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BLOCKCHAIN AND CRYPTOCURRENCY: THE WAY FORWARD

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Since 1944

The Institute of Cost Accountants of India is a premier professional Institute and a Statutory Body established under an Act of Parliament under the administrative control of Ministry of Corporate Affairs (MCA), Government of India to regulate and develop the profession of Cost and Management Accountancy (CMA) in the country.

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- CFO
- Director - Finance
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Azadi Ka Amrit Mahotsav

- **THE INSTITUTE OF COST ACCOUNTANTS OF INDIA** (erstwhile The Institute of Cost and Works Accountants of India) was established in 1944 as a registered company under the Companies Act with the objects of promoting, regulating and developing the profession of Cost Accountancy.
- On 28 May 1959, the Institute was established by a special Act of Parliament, namely, the Cost and Works Accountants Act 1959 as a statutory professional body for the regulation of the profession of cost and management accountancy.
- It has since been continuously contributing to the growth of the industrial and economic climate of the country.
- The Institute of Cost Accountants of India is the only recognised statutory professional organisation and licensing body in India specialising exclusively in Cost and Management Accountancy.

MISSION STATEMENT

"The CMA Professionals would ethically drive enterprises globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting."

VISION STATEMENT

"The Institute of Cost Accountants of India would be the preferred source of resources and professionals for the financial leadership of enterprises globally."

IDEALS THE INSTITUTE STANDS FOR

- *to develop the Cost and Management Accountancy profession*
- *to develop the body of members and properly equip them for functions*
- *to ensure sound professional ethics*
- *to keep abreast of new developments*

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secy@icmai.in

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CMA (Dr.) Debaprosanna Nandy
studies.director@icmai.in, placement.director@icmai.in, advstudies.director@icmai.in

Senior Director (Membership) & Banking, Financial Services and Insurance
CMA Arup Sankar Bagchi
membership.director@icmai.in, bfsi.hod@icmai.in

Director (Examination)
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exam.director@icmai.in

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CMA Arnab Chakraborty
finance.director@icmai.in

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pr.hod@icmai.in

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Additional Director (PD & CPD and PR Corporate)
CMA Nisha Dewan
pd.hod@icmai.in, prcorp.hod@icmai.in

Additional Director (Technical)
CMA Tarun Kumar
technical.addldir1@icmai.in

Additional Director (Infrastructure)
CMA Kushal Sengupta
Infrastructure.hod@icmai.in

Director (Discipline) & Additional Director
CMA Rajendra Bose
discipline.director@icmai.in

Additional Director (Journal & Publications)
CMA Sucharita Chakraborty
journal.hod@icmai.in

Additional Director (Internal Control)
CMA Dibbendu Roy
intcontrol.hod@icmai.in

Joint Director (Information Technology)
Mr. Ashish Tewari
it.hod@icmai.in

Joint Director (Admin-HQ, Kolkata & Human Resource)
Ms. Jayati Sinha
admin.hod.Kolkata@icmai.in

Joint Director (Admin-Delhi)
CMA T. R. Abrol
admin.hod@icmai.in

Joint Director (Legal)
Ms. Vibhu Agarwal
legal.hod@icmai.in

Joint Director (CAT)
CMA R. K. Jain
cat.hod@icmai.in

Joint Director (International Affairs)
CMA Yogender Pal Singh
intlaffairs@icmai.in

Headquarters
CMA Bhawan, 12 Sudder Street
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Institute Motto

असतोमा सद्गमय
तमसोमा ज्योतिर् गमय
मृत्योर्मामृतं गमय
ॐ शान्ति शान्ति शान्तिः

From ignorance, lead me to truth
From darkness, lead me to light
From death, lead me to immortality
Peace, Peace, Peace

Delhi Office
CMA Bhawan, 3 Institutional Area
Lodhi Road, New Delhi - 110003

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INSIDE COVER STORY

NOVEMBER 2021

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We have expanded our Readership from **1** to **94** Countries

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EDITOR - CMA Dr. Debaprosanna Nandy
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CHAIRMAN, JOURNAL & PUBLICATIONS COMMITTEE - CMA (Dr.) K Ch A V S N Murthy

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- **Articles/Publications/News/Contents/Letters/Book Review/Enlistment** *editor@icmai.in*
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EDITORIAL OFFICE

CMA Bhawan, 4th Floor, 84, Harish Mukherjee Road Kolkata - 700 025;
Tel: +91 33 2454-0086/0087/0184/0063

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EDITORIAL

Blockchain and Cryptocurrency: the Way Forward

Blockchain has initially emerged as the backbone of bitcoin and is an incorruptible digital public ledger of transactions. Blockchain technology is secure, cryptography-based, and stores transactional records (known as the block) in databases (known as chains) distributed across a network through peer-to-peer nodes, allowing the transfer of digital goods. It works on the principles of transparency, decentralisation, accountability, and immutability. They find wide applications in Smart Contracts, Supply Chain Management, Asset protection through an indisputable record of real-time ownership, Personal data management and Identification, Payment processing, Crowdfunding through cryptocurrencies, tracking drugs in pharmaceutical supply chains, verification of land records and certificates, etc.

The potential of blockchain technology to enable remote voting is also being explored by the election commission. It is estimated that blockchain will generate $3.1 trillion worldwide in new business by 2030. India aims to become a digital economy powerhouse and embracing emerging technologies like cryptocurrency and blockchain are inevitable. The digital economy currently comprises 14-15% of India's total economy, which is targeted to reach 20% by 2024.

Globally India is among the fastest-growing FinTech markets. It is expected that 60% of retail and SME credit will be digitally disbursed by 2029. In 2019, fintech investments nearly doubled to $3.7 billion from the previous year's $1.9 billion. The Centre of Excellence (CoE) in Blockchain Technology was launched in Bengaluru for identifying and sharing suitable data and rendering world-class blockchain services to government departments. It is set up by the National Informatics Centre (NIC) to provide Blockchain-as-a-Service (BaaS) as a third-party cloud-based infrastructure and management. Institute for Development and Research in Banking Technology (IDRBT), an arm of the Reserve Bank of India (RBI), is working on a model platform for blockchain technology.

In recent years, blockchain technology has evolved far beyond bitcoin and is now being tested in a broad range of business and financial applications. Many accounting firms have undertaken blockchain initiatives to further understand the implications of this technology. Blockchain has the potential to enhance the accounting profession by reducing the costs of maintaining and reconciling ledgers, and providing absolute certainty over the ownership and history of assets. Blockchain could help accountants gain clarity over the available resources and obligations of their organisations, and also free up resources to concentrate on planning and valuation, rather than record-keeping.

A blockchain solution, when combined with appropriate data analytics, could help with the transactional level assertions involved in an audit, and the auditor's skills would be better spent considering higher-level questions. The adoption of blockchain will allow auditors to access information in real-time and conduct online assessments throughout the period under audit instantly. The auditors will no longer need to request and wait for clients to provide data as they will be able to obtain audit evidence directly through blockchains.

To have the matching set of skills needed in 2021 and beyond, having an understanding of how blockchain technology affects audits is very important to study. Furthermore, accountants with blockchain experience can serve as consultants by helping their clients navigate both implementation and regulatory issues related to blockchain technology. Professionals like CMAs will also have enormous opportunities for participating in the process of developing market driven entity specific business strategies, merging the same with digital transformation strategies, providing consultations for risk-enabled performance management, etc. They can immensely contribute to articulating digitally transformed business requirements; participate in solution development using Blockchain, AI, Machine Learning, Forensic Data Analytics, etc. and can define revised policies and lay down strategies for clients; thus ensuring sustainable value creation for business entities.

This issue presents a good number of articles on the cover story *"Blockchain and Cryptocurrency: The Way Forward"* written by distinguished experts. We look forward to constructive feedback from our readers on the articles and overall development of the Journal. Please send your emails at *editor@icmai.in.* We thank all the contributors to this important issue and hope our readers will enjoy the articles.

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The DISSA course combines latest technology, information assurance and information management expertise that enables an ISSA to become a trusted Information Technology advisor and provider of IS Assurance services. DISSA course aspires to create new generation systems auditors who can deliver value added services in the field of information systems to all entities – Banks, Corporate Sector, Regulator etc irrespective of their size, nature and scope of business.

For details, please visit https://icmai.in/Advanced_Studies/DISSA/index.php

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PAPERS INVITED

Cover Stories on the topics given below are invited for ***'The Management Accountant'*** for the four forthcoming months

December 2021	Theme	Changing Contours of Indian Insurance Sector	Subtopics
			⊙ Life Insurance in the post-pandemic World ⊙ Emerging trends in the General Insurance sector and Road Ahead ⊙ Scope of IoT in Indian Insurance ecosystem ⊙ Global Impact on Insurance Industry in India ⊙ Evolving role of InsurTechs ⊙ Disruptions in Payments: Powering Innovation in a Digital world ⊙ The winds of change in Health Insurance ⊙ COVID-19: a Catalyst for Innovation in the Insurance Market ⊙ Cyber Security & Data Protection ⊙ Auto Insurance: Getting ready for a Post Covid-19 Landscape
January 2022	Theme	Future of Banking in India	Subtopics
			⊙ The Indian Banking Sector: Its journey so far ⊙ EASE 4.0: Reform agenda for Public Sector Banks (PSBs) towards Smart Banking ⊙ Green Banking: Ways and Practices ⊙ India's approach to Open Banking ⊙ The 'RBI Retail Direct' scheme: a One-Stop Solution to Facilitate Investment in Government Securities ⊙ Cloud Banking: a Potential Game-changer ⊙ E-payment Landscape: Trends & Opportunities ⊙ Innovation-driven Cyber Risk: Imminent Need of the Hour ⊙ 'MSME Prerana': Empowering MSMEs amidst Pandemic
February 2022	Theme	"Azadi Ka Amrit Mahotsav": Promoting a spirit of Pride and Aatmanirbharta	Subtopics
			⊙ Aatmanirbharta: Providing impetus towards achieving Independence 2.0 ⊙ Showcasing India as a Rising Economic Force: Achievements so far in terms of Education, Health and Technology ⊙ Role of Good Corporate Governance in achieving Atmanirbhar Bharat ⊙ 'Swachhata Se Sampannata': 7 years of iconic Swachh Bharat Mission ⊙ Attaining Self-reliance in Agriculture ⊙ MSMEs as the driver for Aatmanirbhar Bharat ⊙ Export Promotion-Import Substitution: Reducing Dependence ⊙ National Single Window System and Industrial Park Rating System: a Decision Support System for Investors and Policy Makers ⊙ Decriminalisation of various offences under Companies Act & LLP Act: A major initiative by GoI towards Ease of Doing Business & a step towards making India Self-Reliant" ⊙ 'Shatabdi Sankalp': India in the next 25 years ⊙ Role of CMAs to shape a more glorified future
March 2022	Theme	Environmental, Social & Governance (ESG)	Subtopics
			⊙ Introduction to ESG ⊙ The ESG Market ⊙ Environmental, Social & Governance Factors ⊙ ESG Risks and Opportunities-Key Considerations for Companies & Investors ⊙ ESG Reporting, Transparency, and Valuation ⊙ ESG Competitive advantages, Trends and Initiatives ⊙ ESG Integrated Portfolio Construction and Investment Strategies ⊙ Global ESG Regulatory Reform and Development ⊙ COP26 Goal

The above subtopics are only suggestive and hence the articles may not be limited to them only.

Articles on the above topics are invited from readers and authors along with scanned copies of their recent passport size photograph and scanned copy of declaration stating that the articles are their own original and have not been considered for anywhere else. Please send your articles by e-mail to editor@icmai.in latest by the 1st week of the previous month.

DIRECTORATE OF JOURNAL & PUBLICATIONS
CMA Bhawan, 4th Floor, 84 Harish Mukherjee Road, Kolkata - 700025, India
Board: +91 33 2454 0086 / 87 / 0184 Tel-Fax: +91 33 2454 0063
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Headquarters
CMA Bhawan, 12, Sudder Street, Kolkata 700016
Tel: +91 33 2252-1031/34/35

Editorial Office
CMA Bhawan, 4th Floor, 84 Harish Mukherjee Road
Kolkata -700 025
Tel: +91 33 2454-0086/0087/0184

Delhi Office
CMA Bhawan, 3 Institutional Area
Lodhi Road, New Delhi -110003
Tel: +91 11 24622156, 24618645

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CMA Biswarup Basu
President
The Institute of Cost Accountants of India

"Take up one idea. Make that one idea your life - think of it, dream of it, live on that idea. Let the brain, muscles, nerves, every part of your body, be full of that idea, and just leave every other idea alone. This is the way to success."

– Swami Vivekananda

My Dear Professional Colleagues,

I am sure you all must have celebrated Diwali and other festivities with lot of joy and had a wonderful time with your family, friends and your loved ones this year. You may recall that the celebrations during the festivals were restricted last year due to the many restrictions being imposed due to COVID-19 pandemic. This improvement in situation from the previous year is the outcome of commendable efforts put in by our Government and frontline health workers. Vaccination rates across the world is an important factor in our global recovery from COVID-19 pandemic and our Country has already crossed historic milestone of administering 100 crore COVID-19 vaccine doses. We are grateful to COVID-19 frontline heroes for working tirelessly to achieve this milestone. I am sure that we as a responsible citizen will continue to participate in this transition toward normalcy.

National Seminar on Role of Skill Development for Youth Empowerment & Nation Building

I am pleased to share that in view of Skill Development importance for our youth and aim to acknowledge the ability of the youth and extend their support by serving them with the proper guidance, infrastructure, opportunities, and encouragement, the Training & Educational Facilities and Placement Committee in association with Bankura Chapter of the Institute has organized a National Seminar on the theme "Role of Skill Development for Youth Empowerment & Nation Building" on 7th November, 2021 at Rabindra Bhavan, Bankura.

Dr. Subhas Sarkar, Hon'ble Union Minister of State for Education was the 'Chief Guest' of this National Seminar. I shared the dais with Shri Niladri Sekhar Dana, MLA, Bankura, CMA P Raju Iyer, Vice President, CMA (Dr.) Balwinder Singh, Immediate Past President, CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board & Indirect Taxation Committee of the Institute, CMA Subhash Chandra Samanta, Chairman, Bankura Chapter and CMA Gour Bandhu Gupta, Secretary, Bankura Chapter in the inaugural session of the event. CMA Arup Mukherjee, CGM, SAIL was the speaker in the technical session.

The eminent dignitaries discussed the key issues concerning Skill Development training and entrepreneurship skills for youth such as Challenges Facing Skills Development efforts, Trends in Demographics, Skills Development opportunities outside the Formal Education System, Government initiatives in Skill Development etc. More than 150 participants including members, students, industry and corporate representatives, media personalities attended the event.

Release of Internal Audit & Assurance Standards (IA&AS)

I am glad to inform you that the "Internal Auditing and Assurance Standards Board (IA&ASB)" of the Institute under the Chairmanship of CMA P Raju Iyer, Vice President has published the Internal Audit & Assurance Standards (IA&AS) and the publication was officially released at the hands of Shri Pankaj Chaudhary, Hon'ble Union Minister of State for Finance on 27th October, 2021. I am sure that these standards will provide the pathway to the members for carrying out an effective internal audit activity. These standards are principle based which would help industries as well as internal auditors in performance of audit activities related to all the audit aspects i.e. performance audit, operational audit, forensic audit, system audit and transaction audit.

Extension of last date of submitting the Cost Audit Report

The last date of submission of the Cost Audit Report by the Cost Auditor to the Company / Board of

Directors for the FY 2020-21 has been extended by Ministry of Corporate Affairs upto 30th November, 2021 vide its circular dated 29th October, 2021. Link to the circular: https://icmai.in/upload/Institute/Updates/MCA_Circular_2910_21.pdf

Events organised under Azadi ka Amrit Mahotsav (AKAM)

I am pleased to inform that the Professional Development & CPD Committee of the Institute conducted a Webinar on 'Atmanirbhar Bharat-Idea, Achievement and Resolve' on 26th October, 2021. CMA P. Raju Iyer, Vice President, CMA Rakesh Singh, Past President, CMA Chittaranjan Chattopadhyay, Council Member and CMA B B Goyal, Former Addl. Chief Advisor (Cost), Ministry of Finance, GoI were the eminent speakers in the webinar who shared their valuable thoughts on Idea, Achievements and Resolve in Atmanirbhar Bharat.

A Poster Making Competition on 'Khadi Movement' was also organised under AKAM at CINI (Child In Need Institute), Kolkata Unit. It was the time for the kids to break the chain of day to day mundane activities and touch the horizon with their innocent thoughts and imagination. Participating kids enthusiastically and earnestly tried to display their thoughts into canvas and ultimate results were overwhelming.

The Institute has successfully organised Rashtriya Ekta Diwas Shapath Campaign as part of celebration under Azadi ka Amrut Mahotsav (AKAM) and to commemorate the 146th birth anniversary of the 'Iron Man of India', Sardar Vallabhbhai Patel who played a crucial role in the unification of India. To remember his incredible effort and to celebrate 'National Unity Day', all officials of the Institute took pledge on Rashtriya Ekta Diwas. A Poster Making Competition was also organised on 'Rashtriya Ekta Diwas' at Kolkata.

The Regional Council & Chapters Coordination Committee under the Chairmanship of CMA (Dr.) K Ch A V S N Murthy, organised online Essay Writing event on 27th October, 2021, as a part of celebration of Bharat Ki Azadi ka Amrut Mahotsav (AKAM) to commemorate the 75 years of India's Independence. The topic was "National Unity – Rashtriya Ekta" and was organised with the help of Regional Councils and Chapters which was participated by members and students by online mode.

The Institute organized a Poster Making Competition on 'Freedom Fighters' on 5th November 2021 at CMA Bhawan, New Delhi. Around 50 underprivileged children actively participated in the competition.

Meetings with dignitaries

On 20th October, 2021, I along with CMA P Raju Iyer, Vice President, CMA Chittaranjan Chattopadhyay, Chairman of BFSIB, CMA Ashwini G. Dalwadi, Chairman IT Committee, CMA Asish Bhavsar, RCM of WIRC had a meeting with Shri Vinod Sharma, Chief Executive Officer of Rajkot Nagarik Sahakari Bank Limited and discussed the role Institute can play in Cost Optimization Process for Urban Cooperative Banks.

I along with CMA P. Raju Iyer, Vice President, CMA Chittaranjan Chattopadhyay, Council Member of the Institute and CMA J K Budhiraja, CEO of ICWAI Management Accounting Research Foundation had a courtesy meeting with Shri Naresh Salecha, IRAS, Member (Finance) Railway Board on 27th October, 2021.

I am pleased to inform that CMA Vijender Sharma, Chairman, Professional Development & CPD Committee and International Affairs Committee along with CMA Avijit Goswami, Former Council Member of the Institute had a meeting with Mr. Nikhel Kochhar, Chief Advisor, Institute of Internal Auditor of India (IIA India) to explore new areas to collaborate and further strengthen the relationship between both the Institutes.

Representation to International Financial Services Centres Authority

I wish to inform the members that the Institute has submitted representation to International Financial Services Centres Authority (IFSCA) to provide equal opportunity to Cost Accountants for Certifications under the International Financial Services Centres Authority (Registration of Insurance Business) Regulations, 2021.

SAFA Quiz Contest 2021

I am pleased to convey that the South Asian Federation of Accountants (SAFA) conducted a SAFA Quiz Contest 2021 on 7th November, 2021 through online mode wherein students from nine (9) SAFA member bodies from Bangladesh, India, Nepal, Pakistan and Sri Lanka participated. Ms. Priyanka Surana and Ms. Riya Chandak who were the first prize winners of CMA National Online Business Quiz 2021 represented the Institute in the SAFA Quiz Contest 2021 and won the 2nd Runner up position.

Meeting of CAPA MDC

I am pleased to inform that CMA (Dr.) Ashish P. Thatte, member of the Members Development Committee (MDC) of Confederation of Asian and Pacific Accountants (CAPA) attended the Committee meeting held on 18th October 2021 through Virtual Mode.

I now present a brief summary of the activities of various Departments/Committees/ Boards of the Institute, in addition to those detailed above:

BANKING, FINANCIAL SERVICES AND INSURANCE BOARD

I am pleased to share a brief note on various activities of the BFSI Board under the Chairmanship of CMA Chittaranjan Chattopadhyay during the month of October 2021 as appended below:

- **Certificate Course on General Insurance in association with National Insurance Academy**

The BFSI Board is in the process of launching certificate

course on General Insurance in association with National Insurance Academy (NIA) to update the members about various facets of general insurance which are necessary for them to update their knowledge in insurance sector. The course would be for members and students to take the opportunity for skill development and knowledge dissemination.

- **Investment Management Course in association with NISM**

BFSIB and NISM has started admission process for the 7th Batch of Investment Management (Level-I) and 4th Batch of Investment Management (Level-II) respectively. The 2nd batch of Investment Management (Level-III) has started and would be concluded soon.

- **Banking Courses**

BFSIB has concluded the 5th batch of Certificate Course on Concurrent Audit of Banks on 17th October 2021. The admission process for the 6th Batch of Certificate Course on Concurrent Audit of Banks and Certificate Course on Credit Management of Banks respectively is going on along with the 5th batch of Certificate Course on Treasury and International Banking respectively.

Like all other courses of the Institute, I am sure members and students who take up the three certificate courses on Banking will greatly benefit towards their skill development and knowledge enhancement.

- **Representation letters for inclusion of CMAs**

The BFSI Directorate has represented to various authorities and employers for inclusion of CMAs in the BFSI sector whenever such a scope has come to the notice of the Institute.

- **Handbook on Infrastructure Finance**

Publication of Handbook on Infrastructure Finance is underway, and I am sure that such publication as and when published by BFSIB will be of immense benefit for all the stakeholders.

- **Release of the BFSI Chronicle (7th Issue)**

BFSIB released online publication of the 7th issue of BFSI Chronicle. I urge all members and students to keep updating themselves with all the useful knowledge dissemination and interesting articles.

DIRECTORATE OF CAT

- **New ROCCs**

The month of October 2021 will always be remembered in the history of CAT course, as its footprints will now be seen outside India as well. I am glad to share with you that the first ever overseas Recognised Oral Coaching Centre (ROCC) has been established in Dubai (U.A.E.). I hope this first ever overseas ROCC will benefit the Indian diaspora in the gulf region who wish to pursue the CAT course. I congratulate Team CAT for this achievement and wish the CAT course may get recognition worldwide in the future.

I am equally pleased to see the advent of new ROCCs into the CAT family in Eastern, Western and Southern region of India. The four new ROCCs are established in Kolkata, Indore, Karur & Coimbatore.

- **WEBINT**

The CAT Directorate rendered full support to the WEBINTs jointly organised with the other Committees/Board of the Institute. The series of WEBINTs on 24 Cost Accounting Standards issued by the Institute is being organised by the Cost Accounting Standards Board (CASB) jointly with CAT and AAT Board. A webinar on Internal Auditing and Assurance Standards was also conducted jointly with IAASB on 19th October, 2021.

- **Launching of CAT Course in Noida Chapter**

I am happy to see that our own network of chapters is embracing the CAT course and showing exuberance in running it through their own infrastructure. In the month of October 2021, CAT course has been launched in the Institute's Noida Chapter (Uttar Pradesh). I am hopeful that it will surely benefit the CAT aspirants from Delhi/NCR.

- **Meeting with the Ministers/ Officials**

Delegation of CAT regularly meets senior officers and Ministers of Central & State Government to take up CAT proposal under skill development programme. Delegation of CAT met Shri Navin Mittal, IAS, Commissioner of Collegiate Education, Government of Telangana, Dr. Subhas Sarkar, Hon'ble Union Minister of State for Education, Ms. Saequa Monazza, Chief Administrative Officer of West Bengal State Council of Technical & Vocational Education & Skill Development, Shri Adil Khan, IAS, Mission Director Assam Skill Development, Dr. K K Dwivedi, IAS, Principal Secretary, Department of Industries and Commerce, Government of Assam, Dr M. Ariz Ahammed, IAS, Principal Secretary, Department of Public Enterprises, Government of Assam.

I would like to express my gratitude to all of the Council colleagues specially Chairman-CAT who have been regularly approaching the Govt. to bring CAT course under its skill development programme.

- **Implementation of CAT Course in other States and Universities**

I did inform in one of my previous communiqué that the delegation of CAT called on the Hon'ble Minister for Skill Development, Govt. of Uttar Pradesh (UP) and submitted CAT proposal for implementing the CAT Course in the state of UP under its Skill Development programme. I am glad to learn that CAT Directorate has got a positive response from the Govt. of Uttar Pradesh. Given the vastness of the UP and its recent initiative towards Skill Development Mission and ease of doing business, I hope the partnership with it will be advantageous for the youth of UP and for the Institute as well.

I am glad to see the activities undertaken by Team CAT to promote CAT course. Towards this endeavour, the proposal to implement CAT Course was submitted by the delegation of CAT to Mahatma Gandhi University, Osmania University,

Satavahana University, Palamuru University, Telangana University, Guwahati University, Andhra Pradesh State Council of Higher Education, Telangana State Council of Higher Education and North Eastern Hill University, Meghalaya.

I am thankful to CMA H. Padmanabhan, Chairman - CAT for his tireless efforts towards uplifting the reach of CAT course.

INTERNATIONAL AFFAIRS COMMITTEE

I am happy to inform that CMA Vijender Sharma, Chairman, International Affairs Committee and CMA B B Goyal, Former Addl. Chief Advisor (Cost), Ministry of Finance, GoI, had a virtual meeting with Ms. Sara Breen, Head of International, CIPFA, Mr. Khalid Hamid, International Director, CIPFA and Mr. Steve Watkins, International Relations Manager, CIPFA on 25th October, 2021 to review the current MOU between both the Institutes and to explore the areas to further strengthen our partnership.

MEMBERSHIP DEPARTMENT

I warmly welcome and congratulate all the 91 new members who have been granted Associate membership and 34 Associate members who have been granted Fellowship during the month of October 2021.

A soft recall for all practicing members who have taken new Certificate of Practice (COP) during the period 1st February, 2019 to 31st March, 2021 and have not undergone the Mandatory Capacity Building Training (MCBT), has been granted extension of time for successful completion of MCBT upto 31st December, 2021. Notification dated 9th April 2021 may be referred to vide the link https://icmai.in/upload/Notification-MCBT-Extension.pdf for full details.

PROFESSIONAL DEVELOPMENT & CPD COMMITTEE

I am delighted to inform you that after successful completion of three batches of online mandatory capacity building training (e-MCBT), the Professional Development & CPD Directorate has started registrations for the 4th batch of e-MCBT. I urge the practitioners to enroll for this batch to avail this opportunity to complete their MCBT.

I am pleased to inform you that on the Institute's representation, Pension Fund Regulatory and Development Authority (PFRDA) considered the firm of Cost Accountants for conducting Internal Audit. Further, GAIL Gas Limited, Bengaluru considered Cost Accountants for Tax Compliance of Bengaluru and Mangalore locations.

PD Directorate submitted representations to various organizations for inclusion of Cost Accountants for providing professional services.

Please visit the PD Portal for Tenders/EOIs during the month of October 2021, where services of the Cost Accountants are required in Lucknow Smart City Limited (LSCL), Uranium Corporation of India Limited, Container Corporation of India Limited, Bureau of Indian Standards, Kochi, Pension Fund Regulatory and Development Authority (PFRDA), New Town Telecom Infrastructure Development Company Limited, Artificial Limbs Manufacturing Corporation of India (ALIMCO), Garden Reach Shipbuilders Limited, Mormugao Port Trust, Municipal Corporation Adityapur, IREL (India) Limited, Gail (India) Limited, etc.,

During the month, around fifty webinars were organised by the different committees of the Institute, Regional Councils and Chapters of the Institute on the topics of professional relevance and importance. I am sure our members are immensely benefited from the deliberations in the sessions.

TAX RESEARCH DEPARTMENT

October is always special for the Tax Research Department since it marks the Anniversary of the publication of their Tax Bulletin. This year the 4th Anniversary Edition of the Tax Bulletin was published with article contributions from various Industry experts and stalwarts. The Bulletin is circulated and well-read among the members from the Industry and Government officials. The Tax Research Department has also started the GST Course for Colleges and Universities at two colleges in Kerala and Kashmir. There would be 100 plus student who would be undertaking this skill training and it is highly beneficial for the students at the initial stages to have their first brush of the technicalities of GST in practical world. Admissions for the Taxation Courses are going on seamlessly and the classes are scheduled to commence soon. Students from all across India are participating in these courses. Even corporates are showing their interest and enrolled their candidates. 97th and 98th Bulletin has been published and the Taxation portal is being updated on a regular basis.

ICMAI REGISTERED VALUERS ORGANISATION (RVO)

I am pleased to share that ICMAI RVO has successfully organized 3rd Online Regular Batch Securities or Financial Assets, 11th Online Batch of seven days program on Land & Building and Plant & Machinery, 17th Online Batch of seven days program on Securities or financial Assets, Overview of Valuation and Emerging Professional Opportunities in Valuation Domain and several master classes, learning session, Knowledge Upgradation Session on Valuation during the month.

I wish prosperity and happiness to members, students and their family.

Be safe and healthy!

With warm regards,

CMA Biswarup Basu

November 7, 2021

Release of 'Internal Audit & Assurance Standards' published by Internal Auditing and Assurance Standards Board (IA&ASB) of the Institute at the hands of Shri Pankaj Chaudhary, Hon'ble Union Minister of State for Finance on 27th October 2021

Signing of Memorandum of Understanding (MOU) between the Institute and Maharashtra State Skill Development Society(MSSDS), Government of Maharashtra at Mumbai in the august presence of Shri Nawab Malik, Skill Development and Entrepreneurship Minister, Government of Maharashtra, delegation of the Institute led by CMA H Padmanabhan, Chairman, Committee for Accounting Technicians(CAT), CMA (Dr.) Balwinder Singh, Immediate Former President and CMA Rakesh Singh, former President, senior officials of the Maharashtra Government and Officials of MSSDS.

CMA Biswarup Basu, President of the Institute along with CMA H Padmanabhan, Chairman, Committee for Accounting Technicians (CAT), CMA Chittaranjan Chattopadhyay, Council Member, CMA Rakesh Singh, former President and CMA (Dr.) D.P. Nandy, Senior Director met Ms. Saequa Monazza, Chief Administrative officer of West Bengal State Council of Technical & Vocational Education & Skill Development and handed over the proposal for implementation of CAT course in West Bengal for skill development of youth.

CMA P. Raju Iyer, Vice-President along with CMA Neeraj Joshi, Council Member of the Institute and CMA B.B. Goyal, Former Addl. Chief Adviser (Cost), Ministry of Finance, GoI, extending greetings to Shri Arun Goel, IAS, Secretary to the Government of India, Ministry for Heavy Industries during a meeting on 1st October, 2021 to submit a detailed representation relating to Cost Audit in the notified PLI Scheme for Automotives and Auto Components.

CMA H Padmanabhan, Chairman, Committee for Accounting Technicians (CAT), CMA (Dr) Balwinder Singh, Immediate Former President of the Institute, CMA Chittaranjan Chattopadhyay, Council Member, CMA D.P. Nandy, Senior Director met Dr. M. Ariz Ahammed, IAS, Principal Secretary, Department of Public Enterprises, Government of Assam and handed over the proposal for implementation of CAT course in Assam for skill development of youth.

CMA H Padmanabhan, Chairman, Committee for Accounting Technicians (CAT), CMA (Dr) Balwinder Singh, Immediate Former President of the Institute, CMA Chittaranjan Chattopadhyay, Council Member, CMA Rakesh Singh, former President met Shri Adil Khan, IAS, Mission Director Assam Skill Development Mission and handed over the proposal for implementation of CAT course in Assam for skill development of youth.

CMA Chittaranjan Chattopadhyay & CMA (Dr.) K Ch A V S N Murthy, Members, Committee for Accounting Technicians (CAT) and Dr. Archalapathi K.V., Director AAT Board met Shri Navin Mittal, IAS, Commissioner of Collegiate Education, Government of Telangana and discussed about CAT Course along with the various activities done by the Institute.

CMA Chittaranjan Chattopadhyay, Council Member & Member, Committee for Accounting Technicians (CAT), CMA (Dr) Balwinder Singh, Immediate Former President of the Institute and CMA (Dr.) D.P. Nandy, Senior Director met Dr. K. K. Dwivedi, IAS, Principal Secretary, Department of Industries and Commerce, Government of Assam and handed over the proposal for implementation of CAT course in Assam for skill development of youth.

CMA Chittaranjan Chattopadhyay & CMA (Dr.) K Ch A V S N Murthy, Members, Committee for Accounting Technicians (CAT) and Dr. Archalapathi K.V., Director AAT Board met Prof. R. Limbadri, Chairman, Telangana State Council of Higher Education Hyderabad and discussed about CAT Course along with the various activities done by the Institute.

CMA Chittaranjan Chattopadhyay, Council Member & Member, Committee for Accounting Technicians (CAT) called on Prof (Dr) Pratap Jyoti Handique , Vice Chancellor of Guwahati University and discussed about CAT Course along with the various activities done by the Institute on Skill Development and capacity building of the youth in India.

CMA Chittaranjan Chattopadhyay, CMA (Dr.) K Ch A V S N Murthy, Members, Committee for Accounting Technicians (CAT), CMA TCA Srinivasa Prasad, Former Council Member, Dr. Archalapathi K.V., Director AAT Board, CMA K Sanyasi Rao, Former Chairman, SIRC met Prof. L.B. Laxmikanth Rathod, Vice-Chancellor, Palamuru University, Telangana and handed over the proposal for implementation of CAT course.

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

Statutory Body under an Act of Parliament

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Azadi Ka Amrit Mahotsav

Banking, Financial Services & Insurance Board (BFSIB) of The Institute of Cost Accountants of India

3 DAYS WORKSHOP ON

"RISK BASED INTERNAL AUDIT"

November 18 - 20, 2021 from 10.00 am to 5.00 pm

Reserve Bank of India (RBI)'s Circular No. RBI/2020-21/88 issued vide Ref. No. DoS.CO.PPG./SEC.05/11.01.005/2020-21 dated February 03, 2021 mandating Risk Based Internal Audit in NBFCs/ UCBs is to be implemented by March 31, 2022.

The Circular provision has to be complied by the following stakeholders:

- All Deposit taking NBFCs, irrespective their Size
- All Non-deposit taking NBFCs (including Core Investment Companies) with Size of ₹ 5,000/- Crores and above and
- All Urban Co-operative Banks Asset Size of ₹ 500 Crore and above
- The provisions of the aforesaid circular shall be applicable to Housing Finance Companies (HFCs) – Vide RBI Circular No: RBI/2021-22/53 DoS.CO. PPG.SEC/03/11.01.005/2021-22 dtd: 11th June, 2021

The BFSI Board of the Institute of Cost Accountants of India has taken this opportunity to give proper Knowledge / Training to all eligible NBFCs / UCBs by organizing 3 Days Workshop to update the concept of RBIA.

The particulars of the course are as follows:

- 3 Days Course – Full Time **(10.00 am to 5.00 pm** – with 1 Hour Lunch Time), **18 - 20 November, 2021**
- Total Cost per person **₹ 6,000/ + GST @ 18%** for 3 Days Course
- Guidance Note published by the Institute of Cost Accountants of India on Risk Based Internal Audit to be provided in hard copy
- Size of the Batch Not exceeding **50 Participants**
- Google Meet Platform to be used

Who can Participate: ***Practicing CMAs/Officials of NBFC, HFC & UCB/Other Professionals***

CMA Biswarup Basu
President

CMA P. Raju Iyer
Vice President

CMA Chittaranjan Chattopadhyay
Chairman, BFSI Board

Speaker

CMA (Dr.) P. Siva Rama Prasad
Former AGM, State Bank of India

CEP Credit: 12 Hrs for Members of the Institute

Contents of the Course/Training:

Date	Topics
18.11.2021 (Day 1)	Introduction to RBIA • RBIA Scoring Methodology • Areas of Credit Risk • RBI Guidelines on Credit Risk
19.11.2021 (Day 2)	Areas of Operational Risk • Information Security Audit • RBI Guidelines on Operational Risk/IS Audit
20.11.2021 (Day 3)	Areas of Market Risk (SLR & Non-SLR Investments) • RBI Guidelines on Market Risk (Investments) • Overview of Risk Based Internal Audit Areas • Explanation of RBIA Format & Audit Plan etc.

For any clarification, please call at 8368693781/9830249447 or mail at: bfsi@icmai.in

Weblink: https://icmai.in/icmai/Webint-BI.php

Behind every successful business decision, there is always a **CMA**

BLOCKCHAIN TECHNOLOGY: A TOP-UP ERP

Abstract

This article highlights certain areas where the blockchain technology can be applied to make the existing ERP more robust. Blockchain brings the parties to a reasonable consensus in a business process who would not otherwise trust each other by means of decentralised ledger provided to each party with a single shared source of truth. A blockchain and ERP combination seek to eliminate the trust gap between the parties.

INTRODUCTION

ERP is a software based integrated management of a business process in real time. ERP integrates all the business transactions of an organisation and can be used to collect, store, manage and interpret data relating to its business activities. ERP can be either local or cloud based.

Blockchain is a distributed digital ledger which captures transactions administered among various parties (peer) in a network. The transactions agreed by peers will add to the blockchain network in a chronological manner. All peers using the shared database are "nodes" connected to the blockchain. Since each will conserve analogous copy of the ledger,it is called distributed ledger. It is a peer-to-peer, internet-based distributed ledger. The transactions are captured and stored on blocks sequentially with cryptographically generated unique hash number together with time stamps. The connection of all such *blocks*, which are created during the course of business transactions, among each other in the form of a *chain* gives the reason for the term *blockchain*, which is immutable/ irreversible once created.

The foremost aspect which differentiates ERP and blockchain refers to centralise and decentralise technology respectively. However, the blend of ERP and blockchain could be a radical innovation in the future. Integration of ERP with blockchain, enables optimisation of operations (when necessary) among different organisations. They are externally connected, through trusted sharing of relevant data.

An ERP works incredibly well in an organisation and is most trusted. ERP has a support system to the audit trails functionality as under:

- Recording audit trail of each and every transaction with user ID, date and time
- Creating audit logs of each change (edit) made in the books of account
- Capturing of date and details when such changes (edits) are made
- To ensure that the audit trail cannot be disabled.

[Application of audit trail functionality will be mandatory for all businesses which are using accounting software for maintaining books of accounts from 1st April, 2022 (deferred from 1st April 2021) vide Notification No. GSR 205 (E) dated 24th March, 2021.]

In case of cross company activities, ERP fails to mitigate the trust gaps between the companies. Every company demands the correctness of its statement in comparison to others, which is an extract of their ERP. In such cases of undue disputes, the futile exercise that arises is reconciliation. This type of non-value-added activity can be avoided by blockchain concept if applied along with ERP.

ERP FRAMEWORK FOR PURCHASE AND SALES

In a business process purchase and sales of goods and services are the cross-company transactions. The process of 'purchase and sales' (in ERP environment) and also how

CMA Arunabha Saha
Practicing Cost Accountant
Thane
saha.arunabha@gmail.com

the trust gap can be mitigated through blockchain have been discussed hereunder.

The process of 'procure to pay' (P2P) in an 'ERP accounts payable' (AP) module can be summarised thus:

P2P is a process when one company purchases materials/services from an external vendor for its business purpose. The process starts with purchase requisition (PR) and ends with vendor payment. The P2P process is generally segmented into nine sub-processes as shown in Table-A (infra)

The process of 'order to cash' (O2C) in an 'ERP accounts receivable' (AR) module can be summarised as under:

O2C is an overall complete process from customer inquiry to goods/ service delivery, billing and receipt of cash. The O2C process is mostly segmented into seven sub-processes as shown in the following Table -A:

TABLE -A

The whole cycle of P2P and O2C can be summarised thus:

Sr.No.	ERP-activites P2P	Cross Company Transactions	Sr.No.	ERP-activites O2C
i	Determination of requirement		i	Customer Inquiry
ii	Requisition Processing (PR)		ii	Quotation for customer inquiry
iii	Sourcing-Vendor Selection		iii	Sales Order (SO) creation
iv	Request for Quotation		iv	Post Goods issue (PGI) for production/ manufacturing activity/ Service is Scheduled
v	Purchase Order (PO) - Processing & Issuing to Vendor		v	Delivery/ Service Performed
vi	Goods Receiving (Quality& Quantity Checking)/ Service Receiving (Service Entry)		vi	Billing- Bill sent to customer
vii	Goods Receipt Invoice / Acceptance of Service Entries		vii	Receipt of money- Customer Payment-Cash
viii	Invoice Verification			
ix	Payment to Vendors			

PO could be a formal request to a vendor to supply certain materials or services under certain conditions. PO usually specifies the terms of payment, incoterms, delivery date, specifications, material quantity, price, demurrage/ liquidated damages if any, penalty clauses, and other terms and conditions as applicable.

SO is an internal document generated by the company for its internal use. SO should contain the customer's original PO reference, which is an external document. SO is created to take care of the internal control and monitoring of the completeness of order instead of using the customer's PO document.

In the area of cross company (Table-A) transactions there are possibilities of mismatching of ERP data between the parties, which are independent of individual ERP purview.

Incidents independent of individual ERP purview

Both the buyer and seller have their own ERP to control their area of activities. The mismatching may arise when the transactions are not properly addressed in cross-company activities. The major reasons for mismatching are the following:

1. Rejections/ returns not accounted by vendor
2. Advance payment by buyer for one PO accounted against another PO by vendor
3. Credit note / debit note not properly accounted by any of the parties
4. Mismatching of invoice quantity and price w.r.t PO
5. Payment has been made by the buyer but the vendor has not yet received or not accounted (occurs at the end of a period)
6. Discount given by vendor has not been accounted by buyer
7. Retention money (mainly for construction company) is not properly accounted

The above discrepancies can be resolved only after reconciliation which is a very lengthy and cumbersome process. Internal and external audit controls often use the vendor statement to validate the vendor liability on the balance sheet of the client. Mismatch statement raises an issue at the time of auditing. The main reason for the mismatch is the communication gap between the parties, which will be identified at the time of final payment.

ADVANTAGES OF INTEGRATION OF BLOCKCHAIN TECHNOLOGY WITH ERP: CROSS COMPANY TRANSACTIONS

a. Feasibility of mitigating the gap

Smart contracts (not legally tenable in India till date) in blockchain may mitigate the gap as mentioned above. A smart contract is a protocol encoded in the blockchain which enables the entity to capture all the transactions arising after issuing PO from the buyer and also after delivery of goods by the seller. Smart contract in blockchain is operated by the concept of distributed ledger technology, where the data base is shared, replicated and synchronized among the parties of a decentralized network. The distributed ledger records the transactions arising (as mentioned above) and exchanges the data, among the parties in the network. The parties involved have to authenticate each such transaction and the same will be distributed among the parties. Integration of smart contract with ERP will automatically post the required entries in the respective party's ledger once the pre-defined rules are met, which will eliminate the reconciliation activities. The smart contract will be a repository for such transactions with the parties involved. With a single PO, one smart contract can be generated till the PO is closed.

Nevertheless, a PO protects both the parties from any development or controversy in future, depending on the terms and conditions agreed in the offer and mentioned in the PO, but not able to help in nullifying the mismatch arising during the cross-company transactions. Here the application of blockchain technology is unprecedented and acts as a top up in ERP.

b. In case of repetitive orders

In case of a blanket PO, which is typically used for repetitive procurement of a specific set of items from a specific supplier – a smart contract between the parties offers automatic execution of order as per contractual terms and business logic already agreed (electronic agreement). Such smart contracts are ideally integrated with ERP to automate transactional processes. An ERP can trigger POs (as per agreed terms and conditions) when stocks fall to benchmark level and automatically transmit to the vendor's ERP through smart contract. Business operations will continue through credible transactions without any intermediate Departmental intervention.

c. Elimination of paper work and reduction of process time

For export and import of goods lots of documents are required like (i) Bill of lading, (ii) Commercial Invoice, (iii) Packing list, (iv) Bill of entry, (v) Insurance papers, (vi) Country of origin, (vii) Shipper's letter of instruction, (viii) Custom clearance documents and few others. To get customs clearance another bunch of documents are required namely (i) Import / export license, (ii) PO and letter of credit, (iii) Technical write up/ literature, (iv) Test paper, (v) Registration cum membership certificate, (vi) Duty exemption documents, (vii) Insurance papers etc. To avoid such strenuous process, the organisation hires a third party as agent to execute the process. In each entry point, while shipment is in progress, it will add some additional papers. By the time it reaches the accounts department for verification and payment, it becomes a large volume of papers and takes time to verify the documents and process them. To avoid execution of all such formalities manually and in physical papers, the full exercise can be done seamlessly through blockchain .Blockchain provides peer nodes with originator, receiver, customs department and in each entry point. The required documents and legal papers for the export/ import, clearances from customs department and endorsement at all entry points can be executed through blockchain without any interference of a third party. The peer-to-peer protocol allows nodes to communicate with each other within the network and transfer information of each transaction and a new block is created and connects with existing one to form a blockchain till the end of the process. All the documents from blockchain in soft form will be available to be attached in ERP as a repository by the accounts department. Transaction through blockchain will reduce the time and physical paper work. It also eliminates the problem of storing the papers. This type of external transaction cannot be covered by ERP only. Here the blockchain again adds as a top-up.

d. Automatic Payment

The key advantage of blockchain is its ability to make risk-free financial transactions by its ability to verify and authenticate identities. In a smart contract, as per payment terms it will inform the buyer's bank to execute the payment in time and will take confirmation from seller's

bank. Necessary entries will be passed in the books of both the parties simultaneously. Sometimes, payments need various compliances as per the regulations and a blockchain makes sure that it meets the regulatory compliances. Hence, blockchain and ERP together make the payment system automatic, risk-free and fast. It makes the entire technique obvious and authentic, which ultimately makes auditing risk-unfastened and simple.

OTHER ASPECTS OF AUTOMATIC PAYMENT OPTIONS

1. Vendors will get their payment in time without pursuing for payment with the customer.
2. Lower transaction cost, systematic cash flow, better payment security, enhanced vendor's experience and monetary eco system.
3. Automatic bill payments can improve customer's credit score
4. Unmistakable and transparent financial transactions
5. Failure to accomplish the payment due to non-availability of fund with the customer's bank account will trigger a credit worthiness of the customer/debtor.
6. Repeated failures may trigger insolvency of the debtor giving signal to banks and vendors.

ERP-blockchain combo technology is capable of handling almost the entire e. commerce activities like product searches, supply chain management, product reviews, data security, post-sale customer care and many more

CONCLUSION

There are many more areas in cross-company operations (like GST), where a combination of ERP and blockchain provide solutions in eliminating possible human errors, reducing the process time by switching from manual process to automatic process, increase the efficiency of the business process in a cost-effective way. The areas discussed above - mitigation of trust gap, automatic processing of repetitive activities, elimination of huge paper work, automatic payment processing are just a tip of the iceberg. ERP-blockchain combo technology is capable of handling almost the entire e. commerce activities like product searches, supply chain management, product reviews, data security, post-sale customer care and many more. Blockchain technology and ERP together hold a promising future in the business world. MA

References

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2. *https://www.pwc.nl/*
3. *https://www.deloitte/*

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

Statutory Body under an Act of Parliament

www.icmai.in

NATIONAL INSURANCE ACADEMY

ONLINE CERTIFICATE COURSE IN

GENERAL INSURANCE

Program Objectives

The objective is to equip members and students of the Institute in areas of General Insurance for equipping them to understand and comprehend various insurance aspects and have a working knowledge on the various aspects of General Insurance.

