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# THE MANAGEMENT ACCOUNTANT

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UGC  
APPROVED  
JOURNAL

## BLOCK CHAIN TECHNOLOGY

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# The Institute of Cost Accountants of India

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA (erstwhile The Institute of Cost and Works Accountants of India) was first 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

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

# Contents

JUNE 2018

## INSIDE COVER STORY



June VOL 53 NO.06 ₹100

**22** BLOCKCHAIN TECHNOLOGY  
THE POWER HOUSE FOR INDUSTRY  
4.0 ERA

**29** BLOCKCHAIN:  
CONCEPT AND PRACTICAL  
APPLICATION

**37** BLOCKCHAIN TECHNOLOGY -  
AN EXPLORATORY STUDY ON ITS  
APPLICATIONS

**42** BLOCKCHAIN TECHNOLOGY  
WILL IT DISRUPT OR  
DISCIPLINE ACCOUNTANTS?

**47** BITCOIN -  
BLOCKCHAIN INDUSTRY  
ANALYSIS

**55** IMPACT OF BLOCKCHAIN  
TECHNOLOGY ON  
ACCOUNTANCY

**60** BLOCKCHAIN  
THE FUTURE OF  
ACCOUNTING

**66** UNIVERSAL CONTEST OF PILOTING  
A REVOLUTION IN PRESENT  
ACCOUNTS AND AUDIT SYSTEMS

**73** BLOCKCHAIN ACCOUNTING  
THE DISRUPTION  
AHEAD



## MANAGEMENT ACCOUNTING

- 79 | MANAGEMENT ACCOUNTANTS MARCHING DILIGENTLY INTO THE FUTURE: CONDUCTING DUE DILIGENCE WITH BIG DATA ANALYTICS

## GST

- 85 | CRITICAL ANALYSIS OF IMPORTANT PROVISIONS UNDER GST ACT AND ITS IMPACT ON DIFFERENT STAKEHOLDERS

- 95 | REFUND OF GST PAID BY EXPORTERS ON INWARD OR OUTWARD SUPPLIES

- 98 | IMPACT OF GST ON FINALIZATION OF ACCOUNTS

## COST AUDIT

- 104 | ARTICLES ON COST AUDIT

Editorial	06
President's Communiqué	09
ICAI-CMA Snapshots	12
Institute News	114

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# EDITORIAL

## *Greetings!!!*

Blockchain was first introduced as the core technology behind Bitcoin, the headline-grabbing decentralized digital currency ecosystem proposed in 2008. A blockchain is a continuously growing distributed database that protects against tampering and revision of data and has the potential to shapeshift the nature of today's accounting. It has the ability to constitute a way of vastly automating accounting processes in compliance with the regulatory requirements. At its core, blockchain is an open, decentralized ledger that records transactions between two parties in a permanent approach without requiring third-party authentication. This creates an extremely efficient process and would reduce the cost of transactions.

The move to a financial system with a significant blockchain element offers many opportunities for the accountancy profession. Accountants are seen as experts in record keeping, application of complex rules, business logic and standards setting. They have the opportunity to guide and influence how blockchain is embedded and used in future, and to develop blockchain-led solutions and services. Blockchain could 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.

When entrepreneurs understood the power of blockchain, there was a surge of investment and discovery to see how blockchain could impact supply chains, healthcare, insurance, transportation, contract management and more. Nearly 15% of financial institutions are currently using blockchain technology.

To become truly an integral part of the financial system, blockchain must be developed, standardised and optimised. This process is likely to take certain years since bitcoin began operating and there is much work still required to be done. There are many blockchain applications and start-ups in this field, but there are very few that are beyond the proof of concept or pilot study stage. Accountants are already participating in the research, but there are more works for the profession to perform.

The spread of internet complemented with the rising speed of browsing over the last few years has led to exponential advancement of the digital world. Blockchain is set to be the next step on this evolution. Extensive research is being conducted worldwide in order to explore the prospects in revolution of technologies related to accounts and audit. It has even reached to the level of building a premise that Blockchain technology can bring tremendous improvement in terms of efficiency and reduction in consumption of time for the performance of services related to its concerned areas.

Accountants will find enormous opportunities for participating in the process of developing market driven entity-specific business strategies, dovetailing the same with digital transformation strategies, providing consultations for risk-enabled performance management, etc. They can immensely contribute for articulating digitally transformed business requirements, participate in solution development using Blockchain technologies, AI, Machine Learning, Forensic Data Analytics, etc. testing them before use and would ensure sustainable value creation for business entities and the society as a whole for inclusive happiness. Blockchain credentials serve to establish a standard for education in the subject of alternate currencies, and it helps to reinforce acceptance of cryptocurrencies as a viable means of payment. Programmers, cryptocurrency developers, and security specialists are some of the other occupations, in addition to accounting, that can benefit from blockchain certification, as it provides a knowledge base and helps workers in a wide array of disciplines.

This issue presents a good number of articles on the cover story theme 'Blockchain Technology-A Game Changer in Accounting' by distinguished experts and authors. We look forward to constructive feedback from our readers on the articles and overall development of the journal. Please send your mails at [editor@icmai.in](mailto:editor@icmai.in). We thank all the contributors to this important issue and hope our readers enjoy





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# THE MANAGEMENT ACCOUNTANT

## :- PAPERS INVITED :-

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

Theme

July 2018

Indian Railways - CMAs  
as Game Changer

Subtopics

- ◆ Vision & Plans
- ◆ Cost Management
- ◆ Tariff Mechanism
- ◆ Security Systems & Risk Management
- ◆ Non-tariff Sources for increasing Revenue
- ◆ Sustainable Growth
- ◆ Govt Initiatives
- ◆ Role of CMAs

Theme

August 2018

Doubling Farmers'  
Income-Strategies  
and Prospects

Subtopics

- ◆ Technology and Innovations
- ◆ Sustainability indicators
- ◆ Cost Accounting techniques in Agriculture
- ◆ Appropriate Price Mechanism
- ◆ Risk Management in Agriculture
- ◆ Challenges and the way forward
- ◆ Govt Initiatives and Policies
- ◆ Role of CMAs

Theme

September 2018

Professional Scepticism

Subtopics

- ◆ Definitions and Views of Professional Scepticism
- ◆ Auditor Objectivity and Scepticism
- ◆ Proper applications and techniques
- ◆ Preferred Scepticism Skills
- ◆ Barriers to scepticism
- ◆ Challenges and the way forward
- ◆ Global Opportunities
- ◆ Role of CMAs

Theme

October 2018

Global Management  
Accounting Research

Subtopics

- ◆ History
- ◆ Emerging areas of research
- ◆ Use of modern tools & techniques
- ◆ Economic sector specific research
- ◆ Societal contribution
- ◆ Academic perspective vis-à-vis Practical approach
- ◆ Institutionalization of research
- ◆ Indian experiences

*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 publication anywhere else. Please send your articles by e-mail to [editor@icmai.in](mailto:editor@icmai.in) latest by the 1st of the previous month.*



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# PRESIDENT'S COMMUNIQUÉ



## CMA SANJAY GUPTA

*President*

*The Institute of Cost Accountants of India*

### *My Dear Professional Colleague,*

“Over the last four years, development had become a **vibrant mass movement**, with every citizen feeling involved in India’s growth trajectory. 125 crore Indians are taking India to great heights.” Quoted **Hon’ble Prime Minister of India Shri Narendra Modi** on completing 4 years of office in Government.

We at the Institute applaud Government’s effort towards India’s Transformation and has always been fore runners in contributing towards Government’s initiatives.

### **SAFA Events and International Conference 2018 in New Delhi**

I am happy to inform you that the Institute of Cost Accountants of India is organising its **International Conference** on the theme “**Professionals of the Future: Thoughts on 2018 & Beyond**” on June 29th, 2018, which would be held **Hotel Taj Diplomatic Enclave**, New Delhi. IFAC President, **Ms. Rachel Grimes** has given her consent to attend as Special Guest. We would also be hosting SAFA Board and Committee meetings on the sidelines of the Conference. I request you to block your dates, participate actively in the Conference and make this mega event a grand success.

### **15th National Awards for Excellence in Cost Management**

In view of high demand from Corporates to extend the last date of sending of entries for the National Awards, the Institute has extended the last date upto 6th June 2018. I urge the members to send the entries of their respective organisations for the awards within the stipulated time.

### **Directorate of Journal & Publications**

I feel extreme pleasure to announce that the printed copies of the monthly journal ‘The Management Accountant’ has been resumed to be circulated to all the members of the Institute from May 2018. Members and subscribers of the Journal are now provided with the printed copies of the Journal in the usual manner and we are extremely hopeful to maintain the same level and even to achieve a higher yardstick to fulfil expectations of the readers in near future.

### **Directorate of Studies (Training, Placement & Counselling)**

I am happy to share that almost 250 budding CMAs are placed in different renowned companies through campus placement drive across India during the month of April - May 2018. The Placement Directorate has also started Summer Campus Placement drive for the first time to facilitate qualified CMAs with lucrative job opportunities. I express gratitude to the corporate leaders on their reliance in our qualified students. I congratulate all the qualified CMAs who got placed during this season. I am sure that the CMAs successfully placed through this campus placement drive, would positively contribute towards the growth and prosperity of their respective organizations and raise the stature of our profession throughout their professional career.

### **Valuation: Emerging Area for CMA Professionals**

#### **ICMAI Registered Valuers Organisation (RVO)**

Our Institute is the first professional body in India to launch Educational Courses on Valuation through **ICMAI Registered Valuers Organisation (RVO)** [a section 8 company under Companies Act, 2013], which is recognised under



# PRESIDENT'S COMMUNIQUÉ

the Insolvency and Bankruptcy Board of India (IBBI) [vide RVO Recognition No. IBBI/RVO/2018/005] to conduct the Courses for three different Asset Classes - Land & Building, Plant & Machinery, and Securities or Financial Assets.

The first batches of Educational Courses on Valuation has been completed on 27th May 2018, at four locations simultaneously - Delhi, Kolkata, Chennai and Mumbai. A good number of professionals have joined this IBBI recognized, one week / 50 hours training program followed by an IBBI examination to become a Registered Valuer. Expert faculty members from the industry, professions and academia are imparting training programs to enlighten the participants about critical valuation concepts.

A special Valedictory Session on the course was conducted by ICAI RVO in New Delhi, in the presence of eminent personalities including Dr. M.S. Sahoo, Chairman of Insolvency & Bankruptcy Board of India; Dr. Rishab Chand Lodha, Chairman, ICAI RVO; CMA Chandra Wadhwa, Past President of the Institute and CMA Dr. Rajkumar Adukia.

I urge all the members to join these courses to shape their professional career in this vast arena of Valuation.

## International Affairs Department

### Meeting with IMA President & CEO

I along with my Council Colleague CMA P. Raju Iyer had a meeting with Mr. Jeff Thomson at their office in New Jersey, USA on May 3rd, 2018 and discussed with them on signing MOU/MRA.

### Meeting with CPA Canada

I had a meeting with Ms Tashia Batstone, Senior Vice President- CPA Canada in Toronto, Canada on 3rd May, 2018 to take forward our discussions about possibilities of mutual recognition of the professional qualifications and professional development programmes offered by both Institutes.

*I also had the opportunity to meet with members of the Institute in Canada and deliberated on the various issues & matters of their concern related to the profession during the Meet & Greet "President of the Institute of Cost Accountants of India" organised by the Toronto Overseas Centre of Cost Accountants of India (TOCCA) at Ontario, Canada on 2<sup>nd</sup> May, 2018.*

I along with my Council Colleague CMA P. Raju Iyer attended the INSOL International New York conference held during 29th April to 1<sup>st</sup> May 2018 at New York.

## CAPA & SAFA Meetings in Kathmandu:

I along with my Council Colleague CMA Dr. P.V.S. Jagan Mohan Rao, Vice President, SAFA and CMA Dr. I. Ashok attended SAFA Board Meeting on 11<sup>th</sup> May, 2018 and International Public Sector Conference on "Public Sector Financial Management – Enhanced Accountability and Transparency" organised by the Institute of Chartered Accountants of Nepal (ICAN) jointly with PEFA Secretariat in association with CAPA on 12<sup>th</sup> May, 2018 at Kathmandu, Nepal. I was one of the key panellists for the Technical Session on "Integrated Financial Management System" of this Conference.

I also attended the Public Sector Financial Management Committee (PSFMC) meeting, Task Force & Board Directors Meeting of Confederation of Asian and Pacific Accountants (CAPA) held on 11<sup>th</sup> May, 2018 at Kathmandu, Nepal.

## Membership Department

The month of May witnessed granting of 273 new Associate membership and advancement of 85 members to Fellowship. I take this opportunity to congratulate them and extend a warm welcome to the expanding CMA fraternity.

A gentle reminder to members holding Certificate of Practice who are running short on the stipulated CEP credit hours required for CoP renewal for 2018-19, such shortfall needs to be completed and made good latest by 30th June 2018.

## Professional Development and CPD Committee

I sincerely appreciate our Regional Councils and Chapters for organizing 25 programs, seminars and discussions on the topics of professional relevance and importance for the members such as, Cost Audit in the Context of GST, Impact of IND-AS on Cost Computation & Cost Audit, Disruption for Reinventing Business, IBC-2016 Game Changer for Corporate and Professionals, Corporate Governance & Company Law, Direct Tax Amendments, and so on.

The Institute was associated with Cyber Research and Innovation Society and Cyber Immersions Solutions for a conference on "The Blockchain Technology-A Revolution to Transform Society" on 12th May, 2018 at India International Centre, New Delhi. Institute is also associated with PHD Chamber of Commerce & Industry for conducting workshops on "Issues in Export & Import of Goods & Services vis-à-vis Foreign Trade Policy", "Assessment, Audit, Demand and Recovery under GST-Analysis and Open Issues" and "Indian Accounting Standards (Ind AS) Transition towards Uniform Regime" on 11th May, 2018, 24th May, 2018 and 29th May 2018 respectively. I hope our members are immensely benefited with these programmes.

## Global Exhibition on Services (GES) 2018

The Department of Commerce, Ministry of Commerce and Industry, Government of India, Services Export Promotion Council (SEPC) and Confederation of Indian Industry (CII) organised its 4th Global Exhibition on Services from 15th – 18th May 2018 at Bombay Exhibition Centre, Mumbai. GES event targeted participation from 100 countries and also host 30 knowledge sessions, seminars and thousands of B2B & B2G meetings. As a partner-in-nation-building, The Institute had also put a stall in this exhibition to promote CMA Profession. This exhibition was inaugurated by the Hon'ble President of India that was then followed by the launch of 12 Champion Services Sectors.

A Seminar on the theme 'Legal Services: Compliance Challenges under Emerging Regulations and Technology Disruptions' was also organized during GES 2018 on 16th May 2018 at Mumbai to highlight the convergence of compliance and good governance and how sound and robust LEGAL SERVICES is vital for the growth of trade and industry in the current era of technology disruption. Being one of the key Panellist of Session II, I addressed the gathering on 'Resolving Insolvency in India: Progress & Way Forward' in this Seminar.

### Representation with Government, PSUs, Banks and Other Organizations

PD Directorate is sending representation letters to various organizations for inclusion of cost accountants for providing professional services. I am pleased to inform you that, on the request made by the Institute, Hospital Management Society, Guwahati has assured to include Cost Accountants for Internal Audit in their upcoming tenders. Further, Uttar Pradesh Medical Supplies Corporation Limited, National Scheduled Tribes Finance & Development Corporation, Karnataka Rural Infrastructure Ltd, Purvanchal Vidyut Vitran Limited, Mangalore Refinery and Petrochemicals Limited, Pashchimanchal Vidyut Vitran Nigam Limited, National Health Mission, Andrew Yule And Company Limited, Power Transmission Corporation of Uttarakhand Limited (PTCUL), Food Corporation of India Limited, Bharat Heavy Electricals Limited Ramagundam Fertilizers and Chemicals Limited (RFCL), and Agricultural And Processed Food Products Export Development Authority (APEDA) etc. included CMA in their Tenders/EOIs during May 2018.

### National CMA Practitioners Convention 2018

The National Practitioners Convention 2018, which was organised by the PD Directorate in association with WIRC & Baroda Chapter at the heritage city - "Vadodara", Gujarat on 19th & 20th May 2018 got overwhelming response from the practitioners. I congratulate WIRC & Baroda Chapter for successfully organising the event. The efforts of PD Directorate are placed on record. Shri Bharat Dangar, Mayor Vadodara was the Chief Guest of the event. The Guests of honour

were Prof. Parimal H. Vyas, Vice Chancellor, The Maharaja Sayajirao University of Baroda; Shri Ajay Das Mehrotra, IRS, Chief Commissioner of Income Tax, Gujarat; Shri P.R. Dahake, MD, GSECL. The theme of the NCPC-2018 was "Emerging Professional Avenues: Capacity Building of CMAs". There were discussions on various contemporary issues like Business Competitiveness through Cost Audit; Insolvency and Bankruptcy Code - Challenges and Opportunities; GST; Valuation Profession - the way ahead for CMA Professionals; Contemporary Areas of Practice etc.

### Taxation Committee

I would like to congratulate, the Tax Research Department, for successfully compiling and suggesting changes in the New Direct Tax Law, which has been submitted to the finance ministry on the 25th of May. The department has also launched its 15th and 16th Tax bulletin during the month of May. The learners / students, who have taken admission in the 2nd Batch of Certificate Course on GST, have been provided with the option of switching from online to offline and vice-versa post registration. One day seminar on GST has been organised by the department in association with the South Orissa Chapter and Chamber of Commerce on 20th May 2018. CMA Mrityunjay Acharjee, our esteemed Resource Person, have attended the seminar as Keynote speaker.

### Northern Regional Students Convention - 2018

The Northern India Regional Council (NIRC) of the Institute organised a Northern Regional Students Convention - 2018 on the theme "Skills towards Excellence" on 25th May, 2018 at New Delhi. Recently qualified CMAs and Students from Northern Region participated in this Convention.

The holy ninth month of Islamic calendar, popularly known as Ramadan that is observed by praying and fasting and doing charity for the underprivileged, will begin in May end and conclude in June end this year with the celebrations of Idu'l Fitr. I extend my warm wishes to all of you for this auspicious festival.

Let us imbibe the spirit of such festivals and promise to serve our nation more and better. Let us share our happiness with the underprivileged. Let us commit ourselves to the mutual welfare. Let us follow the path of love and universal brotherhood.

With warm regards,



CMA Sanjay Gupta

1st June, 2018



# ICAI-CMA SNAPSHOTS

*Glimpses of Northern Regional Students Convention - 2018 on the theme 'Skills Towards Excellence' organised by NIRC of the Institute on 25th May, 2018 at New Delhi*



*Valedictory Session of First Batch of Educational Course on Valuation- Securities or Financial Assets on May 27, 2018 at India Habitat Centre, New Delhi*

**Photo I**



**Photo II**



**In Photo 1, From Right: CMA Dr. Rajkumar S. Adukia, Chairman, Competent Valuation Private Limited, Dr. Rishab Chand Lodha, Chairman, ICAI RVO, Dr. M.S.Sahoo, Chairman, Insolvency and Bankruptcy Board of India, CMA Sanjay Gupta, President of the Institute, CMA Chandra Wadhwa, Past President and CMA Dr. D. P. Nandy, CEO, ICAI RVO**



*Glimpses of International Public Sector Conference on "Public Sector Financial Management – Enhanced Accountability and Transparency" organised by the Institute of Chartered Accountants of Nepal (ICAN) jointly with PEFA Secretariat in association with CAPA on 12th May, 2018 at Kathmandu, Nepal*



*Glimpses of the seminar on the theme 'Legal Services: Compliance Challenges under Emerging Regulations and Technology Disruptions' was organized during GES 2018 on 16th May 2018 at Mumbai*





# ICAI-CMA SNAPSHOTS

*The Institute organized National Regional Council & Chapters Meet on 5th & 6th May, 2018 at CMA Bhawan, J.N. Bose Auditorium, Kolkata*



CMA H. Padmanabhan, Vice President & Chairman, RC & Chapters Co ordination Committee, CMA PV Bhattad, Past President, CMA Manas Kumar Thakur, Immediate Past President, Council Members CMA Dr. I. Ashok, CMA Dr. P.V.S. Jagan Mohan Rao, CMA Papa Rao Sunkara, CMA Niranjan Mishra, CMA Biswarup Basu and CMA Avijit Goswami were among eminent dignitaries who attended the Meet

## Business Standard

KOLKATA | WEDNESDAY, 23 MAY 2018

### National Regional Council & Chapters Meet organized by The Institute of Cost Accountants of India

The Institute of Cost Accountants of India (ICAI), a premier professional body, the 2nd largest Cost & Management Accounting body in the world and the largest in Asia, organized National Regional Council & Chapters Meet on 5 & 6th May at J.N. Bose Auditorium, Kolkata. The interactive discussion meet was arranged to resolve issues raised by officials of Regional Councils and Chapters of the Institute.

The eminent personalities who graced the dais were: CMA H. Padmanabhan, Vice President & Chairman - RC & Chapters Coordination Committee; CMA Pramodkumar Vithaldasji Bhattad, Past President & Council Member; CMA Manas Kumar Thakur, Immediate Past President & Council Member and Council Members of ICAI - CMA Dr. I. Ashok; CMA Dr. P.V.S. Jagan Mohan Rao; CMA Papa Rao Sunkara; CMA

Niranjan Mishra; CMA Biswarup Basu and CMA Avijit Goswami. The discussion meet was widely participated by Chairman, Vice-chairman, Treasurer and Secretary of various Councils and Chapter; CMA Arnab Chakraborty, Secretary (Acting) of the Institute and other Institute officials. They addressed the varied issues raised by representatives of Regional Councils and Chapters.

The Institute's Theme song was officially released in the aforesaid event. Awards were presented to Regional Council & Chapters PAN India basis under various categories.

CMA Niranjan Mishra delivered the Welcome Address and CMA Arnab Chakraborty concluded the event with Vote of Thanks.

CMA Anil Sharma, Secretary of NIRC took a small session on GST on the second day of the event.





