world of fintech and take advantage of the many benefits that it offers.

To summarize, the fintech industry is quickly expanding and changing the way we handle and monitor our finances.



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FINTECH

Mr. Muhammad Fahad, ACA

“Technology will soon take over the world in a way that every facet of life will be engulfed into it and dependency on the technology will increase day by day”

Throughout our childhood, we have repeatedly heard the phrase that innovation makes our lives easier and better, and in many ways, this is true. With each passing day and year, we witness more and more advancements that further improve our lives. It is certain that in the future we will continue to discuss the validity of this statement.

“Technology will soon take over the world in a way that every facet of life will be engulfed into it and dependency on the technology will increase day by day”

☞ Fintech is part of this world since 1950 when the idea of plastic payment or the usage of debit/credit cards came to Mr. Frank McNamara therefore, it is safe to say that this has been part of our lives for long albeit being changed in different shapes, sizes and improved technology and experience over the period. ☞

While fintech has been a term associated with technology for some time, it may be new to some individuals due to the recent surge of new products and companies that have revolutionized the financial industry with innovative solutions.

Fintech is part of this world since 1950 when the idea of plastic payment or the usage of debit/credit cards came to Mr. Frank McNamara therefore, it is safe to say that this has been part of our lives for long albeit being changed in different shapes, sizes and improved technology and experience over the period.

There was a time when making the bigger payments was so difficult, that it hampered the trade and exchange of services due to security and carrying reasons but now, every payment or receipt is just a click away which will eventually get better and more secure in the future.

With the invention of blockchain technologies and cryptocurrencies, we might move in another direction of fintech that will completely change the current setup in the future, and who knows what the future holds as we might see the emergence of gold, silver, copper and etc. again being fit in to the fintech setup.

Artificial Intelligence is revolutionizing the way fintech operates and introducing novel features to enhance its value proposition. The remarkable growth of the financial services sector over the past decade is a testament to this transformation, as it has empowered consumers with a diverse range of options and enabled them to make informed decisions that generate secure returns through encrypted channels that are extremely difficult to breach.

For third-world countries like Pakistan, which is always struggling to hold USD in reserves, the exponential growth of fintech is a must because people have lost their trust in the current financial system due to various reasons and may be looking for other methods for sending remittances to trade to get more benefits and security. While some efforts have been made and progress has been achieved, the pace of progress in shifting away from physical document orientation has been slow. This creates significant difficulties in today's world where time is of the essence. We are losing a lot of USDs due to this old-age financial system and the Government must consider announcing tax havens for companies like PayPal to enter our financial system and change it 360 degrees.

Everything in the world carries pros and cons and fintech is no different, the lack of acceptability and expertise of the people in using fintech applications and systems make it vulnerable to data breach and security as millions of USDs every year go into the breachers' pockets. The lack of global-level laws that are acceptable to every country in the world makes it very difficult for the regulators to track and identify transactions as well as make foreign investors compliant with minimum acceptable law that encourages investment but also put certain conditions that stop the crimes like money laundering and terror financing.

As we have been writing about all the innovations and technologies and the rapid strides fintech has made from 1950 to the current date of 2023, there might be someone in 2073 who will be writing about anything else that would have replaced all current financial systems and what future will bring in the 22nd century as this is a never-ending debate and technology will make its way and will change current setup every day.



Mr. Muhammad Fahad, ACA is an Associate Chartered Accountant working at Deloitte Middle East.

Fintech Disruption: Navigating the Changes in Financial Industry

Ms. Farheen Shahzad, FCA



Fintech entrepreneurs are developing disruptive technologies, designed to scale faster and more accurately than traditional financial services. This wave is so big that the industry is now called FINTECH INFINITE.

The word Fintech has been known to us for quite some time but now it has gained much popularity. Since the beginning of the 21st century, we have been witnessing many inventions, particularly in the field of technology. This is an era of technological breakthroughs which has changed the way individuals and companies are acting. Digitalization has been on a steady rise and is the way forward. The availability of smartphones and the internet has made it possible for individuals to buy and sell from the vicinity of their homes and cross borders. The availability of search engines has made it easier to take better and more informed decisions. Technology is the reason behind these advancements.

What is FINTECH?

Fintech is a combination of two words; Financial and Technology. When technology is connected to financial transactions, it becomes 'fintech'. The usage and delivery of financial services with the help of technology are called fintech. Fintech is a new era of financial technology. Fintech entrepreneurs are developing disruptive technologies, designed to scale faster and more accurately than traditional financial services. This wave is so big that the industry is now called FINTECH INFINITE.

Fintech is a buzzword that will change the financial industry's future. It is mainly used by financial institutions for improved and better customer services to their customers. Fintech uses a variety of advanced technologies like Artificial Intelligence, Robotics, Big data, Blockchain, Cryptocurrency, etc. They can offer faster approval times for loans or credit cards, higher security standards for online transactions, better fraud

detection systems, or even help you save money by finding ways to reduce your expenses through automatic budgeting tools.

Tech-savvy consumers have paved the way for fintech and have changed the traditional financial sector as well as the banking industry. The Covid-19 pandemic has also been a reason for the rapid growth of fintech due to a change in consumer behavior towards contactless and online transactions. It's easier to transfer funds online instantly from one account to another, check balances, make payments of utility bills, etc., thus saving time and hassle.

The Impact of Fintech on the Financial Industry

The impact of fintech on the financial industry has been far-reaching, with many traditional financial institutions struggling to keep up with the rapid pace of change. Some of the key ways in which fintech is disrupting the financial industry include:

1. **Reducing barriers to entry:** Fintech has made it easier for new companies to enter the financial industry and compete with established players. This has led to increased competition and more options for consumers.
2. **Improving access to financial services:** Fintech has made financial services more accessible, particularly for underserved populations such as those in developing countries or those without access to traditional banking services.
3. **Increasing efficiency:** Fintech has the potential to significantly improve the efficiency of financial services, reducing costs and improving the overall customer experience.
4. **Changing the role of traditional financial institutions:** Fintech has disrupted traditional financial models and forced traditional financial institutions to adapt. Many have embraced fintech and are now collaborating with fintech companies to stay competitive.

Fintech has made banking easier and customer driven and reduced the time taken to complete a transaction. The use of credit cards, debit cards, and mobile wallets has become the norm and gradually eliminated cash transactions. Online banking has now shifted to mobile banking with the introduction of mobile banking apps. The introduction of chatbots will save banks' operational costs by \$7.3 bn globally by 2023 (juniper research.com). The digital mobile wallet market size, valued at \$1,043.1 bn in 2019 is predicted to reach \$7,580.1 bn by 2027, growing at a CAGR of 28.2% from 2020 to 2027 (prnewswire.com)

Fintech has brought a digital revolution and transformed how the financial industry operates. Banks are becoming digital savvy investing heavily in digitalization and

Fintech uses a variety of advanced technologies like Artificial Intelligence, Robotics, Big data, Blockchain, Cryptocurrency, etc. They can offer faster approval times for loans or credit cards, higher security standards for online transactions, better fraud detection systems, or even help you save money by finding ways to reduce your expenses through automatic budgeting tools.

innovation, particularly in Asia, where they see huge growth potential.

Requiring a new skill set and open-mindedness towards technology, a Fintech career is promising - many companies like Google, Goldman Sachs, and JP Morgan Chase are hiring them.

Fintech companies are having more valuations as compared to non-tech-based companies because of the use of new and advanced technologies in doing their businesses, giving them a competitive advantage over others. Fintech startups are often more agile and innovative than traditional financial institutions, allowing them to quickly adapt to changing market conditions and consumer needs. This has led to the rise of many successful fintech companies that have disrupted traditional financial models and challenged the dominance of established financial institutions.

Asia Pacific region is the fastest growing market of fintech with China and India being on top due to their huge population. The global fintech market was worth \$127.66 bn in 2018 and is expected to grow and reach a market value of approximately \$324 bn by 2026, growing at a compound rate of about 25.18% over 2022-2027 (market data forecast.com). Digital payment has been the largest sector within the fintech ecosystem. Other include lending and investment, crowdfunding, point-of-sale transactions, financial research, consumer payments, etc.

Fintech has become a platform for all players in the market, with many players fighting to capture new customers and grow their businesses. It is going to shape the future of financial services, as it merges with the electronic and mobile financial sectors, bringing advances in technology and new business models. With the creation of blockchain technology, companies can now leverage technology like never before to transform their business processes.

Fintech has brought a digital solution for every financial need whether it be a loan, investing, or managing your finances. A recent study claimed that 90 percent of banking transactions will be processed by fintech companies within the next 10 years. As technology gets smarter and better, it will have an impact on what people do with their money. Fintech disruption is happening all around us, and we must be ready to embrace it.

Implications of Fintech in Pakistan

Fintech has the potential to revolutionize the financial industry in Pakistan. The country currently has a large unbanked population, and fintech can provide access to financial services to those who are not served by traditional banks. Additionally, fintech can help reduce poverty in Pakistan by providing access to financial products and services that can help people save and invest.

However, some challenges must be overcome for fintech to be successful in Pakistan. Firstly, the regulatory environment is not conducive to rapid innovation. The government must create a regulatory framework that strikes the right balance between protecting consumers and allowing innovation to flourish. Secondly, the infrastructure for financial services must be improved. This includes increasing access to the internet, improving digital literacy, and providing better access to digital banking services. Finally, financial inclusion must be improved by providing education and raising awareness about the benefits of financial services.

Conclusion

Fintech has significantly impacted the financial industry, disrupted traditional financial models and is forcing traditional financial institutions to adapt. While there are challenges associated with the rise of fintech, there are also many opportunities for innovation and the development of new financial products and services. To stay competitive, traditional financial institutions need to be proactive in embracing fintech and adapting to the changing landscape.



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FINTECH

Mr. Adnan Mehmood Khan

Fintech is a portmanteau of "financial" and "technology" and is used to describe the intersection of financial services and technology. Fintech is an umbrella term that encompasses a variety of technologies and services, including but not limited to mobile payments, online banking, peer-to-peer lending, and blockchain technology. FinTech means all the technologies used to digitize and streamline traditional financial services, such as banking and payment methods.

FinTech may refer to desktop or mobile applications, software, programs, or algorithms pertaining to the financial sector. FinTech includes specific hardware, such as online banking applications and ATMs. FinTech is used when people use a mobile app to check their bank account balances and make online purchases. Fintech refers to the sector of financial technology firms. These businesses are engaged in the creation of new financial products and services utilizing

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the most advanced technology. In the past few years, the number of financial technology (fintech) companies has increased dramatically. Fintech companies are those that provide financial services using technology. Investors and customers are attracted to fintech companies with great success.

Fintech companies have been able to leverage new technologies such as the internet, mobile devices, and cloud computing, which has contributed to their success. These technologies have enabled fintech firms to offer financial services more efficiently and at a lower cost. Another factor contributing to the success of fintech companies is their ability to meet the rising demand for financial services. In a number of countries, the demand for financial services is outpacing the supply. This has enabled fintech companies to offer new services and compete with conventional financial institutions. Traditional financial institutions have taken notice of the success of fintech companies. Many traditional financial institutions have invested in or partnered with fintech companies. This has enabled fintech companies to expand their reach and offer additional services.

The most active industry sectors for FinTech are as follows:

Open Banking is a management concept for financial systems in which everyone should have access to bank data. The purpose of "openness" is to encourage app developers to build a network of financial institutions and customers. The applications will serve as third-party providers.

Using distributed ledger technology, cryptocurrency is a decentralized banking system (DLT). The mechanism maintains financial records of payments or transactions using

blockchain. Blockchain generates codes to manage and verify buyer-seller transactions (also known as contracts). Bitcoin, NFT (digital token), and virtual cash are prominent examples of cryptocurrencies, and no real money is involved in the system.

Robo-advisor: a combination of AI and FinTech that provides automated financial or investment advice based on computer analysis and algorithmic calculations. The purpose of Robo-advisor is to reduce user risk and increase their ROI.

Fintech has existed for a long time, but it has only recently begun to attract the attention of the general public. This is primarily attributable to the rise of mobile technology and the introduction of the smartphone. As more people use smartphones to access the internet, there is a greater opportunity for Fintech companies to offer innovative, user-friendly financial services.

One of the greatest benefits of Fintech is that it enables the creation of new financial products and services that can be customized to meet the specific needs of consumers. This is in contrast to the traditional banking system, which is typically slow to adopt new technologies and provides a limited selection of products and services. Additionally, fintech has the potential to increase the effectiveness of the financial system. For instance, blockchain technology can facilitate the exchange of funds and reduce the need for intermediaries. This may result in reduced prices for consumers and businesses.

Fintech has numerous benefits, but there are also potential risks that must be considered. Fintech companies, for instance, may be susceptible to cyberattacks, and certain products and services may be susceptible to fraud. It is essential to be aware of these risks and to take precautions to safeguard oneself and one's finances.

Overall, Fintech is a rapidly expanding industry that is altering our financial interactions. It offers a variety of advantages and opportunities and will likely play an important role in the future of finance.

History

Fintech has a relatively brief history, dating back only a few decades. Nonetheless, Fintech has rapidly become one of the most significant and influential industries in the world during this time period.

Fintech took off in the early 2000s, when online banking and other digital financial technologies were introduced. Initially, consumers were the primary adopters of these technologies, but businesses and financial institutions soon followed suit. Fintech is currently a multibillion-dollar industry that is continuously evolving and innovating. New technologies are continuously developed, and existing technologies are continuously updated and enhanced. Fintech is transforming how we conduct business and interact with the financial

world. It makes financial services more accessible and affordable, and it alters our perception of money and financial transactions. Fintech has a bright future, and the industry will only continue to grow and evolve. Fintech is altering our lifestyles and paving the way for a new era of financial innovation and prosperity.

The technology industry is thriving with no signs of slowing. The financial technology industry, or "fintech," is one of the fastest-growing industries in the world. There are numerous causes for this expansion, but the benefits of fintech are evident.

First, fintech enables more secure and efficient transactions. Fintech platforms are able to process transactions quickly and securely, whereas traditional banking systems are slow and obsolete. In the era of online banking and e-commerce, where security is of the utmost importance, this is especially crucial.

Second, fintech facilitates financial industry innovation. Traditional banks are typically slow to adopt new technologies and products, whereas fintech startups are constantly innovating and introducing new services. This results in a more dynamic and competitive financial sector, which benefits both consumers and businesses.

Fintech is also democratizing the financial industry. Historically, large institutions have dominated the banking sector, making it difficult for smaller businesses and individuals to obtain financial products and services. This is being altered by fintech platforms, which make it easier for everyone to access financial products and services.

Fintech is contributing to the reduction of poverty and the promotion of financial inclusion. Fintech platforms reach low-income and marginalized populations and facilitate their access to financial products and services, whereas traditional banking systems frequently exclude these populations. This aids in reducing global poverty and promoting financial inclusion.

Overall, the advantages of fintech are obvious. Fintech is making the financial sector more efficient, innovative, and democratic, as well as aiding in the reduction of poverty and promotion of financial inclusion. This is having a positive effect on people and businesses across the globe, and the fintech industry will continue to expand in the coming years.

Problems posed by fintech

The challenges posed by Fintech are numerous and diverse. Keeping up with the ever-evolving technological landscape is one of the greatest obstacles. Financial institutions must ensure that their systems are up-to-date and capable of handling the massive amounts of data processed daily. In addition, they must ensure that their security is adequate, as hackers are always looking for new ways to steal data.

Another difficulty is the need to adhere to regulations. Financial institutions must ensure compliance with the constantly evolving regulations governing the financial

industry. This can be challenging, as regulations can be intricate and frequently change.

Another difficulty is keeping up with customer demand. Customers are always seeking novel and innovative banking and investment options. In order to satisfy customer demand, financial institutions must offer the most modern products and services.

The financial industry is perpetually faced with the challenge of competition. To remain competitive, financial institutions must offer the best products and services at the most affordable prices.

Fintech Users

There are four broad categories of fintech users: 1) banks, 2) their business clients, 3) small businesses, and 4) consumers. Mobile banking, increased information, data, more precise analytics, and decentralized access will create unprecedented opportunities for all four groups to interact.

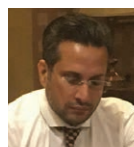
As with most technologies, the younger the consumer, the greater the likelihood that they are aware of and can accurately describe fintech.

Prior to the introduction and widespread adoption of fintech, a business owner or startup would have approached a bank for financing or startup capital. With the advent of mobile technology, these obstacles no longer exist.

Conclusion

Fintech is revolutionizing the financial and payment industries. It facilitates and expedites access to financial products and services, as well as payment processing. Consumers, businesses, and the economy as a whole benefit from this development. Additionally, fintech generates new opportunities for businesses and entrepreneurs. It is essential to ensure that the regulatory environment promotes innovation and protects consumers.

Due to its capacity to disrupt the traditional financial sector, fintech has a significant impact on the future. The rise of cryptocurrencies and the blockchain, which are both supported by fintech, is evidence of this. Fintech enables new business models and methods of conducting business, which benefits both consumers and businesses. Future fintech is likely to continue to grow and evolve, with the development of even more innovative products and services. The economy and society as a whole will benefit from this.



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FinTech

Mr. Muhammad Javed Nawaz

FinTech is an amalgamation of the words “financial” and “technology”. It refers to the use of software, mobile applications, computer programs and new technologies in the financial services industry to improve operational and customer engagement capabilities by leveraging analytics, data management, digital innovation and in some instances exponential technologies. e.g., mobile banking and peer-to-peer payment services.

“**FinTech company**” describes any business that uses technology to modify, enhance, or automate financial services for businesses or consumers. It can also apply to the development and trading of crypto currencies e.g., Bitcoin.

Modern FinTech is primarily driven by AI, big data, and blockchain technology AI can provide valuable insights on

consumer behavior and spending habits for businesses, allowing them to better understand their customers.

Big data analytics can help companies predict changes in the market and create new, data-driven business strategies.

Blockchain, a newer technology within finance, allows for decentralized transactions without inputs from a third party; tapping a network of blockchain participants to oversee potential changes or additions to encrypted data.

These technologies have applied to recordkeeping processes, including the way transactions are initiated, processed, authorized, recorded, reported, and how data is stored.

Blockchain is an accountancy-based technology which allows for keeping all data well structured, stored and easily accessible in almost no time. Such a solution can boost productivity, accuracy, speed and interoperability in routine accounting processes and provide a great platform for subsequent use, e.g., by external auditors.

It brings decentralization, strong authentication, and tamper-resistant ledger of all historical transactions. There is a claim that blocks chain permits 'triple-entry bookkeeping', where a transaction leads to not two but three entries: debit, credit and a cryptographic signature to verify a transaction's validity. Data is encrypted and validated by participants before being added to the ledger. The new entry is verified via a predetermined mechanism: a consensus protocol. 51% of the members of the chain need to agree to it.

Upon transaction acceptance, the entire ledger is updated. Multiple entries, which represent transactions, are put together into a 'block', which is added to the ledger. This way, each block contains information that can be traced back to previous blocks, as they are all connected on a chain with a secure hash that is generated using a cryptographic private key, difficult to break (decipher).

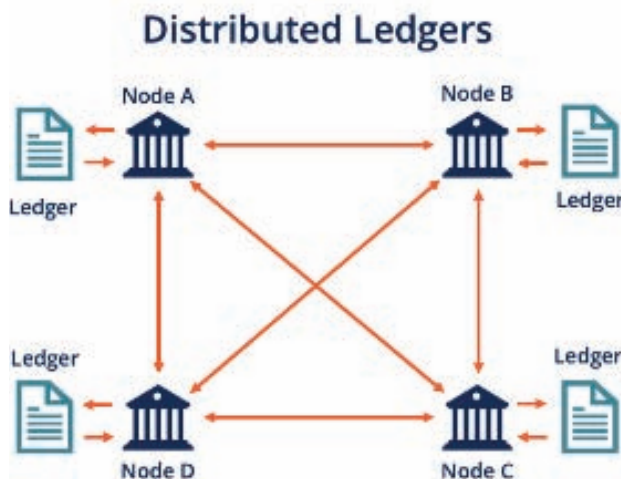
Audit trail feature: Blockchain technology has a built-in "auditing functionality." Blocks that store information, are linked to each and are immutable, therefore blockchain ledger provides not only balances but the whole history of transactions. This enables the track ability of individual transactions (changes). Blockchain can also securely store or link documentation supporting transactions (contracts, agreements, purchase orders, invoices) in an encrypted way.

Decentralization in Blockchain technology prevent the loss of information, i.e., the same set of data is replicated and stored in each node (a computer in the chain). Hence, any change, or rather any addition to the ledger is automatically visible to all network members.

In the blockchain-based accounting system, once information is written to the chain (a block is added), it becomes practically immutable. This system design leaves no room for external tampering, hacking, or fraud unless again the majority of participants agree to the change.

Blockchain work as distributed ledger, a database that is shared and synced

across multiple sites, institutions, or countries by a group of people. The members of each network node have access to the recordings shared across the network and can have an identical copy of them. Any changes or additions to the ledger are reflected and replicated to all participants in a matter of seconds or minutes.



Blockchain ledger characteristics (continuity, irrevocability, irreversibility) can successfully prevent creating fictitious transactions, changing records, backdating options. The transparency of blockchain-based accounting system could benefit external auditors by providing already verified, correct data and make it easy for forensic accountants to access and examine the material related-party transactions.

Instead of asking clients for bank statements or sending confirmation requests to third parties, auditors can easily verify the transactions on publicly available Blockchain ledgers such as blockchain.info or blockexplorer.com

The days of sample based substantive testing will soon be challenged, as auditors will resort to Blockchain technology to test the whole population of transactions within the period under observation. This extensive coverage will drastically improve the level of assurance gained in affected audit engagements.

Blockchain technology has a built-in "auditing functionality." Blocks that store information, are linked to each and are immutable, therefore blockchain ledger provides not only balances but the whole history of transactions. This enables the track ability of individual transactions (changes). Blockchain can also securely store or link documentation supporting transactions (contracts, agreements, purchase orders, invoices) in an encrypted way.

In order to adopt Blockchain audit processes, need to shift further towards the assessment of operating effectiveness of the internal IT controls.