Program Takeways

The objective is skill development and knowledge enhancement of members on matters pertaining to insurance.

Key Contents

5 Modules

Coverage in Fire Insurance, Cargo and Marine, Health, Liability and Miscellaneous 25 hours capsule

Course Fees

We propose to charge a fee of **Rs. 6000 + GST** at applicable rates for the program.

Details of Payment is stated in BFSI Portal of the Institute's website

Who Can Attend

- Graduates of any discipline
- Students of the ICAI
- Members of the ICAI

Course Timing

Saturdays and Sundays from 11.30 a.m. to 1.30 p.m.

Course Details

MODULE - I

- **FUNDAMENTALS OF INSURANCE**
  - ✓ BUILDING BLOCKS OF INSURANCE
  - ✓ LEGAL ASPECTS OF INSURANCE
  - ✓ PRINCIPLES OF INSURANCE
  - ✓ FUNDAMENTALS OF GENERAL INSURANCE
  - ✓ SIGNIFICANCE OF IRDAI REGULATIONS IN INSURANCE BUSINESS

MODULE - II

- **FIRE INSURANCE**
  - ✓ COVERAGE
  - ✓ CONDITIONS AND EXCLUSIONS
  - ✓ SPECIAL COVERS AND CLAUSES
  - ✓ BUSINESS INTERRUPTION
  - ✓ FIRE CLAIMS AND ROLE OF SURVEYORS IN LOSS ASSESSMENT

MODULE - III

- **MARINE CARGO INSURANCE**
  - ✓ MARINE INSURANCE ACT
  - ✓ CARGO CLAUSES
  - ✓ TYPES OF CARGO
  - ✓ MARINE UNDERWRITING
  - ✓ MARINE CLAIMS

MODULE - IV

- **MOTOR INSURANCE**
  - ✓ COVERAGE OF MOTOR LIABILITY
  - ✓ PACKAGE POLICIES
  - ✓ MOTOR UNDERWRITING
  - ✓ MOTOR OWN DAMAGE CLAIMS
  - ✓ MOTOR THIRD PARTY CLAIMS

MODULE - V

- **HEALTH, LIABILITY AND MISCELLANEOUS INSURANCE**
  - ✓ HEALTH POLICY COVERAGE & UNDERWRITING
  - ✓ HEALTH REGULATIONS
  - ✓ BASICS OF LIABILITY
  - ✓ LIABILITY INSURANCE PRODUCTS
  - ✓ BURGLARY AND PERSONAL ACCIDENT
  - ✓ CLAIMS INTIMATION AND NECESSARY FOLLOW UP

For more details

Course Coordinator from BFSI Department

CMA Dibbendu Roy - Additional Director
E-mail: bfsi@icmai.in
Mobile: 96434-43047 / 83686-93781

Dr. Steward Doss - Faculty, Marketing
Email: gdoss@niapune.org.in
Mobile: 9765203257

Behind Every Successful Business Decision, there is always a CMA

BLOCK CHAIN TECHNOLOGY: RISK AND CORPORATE GOVERNANCE

Abstract

Blockchain technology (BCT) is a transparent, distributed, decentralised technological chain growing at CAGR of 35% in 2017 – increasing to 42% in 2018 and expected to involve a spend of $12 billion by 2022.Though it has innumerable pros, it can also be a trajectory of illicit and unregulated activities. BCT can offer smart solutions to classical governance inefficiencies incorporates more strongly by eliminating the potentiality of corporate frauds and also benefiting institutional investors, shareholders, in-house/outdoor stakeholders and minorities.

INTRODUCTION

BCT is a revolutionary decentralized autonomous organization (DAO) built on the pedestal of cryptography and information technology in contrast to the old modus operandi of record keeping issues by forging more trust, accuracy, transparency and cost savings. In 2008, a group of individuals under the stewardship of Satoshi Nakamato ideated the theory of blockchain (BC) in a paper titled 'Bitcoin: A Peer-to-Peer Electronic Cash System' without any trusted third party coming in-between. 'Ethereum' – a new technology with new functionalities was born aiding in better use of tokens and implementation of 'smart contracts'.

OBJECTIVES OF THE STUDY

A. The study is fundamentally aimed at understanding the following:

1) Architecture of blockchain technology and its modus operandi

2) Opportunities and threats of BCT

3) Relationship and compatibility of BCT and Cryptocurrency.

B. The larger and significant objectives are to understand the following:

1) Inherent risks in a BCT

2) How BCT can be best used to support driving better governance including detection and elimination of frauds

A-1 Architecture and modus operandi of BCT

a. BCT is an ***open*** *(anyone with an internet connection can join the chain) ,* ***distributed*** *(many can enter into transactions without a centralized intermediary – no authority can either allow or deny access to the chain- the chain is a composite of computers across the world connected to each other on the network directly or indirectly via an overarching software protocol) ,* ***decentralized*** *(no single party can control / influence the chain – it is governed by a set of rules which no party forming part of the chain can violate it or deviate from it) and* ***global ledger/ database*** *(transparent data storage capability but with a limited capacity and an expensive archive) .*

b. As a BC envelopes and connects a large and unlimited number of computers across the globe, each computer in the chain is termed as 'Node' having same copy of the database. The BC database has two key elements viz. (a) Record – which is information, data, contract, money or almost anything else, (b)– a bundle of records linked to other blocks, creating a chain.

Dr. Subhashish Roy Chowdhury
CEO
REALZA & Associates
Thane
roychowdhurysubhasish@gmail.com

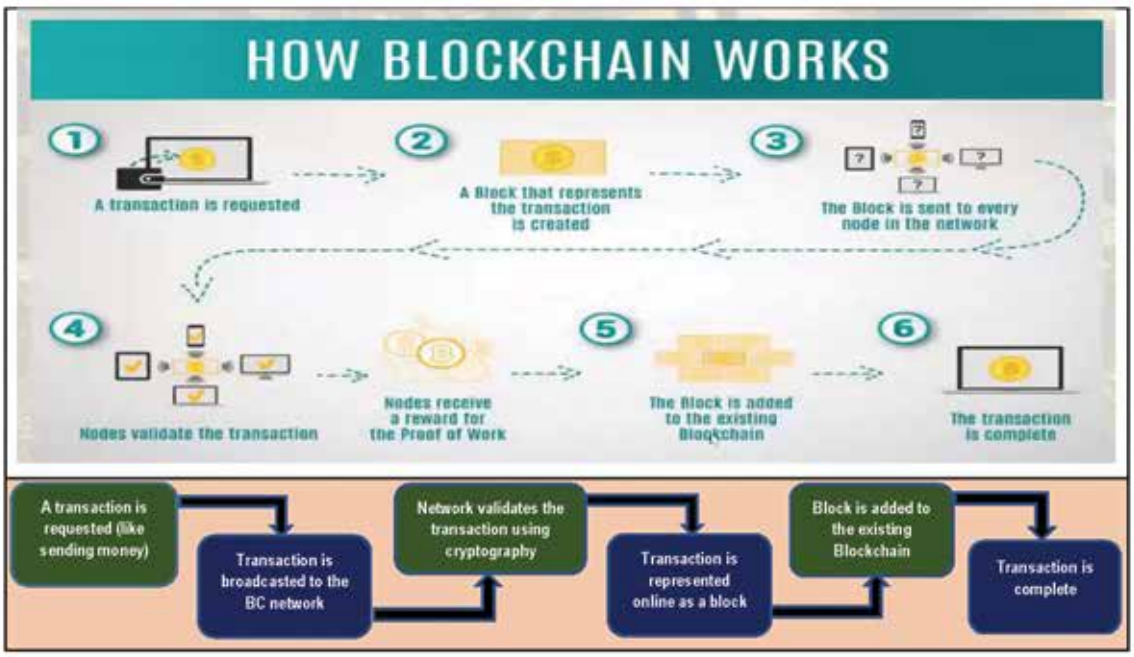
c. When a record with a transaction is created in the chain, the nodes synchronize between themselves along the entire chain and check those transactions to ensure their validity subsequent to which, the record/transaction is linked to the block, post its threadbare auto validation.

d. Each block auto creates its own unique finger print known as cryptographic 'hash' through a mathematical 'guess game' known as the 'proof of work' and connects with the hash of its immediately preceding block in the chain with a which is non-tamperable after being added and helps in data tracking and information security.

e. Hash takes the digital information and generates a unique string containing letters / numbers which is then uniquely associated with the block's transactions. The hash code changes whenever the block is edited in any way thus making it extremely difficult for information on the BC to be changed without getting noticed across the chain.

f. After a node finds a valid hash for the BC, it broadcasts the solution to the rest of the network which enables other nodes to cross verify that the resulting hash meets the protocol requirements. If the consensus protocol between the nodes proves that the hash is valid, only then the block is added to the chain over writing the preceding block – a new BC is formed.

BC constitution and how it operates



A-2 Opportunities and threats of Blockchain Technology

⊙ ***Opportunities (Advantages) of BCT***

a. Eliminates human intervention: Transactions being approved by all nodes on the BC eliminates human intervention and resultant manual errors. Single node computational error would only be made on single copy of BC, repetition of it by at least 51% of the nodes can only multiply the error which is a near impossibility in BC.

b. Reduces cost: Cost for any third-party verification and validation of a transaction as it happens in case of a manual transaction is largely reduced.

c. Decentralized transparent data storage: BC information isn't centrally stored and controlled single handed and hence, has less susceptibility of the data base being tampered / hacked as it has a universal visibility across the chain.

d. Time efficient: BC is operational 24x7 in contrast to any other organisation like a bank, corporate etc. For instance, a cheque deposited in the bank can be processed in a BC instantly with utmost accuracy.

e. Secrecy of user information: BC user nodes can't access identifying information about a user making a transaction without knowing unique code public_and hence, the personal information of the user initiating any transaction will remain unrevealed to any other user in the chain.

f. Secured transaction: A BC transaction is authenticated / validated by thousands of nodes only after which, the transaction is added to the BC block with a unique hash attached to it as a distinctive identifier.

⊙ ***Threats (Disadvantages) of BCT***

a) *High technology / power cost:* 'Proof of work' system used to validate a transaction, consumes huge computational power. Some solutions are of late evolving like using solar power, power from wind farms by BC mining firms.

b) *Speed inefficiency:* "Proof of work' system takes about ten minutes to add a new block to the chain and at that rate the chain can only manage approximately seven transactions per second.

c) *Path of illicit activity:* Illegal/illicit trading can easily happen on a BC as observed in 'Silk Road' – an online dark web involving drug market place which was operational between February 2011 and October 2013 before it was shut down by FBI (Federal Bureau of Investigation), USA.

A-3 BCT in Cryptocurrency (Bitcoin): An Emblematic Illustration

BC has today emerged as the backbone of cryptocurrencies by serving as the public ledger for all transactions in this space. The word 'cryptocurrency' means digital or virtual version of currency secured and encrypted by cryptography or secret coding architecture. Bitcoin is the foremost cryptocurrency which is most popular. BC is used to transparently record a ledger of receipts and payments of Bitcoins in the form of encrypted digital transactions.

B-1 Inherent risks in a BCT

BCT, like any other technology at a nascent / infant stage isn't immune from its inherent risks and hence, it is prudent to recognize those risks, quantify them and devise a suitable mitigation plan. Few such risks are outlined hereunder.

a) *Technological risks* linked to technology integration, data privacy / security, technology performance and speed, consortium IP protection

b) *Operational risks* linked to process governance and control, auditability scope, asset ownership and possibility of theft / loss

c) Regulatory risk_involves legislative and statutory compliance / adherence, anti-trust, money laundering, 'Know Your Nodes – KYN'

d) *Financial risks*_related to funding of the chain, financial controls in place, risk of accounting and financial reporting

e) *Reputational risk*_involves seamless functioning of the chain, failure of which will result in poor client experience and loss of client faith

f) *Contractual risk*_involves monitoring of adherence to several SLAs between participating nodes in the chain and the network administrator as well as service providers. BC may be exposed to 3P material and service provider risks as most of its technology might be sourced from external vendors and maintenance contracts may also be with them.

g) *Consensus Protocol risk* involves use of cryptographic protocol in a BC transferability through consensus among the nodes to update the ledger in the course of any transaction. Such multiple protocols require proper evaluation in the context of the framework and network participant's requirements. While the consensus protocol immutably seals a BC ledger from any corruption, it still has the susceptibility of private keys theft and takeover of assets associated with public addresses.

h) *Liquidity risk* where The Bank of International Settlement warned that the adoption of BC may give rise to such risk of liquidity. Usually, intermediaries typically address and resolve a counter party risk in a normal business; however, dispute resolution in a distributed trust environment will depend majorly on a preordained arrangement.

B-2 Driving better Governance and Eliminating Frauds with BCT

a) BCT can offer smart solutions to classical governance inefficiencies incorporates especially in the relationship between shareholders and the management.

b) Corporate annual general meetings, and mundane annual rituals filled with procedural

flaws can be automated and mechanized thus, reducing shareholder voting costs substantially and increasing voting transparency and enhance voter verification mechanism.

c) Under the agency system, broadly the management structure consists of numerous fractional owners with diversified mind sets, leaving the decision to the mercy of conflicts and its resolution by when, the decision itself has lost its significance. BCT can also increase the decision-making speed by facilitating faster and efficient involvement of shareholders.

d) The terms and conditions of a contractual agreement are recorded in the BCTand hence cannot be amended thereby removing the possibility of any one party hell bent to renegotiate the contract for miniscule purpose.

e) Transparency and trust together form the warp and web of corporate governance as the utility of BCT eliminates opacity and establishes more transparency and trust between shareholders, especially the minorities and board members.

f) Entrepreneurs are weighing the suitability of BCT for recording ownership of assets, stocks, bonds, real estates, automobile titles, valuable artefacts belonging to a company.

g) Governments are also weighing the possibility of introducing BCT in generation and archival of transparent public records like real estate titles, birth certificates, driver's licenses, university degrees which cannot be tampered by any means.

h) BCT being 'consensus and transparent', eliminates the probability of collusion, frauds, divergence in agreement about governance and reduces 'dominance of one on all' leading to misconduct by the 'one'. Deleting / changing transaction records on a BC cannot happen without 'node consensus'. Additionally, a 'time stamp' on all transactions enables BC members to see the transaction source and ownership thereby enhancing the potent possibility of reducing frauds.

The word 'cryptocurrency' means digital or virtual version of currency secured and encrypted by cryptography or secret coding architecture

CONCLUSION

Cryptocurrency is slowly gaining mainstream traction with BCT being the technological platform behind. Undoubtedly, BCT is a transparent and secured trajectory of 'public ledger system' but it has its own merits and demerits. Stricter rules and protocols need to be laid down technologically across the chain so that none of the nodes can resort to fiddle or hackle the chain with detrimental agenda fulfilment motive. Corporate governance can change in many ways under a BC environment benefiting institutional investors, shareholders etc. to have a clearer view of corporate functioning would deny corporate managers the scope of backdating compensation awards or covertly pledge shares for derivatives. BC would induce real time accounting and auditing and smart contracts. Togetherness of all such changeovers could profoundly alter the relative power of all and sundries in the corporates who directly or indirectly interact in the corporate governance arena. MA

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BLOCKCHAIN TECHNOLOGY AND MANAGEMENT ACCOUNTANTS

Abstract

In this article some of the terms used in the Blockchain Technology are demystified. It discusses on how the Management Accountants can play a major role in enabling the organisations to maintain Cost Accounting Records using the Blockchain Technology. It also discusses on how the cost accounting records maintained in a Triple Entry Accounting (TEA) system can help save a lot of time and effort for the cost auditor and other stakeholders.

CMA Guruprasad V
Vice President
Entrust Family Office, Bengaluru
guruprasadca@gmail.com

Introduction:

Myth - Bitcoin and Blockchain are same

Bitcoin is a cryptocurrency and it was the first Blockchain application. One of the outcome of Blockchain Technology is Bitcoin. Hence, both terms are different!

Then what is Blockchain?

Blockchain is a distributed database that is decentralized and runs on many computers/devices all at once through the internet. Just as internet revolutionised the information technology sector in the early 1990s across the globe, Blockchain is hastening the digital transformation. Digital transformation has become more relevant after the outbreak of Novel Corona Virus aka Covid19 that has spread across the globe impacting many economies. Management Accountants across the globe are going to play a significant role in adding value to many organisations in advising and on implementing Blockchain technology applications.

Blockchain

Blockchain is a technology that permits transactions to be gathered into Blocks; recorded cryptographically as blocks in chronological order and linked like a chain; and the resulting ledger is accessed by different servers. Blockchain is decentralized, which means it does not have a central authority. All information in Blockchain is stored on a lot of different devices and it is difficult to break into a single device for hacking or steal information.

Blocks stores information about transactions like the date, time, and value. Block stores information about who is participating in the transaction without identifying information using a unique digital signature and serves as an audit trail. A single block can store up to 1 MB of data, becomes a permanent store of record that cannot be altered or deleted. Whenever a block is added, all devices connected to the network receives a copy and the blockchain gets updated automatically.

After the transactions are entered, cryptography is used to confirm authenticated and verifiable transactions. The Blocks are linked and secured using cryptography to ensure data can be read only by the appropriate users.

Blockchain is a **distributed ledger and immutable (unalterable) database** for transferring data in a secure way. Any information that is added to a Blockchain is packed into blocks and linked together to form a chain. Hence the name Blockchain. Blockchain is a big database that lets you to record information safely, interact with anyone, without any need to trust them or rely on a big company or intermediary.

Blockchain is a Chronological Distributed Ledger

Transaction often is pseudo-anonymous and are grouped together in" Blocks". Blockchain is not centralized which means it does not have single owner. There are strict rules about how it must be maintained.

Hash

Each Block stores a unique code called as "**hash"**. A hash is a function that converts an input of letters and numbers into an encrypted output of a fixed length. A hash is created using an algorithm and is essential to Blockchain management in cryptocurrency. SHA- 256 (Secure Hash Algorithm) is used in Blockchain. Any modification of data involves enormous power consumption and effort, if chain gets broken, record does not gets updated unless all the participants in the Blockchain network agree for any changes/ modifications.

Miners

The individuals who maintain and update the Blockchain are "miners." The miners process transactions by sending

transactions to other nodes to be verified. As soon as all the miners agree the stages have been completed, the block is added to the chain and it is visible to the entire network depending upon whether it is permissioned or public or private blockchain.

Types of Blockchain

There are many types of Blockchain applications storing different types of information. It enables to record money, identities, store music or agreements between people called smart contracts.

Public Blockchain network: - No permission is required to join Public Blockchain network. Example: Cryptocurrencies like Bitcoin, Ethereum etc.

Private Blockchain network: - Only permissioned users hold a copy of a given ledger to ensure the integrity and efficiency of network. Example: Financial Institutions like RippleNet, NASDAQ LINQ.

Hybrid Blockchain network: - Participants in public or private network is allowed to communicate with each other. Example: Health- Care, Cross border payments for trade and financing.

Management Accountants and Blockchain Technology Application

With the advent of internet, management accountants are entering into an exciting and fascinating digital world comprising of Artificial Intelligence, Blockchain Technology, Cloud Computing, Machine Learning and Robotic Process Automation.

As we know that all the information is stored on a lot of different computers/ devices it is called as Distributed Ledger Technology. It makes more difficult to either delete, modify, or erase or steal the information which is in the approved block. It is also immutable (undeniable) Database, since each block is time stamped with date and time so that audit trail is preserved.

Cost accounting records for materials, labour and overheads are generally maintained in Centralised Ledger. There is always a risk of tampering or hacking of the records by anyone, either internal or external. All Cost accounting records like material, labour and overheads like production, administration and selling and distribution can be maintained in a Blockchain since every transaction is time stamped and it is fault tolerant ledger.

One of the apprehensions and reason for reluctance of any top management is the fear of their confidential database of cost accounting records may get stolen and fall into the wrong hands, if it is maintained conventionally and in centralized ledgers.

We learnt that Blockchain makes it technically and economically infeasible to modify a record already added to the blockchain unless a majority of the nodes in the network collude for fraudulent purposes. It is more a consensus driven technology as all the participants will have to approve it cryptographically, before adding an item as a record. Transactions are recorded in a near real time basis at both the supplier and customer end. Hence it eliminates inter party and intra party reconciliation.

The management accountants can give a comfort to the top management by explaining the various advantages of maintaining the Cost Accounting Records using blockchain technology.

Evolution from Single Entry to Double Entry to Triple Entry Accounting system (TEA)

We are all familiar with Single Entry system and time-tested Double Entry System of book-keeping by Italian Mathematician Luca Pacioli fondly called as "Father of Modern Accounting". Presently the books of account in double entry system are maintained by each entity separately and it lacks transparency. This leads to trust deficit between various stakeholders like investors, regulators, auditors, lenders and so forth.

Late Yuji Ijiri, a professor at Carnegie Mellon University conceived the concept of Triple Entry Accounting framework. It should not be misunderstood a third accounting entry is passed. Instead, a third component is added to the existing debits and credits with the help of Blockchain that links two independent books and obviates the need for reconciliation.

All accounting entries are cryptographically signed by a third entry. This reduces the chances of errors, frauds, and manipulations between the parties like vendors, banks, customers. It saves a lot of time and effort to all accountants be they financial or management accountant. It provides them an opportunity to focus more on doing value added roles. Financial and cost accounting records will always be up to date in the blockchain accounting database since it is based on consensus protocol.

Cost Auditors and Triple entry accounting

Cost auditors who audit cost accounting records maintained in Triple Entry Accounting can have the comfort of the cost accounting records being tamper-proof, saves time and effort in reviewing confirmation of inter-party and intra-party balances.

There is a perfect audit trail as it creates an immutable history of all the exchanges within the blockchain system. In these time of pandemic across the globe, accessibility from anywhere, at any time is a great convenience to all Cost Auditors and the Management Accountants.

Conclusion:

We have seen how the Blockchain technology plays a major role in convincing the top management of many organisations, to maintain cost accounting records in Blockchain. Cost accounting records maintained in Blockchain will be immutable, irrefutable, and traceable. It can be kept confidential, unlike conventional cost accounting records which has no such features. Blockchain helps to improve the efficiency, ensure security of the data, save significant time and cost of maintaining cost accounting records on a long-term basis.

The auditors of cost accounting records can further reduce their valuable time and effort spent hitherto in reconciling, obtaining confirmations and thereby focus on value added activities. MA

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A STUDY ON THE DEVELOPMENT OF BLOCKCHAIN TECHNOLOGY IN INDIAN BANKING SECTOR

Abstract

Indian banking is highly inclined towards fully digitalised banking by using the latest fin-tech innovation, blockchain being one of them. This technology brings more security, transparency and speed in settlement and credit disbursement. The usage of blockchain is in initial stage in Indian banking and shows promising outcome in developing Indian banking system in the form of digital payment, trade finance, consortium banking and KYC.

1. INTRODUCTION

It has been noticed that Indian banking is rapidly changing its face in technological development in line with the progress of industrial revolution. Digitalisation is the intangible weapon for the financial sector, especially for the banks to provide banking support which the modern society demands. Keeping in line with the trends of developed global banking practices, Indian banking has made neo-banking platform of integrated, open and universal banking system wherein real time data sharing and processing with a high level of data integrity, transparency and data security are possible. Proper assessment of customer's credit worthiness and past financial behaviour are of utmost necessity for a bank to extend its service and customer profitability. The new innovation, which is in use for the last few years, is blockchain technology which records the data relating to the financial transactions of the customers in the form of distributed ledgers through a chain of blocks, sequentially and chronologically as transactions ended *(Sharma, 2020)*. Blockchain uses a database which acts as a distributed network with the participating members in the ledger. It has the ability to reach to a consensus in cryptographic manner without the need of any central authority or intermediary. This in turn creates a distributed trust in the value transfer. The blockchain can be useful in financial market in transactions of syndicated loans, peer to peer lending, inter-bank payment, KYC, authorisation and authentication, risk management etc.

2. REVIEW OF LITERATURE

Guo and Liang (2016) asserted that blockchain technology has promising application future in the banking industry. It can upgrade and bring efficiency in payment clearing and settlement system and credit information system in the banking sector.

Gupta and Gupta (2018) have stated that Indian banking system can drastically change with the help of blockchain technology. It has the ability to make transactions to be more secured, transparent and cost effective and to evolve towards digitizing the Indian monetary system.

Mallesha and Haripiriya (2019) identified that blockchain technology can reshape the future of the banking. Banks need to process and store enormous data and therefore enhanced security and transparency can be achieved by this technology.

Sharma (2020) stated that blockchain can bring in a revolution in the Indian banking. A secured and distributed database of clients helps in reducing the time and cost in interbank transactions, KYC of customers, and reduction in NPA of the banks.

Hsani and Sherimon (2021) have also noted that blockchain technology helps in quickly completing complex clearing and settlement system and make the process of authentication easier through shared KYC infrastructure.

3. RESEARCH OBJECTIVES AND METHODOLOGY

The present study mainly emphasizes on understanding the concept and relevance of blockchain technology in the Indian banking sector as well as the future outlook of this technology as a disruptive financial technological development.

Biswajit Dey
Additional Treasury Officer (WBA&AS)
Department of Finance
Government of West Bengal, Kolkata
lal.biswajit96@gmail.com

The present study is explorative and descriptive in nature. All the data have been collected from secondary sources which include different reports, journals, articles and websites. Tables have been used to understand the research objectives. All the data are logically arranged to achieve the stated objectives.

4. TYPES AND MARKET GROWTH OF BLOCKCHAIN TECHNOLOGY

Blockchain is of four types. Public blockchain which is fully decentralised and can be used by anyone. It consumes very low amount of resources. Some prominent examples include Bitcoin and Ethereum. Here all the transactions are recorded after proper verification and without the need of any central authority. On the other hand, private blockchain means where permission from some central authority is required to save any transaction in the network. It is mainly used in corporate business models and it provides faster service as compared to the public blockchain. Example includes Multichain, Linq etc. Another type is called hybrid blockchain and this refers to a mixture of private and public blockchains. In the hybrid blockchain, members protect the access to the network by deciding who can participate and which transactions to be made public. Consortium blockchain is also used where instead of one organisation, multiple organisations use the platform. Examples include Hyperledger, Corda, Quoram etc *(Originstamp Article)*. The main points of distinction between the public and private blockchain are tabulated as under:

Table 1: Difference between Private and Public Block chain

Type	*Nature*	*Speed*	*Security*	*Access*	*Energy*	*Immutability*
Public blockchain	Fully decentralised	Slow	High	Open to all	High consumption	Nearly impossible
Private blockchain	Having central authority	Fast	Very high	Permitted access	Low consumption	May be tampered

The popularity and scope of application of blockchain technology has been growing over the years. In India the spending on blockchain technology is increasing. Such spending in 2018 increased by 103.4% and is expected to touch USD 4348.3 million by 2025 from USD 289 million in 2019 at CAGR of 47.3% *(Intrado Globalnewswire Report, 2019)*. Various research reports identified the progressive market growth of this technology on global basis.

Table 2: Different Research Reports on Market Growth of Global Block Chain Market

Source of the Report / Data	*Period of Forecast*	*Forecast Result*	*CAGR*	*Area of Growth*	*Remarks*
Markets and Markets Research	2020-2025	Global blockchain market is estimated to grow to USD 39.7 billion by 2025 from USD 3.0 billion in 2020.	67.3%	Private blockchain is estimated to hold the largest market size.	The banking and financial sector and SME segment will hold the highest share in the blockchain market.
Industry ARC Research	2021-2026	Global blockchain market is expected to reach USD 44.2 billion by 2026.	36.1%	Hybrid blockchain is expected to hold major market share	In automotive and transportation sector, block chain technology is rapidly progressing.
Fortune Business Insight Research	2021-2028	Global blockchain market is estimated to grow to USD 104.19 billion in 2028 from USD 3.06 billion in 2020.	55.8%	Private blockchain is estimated to hold the largest market hybrid blockchain is expected to hold major market share size.	Application in digital identity is growing more due to increasing in number of cyber and identity fraud.
Allied Market Research	2020-2027	Global blockchain market is estimated to grow to USD 137.29 billion by 2027 from USD 2.89 billion in 2019.	62.7%	Hybrid blockchain is expected to grow at the fastest rate.	There is greater push of block chain technology to the Banking, financial services and insurance (BFSI) sectors.
Meticulous Research	2018-2025	Global blockchain market is estimated to grow to USD 28,248.7 million by 2025 from USD 583.5 million in 2018.	74.1%	Blockchain as a service (BaaS) will be used highly.	BFSI and payment segment will take the highest share in global blockchain market.

4. APPLICATION OF BLOCK CHAIN TECHNOLOGY IN INDIAN BANKING

In recent times, a greater focus is on adoption of blockchain technology in Indian banking due to its various benefits. Investment in this technology has also been increased by many banks. The first ever blockchain enabled credit and loan system has been launched by a consortium of eleven largest private sector banks including ICICI Bank, Kotak Mahindra Bank, Yes Bank, Axis Bank, HDFC Bank, RBL Bank, Standard Chartered Bank and South Indian Bank. Recently a coalition of 15 banks including SBI, ICICI, HDFC and Canara bank, called as Indian Banks' Blockchain Infrastructure Company (IBBIC) has been created. It will digitize trade related finance based on Infosys' Finacle Connect. Such move will transform the banking system and reduce the processing time of transactions and could be a catalyst for the growth of MEMEs. Yes Bank has implemented the commercial papers issuance based on blockchain technology; Axis Bank has used Ripple's enterprise blockchain technology for launching international payment service and HSBC India has also executed trade finance transaction with Reliance industries using blockchain technology *(RBI Bulletin, February 2020)*. The main areas of Indian banking where blockchain technology can effectively be applied are enumerated in the following paragraphs.

Digital payment

After the introduction of UPI and fin-tech, digital payment and mobile banking transactions are increasing rapidly. It has become highly integrated with other economic activities and therefore the problem of identification and authentication arises. Here blockchain technology helps in ensuring digital identity of the users.

Trade Finance

It is also a point of great importance since banks are taking more time in credit information collection and proper evaluation of credit worthiness. Blockchain can streamline this issue by providing real time information thus reducing the chances of NPA. Such technology will also reduce the drawbacks and preventing any financial fraud regarding issuance of Letter of Credit which is crucial for inland trading. In 2019 ICICI Bank had brought 250 enterprises in its blockchain technology platform for financing domestic and international trade.

Overseas Transaction

Overseas transactions are vulnerable to risk of turning bad. Thus proper verification and authentication are of much importance. Blockchain provides shared information and authentication is done quickly thereby reducing any unnecessary delays in remittances. The State Bank of India (SBI) has already tied up with JP Morgan, a US based bank for using its blockchain technology to complete overseas transactions speedily.

Consortium Banking

Consortium banking is formed when a large project is to be financed by more than one bank. Blockchain helps in making syndicate formation and smart contracts. Currently the consortium of 11 banks including SBI has introduced the blockchain based loan sanctioning process.

KYC and Fraud Prevention

KYC is of great importance for the banks to safely transact with the customers. It requires traditionally a good amount of paper work involving a time consuming process. Blockchain technology can reduce the time and make it easier for both the banks and clients. Proper KYC and customers' information help banks to reduce possibilities of financial scams.

5. CONCLUSION

Blockchain technology has the greatest potentiality to make drastic transformation in banking sectors. It is not only secured but is also profitable for the banks. Global market growth and trend of blockchain are also signifying the fact that adoption of this technology is spreading across the different sectors including banking, finance and insurance sectors (BFIS). Private and hybrid blockchain technology are being used increasingly because of its high speed processing and secured environment. In Indian banking, the application of this technology is at initial stage and many private banks are using this in credit information processing. MA

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AN OVERVIEW TO BLOCKCHAIN AND FUTURE OF ACCOUNTING & AUDITING IN BLOCKCHAIN ENVIRONMENT

Abstract

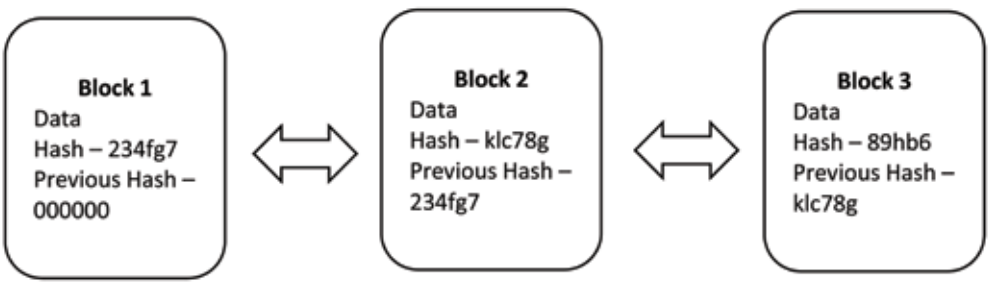
The Fourth Industrial Revolution, popularly referred as "Industry 4.0", involves innovations through digital technologies like artificial intelligence, internet of things, big data and blockchain. Blockchain has the potential to change the business processes across industries and can disrupt the way we carry out accounting as well as auditing functions! We must be ready to accept the challenges and opportunities being thrown by this recent "most talked about technology"!

CMA Ranjan Gunjal
DGM Finance
Godrej & Boyce Mfg. Co. Ltd.
Mumbai
ranjang@godrej.com

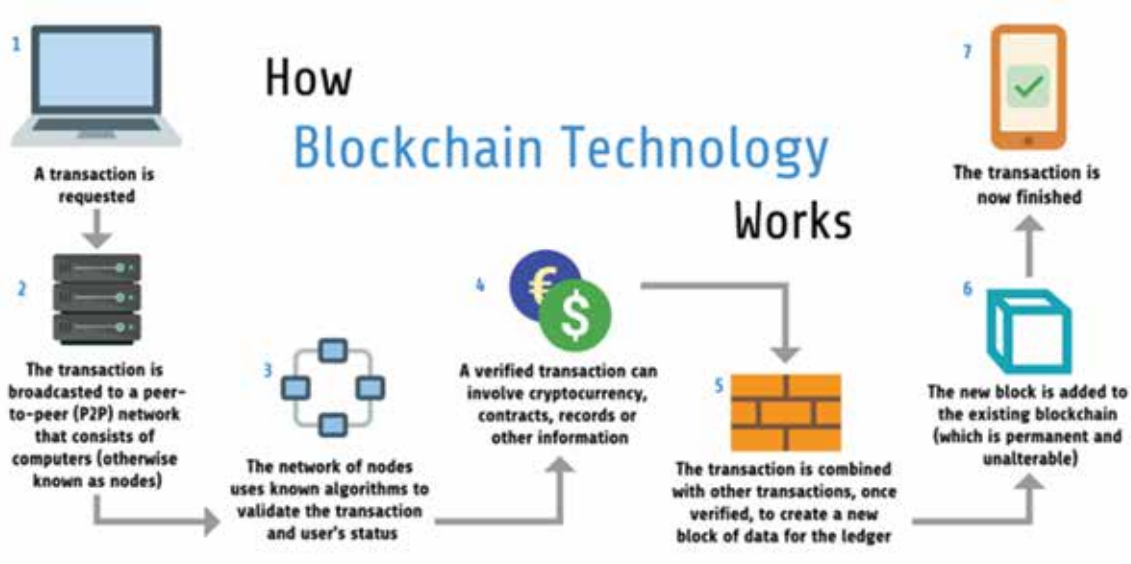
WHAT IS BLOCKCHAIN

Blockchain technology was originally invented by a group of researchers in 1991. However, it started gaining acceptance and usage since 2009 when Satoshi Nakamoto adopted it to create a digital cryptocurrency called "Bitcoin".

Blockchain is a chain of blocks that contains information. Each block contains some data, hash and hash of previous block as depicted in the following diagram. Hash is nothing but an encrypted fixed length code which is derived through a mathematical function based upon a given set of data. Same data will produce the same hash value. Hash is calculated once a block is created and it is like a fingerprint as it is very unique.



If any tampering of data is done with any of the blocks, its hash value change, and information is sent with all decentralised nodes to verify. The tampered blocks will get rejected by other nodes of the network. This concept is called "proof of work". Hence, if anyone wants to tamper the data, all the blocks of the chain need to be tampered with simultaneously which requires a very high amount of computing power, making it practically Impossible to carry out any tampering. How the blockchain technology works is depicted in the following flowchart.



WHY BLOCKCHAIN

Advocates of blockchain are recommending it as it has the following advantages over the current system:

- **Trust and Security:** Trust is the essence of blockchain. Since transactions are carried out using encrypted technology on a decentralised network, it is considered highly secure.
- **Speed and Cost**: Transactions can take place in real time through blockchain and also at a fraction of the cost involved in traditional systems as there are no intermediaries involved.
- **Transparency:** Transaction visibility is high due to distributed network and absence of intermediaries.

AREAS WHERE BLOCKCHAIN IS GETTING TRACTION

Creating Cryptocurrency

According to some experts, what the Internet did to information, digital currency is doing to money! It has the potential to eliminate banking by transforming the way transactions should take place. Crypto means "data encryption" which ensures security of a transaction. Data encryption is similar to secured text messages on WhatsApp. In recent past, we have witnessed that prices of cryptocurrencies fluctuated very rapidly on a day-to-day basis making it as a "Gambling" Activity for its Investors.

Bitcoin is a well-known cryptocurrency which finds its place regularly in print as well as social media. Dogecoin which was created by two engineers as a joke has a value of 50 billion US $. Some of the countries do not support these cryptocurrencies while few others have tried to crack it. Some of the countries are planning to introduce their own digital currency.

Storing Various Types of Records like Medical, Educational, Property etc.

- Secured storage, access, and retrieval of various kinds of records can be managed through blockchain very effectively
  - The Central Board of Secondary Education (CBSE) has started storing students results digitally using blockchain technology. Students can access these results online.
  - Two thirds of civil cases in India relate to land / property matters. The Government of India has started a

project to digitise land records. Blockchain technology can help in a big way to solve this issue by storing title records on a decentralised network.

- **Remittances**
  - While the traditional framework of remittance across borders through banks and financial institutions take many days for transfer of the the money with a transfer cost as high as 10 to 15% of the remittance amount, the remittances through a decentralised currency can be done without any intermediary within few minutes and at a fraction of the cost involved in the traditional system..

- **Own, Protect and Monetize Privacy Data**
  - Currently, large tech companies like Facebook, Amazon etc. collect lot of personal data which is then used for giving personalised services. However, there are instances when this personal data is leaked every now and then. Decentralised storing of personal data through blockchain will ensure security of the data and need based data can be provided to third parties only with the consent of the user. Along with data protection, users can even monetise the data to third parties as they say "data" is the new oil of digital economy!

- **Intellectual Property Rights**
  - IPRs such as copyrights and patents can be stored through blockchain enabling one to check the history of ownership as well as date of creation. Licenses to use these IPRs can be given through smart contracts for consumption and payments / royalties can also be collected from the users. In case of disputes like claim to ownership by another person, it will be very easy for third parties to view the chain of ownership. Indian Rock Band "Euphoria" is about to launch its next album "Sale" in the form of non-fungible token (NFT) using blockchain technology.

BLOCKCHAIN IN FINANCE AND ACCOUNTING

- Although digitisation is happening across industries, functions like accounting and auditing are still lagging behind due to regulatory requirements and possibilities of frauds. Blockchain can save considerable time on manual work involved in documentation, controls, checks and balances etc.
- As we all know, accounting transactions are based on double entry accounting system where every transaction entered in the books of accounts is entered as 'debit' as well as 'credit'. E.g., Goods purchased on credit is entered in the books as "Inventory Account Debit to Creditors Account Credit".
- Double accounting system requires 'debit' and 'credit' entries in the respective ledger simultaneously and was a manual work till about 30 years ago. As ERP systems were introduced, double accounting entry was triggered by ERP system based on set rules for respective transactions involving purchase, sales, payments, collection etc. Taking the above example of material purchased on credit, one of the issues with this system is that both the parties may not record the transaction of the same value at the same time. E.g., One party may enter the value as Rs. 1,00,000 whereas the other party may enter it as Rs. 1,05,000. This results in the need for reconciliations between both the parties involved in the transactions.
- Moving forward in today's world, we have a solution like blockchain where apart from double entry, we can have a third entry of digitally shared ledger with counter parties like suppliers and buyers who can verify and accept/ approve the transactions online thereby eliminating reconciliation issues.

HOW BLOCKCHAIN WILL HELP FINANCE & ACCOUNTING PROFESSION

- Blockchain allows digitised *smart contracts* which are immutable and distributed. Smart contracts are basically computer codes which facilitate functions like storage of rules, verification of rules and self execution of rules. Vending machine can be an example of smart contract where once the consumer inserts the money in the machine and chooses the desired product, the machine delivers the product once the prerequisite conditions like receipt of equivalent money are satisfied.
  - ***Procure to Pay*:** Purchase orders can be maintained digitally with access to suppliers to accept the terms and conditions. As soon as the material is received as per quality parameters, payment can be triggered automatically based upon due date and fund position.
  - ***Sales to Collection*:** Similar to procurement, sales orders can be maintained digitally and payment from customers can be triggered based upon acceptance of the material /services.
- As transactions will be recorded on real time basis, financial statements can be updated on a daily basis thereby making periodic closure of books of accounts a routine and smooth process. Accountants "burning midnight oil" to close the books may be a thing of past!
- As real time data is available, financial planning, financial reporting, MIS, financial review etc. can take place in a swift and efficient manner as compared to several days and months being spent in the current

environment to carry out above activities by the finance team.

- Financial Transactions for revenue recognition can be booked accurately when performance obligations in line with customers' expectation are carried out through smart contracts. E.g. Accounting entries for booking of service revenue under AMC contract can be automatically triggered based upon the actual service rendered to the customer.
- Can we imagine a possibility where there will be no need to file tax returns as Government can directly get data from public ledger?

HOW BLOCKCHAIN WILL HELP THE AUDITING PROFESSION

- The major advantage is elimination of errors and it is practically difficult to commit frauds in transactions related to revenue, expenditure, assets and liabilities in a blockchain environment as it provides a secured, trustworthy and transparent network. Procedures like cross checking of bank balances, reconciliations, balance confirmation with bankers, suppliers, customers and intercompany transaction etc. will not be required as data can be verified by getting access to the distributed network.
- Transactions entered through blockchain will facilitate electronic archival, traceability and easy retrieval in a cost-effective manner as compared to physical records, thereby making it convenient for the Auditors to carry out the audit work.
- Blockchain facilitates timestamping which enables us to understand the exact time when data was entered / modified. Due to this functionality, carrying out back dated transactions will not be possible.
- Very little transaction audit will be required to be done. Auditors will be checking more on data security and system controls to ensure that financial statements and financial position reflects a "True and Fair" view.

Smart contracts are basically computer codes which facilitate functions like storage of rules, verification of rules and self execution of rules

WILL BLOCKCHAIN REPLACE ACCOUNTANTS AND AUDITORS

Having understood the various uses of blockchain technology in transaction processing, generation of financial statements & MIS, inbuilt controls and security, one may think that blockchain may replace accounting and auditing jobs. Experts opine that while jobs at the bottom of the Pyramid like book keeping, reconciliation etc. may be eliminated, there will be a requirement for accountants who understand the blockchain technology and who can add value by focussing on planning and analysis for better decision making! MA

Sources:

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2. *Some Other Digital News Papers*

PROVIDING VISIBILITY TO RECORDING OF RELATED TRANSACTIONS USING BLOCKCHAIN TECHNOLOGY BY SHIFTING FROM DOUBLE ENTRY TO TRIPLE ENTRY

Abstract

Blockchain is a decentralized digital ledger on which transactions can be recorded chronologically that cannot be altered or destroyed and can be viewed by all the participants in the network. This technology seeks to improve the accounting functions by lowering the overheads of maintaining and reconciling ledgers and offering complete transparency into asset ownership and history. This article provides an insight about the concept of blockchain technology, its framework and application in different fields. It focuses on the principle of triple entry system used in blockchain accounting and explores the prospects and challenges of shifting to blockchain accounting.

1. INTRODUCTION

One of the well-received technologies of this new era, blockchain, is a modern transformational digital technology that causes a paradigm shift in industry simulations beyond industries all over the world. It has already demonstrated huge potential for massive reductions in value destructions and an abundance of 'innovative' value creations. Even though Bitcoin and other crypto currencies are the well-known applications using blockchain technology, the "Distributed Ledger Technology" (DLT) is being used in a variety of ways like data storage, pecuniary transactions, real estate, asset management and a variety of other applications.

2. OBJECTIVES OF THE STUDY

- To understand the blockchain technology concept, its framework and application in various fields.
- To comprehend the usage of triple entry accounting system in blockchain technology.
- To explore the prospects and challenges of shifting to triple entry accounting system using blockchain technology

3. LITERATURE REVIEW

Blockchain technology is decentralized storage of distributed database that comprise of similar data that are linked through a sequence of blocks that are secured

Dr. Hari Krishna Karri
Assistant Professor
University of Technology and Applied Sciences
Muscat
harikrishnakarri@gmail.com

Dr. Lina George
Assistant Professor
University of Technology and Applied Sciences
Muscat
lina.george@hct.edu.om

by cryptography and verified by the network community. These blocks confirm the exact time and sequence of the transactions. As these blocks are linked securely by cryptography, it prevents any kind of alterations and insertions of a new block between two existing blocks (*Seebacher and Shuritz,2017*). The blockchain technology minimizes the risk due to falsification because of the decentralized storage and the fact that each block is dependent on the other (*Hawlitschek et al., 2018*). As a distributed database, an uninterrupted multiplied list of data records is maintained by the blockchain technology which are authenticated by the participating nodes. This means that the information of all the transactions that are recorded in the blockchain are shared and are available to all the nodes which are all anonymous, making the system more transparent and secured (*Yli-Huumo et al., 2016*). Blockchain is an organized directory of ordered blocks that has a distributed database in which the committed blocks are irreversible. This technology can be used in multiple domains (*Casino et al, 2018)* This new technology is all

Blockchain technology uses DLT for recording and sharing data across multiple stores

set to revolutionize the accounting on a more positive manner and accountants are finding it easier with these new technologies to have an impact on the ongoing and future operations of their clients (*Nixon, 2016*).The blockchain is a new and advanced technology, helping accountants, finance specialists and regulators to convert invoice, payment transactions, contracts and documents with substantial implications (*Kokina, et. al, 2017*). Blockchain technology provides utmost transparency of the recording of different transactions as it is based on the principle of simultaneous approval and monitoring of the flow of money from different sources (*Mustafa K, 2019*). The blockchain is a digital ledger where transactions are recorded date wise and is visible to all participants in the network who have access (*Tysiac, 2017*). Blockchain is reliable and can be useful for continuously recording and updating the ledger by any company as the transactions once recorded cannot be altered or deleted (*Mustafa.K, 2019*). With the benefits of reduction in cost, increased accuracy in financial reports and minimizing the risk of fraud, benefits to accountants from the use of blockchain technology are considerable. (*Hambiralovic & Karlsson,2018*).