*CMA H Padmanabhan, Vice President of the Institute addressing at the interactive session on 'Cost Accounting Standards' in Chennai. CMA P. Raju Iyer, Chairman, Cost Accounting Standards Board of the Institute and CMA Jyothi Satish, Secretary, SIRC are also seen*



*CMA H Padmanabhan Vice President of the Institute deliberating at a Study Circle Meeting on "Cost Audit in the context of GST" Part II conducted by CMA S. Subhashini, Practicing Cost Accountant and Independent Director, Chennai. CMA K Sanyasi Rao, Chairman, SIRC and CMA Jyothi Satish, Secretary, SIRC are also seen*



*Chief Guest Sri Srinivasan IRS and CMA H Padmanabhan Vice President of the Institute lighting the lamp at valedictory session for 'Certificate Course on GST' and 'Educational Course on Valuation' CMA P Raju Iyer, Council Member, CMA Dr A Mayil Murugan Chairman SIRC were also present in the event.*



*CMA H Padmanabhan Vice President addressing on the valedictory session for 'Certificate Course on GST' and 'Educational Course on Valuation' at Chennai*



*Chief Guest Shri Srinivasan IRS, CMA H Padmanabhan Vice President of the Institute, council members and participants of ICAI Valuation Course at the valedictory session in Chennai*



*CMA H Padmanabhan Vice President and council members at SIRC lighting the lamp during ICAI Foundation Day celebrations at SIRC*



# ICAI-CMA SNAPSHOTS



CMA H Padmanabhan, Vice President addressing on ICAI Foundation Day celebrations at SIRC in Chennai. Council Members CMA Dr I Ashok, CMA Dr P V S Jagannathan Rao, CMA P Raju Iyer and CMA Dr A Mayil Murugan Chairman SIRC are also seen in the programme



CMA H Padmanabhan Vice President and members of SIRC honouring CMA Dr Ramachandran, Senior Member on the occasion of ICAI Foundation Day celebrations at SIRC

## *Glimpses of Training Programme Educational Courses on Valuation: 21-27 May, 2018*



*Delhi Center*



*Kolkata Center*



*Chennai Center*



*Mumbai Center*



# ICMAI REGISTERED VALUERS ORGANISATION



**RECOGNISED RVO UNDER  
INSOLVENCY AND  
BANKRUPTCY BOARD OF INDIA**

**PROMOTED BY**



**THE INSTITUTE OF  
COST ACCOUNTANTS OF INDIA**

(Statutory Body under an Act of Parliament)

Website: [www.rvoicmai.in](http://www.rvoicmai.in)

E-mail: [info@rvoicmai.in](mailto:info@rvoicmai.in)

Toll Free: 1800 345 0092 / 1800 110 910

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**ICMAI REGISTERED VALUERS ORGANISATION**

4th Floor, CMA Bhawan

3, Institutional Area, Lodhi Road, New Delhi - 110003

Ph: +91-11-24666100/24666124

[www.icmai.in](http://www.icmai.in)





Dear Professional Colleagues,

Greetings!!!

I am pleased to inform you that **ICMAI Registered Valuers Organisation (RVO)**, a Section 8 company of the Institute under Companies Act, 2013, has received the recognition of **Insolvency and Bankruptcy Board of India (IBBI)** to conduct educational courses for three different asset classes i.e. Land & Building, Plant & Machinery and Securities or Financial Assets.

You are requested to join these valuable courses to shape your professional career path in right direction.

With Warm Regards,

**CMA Sanjay Gupta**

President

The Institute of Cost Accountants of India

## THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

The Institute of Cost Accountants of India is a statutory body set up under an Act of Parliament in the year 1959. The Institute as a part of its obligation, regulates the profession of Cost and Management Accountancy, enrolls students for its courses, provides coaching facilities to the students, organises professional development programmes for the members and undertakes research programmes in the field of Cost and Management Accountancy. The Institute pursues the vision of cost competitiveness, cost management, efficient use of resources and structured approach to cost accounting as the key drivers of the profession. In today's world, the profession of conventional accounting and auditing has taken a back seat and cost and management accountants are increasingly contributing toward the management of scarce resources and apply strategic decisions. This has opened up further scope and tremendous opportunities for cost accountants in India and abroad.

After an amendment passed by Parliament of India, the Institute is now renamed as "The Institute of Cost Accountants of India" from "The Institute of Cost and Works Accountants of India". This step is aimed towards synergising with the global management accounting bodies, sharing the best practices which will be useful to large number of trans-national Indian companies operating from India and abroad to remain competitive. With the current emphasis on management of resources, the specialized knowledge of evaluating operating efficiency and strategic management the professionals are known as "Cost and Management Accountants (CMAs)". The Institute is the 2<sup>nd</sup> largest Cost & Management Accounting body in the world and the largest in Asia, having approximately 5,00,000 students and 70,000 members all over the globe. The Institution headquartered at Kolkata operates through four regional councils at Kolkata, Delhi, Mumbai and Chennai and 95 Chapters situated at important cities in the country as well as 9 Overseas Centres. It is under the administrative control of Ministry of Corporate Affairs, Government of India.

## ICMAI REGISTERED VALUERS ORGANISATION (RVO)

Credible valuations are critical to the efficient working of the capital markets, businesses, government and all its stakeholders. With growing shareholder activism, importance of independent valuations is arising all over the world including India. Different Regulators in India have prescribed different valuation methodologies for different purposes. However, in most of the cases, there is neither any guidance on the basis for selection of a particular methodology nor much of details on its manner of application including its technical nitty-gritties.

In this backdrop, the Companies Act, 2013 brought into the light the concept of 'Registered Valuers' to regulate the practice of Valuation in India and to standardize the valuation in line with International standards. Consequentially, The Ministry of Corporate Affairs (MCA) notified the provisions governing valuation by registered valuers [section 247 of the Companies Act, 2013 (the Act)] and the Companies (Registered Valuers and Valuation) Rules, 2017 (the Rules), both to come into effect from 18 October, 2017. In addition, to administer and perform functions under the said rules, the MCA by way of notification on 23 October, 2017, has specified the Insolvency and Bankruptcy Board of India (IBBI) as the responsible authority. The notified Rules



attempt to bring in standardization in the valuation standards in India and ensure that valuation reports disclose a true and fair view and result in greater objectivity in valuation procedures. The increased transparency and fairness in the valuation system would also boost stakeholder confidence by bringing uniformity.

In view of the above, the **Institute of Cost Accountants of India** (Statutory body under an Act of Parliament) has promoted **ICMAI Registered Valuers Organisation (RVO)**, a section 8 company under Companies Act, 2013, which has received the recognition of **Insolvency and Bankruptcy Board of India (IBBI)** [vide RVO Recognition No. IBBI/RVO/2018/005] to conduct educational courses for three different asset classes - **Land & Building, Plant & Machinery and Securities or Financial Assets**.

## SCOPE OF VALUATION PROFESSIONALS UNDER COMPANIES ACT, 2013

Valuation Report for Further Issue of Shares

Valuation of equity shares held by the Minority Share Holders

Valuation of shares, property and assets of the Company under a scheme of Corporate Debt Restructuring

Valuation for Merger & Amalgamation of Companies

Valuation Report under scheme of compromise/ Arrangement

Valuation of Assets under Insolvency and Bankruptcy Code, 2016

Valuing assets for submission of report by liquidator



## ICMAI REGISTERED VALUERS ORGANISATION THE CURRICULUM FOR THE EDUCATIONAL COURSES

Asset Class: Land and Building		Asset Class: Plant and Machinery		Asset Class: Securities or Financial Assets	
Sl No	Topics	Sl No	Topics	Sl No	Topics
a	Principles of Economics	a	Principles of Economics	a	Macro - Economics
	Micro - Economics		Micro - Economics	b	Finance
	Macro - Economics		Macro - Economics	c	Professional Ethics and Standards
b	Book Keeping and Accountancy	b	Book Keeping and Accountancy	d	Financial Statement Analysis
c	Laws - General	c	Law - General	e	General laws and Judicial Pronouncements
d	Introduction to Statistics	d	Introduction to Statistics	f	Overview of Valuation
e	Environmental Issues in Valuation	e	Environmental Issues in Valuation	g	Valuation Approaches and Methodologies
f	Professional Ethics and Standards	f	Professional Ethics and Standards	h	Valuation Application
g	Law - Real Estate	g	Valuation of Plant and Machinery	i	Laws and Regulations relevant to Financial Assets Valuation
h	Valuation of Real Estate		Three Approaches to Value - Cost, Market and Income	j	Case Studies on application of valuation techniques
	Income Approach to Value	h	Law - Plant and Machinery		
	Market Approach to Value	i	Principles of Insurance and Loss Assessment		
	Cost Approach to Value	j	Industrial Processes		
	Various purposes of Valuation	k	Report writing		
i	Principles of Insurance and Loss Assessment	l	Case Study		
J	Report writing				
K	Case Study				



# FAQ FOR ADMISSION INTO THE EDUCATIONAL COURSES

## ASSET CLASSES: LAND & BUILDING, PLANT & MACHINERY, SECURITIES OR FINANCIAL ASSETS

Sl. No	Criteria	MODALITIES
1.	Eligibility Criteria	(a) Post-graduate degree or post-graduate diploma, in the specified discipline, from a University or Institute established, recognised or incorporated by law in India and at least 3 years of experience in the specified discipline thereafter; or (b) A Bachelors degree or equivalent, in the specified discipline, from a University or Institute established, recognised or incorporated by law in India and at least 5 years of experience in the specified discipline thereafter; or (c) Membership of a professional Institute established by an Act of Parliament enacted for the purpose of regulation of a profession with at least 3 years experience after such membership and having qualification mentioned above in (a) or (b).
2.	Educational Course Curriculum	<a href="http://www.ibbi.gov.in/ValuationExamination.html">http://www.ibbi.gov.in/ValuationExamination.html</a>
3.	Admission Fee*	INR 5,000 + GST
4.	Educational Course Fee*	INR 18,000 + GST [for each asset class]
5.	Who can pursue the Courses	CMA/CS/CA/MBA/PGDBM/Engineers/Post-Graduates/Graduates subject to relevant experience in the specified discipline in accordance with Rule 4 and Annexure - IV
6.	Admission Procedure	Online Only [ICMAI RVO Web Portal: <a href="http://www.rvoicmai.in">www.rvoicmai.in</a> ]
7.	Course Duration	50 hours
8.	Contact Classes & Training**	Option I: Professional Course [One week condensed] Option II: Regular Course [One month - Sat & Sun only]
9.	Class Timing	10 am - 6 pm
10.	Mock Test	Free of Cost
11.	Study Materials, Webinars, PPT, Model Question Bank etc.	Free of Cost
<b>GENERAL INFORMATION ABOUT EXAMINATION</b>		
1.	Evaluation Mechanism	IBBI - Online Valuation Examination [ <a href="http://www.ibbi.gov.in/FAQ_VE_ver5.pdf">http://www.ibbi.gov.in/FAQ_VE_ver5.pdf</a> ]
2.	Examinations Fees	Rs.1500 with every enrolment
3.	Time duration of Examination	2 hours
4.	Examination Centres & Frequency	The examination is available from a number of locations in the country. The examination is available on every working day.
5.	Pass marks	60% [a wrong answer attracts a negative mark of 25% of the marks assigned to the question]
6.	No. of times one can appear in Examination	Any numbers of times till you clear the exam. You have to enroll yourself afresh and pay the examination fee for each enrolment.
7.	Award of Certificate	On submission of the answer paper, you would see your score on the computer screen. You would be issued a pass certificate, if you have secured 60 marks or above, by the IBBI within 30 days of the examination.

\*Refundable within 30 days in case of any discrepancies found in eligibility criteria subject to a deduction of INR1,000 as processing charge

\*\*Any changes in Class Schedule & Timing will be communicated in advance. Number of Study Centres may be extended depending on requirement.

Website: [www.rvoicmai.in](http://www.rvoicmai.in); E-mail: [info@rvoicmai.in](mailto:info@rvoicmai.in)

### REGISTERED OFFICE

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E-mail: [info@rvoicmai.in](mailto:info@rvoicmai.in)



**THE INSTITUTE OF  
COST ACCOUNTANTS  
OF INDIA**  
(Statutory Body under an Act of Parliament)



**SOUTH ASIAN  
FEDERATION OF ACCOUNTANTS**

# INTERNATIONAL CONFERENCE 2018

Theme:  
**Professionals  
Of The Future:**  
Thoughts on 2018 & Beyond

Date: **Friday, June 29, 2018** Venue: **Hotel Taj Diplomatic Enclave, New Delhi**

## Sessions

Managing Change - Regulatory Framework and Challenges

Essence of Reporting- Governance & Sustainability

Artificial Intelligence : Challenge for the Profession

Insolvency, Restructuring & Business Valuation

Connected World - The Emerging Landscape: Visualizing the Future

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**Ms. Rachel Grimes**  
President,  
The International Federation  
of Accountants (IFAC)



**Ms. Tashia Batstone**  
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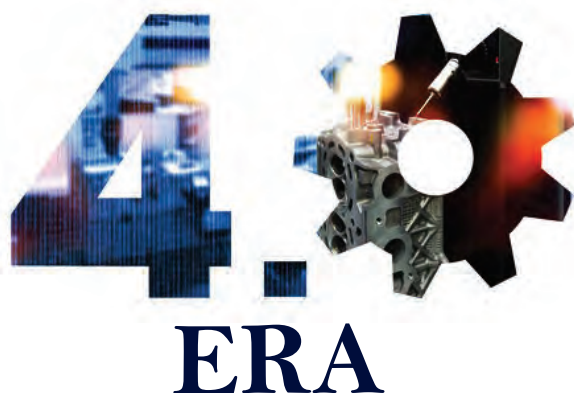
**CMA Sanjay Gupta**  
President  
The Institute of Cost Accountants of India



**SAFA Member Countries:**



## BLOCKCHAIN TECHNOLOGY THE POWER HOUSE FOR INDUSTRY



**CMA (Dr.) Paritosh C. Basu**  
Senior Professor  
NMIMS School of Business Management  
Mumbai

**A**dvancements in digital technologies in Industry 4.0 era have started bringing in quantum leaps in transformational impacts on systems and processes for value deliveries to business stakeholders. It has already shown potentials for enormous minimisation of value destructions and surfeit of 'innovative' value creations. Some of these technologies will cause shift to higher trajectory of quality and speed for multifaceted service deliveries by any government both at federal and county levels.

Blockchain is one of the most welcomed technologies of this new era. Digital scientists are categorising it as a medium to high impact creating technology. But the present author's divination is that it has power of creating groundbreaking transformational impacts. It has immense potential to benefit people at the lower strata of society, more than what www has rendered in the immediate preceding era.

This paper has been written in sequel to the present author's first paper<sup>1</sup> on Blockchain, which was published in February 2018 issue of this journal. Objectives are to

demystify myths and perceptions about Blockchain, take a brief account of its applications in solution building, humane dimensions, imperatives for digital scientists, and regulatory interventions that are necessary to achieve success in applications of this technology. The present author expects readers, if possible, to read his earlier paper for the benefits of continuity.

### Research Methodology

Even after extensive research, one is hardly able to hunt out hard facts and authentic literatures on Blockchain as the technology has started evolving. However, news items, viewpoints of IT and legal professionals, blogs by academicians and opinion makers, etc. can be mined out from cyberspace. Any author on Blockchain, therefore, does not have options but to refer those.

The present author, however, has the benefit of interacting with many 'startupians', first generation entrepreneurs, digital scientists from world class MNCs, academicians, senior business professionals and opinion makers who are directly / indirectly associated with Blockchain applications. He has viewed their presentations, interacted in one-to-one meetings in events, e. g., National Blockchain Conference, Vizag, held in October 2017, World Block Chain Summits, in Dubai and Moscow held in October 2017 and April 2018 respectively. Desk-top researches had to be conducted to explore information and data points for his own inaugural keynote presentations, as the Chairperson of those two summits and moderating three panel discussion sessions. This paper is being presented with researched out information and viewpoints gathered during interactions with those professionals.



### Genesis of Blockchain

Ideation and the first use of this technology can be traced after the global financial crisis of 2008. In his article<sup>2</sup> Bernard Marr wrote that when "Satoshi Nakamoto, whose true identity is still unknown, released the whitepaper Bitcoin: A Peer to Peer Electronic Cash System in 2008 that described a 'purely peer-to-peer version of electronic cash' known as Bitcoin, blockchain technology made its public debut." Nakamoto's seminal idea is based on a 'chain of digital signatures'. There are different views whether Nakamoto was

one person or the pseudo name of a group of professionals who initiated Distributed Ledger Technology (DLT). In subsequent sections DLT and Blockchain has synonymously been used.

Tim Harvey<sup>3</sup> observed that, "..... However, a March Newsweek article raised the possibility that Nakamoto is a very real recluse living in Temple City, Calif. See "The Face Behind Bitcoin," (<http://tinyurl.com/mhcq3ok>) by Leah McGrath Goodman, Newsweek, March 6, 2014....." Objective of this paper is not to indulge into such controversies.

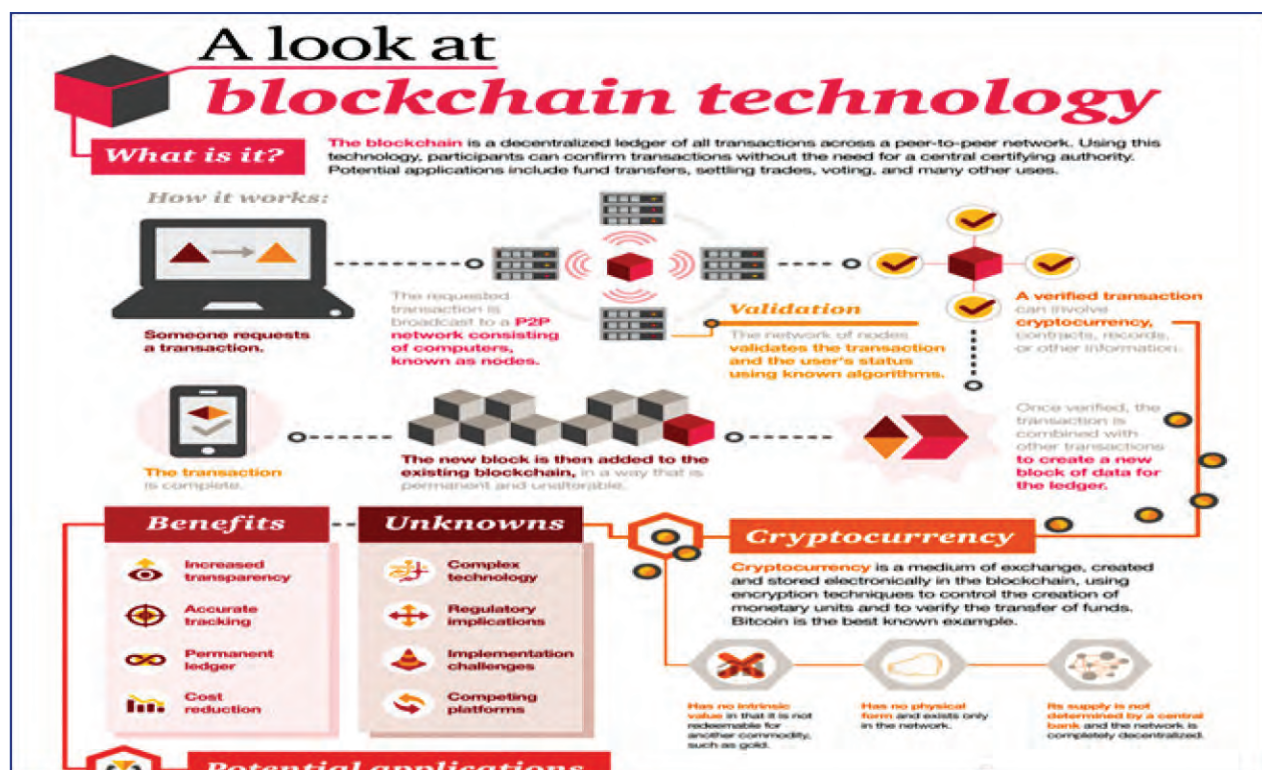


Keeping aside those, Bitcoin was thus born in 2009, followed by other crypto currencies (CCs). Bitcoin and CCs are being touted to be another asset class for investments and safe medium for conducting financial transactions.

## Core of Blockchain

Essentially Blockchain is a cryptographically enabled computing system with distributed ledgers maintained in and accessible from the computing device of each participating user. Every user must log into the platform

from his / her device, called a Node in the whole chain, using both his / her private key and public key. Any user can view earlier transactions by linking with the public keys of the initiating participants. He / she can also initiate a fresh transaction or one linking with any previous transaction. No third-party authentication is required since every user accepts the terms and conditions of the 'Smart Contract' embedded in the platform. No user can delete / modify earlier transactions of any user(s) in any manner and under any circumstances.



Source: [https://www.google.co.in/search?q=a+look+at+blockchain+technology+pwc&tbm=isch&source=iu&ictx=1&fir=Uf4cJuOBGQ22VM%253A%252C2n00F9vTxDfGM%252C\\_&usg=\\_\\_WF6u-lrbbPuX2-6JKx6axiFXefs%3D&sa=X&ved=0ahUKEwjowsSc\\_qLbAhWFsI8KHQUHCJwQ9QEIUjAD&biw=1280&bih=615#imgsrc=Uf4cJuOBGQ22VM:](https://www.google.co.in/search?q=a+look+at+blockchain+technology+pwc&tbm=isch&source=iu&ictx=1&fir=Uf4cJuOBGQ22VM%253A%252C2n00F9vTxDfGM%252C_&usg=__WF6u-lrbbPuX2-6JKx6axiFXefs%3D&sa=X&ved=0ahUKEwjowsSc_qLbAhWFsI8KHQUHCJwQ9QEIUjAD&biw=1280&bih=615#imgsrc=Uf4cJuOBGQ22VM:)

Since every two-key sign-in and all transactions are cryptographed and simultaneously maintained in distributed ledgers of each Node, it is almost impossible to be hacked or infiltrated with a malware. The hacker must apply a superfast algorithmic tool, beating all developed so far, and use a computer with supersonic speed to decrypt those entries before hacking. Information privacy and safety will further be enhanced with implementation of 'General Data Protection Regulation' by the EU from May 25, 2018. In India, a similar Bill is in advanced stage of drafting by the Justice B. N. Shrikrishna Committee.

From around 2014 other digital scientists explored more and started developing private blockchains for alternative applications. Marr's observed that Vitalik Buterin, one of the co-founders of Ethereum and contributors to Bitcoin codebase, wanted to remove this technology's limitation of only dealing with a digital currency. He launched in 2015 the second public Blockchain called Ethereum, which could handle different types of transactions with the help of a built-in 'Smart Contract'. This version of Ethereum attracted attentions of multinational corporations like Microsoft, BBVA and UBS, because of its vast business potentials, powerful ability to disrupt legacy systems and ushering in a new era.



## Demystification of Blockchain vs. Cryptocurrency

Such a genesis of digital currencies, and because transactions are conducted using a cryptography enabled DLT platform, this technology in common parlance has become near cent percent synonymous to cryptocurrency. This perception is perhaps because a common man is yet to observe and experience widely used applications of this new technology. Readers will recall that internet was initially equal to email only till hundreds of other applications were developed. Let this be clear that Blockchain is not a crypto currency and a crypto currency is not equal to Blockchain.

A section of experts has attributed certain reported frauds concerning CCs to the failure of DLT. Many have concluded that Blockchain cannot prevent frauds like any other technology. Let this first be clearly understood that the meteoric rise and extreme volatilities in prices of Bitcoin and other CCs are not due to the underlying DLT but mainly due to interplay of factors, viz., demand, supply, human greed and many others influencing business and financial ecosystem.

Again, the reported frauds related to Bitcoin, etc. are not the frauds committed by infiltrating into the DLT. Human gluttony and ulterior motives have played their forceful roles like in any other cases of economic offences. Such frauds have mostly occurred in the course of CCs being traded in exchanges operated by separate entities. Most of the buyers and sellers do not directly access the underlying DLT platform from their respective Nodes. Their brokers in those exchanges do.