Internet of things system consists of sensors and actuators embedded in physical objects that are “linked through wired and wireless networks, often using the same Internet Protocol (IP) that connects the Internet”. As sensors send data to the cloud, information is collected, and software can process it for the purpose of performing an action. IoT sensors are in place, the information from operations automatically ends up in the accounting ledgers, hence no need for manual entry.

Sensors can update financial records regarding any physical asset in real-time: inventory, production levels, equipment usage and its wear and tear.

Automation brings real-time-data, lower labor costs for the company, fewer errors but also fewer possibilities for manipulating records.

Auditors, rather than checking the correctness of information in the financial statements, will be able to put more emphasis on detecting fraudulent behavior of the company’s management.

It will enhance fair value accounting and disclosure. It can track not only the amount of inventory but also its quality. Similarly, sensors, video cameras or chips embedded in property or machinery can provide a more accurate record of a fixed asset. While sensory data measuring the health of an asset may be utilized by operations to decide about its maintenance, replacement etc., accounting can use this data to select a more appropriate depreciation method, and investors can use this new information in their valuation models.

Smart contracts are “user-defined programs that specify rules-governing transactions” that can be integrated into the blockchain. Blockchain users program their own rules (in practice, ‘if-then’ propositions) into a smart contract. These rules are encoded to execute specific tasks automatically, upon certain conditions being met. A simple application of an ‘if-then’ smart contract proposition in accounting is an automatic payment of accrued, unused vacation on termination of employment.

A minimal disclosure model built on blockchain enables unique access privileges for different members. Those who can access the blockchain, can retrieve disaggregated and very detailed information about the company’s operations, and use it according to their idiosyncratic needs. But if a minimal disclosure model were built onto the blockchain, access to blocks containing different accounting information could be granted at different levels, i.e., full access to regulatory bodies or partial access to investors.

Blockchain work as distributed ledger, a database that is shared and synced across multiple sites, institutions, or countries by a group of people. The members of each network node have access to the recordings shared across the network and can have an identical copy of them. Any changes or additions to the ledger are reflected and replicated to all participants in a matter of seconds or minutes.

ML tools provide automatic, near real-time alerts for relevant interested parties about unusual company’s activities. Tax authorities can be immediately notified if there is an event of tax evasion, investors—if the company is misusing its resources, banks—if the company is using borrowed funds not in accordance with the loan agreement. This could be possible through joint implementation of machine learning.

FinTech in the form of Digital banking, AI and ML are expected to grow to a compound annual growth rate of 11.5 percent by 2026.

In Pakistan there are 269 startups specializing in the FinTech sector and many of them are highly successful and sustainable. SBP in its Digital Financial Services -Innovation Challenge Facility guidelines paper stated that it is estimated that the market potential of Digital Finance services in Pakistan will cross \$36 billion by 2025, providing a 7 percent boost to the GDP, creating 4 million new jobs. It

comes as no surprise that Pakistan has become a hotspot for FinTech transformation.



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Fintech, Double Edge Sword and a solution to the Bad Sharp Edge

Mr. Safdar Ali, FCA

The FinTech industry, which utilizes modern computing and telecommunication technologies to conduct financial transactions, is a billion-dollar industry that is expected to continue growing exponentially, even during periods of recession and inflation. Inflationary trends can actually increase the monetary value of goods and services, resulting in higher commissions and profits for FinTech businesses.

The industry is highly competitive, with numerous market players vying for market share. As soon as a new entrant launches in the market, existing players are quick to respond. These micro-services to end consumers are also integrated with the banking networks of the country, allowing even non-registered individuals to transact through any FinTech player for a fee.

The profits generated by this industry are so lucrative that a nominal bonus amount is automatically added to a new

customer's account, and further rewards are offered if the customer base increases as a result of referrals from current customers.

The FinTech industry has disrupted the traditional modes of conducting transactions between Business to Business (B2B), Business to Customer (B2C), and even Business to Government (B2G). Governments have also launched FinTech solutions to eliminate bureaucratic processes involved in realizing financial transactions, and the Inland Revenue Service (IRIS) is an excellent example of B2G engagement with taxpayers.

The Positive Sharp Edge

FinTech has led to a reduction in the paperwork required for financial transactions. For example, in a developed country like Japan, the entire financial record is maintained on a computer, enabling paperless financial accounting.

Governments are also utilizing FinTech for the collection of toll taxes, tickets, and other government duties, resulting in increased efficiency and convenience for citizens.

Freelancers are earning a lot via FinTech services as they can easily cash their services provided via online platforms in their own country and in their own currency and in their own bank accounts. Hence, the problem of any anti money laundering regulations etc. are been taken care of by the bank.

FinTech uses paper currency and plastic currency variants to conduct business transaction faster.

The Negative Sharp Edge

1. Since all transactional record is kept in electronic and online form so the auditor needs to be an expert in using Computer Assisted Audit Techniques (CAATs) A failure to use CAATs will increase audit risk leading to an appropriate audit opinion.
2. Freelancing websites charge for their commissions from earning of the freelancers and hence huge profits are made by freelancing website owners at expense of the internet skilled community.
3. FinTech uses both Fiat money and Fake money as mediums of exchange. Fake money are the crypto currencies and bitcoins which are generated in the dark web domain of the world wide web and there is no government and authority behind this fake currency. In this highly regulated world, all controls etc. can be easily bypassed via fake currency exchanges and money is easily utilized for criminal and outlawed activities.
4. Due to ease of use FinTech is becoming a necessity almost and many organizations and governments are transforming their payments and collections mandatorily to FinTech use. For instance, the Federal Board of Revenue (FBR) last year announces transactions beyond certain limit to be conducted online in order to allow it as a taxable expense (FinTech Promotion).
5. In Pakistan many entrants in the FinTech industry are using dirty tactics. There is no control on applications. Many corporations have been established in Pakistan that are providing loans to Pakistani android phone users just by the click of buttons. Those applications require special permissions to data held in the phone. Loan is usually transferred to a well-known FinTech application like Easy Paise or Jazz Cash. However, the entity lending is another one. When the poor Pakistani is unable to pay the loan at due date another application is offered via Artificial Intelligence technique which offer higher amount of loan. So, the android phone user then have another interest-based loan for payment of existing loan with interest and keeping some extra cash. A point then comes where no loan is provided exceeding certain limit. Behind the loan no guarantee is taken as happens in usual banking services. Now, the technique used is editing of pictures and videos of the phone user and his relatives and friends in a bizarre way and blackmailing begins from providers of the loan and the person is trapped. Either he

has to become a target for his or her adverse publicity in the society for something he has not done or he has to repay the loan to the unethical loan provider.

6. Pakistan is currently facing a similar situation where negative propaganda is being directed towards the government and state institutions due to the country's reliance on International Monetary Fund (IMF) loans, which have been accumulating for decades. The loan transactions between Pakistan and IMF also involve FinTech services.

However, the blackmailing techniques adopted by Economic Hitmen resemble white-collar crimes that are legal but unethical, and can be lethal to any country. Sri Lanka has already fallen victim to the slavery chain by reducing its army strength under IMF dictations. The scarcity of dollars during loan installment repayment, negative balance of trade, and reckless spending are all factors that make Pakistan vulnerable to the drastic measures imposed by IMF dictations.

What to Do:

From brevity only points 5 and 6 above presented in the negative sharp edge are discussed hereunder:

1. For point 5 two types of solutions may be proposed:
 - I. Curtailing interest based micro finance operations in Pakistan and introducing criminal penalties under the Code of Criminal Procedures (CCP) for execution of offenses under the enforced acts. Simultaneously, passing resolution for annulment of existing microfinance laws of the land and providing an exit route to all existing microfinance operations the salient feature of which will be not to get involved in further microfinance operations with immediate effect. Where microfinance loans interest is declared as illegal in Pakistan this menace as discussed will vanish by itself and the existing FinTech transactions will be affecting only the mental and social health of Pakistani citizens and the society respectively.
 - II. Introducing laws and regulations within the existing conventional interest based micro finance operations vicious cycle that will cost more and more in all terms including legal technicalities of overlapping laws, greater monitoring and vigilance and longer time consumed in courts of law in disposal of such cases due to defect in the root cause i.e., legislation. Solution A presented will be more beneficial to Pakistan as the present human resource will be having peace of mind to live a respectable life and the cost under the existing vicious conventional system will also be saved for righteous laws promulgated under the injunctions of Quraan and Sunnah.

Besides the above two, the FinTech industry players whose platforms are used will require instructions issued from the regulator (SBP) to have proper Know Your Client (KYC) procedures to pinpoint the culprits. In case of

- improper client screening penalties of say @10% of the culprit should be imposed on the FinTech player if so, proved guilty under any promulgated regulations etc.
2. For the IMF vicious Web of White-collar modern slavery traps the following step wise suggestions are proposed for the authoritative to consider and work on viz;
 3. The Constitution of Islamic Republic of Pakistan allows the federal and provincial governments to take loans with such terms as may be approved by respective assemblies. The constitution includes the word "terms" only. Interest payment are mentioned at the time of making payment only. Hence, if the elected members of all the assemblies wishes so they can legislate not to take any further loan of they are based on interest, may it be 1% because haram is haram. It will also be as per will of the Pakistani people as people seems to be like a lava in a volcano that can erupt anytime, if the coming elected public representatives does not act in accordance with public will.
 4. In Pakistan the main purpose of any elected assembly is to legislate so as to provide a frame of reference via which justice is to be provided to the citizens of Pakistan. After the legislators are done with the legislations under the constitution for framing all laws in accordance with Quran and Sunnah and removing and nullifying all laws repugnant to Quran and Sunnah, the can than work on with those law enforcement and justice delivery systems. As said in Pakistan that the wealth of Qaroon, the age of Prophet Nooh AS and the Sabr of Prophet Ayub AS is needed to get justice from Pakistan Judiciary. So, a lot needs to be done. The purpose of elaborating the above was to mention another point which is that ministers of elected parties are been allocated with Annual Developmental Plans budgets in the tight economic conditions of Pakistan. The ministers and the SAPMs etc. of the elected party usually use those funds in a way so as to maintain or increase their vote bank for coming elections as they have to go to the public at least after every five years. Hence, all such budget allocations should be banned. After the budget is ascertained to be sufficient to sustain existing operations within the available resources than and only than an ADP should be approved with mutual consensus or say by a resolution in the assembly on need and or priority basis.
 5. Under the Constitution of Islamic Republic of Pakistan, a state is defined as the one having the authority to impose taxes. Pakistan government is fully authorized to impose taxes in order to run government affairs. In Pakistan and around the world we have a system of taxation that is against one grand canyon of taxation i.e., avoidance of double taxation. Poor Pakistani consumers has to pay these taxes many a fold and sometimes even greater than original price of the product itself. This is true in case of vehicles and imported vehicles where the import duty and advance taxes are such high that even exceeds the original price of the product. And this is why the professionals post via LinkedIn the belonging of a car as an achievement. Elsewhere in the world this is not the

- practice because car is a necessity for them. In Pakistan it is also a necessity when up to certain cc but is perceived as a luxury due to the prices associated to it especially in hyperinflationary economic trends. So, when a halt is made to the IMF loans and re-loans for paying existing loans with interest and starting and sustaining new and existing ADPs and then repeating the cycle time and again to the extent that now the country is being instructed to sell out its assets in the form of steel mill and power plant where the primary industry and power supply respectively are already in shortage of supply make this more critical for the country. Taking of these loans is a menace and it has now adopted the shape of a cancer that is spreading all around in a multiplied rate. The only solution to this cancer is to stop it so that the rest of the time of Pakistan may be cured and the healing is also going to take a lot of time. By doing so, Pakistani citizens will be unaware of how and when an IMF installment is due and it will be paid in normal course of business and collection of revenue and disbursement of expenditure and funds and that too via FinTech in which no coming and going of delegations incurring millions of expenses will be made for satisfying IMF or begging the only veto power of IMF i.e., the US.
6. It is suggested that Pakistan should introduce an alternative system of zakat to replace the current taxation system, which is burdensome for both businesses and individuals. This new system should be transparent and require a true and fair declaration of all assets owned by companies and individuals. To ensure compliance, Pakistan could enter into agreements with foreign nations where Pakistani Muslims have properties and bank balances, requiring them to disclose their assets and pay zakat at a specified rate of 2.5%. Iran has already done something similar with Pakistan in the past.

Furthermore, profiteering from government ADP plans should be eliminated, and all monies and profits gained by individuals and companies through such plans should be recovered. This is expected to be more than the annual tax collection in Pakistan. If government expenditure cannot be met from zakat alone, taxes may be introduced to cover the shortfall, but only after all possible measures have been taken to reduce unnecessary expenses.

Finally, a non-deficit budget should be introduced to the financial and economic system. Instead of presenting a budget where all allocated expenses are utilized to 100%, regardless of whether the money is hard-earned tax money or borrowed from the IMF, a more efficient and responsible budgeting approach is required.



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FinTech – an ultimate global economy. Where Pakistan does stand on FinTech?

Syed Imtiaz Abbas Hussain, FCA

FinTech is a blend of “financial” and “technology”. It refers to any app, software, or technology that allows people or businesses to digitally access, manage, or gain insights into their finances or make financial transactions. In general terms, FinTech pertains to the provision of financial services such as banking and insurance, where companies utilize innovative technology to challenge traditional financial methods. The use of advanced technology such as artificial intelligence, blockchain, cloud computing, and big data are considered the essential components, also known as the “ABCD,” of FinTech. Some examples of FinTech include mobile banking, mobile insurance, peer-to-peer payment services (e.g., Venmo, CashApp), automated portfolio managers (e.g., Wealth front, Betterment), or trading platforms such as Robinhood.

FinTech is a blend of “financial” and “technology”. It refers to any app, software, or technology that allows people or businesses to digitally access, manage, or gain insights into their finances or make financial transactions. In general terms, FinTech pertains to the provision of financial services such as banking and insurance, where companies utilize innovative technology to challenge traditional financial methods.

I recall that I have not physically visited a bank branch in over a decade. Similarly, my son, who was previously residing in Dubai and now in Australia, has never visited a bank branch. Moreover, my clients, customers, friends, and relatives have also refrained from visiting bank branches, as well as those of general and life insurance or takaful companies, and even business malls and centers for years. How have they been managing their financial services, purchases, and business transactions, you may ask? They have harnessed the power of FinTech, which not only saves time and provides greater control, but also reduces competitive market risks, saves money, fosters better financial habits, and mitigates stress. Furthermore, FinTech enables users to utilize their saved time in more productive and profitable ways in today's fiercely competitive world with minimal risks.

As more and more consumers have adopted digital tools, especially during the COVID-19 pandemic, FinTech has emerged as a means to help them address financial challenges and achieve their financial goals. FinTech is now accessible through mobile devices, which are ubiquitous and enable individuals to manage their banking, insurance, and other financial transactions with a simple click on FinTech apps. Consequently, FinTech has become a necessity and an integral part of people's daily lives.

The phenomenal increase in the usage of FinTech can also be attributed to the COVID-19 pandemic, which has removed all doubts about the operation of FinTech and has given the public confidence in its use worldwide.

How does FinTech work?

There are several types of FinTech apps, and they work in different ways across business-to-business (B2B), business-to-consumer (B2C), and peer-to-peer (P2P) markets. The following are just some examples of the types of FinTech that are changing the financial services industry.

Banking

One of the most central components of the financial system, banking services has been shaken up by the FinTech industry. Things like account opening and funding as well as a reduction in fraudulent sign-ups are now quick and easy thanks to technology like Plaid's own Auth and Identity, respectively. In turn, neo-banks like Current offer flexible personal checking accounts, faster direct deposits, and even teen banking products—all without the traditional fees that can hinder people from achieving their financial goals.

Payments Services

Cashless payments are on the rise by using FinTech payment apps and services such as PayPal, Apple Pay, Google Pay, Venmo, or Google Play for sending or receiving payments. That's because receiving payments via direct bank transfer is significantly less expensive than using credit cards, and getting users signed up and authenticated has become faster and easier as this app allows consumers to instantly connect their bank account to an app or service to carry out digital payments. On the B2B side, apps like Wave help businesses

pay bills, do bookkeeping, and send payroll—also digitally and via ACH.

Peer-to-Peer Lending and Borrowing

This type of FinTech streamlines the loan process for borrowers while giving lenders access to the user-permissioned bank, payroll, and other data they need to make informed lending decisions. In this way, it becomes fast and easy to verify borrowers' identity, assets, employment, and income, as well as authenticate their accounts, check balances in real-time, and verify financial obligations. Any individual could access these platforms and borrow loans anytime without attending any office or bank.

Personal Finance Management (PFM)

PFM apps help users consolidate financial information from various accounts into a single dashboard, making it easier to stay up to date with their finances. PFM is a unique and personalized category of FinTech focused on enhancing wealth management and retail investment practices.

WealthTech

WealthTech helps financial advisors and wealth management platforms aggregate held-away account information to better grow assets under management (AUM) while delivering more comprehensive financial advice.

Regulatory Technology (RegTech)

RegTech is a subclass of FinTech focused on technology that could enable efficient delivery of regulatory obligations. RegTech could utilize cutting-edge technology to improve compliance alongside facilitating the introduction of simple, cost-effective, secure, and easy-to-understand regulations. RegTech aims at standardization and promotion of transparency in regulatory processes. RegTech could offer the foundation for various regulatory solutions such as risk management, compliance management, regulatory reporting, and transaction monitoring.

Insurance Technology (InsurTech)

InsurTech has enabled flexibility for developing insurance solutions with high value to improve user experience. Insurers are trying to use FinTech app for the integration of smartphone apps, AI, IoT, machine learning, and many other technologies to improve the value of insurance services. FinTech could enable formidable improvements in insurance services, such as an easier collection of insurance details on smartphones. Similarly, user-friendly apps could play a crucial role in ensuring easier management of coverage. Many providers have been working on telematics to improve core insurance products and streamline coverage. InsurTech also changes the perspective of users on insurance products with many value advantages.

Crowd Funding

Crowd funding type has removed the need to visit a bank or pitch ideas before venture capitalists to obtain loans or funding for projects. Crowd funding could offer the ideal

opportunity for micro and small enterprises to discover investors for their projects for raising capital.

Robot-based Advice and Stock Trading

Robot-based advisors are apps powered by AI and ML for offering recommendations regarding financial decisions. Robot advisor would never take breaks and would provide round-the-clock data analysis capabilities.

Similarly, Stock trading apps are useful tools for investors to conduct desired transactions directly from their smartphones. The power of AI and ML could help in capitalizing on meaningful insights from huge piles of data.

Embedded finance

Embedded finance refers to financial services offered smoothly in consumers' everyday experiences through non-financial products and services. For example, Shopify Balance provides business checking accounts for Shopify users that help them get paid faster and manage their business.

FinTech is revolutionizing the way financial services companies operate. Companies across the Middle East are moving to digitization fast. Likewise, the UK has a strong FinTech industry. More than 40% of Europe's FinTech unicorns are based in the UK. Similarly in USA alone, the number of FinTech startups increased from 5,868 in 2018 to 10,755 in 2021. In 2021 the global FinTech funding reached a record \$132 billion. Much has been predicted about the industry's next big trends, such as increased use of AI to mitigate the risk of fraud, greater financial inclusivity, and the further expansion of embedded finance. Projected value of global FinTech market by 2023 is US\$ 306 bn.

Where Pakistan does stand on FinTech?

The provision of FinTech products and services is regulated in Pakistan by the Securities and Exchange Commission of Pakistan (SECP) or the State Bank of Pakistan (SBP), depending on the nature and scope of the relevant FinTech products and services in order to maintain transparency and accountability in dealing of FinTech providers and to safeguard users of FinTech from possible risk of fraud etc.

There is no specific regulation for peer-to-peer or marketplace lending or crowd funding or invoice trading or open banking, therefore these activities are prohibited.

FinTech companies that sell insurance products are regulated under the Insurance Ordinance 2000. Any promotional material for life insurance products must conform to any relevant directions given by the SECP.

FinTech sector growth in Pakistan

Growing smartphone penetration, internet connectivity, and encouraging but regulated government policies aimed at

using digital financial technology has already set the stage for FinTech's growth.

There are approximately 269 startups specializing in the FinTech sector and many of them are highly successful and sustainable.

According to SBP, it is estimated that the market potential of Digital Finance services in Pakistan will cross \$36 billion by 2025, providing a 7 percent boost to the GDP, creating 4 million new jobs.

Over the last decade, the Pakistani digital financial services sector has been in an accelerated upwards spiral. As high-bandwidth penetration (3G/4G) surges past 43%, and mobile penetration increases beyond a staggering 77% and Pakistan Telecommunication Authority (PTA) projects this number to double by 2024.

Observations

FinTech is not an overnight phenomenon, as the first examples of financial technology are visible in the use of credit cards in 1950 and later on use in ATMs. Now the users of FinTech include not only individual customers but also startups, small businesses, and well-established corporations which want to leverage FinTech.

The pandemic COVID-19 spurred a rapid boost in online booking, micro-loans, and virtual transactions to ensure efficiency in financial management. The transaction value in digital payments reached almost \$5.2 trillion in 2020, as compared to \$4.1 trillion in 2019.

FinTech may face challenges and hindrance

FinTech in many countries face the capital requirement or the funding blockades due to presence of risk averse culture resulting in less interest of funding sources such as crowd funding and venture capital.

FinTech widely face the issues related to cyber, data security and protection of personal information of customers which hinder the process of their growth.

In few years FinTech will remove majority of branches of banks and insurance. Having reached mass adoption, it's clear that FinTech is here to stay. It's no wonder that all eyes are focused on where FinTech is headed next.



Syed Imtiaz Abbas Hussain is a fellow member of Chartered Accountants of Pakistan and has experience of 28 years in different capacities.



FinTech: To build Digital bricks along Analogous brook by Fin – Tech

Mr. Khizar Hayat, FCA

Fintech is being gradually integrated into both public and private organizations, capital markets, international trade, and e-commerce, as there is a saturation of technological advancements. The digital revolution is essentially replacing physical processes with analogous and cellular Infosys solutions. The profound impact of artificial intelligence and cloud technologies is revolutionizing the public domain and transforming business agility.

To achieve impulsive and synchronized outputs, manual and semi-manned processes in public, commercial, and trade domains have been rapidly supplemented with ultra-high-tech digital, cellular, and wavelength silicone chips, and smart software conversions since the early nineties. Factors that support and facilitate such conversions are essential for

infrastructural enrichment, whether it be in financial, technological, commercial, or other e-commerce initiatives.