4. BLOCKCHAIN TECHNOLOGY

4.1 Introduction

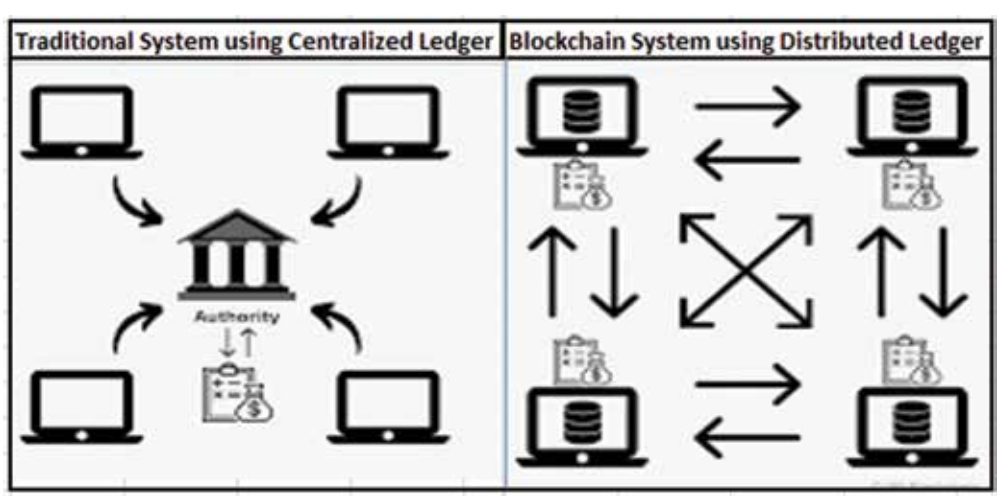
Blockchain technology is a type of database for recording transactions in chronological order in the form of blocks. When participants are agreed to its legitimacy, collective transactions in a block are added to its related previous block. All transactions of a block are broadcasted to each user in the network, so that all users will update their database accordingly.

4.2 Features

The blockchain technology can be comprehended more precisely by having an insight to all its elements conscripted underneath.

Distributed Ledger System (DLT)

Blockchain technology uses DLT for recording and sharing data across multiple stores. Every user in the system has a copy of every transaction recorded in the system, making it extremely difficult to hack the blockchain system. The following chart brings out the differences between the traditional and the blockchain systems:



(Source: https://imiblockchain.com/guide-to-distributed-ledger-technology)

Public and Private Keys

The blockchain uses public and private keys to ensure anonymity. Public key is broadcasted on the network for transaction authorization and for generating users' addresses, whereas private key is used to get the approval of transaction by the user.

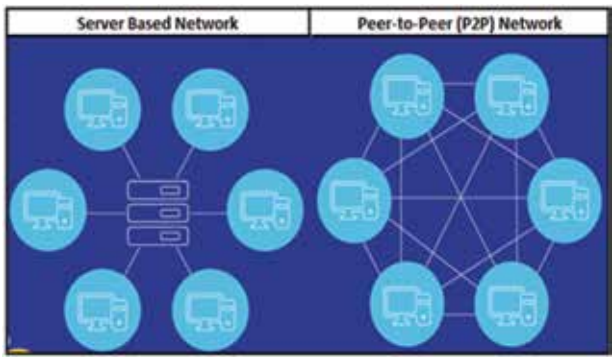
(Source: https://twitter.com/blockchain_sem/status)

Hashing Mechanism

Hashing is used to make the blockchain system secure. A formula generates the hash, helping to protect the security of the transmission from being tampered.

Peer to Peer Networking Model

Blockchain technology uses the peer-to-peer network model in which a group of computers are connected together with equal permissions and responsibilities for processing the data.



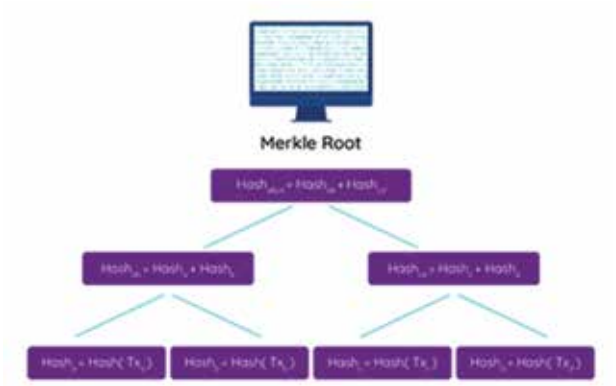
(Source: https://www.himss.org/resources/blockchain)

Consensus Mechanism

Blockchain technology employs a consensus approach ensuring that all nodes in the network are synchronized and the transactions are legitimate.

Merkel Tree Format

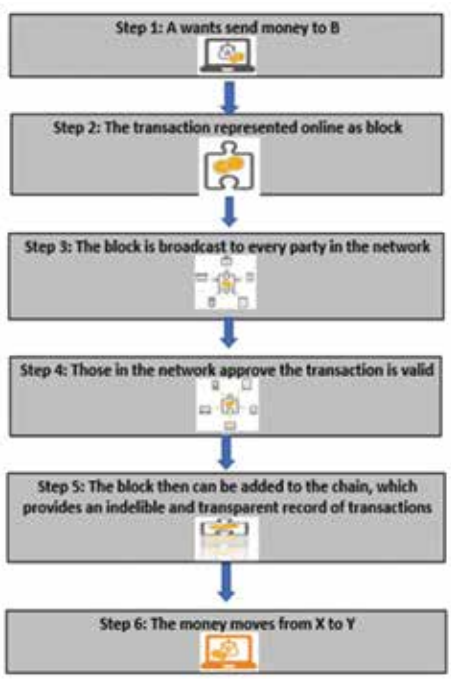
Blockchain technology practices *Merkle Tree Edifice* setup that recapitulates all the transactions in a block by structuring the data and allowing verification of the accuracy of transactions quickly and efficiently.



(Source: https://levelup.gitconnected.com/the-heart-of-blockchains-hash-functions)

4.3 Framework

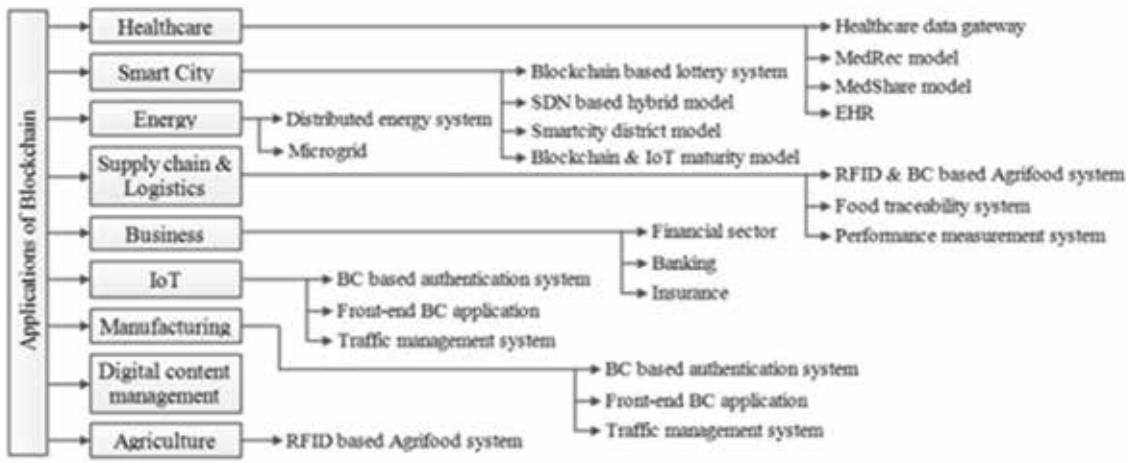
When a user initiates a transaction on the blockchain, the process begins. The user then authenticates his identity utilizing his personal key (a digital signature can also be used on a private or permissioned blockchain). The transaction's content is then hashed to make it safe. The public key is appended to the hash and thereafter the transaction is sent to the recipient. The transaction is then validated by the recipient using his private key. The sender can send the same transaction to several inheritors at the same time. Transactions are disseminated throughout the network to reach consensus depending on the individual blockchain predetermined consensus method for transaction validation. It is then added to the existing blockchain, including time stamping to ensure that transactions are recorded in the correct order.



Blockchain system overview *(source: https://blogs.thomsonreuters.com)*

4.4 Application

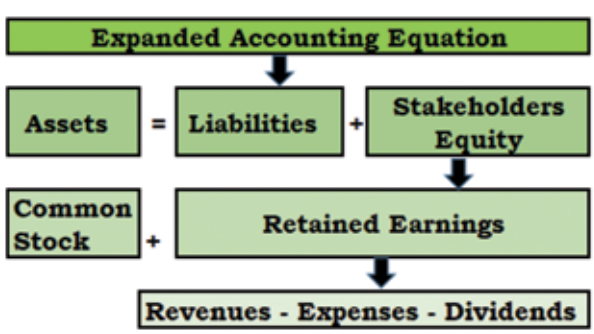
The application of blockchain technology, which was originally created for the digital cryptocurrency Bitcoin in 2008 are numerous. It is a real technology available today as it has the potential to satisfy the Internet of things privacy and security requirements. It is being implemented in many innovative ways in different industries and regions around the world.



(Source: Blockchain for Industry 4.0: A Comprehensive Review)

5. DOUBLE ENTRY SYSTEM OF ACCOUNTING

Double entry system of accounting which was developed to minimize mistakes had its origins from Italy and was published by Luca Paciola in 1494 (*Ovunda.A.S, 2015).* It is based on the dual aspect concept of accounting and involves two accounts recording both the debit and credit. The accounting equation based on the double accounting principles is given in the following flowchart:



(Source: Harmon, C. 2011)

The annually published financial statements prepared using the double entry system of accounting by every company is an imperative tool for the various stakeholders of the company. Nevertheless, this system is inefficient as it can be easily manipulated which is evident from various company scandals that have surfaced in recent years. It allows frauds to occur, despite the various regulations and established standards such as the IFRS and FASB. In order to reduce the fraud and inefficiencies in accounting, companies will have to bear additional costs in the form of auditor's fees for the continuous examination and controlling of the accounts by the internal auditors. As it is time consuming and expensive, there is a need to work on the current accounting system.

6. TRIPLE ENTRY SYSTEM OF ACCOUNTING

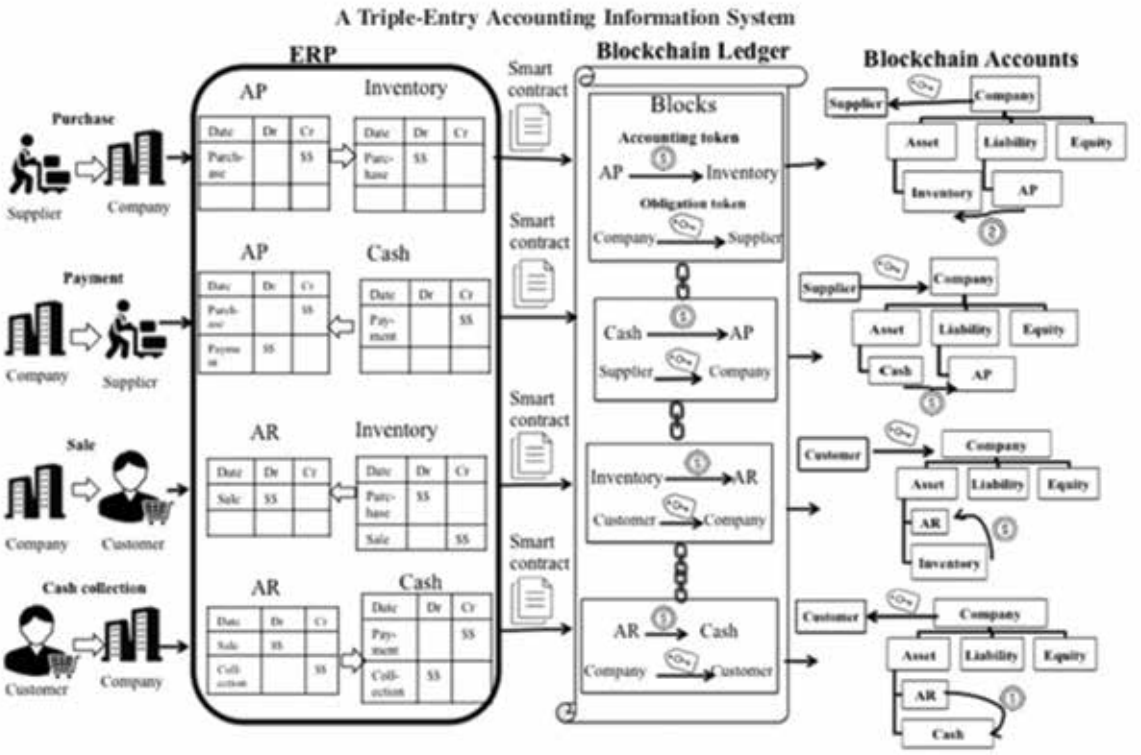
6.1 Introduction

Triple entry accounting system which was originally coined by *Yuji Ijri* in 1986 is a modern and improved way to resolve problems of trust and transparency issues that prevail in the current accounting systems (*Cynthia Weiyi Cai, 2019).* It is an upgradation of the traditional double entry system in which a third entry is used to seal cryptographically all accounting entries for transactions involving outside parties. Every entry will have a debit, a credit and an immutable link to all past debits and credits. (*Febrero, P, 2019*).

(Source:Febrero, P. 2019)

The matters which involve triple entry system are purchases of inventory and supplies, sales, tax and utility payment and other expenses which require both parties involved to record entry for the same transactions in their own accounting books. For example, when a seller debits cash for cash received against sale and the buyer credits cash for cash spent for the same transaction, each of them are kept in separate set of accounting records. This is where blockchain can be used. Instead of recording the entries in separate sets of books, an interlock system

is created in the same distributed public ledger, such that a transfer occurs between the wallet addresses, keeping the accounting records safe for long periods. These entries cannot be altered or destroyed as they are cryptographically sealed. Both the companies will be using the same ledger to record transactions ensuring more transparency and reposing trust in the transactions. The following flowchart explains the triple accounting information system for a buyer and a seller using blockchain technology.



(Source: Dai, J., Vasarhelyi, M., 2017)

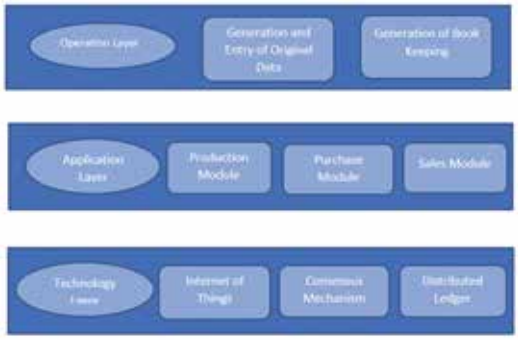
6.2 Why to apply blockchain technology in accounting system.

The financial reports prepared using traditional method or the double entry system may lack quality due to various factors like the burden of work done by a single person, lack of professional ability of the accountants, different rules of law applied, lack of principles leading to concealing and misrepresenting financial data etc., Blockchain technology exhibits a shared database, in which a complete data chain is created for each block. Every record in the financial data is linked from the beginning to the end, forming a chain consisting of many organizations in the data chain. Once the recording is made at one end no human being can interfere, making alterations impossible. The person who is recording the data will be audited on multiple blocks once the data is entered successfully ensuring authenticity of the financial information with high quality supervision.

6.3 Types of Blockchain application models in Accounting System

Longitudinal Model

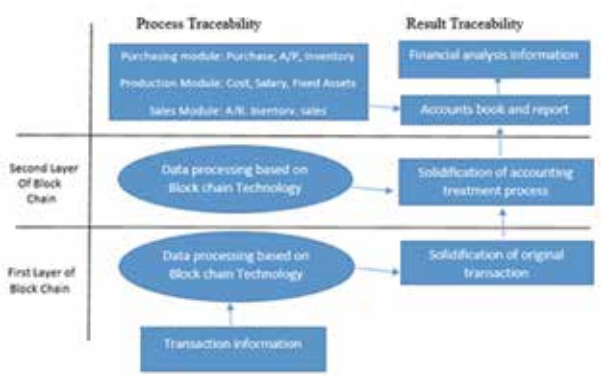
The accounting information system based on the blockchain technology will be divided into three layers with the technology layer on the bottom which includes the consensus mechanism. It is the blockchain internet of things network and is based on the interconnection of internet of things environment constituting a decentralized distributed ledger. The application layer which is in the middle jointly constructs the production and procurement in business and is made up of the combination of business types and blockchain. The operation layer being on the topmost is used for entering the original voucher and generating the book keeping voucher. The figure below depicts the overview of the model.



Overview of Longitudinal Model *(Source: Zheng, R. 2021)*

Horizontal model

The horizontal model which corresponds to different operation modes of accounting information system needs to apply blockchain in one or two links. The entry and the generation of the original vouchers is the first layer of the blockchain while the generation of book-keeping vouchers is the second layer of the blockchain. These two links secure the information of the transaction from the sources and the process. The first layer of the blockchain technology is the basis for security and reliability of the accounting information, which is in the operation mode of accounting information system. This is the key to ensure the credibility of accounting information. Securing the mechanism of accounting information processing task is the second layer of the block chain technology. This layer is the man- machine cooperation mode, which can leave traces of every accounting information recorded that cannot be changed or tampered. It is the second layer which helps in verifying and ensuring the genuineness and reliability of the accounting information. The following Flowchart shows the Horizontal model of the accounting information system based on blockchain



Overview of Horizontal Model *(Source: Zheng, R. 2021)*

7. BENEFITS OF IMPLEMENTING BLOCKCHAIN IN ACCOUNTING

Information Accuracy

Blockchain technology has the characteristics of decentralization, distrust, transparency and tamper proof ensuring authenticity, reliability and credibility of recorded transactions.

Concentrate on activities that bring value

Blockchain accounting frees up the resources as traditional record keeping is excluded. These free resources can be utilized for a variety of value-added activities within the company.

Fraud Minimization

Fraud can be reduced as the blockchain technology uses shared digital ledger. All transactions recorded are visible and transparent to all participants. Altering and destroying recorded transactions is nearly impossible.

Reconciliation is no longer required

As transactions are recorded in real time and ledgers are updated quickly, there is no requirement for reconciliation.

Reporting in real time

Blockchain accounting allows for real time reporting and provides access to the participants about necessary information relating to a company. The regulators will have real-time access to all information regarding the reporting entity.

8. CHALLENGES IN IMPLEMENTING BLOCKCHAIN IN ACCOUNTING

Despite the fact that blockchain accounting has a slew of advantages and has capability to transform accounting and auditing into new levels of cost-effectiveness, automation and high-reliability systems, there are some obstacles to be overcome when applying this technology.

Time-consuming procedure

Time and patience on the part of everyone is required for developing such a mechanism, which may include several trials and blunders in producing effective outcomes. Linking one function to the other is another key responsibility of the organization like the accounts, finance, supply chain management, marketing, sales, corporate communication, legal and secretarial, and so on.

Discrepancy among corporations

Obtaining authorization from multiple institutions for gaining access to their data and information may be a challenging task. Additionally, there may be disagreements across companies and bodies as to how applications should be customized. Concerns about privacy and

Fraud can be reduced as the blockchain technology uses shared digital ledger

the misuse of data and information may also pose legal and ethical issues.

Cybersecurity Issues

Even though blockchain technology promises security for data, inadequate infrastructure can wreak havoc. Cyber criminals and hackers may alter data using virus attack leading to a massive loss of money, vital information and business damage.

Changes in regulations

Regulations have a significant role in accounting. As a result, in order to reap the full benefits of blockchain accounting, proper legislation must be put in place. A process should be set up in such a way that any changes to the regulation can be implemented immediately.

Disruption to Accounting role

Blockchain technology will undoubtedly disrupt; it is a danger to some accounting functions. Accountants needs to be thorough with numbers as well as computers. They have to collaborate closely with the IT department and communicate effectively on tax matters.

9. CONCLUSION

Blockchain technology seeks to improve the accounting functions by lowering the overheads of maintaining and reconciling ledgers and offering complete transparency on asset ownership and history. The foregoing discussion provides an insight about the concept of blockchain technology, its framework and application in different fields. It focuses on the principle of triple entry system used in blockchain accounting and discusses the prospects and challenges of shifting to blockchain accounting. It concludes with an understanding that blockchain accounting has the potential to increase transparency and visibility of records that will minimize fraud and increase trust, security and credibility of the transactions. MA

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CRYPTOCURRENCY IN INDIA: GOVERNMENT'S STAND AND LEGAL STATUS

Abstract

Cryptocurrencies are gaining wider acceptance year after year all over the world as evident from the perennial increase in the volume of trade. But they are associated with high degree of risks including greater volatility in the prices besides the absence of government support. However, there is no comprehensive law in India to regulate the crypto-trading and to ensure that illegal activities are not funded with crypto-related activities. Therefore, it is necessary for the Government to enact a comprehensive law at the earliest.

Dr. Inchara P M Gowda
ICSSR Post-Doctoral Fellow
Sahyadri Commerce and Management College
Shivamogga
incharapmgowda@gmail.com

INTRODUCTION

Countries all over the world have accepted the money/currency as the common medium of exchange. Of course, each country has its own currency regulated and backed by the Government. Now, a new form of currency called, 'cryptocurrency' is spreading like wildfire around the world. An official estimate shows that in India itself, 7 million Indians are holding cryptocurrencies worth over US$ 1 billion. According to *Mr.Shivam Thakral* , CEO of Buy Ucoin, this amount is around US $ 1.5 billion.

Cryptocurrency is a type of currency which uses digital files as money. It is a form of payment that can be exchanged online for goods and services but uses an online ledger with strong cryptography to secure online transactions. Although the first digital currency, 'Bitcoin', came into being in 2009, at present, there are more than 3,000 different cryptocurrencies that are traded publicly. And they continue to proliferate raising money through 'initial coin offerings' (ICOs). As at 29 September 2021, the value of all cryptocurrencies is estimated to be $ 1.87 trillion (declining from $ 2.2 trillion in April 2020). Among several cryptocurrencies, bitcoin is the most popular one whose value is estimated at $ 794 billion (also declining from $ 1.2 trillion in April 2021). The uniqueness of the system is that 'anyone could participate in, but no one could own'. Although crypto trading is open to all, crypto-related transactions are, in reality, anonymous signalling the absence of both transparency and certainty.

MAJOR APPREHENSIONS ABOUT CRYPTOCURRENCIES

As is known, 'fiat money' is a currency established as money with the government support and regulation. Although it has neither intrinsic value nor user value, it has value because, its value is maintained by the government.

In the case of cryptocurrencies, they are made to be free of government issued currencies and they are neither backed nor regulated by the government. The price/value of a cryptocurrency coin is determined by its demand – increase in the demand from buyers pushes the value of a cryptocurrency upwards and vice-versa. Therefore, the value of cryptocurrency is subject to greater volatility. A few details (Table A) pertaining to one of the cryptocurrencies namely Bitcoin would substantiate this inference

Table 1: Bitcoin Price Index in US $*

Month and Year	Bitcoin Price Index in US $
Oct 2013	196.02
Oct 2017	6,130.56
Dec 2017	10,542.66
Jan 2019	3,441.03
June 2019	12,024.08
July 2019	9,572.74
Mar 2020	6,453.73
Mar 2021	58,734.48
Aug 2021	47,663.02
Sep 2021	41,734.57

**Source: Compiled from the data retrieved from, https:// www.statista.com {take this to the end of the page as foot note}*

From the above, it is unequivocal that the value of bitcoin has been experiencing wider variation (Mean = US $ 19,649.29; Standard Deviation = US $ 21,189.12 and Coefficient of Variation = 107.84%). This is a reflection of the volatility in the prices of (other) cryptocurrencies also. Even a single transaction involving higher amount is capable of influencing the value of a cryptocurrency substantially. For instance, when Elon Musk-led Tesla announced in February 2021, that it purchased US $ 1.5 billion worth of Bitcoin for maximizing the returns on its cash, the value of Bitcoin surged over 15%.

Another trepidation about cryptocurrencies is that the primary objective of trading in cryptocurrencies is for profit. Therefore, the speculators are capable of playing a major role in price movements. For instance, in March 2021, the price of Bitcoin increased to an all-time high of US $ 58,734.48 from mere US $ 6,453.73 in March 2020.This was due to increased interest from long-term investors citing speculative buying. As a result, the genuine investors were at loss. Therefore, many governments have cautioned the users/holders/traders of virtual currencies (VCs) including Bitcoins about the risks involved.

CRYPTOCURRENCIES AND STAND OF OTHER COUNTRIES

Countries differ in terms of their stand on cryptocurrencies. However, one group of countries such as Germany, Hong Kong, Malaysia, Singapore, Switzerland, etc., have taken a liberal view. For example, in Malaysia, cryptocurrency transactions are tax-free and do not attract capital gains tax as the authorities have not considered digital currencies as assets or legal tender. But the profits from active crypto trading are taxable. Even the Internal Revenue Service of US treats VC transactions as taxable just like transactions in any other property. And the levy of taxes on income and capital gains from cryptocurrencies is now common in many countries.

On the other hand, countries like Bolivia, China, Egypt, Indonesia and Turkey have imposed restrictions on crypto-related transactions. Surprising is the stand of China which was, at one point, home to world's largest number of Bitcoin miners. Now the Chinese central bank (People's Bank of India) has stated that 'VC-related business activities are illegal financial activities'. Further, it warns that, 'the offenders would be investigated for criminal liability'.

On the above lines, the countries differ as to the treatment of cryptocurrency-related transactions. However, India is planning to tread a different path.

INDIAN GOVERNMENT'S STAND AND LEGAL STATUS

The Finance Minister, in the Budget Speech for 2018-19, had said that the Government of India (GoI) does not consider cryptocurrencies as legal tender or coins and will take necessary steps to eliminate the use of these crypto assets in financing illegitimate activities.

The Reserve Bank of India (RBI), has been issuing circulars to all banking and financial companies and the latest is the one issued on 6 April 2018. Through the circulars, the apex bank has cautioned the users/holders/traders of VCs including Bitcoins regarding the varieties of risks associated in dealing with VCs. Further, the apex bank has directed all entities regulated by it not to deal with VCs or to provide services for facilitating any person/entity in dealing with/settling VCs. Besides, it has asked the regulated entities (if they had been providing such services) to break-off all such ties/relationships within three months from 6 April 2018.

But this circular of the RBI banning the trade in cryptocurrencies was overturned by the Supreme Court of India in its judgement of 4 March 2020 in Civil Appeal No.528 of 2018 rendered in the case of *Internet and Mobile Association of India v. Reserve Bank of India*. This has provided the much needed/awaited (but temporary) solace to the parties i.e., to those who were trading in cryptocurrencies. Consequent to the lifting of the ban, operations in cryptocurrencies have resumed in India.

In the meanwhile, the GoI set up an Inter-Ministerial Committee under the chairmanship of Mr. Subhash Chandra Garg, former Finance Secretary, to examine the issues related to VCs and to propose specific actions to be taken by the government. This Committee, in its report (2019), recommended banning private cryptocurrencies in India (except VCs issued by the State) by enacting appropriate law, and to impose fines/penalties for carrying on crypto-related transactions. However, there are reports to the effect that the GoI may constitute a new panel of experts to examine the possibility of regulating cryptocurrencies in India. This appears to be due to the reason that the recommendations of Inter-Ministerial Committee for a blanket ban on cryptocurrencies had become outdated.

Realizing the fact that it is difficult for imposing a complete ban on crypto-related trade, the Ministry of Corporate Affairs, on 24 March 2021, made few amendments to Schedule III of the Companies Act, 2013. One such amendment

pertains to cryptocurrencies/VCs and this amendment is effective from accounting/financial year commencing from 1 April 2021 (i.e., for the reporting period 2021-22). The amendment requires that, if a company had traded/invested in cryptocurrencies/VCs during the financial year, then it should disclose the following details in its financial statements:

a. Profit/loss on transactions involving cryptocurrencies/ VCs
b. Amount of currency held as at the reporting date
c. Deposits/advances from any person for the purpose of trading/investing in cryptocurrencies/VCs.

This amendment is considered a major step towards regulating the crypto assets in India and to ensure transparency in reporting crypto investments. This is expected, according to *Mr. Shivam Thakral,* CEO of BuyUcoin, to boost the institutional adoption of crypto assets in India and take Indian crypto industry to the next phase of growth.

Mr.Nandan Nilekani, Co-founder and Chairman, Infosys, endorsed cryptocurrencies as a store of value and felt that the people should be allowed to have them as an asset class. Cryptocurrencies, in his view, have enormous potential and the Indians have undoubtedly embraced blockchain. On the other hand, *R. Gandhi,* former Deputy Governor of RBI has said that people have fully understood that crypto cannot be a currency because of absence of fundamental element of a currency viz., legal tender. However, he made a case for treating and regulating crypto as a separate asset class enabling the Government to deal effectively with illegal activities associated with VCs.

When the central banks of different countries are exploring the possibility of introducing fiat digital currencies, the RBI had set up a committee to explore the feasibility of launching an official digital currency. Recently,

GoI has reportedly finalized the draft of a new Bill on cryptocurrencies viz., The Cryptocurrency and Regulation of Official Digital Currency Bill, 2021

the Governor of RBI, *Mr.Shaktikanta Das,* stated that the apex bank is making necessary preparations to launch a pilot of its digital currency called, Central Bank Digital Currency (CBDC), by December 2021. As it is a new product, the apex bank is 'extremely careful' and therefore, working on a phased implementation strategy,he said . The CBDC will be a legal tender to be issued by the apex bank in a digital form. It will be same as a fiat currency. It is exchangeable one-to-one with the fiat currency but in a different form. The unique feature of CBDC (which distinguishes it from other cryptocurrencies now in circulation) is that, it will be backed by the GoI.

The GoI has now realized that the country does not have a legal framework to regulate the cryptocurrencies directly as they are neither currencies nor securities/ commodities issued by an identifiable party. It has also realized that, blanket ban of cryptocurrencies is not advisable/desirable as many Indians (both individuals and organisations) have been trading in cryptocurrencies. As of now, cryptocurrencies are not illegal in India. The Government has also assured the crypto stakeholders that there won't be a blanket ban on digital currencies.

Moving forward, the GoI has reportedly finalized the draft of a new Bill on cryptocurrencies viz., The Cryptocurrency and Regulation of Official Digital Currency Bill, 2021. In all probability, the Bill is expected to be placed before the Parliament in its upcoming winter session.

It may be noted here that the Central Economic Intelligence Bureau (CEIB) of the Ministry of Finance has put forward a proposal to levy 18% GST on crypto transactions. This is expected to generate Rs. 7,200 crores of income to the State exchequer. Realising the rise in cryptocurrency trading in India besides its potential, the Finance Ministry is examining the ways of taxing crypto-income. It is reported that the Ministry of Finance has formed a new committee to explore if income earned by crypto-trading could be taxed as capital gains or they would need to be classified under a new tax category. And the committee is given a four-weeks time. This in essence is the position of India at present with regard to cryptocurrencies.

CONCLUSION

From the foregoing discussion it can be concluded that there has been a continuous increase in the volume of business of cryptocurrencies all over the world including India. But there is a vacuum in the form of absence of a comprehensive law to regulate crypto-related transactions. Therefore, it is the need of the hour to ensure that the proposed Bill viz., The Cryptocurrency and Regulation of Official Digital Currency Bill, 2021 is presented before the Parliament at the earliest. This is necessary not only to protect the investors but also to mobilize additional tax revenue to the State exchequer from crypto-related transactions. MA

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RISK AND RETURN CHARACTERISTICS OF CRYPTOCURRENCIES: AN ESTIMATION OF THE VOLATILITY PARAMETERS

Abstract

Crypto currency is a type of virtual or digital currency. The security of cryptocurrency is secured by cryptography, which makes it almost impossible to counterfeit or double-spend. The main objective of this article is to find out the correlation between Cryptocurrency Index and S&P500, Gold, BSE SENSEX.

Dr.Anupam Karmakar
Assistant Professor of Commerce
New Alipore College
Kolkata
anupam_2013@yahoo.com

INTRODUCTION

The bankruptcy of Lehman Brothers Holding Inc. in 2008, shook everyone's faith in banks. A new class of asset called cryptocurrency emerged out of this incident, which did not have the backing of any financial institution. Cryptocurrency is a digital or virtual currency. In 2009, Satoshi Nakamoto, a person whose identity is still a secret, created the first cryptocurrency, Bitcoin. The features of cryptocurrency are that it has no intrinsic value and hence it is not redeemable for any other commodity, such as gold. Cryptocurrency has no physical form and exists only in the system. Cryptocurrency's supply is not determined by any central bank and the network is completely decentralized. Bitcoin is the first cryptocurrency that was launched on 9th January 2009 a year after the great recession of 2008.

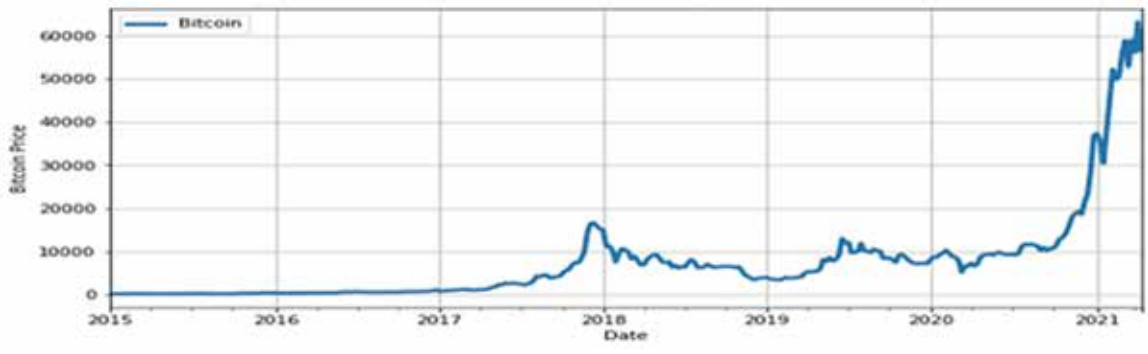

Figure 1 (Graph) : Price of Bitcoin from 2015 to 2021

OBJECTIVE OF THE STUDY

- To find out the correlation between Cryptocurrency Index and S&P500, Gold, BSE SENSEX.

RESEARCH METHODOLOGY

Tools used: Excel, Python for Data Visualization.

Data Collection Method: Data collection done through secondary sources – Yahoo Finance, Money Control, https://www.investing.com/crypto/bitcoin/btc-inr-historical-data and https://coinmarketcap.com/.

Plan of study: The data was collected from the above-mentioned sources for the period from the 1st January, 2015 to the April 15th, 2021. The data collection was on a weekly basis. On the basis of collected data an average of 14 cryptocurrencies namely Bitcoin, Binance Coin, Cardano, Chain Link, Cosmos, Dogecoin, EOS, Ethereum, Litecoin, Monero, NEM, Stellar, Tether and XRP have been calculated for the purpose of creating a Cryptocurrency Index.

ANALYSIS AND FINDINGS

Using Python, Log scale plotting of Sensex vs. Cryptocurrency Index vs. S&P 500 vs. Gold has been made [Figure 2] on the basis of data taken for the period from 1st January, 2015 to 15th, 2021 relating to Cryptocurrency Index, Sensex, S&P 500 and Gold.

Figure 2 (Graph) : Log Scale plotting using Python

The graph (Figure 2) shows how profitable it would be for an individual to invest in cryptocurrency compared to the others.

⊙ Returns After Investment

From the spreadsheet (Figure 3 Table) it can be observed that a Cryptocurrency Index of 14 cryptocurrencies was created by taking the simple average of the daily returns of 14 cryptocurrencies i.e. Bitcoin, Binance Coin, Cardano, Chain Link, Cosmos, Dogecoin, EOS,Ethereum, Litecoin, Monero, NEM, Stellar,Tether, XRP.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Date	Bitcoin	Binance Coin	Cardano	Chain Link	Cosmos	Dogecoin	EOS	Ethereum	Litecoin	Monero	NEM	Stellar	Tether	XRP	Crypto Index
2	1/1/2015	294.337006	1461.43335	0.131725	0.170278	4.776164	0.000173	2.71005	0.701897	2.11818	0.463607	0.000232	0.005284	1.20574	0.020843	126.2916375
3	8/1/2015	278.102997	1461.43335	0.131725	0.170278	4.776164	0.000155	2.71005	0.701897	1.55701	0.223522	0.000232	0.004318	1.20574	0.054233	117.9022595
4	15/1/2015	226.893003	1461.43335	0.131725	0.170278	4.776164	0.000153	2.71005	0.701897	1.37331	0.241268	0.000232	0.005054	1.20574	0.056653	121.4059195
5	22/1/2015	233.914993	1461.43335	0.131725	0.170278	4.776164	0.000144	2.71005	0.701897	1.87202	0.290979	0.000232	0.004895	1.20574	0.03497	121.9488166
6	29/1/2015	226.852997	1461.43335	0.131725	0.170278	4.776164	0.000147	2.71005	0.701897	1.79235	0.289486	0.000232	0.003765	1.20574	0.013498	121.4384054
7	5/2/2015	219.184998	1461.43335	0.131725	0.170278	4.776164	0.000138	2.71005	0.701897	1.72744	0.235497	0.000232	0.003535	1.20574	0.013776	120.877914
8	12/2/2015	236.326004	1461.43335	0.131725	0.170278	4.776164	0.000143	2.71005	0.701897	1.82816	0.248507	0.000232	0.00316	1.20574	0.013795	122.1106569
9	19/2/2015	237.470001	1461.43335	0.131725	0.170278	4.776164	0.000142	2.71005	0.701897	1.80234	0.365243	0.000232	0.003165	1.20574	0.013401	122.1988374
10	26/2/2015	273.09201	1461.43335	0.131725	0.170278	4.776164	0.000143	2.71005	0.701897	1.9305	0.413351	0.000232	0.002888	1	0.010032	124.7408869
11	5/3/2015	296.378998	1461.43335	0.131725	0.170278	4.776164	0.000145	2.71005	0.701897	2.02628	0.715782	0.000232	0.00293	1	0.010229	126.4327183
12	12/3/2015	256.299011	1461.43335	0.131725	0.170278	4.776164	0.000133	2.71005	0.701897	1.74254	0.638029	0.000232	0.002666	1	0.010575	123.5480863
13	19/3/2015	246.197006	1461.43335	0.131725	0.170278	4.776164	0.000131	2.71005	0.701897	1.67354	0.767497	0.000232	0.002934	1	0.009115	122.8266796
14	26/3/2015	247.272003	1461.43335	0.131725	0.170278	4.776164	0.000128	2.71005	0.701897	1.66463	1.00685	0.000232	0.002801	1	0.007668	122.919841
15	2/4/2015	245.022003	1461.43335	0.131725	0.170278	4.776164	0.000117	2.71005	0.701897	1.6275	0.755192	0.000146	0.002709	1	0.009198	122.7385946
16	9/4/2015	223.832993	1461.43335	0.131725	0.170278	4.776164	0.000105	2.71005	0.701897	1.383	0.673307	0.000147	0.002655	1	0.007949	121.2016869
17	16/4/2015	234.175995	1461.43335	0.131725	0.170278	4.776164	0.000111	2.71005	0.701897	1.45419	0.576335	0.000134	0.002698	1	0.008025	121.9386389
18	23/4/2015	225.807999	1461.43335	0.131725	0.170278	4.776164	0.000098	2.71005	0.701897	1.36132	0.495526	0.000149	0.002575	1	0.007861	121.3282136
19	30/4/2015	229.781998	1461.43335	0.131725	0.170278	4.776164	0.000087	2.71005	0.701897	1.3889	0.458257	0.000151	0.002757	1	0.007782	121.4316709
20	7/5/2015	236.376999	1461.43335	0.131725	0.170278	4.776164	0.000108	2.71005	0.701897	1.45142	0.483207	0.00016	0.00285	1	0.006857	122.0889301
21	14/5/2015	234.018005	1461.43335	0.131725	0.170278	4.776164	0.000134	2.71005	0.701897	1.45919	0.492917	0.000182	0.002722	1	0.006636	121.9216604
22	21/5/2015	237.283005	1461.43335	0.131725	0.170278	4.776164	0.000184	2.71005	0.701897	1.84502	0.421971	0.000177	0.003167	1	0.006937	122.1774229
23	28/5/2015	225.873993	1461.43335	0.131725	0.170278	4.776164	0.000151	2.71005	0.701897	1.68718	0.453476	0.000168	0.00301	1	0.008012	121.3535336
24	4/6/2015	228.802994	1461.43335	0.131725	0.170278	4.776164	0.000157	2.71005	0.701897	1.75924	0.479738	0.000155	0.003161	1	0.007999	121.5697789
25	11/6/2015	249.283997	1461.43335	0.131725	0.170278	4.776164	0.000197	2.71005	0.701897	2.88862	0.50334	0.000161	0.0036	1	0.009678	123.1152181
26	18/6/2015	240.514999	1461.43335	0.131725	0.170278	4.776164	0.000178	2.71005	0.701897	2.77863	0.506506	0.000152	0.003436	1	0.010914	122.4813054
27	25/6/2015	258.621002	1461.43335	0.131725	0.170278	4.776164	0.000193	2.71005	0.701897	3.92427	0.498848	0.000129	0.003458	1	0.011198	123.855897
28	2/7/2015	270.785004	1461.43335	0.131725	0.170278	4.776164	0.000189	2.71005	0.701897	6.36112	0.51399	0.000157	0.003214	1	0.009449	124.8997559
29	9/7/2015	285.82901	1461.43335	0.131725	0.170278	4.776164	0.000186	2.71005	0.701897	4.21409	0.543855	0.000148	0.003003	1	0.008536	125.8228761
30	16/7/2015	277.221985	1461.43335	0.131725	0.170278	4.776164	0.000184	2.71005	0.701897	3.82366	0.57342	0.000173	0.003118	1	0.007579	125.1823985
31	23/7/2015	289.589996	1461.43335	0.131725	0.170278	4.776164	0.000184	2.71005	0.701897	4.79768	0.589967	0.000154	0.002823	1	0.008539	126.1366274
32	30/7/2015	281.681989	1461.43335	0.131725	0.170278	4.776164	0.000173	2.71005	0.701897	4.34922	0.638634	0.00013	0.002634	1	0.008224	125.5560319
33	6/8/2015	266.376007	1461.43335	0.131725	0.170278	4.776164	0.00016	2.71005	1.56603	3.98545	0.622923	0.000123	0.00238	1	0.008271	124.4848934
34	13/8/2015	226.684006	1461.43335	0.131725	0.170278	4.776164	0.000131	2.71005	1.35259	3.47782	0.534109	0.000098	0.00185	1	0.007758	121.5914198
35	20/8/2015	225.830994	1461.43335	0.131725	0.170278	4.776164	0.000133	2.71005	1.31927	2.98651	0.496479	0.000104	0.002035	1	0.007492	121.4874843
36	27/8/2015	229.283997	1461.43335	0.131725	0.170278	4.776164	0.000126	2.71005	1.29583	2.79545	0.468083	0.000096	0.002423	1	0.0077	121.719662

299	10/9/2020	10974.90527	1940.74707	0.089433	9.768122	null	0.002826	2.67334	371.05283	47.933434	86.605865	0.112103	0.080199	1.002654	0.247847	1033.478538
300	17/9/2020	10225.86426	1933.866211	0.101206	10.773764	4.728624	0.002564	2.588454	357.32169	43.042057	87.806969	0.121839	0.067778	1.000534	0.221657	904.8219715
301	24/9/2020	10787.61816	2131.06958	0.096301	9.424563	5.10375	0.002642	2.525159	353.12192	46.284039	106.42014	0.117615	0.07497	1.001763	0.242311	960.2216364
302	1/10/2020	10679.13672	2084.987305	0.106538	10.847407	6.07976	0.0026	2.665028	375.14206	46.674709	110.77127	0.121106	0.072596	1.000734	0.249041	951.2754909
303	8/10/2020	11429.50684	2251.759766	0.107388	10.880713	5.763817	0.002637	2.556328	378.21368	49.846489	128.70174	0.113602	0.074283	1.000784	0.249448	1018.484108
304	15/10/2020	12823.68945	2223.023682	0.106351	12.160059	5.29901	0.00263	2.694367	406.21777	53.04533	121.75271	0.105538	0.08378	1.000721	0.251615	1117.816644
305	22/10/2020	13271.28516	2124.243164	0.098197	11.53663	4.735605	0.002595	2.511798	396.35819	55.742512	126.35037	0.098224	0.078592	1.000379	0.245865	1142.449091
306	29/10/2020	14133.70703	2093.955811	0.106621	12.656035	4.803346	0.002533	2.539606	453.55478	54.499104	115.95584	0.127498	0.074593	1.000846	0.237793	1205.230103
307	5/11/2020	15701.33984	2058.813477	0.100531	12.121813	4.980141	0.002769	2.49787	447.55908	59.51503	113.36577	0.133033	0.080692	1.000647	0.256259	1314.411925
308	12/11/2020	17804.00586	2218.979492	0.14476	14.444801	5.463235	0.002909	3.051497	558.06812	73.694939	123.64198	0.128723	0.083615	0.999203	0.294222	1485.928811
309	19/11/2020	18732.12109	2227.178223	0.166639	13.372918	5.425222	0.003727	3.032927	575.75806	81.880127	129.14587	0.17797	0.195202	1.00089	0.635483	1555.00674
310	26/11/2020	19201.0918	2180.199219	0.158867	13.492397	5.207972	0.003374	2.99616	601.909	88.856514	127.89872	0.248957	0.185151	1.001203	0.629893	1587.419944
311	3/12/2020	18553.91602	2145.9729	0.153964	12.933703	5.189534	0.003158	2.848079	589.66321	77.41098	132.62824	0.25273	0.172224	0.999952	0.58359	1537.337734
312	10/12/2020	21310.59766	2514.077148	0.161988	13.070074	5.025793	0.003416	3.135013	638.29083	92.789688	158.70459	0.289209	0.191401	0.999643	0.568628	1766.99322
313	17/12/2020	23241.3457	2470.668457	0.154422	12.129708	4.827109	0.003768	2.714698	682.64233	101.81706	150.89761	0.235906	0.126471	0.998854	0.258602	1904.915765
314	24/12/2020	28840.95313	3007.456055	0.204995	13.650172	5.813898	0.004636	2.795052	975.50769	129.46608	159.3725	0.210482	0.131913	1.000514	0.211828	2366.912781
315	31/12/2020	36824.36328	3113.865234	0.304895	16.247431	6.430042	0.010465	3.087288	1262.2467	169.01692	142.32329	0.235554	0.340793	1.000223	0.250895	2967.123073
316	7/1/2021	37316.35938	3341.655518	0.379852	23.166773	8.506617	0.008616	2.763901	1230.1722	147.42134	171.80226	0.223497	0.304022	1.000414	0.30558	3017.433572
317	14/1/2021	35547.75	3057.184082	0.353881	24.701859	8.240555	0.00906	2.71484	1391.6094	149.93143	153.02622	0.214632	0.294351	1.001417	0.296518	2881.237729
318	21/1/2021	30432.54688	3228.184814	0.344898	22.598434	8.137376	0.007482	2.914483	1314.9862	122.94947	126.01576	0.23409	0.23907	1.000808	0.251943	2518.600837
319	28/1/2021	37472.08984	4993.050293	0.663238	24.790121	13.916703	0.03712	3.443782	1614.2278	155.61203	154.9664	0.305187	0.342151	1.001211	0.39349	3173.917097
320	4/2/2021	44918.18359	9903.889648	0.848419	33.290321	19.243099	0.072896	5.09524	1805.0841	182.17439	175.71759	0.369635	0.412419	1.000746	0.503445	4074.706111
321	11/2/2021	52149.00781	21327.79102	1.10052	34.15274	21.591427	0.049376	5.11316	1935.6011	236.97353	270.99573	0.566534	0.497002	1.000382	0.535537	5427.49827
322	18/2/2021	49705.33203	15444.33301	1.308059	24.663532	17.622765	0.056555	3.464254	1416.049	181.37849	205.74913	0.604146	0.40724	1.002115	0.471832	4785.888722
323	25/2/2021	50538.24219	17577.0957	1.133367	28.548212	19.493658	0.050592	3.84428	1723.1538	188.52567	219.82544	0.708198	0.422105	1.000318	0.450279	5021.606701
324	4/3/2021	56008.55078	19236.53906	1.059154	28.789425	18.553705	0.056004	3.973724	1854.5643	200.51686	220.66264	0.332041	0.410769	0.999791	0.463166	5541.105104
325	11/3/2021	58870.89453	19181.07031	1.18914	29.272839	20.507261	0.057653	4.170244	1788.217	206.06793	236.02257	0.372696	0.404744	1.00128	0.472417	5738.551476
326	18/3/2021	52774.26563	19502.2207	1.191124	26.696995	19.308496	0.051702	4.123774	1691.356	177.65495	211.7057	0.370205	0.368639	1.000607	0.488837	5315.05738
327	25/3/2021	58918.83203	25800.88281	1.19142	30.957281	21.737732	0.053657	6.348459	2093.1228	197.4991	246.15054	0.416237	0.410898	1.003402	0.573869	6237.084303
328	1/4/2021	56048.9375	39261.92578	1.266735	33.919182	23.345903	0.059028	6.744065	2157.657	219.42368	257.74286	0.443207	0.47328	1.002177	0.917576	7000.989854
329	8/4/2021	63109.69531	35867.57422	1.275501	39.06591	21.377644	0.121517	7.242909	2237.137	279.74841	321.66007	0.403658	0.636735	1.000104	1.839236	7277.769871
330	15/4/2021	56473.03125	44291.02344	1.265934	38.950634	21.250105	0.3195	6.684968	2330.2109	260.94135	401.20789	0.371514	0.52795	0.999938	1.383299	7416.297764

Figure 3 (Table) : Calculation of Cryptocurrency Index on the basis of simple average of the 14 cryptocurrencies

After calculation of Cryptocurrency Index on the basis of 14 cryptocurrencies the percentage returns and absolute returns of crypto index has been calculated for the period from 1st January,2015 to 15th April, 2020 by taking the Crypto Index for the starting date of this study i.e.1st January,2015 =100.The calculation is shown in Figure 4 (Table).