Readers will recall the newspaper item<sup>4</sup> that US Justice Department has been reported to have started probe into suspected Bitcoin price manipulation. It will be worthwhile to quote a portion from the report – “Authorities worry that virtual currencies are susceptible to fraud for multiple reasons: scepticism, that all exchanges are actively pursuing cheaters, wild price swings that could make it easy to push valuations around and a lack of regulations like the ones that govern stocks and other assets.”

## Blockchain – The Power House of Industry 4.0

Solution architecture for dealing with business operations can be developed using an in-house or external vendor's Blockchain dovetailing with digital transformation strategy. External DLT platforms are available based on open source, permissioned, or hybrid arrangements. Readers may know more about eight such public Blockchains, viz, Ethereum, Hyperledger (Sawtooth Lake), Multichain, HydraChain, Open Chain, IBM Bluemix Blockchain, Chain, IOTA in the article of Shyam Purakayastha<sup>5</sup>. However, one must take due care before selection of the public DLT. Rohas Nagpal<sup>6</sup> has written about 17 more platforms which are “purely peer-to-peer version of electronic cash.”

At this stage readers must be keen to know what all applications are possible using Blockchain. The present author has tried to compile the following illustrative list, which is in no way being claimed to be comprehensive, because every week and month a new use is being ideated, developed, tested, and / or put to pilot or full commercial use in some parts of the world.

<b>Finance, Industry, Trade and Commerce</b>	<b>Government Service Functions and Others</b>
1. Banking, Insurance, Credit history, FinTech	I. <b>Government functions and services</b>
2. Cross border P2P and B2B remittances	1. Citizens identity management and Passport
3. Investments in capital assets, Derivatives	2. Public voting
4. P2P Lending, Crowd funding, Micro finance	3. Land registration, title deed and mortgage
5. eCommerce, Software Apps sale	4. Wills and inheritances
6. Health care	5. Underground water use management
7. End to end export-import business	6. Correction houses, orphanages
8. Multimodal supply chain	7. Gun safety management
9. Real estate listing and rental	8. Law enforcement and crime management
10. Sea and dry port management	II. <b>Others</b>
11. Security trading, stock exchange management	1. Music streaming

Finance, Industry, Trade and Commerce	Government Service Functions and Others
12. Contracts – Digital Rights, Wagers, Escrows	2. IPR of singers and musicians
13. Public transport and ride sharing	3. Donations and charity, old age home
14. Public car parking at airports	4. Protection of right to speak and write
15. Pollution control devices and carbon credit	5. Testimonials and credential documentation
16. Travel and leisure management	6. Cloud storage and cybersecurity
17. Warranty and maintenance services by OEMs	7. Education
18. IOT and Blockchain of Things	8. Human resource

The following information are relevant and useful to know in the context of Blockchain technology applications and implementations:

- ✱ Power of Blockchain is being further enhanced with simultaneous applications of Artificial Intelligence, Machine Learning, Deep Learning, Predictive Modelling and Internet of things. In near future Swarm Computing and Human Brain-Computer Interface are expected to enhance the power of Blockchain.
- ✱ Existing and established entities can migrate from legacy systems to DLT based operations and accept payments through CC. The myth that Blockchain is for startups only has been invalidated by a European company called ParkinGo.
- ✱ There are several instances of service providers using Blockchain resorting to issue of their own CC like Helthureum for healthcare management. Some startups are also using and / or planning for Initial Coin Offering (ICO) of CCs as medium of raising funds for their projects, e. g., GladAge.
- ✱ As is evident from the above list DLT can encompass different streams of activities in one application. Therefore, very existence of embedded 'Smart Contracts' will transcend multitude of legislations within and across sovereign boundaries when participants are from different countries, e. g. export-import transactions. This will cause legal disruptions.
- ✱ As per the findings of a recent survey of Gartner, worldwide 20.4 Bln. connected things will be in use by 2020, as against 8.4 Bln. in 2017, i. e., increase by 142%. But the centralised model that currently supports billions of smart devices connected to the IoT devices fails to address several critical risk issues.

Technologists are trying to use IoT devices like tracking / tamper proofing seals, powered by Blockchain, to eliminate cyber-physical gap and create a transparent and responsible system for logistics management. This concept is being christened as 'Blockchain of Things'.

- ✱ Efforts are also on for ensuring omnichannel delivery with interoperability between more than one DLT platforms. These will add versatility, e. g., payments using a digital currency, offered by a separate FinTech operator, while business operations are done in a different DLT. This will enhance user acceptances.
- ✱ International Decentralized Association of Cryptocurrency and Blockchain (IDACB), is working on basic principles of market legal regulation and synchronize law initiatives for various countries in Blockchain and CCs. Efforts are on to propose law initiatives for regulators based on best countries' practices. IDACB is said to already have memberships of about seventy-five countries.
- ✱ Some digital technologists are working for ushering in the requirements Industry 5.0 by cerebral designs of their Blockchain in such a flexible manner that each customer will have the option personalise his / her own needs and meet his / her unique requirements by using the platform the way they want.

## Recent Developments

The following is an illustrative list of major recent developments. These will provide directional guiding light to digital scientists for their journey through roadless paths to the dream destinations of Industry 4.0.

- ✱ "U.S. regulators are still looking into cryptocurrencies and initial coin offerings, but don't aim to suppress the industry, according to comments made during a panel

at CoinDesk's Consensus 2018 conference in New York."<sup>77</sup>

- ✱ "On May 16th, (2018) The European Parliament Committee on Research, Industry and Energy, passed a blockchain resolution, and included a section on initial coin offerings (ICOs). ... Greek S&D member Eva Kaili said that it was an important moment because this was the first time a big institution such as a Parliament was discussing the regulatory framework requirements for distributed ledger technologies and blockchain."<sup>78</sup>
- ✱ "J.P. Morgan Chase & Co. is experimenting with the way blockchain could help cut costs and facilitate smoother transactions within capital markets. ... The bank demonstrated a prototype of its blockchain-based platform for capital markets, called Dromaius, on May 16th at the Consensus 2018 conference...said Christine Moy, executive director and head of J.P. Morgan's Blockchain Center of Excellence."<sup>79</sup>
- ✱ Emirates Real-estate Solutions, the technology arm of Dubai Land Development Authority, will develop five real estate related solutions using Blockchain, viz, Title deed management, Smart sales, Real estate listing portal, Rental platform and Mortgage platform.<sup>10</sup>The readers may be aware that the UAE Government has already taken multitude of ambitious initiatives for making Dubai as the happiest and smartest city of the world by 2020. Blockchain will play a pivotal role for achieving this target.

## Recommendations

The present author would recommend for technologists, users, sovereign governments, regulators and all other stake holders associated with Blockchain to reflect upon the following comments and recommendations while dealing with DLT for solution building. He is of the view that consideration of these will further augment the power and resourcefulness of Blockchain.

**1. Power of Mind:** Time immemorial Indian mythology, particularly Bhagvad Gita, has taught us that "We are born into the world of nature, Our second birth is into the world of spirit. But he who with strong body serving mind, Gives up his power to worthy work." It is power of mind and spirit that will determine sustainable success in Industry 4.0 era. This comment can be corroborated by the famous quote of Albert Einstein who said that, "The true sign of intelligence is not knowledge, but imagination."

**2. Application of '7WH Principle':** In present market-

driven globalised economy risks and ever-changing dimensions of volatilities, uncertainties, complexities and ambiguities (VUCA) in the business ecosystem are day by day becoming more unpredictable. To withstand and combat these five foundations are required for a business ready solution. Those are Trust, Shared value proposition, Value experience, Ease of application, and Sustainability. IT professionals will be able to test whether any DLT based solution is really built on those five foundations and an antithesis of those risks by testing for the following '7WH Principle' based questions ideated by the present author:

- ✱ What are the latent needs and demands of business, society and humanity at large?
- ✱ Who are the service providers and target customers?
- ✱ When the solution is to be delivered, updated and upscaled?
- ✱ Where is the universe of customer located and for what value?
- ✱ Whose regulations are to be complied with and for what risk coverages?
- ✱ Whom should the user refer to in case of trouble?
- ✱ Whether any better solution is being offered by competitors for edge in competitive advantage?
- ✱ How to minimise risks of and value destructions by legacy systems, assess and track users' delight to ensure sustainability?

At every step of system development life cycle (SDLC) the system developers must apply the above questions to ensure sustainable effectiveness and desired ROI of their solution.

**4. Humane Dimensions:** Technology does not have morality, passion, emotion, ethics and value generation skills. Technologists have. Success of Blockchain will depend on those humane qualities of solution builders, leaving least scope for the user to deploy against humanity with an ulterior greedy motive. Blockchain will attain 'Darling of the Mass' status like 'Internet' if it is adopted and applied with the mindset of universal altruism. It should be grounded on the foundation of sustainable shared values. Blockchain technologists cannot become just another 'Technology-tribe'. They should be harbingers of shared developments



for inclusive happiness of mass. Blockchain should have its own ism irrespective of globalisation and protectionism.

**5. Regulatory Need:** www has transcended geographical boundaries, Blockchain will have to transcend sovereign / political boundaries for achieving its dream to be the 'Powerhouse of Industry 4.0' with ground-breaking successes. Humanity is one and the world is its home. Hence there is definite need of a global regulatory body for directional policy guidelines, defining international code of conduct, tracking and monitoring of applications, etc., which must be followed by all nations, besides own internal regulations. Institutions like UN or WTF can take this role. Objective will be to ensure that this powerful technology can also achieve, besides success for industry, trade and commerce; shared developments for inclusive happiness of all till the lowest strata of society across the world.

### Blockchain and CMAs

CMAs will find enormous opportunities for participating in the process of developing market driven entity-specific business strategies, dovetailing the same with digital transformation strategies, providing consultations for risk-enabled performance management, etc. They can immensely contribute for articulating digitally transformed business requirements, participate in solution development using Blockchain, AI, Machine Learning, Forensic Data Analytics, etc. testing them before use. They can define revised policies and lay down SOPs for clients. They can also add values by conducting RAGE (Required, Available, Gap and Essential) Analysis before the said 7WH Principle is deployed and tested jointly with the digital scientists. All these will contribute for ensuring sustainable value creation for business entities and the society as a whole for inclusive happiness. MA

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## BLOCKCHAIN: CONCEPT AND PRACTICAL APPLICATION



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Joint Director  
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*“The technology likely to have the greatest impact on the next few decades has arrived. And it’s not social media. It’s not big data. It’s not robotics. It’s not even AI. You’ll be surprised to learn that it’s the underlying technology of digital currencies like Bitcoin. It’s called the blockchain.”*

*—Don Tapscott*



*The controversial cryptocurrency Bitcoin suddenly caught the attention of the world when during the mid December 2017, its per US dollar exchange value came close to \$20,000 from less than \$1000 a year ago registering an astonishing growth of more than 20 times. However, its exchange value soon fell to less than \$7000 within one and half month. Warren Buffet, the CEO of Berkshire Hathaway and world's 3rd richest man is very critical of cryptocurrencies and according to him Bitcoin and similar cryptocurrencies have no value. He even compared bitcoin with rat poison. The sceptics of Bitcoin compared it with "tulip mania", related to the Dutch financial craze for tulip bulbs in the 1630s. This article is however not related to the Bitcoin currency but about the technology behind it, the blockchain technology, which is slowly gaining acceptance among the technocrats. As per Mark Sigal, "The blockchain technology, as a mode of decentralization, has a potential to be next major disruptive technology following the mainframe, PC, Internet, and social networking/mobile phones to bring about paradigm shift in worldwide computing, with the potential to influence every sphere of human activity".*



**G**rowth of internet increased the horizon of the business by creation of virtual space and eliminating the need for place where buyer and seller can meet. This also created the need for transferring money through electronic payment. Traditionally, the electronic payment system is based on trusted third party model, wherein a trusted third party authorises the transactions between the payer and payee in exchange of transaction fees. This system becomes costlier when value of each transaction goes down due to relative increase in the fees per transaction.

To address this problem, Satoshi Nakamoto in his paper Bitcoin: A peer to peer Electronic Cash system proposed a electronic payment system, which was based on cryptographic proof instead of trust, where two willing parties to transacts directly with each other without the need for trusted third parties. This system was based on a peer to peer distributed timestamp server to generated computational proof of chronological order of transactions, which also addresses the double spending problem.

### Objective

Blockchain is relatively new technology which was introduced just a decade back and there is still long way to go for its acceptance and adoption by masses. Even for the all pervasive internet, it took around 30 year for acceptance and adoption by the masses. Even if the blockchain technology is regarded as next major disruptive technology, still there is very little awareness about the technology. This article is an attempt to decipher the nuance of blockchain technology and interpret the technical aspects of blockchain technology in dummy's language. Throughout the course of the article attempt is made to keep the article crisp without comprising on the understanding of the subject. Bibliography is suggested for readers interested in in-depth knowledge about the subject.

### Introduction to the Blockchain Technology

In simple words blockchain can be described as chronological recording the transactions in form of blocks. For securing the transactions, cryptography is used. Each block is a cluster of transactions which are added to last block by reaching consensus about its authenticity among the users, which is then broadcasted to each users of the network for updating their database. Since the blockchain system is a chronologically arranged public ledger, recording all the transaction which is ever made, authenticated by distributed consensus method and shared among each of the participating users, it is very difficult to forge it. To understand the technology we have to understand its

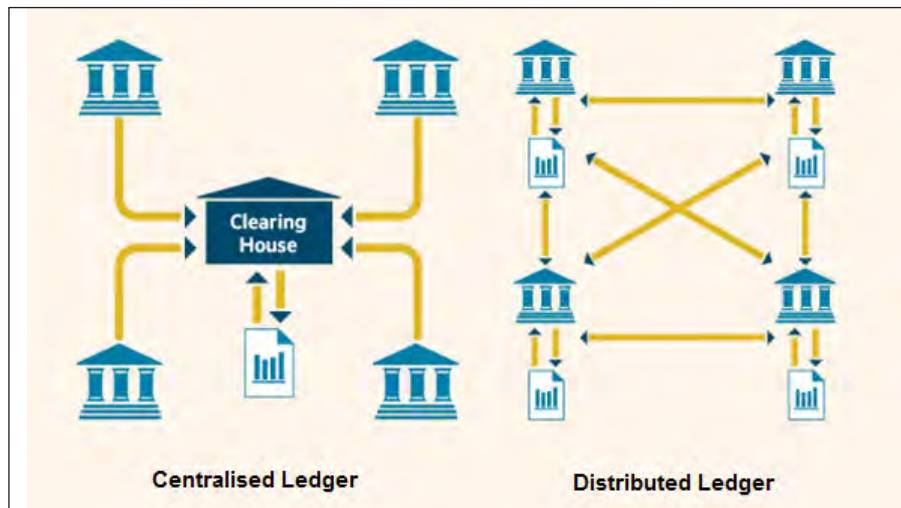


features, which is enlisted below.

#### a) Distributed Ledger:

Under the traditional payment transfer mechanism, transfer of funds is routed through a trusted third party, banks for example, which authenticates the transaction. The transaction is then recorded and saved in a centralised server. User only receives copy of his transaction.

Distributed ledger on the other hand, not only records the transactions, shares it with each of the participating parties. That means each user of the network is having the copies of all the transaction which is ever made in the system making it difficult for hacker to corrupt or hack the system, as he has to manipulate least 51 percent of users copy in the network to forge blockchain system.

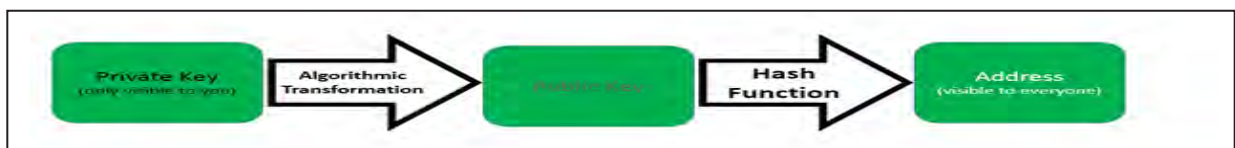


(Source: [www.ledgerfx.com](http://www.ledgerfx.com))

#### b) Anonymity:

One of the important features of Blockchain technology is anonymity, which is achieved through creation of private key and public keys. Public key is utilised to create the address of the user which is broadcasted in the network for undertaking transactions and private key is used to authorise the transaction by the user. In Bitcoin blockchain system private key is an integer between one and about 1077. This private key is used to derive the public key which is an identifier of 26-35 alphanumeric characters.

The public key is then hashed to arrive at address for the user. Blockchain ensures anonymity as transactions are broadcasted in network in form of address only i.e. when transactions are broadcasted in network, one can only able to see that one address has send money to another address and not the actual identity of the user. Anonymity is required only in public or permissionless blockchain, whereas in private or permissioned blockchain users or members are usually known and trusted.



(Source: <https://blog.wetrust.io/why-do-i-need-a-public-and-private-key-on-the-blockchain-c2ea74a69e76>)

#### c) Cryptographic Hash function:

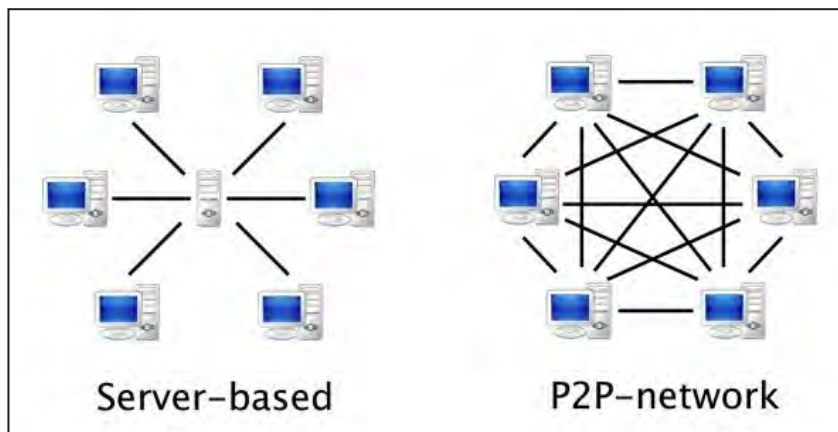
For making the blockchain system secure, hashing mechanism is used where input of any length is converted into output of fixed length. Under Bitcoin Blockchain, the transactions are taken as input and run through a hashing

algorithm (Bitcoin uses SHA-256) which gives an output of a fixed length. In the case of SHA-256 (Secure Hashing Algorithm 256), no matter how big or small your input is, the output will always have a fixed 256-bits length i.e. expressed as a 64-bit number. This mechanism accommodates a fairly

large amount of input data (maximum possible size under 64 bit input is 2091752 terabytes). This function becomes critical when huge amount of data and transactions are dealt with where only hash is required to be remembered and tracked. Under hashing algorithm each input gives separate output and even a marginal change in input results in huge change in output. Therefore, only possible way to crack the hashing output is through “brute-force method” which means that you have to pick up a random input, hash it and then compare the output with the target hash and repeat until you find a match. The odds of this happening are astronomical. Under a 128-bit hash model possibility of finding such match is  $2^{128} - 1$  times which makes cracking of hash input in blockchain is practically unfeasible. Use of cryptographic hash function makes the blockchain system secure and reducing the possibility of forging it.

## d) Network:

Blockchain uses a peer to peer networking model used by BitTorrent file sharing mechanism. It uses a flat topology with no hierarchical special server node. This means that all users consume services equally via consensus rules. As soon as transactions are broadcasted each user updates its copy of database containing the history of transactions. This model is different from client server model where data is stored in a central server and client needs to log in to the server to have access to requisite information. Traditional client server model is susceptible to data breaches due to singularity of data storage. Multiplicity of data storage makes it very difficult for a hacker to corrupt or modify the data. Such possibility arises only when a hacker is able to control at least 51 percent of users.



(Source: <https://qph.fs.quoracdn.net/main-qimg-e22a006a1277ad37a0a02360ef587ef7-c>)

## e) Distributed Consensus:

Blockchain is a decentralised peer-to-peer system having no central authority to monitor the fair happening of transactions. It therefore uses consensus mechanism for validation of transactions and resolution of disputes. There are four main methods of arriving at consensus in a blockchain system, these are: -

- (i) The practical byzantine fault tolerance algorithm (PBFT): It is based on the potential solution to the Byzantine General's problem, where each user solves the problem, which is broadcasted to all users and consensus is determined based on the total decisions submitted by all users. Examples of Blockchains system which rely of PBFT consensus are Hyperledger, Stellar, and Ripple.
- (ii) The proof-of-work algorithm (PoW): Bitcoin blockchain uses PoW method of reaching consensus where system uses 'hash function' to create conditions under which

all participant are allowed to solve the equation but only a single participant is permitted to announce its conclusions which was independently verified by all other system participants. Hash function removes the possibility of arriving at the false.

- (iii) The proof-of-stake algorithm (PoS): This method of reaching consensus is similar to PoW method except that participation in the consensus-building process is restricted to those parties having legitimate stake in the blockchain. Here hash function calculation is replaced with a simple digital signature which proves ownership of the stake. The network selects an individual to approve new messages based on their proportional stake in the network. Peercoin is the example which uses this consensus mechanism.
- (iv) The delegated proof-of-stake algorithm (DPoS): The final method of establishing consensus is the most centralized, which works in the similar lines as the PoS

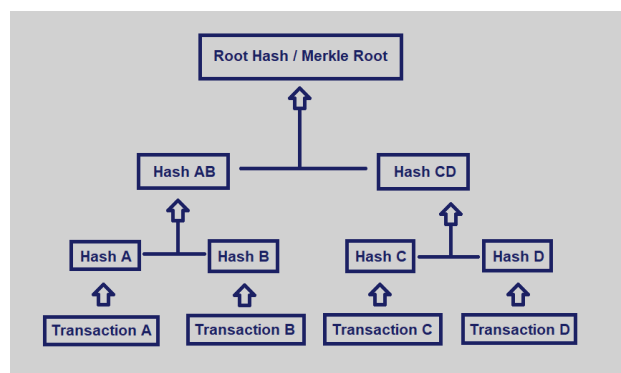
system, except that individuals choose an overarching entity to represent their portion of stake in the system. Bitshares is one company that employs a DPoS system.

#### f) Permission less:

There is a big difference in what blockchain system you need, depending on whether you allow anyone to write or only known and vetted participants can write. In this way blockchain systems can be categorised into either public or private blockchain. Public or permission less blockchains are ledger where anyone without any permission granted by another authority can read and write data. In the contrary in a private or permissioned blockchains network participants are known and trusted and writing of data by the chosen individual which is vetted as per their delegated authorities.

#### g) Storing of transactions:

Under blockchain information are sequenced and stored in Merkle tree structure format, which summarizes all the transactions in a block by producing a digital fingerprint of the entire set of transactions, thereby enabling a user to verify whether or not a transaction is included in a block. The advantage of Merkle tree is instead of storing all the input, only hash function can be stored for verification of authenticity of transactions. Merkle trees are created by repeatedly hashing pairs of nodes until there is only one hash left (this hash is called the Root Hash, or the Merkle Root). They are constructed from the bottom up, from hashes of individual transactions (known as Transaction IDs).