Process sophistications are undoubtedly a means for achieving excellence, but they cannot be a substitute for any lacking endowments. Sharing of instant tech facilities can be accomplished through bilateral supplements modification and free trade associations. Revolutionary advances in information dissemination and data facilitation are increasing day by day, along with advancements in work and tech-enriched processes. However, financial opportunities are often limited for developing communities and regions. State-level entrepreneurship can complement system excellence, financial integration, and the search for the best resources. Institutional product designs aimed at supporting tech tools and facilities can also be considered.

Factors support and conversions are vital part for any Infrastructural enrichment whether it may be either financial, technological or commercial and other e-commerce initiatives.

In financial sector, FinTech Infosys, solutions, offerings are being emerging in form of digital banks from conventional Branch banking. Processes like adoption to digital arena, simplification of payments, quicker access to capital, efficient lending, and enhanced risks re-addressal have been automated and made more flexible.

The digitization and use of analogs, as well as fiber optics, have established patterns for faster and more robust results and conversions. Resources kiosks and specialized sector-specific holdings should be defined and designed in liaison with international tech benchmarks to further enlarge collaborative potential refinements.

The true shift in the era of data, information, allied telecom, and the digital arena has meshed technical facilitations with financial and investors' accessibility, optimizing ease and reducing complexity. Specialized windows can be developed or chosen to tap into different international streams of brooks and hubs, considering local boundaries and elasticities.

Specialized windows are increasingly being adopted for end-users' facilitation and robust customer service. In the future, processes such as track and trace, automation, storage and sorting, retrieval, and add-ons will be sophisticated manifold, and grading will be scaled in terms of extrusive brain computing and tech reliance.

Developing manning skill sets and creating long-term resourceful planning for foreseeable tech trends are crucial

for paving the way forward. In public domains, soft and tech reliance have provided agility to cope with boom and bearish surges and impulsive strategic manifestations. Regulators can be aided through FinTech tools to build safeguards or limits for exceptional dips in marketplace volatility and liquidity bars. The roles of physical skills sets and allied educational levels need to be further reshaped to accommodate upcoming innovative solutions and impulsive emigrating trends in the FinTech field. The extended bandwidth, ease of handling repetitive tasks, and enlarged applications of brain computing techniques in processing financial, technical, and process-related information, data, and returns metrics in affirmative modes have led to the rapid development of IT branding and the latest merchandising of Fin soft & hard tech.

The just and equitable applications and rapid infusion of FinTech capabilities have made it easier and more spontaneous to lift both public and private domains in the rapid development of growing economies. Visible cornerstones of this development are adaptations to emerging FinTech capabilities and exorbitant automations with substantial structural layouts, keeping pace with the latest tech benchmarks.

FinTech over reliance and usage be further augmented with adequate coverages, backups, outages management, connectivity plus / minus, designs checks and upgrades, soft and tech compatibilities and successful integrity among systems.

Regulations and marketplace deterrents are deterrents of future footsteps and patterns for speedier growths.

Regulatory and operational frameworks contain as well also set directional roadmaps for fin-techs routing from higher niche culture to developing masses. These are subject of common reviews and sharing between international associations of fin-techs and bodies of cross-borders professional federations.

In recent years, rapid conversions and shift of methodologies have taken place in capital, money, financial, telecoms, and retail markets in terms of newer and sophisticated automated financial and supply chain as well as logistics management.

In larger tech-edged world and societies, updated versions of Blockchain technology, Robo-advisors, online & mobile banking and mobile payments are latest fashioned applications.

Overwhelming penetration of financial technology (FinTech) is being witnessed in institutional markets of investments management, lending & deposits, crowdfunding, insurance, payments and financial research.

In financial sector, FinTech Infosys, solutions, offerings are being emerging in form of digital banks from conventional Branch banking. Processes like adoption to digital arena,

simplification of payments, quicker access to capital, efficient lending, and enhanced risks re-addressal have been automated and made more flexible.

Sparklights, terminal weighing of a going concern or public utilities or commercial domain are predominantly termed in form of integers, digits numeric, textual and visuals or graphics by use of Fin – tech support. Every technical process is manifested into digital and analog yardsticks and financial pyramids.

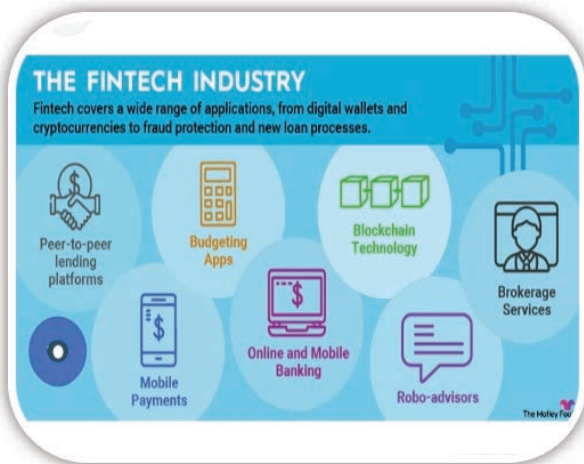
FinTech amalgamated with appropriate Fin-scaffolding, Fin-sprouts, Fin – overshadowing and Fin – oversights as well as spontaneous Fin – Tech laying out or offspringing would complement overall systems and revamp the corporate excellence and investors yields.

Manning roles and efficacies are correlated with efficient utility of Infosys solutions.

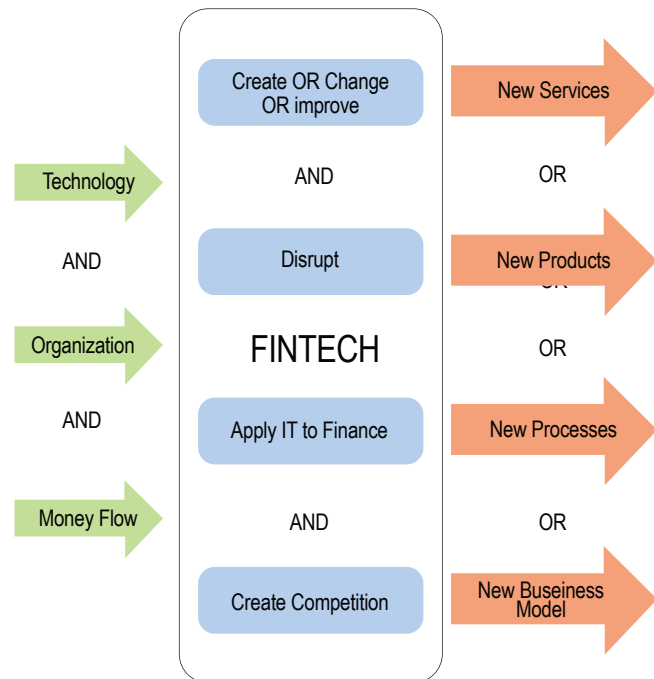
Stakes holder’s win – win scenarios and Fin – Tech excellences would be lasted infinity based on horizontal and vertical research & development, skills textures, manning levels & capacities, penetration across supply chain, factors supporting as well as total adaptation to emerging trends innovation. Stand - alone Fin – Tech applications would be a sapper with fewer cocktail edges. To make it more edges full and fruitful, stand-alone Infosys solutions would be supplemented and meshed across the globe for rapid availability of financial and commercial bargains and bilateral exchanges.

Sectoral FinTech benchmarks and gaps would have to be solicited in anticipation and dealt abreast in form of annualized and long-term accretions and plans.

The industrial cluster is enjoying massive repeat customers layering with very survival of on-line & digital/mobile banking, mobile payments, sophisticated lending and budgeting apps. Blockchain technology, crypto currency, Robo – advisory are recent footprints of digital west world.



FinTech has led into newness outcome being a change in supply chain output with joinder of technology, organization and money flows.



Citations of true and fair applications would be transformations made by financial institutions through FinTech solutions. Books and manual transactional traffic handling have been converted into as well as supplemented with cellular medium and satellite connections.



Unleashing optimizations of FinTech would evolve and encompassing: -

- Speed and Convenience+ (Ease of doing).
- Higher Security and transparent.
- Quality and cost considerations.
- Upgraded Facilitations.



Institutional products leverages and professional fields skills sets support layering would be top areas for top predictions and trends covering mainly: -

- Artificial intelligence and machine learning.
- Biometrics Security systems.
- Open and Digital Banking.
- Reg Tech.

Impulsive emigrating from physical Infosys forms into digital & cellular aspirations would make the foreseeable time very promising with due trigger and mutualism.



From financial sectors to services sectors products design and customer orientation would be further reshaped through FinTech upgrades.



Future outlook would be abreast with requisite plans, allocations, multiple cohesion and soft and tech compatibilities.

Effect of technology trends up to 2050

- **Future of connectivity:**
Up to 80% of the global population could be reached by 5G coverage by 2030.
- **Distributed infrastructure:**
More than (>) 75% of enterprises-generated data will be processed by edge or cloud computing by 2025.
- **Next-generation computing:**
More than (>) \$trillion value of quantum-computing use cases at full scale by 2035.
- **Applied AI:**
>75% of all digital-service touch points (e.g., Voice assistance) will see improved usability, enriched personation, and increased conversion.
- **Future of programming:**
~30x reduction in the working time required for software development and analytics.
- **Trust architecture:**
~10% of global GOP could be associated with blockchain by 2027.
- **Bio Revolution:**
45x cost reduction for sequencing the human genome has been achieved in the past 10 years.
- **Next-generation materials:**
10x growth in number of patients between 2008 and 2018.
- **Future of clean technologies:**
More than (>) 75% of global energy will be produced by renewable in 2050.

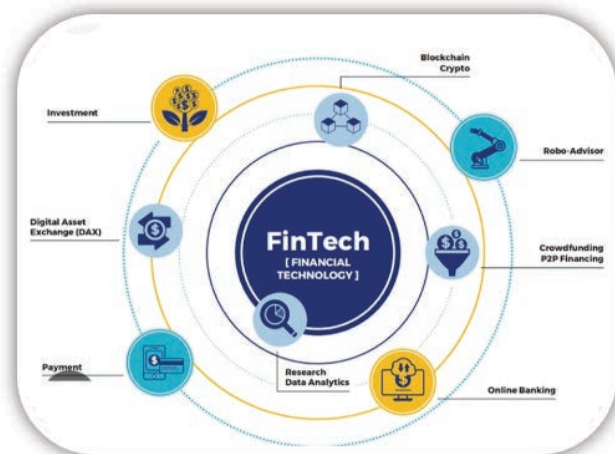
Technology trends and underlying technologies
Industry-agnostic trends

- **Next-level process automation and process visualization:**
 - Industrial IoT (Internet of things).
 - Robotics/cobots/RPA (Robotics processes Automation).
- **Future of connectivity:**
 - 5G and IoT connectivity
- **Distributed infrastructure:**
 - Cloud and edge computing
- **Next-generation computing:**
 - Quantum computing
 - Neuromorphic chips (ASICs)

Cover Story

- Applied AI:
 - Computer vision
 - Natural language processing
 - Speech technology
- Future of programming:
 - Software 2.0
- Trust architecture:
 - Zero-trust security
 - Blockchain
- Bio Revolution:
 - Biomolecules
 - Biosystem
 - Biomechanics
 - Biocomputing
 - Augmentation
- Next-generation materials:
 - Nanomaterials
 - Graphene
 - 2-D materials
 - Molybdenum
 - Disulfide nanoparticles
- Future of clean technologies:
 - Nuclear fusion
 - Smart distribution/metering
 - Battery/battery storage
 - Carbon-neural energy generation

In Latin America and EU, FinTech tools are commonly phased for crowd funding, research Data analytics, digital assets exchanges, Robo advisory and investments management.



Pakistan Single Window is a truly transformative initiative that aims to digitize Pakistan's cross-border trade. It simplifies trade procedures and motivates businesses by streamlining their current development to support them in becoming a part of the global supply chain.



The true challenges lying ahead for rigorous and upfront re-addressable are: -

- Food inflation and security.
- Energy crisis and management.
- Cyber prefiltration and aversions.
- Debt accelerations and robust planning for offsets.
- Abridging and bridging Information Systems gaps.
- Trade imbalances.

Overall global picture for risks saturation is more painted in areas of aforementioned critical factors and is marked along with riskier higher axis.

Digital transformations had led into technological ease of things coupled with higher niche of risks. Systems safety as well as IT Security would still remain major considerations in days ahead for nations-wide trades spreads.

Capital market regulators are also on outlook for compliance related matters and allied measures with regard to electronic communications coupled with advantageous real-time settlements and optimizations.

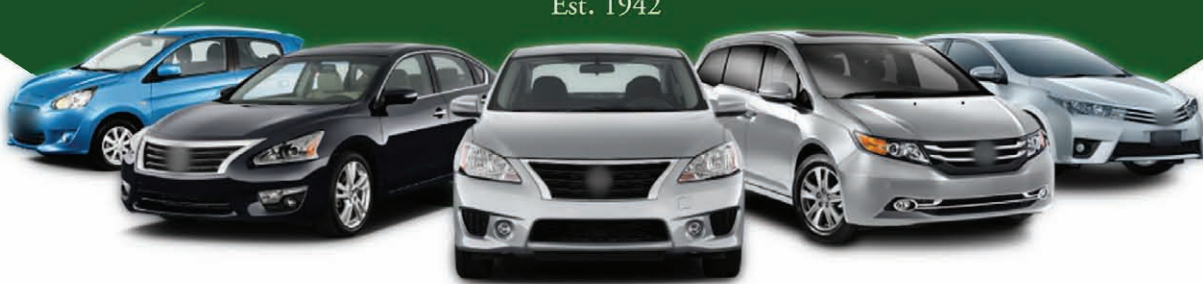


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ADDITIONAL COVERAGES/SERVICES (OPTIONAL WITH ADDITIONAL PAYMENT)

1. TRACKER

Tracker Facility @ Rs. 6,500/- ; to be paid additionally

2. 50% REDUCED DEPRECIATION

Following scale for ICAP users at extra premium of 0.20% to be charged in addition to standard rate of 1.50%:

Depreciation Scale	Standard	ICAP Plan
Vehicles of latest model but not older than 6 month	05%	2.50%
Vehicles of older model than 6 months but not exceeding 12 months	10%	5%
Vehicles of older model than 12 months but not exceeding 24 months	20%	10%
Vehicles of older model than 24 months but not exceeding 36 months	30%	15%
Vehicles of older model than 36 months but not exceeding 48 months	40%	20%
Vehicles of older model than 48 months but not exceeding 60 months	50%	25%
Vehicles of older model than 60 months but not exceeding 66 months	55%	27.50%
Vehicles of older model than 66 months but not exceeding 72 months	60%	30%

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FinTech in Audit and Assurance

Mr. Muhammad Sannan Jalisi, ACA

FinTech, or financial technology, is rapidly changing the way the audit and consulting industry operates. With the advancements in technology, auditors are now able to access vast amounts of data in real-time and use advanced analytics to identify potential issues and fraud. This has led to a shift in the traditional audit process, as auditors now have access to more data and can perform more in-depth analyses. Following are some of the processes by which FinTech is affecting the environment.

Data Analytics: One of the major ways that FinTech is impacting the audit industry is through data analytics. Auditors can now access vast amounts of data in real time and use advanced analytics to identify potential issues and fraud. This allows them to perform more in-depth analysis and identify potential problems before they become major issues.

For example, a forensic auditor may use a machine learning algorithm to analyze a client's financial transactions, looking for patterns that may indicate fraudulent activity.

Another example is using natural language processing (NLP) to analyze unstructured data such as emails, social media posts, and other forms of written communication. This technology can help auditors identify potential red flags and risks by analyzing text data for keywords, sentiment, and other clues. For example, an auditor may use NLP to analyze a client's emails and social media posts, looking for any mention of financial fraud or insider trading.

Additionally, data visualization tools such as dashboards and heat maps can be used to present the findings of data analytics in a clear and easy-to-understand format. This allows auditors to quickly identify patterns, trends, and anomalies in the data, and to share their findings with their clients and other stakeholders concisely.

Interaction with Stakeholders: FinTech is also changing the way auditors interact with their clients. With the increasing use of digital platforms, auditors are now able to communicate with clients in real-time, and share data and insights more easily. This has led to a more collaborative and efficient audit process, with clients and auditors working together more closely to identify and resolve issues.

Many firms now offer clients a secure, online portal where they can access their financial data and communicate with their auditors in real-time. This allows clients to easily share information and collaborate with their auditors, which can lead to a more efficient and effective audit process.

Another example is the use of mobile apps that allow clients

to access their financial information and communicate with their auditors on the go. Clients can easily upload documents, provide feedback, and receive notifications and updates from their auditors. This allows clients to stay engaged and informed throughout the audit process, even when they are away from their desks.

FinTech is changing the way auditors can collaborate with other stakeholders in the financial ecosystem, such as banks and other financial institutions. With the increasing use of APIs and other integration technologies, auditors are now able to access and share data more easily with these other stakeholders. This can help to improve the overall efficiency of the audit process and can lead to better outcomes for clients.

FinTech, or financial technology, is rapidly changing the way the audit and consulting industry operates. With the advancements in technology, auditors are now able to access vast amounts of data in real-time and use advanced analytics to identify potential issues and fraud.

Blockchain Technology: Blockchain is a distributed ledger technology that allows multiple parties to access and update a shared database in real-time. This technology has the potential to revolutionize the way audits are performed, as it allows for real-time data sharing and eliminates the need for a central authority to oversee the process.

An example of how blockchain technology is impacting the financial audit process is smart contracts. Smart contracts are self-executing contracts with the terms of the agreement written into code. These contracts can be stored and replicated on a blockchain network, providing an immutable record of the agreement. This can be especially useful in the financial audit process, as it can provide a tamper-proof record of financial transactions that can be easily audited.

Another example is the use of blockchain-based digital assets, such as cryptocurrencies. Auditors can use blockchain-based ledgers to track and verify the ownership and movement of these digital assets, helping to detect

any fraudulent activity or other financial irregularities.

Additionally, blockchain technology can help to improve the efficiency of the audit process by reducing the need for intermediaries and manual reconciliation of data. This is because, in a blockchain network, transactions are recorded and verified in real-time by multiple parties, eliminating the need for a central authority or intermediary to oversee the process.

Practical Implication in the Audit process (Ease in Audit):
Audit automation: Platforms like BlackLine, Trintech and Workiva use automation, machine learning and other advanced technologies to automate repetitive tasks in the audit process, such as data collection, reconciliation and testing, reducing the time and resources needed for an audit.

Cloud-based audit: Platforms like Xero, QuickBooks and Sage allow auditors to access financial data in real-time and work collaboratively with their clients, regardless of location.

Continuous auditing: Platforms like AuditBoard, ACL, and AuditCloud use real-time monitoring and analytics to detect and alert auditors of potential risks and anomalies in financial data, allowing for more timely and effective audits.

Predictive analytics: Platforms like IBM Watson, Alteryx and RapidMiner use machine learning and predictive analytics to analyze large data sets and identify potential risks and fraud in financial statements, making audits more effective.

Digital signature: Platforms like DocuSign, Adobe Sign and HelloSign allow auditors and clients to sign and approve documents electronically, reducing the time and costs associated with manual signing.

Cognitive computing: Platforms like KPMG Ignition and Deloitte Watson use cognitive computing and natural language processing to help auditors analyze and understand large amounts of unstructured data, such as emails and social media posts, in order to identify potential risks and fraud.

Continuous monitoring: Platforms like AuditBoard, RiskRecon and LogicGate allow auditors to continuously monitor and assess the risks associated with their clients' systems and operations, allowing for more proactive and efficient audits.

Automated financial statement audit: Platforms like Arbutus Audit Analytics and EY Smart Audit use machine learning and natural language processing to automate the analysis of financial statements and other financial data, reducing the time and resources needed for an audit.

Risk management: Platforms like Riskmethods, Resolver and LogicGate use machine learning and natural language processing to monitor and identify potential risks in financial statements and other financial data, allowing for more proactive risk management.

Digital workflow: Platforms like Intapp, Workiva and BlackLine allow auditors to streamline and automate their workflow, making the audit process more efficient and reducing the potential for errors.

Risks associated with FinTech

There are several risks associated with the use of FinTech in the audit industry, including:

Cybersecurity risks: As auditors rely more heavily on technology to access and analyze financial data, they may be at a greater risk of cyberattacks. This could compromise sensitive client information and lead to financial losses.

Data privacy risks: With the increasing use of technology in

the audit process, there may be more opportunities for sensitive client information to be accessed or shared without proper permissions or safeguards.

Dependence on technology: As auditors become more dependent on technology, there is a risk that they may become too reliant on automated systems and may overlook important manual checks or human judgment.

Limited understanding of technology: Auditors may not have the necessary knowledge or skills to properly understand and use new technology, which could lead to errors or inefficiencies in the audit process.

Complexity: With the fast-paced development of technology, it can be challenging for auditors to stay current with the latest tools and trends, which can be a risk to the process.

Lack of regulation: As FinTech is a relatively new field, there may be limited regulation in place to govern the use of these technologies in the audit industry.

To mitigate these risks, auditors need to be aware of the potential risks and take steps to protect sensitive client information. They should also have a thorough understanding of the technology they are using and should be properly trained to use it. Additionally, it's important for auditors to have a robust cybersecurity strategy in place to protect against cyberattacks and to ensure that the data is kept private.

Overall, FinTech is having a major impact on the audit industry. It is

changing the way audits are performed and is helping auditors in one way or the other. Still, at this stage, the picture is quite vague, and we can't predict the exact impact of FinTech on Audit but we can see that the new technology is being adopted to enhance the capacity and solve problems in an efficient manner. These advancements are changing the role and expectation of the Auditor and an auditor will be looking at things with more in-depth detail and a different mindset will be required to satisfy the changing needs.

FinTech is also changing the way auditors interact with their clients. With the increasing use of digital platforms, auditors are now able to communicate with clients in real-time, and share data and insights more easily.



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FinTech

Mr. Raeel Muhammad Rafique, FCA

In recent years, where technological development and digital advancement has transformed most of the industries it has its wide impact on financial services sector as well which is now a day most commonly known as “Fin-Tech” industry. The word “FinTech” is short of Financial Technology that uses innovative technological tools, algorithms, software and applications for shaping the traditional banking methods towards automation and more efficient and convenient ways of providing financial services.