	Date	Crypto Index	Returns	
2	1/1/2015	126.2910375		100
3	1/8/2015	117.9022591	-7%	93.35758
4	1/15/2015	121.4059195	-4%	96.13186
5	1/22/2015	121.9448166	-3%	96.55857
6	1/29/2015	121.4344054	-4%	96.15441
7	2/5/2015	120.877914	-4%	95.71377
8	2/12/2015	122.1106569	-3%	96.68988
9	2/19/2015	122.1988374	-3%	96.75971
10	2/26/2015	124.7408869	-1%	98.77256
11	3/5/2015	126.4327183	0%	100.1122
12	3/12/2015	123.5440461	-2%	97.82487
13	3/19/2015	122.8266796	-3%	97.25685
14	3/26/2015	122.919841	-3%	97.33061
15	4/2/2015	122.7385946	-3%	97.1871
16	4/9/2015	121.2016869	-4%	95.97014
17	4/16/2015	121.9386389	-3%	96.55368
18	4/23/2015	121.3282136	-4%	96.07033
19	4/30/2015	121.6116709	-4%	96.29478
20	5/7/2015	122.0889301	-3%	96.67268
21	5/14/2015	121.9216604	-3%	96.54023
22	5/21/2015	122.1774229	-3%	96.74275
23	5/28/2015	121.3535336	-4%	96.09038
24	6/4/2015	121.5697789	-4%	96.2616
25	6/11/2015	123.1152181	-3%	97.48532
26	6/18/2015	122.4813054	-3%	96.98337
27	6/25/2015	123.855897	-2%	98.0718
28	7/2/2015	124.8997559	-1%	98.89835
29	7/9/2015	125.8228763	0%	99.6293
30	7/16/2015	125.1823985	-1%	99.12216
31	7/23/2015	126.1366274	0%	99.87773
32	7/30/2015	125.5560319	-1%	99.41801
33	8/6/2015	124.4844934	-1%	98.56954
34	8/13/2015	121.5914198	-4%	96.27874
35	8/20/2015	121.4874843	-4%	96.19644
36	8/27/2015	121.719662	-4%	96.38029
37	9/3/2015	122.3403992	-3%	96.8718

295	8/13/2020	997.8714393	690%	790.1364
296	8/20/2020	987.3115617	682%	781.7748
297	8/27/2020	974.2266786	671%	771.4139
298	9/3/2020	1002.968982	694%	794.1727
299	9/10/2020	1033.478538	718%	818.3309
300	9/17/2020	904.8219715	616%	716.4578
301	9/24/2020	960.2216364	660%	760.3245
302	10/1/2020	951.2754909	653%	753.2407
303	10/8/2020	1018.484108	706%	806.4579
304	10/15/2020	1117.816644	785%	885.1116
305	10/22/2020	1142.449091	805%	904.6161
306	10/29/2020	1205.230103	854%	954.3275
307	11/5/2020	1314.411925	941%	1040.78
308	11/12/2020	1485.928811	1077%	1176.591
309	11/19/2020	1555.00674	1131%	1231.288
310	11/26/2020	1587.419944	1157%	1256.954
311	12/3/2020	1537.337734	1117%	1217.298
312	12/10/2020	1766.99322	1299%	1399.144
313	12/17/2020	1904.915765	1408%	1508.354
314	12/24/2020	2366.912781	1774%	1874.173
315	12/31/2020	2967.123073	2249%	2349.433
316	1/7/2021	3017.433572	2289%	2389.27
317	1/14/2021	2881.237729	2181%	2281.427
318	1/21/2021	2518.600837	1894%	1994.283
319	1/28/2021	3173.917097	2413%	2513.177
320	2/4/2021	4074.706111	3126%	3226.441
321	2/11/2021	5427.49827	4198%	4297.612
322	2/18/2021	4785.888722	3690%	3789.571
323	2/25/2021	5021.606701	3876%	3976.218
324	3/4/2021	5541.105104	4288%	4387.568
325	3/11/2021	5738.551476	4444%	4543.91
326	3/18/2021	5315.05738	4109%	4208.578
327	3/25/2021	6237.084303	4839%	4938.659
328	4/1/2021	7000.989854	5444%	5543.537
329	4/8/2021	7277.769871	5663%	5762.697
330	4/15/2021	7416.297764	5772%	5872.386

Figure 4 (Table) : Calculation percentage returns and absolute returns from 1st January 2015 to 4th April,2015 (A portion of the calculation is shown in Figure (Table) 4)

From the spreadsheet calculations, it can be seen that investing 100 units of a currency in the Cryptocurrency Index in the first week of 2015 gave us 5872.38 units of currency at the end of the period.

In case of Gold, S&P 500 Index and BSE Sensex the same method is followed as in the case of cryptocurrency in order to calculate percentage returns and absolute returns from 1st January 2015 to 4th April, 2015. By investing 100 units of a currency in the first week of 2015, for:

a. Gold, we got 146.19 units of the same currency for the same period.

b. S&P 500 Index, we got 205.50 units of the same currency for the same period.

c. BSE Sensex, we got 177.29 units of currency for the same period.

Thus it can be seen from the above that the Cryptocurrency Index is the most profitable of all and hence no wonder that more and more people are choosing to invest their funds in the same.

The correlation between Cryptocurrency Index and:

a. S&P 500 Index is: 0.742997

b. Sensex is: 0.731994

c. Gold is: 0.562931

Thus, it can be seen that the highest correlation is with the S&P 500 Index.

The factors which in general affect the prices of various cryptocurrencies are - forces of supply and demand, gathering of additional information and speculators. Cryptocurrency or Bitcoin specifically has been seen to be influenced by the variables related to the US Economy.

⊙ Risk and Volatility

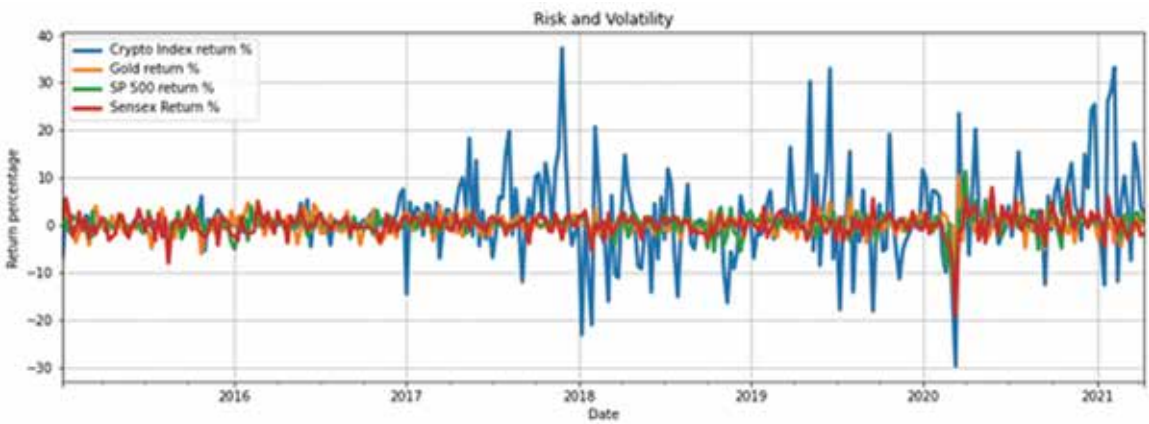

Figure 5

From the above graph (Figure 5) it can be seen how volatile the return on cryptocurrency is as compared to others. This poses a huge risk to the investors. It can also be observed from Figure 5 Graph that there was a huge fall in returns during the month of March, 2020. This was due to the COVID-19 Pandemic and the worldwide lockdowns. This was the time when all the indices fell. From the graph (Figure 5) it can be seen that the Cryptocurrency Index also fell the most.

Table 1: Returns of Crypto Index, Gold, S&P 500 Index and Sensex **(in %)**

	Crypto Index Return %	*Gold Return %*	*S&P 500 Index Return %*	*Sensex Return %*
Count	328.000000	328.000000	328.000000	328.000000
Mean	1.572141	0.135817	0.243828	0.203199
Std.	8.200138	2.00527	2.172925	2.356230
Mean	-29.564694	-9.097561	-12.522160	-19.127135
25%	-1.176031	-0.926257	-0.420559	-1.058913
50%	0.458346	0.118641	0.464396	0.400434
75%	4.203171	1.234748	1.333028	1.593218
Max	37.288664	10.492114	11.312690	7.923754

From the standard deviation associated with the data as given in Table 1 above, it can be observed that for Gold, S&P500 and BSE Sensex returns, it is close to 2. In the case of Cryptocurrency Index, the number is 8.20, which is almost 4 times higher than the rest. Hence the risk associated with the Index is very high.

Graphically and with the help of standard deviation, it has been shown that the risk is very high in the case of the

Cryptocurrency Index.

Let us have a look at the risk factor of all the cryptocurrencies individually in the light of their standard deviation as given in Table 2 below:

Table 2: Risk factor of 14 Cryptocurrencies in terms of Standard Deviation

	Binan-ce Coin % return	Bitc-oin % return	Carda-no % return	Cha-in Link, % return	Cosmos % return	Dogecoin % return	EOS % return	Ethereum % return	Litecoin % return	Monero % return	NEM % return	Stellar % return	Tether % return	XRP % return
count	328.00	328.00	328.00	328.00	328.00	328.00	328.00	328.00	328.00	328.00	328.00	328.00	328.00	328.00
mean	1.4966	2.189	2.929	3.112	0.9028	5.3022	1.392	3.992	3.009	3.649	4.174	4.672	-.004	3.726
std	11.037	10.796	28.913	19.066	9.811	33.746	16.076	18.919	20.724	19.084	21.536	38.696	1.1945	27.931
min	-36.58	-39.490	-61.044	-50.51	-37.612	-41.758	-45.2899	-37.607808	-45.377	-51.786	-53.1146	-36.742	-17.063	-54.5217

The standard deviations of the above cryptocurrencies and the minimum percentage returns make cryptocurrency a riskier investment option compared to the traditional ones.

CONCLUSION

Cryptocurrencies as seen in the above discussion have been adopted by quite a few countries and several individuals. This study has shown that Cryptocurrency Index is the most profitable compared to Gold, S&P 500 Index, and BSE Sensex. For this reason people are more inclined towards cryptocurrencies in order to earn more return compared to other investment opportunities. The risk factor associated with cryptocurrency financial instrument is very high compared to the traditional ones. With no asset to back its value, it becomes very risky for the investors. Globally there have been cases of salaries paid and cars bought with cryptocurrencies. Also since there is no supervision of regulatory authorities it has a huge negative potential to be used in crime. MA

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ROLE OF BLOCKCHAIN IN FINANCIAL INCLUSION THROUGH MICROFINANCE

Abstract

Microfinance is an effective medium of financial inclusion. Blockchain can serve as a valuable tool to enhance the efficacy of microfinance. This article brings out the role of blockchain technology financial inclusion.

Amit Kumar Dutta
Assistant Professor (Senior Grade)
Department of Commerce
SRM University Sikkim
Gangtok
amitdutta02@gmail.com

INTRODUCTION

Financial exclusion among a vast section of people especially in poor and developing countries is a veritable roadblock to achievement of sustainable global peace. The poor suffer from financial exclusion for myriad reasons. The conventional banking and financial institutions are yet to completely address the issue of financial exclusion due to reasons such as feasibility of operations, institutional bottlenecks, etc. Technology can play an important role in financial inclusion in an effective and transparent manner. In this context blockchain can play an important role in achieving financial inclusion among the poor and disadvantaged sections of the society.

BLOCK CHAIN – A TECHNOLOGICAL WONDER

Blockchain is truly a technological wonder of the contemporary world. It may be defined as a group of blocks which have been tied in chain with cryptgraphic hashes. All the blocks with the exception of the first one has the hash of the previous block.[1] Satoshi Nakamoto is credited with the invention of blockchain technology. He brought out his invention through a publication in a paper on Bitcoin in 2008 titled "Bitcoin: A peer to peer Electronic Cash System".[2] The technology of blockchain is based on a decentralized data base which exists in various computers and every copy of these data base is similar. The architecture of blockchain can be divided into three layers – Applications, Decentralized Ledger and Peer to peer network. The various types of block chain are: public blockchains, private blockchains, semi private blockchains, sidechains, permissioned ledger, distributed ledger, shared ledger, fully private of proprietary blockchains, tokenized blockchains and tokenless blockchains.[3]

SIGNIFICANT BENEFITS OF BLOCK CHAIN

1. Trust

Blockchain technology operates in a decentralized manner. The blockchain ledger adds new information only when majority of the network participants give their consent after being satisfied about the truthfulness of the cryptographic information. The information is authenticated quickly and updated information is put into the blockchain ledger.

2. Immutability and Transparency

Blockchain technology provides robust protection of data as the data once entered cannot be modified. Moreover, there is high level of transparency as any change made in the ledger can be audited and made accessible to all those who are part of the network.

3. Disintermediation–

The blockchain technology results in disintermediation due to the decentralized nature of the blockchain ledger (database). Two parties can communicate without the intervention of any central intermediary to attest the truthfulness of the records.

4. Cost Savings

An important benefit provided by the blockchain technology is that it results in cost savings besides speeding up the transactions. It also does away with the presence of intermediation and the need to audit transactions by commission thereby increasing the speed of transactions.

MICROFINANCE AND FINANCIAL INCLUSION

Microfinance is the provision of microcredit or loan of

small amounts to the poor, marginal and unbanked sections of people who have no access to credit by the conventional banking system. Microfinance plays an important role in financial inclusion as findings from various parts of the world especially the poor and developing countries bears testimony to it. However, the concept of modern day microfinance, which originated in Bangladesh in the 1970s and successfully emulated elsewhere, is facing serious challenges which has dented its role in providing financial inclusion to the poor. The efficacy of microfinance as a tool of empowerment is under serious challenge as vindicated by the Andhra Pradesh microfinance crisis of 2010 and Assam microfinance borrower debt crisis.

Today, the microfinance sector, due to the imperatives of commercialization, is experiencing several problems. The concept of microfinance was mooted to make credit available to those who are unbanked so that they could enjoy financial inclusion besides being the empowered individuals of the society. However, blatant commercialization has led to the mission drift of microfinance and its role in financial inclusion is being seriously questioned. Microfinance institutions have to make microcredit available to large sections of people thereby leading to high interest rate. Moreover, due to the high level of illiteracy prevalent among the loan recipients and lack of collateral resulting the problem of maintaining effective control over the credit delivery process. Lethargy in the KYC process and high transaction charges are also considered as serious problems of microfinance.[5]

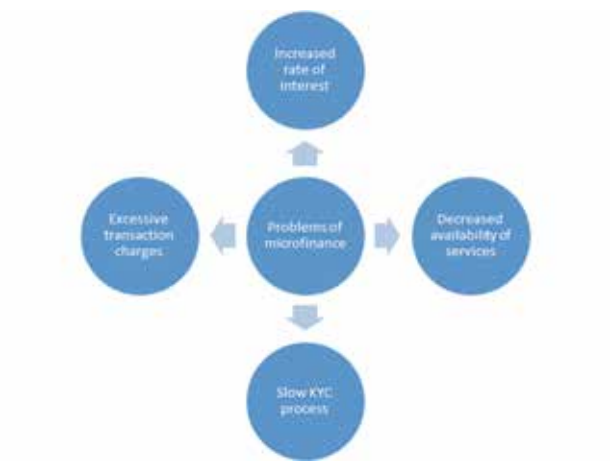

Figure – Problems of Microfinance ***(Source -*** *https://www.allerin.com/blog/empowering-microfinance-with-blockchain)*

The advantages of blockchain technology such as decentralized ledger (data base), speed, transparency, security can be a boon to bail out the microfinance sector from its contemporary perils

FINANCIAL INCLUSION: ROLE OF BLOCKCHAIN

Blockchain technology can play an important role in enhancing financial inclusion through microfinance. Undoubtedly, the efficacy of microfinance due to unregulated commercialization and laxity in regulations is under serious threat. however, blockchain can provide solutions to many of the teething problems that contemporary microfinance sector faces. The advantages of blockchain technology such as decentralized ledger (data base), speed, transparency, security can be a boon to bail out the microfinance sector from its contemporary perils.

Lack of proper regulations and transparency in transactions are the key reasons behind frauds and scams in the microfinance sector. Such issues can be successfully addressed by blockchain which can enhance the speed of the KYC process through digital identity besides streamlining the processes with high level of efficiency[6].

CHALLENGES

Blockchain technology is yet to be fully tested. Some significant limitations of blockchain are its complexity and complicacy besides being expensive[7]. Therefore, its application in the microfinance sector is fraught with challenges. The recipients of microcredit are poor, semi-literate and illiterate people. They would find operating such a complex technology a herculean task. Moreover, the expensive nature of blockchain can detract the microfinance institutions from using it. Therefore, the practical hindrances in using blockchain in the microfinance sector will result in a negative attitude in its adoption by the stakeholders.

CONCLUSION

The microfinance sector is facing a serious threat due to issues of transparency, security and malpractices. Therefore, blockchain can help redeem microfinance its role as facilitator of financial inclusion among the poor. Despite the practical challenges that exist in adopting this technology, undoubtedly, blockchain can offer meaningful solutions to bail out microfinance from its present crisis. MA

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DEMYSTIFYING THE CULT OF CRYPTOCURRENCY: A DISCOURSE ON BITCOIN

Samuel S Mitra
Researcher
St. Xavier's College (Autonomous)
Kolkata
samuelmitra18@gmail.com

Payal Sharma
Assistant Professor and Research Scholar
Dept. of Commerce (Morning)
St. Xavier's College (Autonomous)
Kolkata
pspayal1996sharma@gmail.com

Uzma Khan
Guest Faculty
Bhawanipore Education Society College
Kolkata
uzmakhan7.uk@gmail.com

Abstract

The standout revolution of the 21st century era is arguably the blitzkrieg proliferation of technology. In this light, it is quite intriguing to deliberate upon the digital currencies which have triggered a seismic shift in the way businesses are being conducted and has brought a wholesome metamorphosis in the modus vivendi of the common man. The so called "cryptocurrencies" have garnered prodigious attention in the past few years. The cryptocurrency market is deluged with several other digital currencies intending to make inroads in the market. In this context, it is imperative to throw light on Bitcoin which was the first and presently the leading decentralized cryptocurrency. The aim of the present study is to understand the essence of Bitcoin along with its pros and cons and examine if it could exist for the long haul.

PREFATORY OBSERVATIONS

Bitcoin seems to have become a double edged sword in the Indian backdrop, as more often than not, it is highly appreciated and at the same time also criticized by many, a notable act as the Government of India is expected to introduce a Bill in the Parliament to ban Bitcoin in India. Bitcoin is actually a "decentralized digital currency" which is not under the control of the central bank or any other administrator, which has proven to be quite useful in being sent from user-to-user on the "peer-to-peer" bitcoin network without any intermediaries. Bitcoins can be exchanged in place of other currencies as well as products and services, albeit, it's real worth being quite volatile. Nevertheless, the baptism of Bitcoin as a protocol rooted in open source software has pulled off a stunning heist, as a whopping proportion of more than 100 million people who have adopted the astounding crypto in just over a decade bears a strong testimony to its impregnable significance. Not to forget, the value stored in the software has propelled to a head turning $1 trillion. Granted the fact that Bitcoin has been useful in its use as an investment

measure, its ignominious use in illegal transactions, the generation of carbon footprints from its massive electricity usage and exchange thefts have bludgeoned its reputation and hence, there is already a harbinger witnessed in India about its possible existence thrown into jeopardy.

BACKGROUND REFLECTIONS

The advent of Bitcoin was rather an unfathomable phenomenon as a coder named Satoshi Nakamoto, launched the financial network in the year 2009. On 22nd May, 2010, Laszlo Hanyecz made a payment of 10000 Bitcoins for a couple of "Papa John's Pizza", at a rate of exchange of 0.1 cent per Bitcoin, oblivious of the concrete reality that those 10000 Bitcoins would be worth a staggering $500 million. Ten years down the line, the Supreme Court of India demonstrated a clear perspicacity about the future of money, hinting at a possible ban of Bitcoin. It is such an anti-thesis that the existence of such a profound revolution of the 21st century stands at cusp of existence and elimination. The mercurial reactions of customers have been showcased with vitriol and vague accusations, some even calling it a "Ponzi Scheme", exhorting its ban by the governments. The question here is that if it is failing then should it be banned? Truth to be told, Bitcoin is thriving the heat as evidenced in the number of users adopting it is on the rise as they can see the stability in the value of Bitcoin and a predictable money supply. Bitcoin is generally used in two ways in the current era. First, it is a storehouse of value as it delivers a talismanic rescue in providing an exit from currency hyperinflations, especially to countries with vulnerable monetary regimes. Second, it provides an alternative to the monopoly of financial regimes which are controlled by the government.

THE TALISMANIC ATTRIBUTES OF BITCOIN: TOUCH-POINTS

1.Uniquely global and distributed: Thousands of nodes run the software which helps in validation of new transactions. The network is resilient making sure nodes do not enter and exit as they please and ensures no interruptions or adverse impact on performance.

2. Anti-fragile: Has survived multiple attacks by hackers, corporations and governments. Every 10 minutes, a new block transaction is unfailingly added to the network of Bitcoin.

3. ***High cost of attacking Bitcoin****:* Since the hash power dedicated for Bitcoin mining is quite high, to launch an attack on Bitcoin would require billion dollars. Even if does happen, users of Bitcoin would find ways to keep transactions on.

4. Constant Evolution and Amelioration: Some of the best programmers across the globe are fine-tuning codebase of Bitcoin itself. Besides, cheap and renewable energy can be tapped into which cannot be further sold or transmitted. Thus, stranded energy is being converted into value by Bitcoin.

5. Criticism refuted: Bitcoin has been misused by some but in less quantity in juxtaposition to Dollar and hence terming it as a 'Ponzi Scheme' is somewhat misplaced and vague. Its independence does not make it valueless.

BANNING BITCOIN: BOON OR BANE

The crux questions looming large are what are the representation of Bitcoin and what would it actually mean to impose a ban on it. Bitcoin simply represents "the conversion of an individual's time into money" as an individual efforts and value creation exchanged as digital money. The liberty that Bitcoin has been designed to provide as well as preserve, would be affronted. Bitcoin is a representation of a "step-change" in the function of the evolution of money and opens up great avenues to all economic classes. Cynics and skepticism about Bitcoin could possibly hint at a poor research done on Bitcoin and lack of adequate knowledge. For myriad people, it a rescue weapon needed to unshackle the labyrinth of poor monetary regimes. The reason is enough to raise vocals about the need to lend support to Bitcoin. It can be safely asserted that it would be quite infeasible, talking in the light of technology, to impose a ban on Bitcoin, but the legal issues could be wielded and set aside.

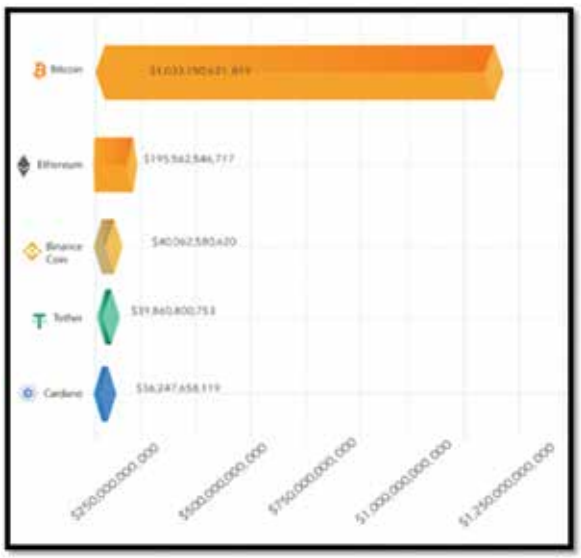

Figure 1: Biggest Players in the Cryptocurrency Market
(Image Source: Economic Times)

IS IT POSSIBLE TO SURGE AHEAD BEYOND BITCOIN

It is a no-brainer that Bitcoin is the largest cryptocurrency, but an oblivious truth is that there lies an enormous existence of over 5000 cryptocurrencies, some of which are listed on "Coinswitch Kuber" app. In fact, several cryptos have already racked gaudier returns compared to Bitcoin. "Ethereum", the second largest crypto has witnessed a gargantuan surge by 750% since 2020, besting Bitcoin's record of 600% during the same time period. Myriad digital currencies are now competing with Bitcoin, giving the common people plenty to mull over as to the next bid crypto revolution in 2021. In spite of the prodigious amount of cryptocurrencies available, people recognize cryptocurrencies through the

lens of Bitcoin, largely because of Bitcoin's enamored establishment of a valuable asset and crypto behemoth. Another significant factor acting in Bitcoin's favour is that it eliminates all intermediaries from transactions and hence provides service as a deflationary asset with a controlled supply of 21 million BTC. This helps Bitcoin preserve its value since with limited supply it can overcome the menaces of inflation and undervalue of assets. A cryptocurrency to perch itself as the next crypto revolution requires to have certain essential traits like transparency, definite purpose, easy accessibility, trustworthiness and backing by a reputed and efficient team. The market of cryptocurrency is a melting pot of groundbreaking head turning innovative percolations. Several cryptocurrencies have been introduced which are characterized by high efficacy and functionality. Some of the trends that could result in the revolution of crypto space in 2021 are Decentralized Finance (DeFi), Non Fungible Tokens (NFT), Polka Dot and Yield Farming.

SWOT ANALYSIS FOR BITCOIN

Imperative as it would be on the part of Bitcoin, to delve into its strengths, weaknesses, opportunities and threats. To serve this purpose, it is highly relevant to conduct a SWOT analysis where the essence would lie in unfurling and highlighting the SWOT of Bitcoin. The term "SWOT" was first brought to the limelight by Albert Humphrey between late 1960s and early 1970s at the Stanford Research Institute (SRI). The ultimate aim of a SWOT analysis is to reinforce business strategies by assessing all the business's strengths, weaknesses, opportunities, and threats within one's marketplace. The first two dimensions of a SWOT, i.e. strength and weakness come under the wing of the internal environment while opportunities and threats come under the wing of the external environment. The following Table depicts the SWOT analysis of Bitcoins.

STRENGTHS	WEAKNESSES
• Security • Anonymity • Financial Trust • Financial Incentives • Predictable Rate of Coin Generation • Independent	• Breaking anonymity through transaction history • Deflation and hoarding problem • Loss of Bitcoins • Generation of enormous amount of carbon footprints
OPPORTUNITIES	**THREATS**
• Software Development • Dependable Savings • Reduction in Transfer Fees	• Identification through IP Address and Point of Sale/Exchange • Hacking Online Exchanges • Robberies and Criminal Scenarios • Volatility of Bitcoin Value

Figure 2: SWOT Analysis for Bitcoin *(Image Source: Author's Own Conceptualization)*

CONTEMPLATIONS OF BULLS AND BEARS ABOUT BITCOIN

The stunning performance of Bitcoin after soaring 600 per, cent volume in 2021 with $54000 per Bitcoin from $7000 a year ago, showcases its pyrotechnics and has helped itself

There also exists ample scope for the crypto investors in India for establishing a robust portfolio, courtesy, crypto apps like "Coinswitch Kuber" making relevant inroads into making investments in crypto rather easy

to be perched as one of the leading financial assets of 2020. Albeit, the oscillating winds of change in its price, a repeat of the 2018 humbling price cash has been defied by Bitcoin. Eye-twitching returns have made it difficult for the crypto cynics not to consider Bitcoin as a source of investment. The stellar performance has converted the hardened bears into bulls but that does not change the nous of the ardent crypto fans who are still skeptical and reluctant to invest in Bitcoin, largely because of its high volatility. It has also been observed that there has been a limit on the investments of such enthusiasts at the rate of 1-2 per.cent. Bitcoin bulls and bears have excogitated about its current rally and its contradiction with the 2018 collapse. While bears could see a possibility of a shambolic repeat of 2018 collapse in Bitcoin price from $16000 to $3000, bulls remain bullish about Bitcoin's heroics this time around as they see the professional trading firms and institutional investors whose presence has brought a whole lot of stability in Bitcoin, so much so that the former and the latter form a NIFTY combo to drive the demand of Bitcoin. Following Graph depicts the journey of Bitcoin from 2016 to 2121.

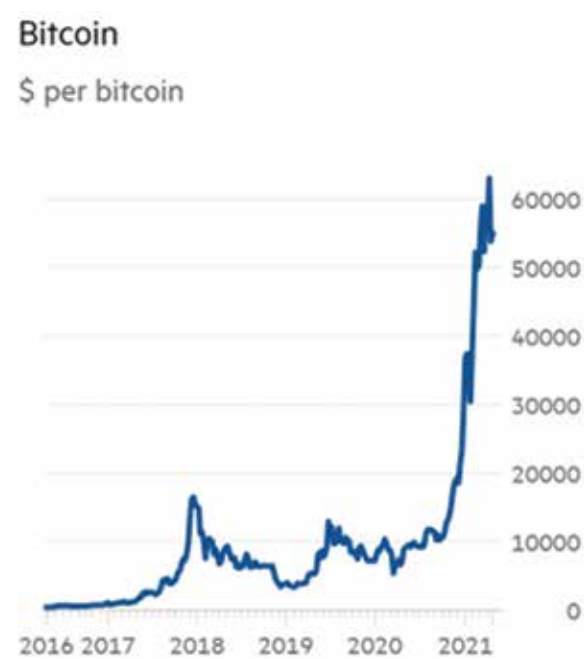

Figure 3: Value of Bitcoin from 2016-2021 *(Image Source: Financial Times)*

THE ROAD AHEAD

It is a no-brainer that the crypto market is unregulated and it leaves the investors stranded for help in case they fall victim to frauds. Exchanges may result in bogus aftermath and a new coin could be found out to be a "tissue of lies." Another major concern is the carbon footprints generated by cryptocurrencies. The emissions generated by Bitcoin is equivalent to that of Greece as the coins are "mined". The cryptocurrency market is volatile and surely has some repercussions, both financial as well as ecological, but there also exists ample scope for the crypto investors in India for establishing a robust portfolio, courtesy, crypto apps like "Coinswitch Kuber" making relevant inroads into making investments in crypto rather easy. However, before arriving at any decision, the investors should always tinker about the functionality of the currency, as thriving of the cryptocurrency would depend upon its functionality. MA

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CRYPTO CURRENCIES: THE FLAG BEARER OF FUTURE FINANCE

Abstract

Cryptocurrencies, as a part of decentralized financial system and powered by distributed ledger technology is the future of finance. Although no one is responsible for the ledger, no one can control or falsify the claims made through blockchain technology. Cryptocurrencies backed by blockchain are transformative technology and a forerunner of virtual monetary system. Cryptocurrencies are created out of perceived 'privacy' need and drive to exit government intermediaries and financial institutions as a regulator of financials. Thus, Government should focus on timely policy planning, implementation and governance of blockchain and virtual currencies so as to prevent halt in data economy.

Aliza
Doctoral Research Scholar
Faculty of Commerce
Banaras Hindu University, Varanasi
aliza@bhu.ac.in

INTRODUCTION

Cryptocurrencies are the latest invention of financial technology**.** Hope and speculations regarding the future uses is the foundation of crypto currencies market. It is expected that more users will lead to inflation of crypto values. Anonymity, speed, transparency, minimum charges etc. make virtual currencies superior to traditional currency and is the reason for its internationalization, but it has certain disadvantages associated with it, like notorious volatility, irreversibility and unsolved security issues. Moreover, there is no value assured and no legal recognition of such currency. Cryptocurrencies are not subjected to local issues such as hyperinflation or government backing. Further, cypherpunks strongly oppose the creation of any regulation on cryptography since encryption is a private act arising out of a social contract with no geographical boundaries.

Popularity of virtual currencies in India can be known from the fact that in 2017, 'Bitcoins' was among the most searched term on Google. Since Nov, 2016 after demonetization of Indian currency, transaction of crypto currencies has registered a hike. Around 1.5 crore Indians are holding cryptocurrency assets of billions value according to a report of India Today. Bitcoin (BTH) and Ether(ETH) have shown manifold growth since 2020. Indian cryptocurrency investments grew from approximately $923 million in April 2020 to a whopping $ 6.6 billion in May 2021according to a report by blockchain data platform Chainalysis, as per report by Chainalysis, India stands at 11th position in cryptocurrency adoption**.** In terms of volume of trade, WazirX is the largest crypto exchange of India. Coin DCX has become Cryptocurrency Unicorn exchange after raising 6.70 billion from investors led by Facebook Inc. Zebpay, Pocket Bits, Bitxoxo, Kuber and Unocoin are the other virtual currency (VC) Exchanges in India.

There is also a dark side of virtual currencies. Fraudulent activities in the name of ponzi scheme can also be noticed**.** Moreover, security is the biggest threat. Malware like WannaCry creates panic in the sector.

Year	*Milestones In the Way Of Cryptocurrencies*
1983	David Chaum, an American Cryptographer conceived an anonymous cryptographic money called ecash and later on implemented it through Digicash.
1994	"DigiCash" was invented in 1994 but later it filed bankruptcy claim.

2008	First decentralized cryptocurrency Bitcoin was created by anonymous developer Satoshi Nakamoto.
2009	Bitcoin come to use as open source software.
2012	The Bitcoin Foundation was formed to restore its reputation which was damaged due to large volatility and fraudulent activities.
2013	Meme cryptocurrency Dogecoin was created.
2015	Ethereum, second most valued cryptography was created.
2021	El Salvador allows Bitcoin as legal tender and became first country to do so.

Source: Author's Compilation

REVIEW OF LITERATURE

Kumar (2018) in the paper 'Bitcoins in India: A Study of Legal and Economic Aspects' made a study on the legal and economic aspects of Bitcoin and concluded that Bitcoin if remain unregulated will, pose a threat to the financial stability.

Jani, S. (2018) has talked about growth in crypto trading in India from its modest level in 2013 all because of growing VC exchange platforms. Along with online exchanges there are various over-the- counter (OTC) crypto shops in the country. Big cities in India are on way of becoming crypto economic hubs with numerous Bitcoin ATMs.

Singh, E. B. P., & Faisal, A. M. (2019) have stated that cryptocurrencies may revolutionize digital trade markets in a very rapid manner without any third party and government involvement that too without fees.

Yousuf Javed, M., Hasan, M., & Khan, R. (2020) state that among various issues and challenges associated with Bitcoin, security threat is the dominant one. Other issues related to *criminal activities, governance and volatility.*

Soni, N. (2020) listed the features of blockchain technology such as it required zero involvement of government authority and eliminates the involvement of banking institutions. Virtual currency is the mean to store money anonymously and facilitates making payments without any additional charges.

TECHNOLOGY BEHIND VIRTUAL CURRENCIES

Virtual currencies apply use of proof- of- work to validate the data which make it indelible. Blockchain technology is based on fragments of codes and algorithm to control the execution and transfer.

Blockchain is a chain of blocks and each block contains a bunch of ledger entries which further contain some information regarding originating and destination terminal details of transactions. Blockchain is a blanket technology consisting of - cryptography, hashing and mining. Cryptography is the process of coding or encrypting data so as to protect it from third party misuse. Using a chosen hash algorithm data is compressed to a fixed size as hashing is a way of constructing a summary of a data field. Afterwards, miners verify legitimacy of transactions which are bundled together and solve mathematical puzzle and the first miner to solve the puzzle is rewarded.

In India, cryptocurrencies are traded via virtual currencies Exchanges. It is advisable to store coins in crypto wallet. Crypto scarcity attract value to it. Limited supply is one the reasons behind the popularity of Bitcoin; on the other hand, supply of Dogecoin is limitless, which may be the probable reason for its failure in the long run. Virtual currencies are highly volatile in nature and the possibility of system collapse is there. Being a symbolic currency, it does not have any real value like legal currency.

ISSUES AND CHALLENGES

i. It is difficult to estimate the total value of cryptocurrency as a large number of individuals hold it in multiple wallets at different Exchanges.

ii. Virtual currencies are not controlled by the central bank or any other apex government institution and hence its unchecked growth may lead to a collapse of the real monetary system.

iii. Uninterrupted government control opens up the space for black marketing of cryptocurrency and is prone to money laundering activities.

iv. Storage in a digital wallet makes VCs vulnerable to hacking, malware, loss of passwords etc.

v. There is lack of recourse in the event of disputes.

vi. Different VCs are based on various digital algorithms and thus are complex to understand and trade. There is high security related risk like fishing and cyber-attacks of VC Exchanges.

vii. Increased use of crypto currencies can have deflationary effect.

CURRENT LEGAL STATUS IN INDIA

High level of disparity can be noticed from country to country in the legalization of virtual currency.USA, Japan, Singapore etc have friendly regulations whereas countries like China and Brazil have hostile legislations. There are few countries like Britain, Thailand etc which have neutral stand.

Digital agreement underlying the blockchain encompasses the following clause- they are written in codes and is self- fulfilling and programmed to automatically execute following set of instructions and is not executed by lawyers. This makes regulation of cryptocurrencies a burdensome technical task for government. In India, initially government brought t forward a Bill named Crypto Token and Crypto Asset (Banning, Control and Regulation) Bill, 2018 but it failed and could not become law.

In 2019 a committee headed by former Finance Secretary Subhash Garg suggested blanket ban on cryptocurrencies, but the Indian Government has now dropped such ideas thinking it impractical and outdated. Instead the Government is formulating a plan to put cryptocurrencies under the asset class and regulate them accordingly.

Recently the Government has drafted the Cryptocurrency and Regulation of Official Digital Currency Bill 2021 which is currently awaiting approval from Union Cabinet and if passed, will decide the future of crypto market.

There is some speculation that The Credit Information Companies Regulation (CICRA) Act, 2005, is likely to be applied on cryptocurrency due to its huge growth. As per this Act, the credit information of individuals of India has to be collected in consonance with certain regulations as laid down by this Act.

Year	*Major Event Shaping Indian Crypto Market.*
2012-17	Warning was issued by Indian Government in trading with cryptocurrency addressing it as Ponzi Scheme.
2013	Cryptocurrency exchange Unocoin launched.
2018	WazirX Largest cryptocurrency Exchange of India commences its operations.
2018	RBI issues circular banning banks and NBFCs from dealing in virtual currency and providing allied services. Appeal was filled by Internet and Mobile Association of India (IMAI) in the Supreme court against such order of RBI.
2020	Supreme Court nullified RBIs virtual ban on cryptocurrencies and allowed banks and financial institutions to trade in cryptocurrencies.
2021	The Central Government drafts the Crypto currency and Regulation of Official Digital Currency Bill, 2021 to ban all private cryptocurrencies while creating a facilitative framework for establishing official digital currency.Moreover the Government promises that it is open to evaluate and explore new technologies for enhancing governance.

Source: Author's Compilation

UNDERLYING OPPORTUNITIES

i. Cryptocurrencies avoid problems of counterfeit and falsification (double spending) as it converts information into inaccessible codes.

ii. It is a self-developed system which allows for indelible time stamping of any piece of information and thus it may be used in emergency conditions.

iii. Government can use such technology for grants and welfare payments, tax collections as it ensures transparency and the fund size cannot be altered.

iv. It can make bureaucratic process cheaper by removing the necessity for expensive infrastructure.

v. It can be used for creation and maintenance of Government licensed assets and also in Government document audit.

vi. Apart from virtual currency,blockchain can be used as a reliable source of voting as it increases the efficiency and reduces the processing cost.

vii. There is dearth in cryptocurrencies and blockchain research, especially in emerging economies but it has boundless potential. Government can reap benefits by exploring crypto sector.

FUTURE INSIGHTS AND CONCLUSIONS

Digitization has made it inevitable to sideline the importance of virtual currencies. VC do not have real value but they can act as a store of value just like precious metals, but is more accessible. Securities threat and unknown identity risk can be the reasons for immediate establishment of Cyber Division/ Anti hacking Squad in the current monetary system of the country. An apex Government body is also required to monitor Indian virtual currency market and till then SEBI can overlook the working of Crypto market. It should be made mandatory for VC Exchanges to get registered with SEBI.Government should be enabled to take timely action else it may lead to exodus of virtual currency business from India along with technical talents.

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EMERGING TRENDS IN BLOCKCHAIN TECHNOLOGY TO FOLLOW IN 2022

Abstract

Blackchain continues to be in the talk since last few years before and after the pandemic hit. These years are witnessing significant developments in the blockchain technology and its applications and usage in many sectors and industries. Other cryptocurrencies and Bitcoin are gathering attention of the investors but at the same time blockchain too are gaining the focus and attraction. This study tries to trace various key emerging trends in blockchain technology in recent years.

1. BLOCKCHAIN DEFINED

Blockchain can be defined as a shared and absolute ledger that can enable the process of tracking the assets and recording transactions in any business network. Here assets can be tangible viz. land, factory, house, gold etc. or intangible viz. patent, brand, intellectual property etc. Thus virtually anything that possesses value can be tracked and/or traded on a defined blockchain network. This will cut costs and reduce the risk for all involved. Blockchain technology is set to transform the nature of transactions and trade across the globe.

Blockchain technology is said to be one of the significant innovations of the last decade with the ripple effect on various key sectors like finance, operations, banking, production etc.

2. EMERGING TRENDS IN BLOCKCHAIN TECHNOLOGY

From Federated blockchain to stable coins, here are the latest blockchain trends that we are likely see this year.

Federated Blockchains	Secured Digital Identity	Decentralized Finance	Blockchain as Service
Hybrid Blockchains	Blockchain with AI	Stable Coins	Central Bank Digital Currency

2.1 Federated Blockchain

Federated Blockchain is one of the most amazing blockchain trends in the business today. It is explicitly used for specific use cases and is just adopted from an upgraded form of the basic blockchain model. It functions under various authorities instead of a unit secure and trusted node. It is quite similar to private blockchain with a few added features and there is no sole organization influence on it.

Enterprise Ethereum Alliance i.e. EEA is one example of Federated Blockchain and few leading organizations such as Microsoft, J. P. Morgan Chase Bank, Accenture etc. are the members of EEA. According to experts, as a private blockchain there will be an increase in the usage of Federated Blockchain in 2022.

Any private blockchain can be controlled by one organization but in the case of Federated Blockchain there can be multiple authorities that can control the preselected nodes. Here various nodes and selected groups can validate the blocks in the existing or modified chain in order to process further transactions. Federated Blockchain is being moved to the central stage as it can be referred to as one of the best blockchain available at present. It is expected to see a rise in the usage of this type of blockchain with a more customizable outlook.

2.2 Secured Digital Identity

Nearly 10 billion internet connected devices are expected

Dr. Rohan P. Dahivale
HoD & Dean Academics
Rajgad Institute of Management Research & Development, Pune
rohandahivale@gmail.com

to grow by 2025.Blockchains are expected to establish more secure digital identity in coming years. Many times unknowingly we leave extensive digital footprints when we do internet surfing. We can expect remarkable reduction in online fraud and online identity theft and our online presence will be more secure with the successful implementation of digital identity.

Data is stored in a trusted, immutable and decentralized manner in blockchain technology. Single user's identity should be stored in an incorruptible and secure manner and blockchain can ensure this. This year will witness growth in this trend as numerous digital identity solutions are under development and expected to integrate with online platforms. Here the advantage will be single digital identity can be always with latest and up-to-date user information.

2.3 Decentralized Finance (DeFi)

DeFi is a form of finance which is based on blockchain. It uses a layered architecture and one can compose building blocks. DeFi does not depend on traditional centralized financial intermediaries such as banks, brokerages or exchanges etc. It utilizes smart contracts on blockchain (most commonly used is Ethereum). By using the DeFi platforms people can earn interest in savings like accounts, take risks on price movements on a range of assets using derivatives, insure against risks, trade cryptocurrencies.

These platforms also allow people to borrow or lend funds from others. Some of the DeFi applications endorse higher interest rates but are subject to high risks. Till January 2020 around 20.5 billion dollars were invested in DeFi and till October 2020, more than 11 billion dollars (worth in cryptocurrency) were deposited in several decentralized financial protocols.

2.4 Blockchain as Service (BaaS)

Blockchain as a service is an emerging trend that is currently integrated with various start-ups and organizations. It is a type of cloud based service where users are allowed to develop their own digital products with blockchain. Businesses are permitted to use these cloud based solutions and they can build, use and host their own smart contract and own blockchain apps. Businesses can use utilities on blockchain infrastructure developed by a vendor. It is similar to SaaS i.e. Software as a service, here software is provided on subscription basis.