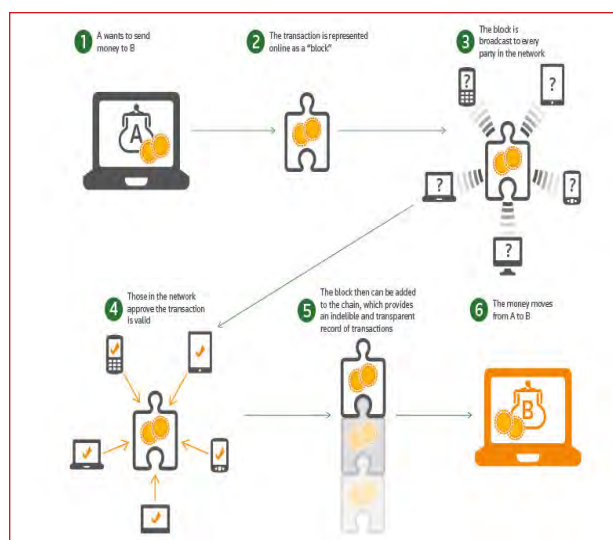


**Merkle Tree** (Source: <https://hackernoon.com/merkle-trees-181cb4bc30b4>)

### Understanding the blockchain process

The various features of blockchain are like the Jigsaw puzzle, where it is easier to solve it once all of its parts are collected and their functions are understood. The blockchain process starts when a transaction is initiated

by a user. The user or the sender then uses his private key (digital signature can be used alternatively in the private or permissioned blockchain) to authenticate his identity. The content of transactions is then hashed to make it secure. After hashing the public key is added to the hash to send the transaction to the recipient. Recipient then validates the transaction by using his private key. This mode of transaction suffers with a inherent limitation especially in case of digital currency or transactions where some valuables are intended to transferred. Limitation in such transactions is recipient will never be sure whether sender has double spent the currency or the valuables. Sender may at the same time initiate the same transaction to the multiple recipients. To avoid such erroneous or fraudulent transactions consensus mechanism is used in the blockchain mechanism. Under which, transactions are broadcasted to in the network to arrive at consensus based on the respective blockchains pre determined on consensus mechanism for validation of transactions. Once validated it is added to the existing blockchain with time stamping ensuring that transactions are chronologically recorded. Beauty of the blockchain mechanism is that the recipient has to worry only about the double spending of previous transaction. The later and earlier transaction is automatically taken care of by the system itself. The blockchain system in respect of digital currency is dramatically shown below.



**Blockchain System overview:** (Source: <https://blogs.thomsonreuters.com/answeron/wp-content/uploads/sites/3/2016/01/infographic-how-blockchain-works.jpg>)

### Application of Blockchain Technology in various fields

Blockchain was created when first cryptocurrency Bitcoin



was introduced to the world by Satoshi Nakamoto in 2008. From the creation of first cryptocurrency to till today blockchain is still evolving and as per Swan, 2015, blockchain 1.0 is currency, with applications related to cash, such as currency transfer, remittance, and digital payment systems. Blockchain 2.0 is contracts, the entire slate of economic, market, and financial applications using the blockchain that are more extensive than simple cash transactions, stocks, bonds, futures, loans, mortgages, titles, smart property, and smart contracts. Blockchain 3.0 is blockchain applications beyond currency, finance, and markets-particularly in the areas of government, health, science, literacy, culture, and art. Similarly as per Mark Sigal (2011), blockchain is one of the five disruptive technologies in the field of computing and today's connected world could usefully include blockchain technology as the economic overlay to what is increasingly becoming a seamlessly connected world of multi device computing that includes wearable computing, Internet-of-Things (IoT) sensors, smartphones, tablets, laptops, quantified self-tracking devices (i.e., Fitbit), smart home, smart car, and smart city.

The use of blockchain in various fields is unlimited. Out of which some are listed below:

## a) Cryptocurrency

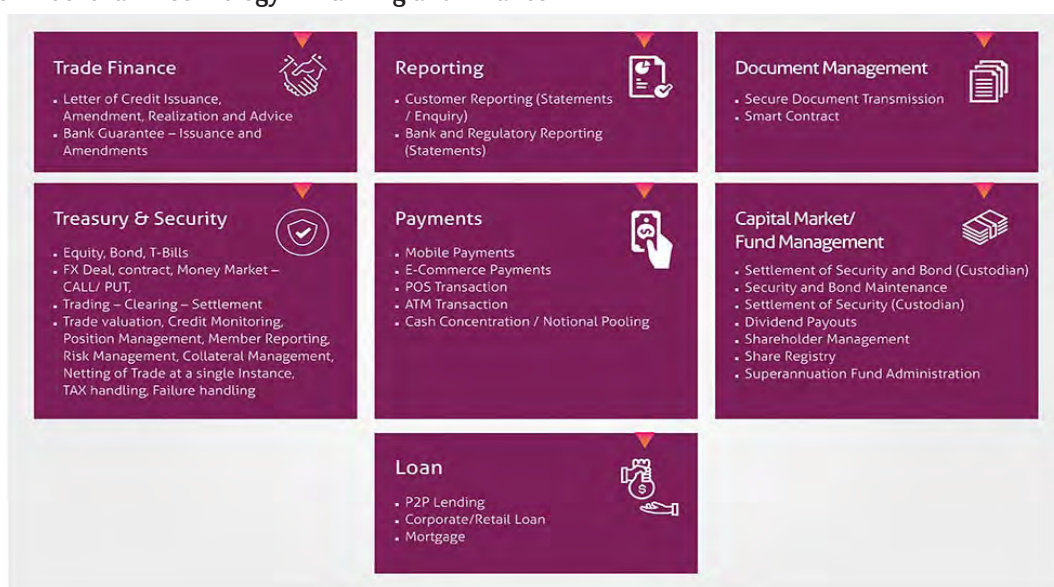
Use of blockchain in cryptocurrency is well known. Blockchain originated from a Bitcoin cryptocurrency. The use of blockchain in cryptocurrency is already been explored to

a large extent and as per website [www.coinmarketcap.com](http://www.coinmarketcap.com) more than 1500 types of cryptocurrencies are existing as of now. To ride on the revolution many of the central banks around the world started adopting blockchain technology to develop digital version of their own fiat currency to leverage the benefits of the underlying blockchain technology. Even Reserve Bank of India is looking at the possibility of introducing a 'central bank digital currency' which is tentatively named as 'Lakshmi' after the Hindu goddess of wealth.

## b) Banking and Finance

As per the white paper "Applications of Blockchain Technology to Banking and Financial sector in India" published by Institute for Development and Research in Banking Technology in 2017, "Blockchain Technology has the potential to address certain limitations of the current processes by modernizing, streamlining and simplifying the traditional siloed design of the financial industry infrastructure with a shared fabric of common information. The advantages brought by Blockchain Technology can be broadly classified into cost savings, efficiency, and transparency". The modern financial system with a permission-based or private blockchain system can improve efficiencies by taking onboard all the beneficiaries to create a banking ecosystem to reap the mutual benefits in terms of moving cash and assets in real-time to settle market transactions.

## Use of Blockchain Technology in Banking and Finance

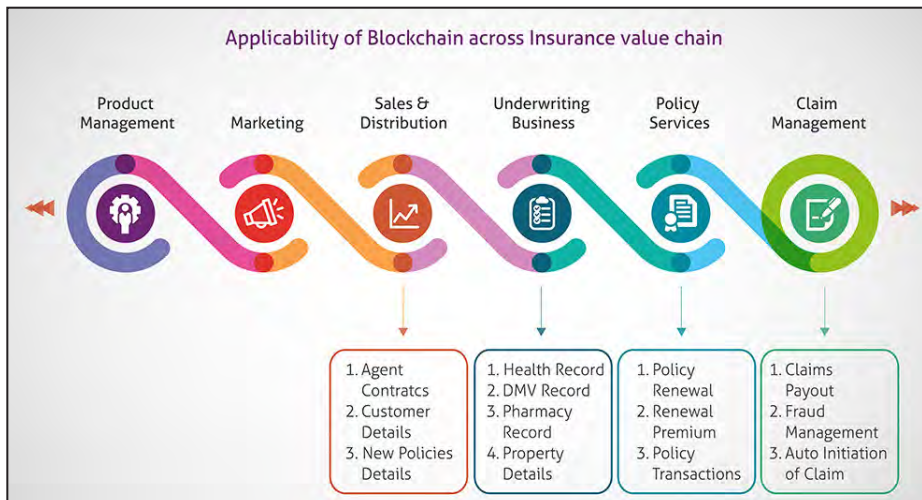


(Source: [www.mindtree.com/blog/blockchain-banks-implementation-guide](http://www.mindtree.com/blog/blockchain-banks-implementation-guide))

### c) Insurance:

The use of blockchain technology has significant potential for entire insurance value chain. Certain insurance products can be automated through smart contracts, which will pay out against the insurable event without the policy holder having to make a claim or the insurer having to administer the claim has significant attractions resulting in significantly

lowering the cost of claims processing by reducing fraud opportunities. Blockchain has the potential to eliminate error, negligence and detect fraud by providing a decentralized digital repository to independently verify the authenticity of customers, policies and claims with a complete audit trail feature. This prevents duplicate transactions and provides a verifiable public record of all transactions.

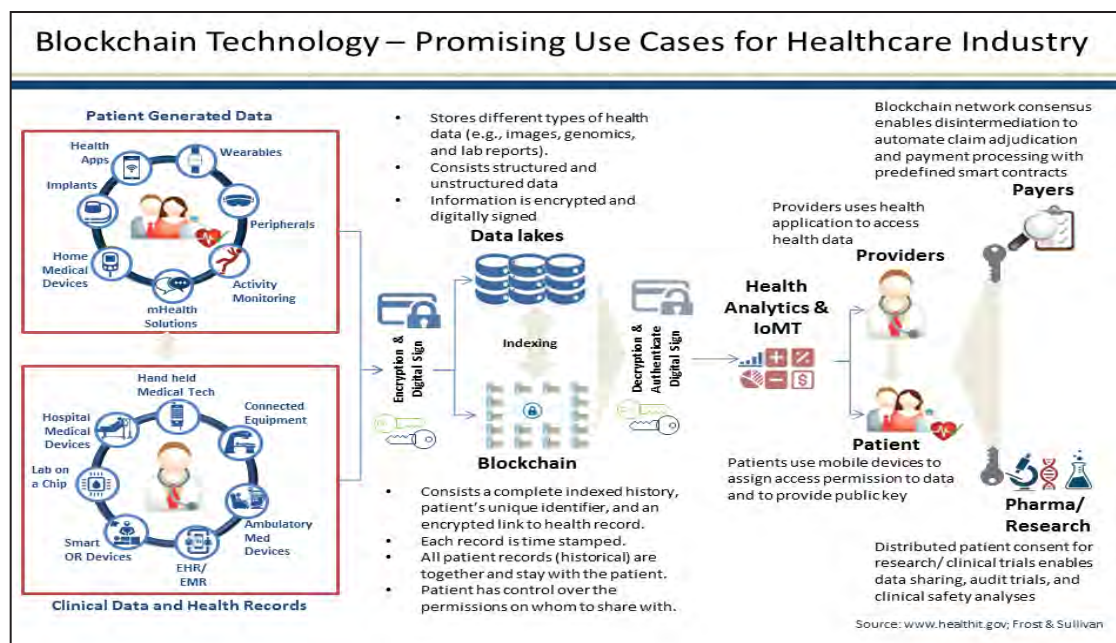


(Source: <http://umbertocallegari.com/blockchain-is-going-to-empower-or-disrupt-the-future-of-insurance>)

### d) Health Care:

The storage and sharing of health information presents an enormous challenge, including some important risks to privacy, and fantastic opportunities, including the potential to develop a practical understanding the health of unique individuals instead of generic humanity. Blockchain

technology may revolutionize medical research and individual care by diving into this space and promising a new era of research and discovery propelled by analysis of aggregated longitudinal health information from individuals in the context of that from the population at large, and by a new ability for researchers to access data they need to gain new insights.



## e) Digital Voting

This requires a geographically distributed network comprising of machines from both government and public infrastructure, which houses two distinctly separate blockchains, one for voter information such as who has voted and the other for vote information such as what has been voted. These blockchains are held completely separately to remove any threat to link votes for certain parties back to individual voters while maintaining the ability to track who has voted and how many votes are actually present. The blockchain containing information of who has registered to vote also allows service centres to ensure each voter is unique and as described by relevant authorities. Once registered voters are then allocated a vote after verification of their details has been completed.

## Conclusion

Blockchain is regarded as one of the emerging technologies, which is still in evolving stage. The next wave of blockchain includes various innovation like hyperledger fabric, smart contracts etc., which addressed the earlier limitation of bitcoin blockchain. In the initial years of introduction of blockchain technology, it was mostly adopted by cryptocurrencies. The practical application of blockchain is limitless and researchers are still exploring the ways to fully exploit the potential of this technology. Looking at the pace of adoption of blockchain it seems that it will soon reach the critical mass, which will make the rate of adoption becomes self-sustaining and creates further growth. 

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## BLOCKCHAIN TECHNOLOGY – AN EXPLORATORY STUDY ON ITS APPLICATIONS



*“The blockchain will do to the financial system what the internet did to media”*

*Joi Ito, Neha Narula, and Robleh Ali - Harvard Business Review*



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**Kumaran.R**  
Institute of Public Enterprise  
Hyderabad



**Dr. R.K. Mishra**  
Professor & Director  
Institute of Public Enterprise  
Hyderabad

**W**hat is blockchain and how does it work? The blockchain is a public ledger where millions of people are connected to that ledger. For example, if we want to send money to someone what is the usual process?

It passes through the intermediary called the bank or someone. But using blockchain we can send money directly to the concerned person. Here we may doubt that when transactions occur through an intermediary there is a great risk involved because someone can steal our data or something can happen, what if we can directly send the money to the concerned person? That is the advantage of blockchain since everyone is connected to the block; a small change will affect the individual ledger of every person. So it is highly impossible to hack someone's account and do data breach. If someone wants to do it then he has to hack millions of computers which are connected to the block simultaneously which is highly unlikely. It never allows manipulation, the double spending of money. Blockchain makes the changes instantaneously i.e. it gives real-time data. It is tamper proof and brings transparency.

### Review of Literature

**(Sachchidanand Singh, 2016)** In this paper, the author explains the importance of blockchain. He emphasized that it is a secure exchange digital currency, perform deals and transactions. And he says that each and every member in the block can have access to the latest copy of encrypted ledger where they can validate a new transaction. And the paper highlighted the need for the blockchain and how it is going to shape the future of banking, financial institutions and it can be adopted along with Internet of Things (IoT).

**(Andersen, 2016)** The author explains the potential of blockchain in accounting. He says that financial sector may undergo disruptive change. In his white paper, he explains the benefits of blockchain technology in specific to the accounting practices. Double entry process revolutionized the field of accounting and by using the blockchain technology we can create an interlocking system of accounting records instead of individuals. And he says this process is similar to verification done by a notary but in an electronic way.

**(Jesse Yli-Huoma, 2016)** In this paper, the author explains why there is attention to the blockchain technology. He says that because its central attributes which provide security, data integrity and anonymity without any intermediary in control of transactions are some of the reasons he quoted for the attraction towards the technology. And in his study, his objective is to identify how many people focus

on bitcoin and blockchain. At the end of the study, he found that nearly 80% focus on bitcoin and only rest on the technology part. He also says that many focusing on improving the limitations of the technology but many of them lack concrete evaluation for the solution provided.

### Objectives of the Study

- ✱ To understand the blockchain technology
- ✱ To study the various applications of the blockchain in various fields
- ✱ To analyze the future blockchain applications

### Major Blockchain Applications

#### I. Fair Value Accounting:

Blockchain technology is tamper proof and transparent. That is where the idea of using it in the fair market value of accounting emerged. The Digital Age poses a considerable challenge to stay relevant on the balance sheet. Basically, the accounting is based on historical value of data. If someone wants to invest money in some company, he will analyze the company's annual report at the most or he will check for a quarterly report of the data which gives him its past data of 1 year or 3 months. So with this information, they can predict results to some extent only. If the investor has the real-time data about the company he can do it in a better way and may take wise investment decisions.

For example, if a company acquires another company or when it merges with another one, it usually affects the balance sheet at the end of the year. So an investor will know about the assets and liabilities of the company at the end of the year, but by using the blockchain technology the change will be immediate and instant. It will never give chance for the companies/firms to manipulate their data and cheat the investor, which brings transparency.

By using blockchain it removes all intermediaries as mentioned earlier. If blockchain technology is used in capital markets then intermediaries are not required. Basically, we need them to know about the companies' position and to analyze the market. When everything is going to be transparent why we need them for transactions. Buying and selling of securities can happen quickly and moreover, it reduces the cost of operations. It can also be used in mutual funds, treasury and securities and managing Funds etc..

Already blockchain technology has been incorporated into the banking sector. Tech Giants Infosys and TCS are aggressive investors and innovators in this technology. Infosys has already incorporated this technology into their

**“The one thing that never changes is CHANGE itself...! We can see how the smartphone has changed our lifestyle. In the late 80's and 90's, we had to wait/stand in a queue for a long time for calling a person. Gradually the cellphone came into our hands and now the smartphone. The entire world has shrunk into our palm. Same is the case with the internet evolution, Facebook etc., and now blockchain technology is on its way. It not only changed the way we use the internet but also revolutionized global economy. Though it is in initial stage of development, the kind of growth since its inception is massive. The question WHAT IF has more power because many great innovations have a start on this question. Likewise, this article speaks about “What if blockchain technology is used in the fair market value of accounting?” and this article speaks about the various applications of blockchain technology.”**

banking product finacle and 10 banks are using this in testing mode. And banks like ICICI, Axis Bank, Yes Bank etc have made agreements with some companies to implement it in their companies.

Also because of its wide range of safety, even RBI is considering to adopt this technology. The IDRBT an RBI institute published a white paper with the title “Applications of blockchain technology in banking and financial sectors in India”. This technology certainly helps the managers in credit appraisal, risk management and improves the efficiency in managing NPAs at banks.

This technology maintains 3 types of ledgers: public, private, permissioned. It depends on the need of an individual. It paves the way for a company to interact with the customer directly. If this technology had been innovated before one or two decades back, then probably the 2008 sub-prime crisis could have been avoided. Also same is the case with Satyam Computers Limited fraud with one of the most valued firms PwC made manipulation.

The daily change in balance sheet may not be possible in the initial stages. So the change can be once or twice a week. Certainly, this technology will emerge and adopted in various industries soon. Then the market performance or trading will be different from then. Most importantly this technology will bring down the number of cases filed with the Insolvency & Bankruptcy code in the country in future

and protects the lender's and investor's interest in business and development.

## II. Initial Coin Offering (ICO)

The most difficult task for any budding as well as an established entrepreneur is fundraising. They really need a good network and negotiation skills, further, they need the luck factor. Also, they have to conduct several business meetings, presentations to clinch the offer of a funding which is a very difficult and time-consuming activity. But now this concept of funding is slowly changing because of the new buzz/magic word ICO (Initial Coin Offering). What is this ICO? How is this going to be a game changer? Is it good or bad?

Someone said, “If you are not ready to be rejected at least 50 times when you are raising funds, you shouldn't even try!”. Probably this might get changed due to ICO. Just talk to any experienced entrepreneur and he/she will tell you that fundraising has the least fun and it is the least glamorous job. It is stressful, uncertain and depressing too. Normally people think/feel that fundraising for a company is easy because of the potential of the company which raised it. But the real scenario is quite different. Even top business giants like Facebook, Flipkart, Paytm, Ola etc., faced and are facing a similar situation, and when they are not able to raise funds they sell the firm.

When you attract an investor you need to give a certain



portion of company shares to him. When you raise funds in multiple rounds, at the end you don't have your own stocks in your company to sell. Then the only possible way to raise funds is going to primary markets i.e. IPO which is not an easy task for most of the companies. Because of this only few companies like Facebook Inc., went to IPO whereas companies like Instagram, Whatsapp sold their companies to Facebook after 3 rounds of fundraising. You have to face so many rejections while raising funds. It is not an easy task. And no one will accept your proposal at first take itself. Whatever is discovered today becomes outdated tomorrow. When there are several companies readily available in the markets, why should they invest in your company? Your proposal may get accepted after 173 rejections also. There are a large number of startups which closed due to lack of funds. Thanks to ICO (Initial Currency Offering) as a solution to startup financing.

Assume that you are a CEO of a start-up which makes an app called XYZ. The app has really got the traction among the customers and it has gained a considerable market share over the past few months and now you want to stimulate your growth and recruit more workforce so you are eagerly planning to raise funds. The available options are VC (Venture Capitals) or IPO (Initial Public Offerings) or Angel financing or crowdfunding campaign like kick starter which is difficult to manage. The other emerging popular option now is ICO's (Initial Currency Offerings).

The ICOs are also tough but not like the other options, even a new set up startup can avail funds through ICOs, provided it proves its credibility to the world what it intends to do on a white paper. The white paper is something like a pitch deck in the form of a web page by putting all the details like how your business model is going to work, how the token allocation will be done, technical information about your project, the team member-details etc., This one paper should give a broad and clear picture of your vision and it should give a crystal clear information for the investor to take an informed decision. Unlike IPOs, in ICOs a token or a coin will be issued instead of securities. The greatest and significant advantage in ICO is owners stake is not diluted i.e. the investor who is willing to invest money can invest only in the particular project and not in the company. At the same time, each and every movement will be monitored by them and decisions will be taken by them. Whereas in the case of IPOs, the company CEO will take decisions.

The present trend of Investors is that of expecting high returns in a short span of time. Probably it is the main reason behind bitcoin popularity and global reach in a

much less time. Suppose, if you have invested \$1 in bitcoin in early 2015 it would have fetched, you around \$7420. Often these days investors are thrilled to see 8% returns on their investments, for such investors \$7420 returns is a huge return in a short span of time. But it is not the only digital currency which has seen this tremendous growth, there are a few others and this ICO is also similar to them. During 2016-2017 many venture capital companies found it difficult to fund start-ups, this ICO arranged payment of rent with coins by creating a DIY patented research tool. According to the Inc.com cypherium, rentberry, loci, trippki, rightmesh, experty, nau, coinlancer, fansunite, giftz are the top 10 companies which have already got ICOs or are going to get it in 2018. The ICOs have raised nearly \$327 million through fundraising which is very high when compared to the usual venture capital. Also, anything which comes fast is not good.

## Analysis:

If there is a top then definitely there will be a bottom also. In this connection, the negative effect is when the public starts investing money and if it does not fetch the expected return, it will be difficult for the good projects to get funds, and there is no regulator as well. Since there is no regulator frauds are possible and if many projects look alike or do not reach the expected level then it is of no use. Though many central banks and regulators are studying the digital currencies, except the USA, no other country has raised concerns regarding this. In the USA has mentioned that it will be considered as security and nothing more than that. When we look at things happening across the world, it raises several questions in minds whether it will be another dotcom bubble.