Technological advancement combined with an increasing use of internet and mobile phones by tech-savvy individuals serves as a spur for raising demand for user-friendly financial services applications, that has eventually resulted in significant growth of FinTech market at a faster pace. Such computer assisted services range from providing online payment mechanism, peer-to-peer lending, providing a secure platform for investment through robo-advisor applications, personalized insurance, crypto application that allows transaction in digital tokens like Bitcoin etc. Additionally, the rapid development in artificial intelligence [AI]

is also shaping the future of FinTech industry towards more automation. Through the use of machine learning technologies and predictive analysis of customer’s spending behaviors and their risk appetite, FinTech companies can now be able to better understand their customer needs and thereby offering customized products which help customers to make more precise decisions unlike traditional banking companies. Let’s have a look at some of the major FinTech innovations aided with AI in financial services sector.

In lending sector, the crowdfunding application is one of the forms of FinTech that is offering better alternative for peer-to-peer lending and enable users to reach out more investors to secure loans directly through mobile phones without being involved in the conventional method of obtaining loans from banks. Moreover, FinTech companies with the use of artificial intelligence can now be seen as disrupting traditional banking models by using technology to make the loan application process faster and more convenient for consumers. Online lenders use data analysis and machine learning algorithms to assess credit risk and

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make lending decisions in real-time. This allows them to offer loans to consumers who may have been rejected by traditional banks, and at a lower cost.

In investment sector, robo-advisor applications are one of most popular FinTech innovation in stock market which enables individuals to buy or sell stocks or to make precise investment decisions by just a click of finger on smartphones without the need to reach out any broker or stock exchange. These digital platforms use algorithms to create and manage portfolios based on a customer's goals and risk tolerance. This helps to democratize access to professional investment advice and make it more affordable for a wider range of people.

Similarly, many insurtechs companies are providing innovative insurance applications that is more user-friendly as compared to the services offered by conventional insurance companies. The FinTech companies are leveraging technology to make the buying and claims process more efficient and convenient. This can include the use of telematics to track driving behavior and set insurance premiums based on actual driving habits, as well as the use of AI and big data to streamline the claims process.

Besides other revolutionary changes of FinTech in financial services industry one of the most popular innovation of FinTech is the use of blockchain technology and cryptocurrencies that has the huge potential to optimize traditional business processes. These technologies provide a decentralized peer to peer network that allow users to send and receive data in a more transparent, secure and efficient way. Blockchain technology offers a digital wallet that stores digital currency such as bitcoin and enable users to have full control on their funds and to store or transfer data via online platforms without the need for banks to facilitate such transaction. Bitcoins are one of the forms of cryptocurrency that are available on a variety of platforms with numerous uses such as online payment, international money transfers and investments.

The traditional banks and financial Institutions have constantly been evolving in FinTech industry at a growing rate for many years by offering mobile banking application that can easily be accessible through smartphones which has transformed the lives of banked population but still the most sizeable and underbanked population is somewhere overlooked or ignored. However, the development and emergence of digital wallets that is one of the forms of financial technology has made it possible for unbanked

population also to fulfil their demand for financial product in a more secure and convenient way. Thus, providing more financial inclusion to the individuals who do not have access to bank accounts so that they can also get the benefit of financial services applications.

No doubt the FinTech industry is revolutionizing and drastically improving and automating the business processes in the financial services sector. But there are some major concerns that poses threats to its success such as data security and privacy, lack of technical knowledge, customer retention and compliance with regulatory requirements. Thus, with the increasing use of electronic mode of financing and use mobile banking applications customer valuable personal data and information is more vulnerable to cyber security risks. So, the need to provide cybersecurity is most important to gain customer satisfaction in FinTech industry. This can be achieved with the use of data encryption techniques and algorithms whereby each user has its own unique identification code to access his or her personal data and information which can enhance security over authentication process.

Moreover, FinTech applications are using innovative technologies by integrating various financial services operations and processes. So, to protect user's investment and sensitive data from the risk of fraud and malicious attacks many regulatory demands and guidelines have been established by the regulators. Therefore, to ensure conformity with such requirements FinTech companies should regularly check their compliance status and should partner with any professional legal consultant who will regularly update them with the changes in laws and regulations to avoid any penal actions.

Additionally, the other major challenge that every FinTech application will come across is the rapid innovation in technology so it is most important for such companies to hire experts who can meet the increasing demand of digital world by providing seamless user-friendly way to financial services. These companies can also outsource their IT function to experienced IT professionals which can also help to reduce the excessive cost on recruitment and training of employees.

Overall, FinTech is driving major changes in the financial services industry, making it easier and more convenient for people to access financial services and manage their finances. As FinTech continues to evolve and gain momentum, it will be important for policymakers and regulators to strike a balance between fostering innovation and protecting consumers and the stability of the financial system. Furthermore, as financial technology is continuously expanding its market share across globe so there arises a need to have team of expert and skilled staff that can ensure proper functioning of FinTech solutions and outwit the competition.



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How is 'FinTech' Impacting Our Lives?

Mr. M. Asad Mirza, ACA

You can conveniently blame the recent COVID-19 pandemic for transforming your lifestyle. During those days, when social distancing was at its peak, your life was still going on. You were able to pay for your groceries online, you were buying coffee by tapping your phone and even paying for your taxi bill with your credit card information saved in the app. It seemed like nothing stopped working even for a second, thanks to the modern technology and FinTech.

Whether you realize it or not, FinTech has become an integral part of your daily life. In 2019 alone, two-third of the world population was using FinTech apps which is 16% more compared to 2015. (Source: Global FinTech Adoption Index).

For many, FinTech can be an ambiguous concept- mainly because the technology is evolving fast and each day there is a new product or service launched. So, what exactly is FinTech?

What is FinTech

FinTech or Financial Technology is 'the use of technology in the field of finance'. In other words, it can be defined as 'any business that incorporates technology to enhance, modify, or digitize its financial services'.

FinTech involves using algorithms, software and different apps designed for mobile phones and desktops. With FinTech, you can perform tasks online that otherwise require your physical presence like depositing a cheque, transferring funds, paying bills, or getting financial assistance. Crypto exchange or peer-to-peer lending can also be performed via FinTech.

FinTech became more popular and gained momentum especially during the recent pandemic when businesses encouraged contactless payments.

How Does FinTech Work?

FinTech has made traditional financial services accessible to the customers via using technology. For example, now you can check your bank account on the go and perform transactions like transferring funds, paying bills and even depositing cheques easily without even visiting your bank in person.

It has also automated many services like real estate appraisals and loan underwriting. Today, corporate giants are also using this technology along with artificial intelligence and consumer data to better understand their customers and introduce customized products and services.

Types of FinTech and How They Work

FinTech covers a wide range of products and services offered by business to consumer (B2C), business to business (B2B) and peer to peer (P2P) business models. Here is how financial technology is transforming the financial sector and making the lives of customers easier than ever.

Banking

There is no denying to the fact that the impact of FinTech is huge on the banking industry. Earlier the traditional set up was keeping people from achieving their financial goals as people would have to take time out to visit their banks and pay the fee to get their work done. However, now FinTech has reduced all these barriers and the customers can easily perform their tasks online. For example, transferring funds from your account to someone else's account can be done in a few seconds with the bank's app.

Payments

Cashless payments are the preferred mode of payment for customers across the world post pandemic. They are fast & saves a lot of time and significantly less expensive. Now you can use several payment apps and services to pay for your shopping like Easypaisa.

Personal Financial Management (PFM)

Even if you have multiple accounts, you can consolidate all your financial information in one place to manage them effectively. PFM are specifically good for making budgets and drafting a financial strategy for a better tomorrow. Some of the examples of PFM are Astra, Brigit, and Dave.

Wealth

Wealth managers and financial advisors use FinTech solutions to accumulate information related to the held-away accounts to increase Assets Under Management (AUM). For example, Atom Finance offers products where users can trace all their investment at one place.

Lending

Lenders often fail to keep a track of their pending amount. For them, collecting income information, managing balance sheets, and updating them is a tedious and time-consuming job. Thanks to the apps like Easy Khata where the lenders can enlist all their borrowers, their borrowed amount, and the status of their amount. The digital bookkeeping is simple to manage and does not require any paperwork hence, making it easier to recover the payment on time.

Embedded Finance

These include financial services that are offered through non-financial products to enhance consumer experience. For example, Shopify offers its business users Shopify Balance to get payments faster and manage their businesses well. Though Shopify is not a financial service, however, Shopify Balance is, and it is an embedded finance product of Shopify.

Pakistan's FinTech Landscape:

The growth in Pakistan's FinTech eco system is overwhelming during the last few years and the country has produced a lot of successful entrepreneurs and trend of

entrepreneurship is continuously increasing among youngsters. With more than 50% of population are below 25-30 years, Pakistani FinTech's sector is one of the main stakeholders to promote technology, bring a new chapter in financial services industry and at the same time can greatly assist economy in raising foreign exchange proceeds.

FinTech's are working to bring in financial inclusion (e-wallets and P2P gateways are examples of financial inclusion) and lifts up economic growth, by ensuring financial inclusivity. As per experts, there is a huge potential in this market and that can be tapped effectively with the help of financial education/literacy of users and ensure them about the security of amounts transferred through multiple applications. Lately, Central Bank also provided NOCs to applicants for establishing digital banks and growth & development in this area is just unrelenting! However, there are challenges in this industry (particularly the regulatory challenges / governance mechanism etc.) on which the stakeholders are working for ensuring governance and regulatory compliance.

The Bottom Line

Today, consumers and businesses are equally opting for FinTech to streamline their experiences. People are just inculcating the habit of using different platforms and applications for performing different tasks and Institutions are relying on software, data, and hardware to introduce new and existing financial services in an innovative way.

The recent digitization of financial services has contributed to the growth of more inclusive and effective services adding to the economic development. It is high time countries embraced these new and innovative financial solutions and introduce policies for their smooth implementation.

Despite the financial crunch, the future of FinTech seems brighter. It is now deeply rooted in our daily lives and our financial industry seems to be entangled in it for all the right reasons. All these things hint that the influence of FinTech will further grow in the years to come and regulators should understand that the accounting system was based on old methodologies and need an upgrade and at the same time, governance mechanism and regulatory compliance should also be reviewed and change is mandatory to take the full benefit of this excellent terminology called "FinTech".

"Ignoring technological change in a financial system based upon technology is like a mouse starving to death because someone moved their cheese" – Chris Skinner



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FINTECH

Mr. Muhammad Faizan, ACA

FinTech is a portmanteau of two terms ‘finance’ and ‘technology’ that has developed an industry where the companies have emerged and deployed advanced technologies to systematize their financial activities that were conventionally being performed manually in older times.

The basic concept of FinTech evolved from early 1950’s with the fruition of credit cards which eliminates the need to carry physical cash for purchase of consumer goods. It was technically the first ever FinTech that continued to potentially grow and consequently resulted in banks and online trading markets. In 1998 first FinTech company PayPal was launched that primarily operates through internet bringing a rebellion across the globe leading to mobile applications, block chain and social media-based payments which are being currently used.

The global number of FinTech that exists aggregate to more than 25,000. According to Market Data Forecast, the global FinTech market is projected to reach \$324 billion by 2026, growing at a CAGR of 23.41%. SBP in its Digital Financial Services – Innovation Challenge Facility guidelines paper mentioned that market potential of digital financial services in Pakistan is expected to cross USD 36 billion by 2025 that will provide a 7% raise in GDP with 4 million new jobs.

As per the research steered by Utility Bidder, following are the top notch dominant FinTech companies from credit services to crypto currency that has drastically transformed the manner in which the financial transactions are being executed on just a tap of button.

S. No	Name of Company	Nature of services being rendered	Net worth in billion \$
1	Robinhood	Allows users to trade stocks commission-free, and exchange crypto currencies.	11.7
2	Stripe	Provides online payment and credit card service allowing the customers to execute purchase transactions in a secure environment	95
3	Kraken	Provides a platform where users can trade in crypto currencies (service currently supports 72 different cryptos)	20
4	Klarna	Offers financial services through their website and application allowing the users to ‘buy now, pay later’ or pay in three instalments	31
5	Wise	Allows users to send money to other countries and receive money in alternative currencies	11
6	Current	Offers online banking, mobile banking, and financial services	2.2
7	Chime	Allows customers to online bank fee-free.	1.4
8	Gemini	Allows users to trade, buy and sell cryptocurrency and digital assets	5
9	Carta	Provides capitalization table management services to companies, investors and employees to manage their equity	6.8
10	BlockFi	Allows users to buy, sell and earn cryptocurrencies.	3

“The basic concept of FinTech evolved from early 1950’s with the fruition of credit cards which eliminates the need to carry physical cash for purchase of consumer goods”

Nevertheless, Pakistan is aggressively progressing in the path of digitalization as so as in the FinTech world. Though Pakistan was not antagonistically making efforts in the recent years, however, after the emergence of COVID when these digital applications get a boost, the country made a dramatic shift in their contribution within the FinTech world.

Some of the leading examples are as follows:

- PayPro – one of the leading FinTech company that offers smart invoicing, subscription management services, payment collection and cash cycle management.
- RAAST - Pakistan’s first instant payment infrastructure that has digitalized the entire payment process among individuals, businesses and government entities
- AutoSoft Dynamics - the first banking software automation company who developed and deployed true Shari’ah compliant product suite within the Islamic banks.
- Jazz Cash - an intermediary mode through which funds are being remitted following CNIC, mobile or account number within seconds.
- UPaisa – This application is as good as mobile banking application that offers diversified financial services.
- Mawazna - that acts as a source of connecting point between the customers and insurance/ takaful companies that assist in selecting the most feasible insurance plan at competitive rates.
- FINJA - an application that enables the consumer to apply for instant loan, pay utility bills, make QR based payments and undertake online shopping.
- CareemPay - a flawless FinTech example with its tag line of ‘Goodbye Cash’. The details of debit or card can be saved in the application and free digital services can be availed such as rides, food delivery etc.

Over the last ten years, the digital financial services have accelerated enormously. The true FinTech digital service provider Easypaisa succeeded to make profit of Rs. 1.7 trillion in the H12022. Money transfer worth Rs. 859 billion was undertaken through the said podium. In February 2022, payment application NayaPay raised USD 13 million in a seed round led by Zayn Capital, MSA Novo and Silicon Valley early-stage investor Graph Venture. During the 1st quarter 2022, Jazz Cash registered over 90 million financial transactions beholding a growth of 100% in terms of mobile transactions. UPaisa touched the revenue growth of 25% on YoY basis with a balance sheet footing of Rs. 114 billion. A high-bandwidth penetration (3G/4G) augmented by 43% whereas, mobile diffusion increased by 77% to be double by 2024.

Despite of the growing population of the country and increased digital offerings, the ratio of financial inclusion is considerably lower i.e., around only 2.4% of the population of Pakistan. The population of Pakistan includes 120 million adults that have biometrically verified CNIC that approximates to 96% of the total population aged 18 and above. In Pakistan, total mobile application users mount to 11 million whereas, 7 million internet banking users. This depicts that at least 70 million people who own bank accounts but are not availing any digital platform for executing financial transactions. The Ex-Governor of SBP stated that “the country had a total of “only” 82 million unique bank accounts, which represented a penetration rate of 62 percent, “amongst the lowest in the world.”

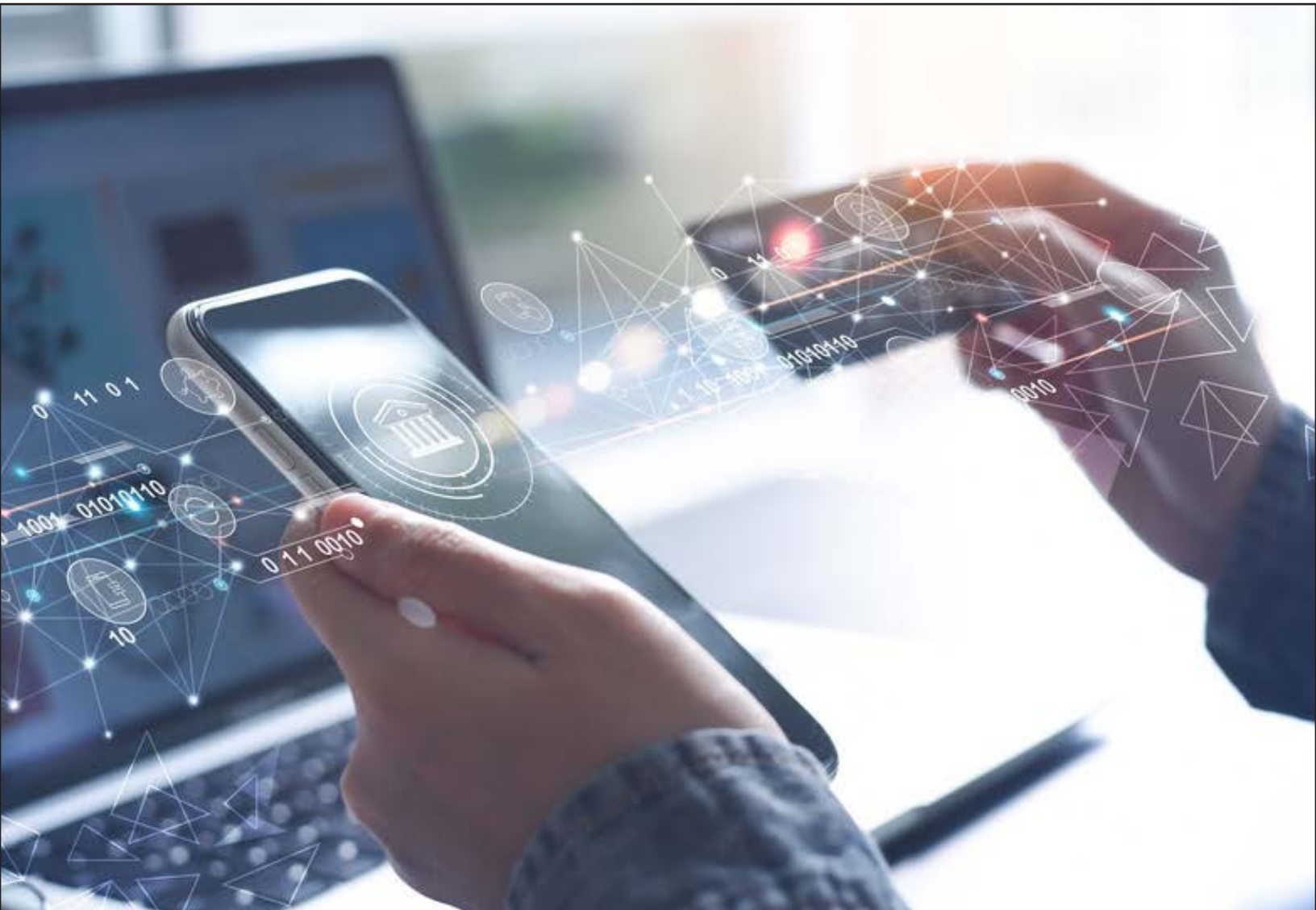
Considering the acceptability and immense advancement in the field of digitalization, it is being presumed that in near future the FinTech companies will replace the Bank. However, the said assumption or presumption seems to be unpracticable since FinTech companies needs considerable time period to gain trust of the customer as the Banks owns since these are offering their services since decades and a high-level trust has already been built up. In the current scenario, FinTech companies and the Banks are entering in to alliances with each other where the Banks gains technology and insights and FinTech companies gain access to customer base through these alliance programs to gain maximum advantage instead of competing with each other.

Despite the overwhelming and attractive industry, there are certain challenges and obstacles being faced the industry. The first most obstacle or rather challenge being faced is cyber security and data privacy risk that have augmented at its peak these days. Vishing is the most common fraud that is being perpetrated these days where the confidential information is being stolen from the customer through fake calls and financial transaction is being executed. During the year 2022, BMP registered 19,670 complaints (2021: 33,196) related to financial scams including impersonating organizations, card skimming, Lebanese loop scams, lottery scams, Phishing, malware attacks etc.

The remarkable progress of FinTech sector in a languorous and pressured economy in Pakistan particularly during COVID time as well demonstrates that it has a crucial role to play in the forthcoming future. Furthermore, the government needs to figure out measures to strengthen the financial industry by supporting innovation and take initiative to educate the customers regarding digital platforms and financial education which will assist in raising the digital inclusion. The economy of different countries which previously agonized from derisory representation of diversity and opportunities now enjoyed bright future ahead due to digitization and financial inclusion, all because of FinTech. Live globally, bank globally.



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Fintech - A blessing in disguise!

Mr. Usman Farooq, ACA

Think of the times when you were on a national or an international itinerary or on an important commitment when you needed to send money to someone on the last date due or waiting in a long queue at bank for utility and other miscellaneous payments? Thanks to mobile banking now when you just need to sign in via a network connection and your payment is just a tap away. Consider you were a manager in an organization and you needed to analyze a huge volume of discrete data of your business and present a report to your boss for their financial decision making in a very short deadline, you didn't have enough time or resources to analyze each discrete aspect of the huge volume of data? Thanks to the data analytics tools which have enabled us to manage and analyze huge volumes of data in a very short time and give precise results as per user needs. Also, there

have been instances, when you have a startup business which needed some vital item to be imported and the supplier asked for the fast seamless payment and no big bank is able to provide you with bank guarantee since you don't have any credit history? Thanks to the online payments systems that support online money transfers, and serves as an electronic alternative to traditional paper methods such as checks and money orders. In addition, use of crypto currencies often referred to as virtual currencies have substantially evolved lately which also serve as convenient and seamless method for international payments. Imagine times when you have an international business setup and you need to reconcile and consolidate the data for group reporting. You are sending follow-up emails, meeting requests and struggling to conduct meetings with regions due to conflicting time zones or your

emails were unattended? Thanks to cloud computing and reconciliation tools which make it easier to provide a virtual share point which is centralized, accessible, and can be updated anytime and anywhere.

We cannot avoid technology in any aspect of our lives. Technology has now become a necessary evil with its own pros and cons. Ease of doing business coupled with the current era of technology created many revolutionary concepts which came to reality now. All businesses strive to manage their finances efficiently and effectively. Concepts like financial management, data sciences, transactional efficacy etc. acted as driving forces to revolutionize finance with technology and creation of "FinTech" a portmanteau of "financial technology". Using mobile trading, banking,

behavior and interactions within large volumes of data.