There is no need for any business if they do not want to develop their own blockchain, here they can access a blockchain network with expected configuration. Businesses can even build in -house expertise on the projected subject. Blockchain only concentrated on organizations offering BaaS including Factom, Dragonchain, Blog and Keleido. Many cloud service providing organizations such as IBM, Microsoft, Oracle, SalesForce, Alibaba etc. now provide BaaS.

2.5 Hybrid Blockchain

One of the emerging concepts in blockchain is hybrid type of blockchain where it attempts to use the most suitable part of the private blockchain solutions along with public blockchains. It operates in a closed ecosystem and thus every bit of information which is on the network is secured. In hybrid blockchains the transactions are quickly verified and the total transaction costs are usually much less. This is because the influential nodes in the network make the process much simpler.

Along with cost effectiveness, it has additional advantage of security as it protects systems from hackers who are unable to gain access to the existing blockchain network and thus prevents more than fifty percent of attacks.

2.6 Central Bank Digital Currency

Central Bank Digital Currency (CBDC) is based on blackchain and is a digital form of central bank money. This is a legal tender created and backed by the central bank. It is the virtual format of a flat currency for a particular nation. It is regulated by its monetary authority and is a digital token of its official currency or in the form of electronic record.

The key benefits include the simplification and implementation of monetary policy along with the fiscal policy. It supports financial inclusion in an economy that is done by bringing the unbanked segment into the financial system. But as they are in centralized form of currency they can erode the privacy of the people or citizens; that is the key weakness of CBDC. In January 2021, the Indian Government released its national blockchain strategy along with a Bill to launch its own digital currency. Similarly, many CBDC pilot projects are underway worldwide.

2.7 Stable Coins

It can be forecasted that stable coins will dominate the crypto space and will be more visible. Cryptocurrencies are in existence because of blockchain technology and cryptocurrencies (like Bitcoin) operate on their own platforms. As compared to traditional assets prices, many of these cryptocurrencies' prices are more volatile. It is predicted that stable coins will tend to get all-time high as they are now in their initial phase. Because of this the stable coins are expected to gain attraction in times to come.

The word 'stable' suggests that these high value stable coins are steadier in nature and do not witness many fluctuations. Frequent currency clashes are prevented in stable coins thus allowing investors to invest more in cryptocurrencies. These are popularly in existence because of the highly volatile nature of few of

the cryptocurrencies and association of the stable value for each stable coin. Facebook introduced its cryptocurrency 'Libra' in 2020 and it is one of the driving forces for using stable coins.

2.8 Blockchain with AI

Blockchain technology is expected to perform better with its integration with artificial intelligence. A numbers of applications are supposed to increase with this integration. According to IDC (The International Data Corporation) by 2020 the worldwide spending on artificial intelligence is expected to reach 57.6 billion dollars. With blockchain integration with AI, around 51% of the businesses will be making the transition to AI.

Following are some important applications of blockchain with AI:

- Smart computing power
- Protection *de datos*
- Trusting AI decision making
- Data Monetization
- Creating diverse data sets

Blockchain efficiency can be enhanced with the help of AI and this will be much better than standard computing. Also AI can be more understandable and coherent because of blockchain and hence it is a win-win situation for both technologies. This integration is beneficial as one can find out why the decisions are made in machine learning and we can better trace with the help of blockchain.

3. LIST OF OTHER EMERGING TRENDS IN BLOCKCHAIN

i. Social networking problems meet blockchain solution
ii. Interoperability and blockchain networks
iii. Economy and finance will lead blockchain applications
iv. Blockchain integration into Government agencies

The key advantages of blockchain technology include protection from cyber-attacks, help in maintaining user confidentiality, option to change the rules and lower transaction costs operated in a closed ecosystem

v. Blockchain combines with IoT
vi. Demand for blockchain experts
vii. Content streaming to be more secure with blockchain
viii. NFT's will revolutionize digital assets and digital art

4. FINAL THOUGHTS

As discussed above we can see numerous emerging trends in blockchain technology in various sectors and industries worldwide. The key advantages of blockchain technology include protection from cyber-attacks, help in maintaining user confidentiality, option to change the rules and lower transaction costs operated in a closed ecosystem. Experts are analyzing the faults in any existing technology and are trying to come up with the solutions.

Technology convergence will happen with integration of various other technologies like artificial intelligence with blockchain or IoT with blockchain etc. Thus undoubtedly blockchain technology will impact different sectors and verticals differently. Though the blockchain technology is still in the budding phase in India it has an enormous potential across the board. MA

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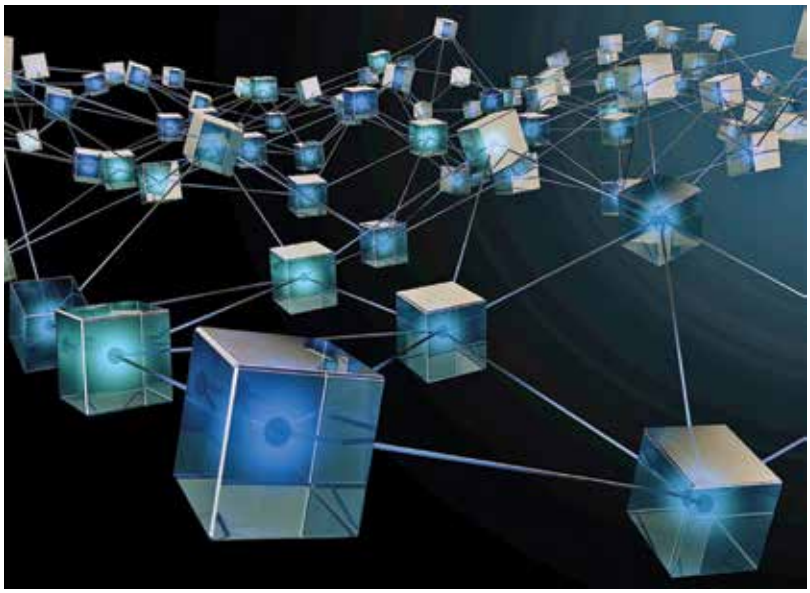

UNDERSTANDING THE FUTURE PROSPECTS IN THE INDIAN FINANCIAL SECTOR THROUGH BLOCKCHAIN TECHNOLOGY RELATED INNOVATIONS

Abstract

Outcomes of the blockchain technology and of the resultant innovations will bring in a new renaissance in the Indian financial sector, if adequate measures can be taken for its efficient implementation. The concerned technology supports the entire structure for the delivery of services by the Indian financial sector in a more cost effective, faster, secure and accurate manner for a gigantic customer base. Moreover, the resultant virtual currency innovation through this technology will create a new space in the existing field of means of exchange of the world.

Shounak Das
State Aided College Teacher
Department of Commerce, Vivekananda College
Kolkata
shounakdascu1994@gmail.com

Sayani Sikdar
Research Scholar
Department of Commerce, University of Calcutta
Kolkata
sayani1988arja@gmail.com

INTRODUCTION

Blockchain technology is the result of the capability of the last generation of the technology platforms where the organization gets the advantage of allocating and using the resources in collaborative platforms. For more than 30 years the concept of the digital currency existed without a centralized intermediary and then there was the growth of the decentralized applications with the successful beginning of the cryptocurrency, Bitcoin that solved mass problems of surveillance by participation through online mode as well as through decentralized governance. Blockchain being the new type of database is very fascinating for the people at large due to its easy applicability in solving the vexed problems specially linked with financial transactions.

Blockchain technology clarifies the understanding of social environment and its associated actuality in connection with the networked system for the interactions (*Burgess and Colangelo*, 2015; *Zhao.et al*, 2016). The foremost characteristics of this technology is to find the course of the financial transactions in a decentralized manner within public databases that actually finds out spurious transactions and stops frauds.

There is considerable importance for the concerned technology in the field of data management in every sector of the economy and throughout the world. As, this technology is new to most parts of the world, exploring and understanding how this technology will create brighter

future prospects for different sectors, is extremely important now.

REVIEW OF LITERATURE

Understanding how innovations through blockchain technology can change the way the economy is working, is a very interesting area of study for social science researchers. The application of blockchain technology in the internet of things (IoT) creates breakthrough innovations in production processes of manufacturing organizations [*Bagha* and *Madisetti* (2016).] Blockchain technology ensures cost saving for banking sector through redefining service delivery infrastructure and along with it also ensures sustainable existence of the organizations, [*Cocco et.al* (2017)].

The robustness in organizational supply chain can be ensured through blockchain technology applications in business organizations [*Min* (2018)]. The blockchain technology has an extremely wide application in different spheres which are acting as indispensable parts of human life, through its application in virtual currency development, support for data management, service delivery related innovations, etc. [*Efanov* and *Roschin* (2018)].

There are no current specific studies in the existing literatures to explore concisely and logically the possibilities that blockchain technology related innovations can bring for Indian financial sector development in the future. Hence researchers designed their study to narrow down this vital research gap having huge overall importance, as far as feasible.

OBJECTIVE OF THE STUDY

The objective of the study here is to identify the prospects that have been created by the blockchain technology revolution over the world in the Indian financial sector through concerned technology supported innovations. The understanding of the prospects is very vital in building adequate trust on the sector.

RESEARCH METHODOLOGY

The study is descriptive and explorative in nature and tries to identify the prospects that blockchain technology can bring for the financial sector in India through mass scale innovations. Indian formal financial sector includes all those authorized and recognized services and institutions available and working, respectively in India for meeting economic needs of the country. The researchers logically analyse the secondary information about the concerned subject available in the existing literatures to explore the prospects. Researchers also put forward possible ways of making the concerned technology adoption more feasible and efficient for the Indian financial sector.

DATA PRESENTATION AND ANALYTICAL DISCUSSIONS

The blockchain technology marked its beginning in the year 2008. The technology can be described as an unalterable, secure and cost effective ledger system that can virtually record transactions or any event in a sequential manner in the form of data blocks with decentralized storing mechanism. The adoption of this technology among different sectors of India is in a nascent stage. The Government has no clear cut rules and regulations at present for governing far reaching blockchain technology application in the country.

Considering its versatile and mesmerizing application in ensuring efficient meeting of the economic needs of the nation through formal financial sector, researchers have highlighted following prospects:

Prevention of Fraud

The most striking feature of the blockchain technology is the level of security assured by the technology. Information once recorded through the system is unalterable and non-erasable. Any wrong information recorded through proper authorization will remain and correct information about the concerned fact needed to be re-recorded in the system to amend the mistake. Moreover, data available in a network will be available only to authorized members of the network and no other individual or organization can access it. The financial sector institutions, like banks, insurance companies, exchanges, rating houses, etc., collecting and keeping extremely valuable information about their customers and business partners need to possess super encryption technology for data protection. The degree of trust in this respect, they can assure, is an extremely important criterion for judging their long term commercial success. At present and also in future context the blockchain technology arrives in the centre stage of data security in the entire world. Considering the degree of trust and cost effectiveness it assures in the field of data security, Indian financial sector will be highly benefited if they choose this technology for future data security related innovations.

Voluminous Data Holding Capacity

In the knowledge world, where the relevancy and volume of information an organization holds is one of the most important determinant of its success, blockchain technology is a blessing. One of the most vital determinants of the institutional success in the financial sector is information management. Financial institutions in India need to maintain huge data set in a synchronized and efficient manner for delivering required services efficiently. Blockchain technology provides the opportunity for decentralized, immutable storage of voluminous information. As, the technology is capable of holding data in a decentralized manner, there is no question of duplication of data in the network and no intermediary is required for data maintenance. These features make the blockchain related

innovations; that will be undertaken by Indian financial sector in future for data management, comparatively more cost effective.

Delivering Efficient Services

Rendering of efficient services by Indian financial institutions required delivering of services more securely and accurately, in a time bound and cost effective manner. Blockchain technology related innovations in data management will go a long way in ensuring customer enrichment through these outfalls. The versatile features of blockchain technology like decentralized storage through data blocks, inalterability of records once recorded, accessibility only to network members, non-requirement of any intermediary for data storage, non-duplication of data in the network, recording of data in a serial or sequential manner and separately identifiable, capacity to store huge volume of data, etc. make the concerned technology related innovations in the financial institutions a game changing aspect for the entire economy. Service and process innovation or in a larger context the business model innovation that can be ensured through this technology can create vast opportunity for Indian financial institutions to be more capable and competitive in the global context. Other modern technologies like Robotics, Artificial Intelligence, etc can be coupled with this technology to make the innovation more exhaustive and mesmerizing for the financial sector of the country.

Virtual Currency

Blockchain technology invention by an individual or group of people in the name of Satoshi Nakamoto marked the real life implementation of cryptocurrency or virtual currency through the launch of Bitcoin. The cryptocurrency is a virtual currency with no centralized control from any authority. Bitcoin can be used for any type of transaction just as formal currency do; every transaction is supported by blockchain technology and recorded in the distributed ledger of the concerned technology. Transactions are authorized through cryptography by network nodes. The value of the currency is market determined. This cryptocurrency under specific formal rules and regulations of the Governments and statutory bodies can be used in India for transaction purposes in future. Bitcoin will bring in a cost effective, secure and faster mode of value exchange in the economy. Moreover, as the value of cryptocurrency is market determined, the transaction values are more market logical and protective to international exchange rate fluctuations. This alternative mechanism if used in future as legal tender in India under proper regulatory measures, will foster financial sector development in the country.

It is understandable from the above discussion that the blockchain technology and resultant innovations will go a long way in building sustainable capacity for the Indian financial sector if proper actions from all the stakeholders can be ensured.

CONCLUSION AND RECOMMENDATIONS

The future contribution of blockchain technology in brightening the prospects of Indian financial sector without any doubt. But, several important issues need to be considered for ensuring beneficial use of the concerned technology in the development of the Indian financial sector. At present there is strong initiative on the part of Governments for promoting blockchain technology adoption in India. This is the prime requirement as Government's motivation is an important trust building factor for adopting any path breaking technological innovations. Secondly, there is an urgent need for formulating and implementing specific set of guidelines and rules to assist the real life adoption of concerned technology related matters and also for promoting concerned technology related innovations. Finally, acquisition and dissemination of requisite knowledge about the concerned technology among all the stakeholders of the economy is another major prerequisite for its full-fledged adoption. In this context, financial intermediaries along with Governments should play a serious role. MA

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IMPACT OF BLOCKCHAIN TECHNOLOGY ON CHANGING ROLE OF HUMAN RESOURCE MANAGEMENT OPERATIONS

Abstract

Human resource management is an area where blockchain can be leveraged to manage and sign smart contracts and audit. Human resource operations may benefit from blockchain by enhancing data gathering, verification, and validation along with strengthening security of sensitive data. It has the potential to provide value to both the HR function and the whole business in the long run by reinforcing the overall performance management system. At the moment, third-party vendors are using blockchain technology to offer services such as recruiting, payroll and grievance handing.

INTRODUCTION

Disruptive innovation in HR, according to *Enrique Rubio* (2017), may provide a new value proposition to become more responsive by leveraging technology. A blockchain is a distributed database of records that is both fraud-resistant and decentralized. It is decentralized because instead of a single entity managing the entire database, data is kept on many host computers, which are unlikely to be hacked.

Blockchain technology is based on blocks of records, each of which contains an encrypted record of the most recent network-validated actions, as well as all prior blocks' operations. This eliminates the need for several individual ledgers and a central authority for approval because all network members will have identical copies of the encrypted data.

The present study is aimed to comprehend the concept of blockchain technology, to investigate leading global blockchain system providers in the field of HR systems and to evaluate the applications of blockchain in the field of HRM.

BLOCKCHAIN SYSTEM

In its most basic form, blockchain is a network of interconnected blocks. Certain factors govern its operation, such as record validation, safeguard entries, and the preservation of all data submitted into the software. It features a chain-like design, with each block consisting of data, a hash, and the preceding block's hash. A hash is a value made up of a string of text. A hash is comparable to a fingerprint in that each one is unique and provides the block a sense of identity. When the data within the block changes, the hash will change. When a block is added to the blockchain, it becomes immutable, meaning the data cannot be modified or deleted. A single block has the potential to store a variety of different items, such as money, employee or customer data, and so on. If a user wants to modify the information on the blockchain, they can't just rewrite it and delete the previous one. However, the update is recorded in a new block that shows the data change as well as the time of the change.

Dr. Shweta Jain
Associate Professor
Department of MBA
Pratibha Institute of Business Management, Pune
drshwetajain01@gmail.com

APPLICATIONS IN HUMAN RESOURCE MANAGEMENT

Blockchain has the potential to revolutionize the way

human resource professionals perform their functions. As per *Casey Soules*, it also contains "smart contracts," which simplify day-to-day chores (2020). According to research, the advantages of implementing this technology exceed the worries and hazards.

1. **Employee Recruitment**

   The time-consuming procedure that candidates must go through in order to be verified by an organisation is exhausting. CV verification is a blockchain-based initiative that works with decentralized verification systems to ensure that applicants are disclosing open background information.

   Recruiters will be able to see a candidate's whole work history, thanks to blockchain. According to *Tarpey* (2014), 55 per.cent of candidates inflated duties on their resumes, 34 per.cent gave fake job titles, and 26 per.cent lied about their affiliations with firms. Experience on other countries, as well as frequent job hopping, makes it more difficult for recruiters to verify credentials. Because reference checks take a long time, blockchain may completely renew this process.

2. **Tracking Payroll**

   On the blockchain, key transactions are encrypted and saved as immutable data. Payroll data is hash-protected and stored via vendor key management, which saves the information needed to produce a key rather than the key itself. However, this new method of payment allows employers to hire and pay labor in remote places or nations with inadequate payment infrastructure or volatile fiat currencies.

   According to *Uma Ganesh,* HR managers might wish to look at the idea of paying staff using Bitcoin (2021). Organizations can even develop their own business currency to avoid processing expenses and adjust for foreign exchange rates.

3. **Training**

   Normally, it is an additional task for employees to reflect training and certificates earned while working in their resumes; however, because this is a manual process with such high importance, it can be very confusing; therefore, in the blockchain system, new gains will be displayed in the form of a new added block. Even on-the-job abilities will be included in the form of a new block, resulting in excellent scores that recruiting managers will notice.

4. **Smart Contracts**

   A smart contract uses the "if this, then that" (IFTTT) language to lay down a collection of parameters in code. Some businesses are utilizing blockchain to pay employees, contractors, and vendors via smart contracts. In fact, it's been claimed that 45 per.cent of early blockchain users are already using smart contracts in their businesses. HR would not need to make a monthly payment run or contact their company's bank.

5. **Strengthen security for sensitive data**

   Internal fraud and external hacks of sensitive personnel records can both be thwarted by implementing blockchain. Because the records are decentralized, thieves will find it impossible to hack the system if blockchain technology is used. As a result, with data no longer being kept in a single location and all changes requiring verification and permission, data assaults may now be virtually eliminated.

6. **Ease in taxation and audit**

   A firm may easily pass an audit, thanks to the blockchain since it can securely exchange its data with regulators without wasting time. As a result, the amount of time and money spent on document collecting is drastically reduced. Furthermore, the block chain's cryptographic hashes and source verification create a strong barrier to document fraud and manipulation.

7. **Performance management system**

   Blockchain may be able to provide a more robust approach to performance management, which can be operated with greater ease and transparency as pay scales adjust by applying defined salary increases for adding blocks for identified skills or key capabilities that are valued by the company. As per *Wiles J.,* blockchain can assist to control employees' performance-based bonuses in a more measurable and data-driven way (2019).

8. **Boost in Productivity**

   Blockchain has the potential to improve labor efficiency in businesses of all sizes. It can help businesses better match people's abilities and performance to the right roles, resulting in increased production. With more clarity on people's talents and experience, organizations will be able to put them in proper areas to be effective.

BLOCKCHAIN BASED HR SOLUTION PROVIDERS

A worker allows job searchers to save his resume on the blockchain, where his credentials, accomplishments, and experiences can be verified and evaluated via a decentralized evaluation and verification mechanism. These WORK tokens are Ethereum-based ERC-20 utility tokens. Bitwage, a San Francisco-based company, also use the technology to make cross-border

payments to employees through blockchain, where the payment is made in and subsequently converted into local currency. Workers have the option of receiving their income in one of 25 currencies, which Bitwage pays in 48 hours. Etchis, the world's first smart contract-based payroll technology, allows for real-time salary disbursements. It is capable of performing all payroll operations effectively, as well as providing per second reports of salaries and remittances paid, with little administrative costs, grievances, and human mistake. Certiif is a cryptographic certification system based on blockchain technology. The information of the proof that the issuer first published to the blockchain is contained in a certiif verified credential. Recipients can use the free source veriif tool to verify the truthfulness, validity, and integrity of a verifiable credential. Gigachain may be used in two scenarios: as a platform deployed by a firm and utilized by all of its hourly-paid or sessional employees and as a transparent record of work and payments shared with customers and candidates placed with them by an agency. Vault Platform brought "TrustTech," a new category of ethics-enabling workplace technology where it has created a powerful solution that empowers employees while offering businesses complete visibility into wrongdoing and the opportunity to intervene before things get out of hand. The TiiQu score is computed algorithmically using verified credentials that are continually gathered in a digital portfolio. Claims are verified at the point of origin. Their "proofs" are uploaded to the blockchain in the form of a "hash" that cannot be traced back to the original data. Sergei Sergienko, a blockchain entrepreneur, created Chronobank in 2016. Workers all around the world will be compensated in cryptocurrency via a decentralized network. LaborX, a new platform created by Chrono.tech, provides users with a variety of tools for posting and accepting employment. It establishes the terms under which a company and an employee would collaborate, including deadlines and payment terms, using smart. Zinc uses Onfido's advanced machine learning to verify document authenticity and the right to work in the UK. Zinc connects to Government departments, national and international agencies to conduct background checks globally that also within seconds. Recruit Co. is a professional service business of the Recruit Group that was founded in Tokyo in 2012. It supports the development of mid-career leaders by concentrating on the development of their management competencies.

CONCLUDING REMARKS

This article presents an overview on the blockchain technology's role in paradigm shift in HRM. All personnel of the HR department, from recruiters to senior management, are likely to experience interruptions in their daily routines as blockchain technology becomes more pervasive and accessible. Hiring important people, conducting background checks, authenticating employment records, involving independent contractors using smart contracts, onboarding, protecting employee data, keeping employee data, managing financial transactions, and monitoring payroll systems are just a few examples. MA

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EMERGENCE OF TRIPLE ENTRY ACCOUNTING IN THE BACKDROP OF BLOCKCHAIN TECHNOLOGY: A CONCEPTUAL STUDY

Abstract

In blockchain ecosystem, all the transactions are recorded and aggregated in the financial statements and get automatically confirmed as accurate. The third ledger serves as a linkage between the double entry ledgers and all records are made available to all participants. This has minimised the possibility of fraudulent attempts leading to errors or manipulations. This article attempts to explore how emergence of blockchain leads to the development of triple entry accounting, how it works and possible benefits and challenges.

Sudipta Majumdar
UGC-Senior Research Fellow
Indian Institute of Technology Kharagpur
sudiptamajumdar523@gmail.com

1. INTRODUCTION

Accounting is an oldest subject as well as profession in the globe dating back to Mesopotamia civilization in 3500 BC. In ancient times, it started with single entry system that records only one side of each transaction. The system used to suffer from inability to trace errors due to one-sided recording and lack of cross-checking, exposing to fraud. To overcome such limitations, double entry system of accounting (*Luca Pacioli,* 1494) emerged. This system recorded two sides of each transaction (debit and credit) and ensured equality of aggregate debit and aggregate credit balance of accounts and provided error free recording of the accounting entries. Although this system preserves a verifiable audit trail, it cannot prevent fraud despite debits equalling the credits. After 2008 global financial crisis, blockchain emerged as a new technology. Under blockchain technology, all the transactions recorded get aggregated in the financial statements and gets automatically confirmed as true and accurate. At the same time, the same records are made available to all the participants involved. This discourages the possibility of errors or manipulations and fraudulent activities. This very phenomenon leads the emergence of triple entry accounting. This article attempts to explore how triple entry accounting emerges in the backdrop of blockchain along with its possible benefits and challenges.

2. BLOCKCHAIN: CONCEPTUAL FRAMEWORK

Blockchain is described as "a distributed ledger which contains the relevant details for every transaction that has been processed. The validity and authenticity of each transaction is protected by digital signatures (cryptography). In blockchain, there is no central administration and anyone can process transactions using the computing power of specialised hardware (nodes/miners) and earn a reward in bitcoins for this service" (*Deloitte,* 2017). It chronologically records block transactions or digital events between parties in verifiable way, to be shared among all participants. This prevents hacking by making every two-key sign-in and transactions crypto graphed and simultaneously maintaining in distributed ledgers.

Figure 1: Blockchain Process

Source: *Faccia and Mosteanu (2019)*

The blockchain has found application in finance through cryptocurrencies and paves the way to implement the triple entry. This offers several opportunities and new

approaches in accounting and help accountants gain clarity over organisational resources and obligations.

3. EMERGENCE OF TRIPLE ENTRY ACCOUNTING

Prof. Yuji Ijiri coined the term '*triple-entry bookkeeping'* with the help of an elaborative framework (*Ijiri,* 1982, 1986). Later on, the concept was re-surfaced by *Prof. Ian Grigg* (2005) leading to a completely new meaning of the term 'triple entry accounting'. *Melse* (2010) analysed the application of triple entry bookkeeping framework as proposed by *Ijiri.*

3.1. Triple Entry Bookkeeping

Under double entry bookkeeping system, the purpose of flow accounts is to account for changes in net stock accounts balance, justifying the equation "Δ Stock $_n$ = Flow $_n$" while the logical extension lies in triple entry bookkeeping in integrating a new set of accounts to explain changes in flows accounts. According to *Ijiri* (1986), double entry bookkeeping system is static in nature, as it keeps 'the changes in wealth through the income earned during a period' in records only. He introduced *Momentum* (i.e., 'the rate at which income is being earned'), measured in monetary units per period, such as dollars per month. It shows the state of income being earned at any single point in time making the assessment dynamic. In addition to *debit and credit,* he also added *Trebit* to account for the changes of momentum. This has extended to three level entry system from double entry, coinciding with the following mathematical derivative/integration concept:

"Δ Assets $_n$ = Income $_n$ = T=tT=t+nMomentum ∂(n)

where 'n' is the time period (*Cai,* 2021)

The major focus of triple entry accounting is to develop an efficient recording system that will take into account momentum information and aid informed decision-making. Although this is the first and interesting work beyond double entry system in accounting parlance, this has also faced criticism for being difficult to implement.

3.2. Triple-Entry Accounting

Double entry acts as the principle for computerised accounting system. The computer can record the transactions, detect and rectify the errors in far efficient way than that of manual accounting system. However, recent technological advancements in the world on financial cryptography have posed a challenge to the operation of double entry system. *Grigg* (2005) linked accounting theory with financial cryptography in the form of a signed receipt to create a more resilient accounting system with more reliability and cost efficiency to deal with accounting frauds. In addition to the entities, the third-party also secures transaction records cryptographically. The digital signature, that can create a strong, safe and reliable record, will be unable to verify if any record is changed later. Therefore, this system enables all participants to keep the same records, eliminating asymmetry in information. This new method of recording transactions is known as triple-entry accounting replacing *Ijiri's* theory. He explained the concept with the help of an example. Suppose A will pay B $500 as service charge. Under double entry system, invoice exists for A's debit and B's credit. In the system of *Grigg* (2005), B writes a signed 'receipt' in a third ledger and subsequently A sees, approves and signs it. Given the third entry is properly recorded on a shared ledger, the system will deny if either A or B updates anything differently in their respective ledgers later on, or they can change any internal records. In such a way, the third entry can validate the transaction in an automated way. The following flowchart explains the operating procedure of triple entry.

Figure 2: Example of Triple-Entry Accounting

Source: *Cai (2021)*

4. THE DISTRIBUTED LEDGER WITH SMART CONTRACT IN BLOCKCHAIN

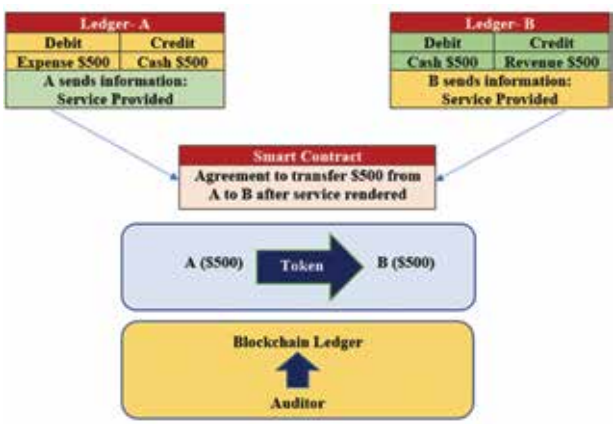
The emergence of blockchain technology and Bitcoin demonstrates that distributed ledger technology associated with triple entry bookkeeping system is decentralized, immutable, secure and automated. This includes smart contracts and is used in maintaining multiple ledgers. Newly added transactions are securely copied to all the participants' ledgers and no central authority is being required to keep track of information of all participants.

Brown (2015) defined a *smart contract* as an electronic or digital contract whose terms are agreed upon by two parties and programmed into a blockchain. Once they are programmed into a blockchain, no manipulations can be

The emergence of blockchain technology and Bitcoin demonstrates that distributed ledger technology associated with triple entry bookkeeping system is decentralized, immutable, secure and automated

done by any party because of the immutability. The third ledger, with embedded smart contracts, built on blockchain is more advanced than a simple ledger. It can self-execute the agreements signed by two parties, respond and send information, thereby working like a traditional banking-house. It works based on its pre-determined 'program codes' and in terms of money (in a tokenized form). For example, with respect to the previous transaction, there is opportunity to commit errors by A and B in their respective ledgers under double entry system. On the other hand, in triple entry framework, A will pay B $500 after rendering service by B, meaning thereby that they both pre-determine payment rules on a self-executing digital contract. They will sign the contract on this third ledger. At the end of the service, they both sign the contract again, the third ledger updates, and the system program will send $500 to B.

Figure 3: Payment Transaction under Triple-Entry Accounting with Blockchain



Source: *Cai (2021)*

4.1. Characteristics of Transaction Record on Blockchain Ledger

Important features of the transaction record on the blockchain ledger are as follows:

a. The transactions take place by tokens (cryptocurrency) that disintermediate the traditional bank;

b. This transaction is chronologically recorded and such record is permanent without any alteration. If there is any change(s) to be made later on, a new record is required to be made;

c. It reduces security threats as the centralized server does not maintain the records;

d. This serves as a linkage between the internal double entry ledgers of the parties involved thereby reducing the possibility of errors, manipulations and frauds;

e. The record is verifiable and also creates an easy audit trail.

5. BENEFITS AND CHALLENGES OF TRIPLE ENTRY ACCOUNTING

Triple entry accounting offers the following benefits:

a. Better auditability ensuring consistency and reduced dependency on auditors.

b. Avoidance of manipulations by compulsory posting of all accounting entries in public ledger.

c. Increased control through self-regulated and shared environment among all participants.

d. Increased reliability and trust by ensuring the bookkeeping and audit not suffering from biased records and human errors or omissions.

e. Increased transparency, reduced cost of maintaining records and no need for reconciliation.

f. Avoidance of fraud as it gives scope for perfect audit trial creating immutable history of transactions within the system.

There are also some challenges that can probably hinder the implementation of triple entry accounting:

a. Issues relating to confidentiality and potential security threats in public blockchain.

b. Threat arising out of manipulation of private blockchain.

c. Highly dependent on internet, proper infrastructure and high level cyber security.

d. Future development of external auditor's occupation might be doubtful.

e. Issues relating to Government regulation and uncertainty on post implementation return on investment.

f. Lack of in-house capabilities and skill sets and compelling technological application.

6. CONCLUDING REMARKS

This article discusses how blockchain transforms the accounting information system enabling the logical extension from double entry to third entry with the help of a third entry that, on one hand, acts as a repository of all transactions as and when recorded, and on other hand, serves as a link between two double-entry ledgers. As a result, man-made errors or manipulations and fraudulent activities would be discouraged. Hence, the role of accountants will no longer be the central authority in financial reports, rather they should become interpreters facilitating in key decision-making and policy implementation towards better transparency, reliability, reconciliation, assurance, reporting and disclosure. Some of the early adopters like IBM, Delloite, and others have already experimented blockchain in accounting. However, blockchain based triple entry accounting has many benefits to offer to the accounting profession, but it is still at a premature stage so far as

transformation and implementation are concerned.

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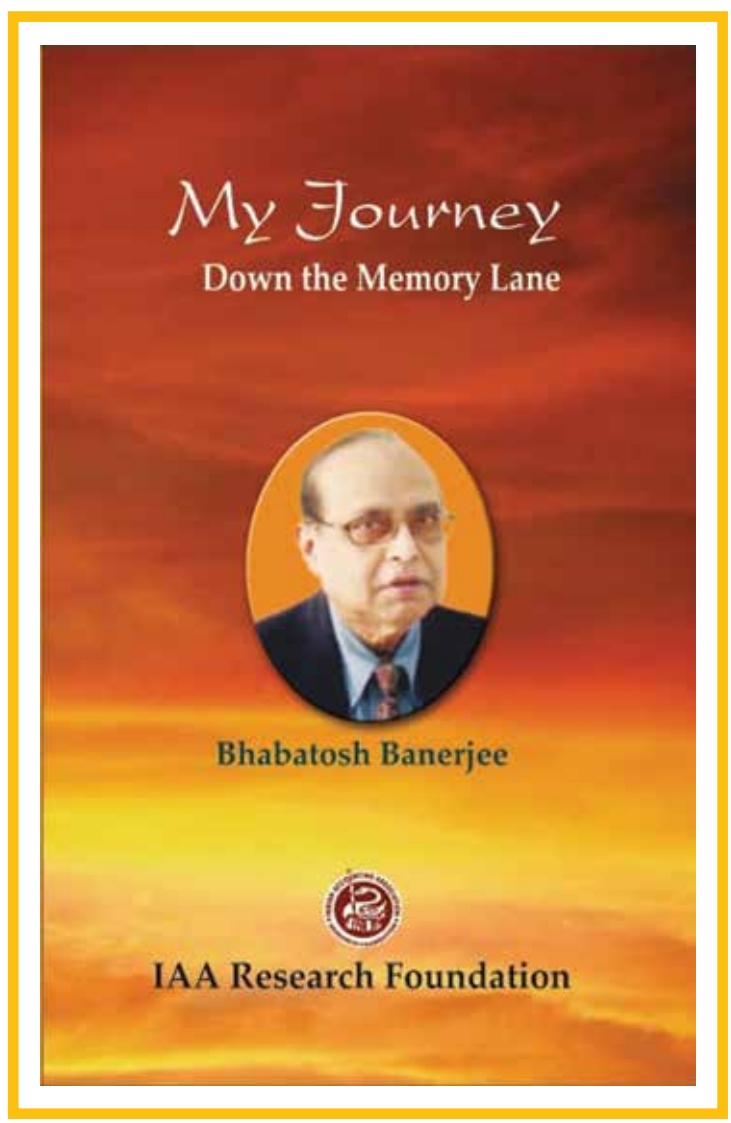
BOOK REVIEW

MY JOURNEY: DOWN THE MEMORY LANE

by CMA (Prof.) Bhabatosh Banerjee

IAA Research Foundation (www.iaarf.in), 2021, Price ₹400, Pages 487

My intention is not to review the memoir of one of our respected accounting teachers, Prof. Bhabatosh Banerjee. I wanted to participate in celebrating the successful journey of Professor Banerjee. When I got the opportunity to share my thoughts on the book, well written in 12 chapters, I grabbed it with both hands. Professor Banerjee's journey from a simple and humble middle-class student to an iconic professor of accounting is truly inspiring. He has influenced thousands of accounting students all over the country. I am one of those fortunate students. My journey in accounting also started with Professor Banerjee's popular textbook on Cost Accounting. As a teacher of accounting, I still use Professor Banerjee's book as my go-to book for any doubts on the principles of costing.



A determined youngster with bold dreams

Dr. Nelson Mandela once said "*Do not judge me by my success, judge me by how many times I fell down and got back up again.*" I too will not assess professor Banerjee on the basis of his achievements, which are many. There are several anecdotes in the book wherein Professor Banerjee reveals failures and his efforts in overcoming those with determination and conviction. One such instance was when he could not secure first class in the graduation examination. His brother reprimanded him by saying "*your prospect of becoming an officer of SBI is closed for ever*". Professor Banerjee used the failure to fix higher goals of doing post-graduation in commerce and pursuing the professional course in cost accounting. In no time, he along with his friend completed both courses with flying colors.

His financial struggles during his school days in Bangladesh continued even after the family shifted to Kolkata. An ordinary person would have withdrawn from studies under the pressure. Professor Banerjee demonstrated his strong will power to pursue higher studies without ignoring the responsibilities towards his family. Professor

Banerjee's formative years (struggle for survival and education) are replete with several instances which enable a reader to understand his inner strengths even before he became a professor at the University of Calcutta. He spent time in learning shorthand and typing to get ready for a job while continuing his higher studies.

People say " *God takes us through the fires to refine us like gold*". Professor Banerjee's journey as an educator over more than four decades is a visible manifestation of walking through fire and emerging as a stalwart of accounting education. He contributed to the accounting fraternity playing different roles: a student, a teacher, a researcher, a doctoral guide and a lifelong mentor to many teachers.

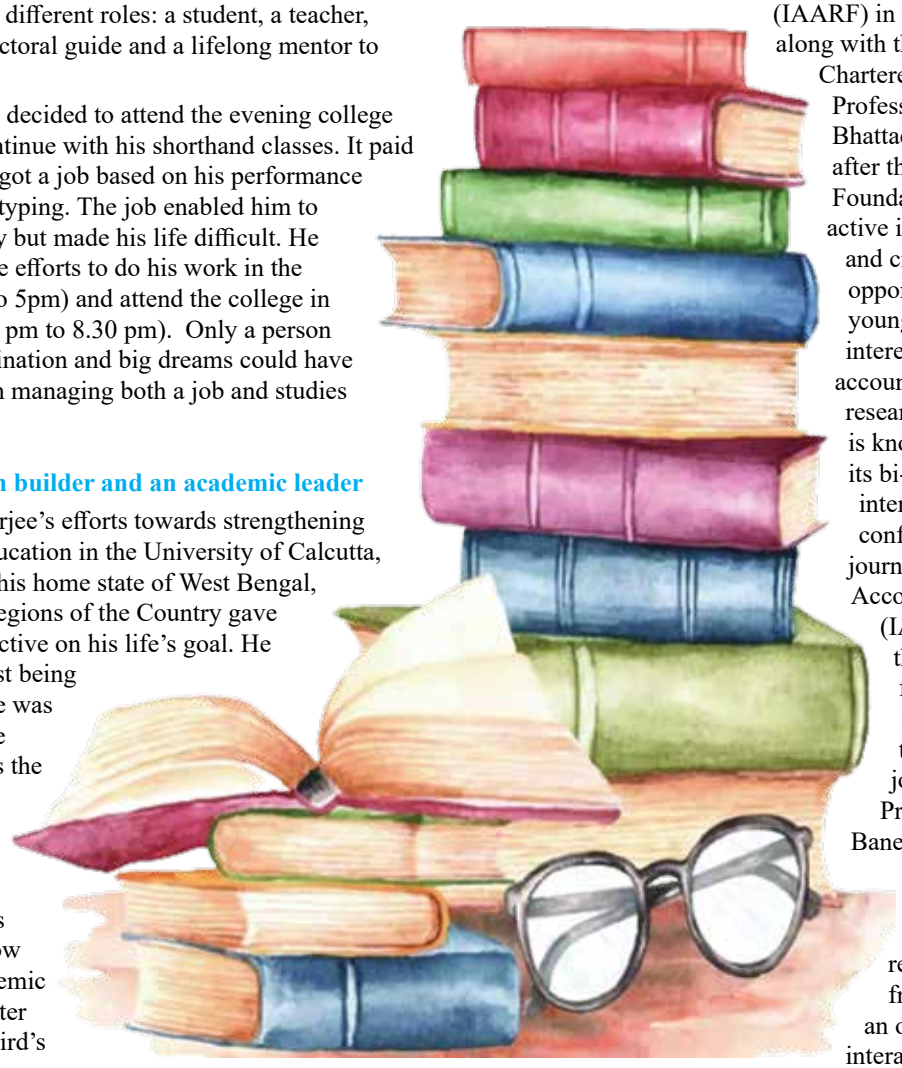
He consciously decided to attend the evening college so that he can continue with his shorthand classes. It paid dividend too. He got a job based on his performance in shorthand and typing. The job enabled him to support his family but made his life difficult. He had to put in more efforts to do his work in the daytime (10 am to 5pm) and attend the college in the evening (5.30 pm to 8.30 pm). Only a person with high determination and big dreams could have put such efforts in managing both a job and studies successfully.

The Institution builder and an academic leader

Professor Banerjee's efforts towards strengthening the commerce education in the University of Calcutta, other colleges in his home state of West Bengal, and in the other regions of the Country gave a different perspective on his life's goal. He was not happy just being a good teacher, he was keen to contribute and work towards the development of others: students and teachers of commerce. Several initiatives taken by him throw light on his academic leadership. Chapter 6 which gives a bird's eye view on various initiatives taken towards strengthening the commerce education in India also be treated as an important note for any academic person for blending personal and institutional development.

Efforts made towards getting the financial support from the UGC for the Department for Special Assistance (DSA) initially, and then for the Centre of Advanced Study (CAS) elaborately show the commitment and dedication of Professor Banerjee and his team in creating and strengthening the research environment in the University. It is worth mentioning that the faculty members of the department of commerce undertook research in some of the important accounting and governance issues under the mentorship of Professor Banerjee. Such efforts of the entire team from the department of Commerce were appreciated and recognized by the Vice-Chancellor of the University of Calcutta and other senior commerce professors in the other parts of the country.

Professor Banerjee played a pivotal role in establishing the Indian Accounting Association Research Foundation (IAARF) in the year 1990 along with the renowned Chartered Accountant, Professor Sukumar Bhattacharya. Even after thirty years, the Foundation is still active in strengthening and creating research opportunities for young researchers interested in accounting related research. IAARF is known for its bi-annual international conference and the journal: the Indian Accounting Review (IAR). Through the research foundation (IAARF) and the research journal (IAR) Professor Banerjee and his team created a platform where accounting researchers from India got an opportunity to interact very closely with the accounting researchers from other countries. Several professors from the well-known universities of USA, Australia, UK and many other countries made it point to visit India during the international conference of the IAARF. Personally, for me, the IAARF's international conferences provided the opportunity to interact with Professor Banerjee very closely. The fact that I was just a faculty member of private institute (XIMB) did not stop him from interacting with me. He took the risk giving me the responsibility of chairing some sessions in each conference. I benefitted a



lot from such opportunities given by him. Over the years he started treating me as his mentee even though I was not from his university. Several young professors benefitted a lot from such mentorship by Professor Banerjee. The IAARF and the IAR are two important contributions of Professor Banerjee to the accounting fraternity of India. Professor Banerjee explains in detail the purpose and the activities of the foundation and the journal in his memoir.

Everyone works for their personal growth but only a few take the responsibility of developing the organisation and the people working in the organisation. Professor Banerjee demonstrated his ability to do both, and emerged as a true academic leader. I think he fits well with the Jack Welch's definition of leadership,"*Before you are a leader, success is all about growing yourself. When you become a leader, success is all about growing others*."

The family man

Professor Banerjee is not a just sincere and hardworking academician, but he is also a devoted family man. He very succinctly narrated the role of his family and friends in his journey of evolving as an academic par excellence. Professor Banerjee's respect for women was visible in the pages where he described his grandmother, mother, sisters, friend's mother, daughter –in-law and his wife Namita ji. He developed concern for people at the bottom of the pyramid observing his mother's attitude towards people in the neighborhood. Similarly Professor Banerjee lovingly remembers his sisters' love and affection for him. He travelled all over the country and world in the company of Namita ji. His active interaction with these wonderful women has been presented all through the book at the appropriate place without compromising the overall purpose of the memoir.

The lifelong learner

The memoir is replete with situations which show that Professor Banerjee as a lifelong learner. He used every opportunity to learn from one and all, right from his school days in Bangladesh to his current post retirement days. He learnt the relevance of Upanishads from his father; learned the art of taking care of others from his grandmother, mother and sisters. He picked up the skills of managing time from his friends. On the professional front, he remembered the contribution of his teachers from his school and college days. Three persons from whom he benefited immensely were Justice Durgadas Basu, Professor G D Roy, and Professor K. Mukerji. Professor Banerjee made extra effort in narrating passionately his interaction with Prof Roy who ultimately became his doctoral guide and co-traveller. His humility is the visible manifestation of his learning as stated in the well-known sloka: Vidya Dadati Vinayam

The traveller

The famous American Philosopher Ralph Waldo Emerson(1803-1882) said, "life is a journey, not a destination". It is apposite that the memoir of Professor Banerjee is named as "My Journey-Down the memory lane". Professor Banerjee's journey started when he shifted from Bangladesh to India. Most of his travels were for academic purposes: attending seminars, workshops, conferences and guest lectures. He met several students, research scholars, young teachers, and senior professors during the five decades of active professional life. He travelled like a friar (a monk who travels) to share knowledge and acquire knowledge.

He used the travels to interact and learn from some of the best minds of accounting: Professor Horngren, Professor Shyam Sunder, Professor Ali Peyvandi, Professor C M Lee, Professor C G Meredith, Professor R J Chambers, Professor S J Gray, Professor Zimmerman and several other professors. Those interactions nurtured him with great thoughts and ideas which he used to strengthen the accounting fraternity in India.

Despite visiting so many places and attending so many academic gatherings, meetings, and conferences several years back, Professor Banerjee takes the readers through the minute details of each meeting and interaction whether it was in India (Delhi, Hyderabad, Bangalore, Bhubaneswar, Jodhpur, Jaipur, Madras, Tirupati, Ajmer, Udaipur and many more) or in other parts of the world(Tokyo, Sydney, Singapore Toronto, Montreal, Vancouver, California, Washington, the list on). This reminds me of a quote of Benjamin Disraeli (1804-1881) the two times Prime Minister of the United Kingdom, "*like all great travellers, I have seen more than I remember, and remember more than I have seen*." It seems Professor Banerjee not only remembered all that he had seen and heard during his travels, but is equally comfortable in sharing with all.

There is something for everyone to extract and learn from the journey of Professor Banerjee: commitment, sincerity, empathy, honesty, excellence, camaraderie and concern for others. The memoir is an inspirational journey of a teacher with a message not to get disheartened with personal failures and professional setbacks.

I will end this short note on Professor Banerjee's journey with the last two lines of his memoir:

I have only covered the ocean
While whole sky remains unexplored.