This skepticism creeps because of a global financial crisis with every investment opportunity being labeled as economic bubble including the bitcoin. The important principle in investment is to wait patiently for a long time in order to reap good benefits. Similarly, we have to wait for another 10 years or more to see how the world is going to use the blockchain to support ICOs, digital currencies etc.. It is going to be the game changer of the world economy.

## III. Economic Inclusion and Entrepreneurship

Financial inclusion is a prerequisite for economic inclusion.

## Applications:

### i. Digital Asset Registries

Following digital currencies and money transfer, one

of the biggest blockchain applications in development is digital asset registries. The same distributed ledger technology provides the means to record and transmit digital goods over the Internet, while ensuring that these goods cannot be copied or multiplied

#### ii. Leapfrog Technology

One of the highest-impact applications of blockchains could be as a leapfrog technology for global financial inclusion. It does not make sense to build out brick-and-mortar bank branches to every last mile in a world of digital services. Instead, eWallet banking apps might be an effective means of reaching the two billion “unbanked” people in the world (PwC, 2016). Even without phone-based banking, low-cost debit cards might effectively service the unbanked (Rogoff, 2016).












#### IV. Payment Channels and Peer Banking Services Following:

One of the most intriguing ideas being developed in the blockchain industry is payment channels. A payment channel is a financial contract executed over time in three steps:

- i) One party opens up a payment channel with one or more parties and posts a pre-payment escrow balance on file,
- ii) The party consumes against this credit over time, until
- iii) The closing transaction in which aggregate activity is booked in one net transaction to close the contract.

#### V. Smart Contracts:

“A smart contract is a computer protocol intended to facilitate, verify, or enforce the negotiation or performance of a contract”.

Traditional contracts	Smart contracts
 1-3 Days	 Minutes
 Manual remittance	 Automatic remittance
 Escrow necessary	 Escrow may not be necessary
 Expensive	 Fraction of the cost
 Physical presence (wet signature)	 Virtual presence (digital signature)
 Lawyers necessary	 Lawyers may not be necessary

Simply put; a smart contract can facilitate the numerous touch points in a contract process, verify, and then enforce them.

#### Benefits:

- ✳ Instant Verification
- ✳ Authority
- ✳ Transparency
- ✳ Enhanced Privacy Structure

#### Conclusion

Block chain technology is not restricted to the above mentioned applications, it can also be used in a wide range of starting from electronic voting machine where we can have fair elections and it has been tested as trail in South Korea and they succeeded too. It can also help to reinvent the financial services system. Some of the financial companies started implementing use of this technology in a testing mode and many others are trying the ways to adopt to use it efficiently and many more applications. It can be adopted in each and every field. But as we know every coin has two sides likewise, it also has some disadvantages. But it can overcome with the rapid developments in technology. When internet came everyone was afraid how it is going to damages but now we are celebrating it. Now world has become like nothing can't be done without internet and many companies succeeded because of internet only likewise blockchain also will become in near future. **MA**

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# BLOCKCHAIN TECHNOLOGY

## WILL IT DISRUPT OR DISCIPLINE ACCOUNTANTS?



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**D**igital Technology or Disruptive Technology is the way of life today and so to say the future is towards digital world. The emergence of disruptive technologies viz., 3D Printing, Sensors, Bots, Robots, Internet of Things (IOT), Self-driving Vehicles, Simulation, Augmented Reality (AR), Virtual Reality (VR), Artificial Intelligence (AI), Big Data, Advanced Analytics, Drones, Blockchain etc., are dominating men and machines in every walk of human life. If you order any item online or over phone, it may soon be delivered by drones replacing the concept of door-delivery by drone-delivery.

### Disruptive Technology

Disruptive Technology is one which displaces the entire existing technology or erodes the major part of use of existing technology. Digital photography disrupted the conventional film photography, pagers were completely disrupted by mobile phones and fixed or land-line phones were significantly replaced by mobile phones. Computers replaced typewriters and human-beings being replaced by robots are some of the examples of disruptive technology.

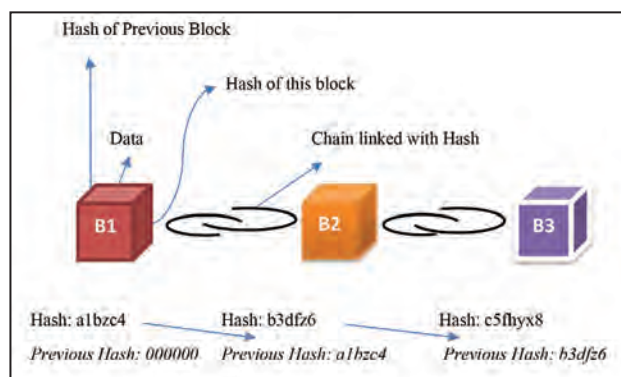
### What is Blockchain?

A Blockchain is a kind of distributed database and is one of the Distributed Ledger Technologies (DLT) where data is recorded, stored and sorted into blocks. Unlike



centralized database, in Blockchain data is stored in various participating nodes. Blockchain is an enumerated list of records containing information. The individual enumerated records are called blocks and chained together using a cryptographic hash that is linked to previous block. Together these blocks are called as distributed ledger. The origin of the block is called genesis block and is the starting point of the chain. The data stored in Blockchain are immutable which means blocks created once cannot be altered without having cascading effect on previous blocks. Since it is distributed ledger technology, Blockchain facilitates peer-to-peer transaction without involvement any other third party. A Blockchain is a type of distributed ledger can contain financial or non-financial transactions replicated across the network on peer-to-peer network using cryptography. There is often a confusion between Blockchain and Bitcoin. Bitcoin is a type of unregulated digital currency known as cryptocurrency. Whereas, Blockchain is a distributed ledger technology that enables and maintains Bitcoin transaction ledger over peer-to-peer network without central authority.

**Figure 1: Blockchain**



B1 above is genesis block hence previous Hash is 000000, B2 is dependent on B1 and B3 on B2

### What is a Hash?

Hash is a 64-character alphanumeric unique code assigned to a transaction. Typically, it works like a finger print of person making the transaction unique. Hashing ensures that original information cannot be seen by third party.

In a Blockchain, each block has a 'header' which contains technical information, reference to previous block, a digital finger-print (hash) of the data contained in the block and the contents of the block i.e., information about the transactions. Every time a participant of the network adds

a transaction a new block is created. This is a key feature of Blockchain Technology making transactions more secure.

### What is Distributed Ledger?

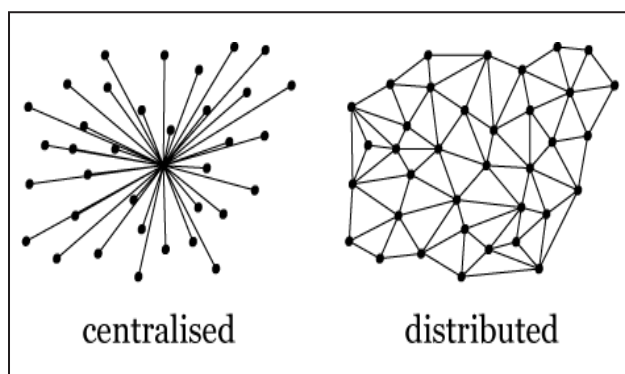
A distributed ledger is a database of assets or transactions that can be shared across multiple nodes in a network so that each participant has their own copy, with any change reflects in every copy almost simultaneously. Each transaction is recorded as a 'block' of data, and each new block has an encrypted copy of the previous block included within it. Blocks are then linked using cryptographic signatures to create a 'chain' of activity or transactions that are time-stamped, distributed and tamper-proof. In short, it creates an incorruptible ledger of information.

### How is Distributed Ledger Technology Different?

Traditionally, ledgers are based on double entry book-keeping wherein for every debit there must be an equal credit. When a transaction is processed, one organization will record debit and the other records credit. Whereas in a centralized ledger a central authority maintains and appends the records to a single ledger and may choose to show a copy of that ledger to other market participants. Here the trust is placed on the third party who maintains the centralized ledger. For example, banks have total control over the customers' accounts as the banks maintain a centralized ledger at their end.

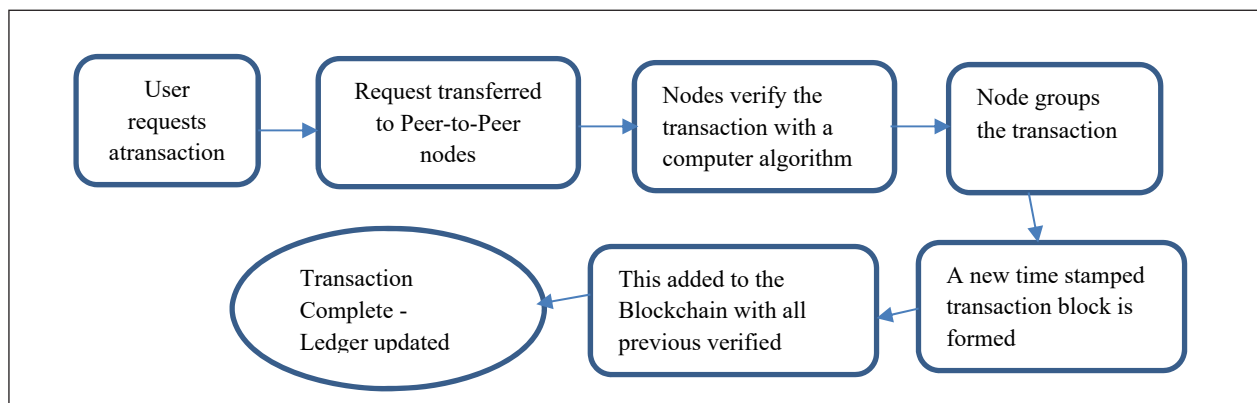
In case of distributed ledger, there is no centralized data storage or no centralized administrator. It is a database that can be shared across the network irrespective of geographical or any other constraint. Each participant connected to the network can have their own identical copy of ledger and any change reflects in all the copies of the ledger in minutes or seconds depending on the database. This ability to transact without the need of a trusted third party is the key feature of distributed ledger technology.

**Figure 2: Centralized vs Distributed Ledger**



## How Does Blockchain Works?

Figure 3: How Blockchain works



Blockchain is a distributed ledger which can contain financial and /or non-financial information and is replicated across the network in near real-time basis over a peer-to-peer network. Every participant of the network owns the same copy of the ledger which gets updated whenever transaction is added. Transactions are highly secured and immutable. Uses cryptography and digital signature (time stamped) to prove identity, authenticity enforcing access rights.

There are three popular types of Blockchain.

**a) Public Blockchain:** In case of Public Blockchain anyone can transact on the network transactions are transparent but they are anonymous. Bitcoin and Ethereum are best examples of Public Blockchain. In case of Bitcoin and Ethereum transactions, participants of these networks can see the transactions but the identity of the participant is anonymous.

**b) Private Blockchain:** In case of Public Blockchain the data is not available for public view. A private Blockchain network requires an invitation to join also a participant cannot read or write the Blockchain unless permission to do so. Private Blockchain is used by large enterprises with permissions defined between various stakeholders of the enterprise Blockchain. A bank can have its own Blockchain network for its private use with restricted access to its various stakeholders viz. employees, suppliers, customers, shareholders etc. In this case members are known but transactions are secret.

**c) Consortium Blockchain:** Consortium Blockchain is a hybrid model of public and private Blockchain in this case

a group of companies or institutions can have their own Blockchain network to share the data among the consortium participants. A good example Consortium Blockchain can be CIBIL (Credit Information Bureau of India Limited). It is neither public nor private only a consortium of banks and financial institutions can access complete details of CIBIL network.

## Blockchain Use Cases

### Use of Blockchain Technology to Government

- ★ Land records can be fully secured making it impossible to tamper
- ★ Facilitates ease of credit availability to farmers from banks and prevents hacking of bank transactions
- ★ Voter ID database can be strengthened so that a voter can vote from anywhere in the country and also avoids duplication in voting.

### Use of Blockchain Technology to Industry

Use of Blockchain Technology while digitisation of healthcare industry brings transparency and significant change in public health. It also ensures genuineness of drugs and medicines, tracking expiry date of medicines etc.,

Use of Blockchain Technology while digitisation of education industry brings transparency in student records, faculty assessment, authenticity of certificates. This avoids requirements of attestation and verification of educational certificates.

Use of Blockchain Technology in oil and gas industry ensures tracking of oil through the entire supply chain and facilitates immutable view of all events of assets life cycle. Smart contract based leases and termination results in reduction of legal costs.

### Blockchain for Accounting and Auditing

Blockchain is an accounting technology, which deals with transfer of ownership of assets and maintaining ledger of accurate financial information. Use of Blockchain can increase the potential of accounting profession by reducing the cost of maintaining and reconciling ledgers. This may be a threat to accountants as automated reconciliations take away the work of accountants. But, Blockchain empowers the accountants that an asset exists with proven authenticity. However, the economic reality or economic value has to be validated by accountants.

Blockchain can improve India's current Trade Finance System. Blockchain Technology in identity management strengthens Known Your Customer (KYC) verification process. Letters of Credit (LC) and Letters of Undertaking (LOU) can seamlessly be validated from end to end of the

transaction cycle so that fake documents can be avoided.

Blockchain improves audit efficiency as auditors typically selects sample transactions and draws conclusion based on certain observations. However, use of Blockchain Technology facilitates time stamping feature observable on real-time basis. By using a hashcode, a unique 64-digit alpha-numeric signature is recorded corresponding to a single transaction. This hash code makes the transaction immutable (non-alterable) and establishes greater security. The same hash code appears at both the ends i.e., supplier and receiver.

Blockchain Technology can be potentially used in accounting and audit function. Blockchain ensures traceable audit trails, automated accounting and reconciliations, tracking of ownership of assets, authentication of transactions. Blockchain can be used as a source of verification for reported data. The days of sample based will soon be a history, as the auditors may soon use Blockchain Technology to test the entire population of transactions of a period under audit. This will extensively improve the level of assurance.

S.No.	Blockchain Features	Use in Accounting and Auditing
1.	Distributed Ledger	Since it is distributed ledger technology with no central authority it is almost impossible to hack all the nodes in the network. Provides highly secured environment
2.	Near Real-time updating	Transactions are recorded in near-real time basis at both the supplier and recipient end eliminates need for reconciliation.
3.	Digital and Time-Stamped (Hash)	All transactions are digitally time-stamped with a cryptographic hash, transactions are more reliable and authenticated.
4.	Consensus	Transactions are updated only with the agreement between participants in the system and each block is linked to a specific participant.
5.	Immutability	Data written to a Blockchain cannot be altered even by system administrator. This ensures greater data security and authenticity of recording

### Case Study 1: Government of Andhra Pradesh- Bhoodhar Card

Andhra Pradesh has become the first State in India to adopt Blockchain Technology in Governance. Andhra Pradesh Government initiated the concept of Bhoodhar (Similar to Aadhar for People Bhoodhar is unique ID for lands) first of its kind in the country to secure land records using Blockchain Technology. This facilitates change of ownership of lands would be automatically recorded once the sale deed is registered. Lands based on the Unicode, are geo-tagged and the information automatically passes

on to Revenue, Registrations, Survey, Municipal, Panchayat Raj and Forest Departments and are available instantly.

### Case Study 2: Bajaj Electricals uses Blockchain to pay suppliers


The process cycle for bill discounting at Bajaj Electricals has come down from four to five days to almost real time after the implementation of Blockchain. Getting paid for materials supplied to Bajaj Electricals Ltd was a complex process for their vendors. It involves many steps including confirmation by Bajaj Electricals, making physical Bill



of Exchange by supplier, transportation documents and submission of invoice to Yes Bank for making payment. This was taking four to five days for getting payment credited to suppliers' account.

The company has explored a speedy and secure solution to replace manual bill discounting process using Blockchain Technology. In January, 2017 company went live on Blockchain based vendor financing developed by Yes Bank. This eliminated manual steps involved in the bill discounting process and entire transaction became almost paperless. Payment cycle came down to almost real time.

### Epilogue

Blockchain Technology can bring revolution in the areas of banking, payments and money transfer, education and health, voting, trade finance, stock trading, real estate and insurance sectors. Digitization of accounting profession is still in its nascence stage compared to technical fields. Rather accounting profession is less disrupted than industrial technology! 

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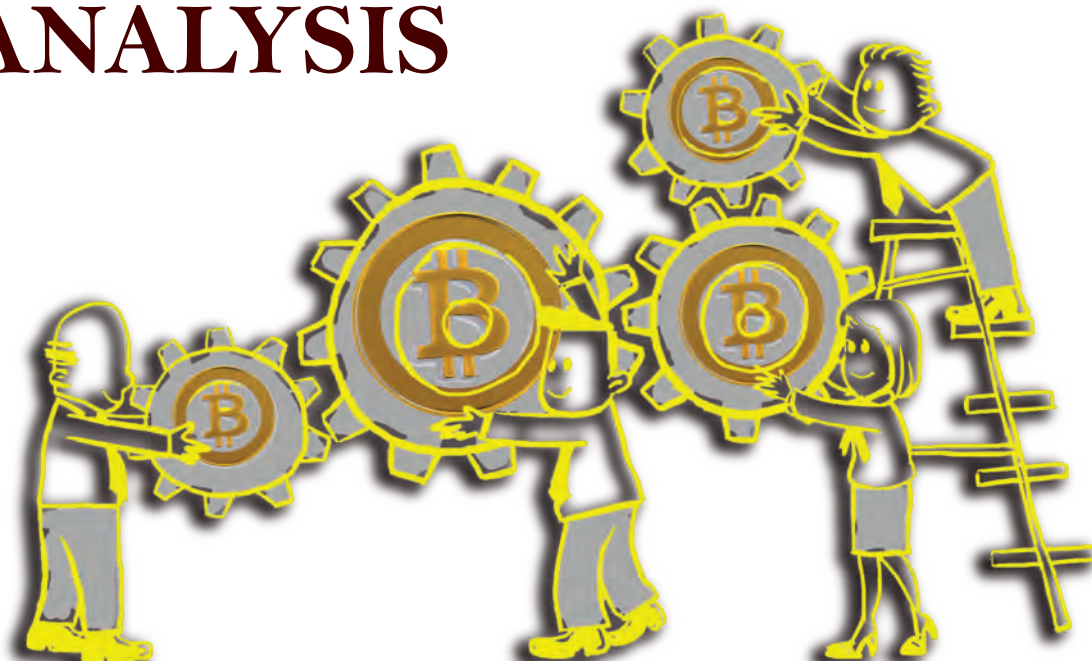
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## Articles invited

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# BITCOIN – BLOCKCHAIN INDUSTRY ANALYSIS



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*Bit coin is talk of town these days. Bit coin is but just one crypto currency. On one hand, Japan consider bit coin as a legal tender, while on the other, JP Morgan Chase CEO James Dimon calls it little more than a “fraud”. Investors or traders of Bit coin faced chaotic situation after Shanghai-based BTC China, a major Chinese bit coin exchange, said it would stop trading in the crypto-currency from September 30, citing tightening regulation, while smaller bit coin exchanges Via BTC, YoBTC and Yunbisimilar closures. This sent negative signal to the world in relation to Bit coin. Indian government also is not looking happy with Bit coin. The objective of this paper is to know what is Bit coin, rise and fall of Bit coins and its usage.*



**B**it coin could be a new currency that was created in 2009 by associate degree unknown person mistreatment the alias Satoshi Nakamoto. Transactions area unit created with no middle men – that means, no banks! Bit coin will be accustomed book hotels on Expedia, buy piece of furniture on buy in and get Xbox games. However abundant of the promotion is concerning obtaining made by commercialism it. The value of bit coin skyrocketed into the thousands in 2017.

Bit coin could be a crypto currency, or a digital currency, that uses rules of cryptography for regulation and generation of units of currency. Bit coin falls underneath the scope of crypto currency and was the primary and most precious among them. It's ordinarily referred to as a decentralized digital currency.

### How does one 'mine' bit coin?

A man (or gathering, or organization) mines bitcoin by completing a mix of cutting edge math and record-keeping. Here's the means by which it works. When somebody sends a bitcoin to another person, the system records that exchange, and the greater part of the others made over a specific timeframe, in a “square.” Computers running extraordinary programming - the “excavators” - engrave these exchanges in a colossal advanced record. These squares are referred to, by and large, as the “block chain” - an interminable, transparently available record of the considerable number of exchanges that

have ever been made.

A block chain initially piece chain, is a persistently developing rundown of records, called squares, which are connected and secured utilizing cryptography. Each piece regularly contains a cryptographic hash of the past square, a timestamp and exchange information. By plan, a block chain is innately impervious to change of the information. It is “an open, circulated record that can record exchanges between two gatherings proficiently and in an irrefutable and lasting way”. For use as a dispersed record, a block chain is regularly overseen by a distributed system all things considered holding fast to a convention for between hub correspondence and approving new squares. Once recorded, the information in any given piece can't be changed retroactively without the modification of every ensuing square, which requires intrigue of the system greater part.

### The History of Bitcoin

Bit coin was created by Satoshi Nakamoto in 2009. It took nearly two weeks after its initial release until the first official transaction on the network occurred between Satoshi and Hal Finney. Moreover, it took some time until the first financial transaction denominated in bit coin took place. This day is known as Bitcoin Pizza Day, an event that is celebrated around the world every single year.

2016 has been the year during which the bitcoin price



exploded in the final 6 months. Bit coin was deemed one of the worlds's best performing assets for the calendar year, and that bullish trend is still visible today. With the number of bit coin ATMs around the world reaching the 1,000 mark soon, the future looks very bright for crypto currency. There are exciting times to live in, that much is certain.

Bit coin is but just one crypto currency. It is the leading one, however, with a total market value of USD 231 billion as of publishing time, accounting for 36% of the total value of all crypto currencies. The entire crypto currency market hit its peak value at about USD 700 billion in January 2018. Ethereum (13% market share) and Bit coin cash (8%) are just two other major crypto currencies that are being traded today.