If we have a look on the challenges for using FinTech in different areas of businesses, majorly we come across data security, lack of tech expertise, regulations and compliance issues. Technology is perceived to be the most efficient financial companion but its regularization and security are still the key concerns of the current era. Though we have evolved in terms of much better data security and being tech-savvy, still unregulated markets and practices exist which pose a significant threat to the integrity of FinTech transactions globally.

With the realization of technological capacity of the finance world there comes the need for value maximization of existing

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investment apps on your smartphones, data analytics tools on your PCs and use of cryptocurrencies are the premium examples of FinTech. Global investment in financial technology increased by more than 12,000% from \$930 million in 2008 to \$121.6 billion in 2020

(<https://home.kpmg/xx/en/home/insights/2021/08/pulse-of-fin-tech-h1-2021-global.html>), and with such a humongous expansion in this domain embark the potential of FinTech.

You must be aware that artificial intelligence, blockchain, cloud computing, and big data are the hot topics of today. These are considered as key components of FinTech. Simplifying the key components of FinTech, first comes artificial intelligence which is often linked with the machine intelligence wherein human natural abilities are now programmed on machines, tools and applications i.e. face and voice recognition, translation, biometrics, logical reasoning etc., blockchain usually refers to the techniques used to record and process large volume of decentralized transactions by maintaining interconnected packets of data called as blocks, and cloud computing refers to remote servers hosted on the internet/intranet to store, manage, and process data. Lastly, big data refers to revealing patterns, trends, and associations, especially relating to human

accountants and respective professional bodies. In 2023 an accountant cannot be perceived to have only theoretical knowledge of accounting; rather he/she should be equipped with necessary knowledge and training of relevant FinTech applications and tools. There were times when organizations needed someone to collect and record the data and it used to take months to analyze the complete and take some rational decisions. With increasing automation, the roles of typical accountants are getting redundant. As always, it's the race for survival of the fittest and Fintech is the new normal of the current era. If someone wants to be a leader in current financial challenges, he/she should be more of a FinTech expert then a merry backend accountant. Because decision making is far more challenging now considering the large volumes of discrete and sensitive information and volatility of national and international markets. Hence, FinTech has proved to be a blessing in disguise!



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Fintech Insight

Mr. Mubeen Akhtar, ACA

As a beginner's guide Fintech would be defined from bird view perspective as Financial Technology (FinTech). In simple words, Fintech is a tech platform that seeks to improve and automate the delivery and use of financial services. At its core, fintech is developed and operated to enable companies, entrepreneurs, and users manage their financial operations, processes, and lives more efficiently by utilizing special tech and algorithms that are used on computers and, increasingly, smartphones. Fintech, the word, is a combination of "financial technology" and advance sustainable finance. In simple perspective fintech holds the power to digitalize any industry or segment by tech-based innovation; say it payment, lending or digital data verticals. Fintech influencers, promoters and professionals in financial services call it a catch-all term referring to software, mobile applications, and other technologies created to improve and automate traditional forms of finance for businesses and consumers alike. The

idea of Fintech could include everything from straightforward mobile payment apps to complex block chain networks housing encrypted transactions or Non-Fungible Tokens (NFT) or Digital Art. It is intended in this piece of writing to discuss fintech as a concept, the various types of fintech, up-skilling and current digital steps taken by Pakistan to sustain and grow as a digital economy.

While fintech seems like a recent series of technological breakthroughs, the basic concept has existed for some time since the introduction of early credit cards in the 1950s generally represent the first fintech products available to the public use. The idea of eliminating need to carry physical currency in their day-to-day lives introduced consumers to the credit cards. In current period of time, we are experiencing a shift from physical credit cards too; and

BARCODE payments, QR Codes and NFC Technology is taking over the need of physical payment cards and we also have societies in CHINA that have fully gone card-less or paper-less when it comes to payments and currencies.

Fintech also evolved to include bank mainframes and online stock trading services since in the 1998, PayPal was founded, representing one of the first fintech companies to operate primarily on the internet which was named a breakthrough that has been further revolutionized by mobile technology, social media, and data encryption. This fintech revolution has led to the mobile payment apps, blockchain networks, and social media-housed payment options we regularly use today. We can see Digital Currencies, Blockchain Algorithms, and Machine Learning in spending trends and automated lending and payments as part of the Day-to-Day transactions in our lives as consumers. We are living in the era of Metaverse, going totally digital with global outreach seems to be the truth of tomorrow and indeed a need of survival. Machines are getting wise and digital payments are becoming automated, with introduction of many alternative commodities to paper money.

While fintech is a multifaceted concept, it's possible to gain a strong understanding. Fintech in a more simplified form or would say in a more acceptable form means that any tech-based solution that simplifies financial transactions for consumers or businesses, making them more accessible and generally more affordable. It can also apply to companies and services utilizing AI, big data, and encrypted blockchain technology to facilitate highly secure transactions amongst an internal network. Broadly speaking, fintech strives to streamline the transaction process, eliminating potentially unnecessary steps for all involved parties. For example, a mobile service like EasyPaisa, Sadapay, JazzCash or any other banking app allows you to pay other people at any time of day, sending funds directly to their desired bank account.

Over the years, fintech has grown and changed in response to developments within the wider technology sector. In 2022, this growth was defined by several prevailing trends:

- Digital banking continues to grow: Digital banking is easier to access than ever before. Many consumers already manage their money, request and pay loans, and purchase insurance through digital-first banks. This simplicity and convenience will likely drive additional growth in this sector, with the global digital banking platform market expected to grow at a compound annual growth rate (CAGR) of 11.5 percent by 2026.

- Blockchain: Blockchain technology allows for decentralized transactions without a government entity or other third-party organization being involved. Blockchain technology and applications have been growing quickly for years, and this trend is likely to continue as more industries turn to advanced data encryption. Check out our guide to blockchain technology if you're interested in learning more.

- Artificial Intelligence (AI) and Machine Learning (ML): AI and ML technologies have changed how fintech companies scale, redefining the services they offer to clients. AI and ML can reduce operational costs, increase the value provided to clients, and detect fraud. As these technologies become more affordable and accessible, expect them to play an increasingly large role in fintech's continued evolution — especially as more brick-and-mortar banks go digital.

Modern fintech is primarily driven by AI, big data, and blockchain technology; all of which have completely redefined how companies transfer, store, and protect the digital currency. Specifically, AI can provide valuable insights into consumer behavior and spending habits for businesses, allowing them to better understand their customers. Big data analytics can help companies predict changes in the market and create new, data-driven business strategies. Blockchain, a newer technology within finance, allows for decentralized transactions without inputs from a third party; tapping a network of blockchain participants to oversee potential changes or additions to encrypted data.

FinTech has been used to revolutionize financial institutions for millions of people across the globe, changing how we pay each other, buy stocks and other financial instruments, and access financial advice. Many different fintech companies are offering unique services for their clients.

Pakistan's government-driven startup eco-system, SECP, and SBP all are on the advancement side and are doing anything and everything to implement acceptance of advancement. In recent times many peer-to-peer payment platforms and mechanisms have been introduced for daily payments alternative for the Pakistani Public, a well-known example of this initiative would be RAAST Initiative. In fact, consistently SBP ensured its promotion through public notices and commercial banking channels to enable the tech-enabled shift in the consumer-driven society of Pakistan.

Pakistan has also taken a calculated and bold advancing step in 2022 by introducing tolerance and acceptance of digital-only / digital banks through the introduction of licensing appeal/tender to welcome any applications from local and foreign applicants interested to open digital retail banks in Pakistan as part of countries moves to become a digital economy. Recently in 2023, Pakistan's banking regulator (SBP) issued 5 digital Retail Banking Licenses to Local and Foreign FinTech/EMIs to grow and stabilize the economy by taking digital and tech-enabled steps in the future. As John Maxwell once said "Change is inevitable, growth is optional".



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Developing the Accountancy Profession - Female Chartered Accountants in Pakistan: a Success Story

Mr. Naeem Akhtar Sheikh, FCA | Ms. Hina Usmani, FCA

Historically, pursuing the Chartered Accountant (CA) pathway has not been a preferred choice for women in Pakistan and the miniscule minority that entered the profession rarely participated actively in its demanding tasks and activities. As a result, female CAs in Pakistan were not a part of the mainstream. For many years, institutional efforts to increase inclusiveness and gender equality failed to yield desirable results in this critical area.

It was only in 2010 that a group of qualified women decided to make a women-centric forum for female CAs (named Chartered Accountant Women Forum, or CAWF) to conduct frequent networking with an aim to counsel and support each other. In the beginning, CAWF gathered and to discuss how they could attract professionally inactive women to become more engaged in the profession and, additionally, to find ways to attract young women to a male-dominated field.

CAWF created quarterly gatherings, including motivational speeches, counselling sessions and fun activities for bonding. For the first five years these gatherings remained relatively casual. However, after years of meeting, the minds at CAWF thought to do two things: first, to convert their forums into a formal woman-focused committee and secondly, to push for at least one seat reserved for women on the ICAP Council.

The Council was persuaded to approve the committee formation. However, there was no woman in the Council to head the committee, which was one of the requirements of the committee formation terms of reference. Eventually, a male Council member was asked to head the committee. Thus, the first committee with over 15 women was formed in 2017 with well-defined terms of reference. Its main focus was to enhance women's participation in the CA profession.

Meanwhile, a revised CA law was in the making for the women’s Council seat. Several conversations were held for the incorporation of the seat. With no positive expected outcome, the forum decided to bring one-woman candidate to run for the scheduled election in mid-2017. Ms. Hina Usmani was a consensus candidate as the first but long overdue candidate for the elections.

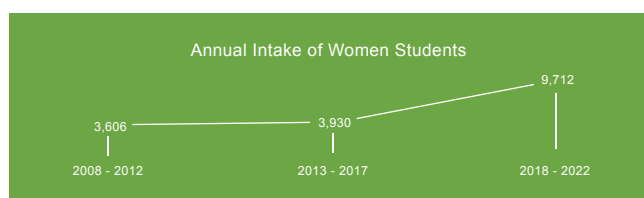
Extraordinary efforts were put in by all her colleagues, which led to a successful 2017 election campaign. She was victorious, with the second highest number of votes for all candidates running for Council seats. Her thumping victory made ICAP history, as she became the first elected woman in the Council in its 56 years’ history. This was a celebratory moment for all women CAs in Pakistan, who started their journey in 2010 and whose decade-long struggle had borne fruit.

Immediately after the election, a new committee was formed and Hina Usmani was made its chairperson. She exuded the same spirit of inclusiveness that initiated CA professional women’s struggle as their strategic goals were set into action. Many programs were initiated, such as:

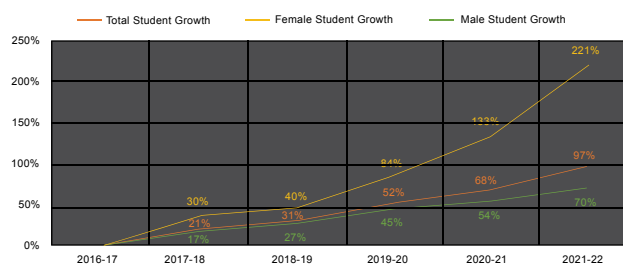
- The CA girls Nurturing Program, aimed to bring more women to the CA profession.
- The Women on Board initiative, intended to onboard and train women to occupy leadership positions. The publication of the first directory for women board members was a landmark achievement in 2018, after the mandatory inclusion of women on the board by the Securities Exchange Commission of Pakistan (SECP).
- The Entrepreneurship Program intended to empower women on career breaks by training them on practical and technical knowledge related to practices other than statutory audit.
- Capacity building measures, which encompass basic skills development through courses such as advanced excel, etc.
- Mentoring sessions, to provide a space for listening to the issues of female trainee students, counselling newly qualified for work-life balance including career guidance and identification of job opportunities.
- The Annual CA Women’s Day, which aligns with International Women’s Day and celebrates it as a signature event. The President of Pakistan, along with high profile government dignitaries, have graced the occasions multiple times.
- An Inspiring Journey of CA Women, which was a historic publication released in early 2021 documenting the entire history of women CAs since the inception of the Institute of Chartered Accountant of Pakistan in 1961.
- The Gender Policy, which advocated for more inclusive work environments for women. Extensive work on the policy was done since 2019, which shaped it into a diversity and inclusion guide for women in CA profession.

- The above initiatives coupled with continued engagement of CA women throughout 2017-2021 impacted gender inequality in Pakistan’s CA profession positively. Another milestone was achieved in 2021 when four women were elected; two in the Council and two in regional committees.

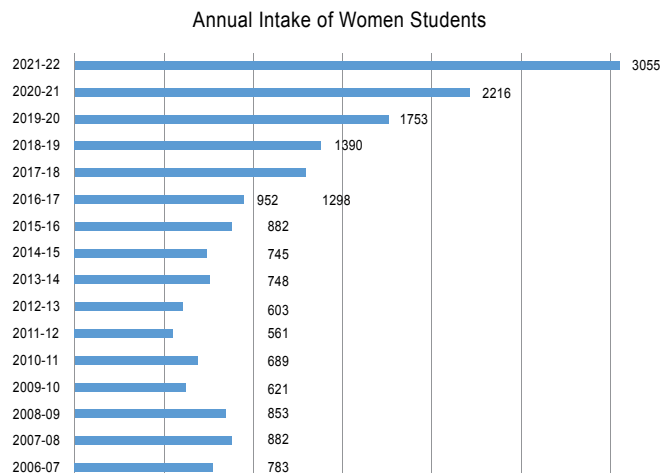
Women CAs in Pakistan have achieved significant progress, especially since 2016-17. The 5-year cumulative intake of female students to pursue the CA pathway increased from 3,930 on June 30, 2017 to 9,712 female students on June 30, 2022. This is a remarkable increase of 147% in female students, especially compared to only 9% increase in the immediately corresponding period. Please see the graph below.



The above graph is further dilated below, showing a steep rise in number of female students since 2016-17 and phenomenal growth of 221% in 2021-22.



This impact is evidence of the actions which the Council took in 2017, forming the women’s committee. It mirrors the circumstances which led to the election of first woman in the Council.



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The number of CA-qualified women in Pakistan today stands at 9% of total CAs in Pakistan, as compared to 4% in 2005. Pakistan now has over 1,000 female Chartered Accountants. The women-to-men blending ratios have also increased substantially, both in students as well as in qualified women. These analyses depict a true outcome of the efforts towards inclusion which were made at the institutional level, and especially those efforts to bring women into leadership positions.

Regional statistics reveal women's participation in the CA profession is 22% in India and 30% in Sri Lanka. This led the CA Women's Committee to achieve another landmark milestone: the formation of a women CA body at the regional level. The South Asian Federation of Accountants (SAFA), an apex body of SAARC, constituted a SAFA Women Leadership Committee on the recommendation of the CA Women's Committee of the Institute of Chartered Accountants of

Pakistan (ICAP) in 2018. In Pakistan, the CA Women's Committee is continuing to move forward with great momentum. The Committee is confident that it will continue to increase the regional average of women participation in CA profession and in the very near future, will bring the regional average to a commendable level by encouraging women to opt for CA profession as their career and by bringing qualified CA professional women into the mainstream.

We, at ICAP, are grateful to IFAC for showcasing the success story of female chartered accountants in Pakistan at the IFAC's Knowledge Gateway under the topic Developing the Accountancy Profession and at the same time highlighting it on all of their social media pages.

IFAC website: <https://www.ifac.org/knowledge-gateway/developing-accountancy-profession/discussion/female-chartered-accountants-pakistan-success-story>

Twitter: <https://twitter.com/ifac/status/1617560359438630916?s=12>

LinkedIn: https://www.linkedin.com/posts/ifac_today-women-make-up-9-of-pakistans-chartered-activity-7023322233456496640-WNYq?utm_source=share&utm_medium=member_desktop



Mr. Naeem Akhtar Sheikh, FCA, is a practicing Chartered Accountant and a Senior Partner in UHY Hassan Naeem & CO. Chartered Accountants and a current member of IFAC Professional Accountancy Organization (PAO) Development & Advisory Group. He was also a member of the 2012 joint committee proposing the way forward for the Pakistan Audit Oversight Board. Mr. Sheikh specializes in taxation and carries with him more than two decades of experience. He has been a member of Pakistan's Task Force on restructuring the Federal Board of Revenue of Pakistan. From 2014-2015, Mr. Sheikh was President of ICAP and in 2016 was the President of the South Asian Federation of Accountants. In addition, he headed many ICAP committees, including Investigation, Education, and Taxation. He is also the current Chairman of the ICAP Professional Standard and Technical Advisory Committee.



Ms. Hina Usmani is a fellow member of the Institute of Chartered Accountants of Pakistan (ICAP) carrying over 30 years of combined work and professional practice experience. She is founder and Managing Partner of Usmani & Co. (UCO), an all-women led quality rated SMP in Pakistan. UCO is one of the global signatories of United Nation's Women Empowerment Principles (WEP). She has the honor of being elected as first woman Council Member (2017) and first-woman Vice President of ICAP (2019). She is sitting council member and chair of CA Women Committees of ICAP and SAFA Women Leadership Committee. She also serves as Technical Advisor at IFAC SMP Advisory Group (SMPAG).



Technological Advancements and Accountants

Mr. Asif Ali, ACA

Information technology (IT) has had a significant impact on the accounting profession. On one hand, many of the traditional manual processes used by accountants have been automated and streamlined through the use of various software programs and applications, and on the other hand, this advancement put the accountants on the hard end to keep them up with the pace of this advancement.

This has allowed accountants to focus on more complex tasks, such as analyzing big data, and providing strategic advice to their clients, and has also made it easier for them to share and access information with clients and colleagues in real time.

“ Information technology (IT) has had a significant impact on the accounting profession. On one hand, many of the traditional manual processes used by accountants have been automated and streamlined through the use of various software programs and applications ”

One example is the use of software programs for accounting and bookkeeping, preparation of financial statements in accordance with IFRSs and GAAP principles, and conducting audits as per ISAs. Some examples of such software programs are QuickBooks, Xero, Sage, ERP, SAP, MYOB, etc.

Another example is the use of digital tools such as cloud computing, which allows accountants to access their work from anywhere with an internet connection and share documents and information with clients and colleagues in real-time. This can improve collaboration and communication and make it easier for accountants to provide timely and accurate services to their clients across the globe.

Moreover, the use of big data, artificial intelligence, and machine learning in accounting is also becoming more prevalent. It allows accountants to analyze large amounts of financial data quickly and identify trends and patterns that may not be apparent to the human eye, it also automates repetitive tasks such as data entry, account reconciliation, and fraud detection.

Overall, these technological advancements have led to increased efficiency and accuracy in the accounting profession, and automated and simplified many routine accounting tasks. However, it also requires accountants to adapt and acquire new skills to work with the new technology. This way, they can take advantage of these new tools to provide more efficient and accurate service to their clients, as well as to analyze and interpret data in a more sophisticated way, providing insights and strategic advice to their clients.

Technological advancement leads to some displacement of jobs in the accounting field, but it is also likely to create new opportunities for accountants with specialized skills and expertise, and it will be important for accountants to adapt and evolve their skill set to stay relevant and competitive in the profession.

It is important for accounting professionals to understand the changes that are happening and embrace the new opportunities that come with technology, such as developing the skills necessary to work with AI tools, understanding how to analyze and interpret data, or being able to provide strategic advice to clients.

There are several ways that accountants can stay up to date with the latest developments in information technology (IT) and artificial intelligence (AI):

- **Continuing education:** Many professional accounting bodies, such as ICAP, ICMAP, PIPFA, and many others offer continuing education courses and webinars on the latest IT and AI developments, data analysis, and visualization tools, and the use of excel in finance. These can provide accountants with a solid understanding of the latest technologies and how they can be applied in the accounting profession.
- **Specialized training:** Some organizations offer specialized training programs on specific topics, such as financial modeling, financial forecasting and budgeting, software or machine learning-based anomaly detection systems, and IT and AI tools. This can provide accountants with the hands-on experience they need to effectively use these tools in their work.

- **Networking:** Attending conferences and events can be a good way to build a network with other professionals and stay on top of the latest industry trends. Many events also feature workshops and sessions on various topics, which can prove to be insightful.
- **Stay informed about new software and tools:** Keep an eye out for new software and tools that are developed for accounting and related fields, and understand how they work, how to use them, and most importantly how they could help their practice.
- **Self-learning:** Accountants can also invest in self-study and online tutorials to learn about new technologies and other developments in their profession and other industries. This can be a more flexible option, allowing accountants to learn at their own pace and on their own schedule.

Ultimately, staying up to date with the trends and developments is essential for accountants who want to remain competitive in their field. Keeping up with new technologies and skills, and incorporating them into their work, can help them to provide more efficient and accurate services to their clients, and to better advise them on important financial decisions.

There are a number of software and tools that accountants may need to learn to stay up-to-date in their profession. Here are a few examples:

- **Cloud-based accounting software:** Cloud-based accounting software, such as Xero, QuickBooks Online, and Sage Business Cloud Accounting, has become increasingly popular in recent years. These tools allow accountants and their clients to access financial data from anywhere, which has made it easier to collaborate and share information.
- **Artificial intelligence and machine learning:** Artificial intelligence (AI) and machine learning (ML) have become more widely used in accounting, many software have this technology embedded which allow for the automation of simple tasks such as transaction categorization, financial forecasting, budgeting, and anomaly detection.
- **Automated tax preparation software:** Tax preparation software such as Befiler, TurboTax, and H&R Block's Online Tax Preparation can automatically import financial data from accounting systems and generate tax returns, which can reduce the time and effort required to perform this task.
- **Data visualization software:** There are many data visualization software programs available such as Tableau, QlikView, and Power BI that can help accountants quickly spot trends and patterns in financial data. This can help to identify areas where cost savings can be made or where the company is not performing as well as it could be.
- **Blockchain technology:** Blockchain technology is being considered by many organizations for their transactions, to keep records of transactions for these systems accountants will have to learn how to use platforms such as Ethereum or Hyperledger.
- **Financial modeling software:** Software such as Excel, or

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“ Overall, these technological advancements have led to increased efficiency and accuracy in the accounting profession, and automated and simplified many routine accounting tasks. However, it also requires accountants to adapt and acquire new skills to work with the new technology.”

specialized financial modeling software like Alteryx, allows accountants to create financial models to help with forecasting, budgeting, and strategic planning.