Reviewed by

Dr. D V Ramana
Sr. Professor of Accounting
Xavier Institute of Management
Bhubaneswar
professorramana@gmail.com

DIGITAL TRANSFORMATION - INTERPLAY OF STRATEGIES AND TECHNOLOGIES FOR CUSTOMERS' DELIGHT IN BANKING INDUSTRY

CMA (Dr.) Paritosh Basu
Senior Professor
NMIMS School of Business Management
Mumbai
paritosh.basu@sbm.nmims.edu

Introduction

In the present Industry 4.0 era, almost all large business entities across industry sectors have embarked upon the journey of digital transformation. They have reinforced, further automated and weaponised their operating and financial policies, processes, and ICT systems with the help of technologies to stay ahead of and/or relevant with competitive advantages. Micro, small, and medium entities are also gradually joining them in this journey. Many startups are helping these entities with digital solutions built with 'innoventive' applications of eight deep digital technologies.

Many of such solutions, aka strategically designed digital weapons, are of 'destruptive' and 'bizruptive' nature. The former means destructively disruptive solutions. These have either destroyed certain conventional methodologies for manufacturing, marketing, and supply chain operations. or replaced traditional products by combining many functional capabilities in one device. For example, robotic process automation has brought in a new era of man-machine collaboration and smart phones have almost killed traditional/amateur cameras and torches. Bizruptive solutions are unique strategy driven innovations for P2P, B2C and B2B networking, as well as time and cost-efficient processes for service deliveries with safety, speed and quality. Case in point is Ola and Uber completely redefining Meru's taxi hailing services and helped riders by adding a digital money wallet to their App.

Image Source:
https://www.simplilearn.com/steps-to-digital-transformation-in-banking-article

Objective

This article aims at appreciating the process through which organisations can fruitfully embark on a digital transformation journey and implement specifically crafted business strategies to attain sustainable competitive advantages. Its objective is also to narrate how the interplay takes place between business strategies and digital technologies. CXOs and solution designers would be able to draw inferences from that interplay. This in turn would help selection and adoption of technologies. Therefore, another objective of this article is help achieving a perfect blended infusion of strategies and digital technologies for solving problems, creating new products with new business and revenue models. At the end the author would provide an illustrative list of use cases to convey ideas about how globally banks are achieving sustainable competitive advantages through digital transformation of their business processes and designing new digital technology-based products for more revenue and profit.

Strategy Revisited

It will be useful at the outset to revisit the orthodox definition of strategy, which originates from the word stratagem. According to the Oxford Dictionary stratagem means, *"A plan or scheme, especially the one used to outwit an opponent or achieve an end.*" And strategy "*is a plan of action designed to achieve a long-term overall gain ... the art of planning and directing overall military operations and movements in a war time*.' These definitions import the essence of battlefield and are equally relevant for industry trade and commerce because every industry sector is a battlefield, and every player therein wants to outwit the other by their strategic initiatives. Banking institutions are no exception to these.

A synthesis of definitions of 'business strategy', as articulated by learned academicians and research scholars, can finally lead to the following definition of strategy – *"A strategy is an integrated set of choices for actions which positions a firm in an industry so as to generate superior financial returns over the long run."* Here 'integrated set of choices' denotes plans for activities to be initiated from internal environment and 'over the long run' signifies dynamics of competitive advantages for sustainable growth and prosperity. At this stage none should forget the axiomatic advice of Sun Tzu[1] which every strategist must always remember *"Strategy without tactics is a slow path to uncertain success. Tactics without strategy is the noise before defeat."* These words of advice are equally apt and relevant even after twenty-six centuries. A business organisation must not stop at framing only strategies, CXOs must always plan action steps or tactics for implementation of strategies for reaping desired results.

Strategic Digital Initiatives - Financial Sector

At national level several strategic initiatives of government of India (GoI) and apex service organisations have triggered paradigm shift from the way financial services sector operated until recently. Digital transformation initiatives like 'Unified Payment Interface'(UPI) and Immediate Payment Service (IMPS) have facilitated fast payments systems with millions of transactions being handled daily. Digital Payments Index (DPI) of Reserve bank of India has revealed substantial growth considering 100 as the base of March 2018. The index increased from 207.84 in March 2020 to 270.59 in March 2021. The year-on-year rate of increase is circa 30%. Volume of such transactions has touched USD 100 billion in the month of October 2021.

Such a rate of growth represents common people's approach to digital transformation and rapid adoption of instant user-friendly facilities. One of the strategic objectives behind implementation of digital solutions is to reduce printing and circulation of physical currencies and handling of cash by banks, processes for both of which are expensive. Such payments will also help reduce volume unaccounted transactions by business entities at retail level. This in turn will improve compliance of tax laws and higher revenue collection. Barendra Kumar Bhoi[2], former Head of the Monetary Policy Department of RBI said, *"....sea changes taking place all around – including the payment and settlement system, digital banking and mobile financial services - calls for constant attention of regulators to stay ahead of the curve to ensure safety, security and orderly developments amid the emerging and evolving risks".*

Digital technologies have helped attaining capabilities for instantaneous exchange of data/information and inter-platform collaboration, powered by the ability to process large databases. Such technological advancements have also made citizens' Aadhaar Number one of the key facilitators and risk-enablers for eKYC and transaction authentication. This has helped introducing the much-awaited process for large scale direct and instant transfers of billions of Rupees to bank accounts of beneficiaries under various welfare schemes of GoI without any leakage and malpractices. Aadhar Nos. serve as the key digital identity, common single link, and validator for the Cowin App. The later has positioned India at the forefront of handling vaccination to fight out Covid-19 Pandemic. This digital initiative has been commended by the whole world and may be emulated by certain nations.

Interplay of Strategy and Technology – Banking Sector

Banking industry is no exception to the above digital transformation (DT) processes. Worldwide organisations under financial services sector in general, and banking in particular, are forerunners in embarking DT journey. Banks of India, like in developed nations, have also encouraged young engineers and startups to participate in 'hackathons' for solving problems with unique digital solutions and/or developing unique service products and methods for delivery through handheld devices. This unique route of hackathon for crowdsourcing of solutions using digital technologies are increasingly being popular in other industry sectors also.

Certain startup entities have emerged on their way to be unicorns as an entirely new category of financial service providers, albeit not having banking licence. Those are called NeoBanks. Initially they started with payment banking services and have further progressed in partnership with traditional banks through digitally integrated processes to serve strategic objectives of both. Cases in point are Paytm, PhonePe, Google Pay, Bankbazaar, Lendingkart etc. Given the unique opportunity, certain business organisations have also converged like Airtel group starting the business of Airtel Bank and Airtel Money. Another unique example of this is formation of a new company by fifteen banks of India, comprising of ten, four and one banks from public, private, and foreign segments. The objective is to design, build, and run a Blockchain Platform for conducting trade finance transactions. The name of the company has been christened as 'Indian Banks' Blockchain Infrastructure Co. Pvt. Ltd. (IBBIC)[3].

Digital Technology and Transformation

When an organisation embarks on a transformation journey, embracing digital technologies, two of their main objectives are to outmanoeuvre competitors and attain sustainable competitive advantages or growth and prosperity. When 'trans-created' solutions are offered by an entity to solve customers' problems, meet their latent demands, and/or simplify operating processes, that business entity starts operating in a strategically created 'blue ocean' market space in that traditional sector. Innovative applications of digital technologies help them to implement the strategic plan and enjoy first mover's advantages. A few of such examples have briefly been referred in a subsequent segment.

Such interplays of strategies and technologies can be termed as 'innovention', which is a combination of three tasks. viz., innovation, invention, and creation driven by distinctively formulated strategies. The objective is to generate and share values. Here value also includes value for time, quality, greener technology, and minimised risks, in addition to additions to organisations' profit measurable in monetary terms. The phrase 'trans-created' means creation of a new versatile product and/or related business model transforming a traditional one run by legacy systems.

The customers perhaps were long waiting for such transcreations because from their individualistic perspective the new one is simpler, cost and time efficient, and risk-enabled while being used on the move. An example of this is money transfer from one phone number to another, linked to their respective bank accounts, without none opening Apps of banks for net banking. The latter App is by itself a digital solution and now trans-created by others for application through a smartphone, without being dictated by the bank.

Interplay of Strategy and Digital Technology for Banks

The parametric elements for formulation of strategies by banks are customer centricity payment facilitators and infrastructure, demand side factors, supply-side factors, and payment/collection performance. Performance metrics are used as an indicative measure of business value creation from the digital technology initiatives. According to Bharadwaj et.al.[4], the emerging idea on digital business strategies may be categorized under four major groups viz, scope, scale, agility, and sources of value creation. These would be the influencing factors for scoping digital strategies for those business entities which want to leverage digital technologies for value creation by integration of operating business processes. Banking institution would have to leverage external networks, including social media of customers and digital eco-systems created by them to innovate the scale and speed of digital strategy.

Research scholars Chanias and Hess in their seminal work[5] concluded that *"Digital transformation strategies are predominantly shaped by a diversity of emergent strategizing activities of separate organizational subcommunities through a bottom-up process and prior to the initiation of a holistic digital transformation strategy by top management. As a result, top management's deliberate strategies seek to accomplish the subsequent alignment of pre-existing emergent strategy contents with their intentions and to simultaneously increase the share of deliberate contents."* These two researchers have graphically explained the process of interplay of business strategy formulation and technology through the following diagram.

Figure 1. The activity-based process model (adapted from Henfridsson and Lind (2014)).

Source: *As stated under serial No. 5 of Bibliography and Webliography*

The triggering event for the entire process of interplay between strategy and digital technologies is identification of the emergent need(s), problem(s) and risks of customers, solution for which was a long persisting latent demand of governmental and/or societal ecosystem. Such a process of identifying an opportunity for an entirely new business and revenue model can also be prompted by digital transformation while business strategies are infused into technology and vice versa. The author in one of his previous articles under this Column has introduced 'Physical-Digital-Physical Loop' (PDP Loop).

A business entity generates loads of data while conducting transactions at the physical marketplace. Particularly a bank generates billions of transactional data conducted with millions of customers. Such data can further be collated for transaction types, time duration, repeats for errors, geographical regions, age group, gender, range values, language, time of the day, etc. once captured. Cognitive tools from the stables of Artificial Intelligence, Machine Learning and Big Data Analytics, can now be used for further processing of such data. When done, the processed information can enable CXOs to draw many inferences in the context of business that has been done and/or can be done. Further reflection on such information can trigger innovative thoughts to craft out new business designs that can be offered to customers through digital solutions, mode, and media. These can then be taken to the physical customers' marketplace for implementation and revenue generation. This is called the PDP Loop. Therefore, the process of interplay starts even before formulation of strategy and/or while formulating the same.

Strategic DT Initiatives by Banks

DT of business processes and strategic initiatives for crafting new products in the value chain of banking services, and their deliveries, if need be, through digitally driven channels, starts with articulating and aligning of 'Digital Vision and Mission' with its 'Digital Technology Strategy.' The next step is to leverage digital technologies to restructure, reform, automate and weaponise operations for accomplishing differentiated competitive strength. For this a bank has to master several technologies, viz., AI, ML and Big Data Analytics, Blockchain, RPA, AR & VR to help risk-enabled performance management. There would be many uses of Application Program Interfaces (APIs) for network building. The following is an illustrative list of as some of the unique applications of digital technologies by banks around the world in search of excellence in service deliveries and attaining stakeholders' delight in both tangible and intangible terms:

- **Artificial Intelligence, Machine Learning, Data Analytics and RPA**
  - Designing Electronic Virtual Assistants (EVA) and online Chatbots to help customers for online banking, using net banking and mobile banking Apps.
  - Robotic Process Automation (RPA) of routine mundane back-office activities, accounting, generating MIS for monitoring of business activities.
  - Conducting due diligence by using bigdata analytics tools for analysing randomly accessed documents and information before onboarding individual and

corporate customers.

- Analysing day-to-day transactions of both individual and corporate borrowers' Loan Accounts to predict whether a customer is prone to fail in timely repayment of instalments and payment of interest.
- Advising staff members of banks while servicing customers so that in turn they can advise customers on an online real-time basis for various service products, including wealth management and investments, sanction retail loans, etc.
- Designing and deploying robots and humanoids for conversing with customers covering many banking related advisory services, e. g., wealth management investment planning, selling of fee-based products like MF Funds, Demat Accounts, Insurance Policies, etc.
- Connecting and coordinating with customers' virtual assistants or chatbots, e. g., Amazon's Alexa and Apple's Siri with the bank's own Chatbots for taking instructions. The primary objective for this is to enable customers to give verbal instructions for banking transactions which in turn can be relayed to the banks EVA for execution.
- Creating a digital platform, powered by AI, ML and Data Analytics tools, which can enable customers of MSME sector to analyse their own transactions and perform risk scenario modelling. The customers would be able access that platform andcreate their respective risk profiles in terms of probability of occurrence and value at risk that may exist in their respective entities.
- Designing and deploying agile software tools as antidotes for cyberattacks and spawning of malwares. These would help banks remain ever vigilant and fight out attacks to ensure privacy safety and security of customers' data, and protecting digital assets of the bank.

Application Programme Interface (API)

An API is a software tool that can establish links with a bank's customer centric operating system with certain facilities provided by social media platforms, e. g. Messenger Service of Facebook through respective customers' smart phones. A customer can use the said messenger service for instructing banks for conducting payment transactions.

Immersive Technologies – Augmented Reality and Virtual Reality

- Designing systems and process for conducting online video KYC of customers before onboarding of new customers.

Blockchain Technology Platforms

- End to end management of its own borrowing instruments like Bonds, Debentures, etc. while raising funds from financial markets for its own purposes.
- Management and safe keeping of soft copies of customers documents and credentials, loan agreements, title deeds for tangible and intangible assets, etc.

The above applications have been identified through the author's study own research and an ongoing research-based work in which the author is also a participant. Readers may also note while many of these applications are already in use, others are in varying stages of being developed, tested, and implemented.

Conclusion

The subject matter of this article is one of wide spectrum relevance and should have been narrated in much more details. Given the limited space under this Column the author has made efforts to briefly narrate how the interplay of business strategies and digital technologies can help CXOs and digital solution designers to adopt the process of digital transformation, design digital solutions for businesses problems and create new products with new business and service models. The author would consider that the work has received a bit of success if readers and new generation entrepreneurs feel inquisitive to take a deep dive into the subject and become excited for contributing to India's successful journey to the digital world.

Note: The author acknowledges contributions of Prof. (Dr.) Deepankar Roy of National Institute of Bank Management, Pune for this article.

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PERSONAL FINANCIAL PLANNING: PERCEPTIONAL ANALYSIS

Abstract

Personal financial planning (PFP) refers to the management of the finances of an individual, in order to achieve financial goals and security. Present paper aimed to study perception about awareness and knowledge of PFP of salary earners on the basis of demographic variables such as gender, age, education and level of income. Primary data and suitable statistical techniques have been applied to draw findings. The result of the study suggests that approximately forty percent respondents have no idea about PFP, even though 45% respondents don't consult to professionals for their financial decision. In addition to that majority of the respondents do not keep the records of financial transaction. Because of this, people may fail to take better and efficient financial decisions therefore there is a need to create awareness and literary programmes about personal financial planning.

Dr. Shivkumar L. Biradar
Assistant Professor
Hirachand Nemchand College of Commerce
Solapur
shiv21biradar@gmail.com

Hibare Rima Balkrushna
Research Student
DAV Velankar College of Commerce
Solapur
hibarerima@gmail.com

I. Introduction:

Finance is an essential part of everyone's life. Planning refers to doing something for the future in a systematic way. Personal finance refers to management of money and financial decisions for a person or family, including income generation, spending, saving, investment, protection and retirement planning. It includes procurement, utilization of funds, efficient planning and controlling of the financial affairs, budgeting, financial forecasting, cash management, credit administration, investment analysis, and fund management and so on. In short it is a comprehensive exercise. A broad financial plan can develop the quality of life and increase satisfaction by reducing uncertainty about future needs and resources. It helps individual to determine the past performance, predict future performance, and assess the capability of generating future cash flows. Nowadays, Knowledge about PFP and other related aspects may not be adequate among people. People must understand the procedure of financial planning simultaneously with its benefits so as to get rewards in future. Financial awareness enables one to identify its financial structure; future needs and helps you determine your short and long-term goals.

II. Research Statement:

Does the level of behavior and perception about personal financial planning among salary earners is influenced by demographic variables such as gender, age, education and

income?

III. Research Objectives:

- To analyze level of awareness and knowledge about personal financial planning.
- To understand the salary earners' perception about personal financial planning.

IV. Literature Review:

Pamela M. LaBorde, Sandra Mottner and Pamela Whalley (2013), made an attempt to study students' perception of knowledge, actual knowledge and behavior regarding financial decisions. The purpose of the study was to understand what will be the structure and content of curriculum for college students that will meet needs during college with respect to variables such as gender, age, etc. It was found that perception of knowledge was greater than actual knowledge, but differed by type of financial knowledge. There are also significant differences between age groups and a wide gap is found in the level of knowledge by gender.

Puneet Bhushan, & Yajulu Medury (2014), study suggests that it is not only financial knowledge which shapes overall financial literacy of an individual but financial attitudes and financial behavior of the individual has a considerable effect on overall financial literacy of an individual. The study suggests that financial education programs should not only aim at increasing financial knowledge but also focus on developing positive financial behaviour and favourable financial attitudes among the people to improve the level of financial literacy.

Personal finance refers to management of money and financial decisions for a person or family, including income generation, spending, saving, investment, protection and retirement planning

V. Methodology of the Study:

This study employs descriptive research approach and has adopted survey method. This research paper is based on primary data. In order to address the research problem, a primary survey was conducted in line with demographic variables of the respondents in different parts of Solapur city in Maharashtra with a total sample size of 205 who are salary earner. Sample size (205) has been determined based on Online Rao software. Primary data has been collected using non random convenient and judgmental sampling techniques through structured questionnaire. Data obtained through survey were analyzed using suitable statistical tools and techniques such as mean, percentage, weighted average, rank correlation and testing of hypothesis (chi-square and t-test) have been applied to analyze the data.

VI. Data Analysis and Discussion:

A. Demographic Profile of the Respondents:

The study incorporates four basic demographic parameters to select its participants such as: gender; age, level of education and income. A brief description of demographic profile of the respondents is given in Table 1.

Table: 01

Demographic Profile of the Respondents

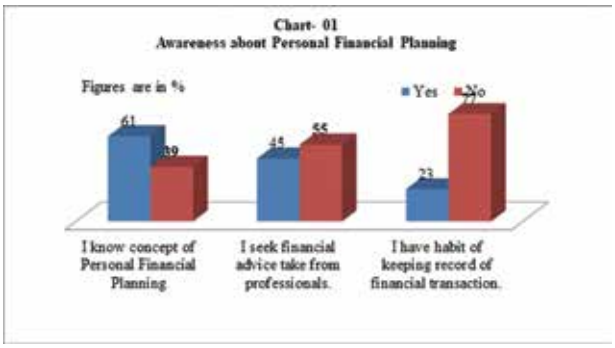
Demographic Variables	Classification	F	%	Cumulative %
Gender	Male	144	70	70
	Female	61	30	100
Age Group	20 to 35 Yrs.	50	24	24
	36 to 50 Yrs.	130	64	88
	Above 50 Yrs.	25	12	100
Level of Education	Up to HSC	21	10	10
	Graduate	70	34	44
	Post Graduate & above	114	56	100
Annual Income	Up to 03 Lakh	56	27	27
	03 to 05 Lakh	62	30	57
	Above 05 Lakh	87	43	100
Source: Primary Data				

The demographics under respondents comprised of gender, age, level of education and income. The frequency of each category, along with their percentage, is presented in Table 1. The male respondents constituted 70% while female

respondent was 30%. The majority belong to the age group of 36 to 50 years, which constituted 63%. The 27% samples respondents have their annual income up to 3 lakhs, 30% respondents are who have their annual income between 3 lakhs to 5 lakhs and 43% respondents have their income above 5 lakhs.

B. Awareness about PFP:

In order to understand awareness about the concept of PFP respondent have been ask some questions to reply, a brief description of the responses are presented in Chart 1. Based on the responses received it is observed that 61% respondents have an idea about the concept of PFP, while 39% respondents have no idea about PFP. This is because of financial illiteracy, lack of information available in their vernacular language. Out of 205 responses 45% respondents seek financial advice from professionals such as financial planner, lawyer and chartered accountant whereas 55% do not seek advice from professionals. In addition to that, only 23% respondents have habit of keeping record of their financial transaction and a significantly large portion respondent (77%) does not keep record of their financial transaction. In short approximately forty percent respondents have no idea about PFA, even though 45% respondents don't consult to professionals for their financial decision. In addition to that majority of the respondents have no habit to keep the records of financial transaction. Hence it is a sign of financial indiscipline and leads to financial uncertainty in future.



Testing of Hypothesis: (Chi-Square Test)

To test the level of dependency between practice of seeking financial advice from professional and habit of keeping record of financial transaction on the basis of demographic variables that is education and income, chi-square test ($\mathbf{X^2 = \sum (O-E)^2 / E}$) was used at 0.05 of level of significance($\alpha = 0.05$) . Where 'O' is observed frequency and 'E' is expected frequency.

Ho: Respondents behavior to seek financial advice from professionals is independent of age and income of the respondents.

Age	Income
$X^2 = 15.42$	$X^2 = 1.90$
D.F. = 2	D.F. = 2
$\alpha = 0.05$	$\alpha = 0.05$
Table value = 5.99	Table value = 5.99
Result: Ho Rejected	Result: Ho Accepted

Interpretation of Result:

Since calculated value (15.42) is greater than table value (5.99), so the null hypothesis is rejected, and can be concluded that respondents' behavior to seek financial advice from professionals is dependent of age group of the respondents. It means approach towards seeking financial advice from professionals is significantly associated with age of the respondents. Majority (64%) of respondents of 36 to 50 years age group seek financial advice from professionals whereas only 24% respondents of above 50 years age seek financial advice from professionals.

Since calculated value (1.90) is less than table value (5.99), so the null hypothesis cannot be rejected, it means it is accepted and can be concluded that respondents is taking financial advice from professionals is independent of income group of the respondents. It means seeking financial advice from professionals is differing irrespective of their income of the respondents.

Ho: Habit of keeping record of financial transaction is independent of level of education and income of the respondents.

Level of education	Income
$X^2 = 4.70$	$X^2 = 2.61$
D.F. = 2	D.F. = 2
$\alpha = 0.05$	$\alpha = 0.05$
Table value = 5.99	Table value = 5.99
Result: Ho Accepted	Result: Ho Accepted

Interpretation of Result:

Since calculated value (4.70) is less than table value (5.99), so the null hypothesis is accepted, and concluded that respondents habit of keeping record of financial transaction is independent of level of education of the respondents. It means respondents' habit of keeping record of financial transaction is not associated with their as per level of education of the respondents.

Since calculated value (2.61) is less than table value (5.99), so the null hypothesis is accepted, and concluded that respondents habit of keeping record of financial transaction is independent of income of the respondents. It means respondents' habit of keeping record of financial transaction is differing irrespective of their income.

C. Analysis of Perception about PFP:

1. Weighted Average of Responses about Perception of PFP:

To understand respondents' views about perception of PFP respondent's responses were recorded in five point scale and analyzed by using weighted average method. Table 2, represents weighted average and average responses about given statements. Statements are framed to understand perception and knowledge about PFP. All weighted average are in between 1.18 and 2.6 implies average responses are either strongly agree or agree to the statement.

Table: 2

Weighted Average of Responses about Perception of PFP

Sr. No.	Statements	Weighted Average	Average Responses
1	PFP is important in everyone's life for secure financial future.	1.18	Strongly Agree
2	Personal finance is refers to management of money and financial decisions for a person or family, including income generation, spending, saving, investment, protection and retirement planning.	1.46	Strongly Agree
3	Everyone must have pre defined financial goals in their life for secure financial today and tomorrow.	1.49	Strongly Agree
4	Everyone knows the importance and concept of PFP but it is quite difficult to apply in practice.	2.31	Agree
5	Everyone should consider macroeconomic variables such as inflation, rate of interest etc. while planning their personal finance.	2.01	Agree
6	Everyone must control their expenses to sustain savings according to fulfill their financial goals.	1.67	Agree
7	Professional financial advisor/ planner will make better financial planning for you as compared to yourself.	2.6	Neither Agree Nor Disagree
8	There is need to enhance level of awareness and knowledge about PFP among earning individuals.	1.63	Agree

Source: Primary Data

2. Testing of Hypothesis: (t-test)

T-statistics has been used to test the significance of the obtained correlation coefficient of weighted average calculated based on demographic variables of the respondents such as gender, age, level of education, income etc. The focus is being made on weighted average of the responses on the basis demographic variables along with the difference of these averages. Table 03; represent correlation coefficient and t-statistics of correlation coefficient. T-test $\{t = R \sqrt{n-2} / 1 - R^2\}$ has been used to test the significance of the obtained correlation coefficient.

Table: 03

Correlation Between Weighted Averages of Responses about Perception of PFP on the basis of demographic variables and t-statistic of Correlation Coefficient

H_o = Two sets of weighted averages of perception about PFP are not significantly associated in population and observed value of 'R' differs from zero by chance.

Demographic Variables	R Value	DF	Calculated Value- t	Table Value	Result	Interpretation

Gender (M-F)	0.98	6	3.09	2.44	Ho: Rejected	The calculated value of 't' at 5% of significance is greater than table value (2.44), hence hypothesis are rejected and concluded that association in two sets of weighted average is significant in population.
Age groups (1-2)	0.97	6	9.74	2.44	Ho: Rejected	
(1-3)	0.96	6	9.53	2.44		
(2-3)	0.98	6	14.88	2.44		
Education (1-2)	0.96	6	8.89	2.44	Ho: Rejected	
(1-3)	0.92	6	06	2.44		
(2-3)	0.9	6	5.2	2.44		
Income (1-2)	0.98	6	12.82	2.44	Ho: Rejected	
(1-3)	0.91	6	5.71	2.44		
(2-3)	0.9	6	5.04	2.44		
Source: Primary Data						

Since the calculated value 't' at 5% level of significance for 6 degree of freedom is greater than table value, so hypothesis is rejected, and concluded that there is significant association exist between weighted averages calculated based on all demographic variables of the respondents. In simple word perception about PFP is similar irrespective of the demographic variables of the respondents.

VI. Conclusion:

Personal financial planning is essential for every one for safe and sound financial tomorrow in India where provision for social security is declining day by day. The present paper studied the perception about level of awareness and knowledge about PFP. It has been observed that 39% respondents have no awareness PFP; it is because of financial illiteracy and lack of information available in their vernacular language. It is found that approximately 45% respondents seek financial advice from professionals and 77% does not have a habit to keep record of their financial transaction. Approach towards seeking financial advice from professionals is significantly dependent of age of the respondents and independent of income of the respondents. Respondent's habit of keeping record of financial transaction is independent of level of education and income. It is also observed that perceptions about PFP are significantly associated in population irrespective of their demographic variables of the respondents. So there is need to create awareness and conduct literary programmes to create good understanding about PFP among every individual's life irrespective of demographic variables. MA

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BANKING FRAUD AND ITS PREVENTIVE AND DETECTIVE MECHANISM IN INDIAN PERSPECTIVE

Abstract

The banking Sector plays a very crucial role in economic development of any country. Since last few years Indian banking sector has witnessed very huge amount of frauds and this rapid increase in bank frauds become more problematic because it affects the public at large. The objective of this study is to analyze the trend of Indian banking sector frauds from FY 2017-18 to FY 2020-21 sector and operational area wise. Further an attempt is made to understand some fraud preventive and detective measures like Early Warning Signals, Red Flagged Accounts and proposed Forensic Accounting and Investigation Standards in current scenario. It is found that bank frauds reported from Indian public sector banks in FY 2020-21 is less as compared to FY 2019-20. Some key measures for prevention of bank frauds are also suggested at the end of the study.

Shivam Agnihotri
ICSSR-Doctoral Fellow
Dept of Accountancy & Law
Dayalbagh Educational Institute (Deemed University)
Agra
cashivamagnihotri@gmail.com

Pramod Kumar
Head & Dean
Faculty of Commerce
Dayalbagh Educational Institute (Deemed University)
Agra
pra19363@gmail.com

INTRODUCTION

The Banking sector of country through its financial services plays a very crucial role in economic development. The Fraud is defined as an individual or organization's act to gain something through unethical means. Today's scenario, the banking fraud is not limited to money but has broad scope which includes any type of benefit in the form of money, funds, credits, securities, assets etc obtained from banks by willful suppression of facts or on the basis of false and fabricated documents. As per section 17 of the Indian Contract Act 1872, the term 'fraud' can be summarize as "fraud is an act or omission with intention to cause wrongful gain to one person and wrongful loss to other, either by way of concealment of facts or otherwise." Reserve Bank of India (RBI) is suggested the following definition of fraud in electronic banking context.

"A deliberate act of omission or commission by any person carried out in the course of a banking transaction or in the books of accounts maintained manually or computer system in banks, resulting into wrongful gain to any person for a temporary period or otherwise, with or without any monetary loss to the bank."

For banking frauds, it can be derived that banking fraud means, any person transacts with bank with intention to get wrongful gain by concealment of facts or otherwise like taking loan from bank on the basis of documents of other person etc. The banking frauds sometimes are committed by stakeholder who transacts with bank independently and the banks internal employees sometimes are also involved in the banking frauds alongwith stakeholders or independently. As banks are essential part of Indian economy and dealing with public's money, therefore the main responsibility for preventing frauds lies

on banks themselves and banks are required to follow due care at the time of operations. As per RBI's annual report for Financial Year (FY) 2020-21, the time lag between the fraud committed and reported is 23 months, therefore it is clear that there is lack of frauds preventive mechanism in Indian banking system, and its detective mechanism works in delayed manner.

REVIEW OF LITERATURE

Sharma, Singh & Dhas (2020), The results of primary data collected from employees of State Bank of India (SBI), Bank of India (BOI) and Bank of Baroda (BOB) of Delhi-NCR region revealed that major frauds occurred from fake documents, forged cheques, manipulation of accounts and opening of fictitious accounts.

Narayana & Ariyanto (2020), views analysis from auditors clearly indicated that high investigative ability and experience of auditors are able to detect fraud easily. In same way higher red flags make better fraud detection.

Singal, Nagi & Goyal (2019), the Indian public sector is prone to fraud due to lack of internal control, vigilance system and integrity. It has found that use of management fraud prevention policy moves toward reduction in frauds. Latest audit standards are required to cater the need of preventive and detective fraudulent activities.

Ahmad (2019), the banking fraud is a combination of civil as well as criminal ingredients and adversely affects the bank, and impact the customers and society at large harmfully.

Vigneshwaran & Yokesh (2018), the frauds in Indian banking sector mainly occur due to lack of supervision of top management, lack of adequate tools to detect EWS of a fraud, lack of coordination and data sharing between different banks across the India. The reporting delay in legal procedure and various loopholes in the system are major reasons of frauds.

Hegazy & Kassen (2010), the external auditors stated that red flags are very helpful in detection of frauds. It was suggested that red flags with most likely occurrence should be identified so that auditor can able to focus specifically on red flags having chance of most occurrence.

OBJECTIVES OF STUDY

This study is conducted with the following two specific objectives.

1. To analyze the trend of banking frauds in Indian perspective sector-wise and operational area-wise from FY 2017-18 to 2020-21.
2. To understand the Early Warning Signals, Red Flagged Accounts concept and proposed Forensic Accounting and Investigation Standards as preventive and detective measure for banking frauds.

ANALYSIS OF BANKING SECTOR FRAUDS

Sector-wise Fraud Analysis

As far as number of fraud cases in Indian banking sector are concerned, the total 7365, 8703, 6793 and 5916 fraud cases are reported during FY 2020-21, 2019-20, 2018-19 and 2017-18 respectively. Data presented in figure 1 below clearly revealed that no. of fraud cases is reduced by 15% in FY 2020-21 as

Figure 1: *Sector/group wise no of frauds based on RBI data.*

these were reported 33% of total number of fraud cases in FY 2017-18 and in FY 2020-21, 50.4% of total fraud cases are reported from private sector banks. The total number of fraud cases in banking sector are reduced by 15% in FY 2020-21, this reduction either may be for improvement of fraud risk management system of public sector banks or due to low operational time of banks for corona pandemic lockdown or otherwise during FY 2020-21.

The total fraud amount reported during FY 2020-21 is reduced by 25% as compared to previous FY 2019-20. As reflected in figure 2 below, it is good sign for public sector banks as fraud amount of public sector banks is reduced by 45% in FY 2020-21 as compared to FY 2019-20's fraud amount. It is again very problematic situation to private sector banks because the total fraud amount is reduced by 25% and in private sector banks instead of reduction, the fraud amount reported in FY 2020-21 is increased by 35%. Although, number of fraud cases reported reduced in foreign banks but fraud amount is increased during last four FYs and in FY 2020-21, it is increased rapidly by 240% as compare to fraud amount of FY 2019-20 in foreign banks.

Figure 2: *Value of frauds in Crores based on RBI data.*

Overall, it can be concluded that public sector banks are in good position as compare to other sectors like private sector, foreign banks and other banks. It is true that in FY 2019-20, the fraud amount reported in public sector is very high but it was not from all public sector banks rather it was reported high due to SBI and Punjab National Bank (PNB) as total fraud of Rs. 148224 crores in public sector banks reported in FY 2019-20, Rs. 78072 crores were reported in SBI and Rs.

39733 crores were reported in PNB.

Fraud Analysis on the Basis of Area of Operations

As per table 1 below, it is clear that 80% of total fraud cases are reported from advances and cards/internet related operational areas. In these two operational areas, highest fraud cases till ever were reported in FY 2019-20.

Almost from all operational areas, number of fraud cases are reduced in FY 2020-21. The highest reduction in fraud cases in term of percentage by 50% is reported from foreign exchange transaction in FY 2020-21. The overall reduction in fraud cases is reported by 15%, whereas the fraud related cases are reduced by 5% from cards/internet. It is good indication from advance area, because 25% of reduction is found in FY 2020-21 as compared to 15% of overall reduction.

Table 1: *Number of fraud cases on the basis of area of operation in absolute number*

Operational Area	2017-18	2018-19	2019-20	2020-21
Advances	2525	3606	4608	3501
Off-Balance Sheet Items	20	33	34	23
Foreign Exchange Trans.	9	13	8	4
Cards/ Internet	2059	1866	2677	2545
Deposits	697	596	530	504
Cash	218	274	371	329
Cheques/ Demand Drafts	207	189	201	163
Others	181	224	274	294
Total	**5916**	**6798**	**8703**	**7363**

In FY 2020-21, approximate 99% of total fraud amount is reported in advance related matters. From last four FYs the fraud amount related to off-balance sheet items is declined very progressively and in FY 2020-21 it is declined by 76%. The fraud amount related to Cheques/DDs increased by 117% in FY 2020-21. After advances and off-balance sheet items, fraud amount related to deposits is found at 3rd place.

Table 2: *Fraud amount involved on the basis of operational areas in crores*

Area	2017-18	2018-19	2019-20	2020-21
Advances	22558	64548	181942	137023
Off-Balance Sheet Items	16288	5537	2245	535
Foreign Exchange Trans.	1426	595	54	129
Card/Internet	109	71	129	119
Deposits	462	148	616	434
Cash	40	56	63	39
Cheques/ Demand Drafts	34	34	39	85
Others	249	452	180	58
Total	**41167**	**71543**	**185468**	**138422**

However, 34% of total fraud cases are from cards/internet but amount of fraud cases involved in cards/internet is too short and is only .08% of total fraud amount. The fraud cases from foreign exchange transactions are declined by 8 to 4 i.e., by 50%, but it is troublesome that inversely the fraud amount from foreign exchange transactions is increased by 138% in FY 2020-21.

Fraud Prevention and Detection Mechanism

Early Warning Signals and Red Flagged Accounts

EWS identifies something bad is likely to be happened. The RBI through Master Directions on Frauds dated 1st July 2016 as updated on 3rd July 2017 issued a list of EWSs and these EWSs should be kept into mind in the bank employees and authorities at the time of entering into transactions with stakeholders. Red flagged Accounts is one when a suspicious and fraudulent activity is traced by the presence of one or more EWSs. EWS and RFA become more efficient fraud preventive tool when one or more EWSs are identified before sanctioning the loan or any other fraudulent transaction etc. If once the fraudulent activities are carried out and any type of EWS is found at later stage, then it indicates the bank to take detective measures and move to alert mode by finding out the reasons and causes of fraudulent activities. The RBI suggested total 43 EWSs, out of which default of bank and statutory dues, raid of tax authorities etc, loan funds are utilised for repayment of earlier bank loan, same collateral charges to other bank and heavy cash withdraw from loan account etc are some key important EWSs.

Forensic Accounting and Investigation Standards

The Digital Accounting Standard Board of The Institute of Chartered Accountants of India in line with strengthen the fraud detective mechanism introduced exposure draft of 20 Forensic Accounting and Investigation Standards (FAIS) on different dates from Sept 2020 to Dec 2020 for comments of various stakeholders. These FAISs are mainly classified into 5 series and 20 FAISs as introduced are belonged to first 4 series. Till now number of standard is proposed on 5th series which deals with Standards on Quality Control. These FAISs

Red flagged Accounts is one when a suspicious and fraudulent activity is traced by the presence of one or more EWSs

as reflected in table 3 below, once applicable will become very helpful to professionals in Forensic Accounting and Investigation (FAI) because these FAISs are principle based, rather than rule based.

Table 3: *List of Proposed Forensic Accounting and Investigation Standards*

STANDARDS ON KEY CONCEPTS	STDs. ON PRACTICE MANAGEMENT
110: Understanding the Nature of Engagement	**210:** Engagement Objectives
120: Understanding Fraud Risk	**220:** Engagement Acceptance and Appointment
130: Laws and Regulations	**230:** Using the Work of an expert
140: Applying Hypotheses	**240:** Engaging with Agencies
	250: Communication with Stakeholders
STDs. ON EXECUTING FAI ASSIGNMENT	**STDs. ON SPECIALISED AREA**
310: Planning the Assignment	**510:** Applying Data Analysis
320: Evidence and Documentation	**520:** Evidence Discovery in Digital Domain
330: Conducting Work Procedures	**530:** Loans and Borrowings
340: Conducting Interviews	**540:** Related and Connected Parties
350: Review and Supervision	
360: Reporting Results	
370: Testifying Before Competent Authority	

CONCLUSION

The total amount involved in bank frauds is declined by 25% in FY 2020-21. Currently, private banking sector is facing more problematic situation as fraud amount is increased by 35%. Same as private sector, the fraud amount reported from foreign banks is also increased by 240% in FY 2020-21. Approximate 99% of total fraud amount is reported from advance related matters. Therefore, it is highly required to take special initiatives for strengthening loan sanctioning system in the banks by providing the training to bank staff for identifying forged documents of loanee and collateral security etc. Strong preventive measures, training and awareness should be provided about EWSs and RFAs. The bank should conduct concurrent audit on regular intervals and if needed the bank should also conduct forensic audit. The third parties like external/statutory audit firm, credit Rating Agencies etc should become more credible towards their own responsibilities by providing adequate information at appropriate time. The proposed FAISs should immediately adopted after availability of final version without waiting for any type of mandatory or legal requirement to follow them. MA

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EASY WAY OF COST ACCOUNTING FOR MSMEs

Abstract

Today MSME sector has to compete with large-scale sector units that have an edge over the former with regard to brand image, quality control, size transaction volume, strong selling and distribution network, professional skill, full-fledged cost accounting department, advanced ERP/ SAP systems, etc. In such circumstances, a proper cost accounting system can be very useful for MSMEs for survival. This article provides an in-site of easy way of cost accounting for MSMEs at minimum cost. Integrating cost accounting with financial accounting with the help of cost codes, can yield maximum results without incurring much cost.

INTRODUCTION

The market scenario is predominantly in favour of customers today. Everyone is in search of better quality products at a cheaper price. Gone are the days when customers used to run behind some popular brands at whatever price. Now, there is no scarcity of options for any product. It is an indication of stiff competition and narrow margins. In such a situation, working without a proper cost accounting system is like walking in the dark. Identifying a proper cost accounting system for an enterprise is again a typical problem.

Customer is the king today, as the market scenario is continuously emerging as under:

Large business groups have the advantage of brand image, quality control, size, transaction volume, strong selling, and distribution network, a herd of professionals, full-fledged cost accounting department, advanced ERP/ SAP systems, etc. Presently, there is no difference in indirect tax structure for small and large-scale units.

The only advantage of MSME is better control and administration of the business activities because of its small size.

For facilitating the small entrepreneurs in decision making, some kind of analytical tools/ systems are required. customized cost accounting can prove to be a panacea for MSMEs in the country for this purpose.

CMA Babu L. Gurjar
Practicing Cost Accountant
Insolvency Professional and Registered Valuer (SFA)
Jaipur
cmablgurjar@gmail.com

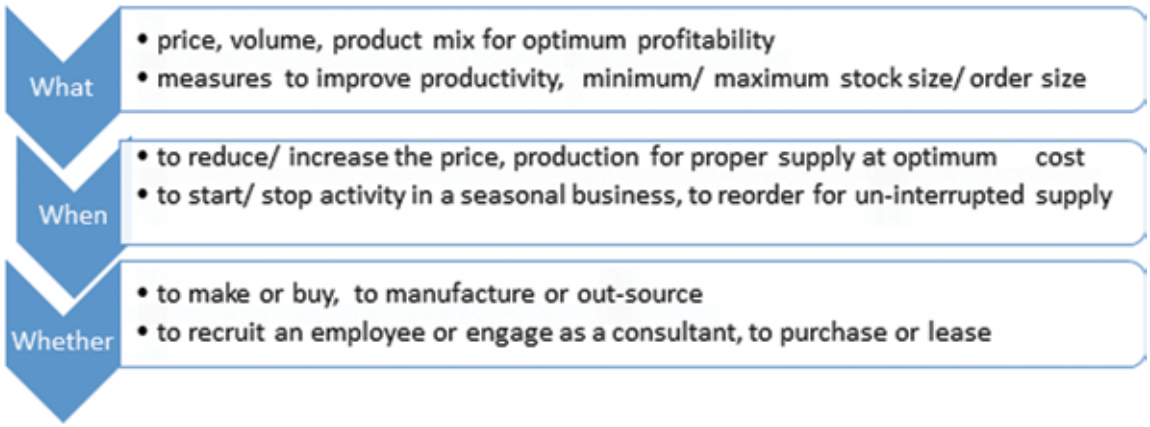
It is the need of the hour for the survival of MSMEs in the present-day competitive environment.

There is a general misperception that cost accounting is merely a summation of the cost of components which is considered to be an easy task. In fact, it is not so in reality and it needs a systematic approach to arrive at the accurate details and required data inputs for intelligent decision making. Small scale entrepreneurs generally pay least attention to this aspect and deprive themselves of the important tool for the day-to-day decision making.

Cost and management accounting plays a pivotal role for MSMEs and provides the entrepreneur the diagnosis for all problems and works like a CT Scan for doctors. Running a business enterprise in fact involves the process of taking numerous decisions at every stage. The secret of success of *Marwari* business groups from good olden days is a crude

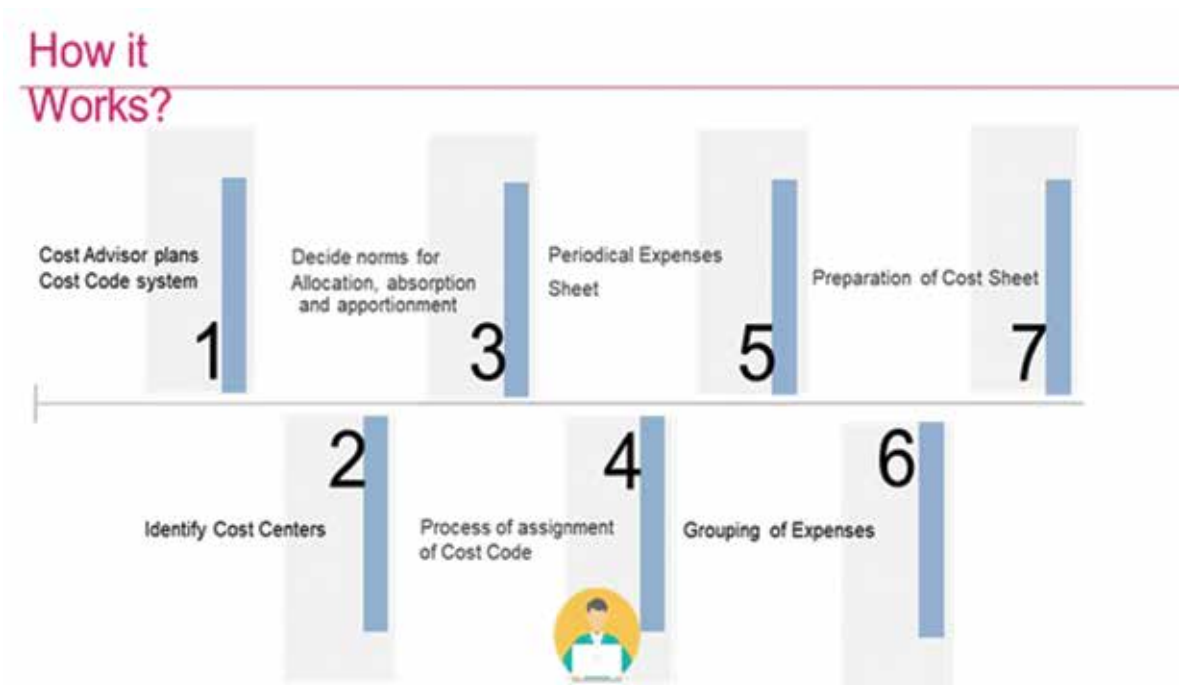
costing system termed as *Parata* system.

Cost and management accounting provides answers to all types of business questions, examples of which are as under:



NO EXTRA SETUP

Most of the MSME units cannot afford to have a full-fledged cost accounting department nor can afford the cost of the latest customized software like SAP. Therefore, within the limited resources of the promoters, the cost accounting system is required to be planned with the existing setup of the accounts department in consultation and supervision of a Practicing Cost Accountant, who may be retained as 'Cost Advisor' on a contractual basis.



MAGIC OF COST CODE

The Cost Advisor will plan the cost accounting system in consultation with the personnel of the accounts department, production engineers, and the software developer. A slight modification will be required in the existing accounting software of the concern for this purpose. We may continue with the existing accounting procedures with the only addition of a system of *cost code* for any voucher entry relating to the incurrence of expenses or consumption.

The cost code system works like a magic to provide necessary cost data in a computerized environment. The purpose of the introduction of a cost code is to identify the actual user of expenditure (cost element).

The system of cost code ensures that direct costs are generally assigned directly to a work order or production batch consisting of a specified number of units of product. Indirect costs, however, cannot be attributed to work order or production batch and are first allocated/ apportioned to cost centres and ultimately absorbed by the related units of production.

IDENTIFY COST CENTERS

Identification of cost centres is an important process and should be performed carefully with the help of the technical department/ shop floor management. It may be on the basis of a specific type of manufacturing process. Machines/ facilities installed at a commonplace performing identical process may be grouped together. Proper care is also required to be taken in the identification of various service cost centres differentiating the type of service provided. It should also be helpful for ascertaining the responsibility and budgetary control.