#### Historical Data of Bit coin

Date	Open	High	Low	Close	Volume	Market Cap
Apr 19, 2018	8,159.27	8,298.69	8,138.78	8,294.31	7,06,32,10,000	1,38,59,10,00,000
Apr 18, 2018	7,944.43	8,197.80	7,886.01	8,163.42	6,52,99,10,000	1,34,92,60,00,000
Apr 17, 2018	8,071.66	8,285.96	7,881.72	7,902.09	6,90,08,80,000	1,37,07,00,00,000
Apr 16, 2018	8,337.57	8,371.15	7,925.73	8,058.67	5,63,13,10,000	1,41,57,10,00,000
Apr 15, 2018	7,999.33	8,338.42	7,999.33	8,329.11	5,24,44,80,000	1,35,81,20,00,000
Apr 14, 2018	7,874.67	8,140.71	7,846.00	7,986.24	5,19,14,30,000	1,33,68,20,00,000
Apr 13, 2018	7,901.09	8,183.96	7,758.93	7,895.96	7,76,44,60,000	1,34,11,40,00,000
Apr 12, 2018	6,955.38	7,899.23	6,806.51	7,889.25	8,90,62,50,000	1,18,04,80,00,000
Apr 11, 2018	6,843.47	6,968.32	6,817.59	6,968.32	4,64,18,90,000	1,16,12,60,00,000
Apr 10, 2018	6,795.44	6,872.41	6,704.15	6,834.76	4,27,27,50,000	1,15,30,60,00,000
Apr 09, 2018	7,044.32	7,178.11	6,661.99	6,770.73	4,89,40,60,000	1,19,51,60,00,000
Apr 08, 2018	6,919.98	7,111.56	6,919.98	7,023.52	3,65,25,00,000	1,17,39,20,00,000
Apr 07, 2018	6,630.51	7,050.54	6,630.51	6,911.09	3,97,66,10,000	1,12,46,70,00,000
Apr 06, 2018	6,815.96	6,857.49	6,575.00	6,636.32	3,76,68,10,000	1,15,60,10,00,000
Apr 05, 2018	6,848.65	6,933.82	6,644.80	6,811.47	5,63,93,20,000	1,16,14,20,00,000
Apr 04, 2018	7,456.41	7,469.88	6,803.88	6,853.84	4,93,60,00,000	1,26,43,40,00,000
Apr 03, 2018	7,102.26	7,530.94	7,072.49	7,456.11	5,49,97,00,000	1,20,41,50,00,000
Apr 02, 2018	6,844.86	7,135.47	6,816.58	7,083.80	4,33,34,40,000	1,16,03,70,00,000

Date	Open	High	Low	Close	Volume	Market Cap
Apr 01, 2018	7,003.06	7,060.95	6,526.87	6,844.23	4,53,21,00,000	1,18,70,50,00,000
Mar 31, 2018	6,892.48	7,207.85	6,863.52	6,973.53	4,55,32,70,000	1,16,82,00,00,000
Mar 30, 2018	7,171.45	7,276.66	6,683.93	6,890.52	6,28,95,10,000	1,21,53,40,00,000
Mar 29, 2018	7,979.07	7,994.33	7,081.38	7,165.70	6,36,12,30,000	1,35,20,50,00,000
Mar 28, 2018	7,836.83	8,122.89	7,809.17	7,954.48	4,93,52,90,000	1,32,78,10,00,000
Mar 27, 2018	8,200.00	8,232.78	7,797.28	7,833.04	5,37,82,50,000	1,38,91,90,00,000
Mar 26, 2018	8,498.47	8,530.08	7,921.43	8,209.40	5,92,10,40,000	1,43,96,00,00,000
Mar 25, 2018	8,612.81	8,682.01	8,449.10	8,495.78	4,56,98,80,000	1,45,88,20,00,000
Mar 24, 2018	8,901.95	8,996.18	8,665.70	8,668.12	5,66,46,00,000	1,50,76,20,00,000
Mar 23, 2018	8,736.25	8,879.62	8,360.62	8,879.62	5,95,41,20,000	1,47,94,10,00,000
Mar 22, 2018	8,939.44	9,100.71	8,564.90	8,728.47	5,53,03,90,000	1,51,36,60,00,000
Mar 21, 2018	8,937.48	9,177.37	8,846.33	8,929.28	6,04,31,30,000	1,51,31,60,00,000

Source: <https://coinmarketcap.com/currencies/bitcoin/historical-data>



The above table shows the historical datas of Bitcoin for the period from March 21<sup>st</sup> 2018 to April 19<sup>th</sup> 2018. Market capitalization of Bitcoin shows the fluctuating trend during period. The highest market capitalization is 1,51,366 (in Billions) on March 22<sup>nd</sup> 2018.

## What makes the price of bit coin rise and fall from day to day?

It depends totally on what individuals esteem the cash as. Since there is a constrained sum, owning some Bit coin will give you a segment of the aggregate. Lets say you

claim 1 percent of the aggregate. On the off chance that the Bit coin economy was purchasing and offering 1 million dollars every day, your 1 percent is worth 1 percent of that 1 million, or \$10,000. Everything relies upon what amount is being purchased and sold. As more individuals like quick exchanges over the world, they may need access. This influences the economy to develop, and the cost of a bitcoin tends to ascend subsequently. Obviously, the opposite is genuine as well, however everything comes down to what the general population esteem the cash at.

## Advantages of Bitcoin

International Payments are easier and cheaper because bitcoins transactions are

- ★ Unregulated by any country.
- ★ No transaction fee
- ★ Transparent Public ledger.
- ★ Anonymous purchase possible

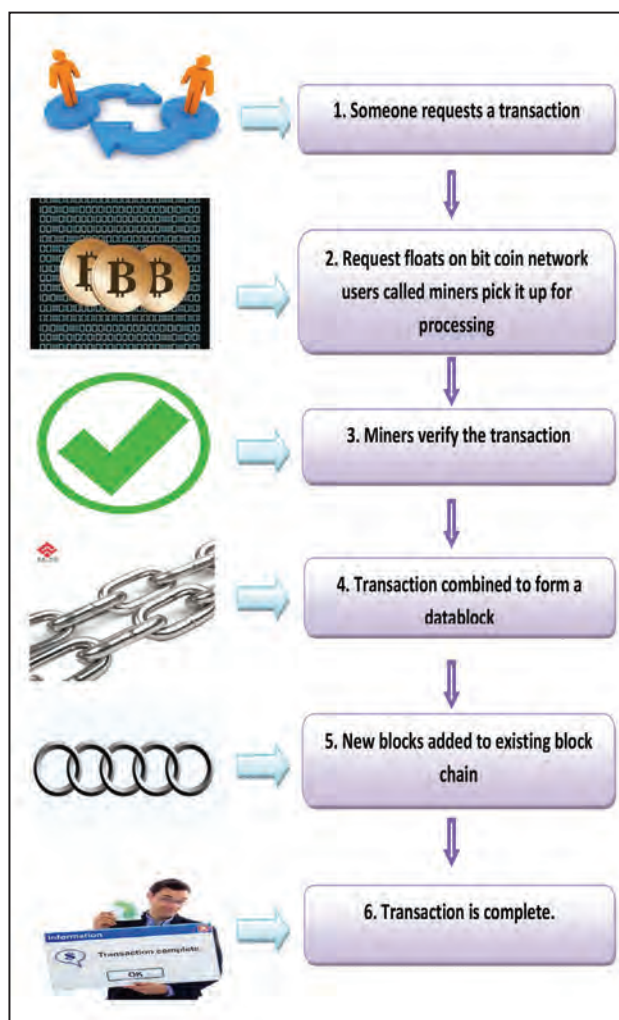
- ★ Preferred by small businesses since there are no credit card fees.

### Disadvantages of Bit coin

- ★ Allows purchases of drugs, weapons and other contraband.
- ★ Government are concerned about taxation and lack of control.
- ★ Bit coin wallets are not insured.
- ★ Price Volatility.

### How Bit coin Transaction Works?

Source: Bitcoin.org. Bitcoin Ladder



### How does Bit coin price fall and rise?

Bit coin to be sure had an awesome bull keep running in 2016. Particularly in the last quarter of the year. The cost of 1 Bit coin nearly hit \$1000. This expansion in cost is relied upon to proceed into mid 2017. However, we should leave expectations aside for the present, and spotlight on the purposes behind this value spike in 2016.

### The Indian government's views on the status of Bitcoin are still being formalized, with a bias towards its legalisation and regulation:

In March 2017 a committee including finance ministry officials, IT ministry officials, the National Institution for Transforming India and Reserve Bank of India (RBI) officials met to discuss crypto currency legalization.

- ★ In July 2017 the committee's findings urged the government to stop the use of cryptocurrencies in order to protect the population from frauds and money laundering.
- ★ In August 2017, the Supreme Court of India (SCI) asked the central government to investigate thoroughly all security-related issues concerning Bitcoin.

In September 2017 a Special Investigations Team (SIT) appointed by the SCI issued a report recommending curbs on Bit coin trading

The RBI considers Bit coin not to be a viable alternative to fiat currency. Enthusiasm for Bit coin has soar in India particularly since November 2016, when the nation's demonetisation procedure was actualized. This saw the eliminating of the nation's bigger division banknotes of 500 and 1,000 rupees, with an end goal to stamp out bootleg market exchanges and tax avoidance. At the point when the measures became effective, 90% of the paper cash in the economy vanished. An ever increasing number of Indians swung to Bitcoin as an approach to securely store their reserve funds and shield them from swelling or potentially appropriation. The main Bitcoin trades in India have seen increment of 250% in their client bases to date since demonetisation.

### How crypto currencies have fared in 2018?

Cryptographic forms of money have seen a monstrous fall in costs since they hit a top in December a year ago. Bit coin, by a wide margin the most well known digital money on the planet, is at present exchanging underneath \$ 7000 when contrasted with its pinnacle cost of over \$ 19,000



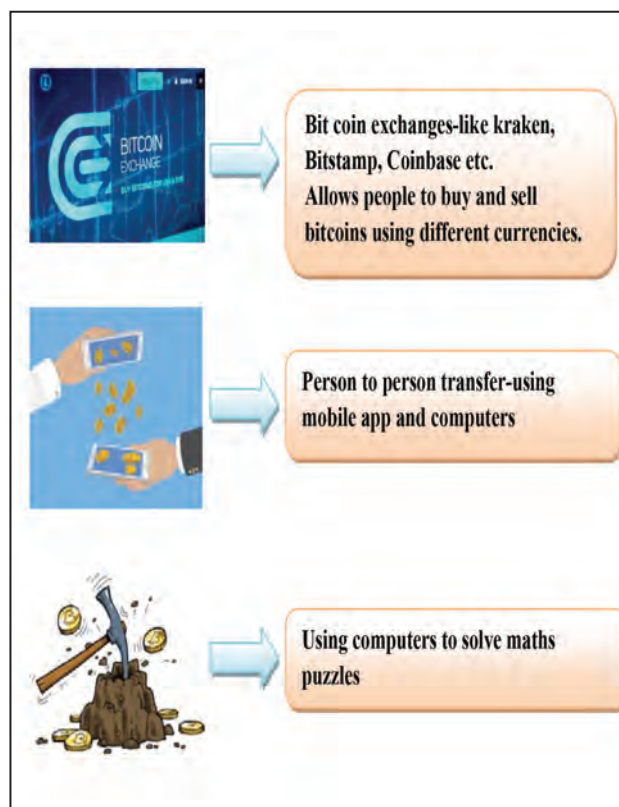
lost 66% of its incentive from the pinnacle. Different digital forms of money have seen a comparative soak fall in their cost throughout the last quarter as financial specialists have hauled out of the market.

## Bit coin Use in India

Bit coin can be purchased online in India with different wallets, including those provided by Unicorn, Bitxoxo, Zebpay and Coin base. There are currently an estimated 1 millions users of Bit coin in India, and the number is increasing by 2,500 daily.

Various online and physical merchants in India have begun accepting Bit coin, including:

- Sapna Online – An online bookshop



- Fashion diva – An online clothing and accessories merchant

- Travel smart – An online bus ticket booking portal

- Dharwad International School – An educational institution

- Tecdoc365- A utility software management firm

A total of 2,000 merchants in India are currently accepting Bitcoin, up from 500 in December 2016.

## Where can I buy bitcoin?

Source: <https://buy.bitcoin.com/>

Since its first introduction in 2008, Bitcoin has seen a transient ascent in appropriation. The estimation of the cash is at an unsurpassed high. A solitary bitcoin now offers for \$1,400 (about Rs 89,806) in global trades. In India, the genuine sum expected to buy a solitary Bitcoin can surpass Rs one lakh. The surge is to a limited extent because of solid request in Japan, where utilization of the cash is lawful. Bit coin is viewed as a place of refuge, in the midst of money related shakiness in any nation. In India, more than 500 traders acknowledge instalment in Bit coin. Everywhere throughout the world, Bit coin is acknowledged as an instalment by little dealers, for charges in colleges, for agreeing to accept web administrations, and by huge programming sellers.

## Who Accepts Bit coin

Here is a list of some companies who accepts bit coins as currency

<b>Microsoft</b>	Users can buy content with Bitcoin on Xbox and Windows store
<b>Overstock.com</b>	A Company that sells big ticket items at lower prices due to overstocking
<b>CheapAir.com</b>	Travel booking site for airline tickets, car rental, hotels.
<b>Expedia.com</b>	Online travel booking agency
<b>Wikipedia</b>	The free Encyclopaedia with 4 570,000
<b>Bitcoin .Travel</b>	A travel site that provides accommodation, apartments, attractions and beauty salons around the world
<b>PizzaForCoins.com</b>	Domino's Pizza signed up-pay for their pizza with bit coins
<b>Bloomberg.com</b>	Online News papers

<b>Dish Network</b>	An American direct broadcast satellite service provider
<b>Shopify.com</b>	An online store that allows anyone to sell their products.

Sources: <http://99bitcoin.com>

Bitcoin is powered by an underlying technology that has far wider implications than Bitcoin. All Bitcoin exchanges are followed in the Block chain, which is an appropriated record innovation (DLT) wherein all members in an exchange know about the various exchanges in the system. While the personalities of the individuals who make the exchanges might be unknown, the exchanges themselves are open information, and accessible to everybody on the planet. Banks and money related foundations around the globe are progressively incorporating Blockchain in their own particular offerings, as it guarantees to cut expenses and is viewed as the eventual fate of monetary exchanges. In India, Bitcoin exchanges are utilized to avoid charge card expenses and charges on outside trade exchanges, particularly to buy advanced merchandise.

## How can I buy bit coin?

### 1. Set up a wallet

The first step is to set up a wallet to store your bitcoin - you will need one, whatever your preferred method of purchase. This could be an online wallet (either part of an exchange platform, or via an independent provider), a desktop wallet, a mobile wallet or an offline one (such as a hardware device or a paper wallet).

### 2. Open an account at an exchange

Crypto currency exchanges will buy and sell bitcoin on your behalf. There are hundreds currently operating, with varying degrees of liquidity and security, and new ones continue to emerge while others end up closing down. As with wallets, it is advisable to do some research before choosing - you may be lucky enough to have several reputable exchanges to choose from, or your access may be limited to one or two, depending on your geographical area.

### 3. Choose a purchase method

Platforms such as LocalBitcoins will help you to find individuals near you who are willing to exchange bit coin for cash. Also, Liberty X lists retail outlets across the United States at which you can exchange cash for bit coin..

## How to Sell Bit coin

All exchanges allow you to sell as well as buy. What type of exchange you choose to sell your bit coin will depend on what type of holder you are: small investor, institutional holder or trader?

Some platforms such as GDAX and Gemini are aimed more



at large orders from institutional investors and traders.

Retail clients can sell bit coin at exchanges such as Coinbase, Kraken, Bitstamp, Poloniex, etc. Each exchange has a different interface, and some offer related services such as secure storage. Some require verified identification for all trades, while others are more relaxed if small amounts are involved.

## Bit coin bigger than Corporations and Countries

If Bitcoin were a country it would be the 53rd wealthiest nation in the world

Source: [CoinDesk](#), [WSJ Data Group](#), [Market Watch](#)

Many believe that the biggest hurdle facing cryptocurrencies is their poor fundamentals. None of the digital currencies, for example, has yet demonstrated




*Bitcoin is powered by an underlying technology that has far wider implications than Bitcoin. All Bitcoin exchanges are powered by an underlying technology that has far wider implications than Bitcoin. All Bitcoin exchanges are followed in the Block chain, which is an appropriated record innovation (DLT) wherein all members in an exchange know about the various exchanges in the system. While the personalities of the individuals who make the exchanges might be unknown, the exchanges themselves are open information, and accessible to everybody on the planet. Banks and money related foundations around the globe are progressively incorporating Blockchain in their own particular offerings, as it guarantees to cut expenses and is viewed as the eventual fate of monetary exchanges*



its essential incentive as a money that will be promptly acknowledged by an immense populace as a medium of trade. This is as opposed to national monetary standards, for example, the U.S. dollar which are generally acknowledged by individuals as cash. So digital currencies, fundamentally, keep on being seen as a bet by most. Governments over the world have additionally not been excessively excited about permitting cryptographic forms of money, making it impossible to be utilized as elective cash as they see private monetary standards as a danger to their sway. The Reserve Bank of India, for example, forced a restriction on keeping banks from managing cryptographic forms of money. The present crash has just figured out how to convey these dangers to the fore.

### Conclusion

It was observed that the cost of Bit coin isn't steady yet the development rate is moderately high when compared with the defeat rate. If you want to take a risk and want to make more profit in a less amount of time than definitely Bit coin investment is a good source of investment. In addition, 80% brokers of Bit coins dependably increase some amount of profit. The traders who are beginners and just began in this field there are chances of 20% that they may lose the measure of venture because of the unstable nature of Bit coin making fear in the beginner's trade. 

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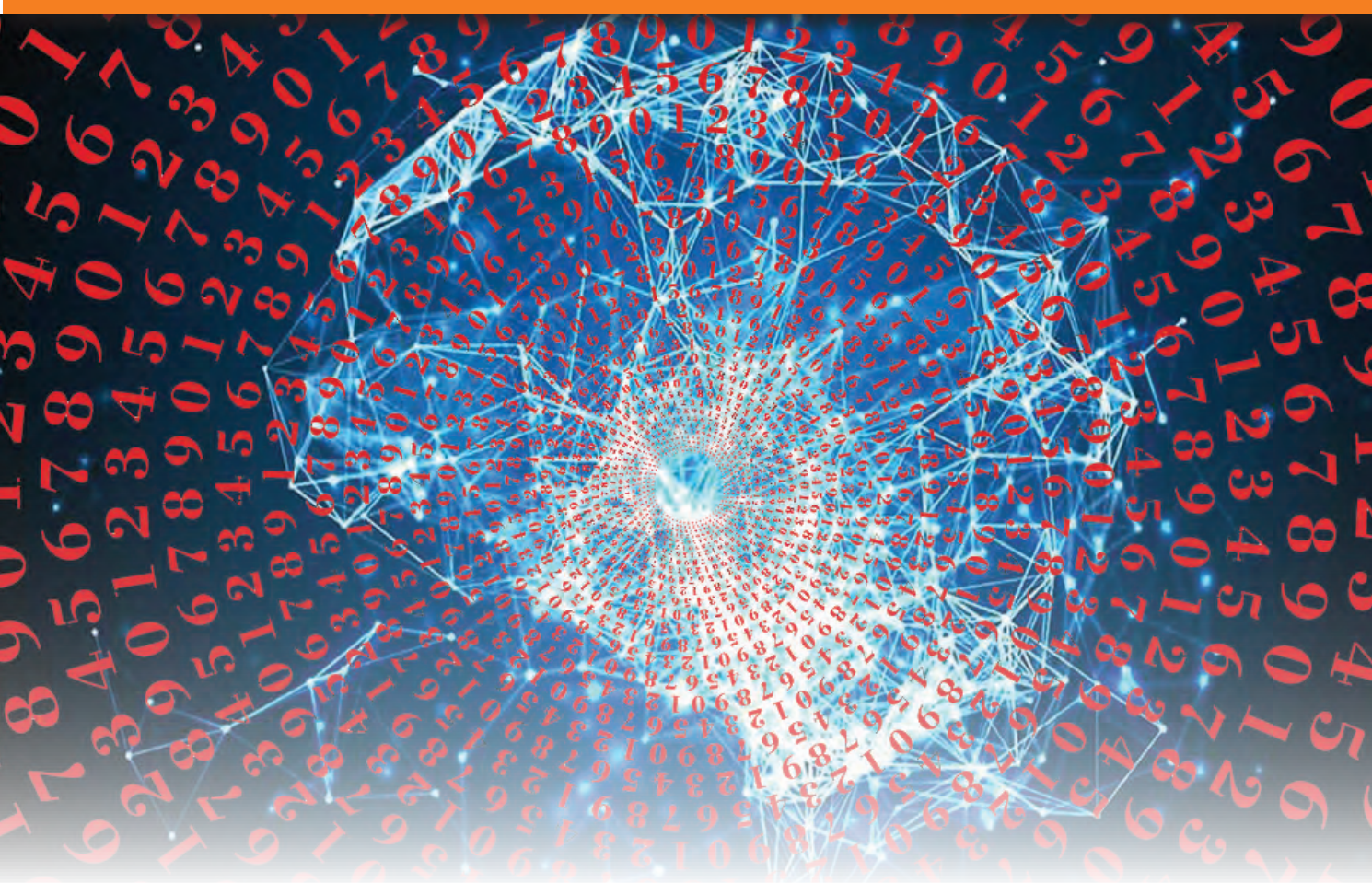
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## IMPACT OF BLOCKCHAIN TECHNOLOGY ON ACCOUNTANCY



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**P**aper currency is now outdated, digital interfaces are getting replaced by this new Blockchain Technology, which is considered as the most disruptive technology at present especially in the financial sector.

“Blockchain can be understood as a digital, immutable, distributed ledger that chronologically records transactions in near real time.

Blockchain which is also called as distributed ledger could help accountants gain clarity over the available financial resources and obligations of their organisations, and to utilise available resources, concentrate on planning and valuation, rather than recordkeeping. This technology has the potential to enrich the accounting profession by reducing the costs of maintaining and reconciling the accounting ledgers, and providing authenticity over the ownership and history of assets. Blockchain which was originally developed in 2009, to record crypto currency transactions has now evolved into a great number of applications such as financial markets, financial services, insurance, land registrations, voting, lease contracts and Government services.

### Objectives of the Study

- To understand the accounting system
- History of accounting systems
- Triple entry accounting system, its working, advantages to accountants,

### Scope of the Study

The scope of this paper is limited to bring the possibility of Triple entry accounting system if Blockchain Technology gets implemented in Accountancy. The paper is structured in two parts, first one deal with brief history of single entry and double entry accounting and Blockchain Technology promoting Triple entry accounting system and the second part deals with future of Accountancy and skills required by the accountants to meet the future challenges.

### History of Accounting

Accounting is a system of recording and summarizing business and financial transactions. For as long as civilizations have been engaging in trade or organized systems of government, methods of record keeping, accounting, and accounting tools have been in use. Medieval Europe introduced monetary economy in the 13th

century; merchants initiated recording multiple transactions by book keeping and for getting financed by banks.

### Origen of Accountancy

An Italian mathematician and Franciscan monk Luca Bartolomes Pacioli, born in 1445 in Tuscany, is known as the father of accounting and bookkeeping, invented a system of record keeping that used a memorandum, journal, and ledger, He wrote *Summa de Arithmetica, Geometria, Proportioni et Proportionalita* (“The Collected Knowledge of Arithmetic, Geometry, Proportion, and Proportionality”) in the year 1494.

### Single Entry Accounting System

A single entry accounting system is normally maintained by small business units, only important aspects of transactions will be recorded. The basic accounts which are necessary will be prepared such as Cash A/c, Sundry debtor's a/c, Sundry creditors a/c the major account will be the cash book to record receipts and payments.