- **Automated expense tracking software:** There are several software programs available that automatically track expenses, such as Expensify, Concur, and Zoho Expense. These tools can automate the process of collecting and categorizing expense data, which can save time and reduce errors.
- **Project management software:** Project management software such as Asana, Trello, and Basecamp can help accountants to collaborate more effectively with clients and other team members, and to manage their time and tasks more efficiently.
- **Document management software:** Software like Adobe Acrobat, DocuSign, and HelloSign allow accountants to manage, track, and share documents electronically, which can streamline their workflow.
- **E-signature software:** Software like DocuSign and Adobe Sign can allow accountants to sign and send documents electronically, which can save time and make the process more efficient.
- **Chatbots and virtual assistants:** Some companies are using chatbots and virtual assistants like Google Assistant, Amazon Alexa, and Microsoft's Cortana to automate routine tasks and answer clients' questions. These technologies could be used in accounting firms to automate repetitive tasks such as scheduling appointments or providing basic information about services offered.
- **Freelancing websites and tools:** Freelancing can be a viable option for accountants looking for a more flexible career path or side income opportunities. As a freelancer, an accountant would have more control over their schedule and workload and would be able to take on projects and clients that align with their skills and interests. There are several websites and tools that can be used to find freelancing opportunities as an accountant, here are some examples Upwork, Fiverr, LinkedIn, Freelancer, or Indeed.
- **Online meeting tools:** Online meeting tools that can be used to conduct virtual meetings and collaborate with others remotely. Some popular examples include Zoom, Google Meet, Microsoft Teams, Cisco Webex, GoToMeeting, and blueJeans.

As you can see, the field of accounting technology is constantly evolving, and there are many new software and tools available that can help accountants to work more efficiently, collaborate more effectively, and provide better service to their clients. Keeping up with the latest tools and software is important for accountants who want to remain competitive in the field and to be able to be effective at the job or deliver high-quality service to their clients.



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What is Web3? – Next-Gen of Internet and its impact on Fintech

Mr. Shaikh Farhan Abbas - ACA

What is Web3? – Next-Gen of Internet and its impact on Fintech

There is a lot of buzz around the term Web3.0 (also called Web3) lately. But what is it really? This is a humble attempt to explain Web3 in a simple way to understand this new concept at a high level. So, let's dive right in.

What is Web3?

"Web3 is the internet owned by the builders and users, orchestrated with tokens"

- Chris Dixon (Partner at a16z).

Think of Web3 in this way:

In the early days of the internet, users need a login ID and password to log in to a website or application for identification and authentication. Then came a time when users did not need to create separate sign-in credentials to access the website or application, all they needed was a Facebook or Google account and they could use it for authentication. Now coming to Web3, where the users are the login, meaning they need to have a digital wallet that connects to the website, and voila! the user can interact with the website.

Picture this!

Web 1	Web 2	Web 3
What are your credentials?	Connect with Google or Facebook ID.	Connect your wallet!

History

Web's history can be divided into three eras Web1.0, Web2.0 and Web3.0

Web Type	Era	Characteristics
Web1.0	1990-2005	Defined by protocols like HTTP (websites) and SMTP (emails).
Web2.0	2005-2020	All about mobile, social, and cloud. Advertising and subscriptions have emerged as dominant business models.
Web3.0	2020 onwards	All about mobile, social, and cloud. Advertising and subscriptions have emerged as dominant business models.

Web3 technologies and concepts

To work, Web3 uses the same infrastructure that we are using today i.e., the internet, but there are certainly new technologies and concepts that come together to create new ways that the user interacts and transacts with the web.

Technologies

Key technologies of Web3 include:

- Blockchains – the basic infrastructure of Web3 is built on blockchains (the permissionless, decentralized ledgers). Blockchain ensures the security and the immutability of the transactions that occur on the blockchain.
- Smart contracts – smart contracts revolutionized blockchains by making them more dynamic. Smart contracts are programs that trigger and ensure that a transaction or event occurs when the conditions written in the code are met.
- Tokens – a token is a digital representation of value on the blockchain.
- Wallets – they are the primary way to authenticate and interact with the blockchains. The most famous wallets are Metamask, Rainbow, and Trust.
- Web3 browsers – these browsers have embedded wallets and let users pull information directly from the decentralized networks, unlike conventional browsers that pull information from a web server. Examples – Brave and Opera browsers.

Key concepts of Web3:

- Ownership - User control over assets, data, and content they create or buy on the internet.
- Programmability - Assets with functionality. Developers can make any transfer of value or ownership automated.
- Composability - The ability of any web3 service to consume or interact with any other that is permissionless.
- Decentralization - The ability of any web3 service to consume or interact with any other that is permissionless.

Business use cases

Music

- 3LAU – sharing revenue with buyers
- Audionero – launching music without middlemen

Gaming - Play to earn model – Axie Infinity

Axie Infinity is a non-fungible token (NFT) based online video game developed by Vietnamese studio Sky Mavis, known for its in-game economy which uses Ethereum-based cryptocurrencies.

Players of Axie Infinity collect and mint (creating new digital assets) NFTs that represent axolotl-inspired digital pets known as Axies.

The key difference between Axie and a traditional game is that blockchain economic design unlocks the ability to have complex player-owned economies and rewards players who are able to reach advanced levels of skill. That reward can be in form of AXS tokens or NFTs.

Social Media – LENS protocol

Currently, social media is controlled by a few companies e.g., Facebook and Twitter. Anything that is posted on social media is subject to scrutiny and censorship. If the social media platform does not like your post or yourself (e.g., Twitter took down ex-US President's account) then you can be blocked or your post deleted.

AAVE (a web3 Decentralized Finance or DeFi) recently launched a new platform called 'LENS Protocol' that claims to revolutionize how we use or experience social media today. Lens Protocol is Web3 native, a user-owned, open

social graph that any application can plug into. Lens Protocol is built on Polygon blockchain (Layer 2) with features to serve the Web3 community. Lens Protocol is a composable and decentralized social graph. It lets creators take ownership of their content in the decentralized internet

Regulations

Few countries have been fast to react and come up with regulations in some shape or form. Some of them have been listed below for reference.

- EU - The European Union’s Markets in Crypto-assets regulation (MiCA)
- USA - The US President’s Executive Order on cryptocurrencies
- UAE - Virtual Assets Law
- Singapore - The Monetary Authority of Singapore’s (MSA) tokenization guidelines
- The Financial Action Task Force’s (FATF) Guidance for Virtual Assets Service Providers

The UK plans to become a hub for crypto assets and recognition of NFTs as legal property and is working to come up with regulations for web3.

Web3 and Fintech

As mentioned earlier, Web 3.0 uses smart contracts along with other technologies to build a more open, transparent, and interconnected internet ensuring that the ownership rights belong to the users. It removes the middlemen from financial operations, enabling faster and more transparent peer-to-peer transactions between users.

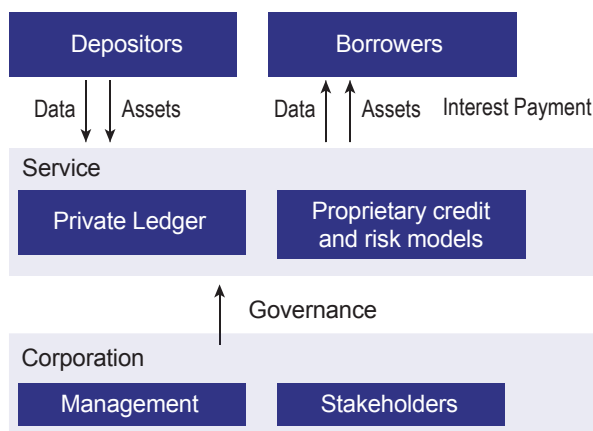
Web 3.0 acts as a catalyst and accelerates the fintech products and services resulting in:

- Improved operations – faster payments, money transfers, loan sanctioning, lending, and investment.
- Security - a password-less world.
- Reduced cost of operations – decentralization of storing data is deflationary.
- Optimized customer journey - Artificial intelligence and machine learning algorithms can learn and predict customer preferences and offer better solutions to users.

Web3 could represent a paradigm shift in business models for digital applications

Illustrative and onexhaustive

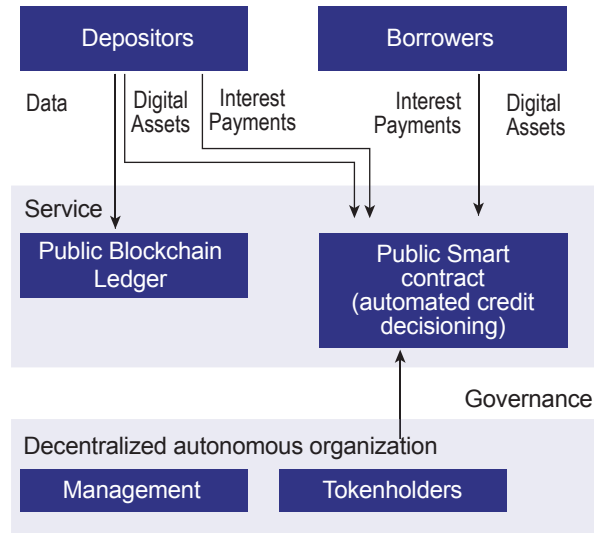
web2 deposits and loans: The familiar model



Web3 deposits and loans: Decentralized model

Illustrative and onexhaustive

web2 deposits and loans: The familiar model



*McKinsey & Co.

Closing Remarks

WEB 3 technologies are here and they have already started to change how we interact with the internet on daily basis. As accountants, it is a great time and opportunity to tinker and get familiar with this new bleeding-edge technology. The combination of web3 and fintech will be a game changer for the business and accounting profession.

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- *Axie Infinity whitepaper*
- *Lens Protocol website (lens.xyz)*
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Artificial Intelligence (AI) and Machine Learning (ML) in Finance

Syed Atiq Ur Rehman, FCA

Artificial intelligence (AI) and machine learning (ML) are rapidly transforming the financial industry. These technologies have the power to automate repetitive tasks, analyze vast amounts of data, and make predictions with a level of accuracy that was previously impossible. As a result, financial institutions are using AI and ML to improve risk management, fraud detection, and customer service.

ML, a subset of AI, allows systems to learn and improve from data without being explicitly programmed. This makes it ideal for tasks such as fraud detection and risk management. For example, ML algorithms can be trained on historical data to

AI & ML power to automate repetitive tasks, analyze vast amounts of data, and make predictions with a level of accuracy that was previously impossible.

identify patterns and anomalies that indicate fraudulent activity. This allows financial institutions to detect and prevent fraud more efficiently. Additionally, ML can be used to analyze vast amounts of data to identify potential risks, such as credit risk or market risk allowing financial institutions to proactively manage these risks, rather than reacting to them after they occur.

AI and ML are also being used to improve customer service, for example, ML algorithms can analyze customer data to provide personalized recommendations and advice. This can help financial institutions improve customer retention and increase revenue. Additionally, AI and ML can be used to analyze customer interactions and predict which customers are most likely to churn, allowing financial institutions to proactively address the issue.

One of the most significant benefits of AI in finance is its ability to automate repetitive tasks. This includes tasks such as data entry and customer service. For example, chatbots powered by AI can handle customer service inquiries 24/7, providing efficient responses. Additionally, computer vision can be used to automatically extract information from documents, such as ID cards or bank statements, reducing the need for manual data entry. This can save financial institutions time and money and improve the customer experience.

AI is also being used in the field of credit risk management. AI algorithms can analyze vast amounts of data, such as customer transactions and market data, to identify patterns and trends that can be used to predict credit risk. This can help financial institutions proactively manage credit risk, rather than reacting to it after it occurs. AI can also be used to identify fraudulent activities, such as credit card fraud, by analyzing patterns in customer transactions. In the field of fraud detection, ML algorithms can be trained on historical data to identify patterns and anomalies that indicate fraudulent activity. This

allows financial institutions to detect and prevent fraud more quickly and accurately. Additionally, ML can be used to analyze vast amounts of data to identify potential risks, such as credit risk or market risk. This allows financial institutions to proactively manage these risks, rather than reacting to them after they occur.

ML algorithms can analyze customer data to provide personalized recommendations and advice. This can help financial institutions improve customer retention and increase revenue.

However, the implementation of AI and ML in finance is not without its challenges. One of the biggest concerns with the implementation of AI and ML in finance is the lack of data privacy and security. Financial institutions handle a vast amount of sensitive personal and financial data, and any data breaches or unauthorized access to this data can have serious consequences. To address this concern, financial institutions must ensure that their AI and ML systems are secure and comply with data privacy regulations.

Another concern is the potential impact on employment. As AI and ML automate repetitive tasks, some jobs may become obsolete. However, it is important to note that these technologies also have the potential to create new jobs, such as data scientists and AI engineers. To mitigate the potential negative impact on employment, financial institutions

must ensure that they provide employees with the necessary training and support to transition to the new roles.

Another challenge is the potential for bias in AI and ML systems. AI and ML algorithms can be biased if they are trained on biased data. This can lead to unfair decisions, such as denying loans to certain groups of people. To address this concern, financial institutions must ensure that their AI and ML systems are transparent and explainable. They should also actively monitor the performance of the system to identify and address any potential biases.

Despite these challenges, the use of AI and ML in finance is expected to continue to grow. As these technologies become more advanced; they will have the potential to provide even more benefits to financial institutions, such as improved decision-making, increased efficiency, and reduced costs.

In conclusion, AI and ML are rapidly transforming the financial industry. These technologies have the power to automate repetitive tasks, analyze vast amounts of data, and make predictions with a level of accuracy that was previously impossible. Financial institutions are using AI and ML to improve risk management, fraud detection, and customer service. However, the implementation of AI and ML in finance is not without its challenges, such as data privacy and security, and potential impact on employment. Nevertheless, the use of AI and ML in finance is expected to continue to grow as these technologies become more advanced.



Syed Atiq Ur Rehman is a Chartered Accountant managing his own business of securities and commodities trading.



Data Analytics Test based on Benford's Law: A must Tool for Audit, Accounting & Fraud Investigation

Mr. Jamal Abdul Nasir, FCA

At the outset, before proceeding with Benford's Law, it is indispensable to elucidate a digit here. A digit refers to any figure from 1 to 9; the low first digits and the last few digits refer to digits on the lower and higher sides of the continuum, respectively. A position at which a digit appears in a number is referred to as "first, second, third and so on. For instance, a number 4182 has the first digit 4, the second digit 1, the third digit 8 and the fourth digit 2. Zero as the first digit is not taken into account; hence, there are nine possible first digits (1, 2, 3... 9) and ten (including zero) possible digits at the second and onward positions. In a negative number, the minus sign is ignored.

Frank Benford, a physicist who presented the paper "The Law of Anomalous Numbers" (Benford, 1938) to the

Frank Benford, a physicist who presented the paper "The Law of Anomalous Numbers" (Benford, 1938) to the American Philosophical Society, found that the digits in multi-digit natural numbers are not arbitrary; instead, they follow a predictable pattern with expected frequencies that are high for the low first digits and low for the last few digits.

American Philosophical Society, found that the digits in multi-digit natural numbers are not arbitrary; instead, they follow a predictable pattern with expected frequencies that are high for the low first digits and low for the last few digits.

He, while pursuing the common logarithm table, noticed that the first few pages are more damaged, shabby, and stained than the last few pages, leading him to conclude that the first few pages displaying the logs of low digits (e.g., 1, 2, and 3) are used more than the last few pages; the low first digits occur more than the last digits (e.g., 7, 8 and 9).

He studied the first digits of twenty diverse sets of data, including population numbers, river areas, atomic weights, mathematical tables, cost data, street addresses, etc. The data sets also included random numbers from the pages of newspapers and issues of Reader's Digest. He tried to keep data sets as diverse and from multiple sources as possible so as to have a fair result of analysis. He found that the expected frequency of 1 and 2 being the first digit in the numbers is on average 30.6 percent and 18.5 percent, respectively; accumulating to 49.1 percent collectively. More precisely, the first digit to be 1 or 2 in any given number has chances of 30.6 percent and 18.5 percent respectively.

This probable occurrence of digits with expected frequencies is most commonly referred to as Benford's Law. Experiments demonstrate that data sets from diverse fields, including accounting, economics, finance, life sciences, physics, and computer sciences, follow Benford's law, but still there are some that defy it.

Analytical Test based on Benford's Law

In the fields of auditing, forensic accounting, and fraud examination, Benford's law is widely used to analyze records and check whether there is any deviation of the actual frequencies of digits in a dataset from the expected frequencies based on Benford's law. Any such deviation may indicate anomalies and signal an increased risk of fraud, manipulation, or error.

Non-conformity with Benford's Law does not necessarily signal fraud or error with certainty but warrants further analysis

It is pertinent to mention that non-conformity with Benford's Law does not necessarily signal fraud or error with certainty but warrants further analysis and detail on a dataset showing non-conformity. To check a dataset against Benford's Law, various types of digit tests can be performed on the data set, but here only first-, second-, and first-two-position-digit tests will be discussed.

First-Position-Digit Test

The first-position-digit test evaluates actual frequencies of a digit at first position (1,2,3...9) against expected frequencies of Benford's Law (figure 1) in numbers. This test gives a high-level overview of a dataset, and any meaningful results can barely be inferred from any deviation unless other digit tests or statistical analysis are performed. For illustration, if this is run on billing data of retailers containing a charge of Rs. 1 for FBR POS Services, there is a high probability of

skewness at digit 1 since every bill has this charge of Rs. 1 in addition to other billing figures.

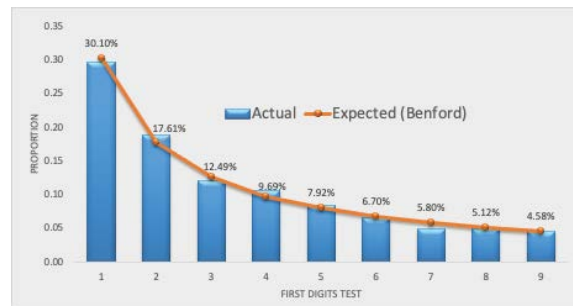


Figure 1: First-Digit Graph of purchase data of a FMCG Company.

Second-position-digit test

The Second Digit is the digit appearing at the second place from the left of a number. For example, the numbers 25000, and 124678 have 5 and 2 as a second digit, respectively. In this test, the actual proportion of a second digit in a number set is examined against the expected proportion based on Benford's Law (figure 2). Again, this test is a high-level check and gives a bird's-eye view of overall data reasonability. Any abnormal variation of the actual occurrence of a second digit from the expected proportion may be examined further for a specific reason. In the case of payment or other price related data, more occurrences of 0s and 5s may be a normal phenomenon since most data consist of rounding numbers such as 500, 1000, 1,500, 2000, and 2,500. But high variation of other digits at second place from expected proportion in case of the same price related data may be indicative of abnormal duplication or other anomalies. As shown in figure 2, the actual frequencies for 0 and 6 as a second digit exceed the expected frequencies; however, the actual frequencies fall short of expected frequencies in the case of 7 and 8 as a second digit. These variations may be looked into further to identify specific reasons for them.

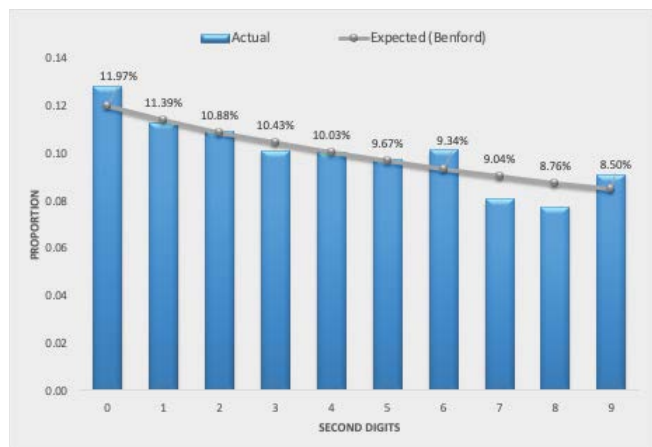


Figure 2: Second-Digit Graph of purchase data of a FMCG Company.

First-two-positions-digit test

The first-two-positions-digit test compares the actual occurrences of digits at first two positions with the expected proportion based on Benford's law. The numbers 25000 and

☞ **The first-position-digit test evaluates actual frequencies of a digit at first position (1,2,3...9) against expected frequencies of Benford's Law (figure 1) in numbers. This test gives a high-level overview of a dataset, and any meaningful results can barely be inferred from any deviation unless other digit tests or statistical analysis are performed.** ☞

124678 have 25 and 12 as their first two digits starting from the left. This is result-oriented with respect to duplication and specific trends in the data set. The variation in actual vs. expected frequencies may be indicative of the following possibilities:

- Excessive amounts just below the cutoff thresholds of 300, 400, 500... 1000 could explain the excess frequencies at 29, 39, 49, 59... 99. These variations are most likely witnessed in price-related data for retail brands.
- In the case of employee expense reimbursement, where the policy requires more stringent approval procedures above some minimum threshold, employees may have a general tendency to keep claim amounts below the minimum threshold in order to avoid more stringent approval procedures. In such case, there may be high frequency for first-two-digit that correspond to the minimum threshold. For example, if a reimbursement policy requires not to produce any supporting documents for reimbursement claim below 5,000 then employees may venture to keep their claim just below 5,000 like 4,900 resulting into spike for first-two-digit, 49.
- High frequencies at first-two digits, in case of financial institutions, may be observed for loan figures just below the threshold for which more stringent assessment and approval procedures are required.
- A state-owned procuring agency may have a tendency to keep its procurements just below the minimum threshold of Rs. 500,000 or Rs. 3,000,000 so as to avoid publication, in accordance with PPRA rules, on the PPRA website or in print media. In such a case, the first two digits may show spikes at 49 and 29, respectively.
- A first-two-positions-digit test run on declared income as per tax returns for the years 2021–2022, in the case of business individuals and associations of persons, may show a spike at 39 or 40, keeping in mind the maximum

threshold of Rs. 400,000 up to which an income is exempt from tax.