For example in an engineering unit the cost centres can be determined on the basis of identical facilities as under:

Production Cost Centres (indicative)

1.Shot blasting	2. Auto lathe-A	3. Auto lathe-B	4. CNC-A	5. CNC-B
6. CNC-C	7. Logo marking	8. Plating	9. Assembly	

Service Cost Centres (indicative)

1.Maintenance	2. Utilities	3. Quality Control	4. Stores
5. General Works	6. Administration	7. Selling & Distribution	

ALLOCATION, APPORTIONMENT AND ABSORPTION OF EXPENSES

During the process of entry of cost code, the concerned officials will follow the fundamental concepts of allocation, apportionment, and absorption of various cost elements asunder:

- Any cost element is either direct or indirect in nature i.e. identifiable/ relatable with reference to work order/ production batch or otherwise.
- Direct costs are generally assignable directly to a work order or production batch consisting of a specified number of units of product.
- Indirect costs, most popularly known as overheads, however, are not attributable to any specific work order or production batch.
- Therefore, the overheads incurred during a particular period are first allocated/ apportioned to cost centres and ultimately absorbed by the related units of production.
- Cost centres are either production cost centres or service cost centres.
- All the costs accumulated against a particular service cost centre are also reapportioned to the production cost centres
- Ultimately, accumulated costs are absorbed by production units manufactured/processed during the specified period.

THE PROCESS OF ASSIGNMENT OF COST CODE

- In the usual accounting/ issue/consumption vouchers, an extra column for cost code is added in this system. Wherever, any expenditure in the form of material, labour, or any other expenditure can be directly attributed to any work order (WO)/ production batch (PB) or capital project (CP) or research & development project (R&DP), then in the column meant for cost code in any type of voucher the cost code of the particular WO/ PB/ CP/R&DP may be mentioned.
- If the expenditure is not identifiable directly to any WO/ PB/CP/R&DP and used for consumption at the manufacturing site, then in the column meant for cost code in any type of voucher, the cost code of the consuming cost centre should be mentioned.
- If the voucher is prepared for an expenditure that is incurred not for immediate consumption but for storage, then the words "Not Applicable" (NA) may be mentioned in the cost code column. Likewise, for other vouchers not involving any element of cost, expenses or consumption there may be a standard inscription of the letters 'NA' in the column meant for cost code.

ITEM-WISE ASSIGNMENT OF COST CODES

1. Raw material:

Raw material cost includes the cost of purchase and incidental expenses such as freight, loading/ unloading charges, insurance, clearing charges, etc. Purchased item of raw material is generally not immediately issued for consumption but it is first sent to stores department for storage and subsequently issued for consumption through material requisition notes (MRN). Therefore, at the time of purchase, the letters NA are mentioned in the cost code column and at the time of issue for consumption the cost code of the particular WO/

PB/CP/R&DP/ cost centre is mentioned.

2. Stores, spares, stationery, etc.

Like raw material, items of stores, spares, stationery, etc. purchased are generally not immediately issued for consumption but are first sent to stores department for storage and subsequently issued for consumption. Therefore, at the time of purchase, the letters NA are mentioned in the cost code column and at the time of issue for consumption, the cost code of the particular WO/ PB/CP/R&DP/ cost centre is mentioned.

3. Salaries and wages

Generally, there is a customized software for payment of salaries and wages. Salaries/ wages paid for a particular work order or production batch, R&D project capital cost project and other cost centres can be easily ascertained. Accordingly, a specific amount can be loaded to the particular WO/ PB/CP/R&D/ cost centre during the month/ specified period.

4. Expenses having common factors for allocation

Electricity, insurance, depreciation, repairs & maintenance, canteen & welfare expenses, factory supervision, etc. can be apportioned periodically on various cost centres on the basis of suitable common factors such as working area, HP load, value of fixed assets, number of employees, etc. The word 'standard allocation' may be inserted in the voucher for these expenses against the column cost code.

For this purpose, the specific ratio of various cost centres is already fed into the software to allocate/ apportion the cost. Accordingly, periodical expenditure under such heads is allocated/ apportioned to the respective cost centres.

5. Other expenses

Other expenses incurred on specific cost centres are booked to those cost centres by mentioning the cost codes of the concerned cost centres.

EXPENSES TRIAL BALANCE

EXP.HEAD	BASIS	PRODUCTION					SERVICE						TOTAL
		1	2	3	4	5	MAINT.	UTILITIES	QC	STORE & GEN WORKS	ADMIN.	S&D	
RAW MATERIAL	MRN*												
WAGES	MPR**												
SALARIES	MPR**												
CHEMICAL & ACIDS	MRN*												
CONSUMABLES	MRN*												
TOOLS	MRN*												
GUAGES	MRN*												
DIESEL	MRN*												
POWER	HPR***												
LIGHTING	NO.POINTS												
INSURANCE	VALUE												
DEPRECIATION	VALUE												
POSTAGE & TELEPHONE	MRN*												
PRINTING .& STATIONERY	MRN*												
PACKING.EXP.	MRN*												
AUDIT FEE	ACTUAL												
LEGAL EXP.	ACTUAL												
ADVERTISEMENT	ACTUAL												
INTEREST & FINANCIAL EXPENSES	ACTUAL												
TOTAL													

6. Deferred Revenue Expenditure

That part of the expenditure that is to be debited for the year should be apportioned to respective cost centres on a suitable common factor. The remaining amount will continue to be part of the capital expenditure and will be reflected as an asset in the balance sheet.

PERIODICAL EXPENSES TRIAL BALANCE

After completion of primary accounts entries and ledger postings, a general trial balance is drawn by the accounts department to ensure error-free accounting. Since the proposed cost accounting system is fully integrated with the main accounting, periodical expenses trial balance is required to be drawn which will be nothing but head-wise bifurcation of the total expenditure into various WO/ PB/CP/R&D/ cost centres, tallying with the accounting trial balance. This is one aspect to ensure accuracy of the cost accounting system.

An indicative example of a "Periodical Expenses Trial Balance" is as under:

*MRN: Material Requisition Note
**MPR: Monthly Pay Roll
***HPR: Horse Power Rating

REAPPORTIONMENT OF MANUFACTURING OVERHEADS

In the process of the above said apportionment, indirect manufacturing expenses (overheads) are apportioned to two types of cost centres i.e. production and service cost centres. Now, the overheads of service cost centres are to be reapportioned with the help of repetitive processes to the production cost centres on the basis of specific common factors.

GROUPING OF EXPENSES

All expenses of the expenses trial balance may be grouped in the following categories:

1. Capital project cost
2. Research & development project cost
3. Direct cost allocated to work orders/ production batch
4. Manufacturing overhead cost (indirect expenses)
5. Administrative overheads
6. Selling & distribution overheads

PREPARATION OF COST SHEET

The periodical expenses trial balance

Cost and management accounting plays a pivotal role for MSMEs and provides the entrepreneur the diagnosis for all problems and works like a CT Scan for doctors

provides all the input data for the cost sheet in the required format which may be summarized as under:

- **Prime Cost:** Expenses relating to direct material, direct wages, and direct expenses accumulated under various work orders/ production batches of various production cost centres form part of the prime cost in the cost sheet.
- **Works cost.** Manufacturing overheads are to be added to the prime cost to arrive at the works cost. For this purpose, manufacturing overheads are to be absorbed by work orders/ production batches. Based on the records of each production cost centre, the periodical manufacturing overheads of concerned production cost centres should be absorbed by work orders/ production batches based on the production number/size/specifications. The unit works cost may be ascertained by dividing the cost of work order/production batch by the number of units.
- **Production Cost:** Administrative overheads are to be added to works cost of work order/production batch on a certain basis for ascertaining the cost of production. Unit production cost may be ascertained by dividing the cost of work order/production batch by the number of units.
- **Total Cost:** After adjustment of opening and closing stocks, selling & distribution overheads are to be added to the cost of production on a certain basis for ascertaining the total cost.

CAPITAL COST

Expenses accumulated under capital project and R & D projects cost codes and carried forward deferred revenue expenditure are part of capital costs and are displayed directly as part of fixed assets in the balance sheet

BUDGETARY CONTROL AND STANDARD COSTING SYSTEM

Periodical budget estimates can be made for each cost centre by using the standard costing system. Actual expenses may be compared along with reasons for decrease/ increase in profits. Standard costing system is an important tool for ascertaining various types of raw material, labour and overheads variances.

QUANTITATIVE DETAILS AND MANAGEMENT INFORMATION SYSTEM

With the above-said product costing, you are ready with the major part of the input data required for day-to-day decision-making. However, input data regarding product-wise quantity details for production, sales, inventory position, orders and supply position, managerial/ employees efficiency, market scenario, share market position, etc. are also required to be collected on a regular basis. MIS formats need to be decided as per needs for various business decisions.

GAGAR ME SAGAR

The easy way of cost accounting discussed above provides step by step approach for ascertaining product costing accurately and precisely without incurring significant extra cost. Simultaneously, it provides a source of robust data input for day-to-day decision-making to the small-scale entrepreneur. An accurate data base instils confidence in the minds of the entrepreneurs for success in the present scenario of cutthroat competition. MA

BLOCKED CREDIT UNDER SECTION 17 (5) OF CGST ACT, 2017: IS IT REALLY BLOCKED?

Abstract

Goods and Services Tax (GST) has successfully completed four years but still, it has many areas to be consolidated. Many frauds pertaining to input tax credit (ITC) under GST are being committed every year since 1st July 2017. We need to have comprehensive provisions under GST for making it flawless. One of the preventive measures is 'blocked credit' under section 17(5) of CGST Act, 2017. Indeed, blocked credit has been beneficial to the business concerns as it is being routed to direct tax for claiming deduction. This article explains the loopholes of blocked credit through accounting entries and discusses how blocked credit is not effective.

INTRODUCTION

Input tax credit (ITC) plays a vital role in eliminating cascading effect of tax under GST. ITC is available on the amount of GST paid on receipt of supply when inward transactions are purely in the course or furtherance of business. ITC assists to levy tax merely on the value addition. But in few cases, ITC is blocked to stop mis-utilization of credit under GST. This article explains how this blocked credit has not been serving the purpose in right manner. Credit in lieu of input tax paid on certain supplies of goods and services is not permissible. Such input tax is added to cost of inward supplies and this is termed as blocked credit.

OBJECTIVES OF BLOCKED CREDIT

Blocked credit is contradicting the basic features of GST though it could be justified on the following grounds:

1. To minimize the risk of fraud pertaining to availing of ITC
2. To restrict tax credit on specified transactions that could reduce indirect tax revenue for government.
3. To keep administration away from controlling the actual consumption of such goods/services which may be easily consumed for private purpose due to their nature.

UNDERSTANDING BLOCKED CREDIT WITH ACCOUNTING ENTRIES

GST is neither an expense nor income for the business entity only when ITC is availed but if ITC is blocked then it becomes an expense for the business. Section 17 (5) of CGST Act, 2017, deals with blocked credit and this section has listed out few transactions on which ITC is not allowed. Let's assume that X Ltd. (engaged in manufacturing of textile garments) has carried out all the transactions which are listed under section 17 (5) of CGST Act, 2017. The following table explains the accounting entries and their effect on the revenue statement (Profit and Loss A/c) of X Ltd-

Dr. Rakesh Kumar S. Manjhi
Assistant Professor
Dept. of Accounting and Financial Management
The Maharaja Sayajirao University of Baroda
Baroda
rakeshkumar.m-afm@msubaroda.ac.in

Blocked credit is contradicting the basic features of GST though it could be justified

Sr. No.	***Particulars (All payment made by cheque)***	***Accounting Entries (GST amount shall be added to value of supply received)***	***Effect on Revenue Statement***
1	Purchased Honda City car for its finance officer (Rs. 10,00,000 plus GST @ 28% from local dealer)	Assets (Car) A/c Dr. 12,80,000 To Bank A/c Cr. 12,80,000 (Being payment made on acquisition of Honda City car)	Depreciation will be charged during the life span of the car in P&L A/c which includes blocked credit amount.
2	Repairing of vehicles (Rs. 10000 plus GST @ 18%)	Repair Expense A/c Dr. 11,800 To Bank A/c Cr. 11,800 (Being payment made for repairing the vehicles)	Repair expense of Rs.11,800 will be charged to P&L A/c and hence profit will also be reduced by GST amount of Rs. 1,800.
3	Works contract services for construction of factory building (Rs. 10,00,000 plus GST @ 12%)	Factory Building A/c Dr. 11,20,000 To Bank A/c Cr. 11,20,000 (Being payment made to contractor for constructing the factory building)	Depreciation on factory building will be charged in P&L A/c which includes blocked credit amount.
4	Catering services on the celebration of annual day of the entity (Rs. 1,00,000 plus GST @ 18%)	Catering Expense A/C Dr. 1,18,000 To Bank A/c Cr. 1,18,000 (Being payment made for catering services)	Catering expense of Rs.1,18,000 will be charged to P&L A/c and hence profit will also be reduced by GST amount of Rs. 18,000.
5	Cement used for construction of administration office (Rs. 5,00,000 plus GST @ 28%)	Administration Building A/C Dr. 6,40,000 To Bank A/c Cr. 6,40,000 (Being payment made to supplier of cement for constructing the administration office)	Depreciation on administration building will be charged to P&L A/c which includes blocked credit amount.
6	Health services for its employees' fitness (Rs. 1,00,000 plus GST @ 12%)	Employee Benefit A/c Dr. 1,12,000 To Bank A/c Cr. 1,12,000 (Being payment made for employees' fitness services)	Employee Benefit expense of Rs.1,12,000 will be charged to P&L A/c and hence profit will also be reduced by GST amount of Rs. 12,000.
7	Travelling expense of employees' incurred by X Ltd. (Rs. 1,00,000 plus GST @ 18%)	Employees' Travelling Exp. A/c Dr. 1,18,000 To Bank A/c Cr. 1,18,000 (Being payment made for employees' travelling expenses)	Employees' Travelling expense of Rs.1,18,000 will be charged to P&L A/c and hence profit will also be reduced by GST amount of Rs. 18,000.
8	Goods distributed as free sample (value of sample Rs. 10,000 and GST amount of Rs. 900 paid at the time of purchase of raw material for stated sample)	Accounting entry at the end of the year would be: P & L A/c Dr. 10,900 To Advertisement Exp. A/c Cr. 10,900 (Being distribution of free sample written off)	Advertisement expense of Rs.10,900 will be charged to P&L A/c and hence profit will also be reduced by GST amount of Rs. 900.
9	Food & beverages purchased for its employees during office hours (Rs. 50,000 plus GST @ 18% paid)	Expense A/c Dr. 59,000 To Bank A/c Cr. 59,000 (Being payment made to supplier of food and beverages)	Expense of Rs. 59,000 will be charged to P&L A/c and hence profit will also be reduced by GST amount of Rs. 9000.
10	Managing Director has taken membership of a club and the company pays the membership fees (Rs. 1,00,000 plus GST @ 18%)	Employee Benefit A/c Dr. 1,18,000 To Bank A/c Cr. 1,18,000 (Being payment made for membership of club taken by Managing Director)	Employee Benefit expense of Rs.1,18,000 will be charged to P&L A/c and hence profit will also be reduced by GST amount of Rs. 18,000.

After understanding all the cases which are shown in the above table, we can reply to the following questions:

Q. Do blocked credit transactions require passing of accounting entry with CGST & SGST or IGST?

Ans. No. Blocked credit transactions don't require accounting entry with CGST & SGST or IGST as total GST amount paid to supplier is added to the value of supply received (i.e. cost of supply received).

Q. Can a registered person claim have blocked credit amount for deduction in the Profit and Loss A/c?

Ans. Yes. The amount of blocked credit can be claimed as deduction in Profit and Loss A/c after passing the accounting entry.

Q. Will the blocked credit amount reduce the profits of entity?

Ans. Yes. The blocked credit amount can reduce the profit of entity as they are claimed as deduction in the Profit and Loss A/c.

Q. What would be the impact of blocked credit on motor vehicles?

Ans. ITC is not allowed but the same amount is added to the cost of vehicle and depreciation can be claimed. This assists in saving direct tax as it reduces the profits of the entity. Similarly, it is applicable for work contracts and construction services where credit is blocked.

Q. Is blocked credit really blocked?

Ans. In true sense, the answer should be 'No'. Whatever amount of blocked credit is not allowed for ITC, either it is part of expense or part of depreciation and can be claimed as deduction in the Profit & Loss A/c. No doubt, they are not claimed while making payment of GST but they are claimed as deduction while making payment of the direct tax. Hence, blocked credit is not really blocked.

Q. Do business concerns derive more benefit of blocked credit?

Ans. Yes. In most of the cases, the business concern derives more benefit of blocked credit as the amount of blocked credit can be claimed as deduction in the Profit and Loss A/c *plus* on such deduction an average of 30% of direct tax is also reduced.

In regard to transactions on which ITC is availed, the registered person doesn't claim deduction in Profit and Loss A/c for the amount of GST paid to the suppliers on inwards supply as ITC is available while discharging GST output liability to government.

CIRCUMSTANCES UNDER BLOCKED AND UNBLOCKED CREDIT

Let's understand with the help of an illustration:

Where ITC is available	***Where ITC is not available (Blocked Credit)***
Mr. X, a registered person, purchased raw material valued at Rs. 1,00,000 and after converting the raw material into finished goods, he sold them at Rs. 2,00,000 (exclusive of GST). Applicable GST rate is 18% on such supply.	Mr. X, a registered person, purchased raw material valued at Rs. 1,00,000 and after converting the raw material into finished goods, he distributed the same as free sample to his clients. Value of goods distributed is Rs. 2,00,000 (exclusive of GST). Applicable GST rate is 18% on such supply.
At the time of receipt of raw material, accounting entry would be- Purchase A/c Dr. 1,00,000 GST Input Receivable A/c Dr. 18,000 To Bank A/c / Creditors A/c Cr. 1,18,000	At the time of receipt of raw material, accounting entry would be- Purchase A/c Dr. 1,00,000 GST Input Receivable A/c Dr. 18,000 To Bank A/c / Creditors A/c Cr. 1,18,000
At the time of sale of finished goods, accounting entry would be- Bank A/c / Debtors A/c Dr. 2,36,000 To Sales A/c Cr. 2,00,000 To GST Output Payable A/c Cr. 36,000	At the time of distribution of finished goods as free sample, accounting entry at the end of the year would be- P & L A/c Dr. 2,18,000 To Advertisement Exp. A/c Cr. 2,18,000
At the time of discharging GST output liability of Rs. 36,000, ITC of Rs. 18,000 will be availed by Mr. X and Rs. 18,000 (Rs. 36,000_Rs.18000) will be paid to Government. No deduction of GST amount in Profit & Loss A/c.	Credit of Rs. 18,000 is blocked under goods distributed as free sample. So, it will be deducted from revenue in Profit and Loss A/c. Consequently around 30% direct taxes will also be reduced in this case.

In this case, Government will collect indirect tax of Rs. 36,000.	In this case, Government will collect indirect tax of Rs. 18,000.
Government can collect more direct tax from Mr. X as GST amount is not available for deduction in Profit & Loss A/c.	Government will collect less direct tax from Mr. X as GST amount is available for deduction in Profit & Loss A/c. but if Government had allowed to avail ITC, definitely the Government would have missed the above Rs. 18,000 indirect tax in this case.
Under this scenario, Government will collect more revenue from direct tax of Rs 5,400 (30% of Rs. 18,000) as deduction is not allowed.	Under this scenario, Government will collect less revenue from direct tax of Rs 5,400 (30% of Rs. 18,000) as deduction is allowed.
Remedy – not required	Remedy – Disallow the amount of blocked credit from being added to cost.

Note: The nature of inter-State or intra-State supply has been ignored in the above illustration.

CONCLUSION

The current provision of blocked credit is not satisfactorily drafted from direct and indirect tax angles. Blocked credit under section 17 (5) of CGST Act, 2017, must be reconsidered in respect to its effectiveness. Comprehensive planning is required in order to make it more constructive as otherwise blocked credit can't serve the purpose for which it has been incorporated in the Act. It will be blocked in true sense only when the amount of GST paid to the supplier on inward supply is restricted to be part of expense or cost of capital assets while recording such transactions in the books of accounts. For effective implementation of tax laws and to do justification with blocked credit, certain actions are required to make this blocked credit more meaningful. Explicit implications on direct tax should not be ignored while drafting any section under indirect tax laws (GST). MA

References:

1. *Section 17(5) of CGST Act, 2017, Retrieved from https://cbic-gst.gov.in/CGST-bill-e.html*
2. *https://www.gst.gov.in/*

PROJECT AUDIT - REAL LIFE CASE STUDY

Abstract

This article, based on a real life project audit conducted, signifies the efficacy of Internal Audit done concurrently at the execution phase of a long duration project, in not only highlighting the areas of major concern but also providing important inputs/ suggestions for timely course correction and improvement of bottom-line.

Through such an intensive audit of all major aspects of the project from estimation to sub-contracting monitoring, many emerging issues for not only arresting the cost and time overrun weres identified and reported but also enabled the company to limit the damage on its reputation/ credibility for being eligible for consideration in similar projects in future. Also it is pertinent to note that there is some possibility of better results if the audit recommendations are positively responded and reviewed by the project management team.

THE CONCEPT

The cardinal issues related to any project implementation, apart from the requisite technical, quality and safety aspects related to the project construction, remain the time and cost constraints. Hence the vital factors impacting these two aspects, form significant part of the project's financial audit review.

PROJECT BRIEF

Sub-contract works under the Korean company Daelim for the civil and mechanical portion of Saudi Kayan Polycarbonate project was bagged by our company in 2008-09. While SABIC was the project owner, M/s Daelim was the main contractor and our company Suwaidi Industrial Services (SIS) was the agency for this work awarded at Saudi Rial (SR) 816 million (Rs 980 crore @Rs12/SR the then exchange rate in 2008-09).

While the bid was won with estimated 20% margin, at the 30% progress stage it was incurring a loss of 10% with a cost overrun of over SR 40 million. Latest estimates reflected a loss of margin of nearly SR 55 million thereby causing huge concern to the Management as being the biggest project, apart from the grave financial impact this tardy progress might impact the company's future eligibility too.

In view of the same the IA team was asked for an in depth audit so that things could be recouped to the extent feasible. The IA had thus the highest mandate and hence an intensive audit of three weeks was conducted with three full time staff from IA. As a Senior Auditor, the author was entrusted to lead the project audit team.

CMA Padmanabhan Satyes Kumar
Ex. Dy General Manager (BHEL)
Haridwar
satyeskumar@yahoo.com

Many cardinal issues were brought out in the said project audit as may be noted from abstract of the IA Report.

ABSTRACT OF EXECUTIVE BRIEF OF THE IA REPORT

1. Assumed soil profile resulted in gross underestimation of civil foundation cost to the tune of SR3.7 million.
2. Latest estimation of labor exceeded original estimates by nearly 60% resulting in huge cost overrun.
3. Price variance of rebar steel was SR 8 million, implies poor market reference for estimation.
4. The Material Take Off (MTO) – was still not frozen despite 30% work completion – resulting

in un-certain completion cost of material and uneconomical procurements.

5. Reconciliation of the rebar steel as well as linking the same with scrap generation was missing resulting in unnoticed waste of costly materials and non-enforcement of the contractual recoveries on such waste.
6. System of material requisition etc. was also not implemented systematically resulting in wastage.
7. Manpower cost not fully reconciled with the project records to confirm correct allocation.
8. Replacement cost of consumables (with overheads) was not recovered as per contractual scope.
9. Customer rate SR 77 per square feet, sub-contracted @SR 110, resulted in cost overrun of SR 3 million.
10. Rebar and ready mix reduced based on IA review resulted in at least SR 10 million (Rs 1200 lakh)

ABSTRACT OF THE DETAILED AUDIT REPORT

Sl.No.	***IA Observations***	***IA Recommendations***	***Auditee Response***
A1	Sheet Piling (SR 4.7 million) instead of assumed Shoring (SR 1 million) resulted in cost over-run of SR 3.7 million.	Correct soil profile review could have saved the cost. Inadequate disclosure by customer could be a ground for additional claim.	**Noted**
A2	Project labor estimates increased by 7.2 million man-hours (nearly 60% increment) leading to at least 38% additional cost impacting project margin in a huge way.	Category wise breakup could not be furnished to IA and it may reflect lack of proper planned labor deployment on the project.	Factors like access constraints, interfacing with other agencies etc. resulted in additional man-hrs.
A3	Despite some reduction in Silo foundation work (de-scoped by the customer), the estimated material requirements have gone up by 6% in case of rebar steel and 26% in case of ready-mix concrete leading to cost over-run in excess of SR 8 million.	Despite the unavoidable price variance, the usage variance could still be curtailed with proper planning and optimization of procurement lots and control on consumption and reconciliation.	Now reviewed to 6300MT (rebar) & 62,000-meter cube (ready-mix). **IA Comment:** ***Reduced quantity implies savings of nearly SR 10million***.
B1	Despite the lapse of major duration of the project the nonfreezing of Material Take Off (MTO) reflected poor planning and coordination with the main contractor/client.	Immediate steps to freeze the MTO would not only be desirable but also crucial for planning bulk procurements at economical rates.	MTO as per customer needs is ongoing but procurements now related to quarterly requirements.
B2	To expedite the project two major fronts have now been subcontracted and hence progress on these works is crucial for the overall completion of our scope but it is noted that both these sub-contracts are delayed on work progress as on date of audit.	As per auditee the critical path of both these works are still under control, still IA feels that one of them (MCC in PC4 area) is terribly behind schedule and may impact the overall project.	Some critical work has since been withdrawn from the subcontractor. **IA Comment:** ***LD still needs to be imposed for delay***.
B3	As against the estimated peak labor deployment of 4500 as on date the deployment has crossed 5100 despite subcontract of two major fronts noted in B2 above.	Though some extra deployment to recoup the delay is justifiable, there still seems some scope of rationalization of labor.	Optimization is planned by reduction of hired and un-productive man-power.
B4	Generally the internal control, especially with regard to material requisition, consumption and reconciliation seems to be inadequate, resulting in avoidable wastage.	As per the revised estimates, materials cover 40% of total cost, minimizing waste required through better controls.	Noted.

C1	As against planned progress of 36% up to December 2008 the physical progress reported is around 28% while only 21% has been certified by the customer and hence such radical gaps needs to be intensely reviewed and curtailed for better financials.	While admitting the fact that it is cumbersome to control 19000 line items of BOQ, still uncertified works needs to be reconciled with customer on periodic basis.	Noted. **IA Comments**: ***Such gaps increase the levels of working capital and hence needs to be kept at minimum.***
C2	Customer payments shows advance of 10% and another 10% progress payment. Further, invoices of SR 53 million are pending for over 45 days.	As per the contract the certified bills should be paid within 30 days and hence 15 days could be reduced.	Noted.
D1	Manpower cost totaling 207,361 man-hours for SR 2.434 million debited to the project is disputed by site Quantity Survey team but remains unresolved despite the debit being nearly 3 months old.	Labor cost variance is one of the major reasons for project's current bottom line and hence such huge debit needs to be urgently resolved.	Needs to be reviewed and reconciled. **IA Comments:** ***Action plan and time line for periodical reconciliation needs to be implemented***.
E1	Rebar cost optimization was reviewed since it is major component of material cost. Usage variance was further linked to the abnormal waste generation of more than 9% since the norms for cutting and bending waste is generally limited to 3%.	Apart from timely and periodical reconciliation and back charge on contractors having abnormal waste, scrap accounting is also required as it can recoup up to 20% of purchase cost.	Latest reconciliation done brings the wastage down to 7%. **IA Comments**: ***Reconciliation post IA review instead of internal controls. Also 7% is still above the permissible norms***.
E2	It was noted that out of 4 rate contracts executed for supply of ready-mix concrete, 85% of the requirements were obtained from those rate contracts which have higher rates than the other rate contracts resulting in excessive cost for this material	We were told that the higher rates are because of technical superiority and shorter response time, such multiplicity of contracts with price differential really defeats the purpose of bidding done for economical buying.	The decision is a mix of technical and commercial aspect justifying higher rate orders. **IA Comments:** ***Technical reason to be disclosed in indent prior to approval.***
F1	Sub contracted works under PC Train 4 was reviewed as under: a. Despite completion of 90% schedule time the progress is around 10%. b. 50% of the work (valued at SR 2 million) is formwork (excluding scaffolding) awarded @ SR110 against the customer rate (including scaffolding) of SR77 and PC 3 subcontract @SR 42 only. c. Rebar though free issue is not linked to its fabrication cost which needs to be recovered.	a. Delay analysis on concurrent basis could have arrested the delay. b. Subcontracting rates far greater than customer rate is not acceptable especially when such work is done @60% of the customer rate in PC3 of the same project in the same time-frame. c. In the absence of specific contract terms such charges should be back charged.	a. Critical works have been taken de-scoped. b. Since major part of work has now been withdrawn the quantity of form work will be greatly reduced and hence the impact will be minimal. c. Scope-free supply of cut and bend bars. **IA Comments:** Monitoring of works, contract, commercial limits etc. should not be diluted at any cost.

F2	Rebar issued for the precast works agency has been noted for recovery of just 30 MT while the sample check of issues shows more than 40 MT has been issued till November end. Also extra contractual payments of SR 515,000 could not be linked to proper approval of competent authorities.	At least SR 54,000 is recoverable for the 10 MT while it is expected that full recovery is done after final reconciliation. Major cost like this is expected to be incurred only after prior approval.	On completion further 56 MT noted for recovery from final dues after full reconciliation. Emergency work was due to sudden demand of customer.

CONCLUSION

The essence of project management is to minimize cost and time overrun and hence the cardinal part of project audit centered on these vital aspects through review of major areas like estimation, execution, customer billings, stock and material controls and sub-contracting.

As the executive summary and the detailed IA report (including the Action Taken/ Response of the Auditee) indicate, this project audit, covering all major aspects of the project, was crucial for both in depth appraisal of the top management as well as significant material inputs/ suggestions for course correction by the site authorities as well as top management for recouping the overall results in the balance 70% of the project. Also system improvement could pre-empt similar and further damage and hence such concurrent audit is better than post audit.

The essence of project management is to minimize cost and time overrun and hence the cardinal part of project audit centered on these vital aspects through review of major areas like estimation, execution, customer billings, stock and material controls and sub-contracting

It is significant to note that the financial impact of the audit was the reduction of a major part of the estimated cost over-run of SR55 million (INR 66 crore) noted prior to the review. MA

REFERENCES

This is fully based on personal experience and a copy of the IA report of this audit done in 2008-09.

Incidentally self was specifically selected by the company with major construction portfolio for the major task of project audit based on similar experience in BHEL and IRCON

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Down The Memory Lane

November 2011

Shri M. Gopalakrishnan, President, ICWAI addressing the guests at the National Seminar on 'XBRL' held at Chennai on 10.11.2011. Also seen from (L to R) are Shri P.Raju Iyer, Secretary, SIRC; Shri Sanjay Bhargave, Council Member; Shri S. Manjesh Rai, Regional Head, SEBI, Chennai and Shri B.R. Prabhakar, Chairman, SIRC

Meeting the Hon'ble Chief Minister of Odisha. Shri Naveen Pattnaik, Hon'ble Chief Minister being flanked by Shri M. Gopalakrishnan, President, ICWAI and Shri S.C. Mohanty, Council Member, ICWAI. Seen on the extreme left Shri Rakesh Singh, Vice President, ICWAI

National Conference on "Cost & Risk Management" in progress at Hotel Ambassador Pallava, Chennai on 19.11.2011. Seen (from L to R) are Shri K.R.S. Sastry, Past President, SAFA; Shri Rakesh Singh, Vice President, ICWAI; Padma Vibhushan Dr. V. Krishna Murthy, Chairman, National Manufacturing Competitiveness Council & member in various committees of the PM, Padmashri K. Raghavendra Rao, CMD, Orchid Chemicals & Pharmaceuticals Ltd.; Dr. R.K. Mishra, Director, IPE; Prof. D. Ravi Shankar, former ED & CFO of CRISIL and Shri B.R. Prabhakar, Chairman, SIRC of ICWAI

Seminar on 'Cost Accounting Record Rules & Cost Audit Report Rules 2011' in progress at New Delhi on 24.11.2011. Seen on the dais (from L to R) are Dr. U.D. Choubey, Director General, SCOPE; Shri B.B. Goyal, Advisor (Cost), Govt. of India; Shri M. Gopalakrishnan, President, ICWAI and Shri S.A. Murali Prasad, Member, CASB

November 2001

AK Jain, Additional Commissioner, Central Excise, Ahmedabad, lighting the lamp at the Seminar on Excise Audit 2000 at Ahmedabad. Seen from left: S.R. Ray, Chairman, WIRC; K.D. Shah, Chairman, Ahmedabad Chapter; A.G. Dalwadi, Vice-Chairman, WIRC; Dhananjay Joshi, CCM; Sanjay Bhargav, Treasurer, WIRC; V.S. Datey, Chairman, Nasik Chapter

Down The Memory Lane

November 1991

S/shri V. Kalyanaraman, P.D. Phadke and Dr. G.B. Rao are seen on the dais on the occasion of 16th SAFA Assembly at Dhaka

Shri P.D. Phadke is seen with foreign dignitary during 35th CAPA Excom meeting held at Kuala Lumpur on 8-9 November, 1991

Workshop on Re-codification of Companies Act 1956

Shri P.R. Kumaramangalam, hon'ble Minister of State, Company Affairs, Law & Justice, Government of India, addressing the gathering

Shri R.K. Gupta, hon'ble Minister of Finance, Planning and Parliamentary Affairs, Government of U.P. inaugurating the Conference by lighting the lamp. Others seen in the picture: S/shri P.D. Phadke, President, ICWAI; Dr. G.B. Rao, Vice President, ICWAI and J.K. Puri, Central Council Member

November 1981

The SIRC and Madras Management Association conducted a 'One day Course" on the Topical Subject "Manufacturing Costs and Profits" at Hotel Taj Coromondal on Saturday the 07th November'81. Shri V. Kalyanaraman, delivering the Opening Speech in the Inaugural Function. Sitting (L-R):Shri A.V.S. Rao, Central Council Member; Shri M.P. Pandit, Vice President, ICWAI; Shri G.N. Venkataraman; Shri H.P. Ray Chaudhury, Director, Professional Development, ICWAI; Dr. S. Ramani, Member, MMA

Source: Extracted from the various issues of The Management Accountant Journal

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GLOBAL RECOGNITION OF CMA QUALIFICATION

Benchmarking of Intermediate and Final Course of The Institute of Cost Accountants of India by UK NARIC*

With the objective of enhancing the recognition and professional opportunities for its students and members across the globe, the **International Affairs Committee** and **Professional Development & CPD Committee** of the Institute had engaged UK NARIC (National Recognition Information Centre in United Kingdom) to conduct an independent benchmarking study for evaluating the comparability of the CMA Intermediate and Final Course in the context of the UK and UAE education systems.

UK NARIC is the designated national agency in the United Kingdom for the recognition of international qualifications and professional skills. As the National Agency, managed on behalf of the UK Government, UK NARIC is the internationally respected voice in qualification recognition offering impartial, trusted judgement on international qualifications. UK NARIC has the largest database of international qualifications in the world, with over 5,000 qualifications from more than 200 countries.

UK NARIC has made the following comparability levels recommendations in the context of the UK & UAE education system:

Course	UK Qualifications	UAE Qualifications
CMA Intermediate Course	RQF Level 6 (Bachelor's Degree Standard)	QF Emirates Level 7 (Bachelor's Degree Standard)
CMA Final Course	RQF Level 7 (Master's Degree Standard)	QF Emirates Level 9 (Master's Degree Standard)

Link to the benchmarking results of CMA qualification published in UK NARIC website:
https://www.ecctis.com/news.aspx?NewsId=1138

This independent benchmarking of the CMA qualification would ensure widespread, international acceptance of CMA qualification. The benchmarking results would strengthen the position of CMA members and help corporates gain a better understanding on the relevance and standing of the CMA qualification. It would also provide opportunities for higher studies and enhanced professional opportunities for CMA members/ semi qualified professionals in UK, Middle East and other foreign jurisdictions accepting NARIC evaluation.

**Due to the United Kingdom leaving the European Union, the UK NARIC national recognition agency function was re-titled as UK ENIC on 1st March 2021, operated and managed by Ecctis Limited. From 1st March 2021, international benchmarking findings are published under the Ecctis name.*

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NEWS
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EASTERN INDIA REGIONAL COUNCIL

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA GUWAHATI CHAPTER

The Chapter celebrated Gandhi Jayanti at its premises on the auspicious day of 2nd October, 2021. It was followed by a members' meet which was attended by several members of the Guwahati Chapter. On the same day, a meeting was also held with CMA Rakesh Singh (Past President), CMA Chittaranjan Chattopadhyay, Central Council Member, CMA H. Padmanabhan, Central Council Member and Dr. D. P. Nandy, Sr. Director, Studies and discussed on various issues relating to the CMA profession and its growth & visibility, which includes effective brand building in the North Eastern Region specially Assam, improvement in professional avenues, visit/communication with educational institutes for enhancement in students intake etc. The session was interactive and the deliberations by the guests and the Chapter representatives made the meeting a fruitful one.

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA SOUTH ODISHA CHAPTER

The Chapter organised an evening Talk on 19.09.2021 at Chapter conference Hall, Berhampur, on the topic "GST Works Contract, and INCOME Tax – Recent Amendments on TDS & TCS Provisions". CA Satyananda Routray, Chartered Accountant, graced and delivered in detail on the topic as a Resource Person. CA Routaray elaborated over the important issues on the topic and amendments of TDS & TCS. Sri Deapak Jain, Chief Finance Controller, TPSODL, Berhampur graced the occasion as Chief Guest and highlighted over various aspects GST Works Contract. CMA Ashwini Kumar Patro, Chairman, of the Chapter welcomed all the Guests and invitees and addressed over basic points of the topic. CA/CMA Rajkiran Padhi, Secretary of the Chapter and a practicing Charted Accountant elaborately discussed on the topic and cleared all the doubts raised by the participants along with Mr. Routray. CMA Binod Bihari Nayak, Chairman, Professional Development Committee, welcomed and introduced the guests and CMA N. C. Kar, Chairman, Oral Coaching extended formal vote of thanks.

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA BHUBANESWAR CHAPTER

To commemorate the 75 years of India's Independence & the Azadi ka Amrit Mahotsav and communication received from the Institute, the Chapter organized Swachhta Abhiyan on 01.10.2021 by undertaking cleanliness activities in the Premises of CMA Bhawan and its nearby places. The Chapter successfully conducted a seminar on "Artificial Intelligence" on 3rd October, 2021 at CMA Bhawna in Physical Platform following appropriate behaviors issued by the Govt. to contain spreading of COVID-19 guideline and also through online (Zoom Platform). Shri Ravi Manie, GM- Systems (Marketing), NALCO Ltd. graced and inaugurated the Seminar as "Chief Speaker". He highlighted how the artificial intelligence shall help the corporate world for quick execution of the assignments. Accordingly, all should move & update with the Systems and technology. CMA Satya Sundar Mahasuar, Member, ICAI-Bhubaneswar Chapter moderated the technical session in so nice manner. CMA Himoj Mishra, Chairman of the Chapter delivered the welcome address. CMA Saktidhar Singh, Chairman, P.D. Committee and Past Chairman of the Chapter facilitated the entire program & delivered the Key Note Address. CMA Surya Narayan Tripathy, Secretary of the Chapter extended formal vote of thanks. Around 10 (Ten) numbers of Print Medias (Local & National) widely published in their newspapers. The Chapter organized a WEBINT on

the theme "Analysis of Recent Changes in Corporate Laws" on 8th October, 2021. Shri K.R. Jinan, Hon'ble Ex-Judicial Member, National Company Law Tribunal (NCLT), Kolkata & Cuttack graced and addressed as "Chief Guest" and CS Rahul Parasrampuria, Practicing Company Secretary, Kolkata delivered on the topic as "Resource Person". CMA Himoj Mishra, Chairman delivered the welcome address. CMA Saktidhar Singh, Chairman, P.D. Committee and Past Chairman introduced the Guests/Resource Persons and facilitated the entire program. CMA Surya Narayan Tripathy, Secretary extended formal vote of thanks.

NORTHERN INDIA REGIONAL COUNCIL

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA JAIPUR CHAPTER

The Chapter organised a webinar on 11th September 2021 on the "INCOME TAX RETURNS-KEY ASPECTS" AND "MAKE MONEY WITH OPTION TRADING". In the beginning of the webinar, Chairman of the Chapter CMA S.L. Swami welcomed the Key Speakers and participants. Key Speaker of first technical session was CA Anoop Bhatia, Leading Tax Practitioner who explained in detail the key aspects of Income Tax Returns. Key Speaker of the second technical session was CMA Arun Goyal, Investment Consultant who explained in detail as to how to make money with Option Trading. Webinar was very interactive and attended by large number of members. It was conducted by CMA Purnima Goyal, Vice Chairperson cum Joint Secretary. At the end of the program, CMA Sudarshan Nahar, Secretary of the Chapter thanked the key speakers and all the participants. The chapter organised Webinar for Students on the Topic "How to Develop Positive Attitude" on 15th September, 2021. In the beginning of the Webinar, Chairman of the Chapter CMA S.L. Swami welcomed the Key Speaker and all the participants. Key Speaker of the Webinar was Dr. Sanjay Biyani, Director, Biyani Group of Colleges (Motivational Speaker). He advised CMA students to achieve success by going ahead with positive attitude. The program was conducted by Executive Member CMA Harendra Kumar Pareek. At the end of the program, CMA P.D. Agrawal, Director of Coaching thanked the Key Speaker and all the participants. The Chapter organised second Vaccination Camp at Chapter premises on 19th September 2021 between 10 am to 3 pm. Program was inaugurated by Chief Guest CMA Latit Maheshwari, Retd. IPS Officer. Shri P.K. Nag, DGM (Planning) RSCB Ltd. was Guest of Honour on this occasion. In the beginning, Chairman of the Chapter CMA S.L. Swami welcomed the Chief Guest, Guest of Honour and Medical Team. This camp was organised for Covishield vaccine to members, their family members and near relatives and also students. The chapter organised Webinar on the Topic "Make Money with Option Trading – Series – II" on 25th September, 2021. Chief Guest of the Webinar was CMA Dr. B.L. Gupta, Retd. Professor, University of Rajasthan. Key Speaker of the Technical Session was CMA Arun Agrawal, Investment Consultant who explained in detail How to make money with Option Trading. The program was conducted by CMA Shweta Kasliwal. At the end of the program CMA S.L. Swami, Chairman, Jaipur Chapter thanked the Key Speaker and all the participants. The chapter got Best Chapter Award in category 'A' of NIRC for the year 2021 in recognition of its commendable performance. On behalf of Jaipur Chapter this Award was received by Vice-Chairperson CMA Purnima Goyal, Executive Member CMA Harendra Kumar Pareek, Past Chairman CMA Rakesh Yadav and CMA Swapnil Bhandari at the AGM of NIRC held at New Delhi on 29th September 2021.

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA BEAWAR CHAPTER

Beawar Chapter was awarded the Best Emerging Chapter Award for the work done in the year 2020-21 by the Chairman of the Northern Region CMA Harkesh Tara and all the council members, which was received by Chapter Chairman CMA Prakash Kothari, Secretary CMA Mitesh Chopra and former

Chairman CMA Rupesh Kothari. Beawar Chapter's CMA Jyoti Maheshwari, CMA Manish Jain, CMA Mandeep Singh, CMA Ankur Sihal, CMA Nitin Malu, CMA Mayank Pipara, CMA Nikita Bhuta, CMA Aditi Gaur, CMA Writer Agarwal, CMA Shubham Sankhla, CMA Madhusudan Joshi, CMA Piyush Dugad, CMA Aishwarya Jain and all the members expressed happiness over this award and called it a matter of pride for the entire city.

SOUTHERN INDIA REGIONAL COUNCIL

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA THRISSUR CHAPTER

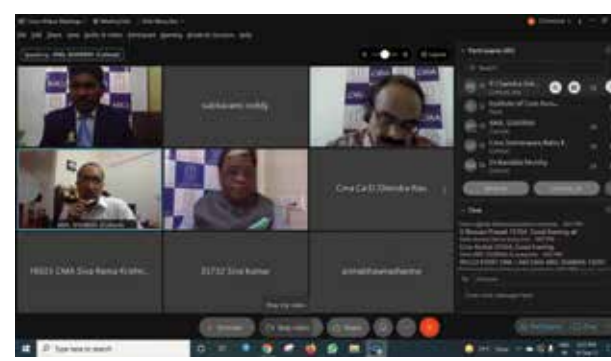
The Chapter conducted exam oriented interactive session with CMA Praveen Kumar, Chairman of the Chapter on 15th September 2021. The programme was well attended by the students. The Chapter conducted a webinar in association with Kozhikode-Malappuram Chapter on "CURRENT MARKET SCENARIO AND INVESTMENT STRATEGY" on September 25, 2021.The programme was blessed with the presence of CMA H Padmanabhan, Central Council Member of ICAI. CMA Praveen Kumar, Chairman delivered the welcome speech. The resource person was DR.V.K Vijayakumar, Chief Investment Strategist, Geojit Financial Services. CMA Vijith Pattoli, Chairman, Kozhikode Malappuram Chapter delivered the vote of thanks.

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA DINDIGUL CHAPTER

Dindigul Chapter Chairman CMA D. Kalaichelvan and Vice Chairman B. Sangaiah attended the CMA Awareness program in Parvathy's Arts College, Dindigul on 07.10.2021. Dindigul Chapter Chairman CMA D. Kalaichelvan and Secretary V. Balasubramani attended the CMA Awareness program in GTN Arts College, Dindigul on 11.10.2021. Dindigul Chapter, Chairman CMA D. Kalaichelvan and Vice Chairman, B. Sangaiah attended the CMA Awareness program in NPR Arts College, Dindigul and signed the MOU on 20.10.2021.

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA HYDERABAD CHAPTER

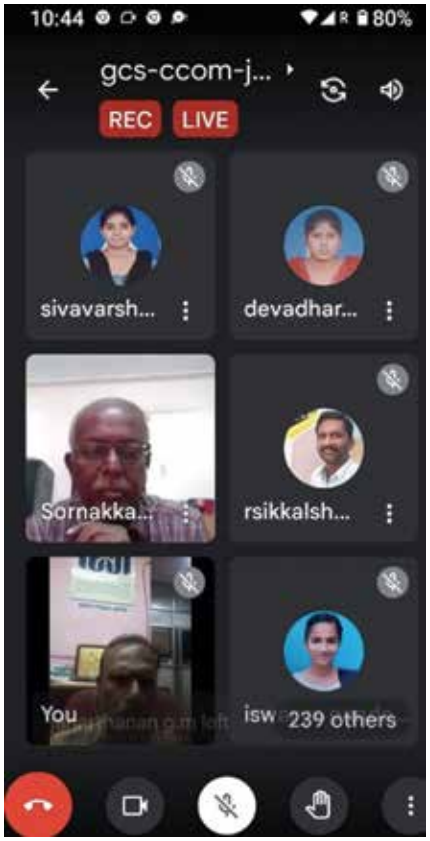
On 2.09.2021 a Refresher Course on Direct Tax Law - Session - 4- Income from Profits and Gains of Business or Profession - Part 1 was organized and speaker was CA Roopali, on 03.09.2021 a Refresher Course on Direct Tax Law - Session – 4. Income from Profits and Gains of Business or Profession - Part 2. Speaker was CA Roopali. On 04.09.2021 Teachers' Day Celebration was organized. On 18.09.2021, programme on collection of costing data, analysis and preparation of cost audit report was organized and CMA Dr. K.Ch. A.V.S.N. Murthy, Central Council Member was the Guest and CMA Anil Sharma, Practising Cost Accountant, Past Chairman NIRC was the speaker. A discussion thereon on September 20, 2021 on outcome of 45th GST Council meeting was held and CMA R. Viswanath Bhat, Secretary - SIRC & Practising Cost Accountant was the speaker of the programme.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA SALEM CHAPTER

The Chapter conducted a seminar on 18th October 2021 titling 'AMENDMENTS IN GST AND INCOME TAX' and the seminar was handled by CMA Dr K Nagarajan, Practicing Cost Accountant, Namakkal. The speaker in his speech dealt with the Amnesty Scheme introduced to rationalize the late fees for delay in filing GSTR-3B for the period from July 2017 to April 2021, Rationalization of late fees, outcome of the 45th GST Council meeting held on 17th September 2021, change in the GST rates wef 1st October 2021 etc under GST Act. The seminar concluded with an interactive session followed by vote of thanks by Secretary CMA Krishnakumar.