Assets and liabilities are usually not recorded in a single entry system; But to find out if the concern is making profits or losses, Statement of Profit/loss will be prepared; basically the difference between capital {ASSETS- LIABILITIES = CAPITAL (balancing figure)} of closing statement of affairs and capital {ASSETS- LIABILITIES =CAPITAL (balancing figure)} opening statement of affairs will be called as profit or loss. Statement of affairs is similar to Balance sheet except for the fact that capital will always be the missing figure.

### Double Entry Accounting System

Double entry accounting is a system of recording where, each transaction with two aspects, one receiving/debit and another giving/credit. There is no limit on the number of accounts that may be used in a transaction, but the minimum is two accounts. Normally, accounts are prepared in T form, it means each account has two columns, left side is called debit and right side is credit and if any difference is there in the account, will be carried as balance. The following figure shows accounting cycle.

Transactions are recorded in journals and from journals, ledger accounts will be prepared the entire ledger balances will be entered in Trial balance and Final accounts will be prepared to know about the profitability and financial status of the concern. Entire process will be covered in a period of twelve months which is called as accounting period.

**Fig: Double- Entry accounting system.**



Issues with Double entry Accounting: (i) Double entry accounting system is time consuming, manual accounting system, is manipulations and errors prone. People can manipulate/alter the information.

(ii) Audit process will be very tedious and difficult as Double entry accounting system has numerous ledgers and financial statements, Audit proves to be very expensive.

### Triple Entry Accounting System

Blockchain Technology based Triple Entry Accounting

#### A simplest explanation for triple entry:

Imagine, Company X buys goods worth Rs 100000 from Company Y, It means, as per double entry,

Company X	Company Y
Recording goods coming in and cash going out,	Recording goods going out and receiving cash,
Entry	Entry
Purchases /goods a/c _____Dr 100000	Bank a/c _____ Dr 100000
To Bank a/c 100000	To Sales a/c 100000

Now it will be, with Blockchain, each transaction will be recorded by the third party, and the third party is Blockchain, which verifies each transaction (Cryptographically) and a receipt will be issued.

#### Outcome:

Every transaction will be simultaneously recorded in the books of third party to be verified by the blockchain. As the transactions are entered in three places, it is called as Triple entry system.

Features of Blockchain Triple entry accounting system: Triple entry which is blockchain based accounting system has various features like, Smart contracts, Distributed ledger, double entry + cryptography, Tamper proof record, Validated and secured, and digitally signed agreements.

(Double-entry + Cryptography

**Fig: Triple entry accounting system**

Triple entry accounting system: It can be understood



that Triple entry system as an extension to the double entry system, in which technically, all accounting entries/ transactions are cryptographically checked and sealed, they occur simultaneously in the same distributed, public ledger, creating an interlocking and chained system of accounting records. In Triple entry accounting system, the transactions are recorded and distributed ,cryptographically sealed, manipulating /altering or destroying them to conceal any information will be practically impossible.

The term “ Triple entry Accounting “was first used by Ian Grigg, financial cryptographer and described in his paper published in 2005 ,three years before the emergence of Bit coin and its underlying blockchain protocol.

#### Working of Blockchain Technology:

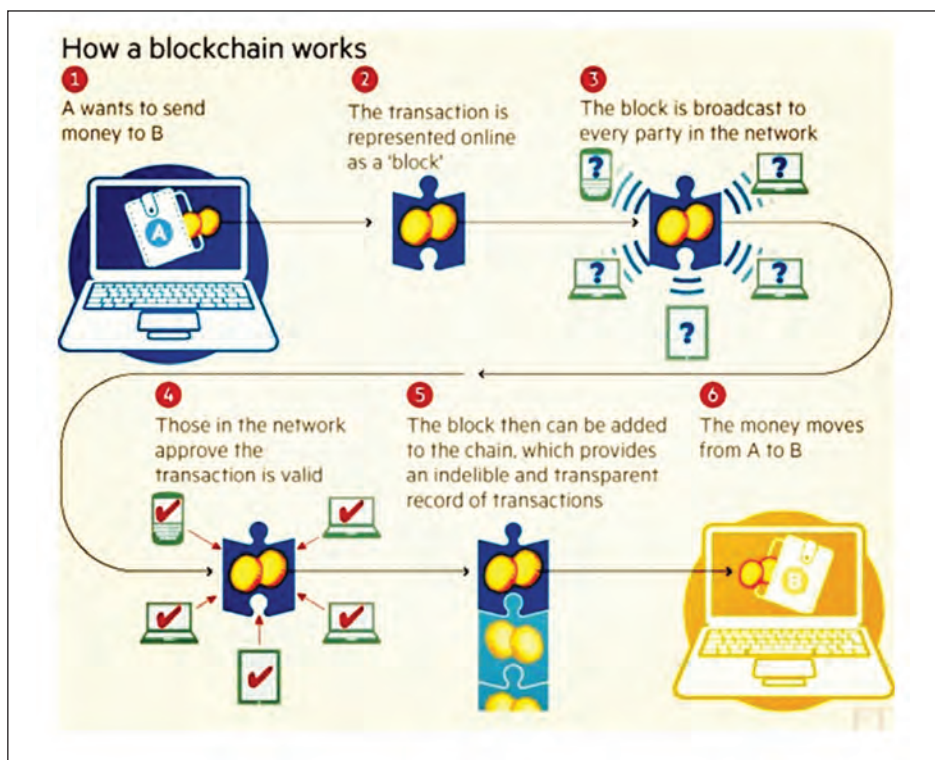
An example showing the procedure that is required to be followed in Blockchain based Triple entry system.

1. Suppose, A wants to send money to B
2. The transaction is represented online as block,
3. The block will be broadcasted to every party in the network,
4. Those in the network approve, the transaction gets validated,
5. The block then can be added to the chain which provides an immutable and transparent record of transaction,



6. The money moves from A to B.

This can be well understood with the help of the following picture.



Source: Financial Times.

Advantages of triple entry accounting system for the Accountants:

- Quick access to information and Time saving,
- No possibility to commit any fraud,
- Immutable record hence no alterations are possible,
- Increased focus on client service,
- Technology driven, digital mobility opportunities,
- Talent management & succession planning

Future of accounting, opportunities for accountants' skills required to meet future challenges:

The emerging Blockchain technology is considered to be the most disrupting technology in Finance especially in Accounting and this technology provides the following

opportunities to the accountants:

Accountants are experts in recording, book keeping, application of taxation and related rules, with the Blockchain Technology; they get opportunities to become Blockchain advisors and can join blockchain network.

Accountants can spend less time on identifying errors and mistakes and reconciliation works instead they can concentrate on areas like technical knowhow, advisory and related activities.

For all this accountants now must understand how this blockchain technology provides benefits to the organizations /Companies.

According to the Journal of Accountancy, the following truths, among others, are important to keep in mind regarding emerging blockchain technology:

- Blockchain is secure and cannot be hacked,

- Blockchain data can create new business opportunities,
- Educating yourself on blockchain will pay off.

### Conclusion

A report by the World Economic Forum suggests that 10% of global GDP will be stored on blockchain-related technology by 2025. This implies that the way transactions are recorded and communicated will completely transform between at present and in the future. Implementation of this technology still requires time, the need for the hour for accountants is to acquire required skills and get updated with this new technology. 

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## BLOCKCHAIN THE FUTURE OF ACCOUNTING



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**B**lockchain technology has experienced exponential growth and innovation is driven by developers, start-ups and enterprise in all areas. The World Economic Forum has listed blockchain as one of the top ten emerging technologies of 2016. The meaning of the word Blockchain, according to Oxford Dictionary- 'A digital ledger in which transactions made in bitcoin or another cryptocurrency are recorded chronologically and publicly'. Blockchain technology forms the foundation for an internet-based peer-to-peer network that uses computer-powered cryptography to facilitate exchanges of value. Computers on the network(nodes), simultaneously verify and record transactions, allowing parties to complete transactions without the traditional trusted intermediary, such as a bank or credit card network. The obligation of ledger verification falls on the entire blockchain community as a whole. The digital ledger is almost impossible to manipulate records in a blockchain. However, Blockchain is different from Bitcoin. Bitcoin may be regarded as the entry point to understand the broader implications of Blockchain. In fact, Bitcoin is to blockchain as email is to the internet.

### Salient Features of Blockchain Technology

According to World Economic Forum, Block Chain has three main features: (i) veracity i.e. multiple copies (as opposed to a single copy) of the complete historical record of ledger entries are each verified by consensus. (ii) Transparency i.e it is a public record of activity that can be seen by all market participants.(iii) Disintermediation i.e. it operates using a peer-to-peer network, rather than requiring a specific central organisation. The salient features of Blockchain may be enumerated as follows:

**1. Sharing of One Common Digital Ledger-** Blockchain is a decentralized distributed ledger technology using cryptographic tools allowing the sharing of a digital ledger across a network of computers.

**2. Transparency** - Blockchain is a digital ledger which is fully public, continually updated by countless users. It is a list of continuous records in blocks(batches of transactions).

**3. Reliability** - The blocks are fully reliable and cannot be corrupted because the transactions cannot be altered retroactively.

**4. Automatic System** - It is also possible to program the Blockchain to record transactions automatically.

**5. Measurability in Cryptocurrency** - The monetary value of the transactions is usually measured in cryptocurrencies i.e. digital currencies

**6. Disintermediation of the Ledger** - It has the ability to transact without the need for any trusted central authority/ a third party intermediary.

**7. Security and Privacy** - Blockchain is secure as it cannot be hacked at all. It protects transactions and secures privacy.

**8.Revolutionising Internal Record Keeping** - Blockchain has the potential to change the way how records are kept and transactions are processed.

### BLOCKCHAIN- A REVOLUTIONARY INNOVATION

*"Blockchain is the most significant innovation in book keeping since double-entry accounting was introduced over 700 years ago. Traditional accounting required transactions to be recorded in two (or more) separate ledgers, depending upon the number of participants in the business network, and reconciled with each other. Blockchain means that there is only one common and indisputable ledger, which is agreed to by all parties."*

*-Juerg von Kaenel,  
Associate Director at IBM*

### Review of Literature

The original concept of blockchain was published via a cryptography mailing list in November 2008 by someone under the alias Satoshi Nakamoto. The first commercial application built on blockchain technology emerged in 2009 as a digital cryptocurrency called Bitcoin, a peer-to-peer payment system enabling users to transact without trusted third parties. Literature review on

Block chain accounting reveals that not many studies have been conducted in this area. However a few prominent studies have been discussed in this section.

Liebenau and Elaluf (2016) have discussed variety of applications of Blockchain within financial services. They have basically focussed on innovation around applications of the core protocol and on building a private and secure version of the blockchain. In another study by Brandon (2016) Blockchain accounting applications have been elaborated as "triple entry bookkeeping" as there are three entries that occur: the debit, the credit, and the

cryptographic signature of the transaction and three parties are there namely the buyer, the seller, and the blockchain network. Later Mori (2016) discussed the potential contribution of blockchain in financial transactions. The study observed that only 20% of the barriers to adoption are technology based, the other 80% being attributable to current business processes and business models.

Watson & Mishler (2017) explored this technology in many areas including stock trading, intellectual property, contracts, and accounting records. They observed its utility for accountants to manage ever-growing volume of transactions, prepare trial balance and financial reports, and analyze results in a timely manner. Similarly Broby and Paul (2017) also discussed the importance of Blockchain in financial settlements and in enhancing the reliability of financial statements. Brian (2017) regarded Blockchain as a technology to revolutionize economic sectors resulting in lower transaction costs and highlighted numerous advantages of this technology

In another study by Iansiti and Lakhani (2017), Harvard Business School professors, in their paper entitled "The Truth About Blockchain," have termed blockchain as a foundational technology having potential to dramatically reduce the cost of transactions and reshape the economy.

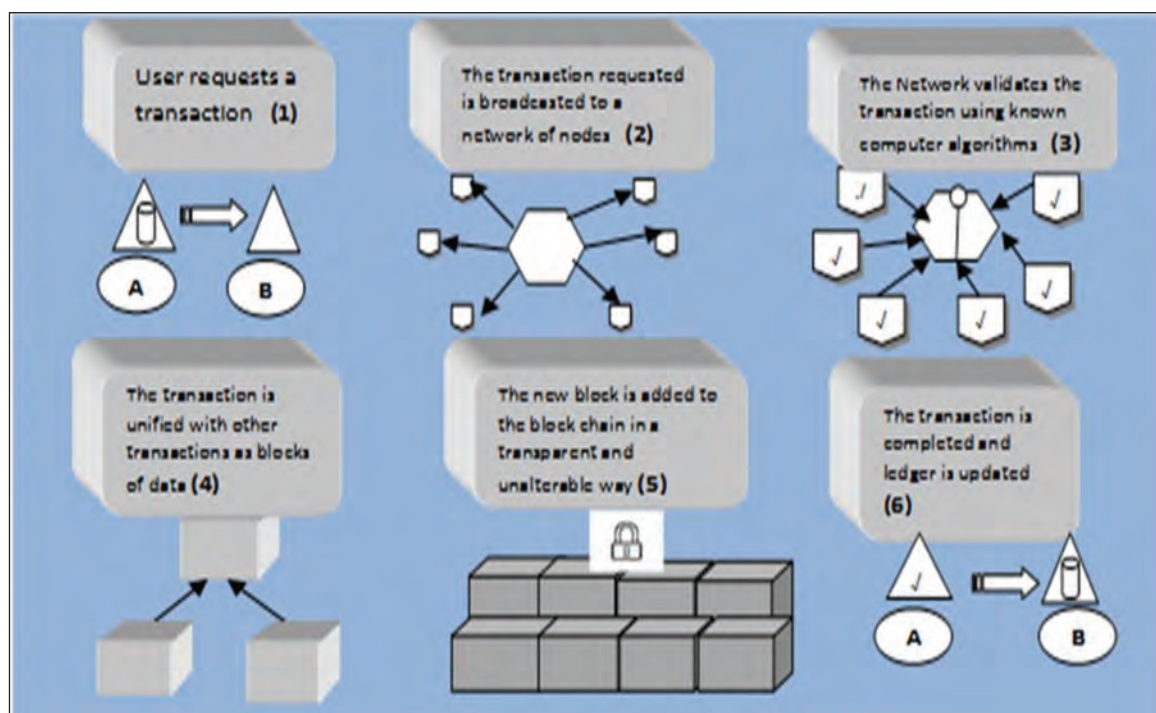
It could affect every agreement, process, task, and payment. Karajovic, Kim and Laskowski (2017) have performed a thorough analysis of the implications of blockchain technology in the accounting profession and its broader industry. In a recent study by Johnson (2018) he has defined and illustrated blockchain and its current and future use around the world. Blockchain provides technology services in a highly efficient and capable manner and has the potential to change the world for the better.

### Blockchain Accounting: Transforming Accounting and Auditing

Under Blockchain Accounting, all transactions are recorded in a virtual block, and after some time, a new block is created, linked to all the previous blocks in the chain. The blocks are visible to both parties involved in the transaction. All of which makes it a system well-suited for storing and sharing accounts. Figure 1 illustrates the working mechanism of Block Chain Accounting.

Accounting, auditing and compliance are a massive cost for business globally. Blockchain accounting could help cut those costs. For example, a company can log off all transactions on an internal blockchain, and record these centrally. Likewise, external auditors could inspect a corporation's books in real time.

Fig. 1. Working Mechanism of Block Chain Accounting



## Impact of Blockchain on Accounting

Technology trends are also reshaping accounting in virtually every way. The emergence of Blockchain technology is likely to transform the field of accounting, by changing the way accountants work. Accounting has remained a highly respected profession serving the internal as well as external users by providing them the needed financial information. Blockchain is often viewed as accounting industry disruptor. The impact of Blockchain on accounting may be gauged from the following points:

**Secure and Transparent Database-** Blockchain in the field of accounting will provide very fantastic database to track data and goods as they move (physically or digitally) through supply chains and organizations. This will allow more rigorous analysis, conversation, and reporting process to take shape.

**Full Authenticity of Parties/Transactions-** It will take into account the accounts payable and receivable, with either intercompany transactions or client-customer transactions. It will verify the payment and the dates, ensuring full authenticity of transactions and will minimise counterparty risk and settlement time

**Fiscal Accuracy, Speed and Reduced Fraud-** It ensures fiscal accuracy, because when a transaction takes place in a blockchain ledger, it is not only updated in real time, but the transaction is closed instantly upon completion. It results in speedy reconciliations, preventing data manipulation and avoiding frauds.

**Guaranteed Integrity and Security of Financial Data-** As every transaction is recorded and verified, the integrity of financial records is guaranteed. Since all transactions are distributed and cryptographically sealed, manipulating, falsifying or destroying them would be practically impossible.

**An End to Traditional Accounting Methods-** Blockchain is poised to up-end traditional methods of invoicing, documentation, contracts, and payment processing across all industries, as it allows for real time recording of both sides of the transaction simultaneously in a shared ledger.

**Accountant as Full Fledged Data Expert-** It requires expert knowledge and mind. It will make accounting process faster and accurate. Consequently accountants will have more time for client interaction and creative thinking for development of accounting profession.



*Technological advances are very much needed for the development of any nation. But at the same time, it is also very true that such developments may also threaten the basic premise of a few professions. Blockchain is a digital ledger on which transactions are recorded chronologically and can be viewed by all who have access. It allows for the transacting and securing of digital data resulting in efficiency in business transactions. It will revolutionize the financial world by radically reshaping finance, accounting and auditing professions by creating opportunities as well as challenges for these professionals. Finance executives should be made aware of the financial technology innovation, and predictions of the impact of Blockchain in the field of accounting and auditing. These professionals must treat the blockchain technology as transformative computing architecture capable of changing the entire accounting world. Accounting and auditing professionals must embrace automation because it's good for efficiency and efficiency is good for business. The present paper aims to provide an understandable definition of Blockchain and highlights the impact of Blockchain on Accounting and Auditing Profession.*





Enhanced Organisational Efficiency and Effectiveness-Blockchain technology will reduce the lag time between when the information is requested and when it is provided, resulting in improved performance. It has the potential of preparing and providing the required information to the interested parties in virtually no time. It eliminates the need for book keepers and results in economies of scale.

Other Benefits- It will be very much useful in transfer pricing mechanism in cross-border transactions. It can also bring substantial efficiencies to tax collection and build critical inter-governmental trust relationships.

Blockchain has the potential to make a positive impact on business bottom line by significantly reducing the cost. It can promote privacy by providing more transparency and control with cryptographic keys. The technology also removes the problem of involving costly intermediaries by eliminating the intermediary. Since the ledger is distributed, it is less vulnerable to online attacks.

### Impact of Blockchain on Auditing:

Auditing is a service critical to protecting shareholders and investors. Various scandals in the past have demonstrated that manipulation can adversely impact the integrity of the auditing process. Existing auditing practices may face conflict of interest, and may also be error-prone in a number of issues. The audit process has remained relatively unchanged for decades except the changes introduced because of IT orientation in the past. Blockchain challenges the basic premise of auditing. Blockchain technology addresses the human vulnerability issues in ledger entry reliability and trustworthiness by ensuring that all transactions are accurate, complete and unalterable. A blockchain solution could essentially allow for an automated third party verification by a distributed network to ensure that transactions are complete and accurate and unalterable. The impact of Blockchain on auditing has been enumerated under the following heads

- 1. New generation of audit services** - Blockchain technology will give rise to a whole new generation of audit services. With access to real-time data, auditors can develop various mechanisms to streamline the audit activity. It may also be used by auditors in the area of cybersecurity and sustainability
- 2. Immutably Time-Stamped Verified Transaction-** Blockchain uses hash strings, and financial information is given a digital

fingerprint which allows for an immutably time-stamped transaction that can be verified automatically with audit software.

- 3. Reduced time and cost of audit services-** Automation of auditing functions will significantly reduce the time and cost of audit services.
- 4. More Transparency-**It gives visibility to all transactions for approved users, and this may decrease auditors' work with sampling and validating transactions. Thus it will allow auditors more time to focus on controls and investigating anomalies.
- 5. Traceable Audit Trails-** Blockchain technology will result in traceable audit trails, automated audit processes, quick authentication of transactions, fast tracking of ownership of assets.
- 6. Redefining Role of Auditors-** It will change the way auditors work, whom they work with, where they do their jobs, and how they connect with clients and colleagues. For auditors to survive and thrive, they will need to learn these new developments.

With the implementation of Blockchain, large audit jobs with numerous staff members could be cut down to few individuals only for ensuring that the financial statements meet regulatory standards. However, the transaction recorded in a blockchain may be still be fraudulent, hence auditors would be needed but their nature of duties may be altered for betterment.

### Conclusion

To conclude, it may be remarked that while the landscape for Blockchain technology is still in its infancy, its potential is transformational. Blockchain transaction tools offer the greatest opportunities for change in various accounting mechanisms, and creating a new platform to reshape the world of business and transform the accounting and auditing profession. Its potential disruption on the accounting industry cannot be overlooked. Various past developments such as the emergence of computers, ERP systems, and cloud computing have just changed the auditors' work instead of making them irrelevant. Auditors will need to develop a more data-centric approach and use it with a forward rather than historic perspective. In this way, the auditors will be able to provide very higher-valued service Firms who early adopt practices that account for these potential disruptions will be

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# UNIVERSAL CONTEST OF PILOTING A REVOLUTION IN PRESENT ACCOUNTS AND AUDIT SYSTEMS

**T**he spread of internet complemented with the rising speed of browsing over the last few years has led to exponential advancement of the digital world. Blockchain is set to be the next step on this evolution. Extensive research is being conducted worldwide in order to explore the prospects in revolution of technologies related to accounts and audit. It has even reached to the level of building a premise that Blockchain technology can bring tremendous improvement in terms of efficiency and reduction in consumption of time for the performance of services related to accounts and audit.

Further, it is also argued by many researchers that this end to end technological change will help in real time data recording and auditing in the most effective manner. Where the auditors who are supposed to be saviours



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of various stakeholders and are expected to serve in a fiduciary relationship, might miss things due to limitations of human brain, these technologies are professed to give fair resolution to all the associated problems.

In contradictory, there is population who oppose such perceptions, raising ethical concerns and state that nothing can replace human intelligence as humans do not analyse the situation on the basis of set of only previous data present or pre-loaded instructions as an automated processes (i.e. create executable policies/ procedures on the basis of codes/ algorithms fed into the machine), rather their intellect deals emotionally as well. They consider various other factors too which exist around and are intangible in nature, yet most important for making right decisions, of which machine is incapable of determining, so as to avoid major issues to take place.

Moreover, the mixture of an artificial intelligence and necessary human intervention is believed to lead towards a drastic move from present systems of bookkeeping, accounting and auditing to faster, smoother and effective methods of doing the same. The innovations in the blockchain technology can possibly shape shift it, in coming years.

Blockchain is considered as a development where the reliability of a ledger is no longer derived from central controller that maintains it, instead it is a derivative of a trust in the system that drives the recordkeeping. Moreover,



the potential of self-executing smart contracts allows programmable ledger to fundamentally alter operations of all the contracts.