Characteristics of Dataset that conforms to Benford's Law
Although no specific guidelines are available, the dataset must have some characteristics in order to adhere to Benford's Law. Generally, experiments show that a data set that has reasonably large numbers with four or more digits and records of more than 1,000 will have good conformity. Some guidelines for a data set to follow Benford's law are as follow:

- The scale of events and facts should be reflected in the records. Instances of such records include population data, trading data of a stock exchange, daily revenue of a company etc.
- A record should represent a whole population, not a sample from that population.
- A record should not consist of identification numbers, numerical labels, numbers impacted by human-thought, or other specially generated numbers. Examples of such numbers include National Identification Numbers, Vehicle registration numbers, Credit card numbers, bank account numbers, invoice numbers, and purchase orders etc.
- A data set should not be skewed toward lower or higher records, such as salary data, which mostly consists of similar amounts for a large group of lower staff. Researchers have shown that a data set with an average (mean) greater than the median shows greater conformity.
- A record should not have data restricted in any way, such as a tax record consisting of a minimum threshold above which salary or income from property is taxable. Another example is a record consists of fixed commission income a person earns regardless of sales amount.
- Pre-defined and pre-set numbers like prices which are set at psychological limit (Rs. 99, 199,299, etc.)

Conclusion

Analyzing data based on Benford's law provides salutary insights of anomalies in a dataset. The first- and second-digit tests imbue a high-level overview of conformity with Benford's law and the first-two-positions-digit test has more efficacy in highlighting duplications and specific trends in a dataset. These tests can be very prodigious for a forensic auditor, an internal auditor, or a fraud examiner.



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Amplification of online Settlement in Stock Market /Money Market After 1992 Scam

Mr. Ahmed Faraz, FCA

In this edition we will be looking how online settlement refined over period in particular after the unearthing of 1992 scam. For readers understanding, brief intro of stock market is given with quick turn to 1992 scam and after math effects.

Stock market is a place where investors buy and sell shares of the company; demand and supply of securities determine its price along with company's operational performance. Market Index reflects the overall performance of the market, so if Index is going up it means securities prices are moving up and vice versa in case of declining Index. In securities and money market industry, the trade settlement period refers to the time between trade date i.e., when an order is executed in the market and the settlement date, when the trade is settled. When shares or other securities are bought or sold, it is prime obligation of buyer and seller to fulfill their obligations. At the time of settlement buyer must pay for the shares/ securities and the seller must deliver the shares. Ultimately, on settlement date buyer becomes the owner of securities.

Countries in different part of the world dealing with securities have established National Clearance and Settlement System (NCSS) to facilitate securities transactions. From time-to-time Rules and Regulations are implemented to govern the process of trading securities. Initially 15 days' time period was allowed to settle the transaction till the implementation of auto clearance system however after the implementation of online system and refinements the settlement period has changed

overtime. Currently worldwide T+2 or T+3 is referred to as settlement period i.e., Transaction has to be settled within 2 days from trade date.

In Pakistan NCCPL provides clearing and settlement services to the Pakistan Stock Exchange Limited through its centralized clearing & settlement system known as NCSS. There is no physical movement of shares after the automated system, buyer and seller accounts are automatically debited and credited. Buyers' bought shares are reflected in CDS sub account maintained with broker agents (clearing members). This is the brief description of how settlement works. The question that arises "Why were there the necessity of introducing online settlement system?" In subcontinent, its significance arises after famous Harshad Mehta Scam 1992, a stockbroker using his bullish and risk-taking market techniques, took advantage of loop holes of system, swept whopping amount of 40 billion Indian rupee adjusted for inflation in 2020's rate to \$3.3 billion. Harshad Mehta's case analysis is as important as Pablo Escobar Medelin carter for analysis of drug dealing and cartel working. In rest of the article, we will be focusing on Mehta's fraud through story telling, as it will clearly demonstrate necessity of online settlement system for securities.

Before going into depth, let us grasp some terms for understanding of the story.

Bear (Bearish): It is a state of market when shares prices are on declining trend. Bearish benefit from keeping prices low as they use technique of short selling which is reverse of buy low sell high mentality of investing. They do this in reverse order i.e., sell stocks when prices are higher and buy when prices are lower to make profit from the difference. They are motivated to keep market in bear state for longer term.

Bull (Bullish): It is exact opposite of bear market; it is the state where prices of stock are rising with further expectation of increased prices. They work on typical investing mentality i.e., buy low sell high. Bullish motive is to keep market on bullish trend to benefit from high prices.

Ready forward deals: Deals carried out by banks where lending was done against collateralization of government securities. Bank A (Borrower Bank) sell securities to Bank B (Lending Bank) with promise to buy back in future at slightly higher price. It is funding arrangement for short term normally 15 days.

Is it getting technical or hard to digest? Yes, then let's get back to our main topic? Very common question arises who Mehta was? How an individual can sweep whopping amount of \$3.3 billion from stock and money market? Mehta was an ordinary person from Bombay and struggled his early life from doing multiple odd jobs including selling hosiery, cement and sorting diamonds. After spending 8 years, he tried his luck as jobber in Bombay stock market, only stock market in India at that time.

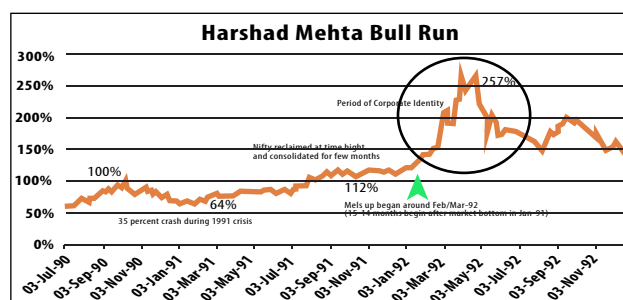
In next 10 years, he moved up the ladder in brokerage firm, his techniques were based on bullish trends where his motive was to pull the market upward to generate high profit. He usually targets small company shares and use informal sources to get the inside information about company future plans/strategies and accordingly he outplayed the market. He fictitiously increases the value of stock through spread of false/inside information to increase the demand, thus pump the stock in upward trend and at saturation point dump the stock thus keeping huge profit while actually company held no such real value as reflected by overpriced stocks.

He rose to prominence in Indian stock market and media touted him as "Amitabh Bachan of Dalal Street – Stock Market). He got strong hold of the market after establishing his own consultancy firm "GrowMore" where he collected money from multiple large holdings in return of high profits by increasing the stock prices through his market manipulating techniques. In addition, his consultancy firm provides investment tips to prospective investor with promise of returns up to 18-20% in short term. In order to sustain increased volumes of trading, he requires access to large funds to play and manipulate the market, for this he targeted to join money market as broker.

In money market, Ready forwards deals are used to fulfill short-term borrowing needs of the banks. Mehta acted as broker between two banks to close the transaction, as at that time banks were not allowed to deal directly and have to go through money market broker to transact Ready forward deals. Before getting into details, we should have a snap of how this system works. Borrower Bank (buyer) Bank issue Bank receipts (BR's) in favor of selling bank (lender) backed by government securities, where it is acknowledgement that funds are borrowed against securities. On maturity date Borrower

bank buy back securities at higher price and lender bank returns BR's, transaction is settled without any physical movement of securities.

Economic liberalization by new Indian government in 1991 resulted in unprecedented growth and prosperity of private corporate sector. Stock market anticipated the good tidings of the private sector and started to boom. This necessitated the requirement of enormous funds for stock operators to stay active in the market. Similarly, free market philosophy created immense pressure on public sector to perform in financial terms, National banks were too under pressure to improve their bottom line. Increase requirements of Capital Adequacy Ratio (CAR) and Statutory Liquidity Ratio (SLR) forced banks to look for higher returns. This was happening in parallel when increase funds are required to finance stock market operations. It was an appropriate time for someone to come up with innovative ideas to route the funds from banking channel to stock market.

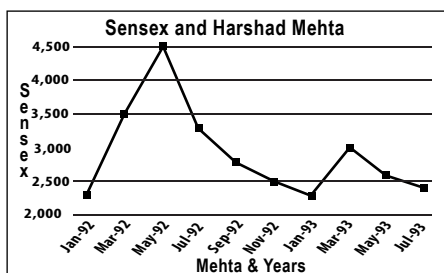
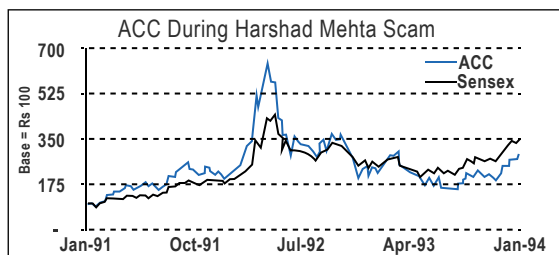


Mehta needs big money market players to finance increase volume of transactions and at that time banks were not allowed to deal in shares. Then here comes the twist in story, soon he unearths loopholes in the banking system dealing with ready forward deals. Due to manual recording, there was delay in recording of BRs in respective Banks' Subsidiary General Ledgers (SGL's) and PDO (Public debt office). There was period of 15 days to settle the transaction, Mehta exploited this loophole to route the funds from banking channel to stock market for financing his investments in stock market.

After creating his good reputation in money market and lobbying his connections established over the period he approached banks as broker for Ready forward deals. He targeted small banks to issue BRs in his name or fake BRs not backed by any government securities so he can route banking funds in to his personal account for taking position in stock market. By the time settlement date comes he settle the transaction through his funds created from other Banks' BR's or through selling the securities at higher prices, this was a vicious circle and he keep rotating the funds. In addition, he convinced banks to let him withdraw running finance for short periods in return of high interest rates.

Between 1991 & 1992 he took the market index from 1000 to 4500 points due to huge inflows of banking and state corporation funds. It was the time when he took the price of Associated Cement Company (ACC) from Indian Rs. 200 to Rs. 9,000 due to massive buying by Mehta. His famous theory behind this increase is that "revalue of company is determined at a price equivalent to establish similar business in current time" termed as "Replacement cost theory" and this mantra quickly works with investors. Everyone was happy with big returns and enjoying the beat except for some foreign

banks along with their associated bear brokers, they were at huge losses due to bullish trend in market. They started to tip off irregularities to top officials of governing body.



Mehta rose to fame due to vast coverage by media; Business Today covered him on front page marked as “Raging bull”. Through huge influx of funds, he started the Bull Run in the market. Everything was going in his favor until veteran journalist “Sucheta Dalal” enters the scene. Informer tipped her for irregularities in BR’s, SGLs’ and recording in public debt. Sooner she started to dig further facts to corroborate her story before publication in April 1992 in Times of India. She exposed irregularities, illegal methods and magnitude of the scam. Bear brokers along with foreign Banks were already against Mehta’s techniques and methodologies, by taking advantage of the situation they quickly strike back and move market in bear trend as investors have already lost the faith in market.

Initially it appeared that there is short fall in Government securities however upon further investigation revealed that this was just the tip of an iceberg, banks issued fake BR’s which weren’t backed by any government securities causing losses of Indian Rs.24,000 crores in today’s value to banking channel. It eroded 80% of market Capitalization of Bombay Stock Market causing the collapse of share market. When ambit of investigation was expanded it came to limelight the involvement of top executives of national banks, trusts, foreign banks and financial institutions, brokers, bureaucrats and politicians.

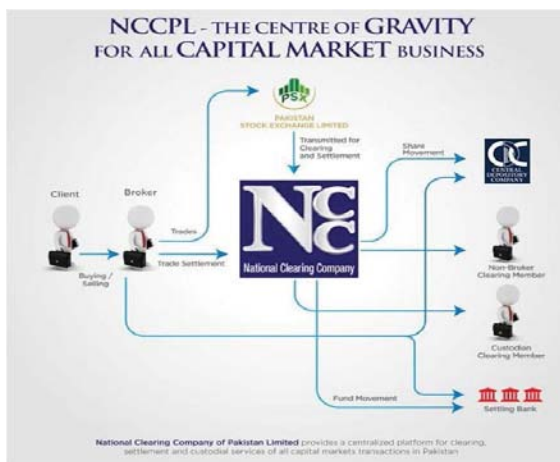
We will not be discussing in detail the aftermath of investigations, as it is not our core topic, reason for articulating this story was to demonstrate how system works manually before strict implementation of auto clearance. This scam cluttered all stock market operating in world with immediate refinements in stock market laws, promulgation of strict corporate laws through bills and ordinances.

Fall of Sensex after Scam

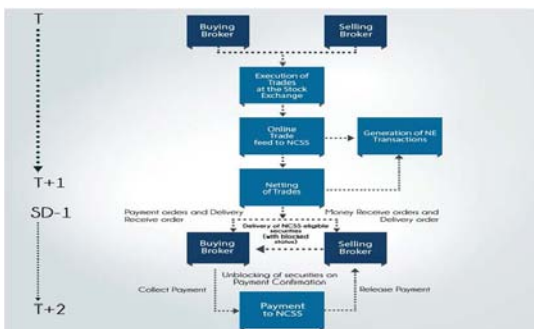
In Pakistan National Clearing and Settlement System replaced separate and individual clearing houses of three stock exchange in 2001, project was funded by ADB under the ambit of Capital Market Development Program. The Capital market of Pakistan is triangular foundation of Pakistan Stock Market, Depository Company and NCCPL. Multiple regulations and rules are enacted to govern the operations of NCCPL, including:

- NCCPL regulations;
- NCSS procedures;
- Clearing house regulations 2016;
- The Companies Act, 2017
- Income Tax Ordinance, 2001
- Securities Act, 2015
- Income Tax Rules, 2002
- NCCPLCKO Regulations, 2017
- CKO Rules, 2016
- CKO Procedures
- Futures Market Act 2016
- Listed Companies Corporate Governance Regulations, 2019
- Leveraged Markets and Pledging Rules, 2011

NCCPL Layout



NCSS Working Stream



Sources:

1. NCCPL
2. Book: The Scam: Who won, who lost, who got away
3. Rediff
4. Business Today & The Times of India
5. Investopedia



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Synopsis - Investment Opportunities For Provident Funds Within Applicable Legal Framework

Mr. Shoaib Ahmad

In Pakistan organizations offer different types of terminal benefits to their employees. These include pension, leave encashment, gratuity, post retirement free medical facility and contributory provident fund etc.

Contributory Provident Funds are a form of retirement saving plan offered to employees by their employers. These funds are established under the Provident Funds Act, 1925, or under Sixth Schedule to the Income Tax Ordinance, 2001.

Under a provident fund, employee and employer contribute a certain amount of money. This money is invested in various financial instruments such as stocks, bonds, and mutual funds.

Securities & Exchange Commission of Pakistan always tried to protect provident fund contributions of employees by issuing various legislations. Today we would discuss investment options available to a recognized provident fund under the legal framework. Investment related provisions can be found in the Companies Act, 2017, Income Tax Ordinance, 2001, Income Tax Rules, 2002 and Employees Contributory Funds Investment in Listed Securities Regulations, 2018. Summary of all the investment related provisions is as follows:

Sr. No.	Act/Rule	Investment Category	Limit	Sub-limit
1	Companies Act, 2017 Section 218(2)(a) i	Deposit in National Savings Scheme.	100% funds can be placed - No Limit	N/A
2	Companies Act, 2017 Section 218(2)(a) ii	Deposit in a special account in a scheduled bank.	100% funds can be placed - No Limit	N/A
3	Companies Act, 2017 Section 218(2)(b) i	Invest in Government securities.	100% funds can be placed - No Limit	N/A
4	Companies Act, 2017 Section 218(2)(b) ii	Bonds, redeemable capital, debt securities or instruments issued by a statutory body, units of collective investment schemes registered as notified entities with the Commission, and in listed securities including shares of companies, bonds, redeemable capital, debt securities and equity securities, subject to the conditions as may be specified.	Investment limits under this section are defined in "Employees Contributory Funds (Investment in Listed Securities) Regulations, 2018", and explained below.	
4(I)	Employees Contributory Funds (Investment in Listed Securities) Regulations, 2018 Clause 3(1) i & 3(1) (b)	Total investment in bonds, redeemable capital, debt securities or instruments issued by a statutory body:	As per Clause 3(1) i & ii investment under Clause 3(1) to 3(10), in bonds, redeemable capital, debt securities or instruments issued by a statutory body or securities listed on Pakistan Stock Exchange, including shares of companies, bonds, redeemable capital, debt securities, equity securities and collective investment schemes other than money market collective investment scheme registered as notified entity shall not exceed 50% of the size of Fund or Trust subject to further sub limits as defined in next column.	Shall not exceed 30% of the size of the Fund or Trust.
	3(2)	Total investment in bonds, redeemable capital, debt securities or instruments issued by a statutory body of a particular sector, as per the sector classification made by the Pakistan Stock Exchange.		Shall not exceed 20% of 30% of the size of Fund.
	3(3)	Total investment in bonds, redeemable capital, debt securities or instruments issued by a particular statutory body.		Shall not exceed 10% of 30% of the size of Fund or 5% of that issue, whichever is lower.
	3(4)	Total investment in bonds, redeemable capital, debt securities or instruments issued by a constituting statutory body.		Shall not exceed 10% of the 30% of the size of Fund.
	3(1) ii	Securities listed on Pakistan Stock Exchange, including shares of companies, bonds, redeemable capital, debt securities, equity securities:		Shall not exceed 30% of the size of the Fund or Trust.
	3(1)b	a) Total investment in listed debt securities.		Shall not exceed 30% of the size of the Fund or Trust.
	3(2)	Total investment in listed debt securities, of a particular sector, as per the sector classification made by the Pakistan Stock Exchange.		Shall not exceed 20% of 30% of the size of Fund.
4(II)	3(3)	Total investment in listed debt securities of a particular company.		Shall not exceed 10% of 30% of the size of Fund or 5% of that issue, whichever is lower.
	3(4)	Total investment in listed debt securities of constituting company or its associated companies.		Shall not exceed 10% of the 30% of the size of Fund.
	3(1)c	b) Total investment in listed equity securities.		Shall not exceed 30% of the size of the Fund or Trust.
	3(5)	Total investment in listed equity securities of a particular sector, as per the sector classification made by the Pakistan Stock Exchange.		Shall not exceed 20% of the 30% of the size of Fund.
	3(6)	Total investment in listed equity securities of a particular company.		Shall not exceed 10% of 30% of the size of the fund or 5% of the outstanding shares in the paid-up capital of the investee company whichever is lower.
	3(7)	Total investment in listed equity securities of constituting company or its associated companies.		Shall not exceed 10% of 30% of the size of Fund.
	3(10)	Total investment in Initial Public Offers (IPO) of equity securities.		Shall not exceed 5% of 30% of the size of the Fund or Trust, every six months in a calendar year. Provided that, total investment, at the time of making investment in one IPO of equity securities shall be restricted to 1% of the outstanding shares in the paid-up capital of the investee company or 2% of 30% of the size of the Fund or Trust whichever is lower.
4(III)	3(1) ii	Collective investment schemes (Mutual Funds) other than money market collective investment scheme registered as notified entity:		30% to 50% of the size of the fund
	3(1)a	a) Total investment in debt collective investment schemes registered as notified entity.		Shall not exceed 50% of the size of the Fund or Trust.
	3(8)	Total investment in debt collective investment schemes managed by a single asset management company.		Shall not exceed 50% of 50% of the size of Fund.
	3(1)c	b) Total investment in equity collective investment schemes, registered as notified entity.		Shall not exceed 30% of the size of the Fund or Trust.
	3(9)	Total investment in any single equity collective investment scheme		Shall not exceed 30% of the 30% of the size of Fund.
	3(11)	Investment in the money market collective investment scheme (Money Market Mutual Fund) registered as notified entity:	Investment can be made up to 100% of the size of the Fund or Trust	Sub limits are given below
	3(11)a	Total investment in any single money market collective investment scheme.		Shall not exceed 20% of the size of the Fund or Trust.
	3(11)b	Total investment in money market schemes managed by a single asset management company.		Shall not exceed 50% of the size of the Fund or Trust.



Mr. Shoaib Ahmad is a CA Intern.



Bridging the Regulatory Gaps

Mr. Waqas Ahmed, FCA

Calling FinTech an unsung hero of current times shouldn't sound strange as the pace at which it became the part of our lives has been so swift that it didn't make us realize when and how our entire being has become dependent on it. Simply put, FinTech is an abbreviation used for Financial Technology, which describes new technology that automates the financial activities and functions. The advent of the term is tightly coupled with Information age where we have made an entry into the most profound eon of change and there is no turning back since then. With increasing levels of digital transformation and process automation, use of Machine learning and AI is evident everywhere, from customized financial advices to secured digital transactions. Here, FinTech makes its way by offering improvement by replacing manual processes and bringing efficiency. However, it is vital to prioritize how FinTech can be utilized as a difficulty solving tool over what is cutting edge in this domain.

FinTech and Regulatory Bodies

Fast scaling of FinTech innovations such as crowd funding, digital banking, robo-advice etc. is imposing pressure on regulators more than ever, meanwhile altering consumer behavior and traditional business models. This implies that the challenge of regulatory gap is same for the policymakers and

innovators, and government bodies are struggling to match the pace of technological innovations in modifying the policies required for the FinTech industry. It is pertinent to mention that policy makers along with setting the stage for new financial innovations have to strike a fine balance between not sweltering but encouraging innovation, meeting regulatory objective of financial integrity and stability, consumer protection and fair competition, and having proactive strategies to deal with inevitable technological disruptions.

Regulatory Gaps in Pakistan

Contrary to Pakistan, international regulatory bodies are matching the pace of FinTech innovations quite well by embracing contemporary and flexible regulatory approaches. Although there are huge opportunities for FinTech companies in Pakistan to introduce such business models and innovations that are still not addressed, lack of efficient regulatory framework hinders the promotion of FinTech industry in the country although these innovations catalyze technological and financial ecosystem, which ultimately translate into more choice, increased competition and stronger financial inclusion. There are identifiable issues in Pakistan that constraint the potential that FinTech has, inter alia, absence of competitive, enabling and predictable

commercial environment along with the regulatory framework for FinTech.

While formulating policies, policy making bodies have to be mindful of not providing opportunities of regulatory arbitrage. Regulatory arbitrage is an activity performed by the firms to capitalize on loopholes in regulatory policies. Below discussed are the most common issues prevailing in regulatory system pertaining to FinTech in Pakistan.