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA MADURAI CHAPTER



An Online Career awareness programme for CMA & CS courses was conducted in association with the PG department of Commerce, The Madura College (autonomous), and a leading Co-Education college in Madurai City. The event was held on 28 September 2021. The mode of meeting was on 'online'. The meeting was organized in coordination with Dr. A Mayil Murugan, HOD of the Department. CMA Dr. S Kumararajan, Vice Chairman, Madurai Chapter participated in the event and addressed the student about CMA courses and opportunities. CMA P. Mahalakshmi, Secretary addressed the students on the procedural aspects of joining the courses and the syllabus etc., the other participants were from The Institute of Company Secretaries of India and The Madura College.

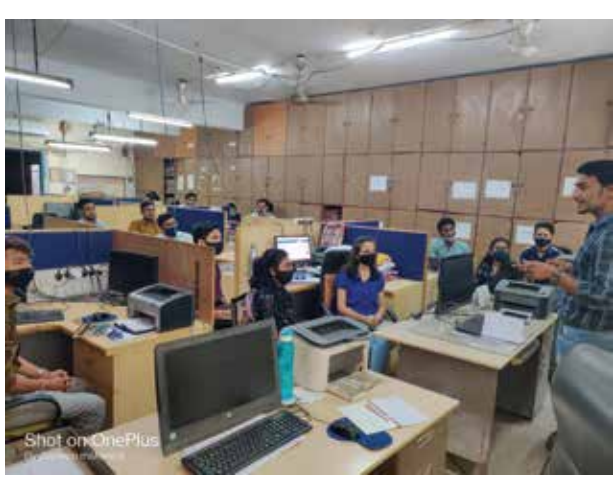
THE INSTITUTE OF COST ACCOUNTANTS OF INDIA BENGALURU CHAPTER

"Interview for Inter and Final Students for the Befree Company" conducted at Bengaluru Chapter, through online Webinar on September 28, 2021 and CMA Kumar H N Chairman BCCA, CMA Jayarama A V Secretary BCCA and Mrs. Depal Trivedi HR Befree Company attended the programme. "Dhee - Vikasa Students Study Circle Programme Webinar on Performance Management" at Bengaluru Chapter, through online Webinar on October 4, 2021. "Dhee - Vikasa Students Study Circle Programme Webinar on Performance Management -1" at Bengaluru Chapter, through online Webinar on October 11, 2021. "Swachhta Abhiyan" at Bengaluru Chapter on October 1, 2021 and "Health Management in Covid Situation" at Bengaluru Chapter on October 1, 2021. Chief Guest, MR.Ramakant Kar, Yoga Teacher, Shreyas Retreat, Bengaluru, CMA Pranabandhu Dwibedy , Practicing Cost Accountant, Soft Skill Trainer and Life Coach, CMA Kumar H N Chairman BCCA, CMA Satish R Vice Chairman SIRC, CMA G N Ventakataraman Past President ICAI. "Basics and Principles of Valuation" at Bengaluru Chapter on October 09, 2021. Chief Guest, CMA SUBBARAYUDU T Management Consultant, CMA Kumar H N Chairman BCCA, CMA Vishwanath Bhat - Vice Chairman SIRC, CMA Manjula B S Chairperson PD BCCA, CMA G N Ventakataraman Past President ICAI were the speakers of the programme.

WESTERN INDIA REGIONAL COUNCIL

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA AHMEDABAD CHAPTER

The Chapter & Baroda Chapter jointly organized CEP Webinar on FEMA Overview on 3rd September 2021. CMA Mihir Vyas, Vice Chairman, Baroda Chapter welcomed present members and CMA Kartik Vasavada, Chairman-Baroda Chapter welcomed & introduced speaker CA Yash Bhatt and participants. CA Yash Bhatt gave detailed presentation and explained about FEMA. CMA Mitesh Prajapati, Secretary of the chapter proposed vote of thanks. Ahmedabad & Baroda chapter organized CEP webinar on Emerging Power Sector and Role of CMA on 4th Sept 2021. CMA Malhar Dalwadi, Chairman of Ahmedabad Chapter, welcomed present members and CMA Ashish Bhavsar program Co-coordinator welcomed & introduced speaker CA Minal Mehta Buch and participants. CA Minal Mehta Buch gave detailed presentation and explained on subject of webinar in a very lucid manner. CMA Priyank Vyas proposed vote of thanks. Ahmedabad, Baroda & Solapur chapter had organized CEP webinar on Multi-Disciplinary Partnership New Horizon of Practice on 5th Sept'2021. CMA Mihir Vyas, Vice Chairman-Baroda Chapter welcomed present members. CMA Malhar Dalwadi, Chairman-Ahmedabad Chapter welcomed speakers RCM CMA Ashish Bhavsar &



CMA Sharad Puranik and all participants. Vote of thanks was proposed by CMA Murali Iyengar. Ahmedabad & Baroda chapter had organized CEP webinar on Project Finance on 11th Sept'2021. CMA Azahar Patel welcomed present members and CMA Ashish Bhavsar program Co-coordinator has welcomed & introduced speaker CA Sohebmohmed M Lahori and participants. CA Sohebmohmed M Lahori gave detailed presentation and explained on subject of webinar. CMA Mitesh Prajapati, Secretary of the Chapter proposed vote of thanks. The Chapter organized an essay competition on the occasion of Hindi Diwas on 14/09/2021 in which about 35 students enthusiastically participated. Ahmedabad, Baroda & Nashik-Ojhar chapter had organized CEP webinar on Inventory Management on 17th Sept 2021. CMA Malhar Dalwadi, Chairman Ahmedabad Chapter welcomed present members and CMA Bhushan Pagere welcomed & introduced speaker CMA Amit Apte and participants. Speaker CMA Amit Apte gave detailed presentation and explained on subject of webinar. CMA Mihir Vyas, Vice Chairman of ICAI Baroda Chapter proposed vote of thanks. Ahmedabad & Baroda chapter had organized CEP webinar on Cyber Crime Prevention – Cyber Security on 18th Sept'2021. CMA Kartik Vasavada, Chairman-Baroda Chapter welcomed present members and CMA Ashish Bhavsar program Co-coordinator has welcomed & introduced Chief Guest ACP Shri Dr. Hardik Makadia and speaker PI Mahendra Motwani and participants. PI Mahendra Motwani gave detailed presentation and explained on subject of webinar. Vote of thanks proposed by CMA Mihir Vyas, Vice Chairman of Baroda Chapter. Ahmedabad & Baroda chapter had organized CEP webinar on Decisions taken in 45th GST Council Meeting on 24th Sept'2021. CMA Malhar Dalwadi, Chairman of Ahmedabad Chapter welcomed present members and RCM CMA Ashish Bhavsar has welcomed & introduced speaker CA Vipul Khandhar and participants. Speaker CA Vipul Khandhar gave detailed presentation and explained on subject of webinar. RCM CMA Ashish Bhavsar proposed vote of thanks. As a part of Azadi ka Amrut Mahotsav, CMA students were invited for presentation at Food Corporation of India (A Govt. Of India Organization). CMA students took advantage of practical approach of Costing, Accounts and Finance in Corporate sector. Ahmedabad & Baroda chapter had organized CEP webinar on Recent changes in CSR & Scope for CMAs' on 25th Sept'2021. CMA Mihir Vyas, Vice Chairman welcomed present members and CMA Vandit Trivedi welcomed & introduced speaker CMA Pankaj Kannaujiya and participants. CMA Pankaj Kannaujiya gave detailed presentation and explained on the topic of program. CMA Azar Patel proposed vote of thanks. The Chapter organized felicitation function at Haribhai Auditorium for all the students, who have passed Intermediate Examination of Dec'19 & Dec'20 term. CMA Aparna Bhonde, Treasurer of Chapter welcomed dignitaries on Dias, Managing Committee members, Students and their parents. CMA Malhar Dalwadi, Chairman of Chapter gave greeting speech and congratulates all the students. He also informed about the activities of chapter and explained about opportunities for the CMAs. CMA Malhar Dalwadi chairman

of Ahmedabad chapter felicitate the Chief Guest CMA L R Jogchand by offering bouquet and memento. CMA Dakshesh Chokshi vice chairman of Ahmedabad chapter felicitates Central Council Member CMA Ashwin Dalwadi by offering bouquet. CCM CMA Ashwin Dalwadi gave motivational speech and advised students to work hard. Chief Guest CMA L R Jogchand gave inspiration speech to students and explained about opportunities for CMAs in Industry and Govt. sectors. Felicitation of successful students was done by the hand of dignitaries on Dias and committee members. At the end of the program, CMA Mitesh Prajapati, Secretary of Ahmedabad Chapter proposed vote of thanks. During the month of Sept 2021, Chapter has done promotional activities for CMA course. As part of Career counseling activity, CMA Mitesh Prajapati, Secretary and Oral Coaching Committee Chairman along with admin person met principals of different schools, Colleges, universities and owner of Private classes.

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA PIMPRI CHINCHWAD AKURDI CHAPTER

The Chapter started free Covishield Vaccination Drive jointly with Pimpri-Chinchwad-Municipal Corporation for the protection against COVID 19 during August and September 2021 (for 1st & 2nd doses) for the Members, Students, Staff and their Families at CMA Bhawan. The event started with the help of Hon'ble Shri. Tushar Hinge, Vice-Mayor Pimpri Chinchwad Municipal Corporation. The Chapter conducted webinar on 'Revenue Recognition in R & D as per IFRS 15' on 28thAugust 2021 through Google Digital platform. CMA Dhananjay Kumar Vatsyayan, Chairman of PCA Chapter welcomed the audience and Sagar Malpure, Chairman-PD Committee introduced the speaker CMA Pradeep Deshpande, Vice Chairman of PCA Chapter and Manager (Controlling), Faurecia India Pvt. Limited, Pimpri. CMA Pradeep Sahasrabudhe briefed on Revenue Recognition 5 step Model. The Chapter conducted webinar on 'The Frills & ILLS of Indian Telecom Sector' on 4th September 2021 through Google Digital platform. CMA Sagar Malpure, Chairman PD Committee welcomed all audience and introduced the speaker CMA Dr. Sreehari Chava, Practicing Cost Accountant. CMA Dr. Sreehari Chava explained the importance of communication and how communications were kept in the time of mythological history of Mahabharata. He further said, the telecom industry is one of the fastest growing industries in India. The Chapter conducted webinar on "Are Unemployed Youths Ready to Become Atmanirbhar?" on September 11, 2021 through Google Digital platform. CMA Sagar Malpure, Chairman – PD Committee has welcomed all audience and introduced the speaker Dr. Kushal De, Assistant Professor, Department of Commerce, Dhruba Chand Halder College. The Chapter organized a webinar on "Practical Cost System taking leaf from ABC" on 18.9.2021. CMA Swapnil Maid, Member PD Committee has welcomed all the audience and introduced the speaker CMA Kailash Sankhlecha, Practicing Cost Accountant and Partner – B M Sharma & Associates. CMA Kailash Sankhlecha in his speech said Financial Accounting is creation of accounting information for external parties and government, Cost Accounting measures and reports financial and other information related to the organisation's acquisition and consumption of resources. The Chapter conducted a webinar on 'Role of ERP in Management Accounting' on 25th September 2021 through Google Digital platform. CMA Dhananjay Kumar Vatsyayan, Chairman of PCA Chapter welcomed the audience and CMA Pradeep Deshpande, Vice-Chairman of PCA Chapter introduced the speaker CMA Sushul Barmecha.

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA SURAT SOUTH GUJARAT CHAPTER

By taking all necessary safety precautions, the chapter hosted a Teachers' Day celebration program to felicitate the faculties involved in oral coaching at the Chapter at the Chapter's campus, on 5th September 2021. The Guest of Honor for the program was Dr. Upendra T. Desai- Educationist and Chief Guest were Sant Shree Nityaswaroopdasji was present through virtual mode and on his behalf Sant Shri Vedant Swamiji was present physically. CMA Kishor Vaghela, Treasurer gave formal introduction of the dignitaries to the gathering. CMA Nanty Shah, Chairman felicitated the Guest of Honor and CMA Bharat Savani- Immediate Past Chairman felicitated Chief Guest. The Formal Addressing begins with Chairman's, Vice Chairman's, Chief Guest's and the guest of Honor's Address. Chief Guest

Shree Nityaswaroopdasji addressed the gathering through Google meet and Sant Vedant Swamiji who was present physically addressed the gathering and blessed everyone. By taking all necessary safety precautions & following the Government & HQ guidelines, the Chapter hosted a Press Meet at the Chapter's campus, on 22nd September 2021. CMA Nanty Shah (Chairman), CMA Bhanwar Lal Gurjar (Vice Chairman), CMA Keval Shah (Vice Chairman) CMA Mahesh Bhalala (Secretary), CMA Kishor Vaghela (Treasurer), joined the Meet. The Press Meet was being held for the declaration of the Foundation Results for June 2021 term held in September 2021. The Chapter organized a Seminar on "Learn, Lead and Earn" on 26th Sep. 2021 at Ritz Square Surat Chapter Office. The Speaker of the Program was CMA Keval Shah Vice Chairman of the chapter, JCI Provisional Zone Trainer. Shri Yuvraj Singh Deora- from JCI also joined the program. CMA Nanty Shah Chairman of the Chapter felicitated Shri Yuvraj. On behalf of JCI, Shri Yuvraj also felicitated the Chairman of the Chapter. CMA Keval Shah began the session and taught students the role of a leader in one's individual success and the overall success of any organization. By taking all necessary safety precautions & following the Government & HQ guidelines, the Chapter hosted a Press Meet at the Chapter's campus on 22nd September 2021. CMA Nanty Shah (Chairman), CMA Bhanwar Lal Gurjar (Vice Chairman), CMA Keval Shah (Vice Chairman) CMA Mahesh Bhalala (Secretary), CMA Kishor Vaghela (Treasurer), joined the Meet. The Chapter organized a Seminar on "Learn, Lead and Earn" on 26th Sep. 2021 at its office. The speaker of the program was CMA Keval Shah- Vice Chairman, JCI Provisional Zone Trainer. Shri Yuvraj Singh Deora- from JCI also joined the program. CMA Nanty Shah – Chairman of the Chapter felicitated Shri Yuvraj and on behalf of JCI, Shri Yuvraj also felicitated the Chairman of the Chapter. The Chapter on 1st October 2021 organized a CEP-Webinar on the Topic "Climate Change and best Practices for Energy Conservation". The Speaker was CMA Joy Shah, Practicing Management Consultant for Sustainable Manufacturing. CMA Nanty Shah, Chairman addressed the members first and then CMA Keval Shah (Vice Chairman) introduced the speaker to the members. CMA Nanty Shah (Chairman) gave formal Vote of Thanks. By taking all necessary safety precautions & following the Government & HQ guidelines, the Chapter hosted Gandhi Jayanti Celebration at the Chapter's campus, on 2nd Oct 2021. The Program started with a training session on Tally for Foundation, Intermediate and Final Students. Speaker of the Program was CA Vinod Gundarwala (Practicing Chartered Accountant). CMA Nanty Shah Chairman addressed the students and CMA Keval Shah Vice Chairman introduced the faculty to the gathering. CMA Nanty Shah (Chairman) felicitated the CA Vinod Sir and the Cleanliness Oath was being taken amongst the Managing Committee members present and the students under the "Swacch Bharat Abhiyan" a mass movement initiative taken by the Hon. Prime Minister of India Shri Narendra Modi. By taking all necessary safety precautions & following the Government & HQ guidelines, the Chapter conducted a training session on SAP for Foundation, Intermediate and Final Students. The speaker of the session was CMA Darshan Patel – Senior Executive (Finance), EWAC. CMA Mahesh Bhalala Secretary Introduced the Speaker to the Audience. CMA Nanty Shah- Chairman felicitated CMA Darshan Patel. CMA Bharat Savani (Immediate Past Chairman) thanked the Faculty and the Students for joining the program. The Chapter jointly with Nashik- Ojhar Chapter- ICAI, on 16th October 2021 organized a CEP-Webinar on the Topic "How to prepare and Pass Insolvency Professional Exams". The Speaker was CMA Ashish P. Thatte- Central Council Member- ICAI, FCMA PhD. CMA Kishor Vaghela- Treasurer Surat Chapter welcomed the dignitaries and the members online, CMA Swapnil Kharade- Chairman Nashik Chapter addressed the members and CMA Keval Shah (Vice Chairman) introduced the speaker to the members. CMA Arif Khan Mansuri – Treasurer- Nashik Chapter formally thanked the Faculty and the members online.

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA NAVI MUMBAI CHAPTER

The Chapter conducted a Webinar CEP programme on "Senior Citizens –Financial Planning & Taxation" on 29th August, 2021 via Google Meet app. The speaker for this event was CMA K M Riyazuddin Practising Cost Accountant, Registered Valuer & Certified Arbitration Professional. CMA Vivek Bhalerao PD Chairman of the Chapter welcomed the

audience and CMA Sushant Ghadge Secretary welcomed the speaker. CMA Ajay Mohan, Chairman of the Chapter introduced the speaker and spoke on the importance of the topic for CMAs. The speaker then discussed various tools and tricks for effective financial and tax planning covering Need for Retirement Planning, Challenges faced by Senior Citizens, Investment Planning, Management of Health, Wealth and Income, Provisions of tax reliefs to Senior Citizens. The lucid presentation & the interactive workshop came to an end with the vote of thanks being proposed by CMA Vaidyanathan Iyer, Vice Chairman of the Chapter. The Chapter conducted a Webinar CEP programme on "Internal Controls & Risk Management" on 26th September, 2021 via Google Meet app. The speaker for this event was CMA Ramprasad G Manager Continuous Improvement Group(IA), Colgate Palmolive India Ltd. CMA L Prakash, Past Chairman of the Chapter welcomed the audience and introduced the speaker and spoke on the importance of Internal Control. The speaker then demonstrated the need for Internal Control in an organization by showcasing various strategies namely – Self assessment Check list, Test of Design & Control, Trial Balance Analysis, Information Security, Risk Categories etc. The lucid presentation & the interactive workshop came to an end with the vote of thanks being proposed by CMA Vaidyanathan Iyer, Vice Chairman of the Chapter. The Chapter conducted the Oral Coaching inauguration function Webinar on August 14, 2021 via Google Meet app. The Chief Guest for this event was Shri Nilesh Dange Chief Human Resource Officer L&T Financial Services. The Oral Coaching Classes will commence from 16th August 2021 for Foundation, Intermediate and Final for December 2021 exams and will be conducted online due to Covid19 regulations. The programme commenced with Chairman CMA Ajay Mohan introducing the Chief Guest and welcoming him to the function. CMA Vaidyanathan Iyer Vice Chairman and CMA Sushant Ghadge Secretary welcomed the dignitaries to the program. CMA Sirish Mohite, Immediate Past Chairman briefed the students and other members present, on the Oral Coaching course curriculum and communication from HO directly to students regarding schedule of SAP training which will be organized for the benefit of the students. They emphasised on the importance of attending these online sessions and not to miss any online classes so that the students can cope up well in the successful completion of the CMA course. CMA Sushant Ghadge Secretary and CMA Vaidyanathan Iyer introduced the various faculties appointed for Oral Coaching Class and welcomed them to the Chapter. CMA Vivek Bhalerao, PD Committee Chairman emphasised that teachers will tutor the students, but the individual effort of the students will take them through. CMA plays a prominent role in achieving Cost competitiveness with a plethora of tools like Balanced Scorecard, Lean Management, Activity based Management etc and acts as an accelerator in nation building with the implementation of cost controlling techniques and effective strategic management. CMA Amit Mahajani, Treasurer welcomed the students and mentioned that CMA course is one of the best professional courses and the role of CMA is growing rapidly in this fast paced world. He then proposed the vote of thanks.

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA PUNE CHAPTER

The Chapter arranged a CEP Webinar on the subject "Role of CMA in ESG reporting & audit" on 8th October 2021 through GOOGLEMEET video conferencing tool. CMA Milind Date was Speaker for the Webinar. CMA Rahul Chincholkar, Member of the Chapter welcomed & introduced the Speaker to the participants. CMA Shrikant Ippalpalli, Managing Committee Member of ICAI-Pune Chapter delivered vote of thanks. After long waiting period & unlock declared by Govt.of Maharashtra, Pune Chapter organized a Guidance Session for Foundation passed students on the Subject "Preparation for Intermediate examination, Syllabus of Intermediate and Future for CMA", on 9th October 2021 at its premises, CMA Bhawan, Karvenagar, Pune. Guidance Session started with lighting of lamp in the hands of CMA Chaitanya Mohrir - Regional Council member WIRC of ICAI, CMA Dr. Madhuvanti Sathe, Speaker for the session, CMA Meena Vaidya, Advisor, CMA Nilesh Kekan Treasurer ICAI Pune Chapter ,CMA Abhay Deodhar Managing Committee Member, ICAI Pune Chapter, CMA Rahul Chincholkar Chairman, Students Coordination Committee, Ms.Simantini Gokhale (Councilor- Sarthak Foundation) were present for the session. CMA Nilesh Kekan Treasurer ICAI Pune Chapter welcomed the students & parents present for the session. CMA Dr. Madhuvanti Sathe was the speaker for the session. CMA Abhay Deodhar Managing Committee Member, ICAI Pune Chapter joined the session through GOOGLEMEET video conferencing tool. CMA Rahul Chincholkar Chairman, Students Coordination Committee, ICAI Pune Chapter explained the scope in GST, costing while in Practice. CMA Chaitanya Mohrir Regional Council member WIRC of ICAI expressed the importance of SAP application while working in industry. CMA Nilesh Kekan Treasurer ICAI Pune Chapter guided the participants about benefits of oral coaching like facilities of coaching, library & other communication. CMA Meena Vaidya, Past Chairperson & current advisor of the chapter concluded the session.

DIRECT & INDIRECT TAX UPDATES - OCTOBER 2021

DIRECT TAXES

- **Notification No. 118 dated 1st October 2021:** In exercise of the powers conferred by clause (i), (ii), (iii) and (iv) of the Explanation to fifth and sixth proviso to Explanation 5 to clause (i) of sub-section (1) of section 9 read with section 295 of the Income-tax Act, 1961 (43 of 1961), the Central Board of Direct Taxes hereby makes the rules further to amend the Income-tax Rules, 1962. In the Income-tax Rules, 1962 (hereinafter referred to as principal rules), in Part II, after the rule 11UD, the following sub-part and rules shall be inserted, namely: 11UE. Specified conditions under Explanation to fifth and sixth proviso to Explanation 5 to clause (i) of sub-section (1) of section 9.– (1) For the purposes of clauses (i), (ii) and (iii) of the Explanation to fifth and sixth proviso to Explanation 5 to clause (i) of sub-section (1) of section 9, the declarant shall furnish an undertaking in Form No. 1 and shall append the undertakings from all the interested parties in Part M of the Annexure to the undertaking in Form No. 1 and furnish all the attachments required to be furnished under any clause or Part thereof. 11UF. Manner of furnishing undertaking under rule 11UE. – (1) The undertaking in Form No. 1 under sub-rule (1) of rule 11UE shall be submitted by the declarant to the jurisdictional Principal Commissioner or Commissioner within forty- five days from the date of commencement of the Income-tax (31st Amendment) Rules, 2021.
- **Notification No. 119 dated 11th October 2021**: In exercise of the powers conferred by sub-section (1C) of section 139 of the Income-tax Act, 1961 (43 of 1961) (hereinafter referred to as "said Act"), the Central Government, hereby exempts the following class of persons mentioned in column (2) of the Table below, subject to the conditions specified in column (3) of the said Table , from the requirement of furnishing a return of income under sub-section (1) of section 139 of the said Act from assessment year 2021-2022 onwards:

Sl No.	Class of Persons	Conditions
1	(i) a non-resident, not being a company; or (ii) a foreign company	(i) The said class of persons does not earn any income in India, during the previous year, other than the income from investment in the specified fund referred to in sub-clause (i) of clause (c) of Explanation to clause (4D) of section 10 of the said Act; and (ii) The provisions of section 139A of the said Act are not applicable to the said class of persons subject to fulfillment of the conditions mentioned in sub-rule (1) of rule 114AAB of the Income-tax Rules, 1962 (hereinafter referred to as "said rules").
2	a non-resident, being an eligible foreign investor.	(i) The said class of persons, during the previous year, has made transaction only in capital asset referred to in clause (viiab) of section 47 of the said Act, which are listed on a recognised stock exchange located in any International Financial Services Centre and the consideration on transfer of such capital asset is paid or payable in foreign currency; (ii) The said class of persons does not earn any income in India, during the previous year, other than the income from transfer of capital asset referred to in clause (viiab) of section 47 of the said Act; and (iii) The provisions of section 139A of the said Act are not applicable to the said class of persons subject to fulfillment of the conditions mentioned in sub-rule (2A) of rule 114AAB of the said rules.

- **Notification No. 120 dated 13th October 2021**: In exercise of the powers conferred by the first provisio to section 119 of Finance Act, 2012 (23 of 2012), the Central Board of Direct Taxes hereby makes the following rules, namely:

  Form and manner of furnishing undertaking under first proviso to section 119 - The form and manner of furnishing undertaking under Explanation to fifth and sixth proviso to Explanation 5 to clause (i) of sub-section (1) of section 9 of the Income-tax Act, 1961 (43 of 1961), as prescribed under sub-rule (1) and sub-rule (3) of rule 11UE and rule 11UF of the Income-tax Rules, 1962, shall mutatis mutandis apply to clauses (i), (ii) and (iii) of the first proviso to section 119 of the Finance Act, 2012 (23 of 2012).

  Conditions under clause (iv) of first proviso to section 119 - The conditions for the purposes of clause (iv) of the Explanation to fifth and sixth proviso to Explanation 5 to clause (i) of sub-section (1) of section 9 of the Incometax Act, 1961 (43 of 1961), as prescribed under sub-rule (2) of rule 11UE of the Income-tax Rules, 1962, shall mutatis mutandis apply to clause (iv) of the first proviso to section 119 of the Finance Act, 2012 (23 of 2012).
- **Notification No. 121 dated 13th October 2021:** In exercise of the powers conferred by clause (46) of section 10 of the Income-tax Act, 1961 (43 of 1961), the Central Government hereby notifies for the purposes of the said clause, 'Punjab State Electricity Regulatory Commission', Chandigarh (PAN- AAAGT0052L), a commission established by the state government of Punjab, in respect of the following specified income arising to the Commission, namely:-

  (a) amount received in the form of processing fee for the

determination of tariff;

(b) amount received in the form of licence fee;

(c) amount received in the form of petition fee; and

(d) amount of interest income earned on bank deposits.

This notification shall be effective subject to the conditions that Punjab State Electricity Regulatory Commission, Chandigarh,- (a) shall not engage in any commercial activity; (b) activities and the nature of the specified income shall remain unchanged throughout the financial years; and (c) shall file return of income in accordance with the provision of clause (g) of sub-section (4C) of section 139 of the Income-tax Act, 1961.

This notification shall apply with respect to the financial years 2021-2022, 2022-2023, 2023-2024, 2024-2025 and 2025-2026.

- **Notification No. 122 dated 25th October 2021:** In exercise of the powers conferred by sub-section (1) of section 280A of the Income-tax Act, 1961 (43 of 1961) and section 84 of the Black Money (Undisclosed Foreign Income and Assets) and Imposition of Tax Act, 2015 (22 of 2015), the Central Government, in consultation with the Chief Justice of the High Court of Karnataka, hereby designates the Court in the State of Karnataka, as mentioned in column (2) of the Table, as Special Court for the area mentioned in the corresponding entry in column (3) of the said Table, for the purposes of section 84 of the Black Money (Undisclosed Foreign Income and Assets) and Imposition of Tax Act, 2015.
- **Notification No. 123 dated 25th October 2021:** In exercise of the powers conferred by sub-section (1) of section 280A of the Income-tax Act, 1961 (43 of 1961) and section 84 of the Black Money (Undisclosed Foreign Income and Assets) and Imposition of Tax Act, 2015 (22 of 2015), the Central Government, in consultation with the Chief Justice of the High Court of Bombay at Goa, hereby designates the court of the Senior Civil Judge and Chief Judicial Magistrate Panaji, Goa as the Special Court for North Goa District and Senior Civil Judge and Chief Judicial Magistrate Margao, Goa as the Special Court for South Goa, for the purposes of sub-section (1) of section 280A of the Income-tax Act, 1961 and section 84 of the Black Money (Undisclosed Foreign Income and Assets) and Imposition of Tax Act, 2015 within their respective jurisdiction in the State of Goa.
- **Notification No. 124 dated 25th October 2021:** In exercise of the powers conferred by sub-section (1) of section 280A of the Income-tax Act, 1961 (43 of 1961) and section 84 of the Black Money (Undisclosed Foreign Income and Assets) and Imposition of Tax Act, 2015 (22 of 2015), the Central Government, in consultation with the Chief Justice of the High Court of Manipur, hereby designates the court of Chief Judicial Magistrate, Imphal East as the Special Court for the State of Manipur for the purposes of sub-section (1) of section 280A of the Income-tax Act, 1961 and section 84 of the Black Money (Undisclosed Foreign Income and Assets) and Imposition of Tax Act, 2015.
- **Notification No. 125 dated 29th October 2021:** In exercise of the powers conferred by clause (46) of section 10 of the Income-tax Act, 1961 (43 of 1961), the Central Government hereby notifies for the purposes of the said clause, 'Chandigarh Pollution Control Committee' (PAN AAATC6094L), a body constituted under Section 4, clause (4) of the Water (Prevention and Control of Pollution) Act, 1974 (Act No.6 of 1974) and Section 6 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No.14 of 1981), in respect of the following specified income arising to that body, namely:-

  (a) Grant-in-aid from CPCB New Delhi; (b) Grant-in-aid received from the Union Territory of Chandigarh Administration; (c) Consent fees; (d) Environment Compensation and penalties; (e) Bio medical waste authorization fees; (f) Bank guarantee forfeiture; (g) Reimbursement of NAMP Project Expenses (CPCB); (h) Stack, Analysis, Water & air testing fees; (i) Water cess receipts; (j) Interest income earned on (a) to (i) above.
- **Notification No. 126 dated 29th October 2021:** In exercise of the powers conferred by clause (46) of section 10 of the Income-tax Act, 1961 (43 of 1961), the Central Government hereby notifies for the purposes of the said clause, 'Madhya Pradesh Pollution Control Board' (PAN AAALM2479H), a Board constituted by the State Government of Madhya Pradesh under the Water (Prevention and Control of Pollution) Act, 1974, in respect of the following specified income arising to the Board, namely:

  (a) Grant or financial assistance from Governments or its agencies; (b) Consent fees or no objection certificate fees; (c) Analysis fees on air quality and water quality or noise level survey fees; (d) Authorization fees; (e) Cess re-imbursement and cess appeal fees; (f) Reimbursement of the expenses received from the Central Pollution Control Board towards National Air Monitoring Program, the Monitoring of Indian National Aquatic resources and like schemes; (g) Sale of books relating to environmental law, regulations, important judicial orders and environmental issues where no profit element is involved and the activity is not commercial in nature; (h) Interest on deposits; (i) Public hearing fees; (j) Vehicle emission monitoring test fees; (k) Fees received for processing by State Environmental Impact Assessment Authority; (l) Fees collected for training conducted by the Environmental Training Institute of the Board where no profit element is involved and the activity is not commercial in nature; (m) Fees received under the Right to Information Act, 2005 (22 of 2005) and appeal fees; (n) Interest on loans and advances given to the staff; and (o) Pollution cost or forfeiture of bank Guarantee due to non-compliance.
- **Notification No. 127 dated 29th October 2021:** In exercise of the powers conferred by clause (46) of section 10 of the Income-tax Act, 1961 (43 of 1961), the Central Government hereby notifies for the purposes of the said clause, 'Gujarat State Aids Control Society' (PAN AAATG3628A), a Society constituted by the State Government of Gujarat, in respect of the following specified income arising to that Society, namely:

  (a) Grant received from NACO; and (b) Interest income on (a) above.

  This notification shall be effective subject to the conditions that Gujarat State AIDS Control Society, (a) shall not engage in any commercial activity; (b) activities and the nature of the specified income shall remain unchanged throughout the financial years; and (c) shall file return of income in accordance with the provision of clause (g) of sub-section (4C) of section 139 of the Income-tax Act,

1961.

- **Circular No. 18/2021 dated 25th October 2021:** The Finance Act, 2015 inserted the following clause (xvii) in sub-section (1) of section 36 of the Income-tax Act, 1961 (the Act) to provide for deduction on account of the amount of expenditure incurred by a co-operative society engaged in the business of manufacture of sugar - "(xvii) the amount of expenditure incurred by a co-operative society engaged in the business of manufacture of sugar for purchase of sugarcane at a price which is equal to or less than the price fIxed or approved by the Govemment;" The matter has been examined by the Board and in this regard , it is clarified that the phrase 'price fixed or approved by the Government' in clause (xvii) in sub-section (1) of section 36 of the Act includes price fixation by State Governments through State-level Acts/Orders or other legal instruments that regulate the purchase price for sugarcane. including State Advised Price, which may be higher than the Statutory Minimum Price/ Fair and Remunerative Price fixed by the Central Government.
- **Circular No. 19/2021 dated 26th October 2021:** Finance Act, 2020, inter-alia, inserted clause (23FE) of section 10 of the Income-tax Act, 1961 (hereinafter referred to as "the Act") to provide for exemption to sovereign wealth funds and pension funds (hereinafter referred to as "specified fund") on their income in the nature of dividend, interest and long-term capital gains arising from investment in infrastructure in India made between 01 .04.2020 and 31.03.2024 subject to fulfilment of certain conditions.

INDIRECT TAXES

GST

- **Circular No. 163/19/2021-GST dated 6th October 2021**: Based on the recommendations of the GST Council in its 45th meeting held on 17th September, 2021, at Lucknow, clarification, with reference to GST levy, related to the following are being issued through this circular;

  i. Fresh vs dried fruits and nuts; ii. Classification and applicable GST rates on Tamarind seeds; iii. Coconut vs Copra; iv. Classification and applicable GST rate on Pure henna powder and leaves, having no additives; v. Scented sweet supari and flavored and coated illaichi; vi. Classification of Brewers' Spent Grain (BSG), Dried Distillers' Grains with Soluble [DDGS] and other such residues and applicable GST rate; vii. GST rates on goods [miscellaneous pharmaceutical products] falling under heading 3006; viii. Applicability of GST rate of 12% on all laboratory reagents and other goods falling under heading 3822; ix. Requirement of Original/ import Essentiality certificate, issued by the Directorate General of Hydrocarbons (DGH) on each inter-State stock transfer of goods imported at concessional GST rate for petroleum operations; x. External batteries sold along with UPS Systems/ Inverter; xi. Specified Renewable Energy Projects; xii. Fiber Drums, whether corrugated or non-corrugated.
- **Circular No. 164 /20 /2021-GST dated 6th October 2021**: Clarifications regarding applicable GST rates & exemptions on certain services.

Sl No.	Description of services	Rate
1	Services by cloud kitchens/central kitchen	5% (without ITC)
2	Supply of ice cream by ice cream parlors	18%
3	Coaching services to students provided by coaching institutions and NGOs under the central sector scheme of „Scholarships for students with Disabilities"	Exempt
4	Satellite launch services provided by NSIL	satellite launch services supplied by NSIL are similar to those supplied by ANTRIX Corporation Ltd, the said circular No. 2/1/2017-IGST dated 27.09.2017, is applicable to them
5	Overloading charges at toll plaza	overloading charges at toll plazas would get the same treatment as given to toll charges.
6	Renting of vehicles by State Transport Undertakings and Local Authorities	vehicles rented or given on hire to State Transport Undertakings or Local Authorities are eligible for the said exemption irrespective of whether such vehicles are run on routes, timings as decided by the State Transport Undertakings or Local Authorities and under effective control of State Transport Undertakings or Local Authorities which determines the rules of operation or plying of vehicles
7	Services by way of grant of mineral exploration and mining rights attracted GST	18%
8	Admission to amusement parks having rides	18% (covers all cases of admission to amusement parks, or theme park etc or any place having joy rides, merry- go rounds, go- carting etc, whether indoor or outdoor, so long as no access is provided to a casino or race club)
9	Services supplied by contract manufacture to brand owners or others for manufacture of alcoholic liquor for human consumption	18%

STATUTORY UPDATES

CUSTOMS

- **Notification No. 48/2021-Customs dated 13th October 2021**: In exercise of the powers conferred by sub-section (1) of section 25 of the Customs Act, 1962 (52 of 1962), the Central Government, on being satisfied that it is necessary in the public interest so to do, hereby exempts the goods of the description specified in column (3) of the Table below, falling within the Chapter, heading, sub–heading or tariff item of the First Schedule to the Customs Tariff Act, 1975 (51 of 1975) specified in column (2) of the said Table, when imported into India, from so much of the duty of customs leviable thereon under the said First Schedule to the Customs Tariff Act, 1975 (51 of 1975), as is in excess of the amount calculated at the standard rate specified in the corresponding entry in column (4) of the said Table, namely:

Sl No.	Chapter or Heading or subheading or tariff item	Description of goods	Standard rate
1	1507 10 00	Crude Soya-bean oil, whether or not degummed	Nil
2	1507 90 10	Soya-bean oil, edible grade	17.5%
3	1511 10 00	Crude Palm Oil	Nil
4	1511 90	Refined bleached deodorized(RBD) palm oil, RBD palmolein, RBD palm stearin and any palm oil other than crude palm oil	17.5%
5	1512 11 10	Crude Sunflower seed oil	Nil
6	1512 19 10	Sunflower oil, edible grade	17.5%

This notification shall come into effect on the 14th October, 2021, and will remain in force up to and inclusive of the 31st March, 2022.

- **Notification No. 49/2021-Customs dated 13th October 2021**: In exercise of the powers conferred by sub-section (1) of section 25 of the Customs Act, 1962 (52 of 1962) read with section 124 of the Finance Act, 2021 (13 of 2021), the Central Government, on being satisfied that it is necessary in the public interest so to do, hereby exempts goods of the description specified in column (3) of the Table below and falling within the Chapter, heading or sub-heading or tariff item of the First Schedule to the Customs Tariff Act, 1975 (51 of 1975) as specified in column (2) of the said Table, from so much of the Agriculture Infrastructure and Development Cess leviable thereon under the said section of the Finance Act, 2021 (13 of 2021), as is in excess of the amount calculated at the rate specified in column (4) of the said Table, namely:

Sl No.	Chapter or Heading or subheading or tariff item of the First Schedule	Description of goods	Rate
1	1507 10 00	Crude Soya-bean oil, whether or not degummed	5%
2	1511 10 00	Crude Palm Oil	7.5%
3	1512 11 10	Crude Sunflower seed oil	5%

This notification shall come into effect on the 14th October, 2021, and will remain in force up to and inclusive of the 31st March, 2022.

- **Notification No. 50/2021-Customs dated 22nd October 2021**: Seeks to amend notification No. 96/2008- Customs dated 13.08.2008 to include Sierra Leone.
- **Notification No. 51/2021-Customs dated 22nd October 2021**: Seeks to amend notification No. 25/2021 - Customs dated 31.03.2021.
- **Circular No. 24/2021-Customs dated 27th October 2021**: Reducing compliance burden regarding registration of Authorised Couriers.

Sources: *incometax.gov.in, cbic.gov.in*

The Institute of Cost Accountants of India

(Statutory Body under an Act of Parliament)

www.icmai.in

Ref. No.: G/128/09/2021 25th September, 2021

NOTIFICATION

Sub: Merging of Intermediate and Final Examination for June and December, 2021 session.

This is for information of all concerned that it has been decided to postpone the Intermediate and Final Examination of the Institute for June, 2021 session due to unavoidable circumstances. The Intermediate and Final Examination of Institute scheduled from 21st to 28th October, 2021 stands postponed and the June, 2021 Examination stands merged with the Intermediate and Final Examination for December, 2021 session, with due carryover of all relevant benefits already available to the students including fee payment and subject wise exemption.

Examination form already submitted by the candidates/students for the Intermediate and Final Examination for June, 2021 session will remain same for the Intermediate and Final Examination to be held in December, 2021. Candidates/students need not apply again.

Candidates/students who have submitted examination application form for the Intermediate and Final Examination for June, 2021 session are allowed to change their examination centre, group(s) by making online application and can add their additional group by payment of differential examination fee in Demand Draft along with their online submitted application form to be sent to the Examination Directorate within due date for appearing in the Intermediate and Final Examination to be held in December, 2021.

Candidates/students who have not applied for the Intermediate and Final Examination for June, 2021 session may apply afresh by submitting online examination application form for December, 2021 Examination.

The examination notification and revised schedule of the examination in details will be announced soon.

CMA Kaushik Banerjee
Secretary

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA
(STATUTORY BODY UNDER AN ACT OF PARLIAMENT)

RESCHEDULED INTERMEDIATE AND FINAL EXAMINATION TIME TABLE & PROGRAMME – JUNE 2021 (Merging) AND DECEMBER 2021

	PROGRAMME FOR SYLLABUS 2016			
	ATTENTION: INTERMEDIATE & FINAL EXAMINATION WILL BE HELD ON ALTERNATE DATES FOR EACH GROUP.			
Day & Date	**INTERMEDIATE (Time: 10.00 A.M. to 1.00 P.M.)**		**FINAL (Time: 2.00 P.M. to 5.00 P.M.)**	
	(Group – I)	**(Group – II)**	**(Group – III)**	**(Group – IV)**
Wednesday, 8th December, 2021	Financial Accounting **(P-05)**	----------	Corporate Laws & Compliance **(P-13)**	----------
Thursday, 9th December, 2021	----------	Operations Management & Strategic Management **(P-09)**	----------	Corporate Financial Reporting **(P-17)**
Friday, 10th December, 2021	Laws & Ethics **(P-06)**	----------	Strategic Financial Management **(P-14)**	----------
Saturday, 11th December, 2021	----------	Cost & Management Accounting and Financial Management **(P-10)**	----------	Indirect Tax Laws & Practice **(P-18)**
Sunday, 12th December, 2021	Direct Taxation **(P-07)**	----------	Strategic Cost Management – Decision Making **(P-15)**	----------
Monday, 13th December, 2021	----------	Indirect Taxation **(P-11)**	----------	Cost & Management Audit **(P-19)**
Tuesday, 14th December, 2021	Cost Accounting **(P-08)**	----------	Direct Tax Laws and International Taxation **(P-16)**	----------
Wednesday, 15th December, 2021	----------	Company Accounts & Audit **(P-12)**	----------	Strategic Performance Management and Business Valuation **(P-20)**

Group (s)		**Final Examination**	**Intermediate Examination**
One Group	(Inland Centres) (Overseas Centres)	`1400/- US $ 100	`1200/- US $ 90
Two Groups	(Inland Centres) (Overseas Centres)	`2800/- US $ 100	`2400/- US $ 90

1. **Application Forms for Intermediate and Final Examination has to be filled up through online only and fees will be accepted through online mode only (including Payfee Module of IDBI Bank). No Offline form and DD payment will be accepted for domestic candidate.**
2. **STUDENTS OPTING FOR OVERSEAS CENTRES HAVE TO APPLY OFFLINE AND SEND DD ALONGWITH THE FORM.**
3. **(a) Students can login to the website www.icmai.in and apply online through payment gateway by using Credit/Debit card or Net banking.**
   (b) Students can also pay their requisite fee through pay-fee module of IDBI Bank.
4. **Students who have chosen for OPT-OUT for the Intermediate and Final Examinations, December, 2020 session will remain same for the Intermediate and Final Examinations to be held in December, 2021. Students need not to apply again.**
5. **Last date for receipt of Examination Application Forms is 8th October, 2021.**
6. **The mode of examination will be online-centre based.**
7. **Candidates/Students are requested to provide updated and in use phone number and email id.**
8. **Examination Centres: Adipur-Kachchh (Gujarat), Agartala, Agra, Ahmedabad, Akurdi, Allahabad, Angul Talcher, Asansol, Aurangabad, Bangalore, Bankura, Baroda, Berhampur – Ganjam (Odisha), Bharuch Ankleshwar, Bhilai, Bhilwara, Bhopal, Bewar City(Rajasthan), Bhubaneswar, Bilaspur, Bikaner (Rajasthan), Bokaro, Calicut, Chandigarh, Chennai, Coimbatore, Cuttack, Dindigul, Dehradun, Delhi, Dhanbad, Duliajan (Assam), Durgapur, Ernakulam, Erode, Faridabad, Ghaziabad, Guntur, Gurgaon, Guwahati, Haridwar, Hazaribagh, Hosur, Howrah, Hyderabad, Indore, Jaipur, Jabalpur, Jalandhar, Jammu, Jamshedpur, Jodhpur, Kalyan, Kannur, Kanpur, Kolhapur, Kolkata, Kollam, Kota, Kottakkal (Malappuram), Kottayam, Lucknow, Ludhiana, Madurai, Mangalore, Meerut, Mumbai, Mysore, Nagpur, Naihati, Nasik, Nellore, Neyveli, Noida, Palakkad, Panaji (Goa), Patiala, Patna, Pondicherry, Port Blair, Pune, Raipur, Rajahmundry, Ranchi, Rourkela, Salem, Sambalpur, Shillong, Shimla, Siliguri, Solapur, Srinagar, Surat, Thrissur, Tiruchirapalli, Tirunelveli, Tirupati, Trivandrum, Udaipur, Vapi, Vashi, Vellore, Vijayawada, Vindhyanagar, Visakhapatnam and Overseas Centres at Bahrain, Dubai and Muscat.**
9. **A candidate who is fulfilling all conditions specified for appearing in examination will only be allowed to appear for examination.**
10. **Probable date of publication of result: To be announced in due course.**

*** The candidates/students are advised to keep regularly in touch with the website of the Institute for further notifications and announcements relating to Examination of June and December 2021 and in case of any query or clarification can e-mail us only at exam.helpdesk@icmai.in**

CMA Kaushik Banerjee
Secretary

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- Major Organ Transplant
- Hemophilia
- Thalassaemia
- Neurological Diseases
- Flue Blown acquired Immune Deficiency Syndrome
- Multiple sclerosis
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