1. Loopholes in current rule based institutional framework

One of the most prominent issues in regulatory framework in Pakistan is loopholes in current rule based institutional framework as the regulatory framework lacks diversity in institutional frameworks employed by SBP and SECP that could accommodate FinTech along with the absence of flexible product categorizations that can adapt and recognize evolving technologies. Prevailing one-size fits all regime is stiff and does not adapt to new innovations and business models. Additionally, licensing is a cumbersome and costly procedure that startups go through, limiting their performance. Pakistan is a country that needs to encourage startups to promote technological innovation to match the highly innovative global FinTech market.

Recommendations:

It is recommended to employ data centric, principle-based function regulatory approach for the regularization of FinTech. To achieve this, MoITT, PTA, SECP and SBP need to collaborate and ensure that such a policy framework needs to be designed that doesn't not require revisit every time a new innovation or business model emerges. Moreover, new regulations must strive for platform utilization and their security protocols, and more harmonized rules whose applicability are same for every player instead of treating them differently to avoid unnecessary competition and artificial segmentation. Moreover, a uniform transitional regime should be used for both newly and existing regulatory entities to ensure smooth transition towards new regulations.

Another recommendation in this regard is to implement risk-based approaches to manage the challenges driven by new technologies and accompany them with specific regulations directed at a specific function or activity such as AML/KYC and payments. If required, these regulations can be further divided into product-based regulations such as customer protection rules and guidelines.

With a purpose of promoting healthy competition, technology neutral approaches must be employed where possible, irrespective of the players offering new technologies or conventional approaches.

2. High barriers for new entrants and FinTech startups:

Promoting new startups especially FinTech startups is a phenomenon common worldwide but not so common in Pakistan as such startups are dis-incentivized in Pakistan when it comes to developing new FinTech products.

Recommendations:

Transitional regulatory regime is a need of the time as the country fails to match up to the international pace of FinTech innovations and regulations. Regulators are required to

formulate less onerous and inconvenient regime for new and small entities that fall below the specific threshold. This implies that tiered approaches based on the size and risk of an entity is needed to be formulated. Further, tiered based licensing fees structures that reflect the risk level of an entity should also be introduced which is in line with principle-based approach. Principle based approach is a risk based; technologically neutral approach set to achieve preferred regulatory outcomes and allows entities and regulators to adapt to dynamic market conditions and ever evolving technological space while addressing consumer protection and AML concerns.

Another recommendation is to ensure coordination among regulators while implementing regulatory sandboxes. Transitional regulations require implementation of multiple regulatory sandboxes, which is nothing but creating a real-life environment to test an innovation that does not fully comply with existing regulatory frameworks. These regulatory sandboxes act as a cushion in a transitional period in case the regulators desire to have a shift from strict institutional approach to a more flexible approach and provides regulators a measure of risk associated with a particular FinTech innovation whilst crafting post sandbox authorization criteria or regulations. SBP and SECP coordinate with each other in relation to sandbox approach.

3. Unclear or absence of ancillary Laws affecting FinTech

Ancillary laws support principles-based approach and require equal attention. There are evident regulatory gaps and ambiguities when it comes to ancillary laws that affect FinTech development in the country.

Recommendations:

Coordination among the regulators is prerequisite for a healthy financial ecosystem. Alerting the ancillary regulations and laws when required; such that any restrictive regulation does not hinder technological innovations and their market use is important, especially in a country like Pakistan where the instances of breakthrough innovations already feel bleak. This includes, but not limited to updated or new regulations on crypto-assets, DLT/block chain, P2P transfers, crowd funding, cloud computing, AI explain ability, and cyber security standards.

Synopsis

Nonetheless, FinTech, without a doubt is catching fire owing to the opportunities it offers to both customers and business owners that lie in areas like bottom line impact, compliance, fraud etc. However, having a sound and efficient regulatory framework is required to be able to enjoy the perks that FinTech offers as these frameworks are the buttresses of any system to function efficiently. As far as Pakistan is concerned, there is a dire need of developing new regulations and clarifying the existing ones to avoid regulatory ambiguities and arbitrage to ensure provision of healthy environment for FinTech innovations to foster.



Mr. Waqas Ahmad is a Fellow member of ICAP and currently working as Chief Internal Auditor for Zarai Taraqiati Bank Limited. Being a part of financial sector for 14 years, he believes that FinTech is one of the most lucrative industries of current times and an inevitable part of the modern economy.



Petrochemicals are all around us

Mr. Ahmed Faraz, FCA

Petrochemical products are everywhere and are integral to modern societies. It includes plastics, fertilizers, dyes, chemicals, detergents, tires, clothing, packaging, medical equipment, construction material etc. Our economies are heavily dependent on petrochemicals.

Petrochemicals are chemical products obtained from petroleum through refining, although many of the same chemical compounds are also obtained from other fossil fuels such as coal and natural gas. Products of petroleum oil refining are the key raw material for petrochemical industry. Petrochemical and petroleum products are second tier of products derived from crude oil after multiple refining processes. Crude oil is the basic component to produce petrochemical and petroleum products after long processes of refinements in refineries.

Petrochemical Products are further divided into two classes

- Olefins including ethylene and propylene – these are major sources for chemical plants and plastic products;
- Aromatics including benzene, toluene and xylene isomers (BTX) – raw material for producing dyes, synthetic detergents, plastics and synthetic fibers

Global ethylene production is approximately 190 million tons while propylene was 120 million tons in 2019. Aromatics production is approximately 70 million tons. The largest petrochemical plants are located in USA and Western Europe with major growth in new production capacity is in Middle East and Asia. Petrochemicals are made on a very large scale.

In petrochemical industry there is integrated manufacturing i.e., not all units are produced at single location rather interrelated and components are manufactured in adjacent plants to benefit from economies of scale, operational efficiency and industry symbiosis. Large petrochemicals plants normally operate in cluster of manufacturing units where utilities, power houses and infrastructure such as road and rail terminal are shared.

Petrochemical are becoming major driver of global oil demand, by 2030 it will account for 1/3rd of global oil demand while by 2050 it will be nearly 50% ahead of trucks and shipping demand. Developed countries like USA and Europe is spending billions of dollars in improvising this sector to meets its local and global demand. Combination of

growing local and international demand with increasing population will result in increasing demand for petrochemical products.

Pakistan chemical industry is still in developing stage excluding fertilizers. At current production of chemicals plants can only meet 15-20% of local demand however in contrast fertilizers have shown unprecedented growth with the result that surplus urea fertilizer is being exported (fluctuates as per govt policy from time to time). Pakistan is highly deficient in production of first-generation petrochemical products. At moment there is no production facilities for building block petrochemicals i.e., ethylene due to absence of facilities for cracking natural gas, Naptha and fractionation of lighter gasses from petroleum refineries. Local facilities are mainly confined to production of nylon and polyester fibers.

Pakistan's plastic industry has developed over the years. Currently country is capable of producing of various types of plastic products including sophisticated pipes, wire, cables, household items, footwear and packing material. Despite higher rate of import duties on raw material, levy of custom surcharge and restriction on import of certain plastic processing machinery, Pakistan's plastic industry is fairly developed and more than 1000-1500 processing units are engaged in manufacture of various types of plastic products.

Challenges faced by Pakistan

From time-to-time plans have been formulated related to establishment of petrochemicals industry in Pakistan and included in country's strategic development plans. However, unfortunately none of the plan was implemented due to:

- Continuous inflation and deteriorating exchange rate as there is a substantial increase in initial capital outlay;
- Lack of interest of foreign sponsors;
- Lack of policy and institutional measures;
- Lack of technical knowledge; and
- Lack of allocation of special funds by Govt., import duty concession on raw material, tax exemptions & incentives;

Pakistan imports approximately \$3 billion petrochemical products and their demand is increasing by 5% - 10 %. While on other hand at current exchange rate Pakistan need roughly \$5 billion to set up petrochemical plant. Petrochemical industry is highly capital intensive with requirement of large sums of capital outlay. Since in developing countries like Pakistan investment in petrochemicals compete with other priority areas like provision of basic facilities, food etc. which hindered growth in this sector. Therefore, country relied heavily on its imports. Top officials are of the view that arranging investment of this magnitude and ensuring its raw material supply from oil producing countries will always remain challenge, thus all these factors restricted self-sufficiency in petrochemical products.

Future Roadmap

Petrochemical industry is capable of generating huge job opportunities and can provide import substitution to save foreign reserves. In Mar'22 Pakistan first Petrochemical

Symposium was hosted by Corporate Pakistan Group with ACCA in support from Board of Investment, OICCI, Pakistan Business Council and PCMA. Business experts and top-notch officials while speaking at inaugural session termed Petrochemical as game changer for the country as Petrochemical and steel sector are mother of all industries. In order to achieve industrialization more considerations in terms of transparent and long-term policy is required to boost this sector, which will not only enable us to meet our local demand but also give us the opportunity to boost our foreign receipt from export of quality products to foreign markets. Pakistan should stop its reliance on export of textile only which is already facing fierce competition worldwide but also it needs to find alternatives to progress further.

Pakistan should move from more traditional to non-traditional sectors in order to boost's countries exports. Petrochemical have a huge potential in meeting local demand and earning foreign reserves in shape of exports. Reliance in India is the largest producer of petrochemicals and amongst the top ten in the world. India's second richest person Mukesh Ambani, who made his fortunes from oil refining and petrochemicals recently signed a joint venture with Abu Dhabi's National Oil Company (ADNOC) to build a \$2 billion petrochemical production facility at Abu Dhabi which in turn will boost India's economy indirectly in shape of returns/dividends and direct/indirect employment for Indian nationals.

Chinese companies are ready to invest \$15 billion in Pakistan's petrochemical industry at the port of Gwadar under its investments initiatives of CPEC. Pakistan should capitalize this opportunity and start working on reforms in order to provide conducive investment environment to boost this sector. Pakistan has to structure tariffs, duties, and taxes for setting up progressive and successful petrochemical industry. Prime Minister Shahbaz Sharif in recent visit to Saudi Arabia convinces Saudi investors to invest \$12bn in oil refinery and petrochemical complex. It's a positive sign that authorities at top have realized importance of this sector and shown its willingness to move further. Let's be optimistic for realization of such dream projects for wellbeing of our beloved country.

Sources:

1. International Energy Agency Report
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3. Pakistan Business Council
4. Forbes
5. Investopedia
6. Wikipedia



Mr. Ahmed Faraz is a Chartered Accountant and have over 14 years of management & consulting experience across multiple sectors including retail, FMCG, government, real estate, financial services, telecom, manufacturing and education. Currently he is working in Accounts & Finance stream of Khushhali Microfinance Bank, above edition is not an official document but a personal opinion/view. He can be reached out at farazfca@gmail.com.



Adoption of IAASB's Quality Management Standards in Pakistan

Ms. Farheen Mirza, FCA

The Institute of Chartered Accountants of Pakistan has adopted the Quality Management Standards issued by the International Auditing and Assurance Standards Board (IAASB).

Through ICAP Circular No. 6/2022 (dated November 25, 2022), the Quality Management Standards will be effective for the firms performing the audits of public interest companies from December 15, 2023. For the firms performing the audits of other than public interest companies, the Quality Management Standards will be effective from December 15, 2024.

The Quality Management Standards will replace the extant ISQC 1, Quality Control for Firms that Perform Audits and Reviews of Financial Statements and Other Assurance and Related Services Engagements which is currently applicable in Pakistan.



The new paradigm, now centered on quality management, will enable a proactive, integrated, risk-based approach and higher quality engagements. The effective date of IAASB quality management standards is December 15, 2022.

The Quality Management Standards have been issued by the IAASB in response to the evolving and increasingly complex environment, the challenges of the effectiveness of pre-existing quality control standards, growing market participant needs and a need for quality management systems that are proactive and adaptable.

The Quality Management Standards include:

- International Standard on Quality Management (ISQM) 1, Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services Engagement;
- ISQM 2, Engagement Quality Reviews;
- ISA 220 (Revised), Quality Management for an Audit of Financial Statements.

The new and revised Quality Management Standards are a substantial development and change for the global accountancy profession and stakeholders. The new paradigm, now centered on quality management, will enable a proactive, integrated, risk-based approach and higher quality engagements. The effective date of IAASB quality management standards is December 15, 2022.



These standards are designed to improve firm's and engagement quality by requiring the firm to design a robust system of quality management to manage the quality of engagements performed by the firm. Moreover, these standards will improve communication between the firm and its stakeholders, between the firm and its network and between the firm and engagement teams.

"A SOQM is a system designed, implemented and operated by a firm to provide the firm with reasonable assurance that: (i) The firm and its personnel fulfill their responsibilities in accordance with professional standards and applicable legal and regulatory requirements, and conduct engagements in accordance with such standards and requirements; and (ii) Engagement reports issued by the firm or engagement partners are appropriate in the circumstances."

Adoption Status of ISQMs Globally

A study of the international adoption status of the Quality Management Standards shows that in most of the developed/underdeveloped economies (like UK, Canada, Singapore, Australia, South Africa, Bangladesh and Hong Kong) the ISQMs have become effective from December 15, 2022. However, in USA and Sri Lanka, these standards are effective from December 15, 2025 and December 15, 2023 respectively. Further in India and Nepal the adoption of these standards are under deliberation.

Overview of Quality Management Standards ISQM 1

ISQM 1 deals with the firm's responsibility for having a system of quality management (SOQM).

The SOQM is the mechanism that creates an environment that enables and supports engagement teams in performing quality engagements.

ISQM 1 requires the firm to apply a risk-based approach in designing, implementing and operating the components of the SOQM in an interconnected and coordinated manner through:

- Establishing quality objectives;
- Identifying quality risks that threaten the achievement of those quality objectives;
- Assessing quality risks;
- Developing and implementing responses; and
- Monitoring and revisiting.

ISQC 1 Elements

1. Leadership responsibilities for quality within the firm;
2. Relevant ethical requirements;
3. Acceptance and continuance of client relationships and specific engagements;
4. Human resources;
5. Engagement performance; and
6. Monitoring.



ISQM 1 requires the firm to consider the nature and circumstances of their own practices and accordingly customize the design, implement and operate its SOQM based on the nature and circumstances of the firm and the engagements it performs.

For example, the information system in a less complex firm may not need to include rigorous policies and procedures that specify how information should be identified, captured, processed and maintained because there is more direct involvement of leadership and fewer personnel. In addition, in a less complex firm, the ultimate responsibility and accountability for the SOQM may be assigned to a single managing partner with sole responsibility for the oversight of the firm.

ISQM 1 applies to all firms performing audits or reviews of financial statements, or other assurance or related services engagements. For other types of engagements (e.g., tax services or consulting services), ISQM 1 is not applicable. However, these engagements, or personnel performing such engagements, may be affected by matters relating to the firm's SOQM.

How the firm's SOQM operates?

ISQM 1 consists of following eight components that deal with the key aspects of the SOQM, as compared to six elements of extant ISQC 1:

1. The firm's risk assessment process;
2. Governance and leadership;
3. Relevant ethical requirements;
4. Acceptance and continuance of client relationships and specific engagements;
5. Engagement performance;

6. Resources;
7. Information and communication; and
8. The monitoring and remediation process.

The eight components of ISQM 1 operate in an integrated manner. The firm may choose to use different terminology/ names for the components to describe the components of the SOQM, or may combine the components, or may have additional components.



Comparison of main components of ISQM 1 and ISQC 1

ISQM 1 and 2	Current ISQC 1
Applying, and Complying with, Relevant Requirements	Applying, and Complying with, Relevant Requirements
The Firm's System of Quality Management	Elements of a system of quality control
The Firm's Risk Assessment Process	
Governance and Leadership	Leadership responsibilities for quality within a Firm
Relevant Ethical Requirements	Relevant ethical requirements
Acceptance and Continuance of Client Relationships and Specific Engagements	Acceptance and continuance of Client relationships and specific Engagements
Engagement Performance	Engagement performance
Resources	Human Resources
Information and Communication	
Specified Responses	
Monitoring and Remediation Process	Monitoring
Network Requirements or Network Services	
Evaluating the System of Quality Management	
Documentation	Documentation of the system of quality control

ISQM 1 requires the firm to consider the nature and circumstances of their own practices and accordingly customize the design, implement and operate its SOQM based on the nature and circumstances of the firm and the engagements it performs.

Key Changes of ISQM 1

- Two elements 'The Firm's Risk Assessment Process' and 'Information and Communication' are new.
- The 'Firm's Risk Assessment Process' focuses on the firm and engagement risks and requires the design and implementation of quality objectives to identify and assess quality risks and implement responses to address the quality risks.
- The firm's quality objectives for 'Information and Communication' must address obtaining, generating or using information regarding the SOQM and communication of information within the firm and/or to external parties.
- The adapted components are 'Governance and Leadership' and 'Resources'.

The 'Governance and Leadership' is of key importance to quality management at the firm and engagement level, because it is the way in which the firm embeds its culture and ethics and self-regulates, and serves as the framework for how the firm's decisions are made.

The 'Human Resources' has now expanded to 'Resources' which includes technological and intellectual resources in addition to enhanced requirements of human resources to enable the operation of the SOQM and performance of engagements.

- The monitoring and remediation process has been extensively enhanced from extant ISQC 1, and now focus more on monitoring the SOQM as a whole (a shift from engagement-level monitoring), evaluate findings and identified deficiencies and robust remediation.
- Specified responses prescribe requirements for addressing matters rather than allowing responses to be designed by the Firm.
- Network Requirements or Network Services are mostly new and requires the firm to understand their impact on the firm's SOQM.

- Evaluation of SOQM is now required, at least annually, by the individual(s) assigned responsibility and accountability for the SOQM. The evaluation would be internal and the firm is not required to obtain independent assurance about the effectiveness of its SOQM.

Scalability of ISQM

The design of the firm's SOQM and related supporting documentation, in particular the complexity of the SOQM, must necessarily vary based on the range of entities and nature of engagements the firm undertakes. ISQM 1 requires the firm to exercise professional judgment in designing, implementing and operating the SOQM.

When applying a risk-based approach and designing a suitable SOQM, the firm must consider:

- a) The nature and circumstances of the firm; and
- b) The nature and circumstances of the engagements performed by the firm.

For example, in case of a sole practitioner, the requirements addressing the organizational structure and assigning roles, responsibilities and authority within the firm, as well as direction, supervision and review, and addressing differences of opinion may not be relevant.

Responsibility and accountability for the SOQM

The firm is responsible for its SOQM and the firm cannot outsource this responsibility to a service provider. The individuals assigned responsibilities for the SOQM are typically firm's partners. The individuals should have appropriate influence and authority within the firm together with appropriate experience and knowledge to fulfill the assigned responsibility.

In a smaller firm, ultimate responsibility and accountability for the SOQM may be assigned to a single partner (or sole practitioner) with sole responsibility for the oversight of the firm. This individual may also assume responsibility for all aspects of the SOQM, including operational responsibility for the SOQM, compliance with independence requirements and the monitoring and remediation process. Furthermore, the documentation of the quality objectives, quality risks and responses may be less extensive as compared to more complex firm.

Examples of how the firm may practically implement ISQM 1

- The firm may take a phased approach to implementation. For example, the firm may design and implement policies or procedures for certain components and commence the operation of these policies or procedures at various stages. In this case, the firm would establish its own effective date for each of the policies or procedures.

In a smaller firm, ultimate responsibility and accountability for the SOQM may be assigned to a single partner (or sole practitioner) with sole responsibility for the oversight of the firm. This individual may also assume responsibility for all aspects of the SOQM, including operational responsibility for the SOQM, compliance with independence requirements and the monitoring and remediation process. Furthermore, the documentation of the quality objectives, quality risks and responses may be less extensive as compared to more complex firm.

- The firm may commence operation of all the new and revised policies or procedures at the effective

In the longer term, the implementation of SOQM will create efficiencies in firm's practice by targeting responses that address the specific risks the firm faces.

Snapshot of ISQM 2

One of the specified responses in ISQM 1 is a requirement for the firm to establish policies or procedures for engagements requiring an engagement quality review (EQR). ISQM 2 is a new standard and replaces the extant provisions relating to engagement quality reviews covered in ISQC 1 and ISA 220.

An EQR is a firm level response to identified and assessed quality risks. It addresses the eligibility, appointment and responsibilities of an engagement quality reviewer, and the performance and documentation of the EQR. Key enhancements include a 2-year cooling-off period before an engagement partner can assume the role of engagement quality reviewer, performance of the EQR at appropriate points in time during the engagement and a "stand-back"

requirement to determine whether the performance requirements given in ISQM 2 have been fulfilled.

ISQM 2 applies to all audit, assurance and related services engagements for which an engagement quality review has been determined as required in accordance with ISQM 1.

Snapshot of ISA 220 (Revised)

ISA 220 (Revised) applies to audits of financial statements and addresses how quality is managed at the audit engagement level by the engagement partner.

The revised standard clarifies that the engagement partner is responsible for managing and achieving quality at the engagement level, to determine that there are sufficient and appropriate resources assigned or made available on a timely basis and determine the nature, timing and extent of direction, supervision and review at appropriate points in time, including audit documentation relating to significant matters (or difficult or contentious matters identified during the audit engagement).

The engagement partner is responsible to ensure that all differences of opinion are addressed and resolved and is required not date the auditor's report until any differences of opinion (arise within the engagement team, or between the engagement team and the engagement quality reviewer or individuals performing activities within the firm's SOQM) are resolved.

Publications and Resources

- IAASB Quality Management Standards (ISQM 1, ISQM 2, ISA 220 (Revised)
<https://www.icap.net.pk/quality-management-standards>
<https://www.iaasb.org/focus-areas/quality-management>
- IAASB First-time Implementation Guides:
<https://www.iaasb.org/focus-areas/quality-management>
- The IAASB other resources under the tab 'Available Resources':
<https://www.iaasb.org/focus-areas/quality-management>
- The IAASB webinar series on Quality Management Standards:
<https://www.iaasb.org/publications/quality-management-webinar-series>
- ICAP Presentations on Quality Management Standards:
<http://www.icap.net.pk/archives/6612>
- The presentations and recordings of ICAP seminars/webinar series on Quality Management Standards: <http://www.icap.net.pk/archives/6606>



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