### Constitution of a Blockchain

“A blockchain, is a continuously growing list of records, called blocks, which are linked and secured using cryptography. Each block typically contains a cryptographic hash of the previous block, a timestamp and transaction data. By design, a blockchain is inherently resistant to modification of the data. It is ‘an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way’. For use as a distributed ledger, a blockchain is typically managed by a peer-to-peer network collectively adhering to a protocol for inter-node communication and validating new blocks. Once recorded, the data in any given block cannot be altered without the alteration of all subsequent blocks, which requires collusion of the network majority.”<sup>1</sup>

The blockchain has complete information about different user addresses and their balances right from the genesis block to the most recently completed block. The blockchain was designed so these transactions are immutable. The blocks are added through cryptography, ensuring that they remain meddle-proof where the data can be distributed, but not copied.<sup>2</sup>

### Blockchain–Basis of Promising Systems for Accounting

With the use of blockchain, it is expected that accounting practices may be enhanced thus reducing costs for maintaining and reconciling ledgers (book keeping). Professionals on these fields can now concentrate in making intellectual efforts in planning, strategy, analysis, valuation and many others instead of performance of mundane tasks which can be done by machines without any application of mind on the basis of pre-loaded data sets which are directed to trigger at certain events.

“In terms of administrative procedures and approval processes, blockchain technologies could be employed to automate and distribute the execution log of a company’s standard operating procedures or accounting procedures, thereby reducing inefficiencies caused by opacity, such as deficient knowledge or understanding of procedures, poor accountability, weak collaboration and distrust and centralized management bottlenecks.”<sup>3</sup>

It is believed that distributed ledger technologies may help in maintenance of accounting records in such a manner

that they produce the actual and fair results without any manipulations, reducing tax frauds. The technology also claim to possess the potential of helping governments in collection of taxes and passing on the direct benefits/ subsidies/ grants/ aids/ supports/ scholarships etc. straight to the actual claimant, eliminating any kind of leakage.

In addition, smart systems can be generated by feeding codes and algos on a blockchain where as and when an entry is posted, the artificial intelligence enables the accounting application of identifying the nature and classification of the entry or transaction as per the accounting standards of the related country and the same is immediately and automatically transferred to the next levels i.e. ledger, trial balance and financial statements on a real time basis. This will eliminate identification and posting of hundreds of entries by humans at later date which generally causes confusions and mistakes. Once adopted, such technologies shall simplify extraction of as-is financial statements showing the real balances and picture of an organization which can be derived at any point of time and date, facilitating calculation of exact and real value of the organization at a particular moment.

Furthermore, the system seems to bring revolutionary impact on working and operations of accounts and finance departments of the establishments, however, it needs a lot of efforts, in terms of identification of numerous transactions which take place on a daily basis and basket of those need to be prepared and bifurcated based on current classification rules in accounting systems. These rules then need to be properly fed to the machines in the forms of instructions, for e.g. the moment sales take place, the related effects like collection of money or creation of a debtor is immediately generated and every relevant transaction along with the sales itself gets recorded at each and every statements where the effect of same must be documented and shown. However, the algos need to be timely checked as and when there are amendments in rules or laws and instructions given to the machine need to be modified accordingly.

In this segment, research and development section opens a plethora of opportunities to the accountants who are experts in record keeping, application of complex rules, business logic and setting of standards, in providing their valuable inputs and experiences so as to develop automated processes of accounting. Experience, guidance, advices and data available to them can help in developing a standardised and optimised financial system with the underlying technology of Blockchain. Although, this

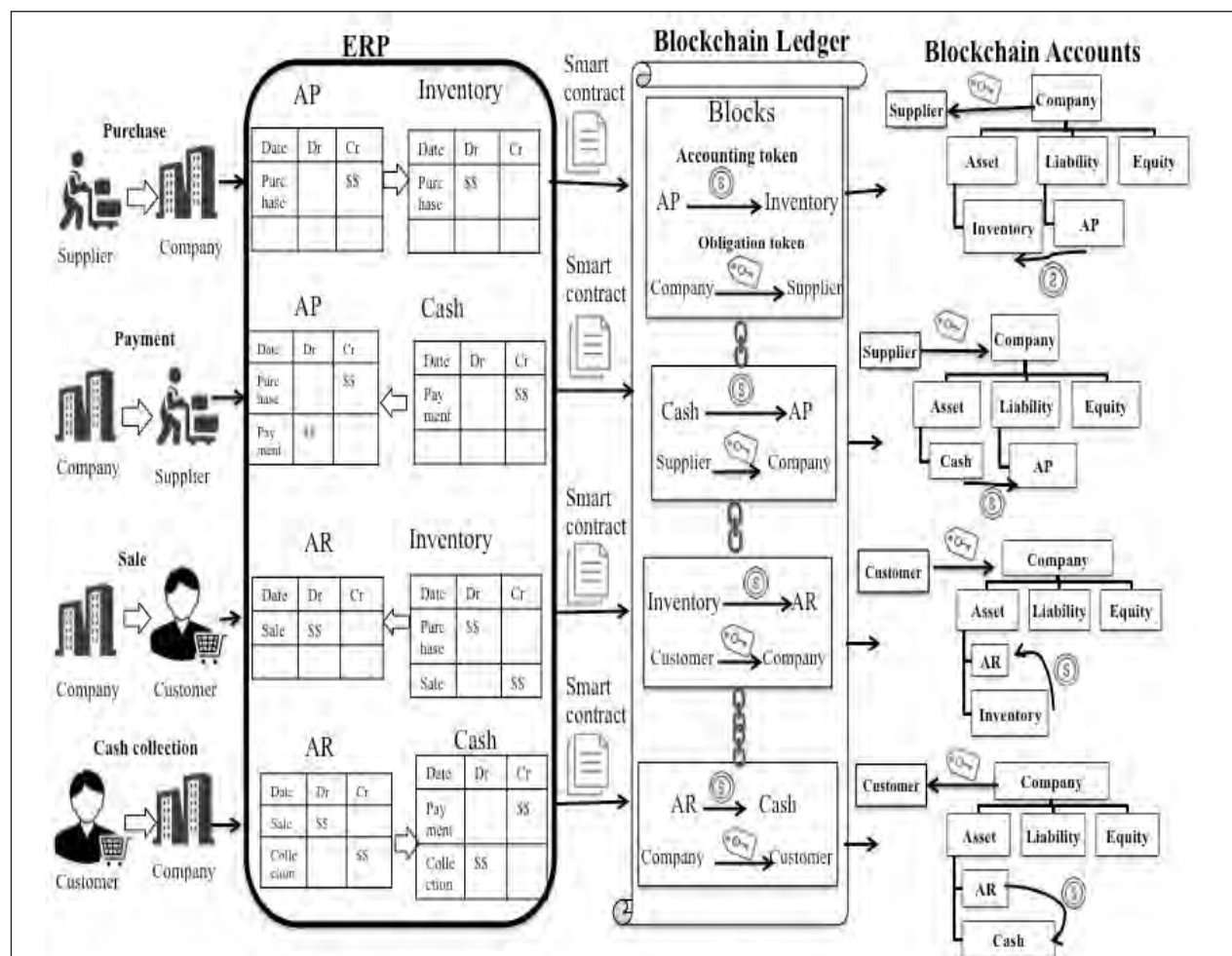
seems to be a rigorous task but the continuous efforts, trial and error may help in constructing rules, regulations, instructions and standards into a digital language to be understood by the artificial technologies.

The challenge also lies in providing smooth transition from one end of operation to another and binding all the functions of an organisation under one technological platform. The dynamic nature of transactions recorded and recognised in the financial statements, make it more difficult. The technology also, shall seem to face the question of exactly and correctly identifying solutions to the problems where judgement or decision is required to be taken very consciously, as the machine lacks the emotional quotient. Herculean task of moving the already present

records into the blockchain in a most effective manner so as to provide the auditors and regulators the access of data and records in order to check the transactions in real time and with certainty over the provenance of those transactions stands in front of scientists and researchers.

The impact assessment of various related aspects, suggestions of accountants, initiatives, concepts and propositions must be made in order to adopt the better, effective fast and efficient technology. Professionals in this fields must proactively participate in improvement and providing recommendations for the enhancement of system. Simultaneously, the extensive use and practice of the systems can lead to the production of desired results.

**Figure 1 - A triple-entry accounting information system**



Source :Dai et al. Toward Blockchain-Based Accounting and Assurance, Journal of Information Systems, Volume 31, Number 3, Fall 2017, pp. 5-21



*The impact assessment of various related aspects, suggestions of accountants, initiatives, concepts and propositions must be made in order to adopt the better, effective, fast and efficient technology*



### **Blockchain –Potential Foundation of Structures for effective Auditing Systems**

“Operating in real-time is still a dream for financial services providers, even if they are introducing innovative digital platforms. However, we are not too far from making real-time financial auditing possible. While these<sup>5</sup> techniques will probably take some time to evolve and be adopted as industry standards, a move towards technology-enabled transparency and proof of solvency would indeed be a positive step forward.”<sup>6</sup>

On the basis of accounted data available with the organisation i.e. invoice, shipping document, customer order, confirmation requests, bills of lading, letters of credit, receipts of transactions etc., an auditor at next level checks and verifies the reliability of same. They seek clarifications on vague transactions, if any and compare the same with the reporting standards applicable to particular industry and country. They also confirm occurrence of transactions, relevant information recorded, accuracy of the record, accounting period and the classification of such transactions. At complete satisfaction, in the end, they express their opinion in the form of report on the accounts of an organisation.

Use of blockchain technology in auditing may help in instant verification of the uploaded records along with the substantiation of its exact amount. It may also assist in matching of accounted data from its inception or at the time of transaction when it was first incurred or generated and recorded at the journal, then, when it was next shifted to the ledger, trial balance and so on upto the finalisation of income statements. Due to the various in-built qualities of blockchain, verification from the accounts recorded long back is also equally feasible.

It can moreover benefit the auditors in tracing and identifying various mismanaged activities in just few seconds as the transactions are originally recorded then encrypted and timestamped, which later on can never be deleted, adjusted or modified. Fraud of financial statements made by organisations with mala-fide intentions by just rotating entries and then vanishing them at some level or later at

some stages after few years will not be possible any more as they can completely be outlined that when they have been moved from one account to another.

If developed more, the technology can also help in verification of transactions of one organisation with another. For e.g. if A and B are two different companies and A has sold the material to B while B has made payment against it, then blockchain may also help in identifying and approving the entries from the accounts of one another, if permitted by both of them by using the same technology for recording of transactions.

The technology can be extended to various other stakeholders in order to make it much user friendly that includes creditors, directors, employees, government (and its agencies), suppliers, unions, buyers etc. It can aid in detecting various non-compliances with respect to unauthorised deposits, loans to directors, related party transactions and others under the Companies Act, FEMA, Listing Obligations etc.

Blockchain also consists one of the very important features i.e. recording of the data at every block and verification of same since its inception each time which may be adjusted according to the willingness of management but comes with the inherent quality of verification since its introduction which makes it even more secure and trustworthy for the purposes of audit.

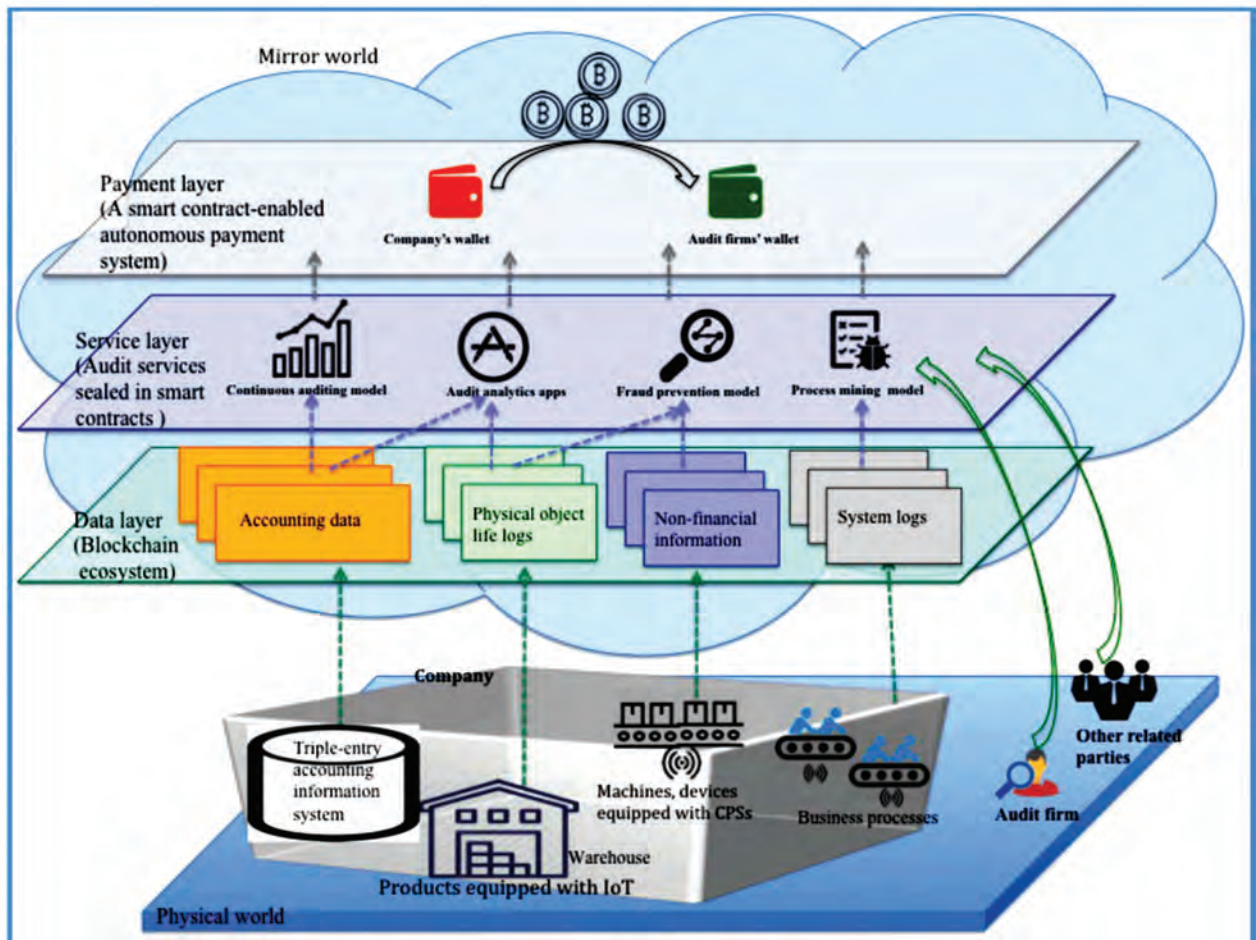
The challenge only lies in giving accurate commands to catch any kind of mismatch or non-compliance which also includes time to time checks and balances of fed instructions. The same could be done with the help of smart contracts. Further, the feature of location detection can add more value so as to examine where and when the transaction took place making it additionally relevant.

The technology which brings the distributed audit trail can also be given the customisable feature of embedding the accountability and responsibility on a particular employee making it pertinent to the auditors. The use of these technologies can help auditors in utilizing their



intellect and time in much more productive areas and activities including bringing simplicity to complex transactions, finding solutions for various unresolved issues, simplification of typical control mechanisms etc. which shall at the end help in adding value to the country and system.

**Figure 2 - The vision of a blockchain-based audit assurance environment**



Source :Dai et al. *Toward Blockchain-Based Accounting and Assurance*, *Journal of Information Systems*, Volume 31, Number 3, Fall 2017, pp. 5–21

## Principles Underlying the Blockchain Technology signifying it as a Forthcoming Champion

There are few principles which make the blockchain, a distributed ledger capable of performing and proving itself as one of the best platform for accounts and audit systems. Supported by its nature of transparency where the transactions are completely and fairly visible to all the relevant parties makes it potential technology for the current auditors to explore and utilise. The unique quality of the distributed ledger where the records are linked to each other forming a perfect unbreakable chain and where the transactions can't be deleted or modified in any case

reduces the chances of manipulations with records to the extent of nil. Once the entry is made, it lasts there upto the perpetuity, fully verifiable. Feature of timestamping and cryptography makes it tamper proof and traceable.

The decentralised nature where there is no control of data in any central location and confirmation on the peer to peer basis leads to the production of fair and transparent results i.e. financial statements at the end of the period carrying exact and accurate profit or loss of an organisation.

The database consist of chain of traceable records since

its inception with the entire history, makes it easier for auditors to create checks and balances and track all the mismatches in a single go at comparatively lesser time. The technology comes up with the customisable features which can be performed at the ease and willingness of the management. The forks can be created if the feature needs to be added with the help of placing algorithms, standards, triggers, rules, regulations etc. so as to keep it adjustable to the size and requirements of an organisation, industry and the country in which it is operating.

## Foreseeable Challenges

### 1. Wilful adoption of a change by the employees

Persuasion for adoption of a change by the society, resulted out of any innovation has always been a difficult task. Most of the people try to work in the pre-set and already organised platforms where they do not need to put any extra effort in learning and adopting something new. This phobia leads to slow embracing of better and fast technologies which can ultimately ease their business. This unfavourable attitude of employees towards accepting new technology and their lazy and lethargic attitude complemented by their unwillingness to upload the previous data and records onto the system followed by creation of codes based on the regular routine exercises of similar nature, manually performed by them and then coding of national and international standards might be a difficult and challenging mission for any management.

### 2. Time taking process based on trial and error

The process to develop such a mechanism may take time and needs a lot of patience by each and every one. This may include many trials and errors in producing the effective results. Combining and joining one function of the organisation with another for e.g. accounts department, finance department, supply chain management, marketing, sales, corporate communication, legal and secretarial etc. to be linked with one another is another major task.

It is again followed by the challenge of creation of an end to end technology embedded procedures for linking of database of; one organization to another, with the government and other stakeholders. For e.g. the disclosure of financial statements is mandatory to be made to the exchanges before a particular date for listed companies at every quarter in the same prescribed format, which is a routine task, then, there can be created few algos instructing that once the financial statements are audited, the numbers from the statements can be converted into the format of disclosure as prescribed by the regulator, which can

automatically be linked with the website of exchanges and gets uploaded on or before the cut-off date. Although the necessary human intervention is must in order to release an accurate information but at least the burden can be reduced upto an extent of feeding of information in the prescribed format from the audited balance sheet.

Even if the aforementioned challenges are met on the front of development of such mechanisms and technology then there might be hurdles in obtaining permissions from various institutions for access of their data and information. Also, there can be disagreement in customization of applications amongst different organizations and bodies. Legal and ethical concerns may also be raised with respect to privacy and misuse of data and information. The sensitive data available on such open sources may lead to serious loss in terms of money, social security and also at various other fronts, protection of which is another challenge.

### 3. Faulty or fat finger algorithms- issues with respect to cybersecurity

Moreover, faulty or wrong fed algos whether intentional (with mala-fide intention) or unintentional (by mistake) may lead to serious disruption instead of being useful. Even after having an inherent quality of being secured, if in any case the data at such open source is manipulated by virus or malware attacks by cybercriminals or hackers, the situation may lead to huge loss of money, useful information and destruction of business. Thus strengthening of internal IT systems and protection of data by creating duplicate server at remote and unidentified location which should be effective enough to independently store and assimilate information is another predictable challenge, which might bring costs to the organisation more than usual.

### 4. Development of user friendly approach with stakeholders and training of the existing staff

In this environment where machine is taking a lead, there is prevailing threat of loss of jobs of those who are engaged in a routine and monotonous task of similar nature. However, the same does not seem to be such a difficult and frightening event as those who are performing this kind of job may be trained and shifted to operate upcoming technologies who may also help in bringing some value addition to the system, organization and a country as a whole.

There must be although need to create awareness of such systems amongst the public, the stakeholders and the owners for immediate adoption of same. One of the best examples can be derived from MCA21, when

digitization of the same was hugely opposed by the professionals, contending that the digitization of physical activities shall lead to loss of jobs.

Instead since the year 2006, with the rise in economy; the roles of professionals, the tasks, practices and quality of work along with the remuneration has enormously enhanced, which has also impacted the government where related professionals are now providing inputs at the level of formation of several policies for the country and economy, which is considered as the value addition by the use of professional endeavours.

The digitization has rather simplified errands and given the professionals, ample opportunity to brainstorm and perform intellectual assignments, bringing importance to the profession and country instead of standing in a queue for an entire day, just for filing a single document with the department.

## Conclusion

As it is said that change is the only constant thing in this world and survival of the fittest applies everywhere, all those who are adaptable and embrace change in terms of new technological environment full of functions related to artificial intelligence will be the ones who shall survive and thrive in such a cut throat competition.

Accountants and auditors are the one who may help in development of such an environment leading to reduction in financial crimes and making records of any organization, even more trustworthy bringing greater transparency and fairness.

Although, there seems to have many challenges in bringing it to perfection but that does not prohibit or abstain anyone from undertaking experiments which may ease our lives and routine works. The blockchain technology is promising and may be employed for at least giving a try for the purposes of accounting and auditing. **MA**

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## Footnote

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<sup>5</sup>*Blockchain is emphasized*

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## BLOCKCHAIN ACCOUNTING THE DISRUPTION AHEAD



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**T**echnology often creates disruption. Over the time many industries have experienced such disruption, which has transformed the concerned industry in a big way. Fortunately or unfortunately, accounting, till date, has not experienced such technology driven disruption except the transition from manual accounting to computerized accounting process, a few decades ago. Even then, such transition never threatened the existence of accountants, but rather it was aimed to equip the then accountants with the knowledge of computer software to adopt themselves in a machine driven environment. However, recently there has been a significant development in the technological space that is threatening the very basic need of having an accountant, or at least a book-keeper, in an organization. Though the service of an accountant may not be outweighed completely (as an accountant often plays an important role in framing certain policies where certain degree of subjectivity is involved), this technology is capable to bring in such disruption in the field of accounting that it will get a complete transformation. This technology is none other than the blockchain technology which has already gained immense importance in various sectors, specially the financial sector.

### The Origin of Blockchain Technology

The origin of blockchain dates back 1990s, when a technological solution was first offered to tackle the problem of time-stamping of easily modifiable digital assets ranging from multimedia files and text documents, in order to track their origin and any subsequent attempt to modify the same. The solution was explained by Haber and Stornetta (1991) in their article 'How to time stamp a digital document', in the Journal of Cryptology. In 1991, they first proposed computationally practical procedures for digital time-stamping of easily modifiable documents by creating cryptographically secured chain of blocks, so that it becomes impossible for a user, either to back-date or to forward-date his document. Their procedures claimed to maintain complete privacy of the documents themselves, and required no record-keeping by a third party time-stamping service. This concept of cryptographically secured chain of blocks laid the foundation of blockchain.

Blockchain, in its current form was conceptualized by Satoshi Nakamoto, a till date anonymous person (or a group), in his attempt to introduce Bitcoin, the digital crypto currency in 2009. Nakamoto used blockchain as the public transaction ledger for Bitcoin. Since then blockchain technology has matured a lot and has been experimented in various other platforms including recording of events, medical records, transaction processing etc.

### Concept of Blockchain

Blockchain may be defined as an open, distributed database or public ledger that can record all transactions

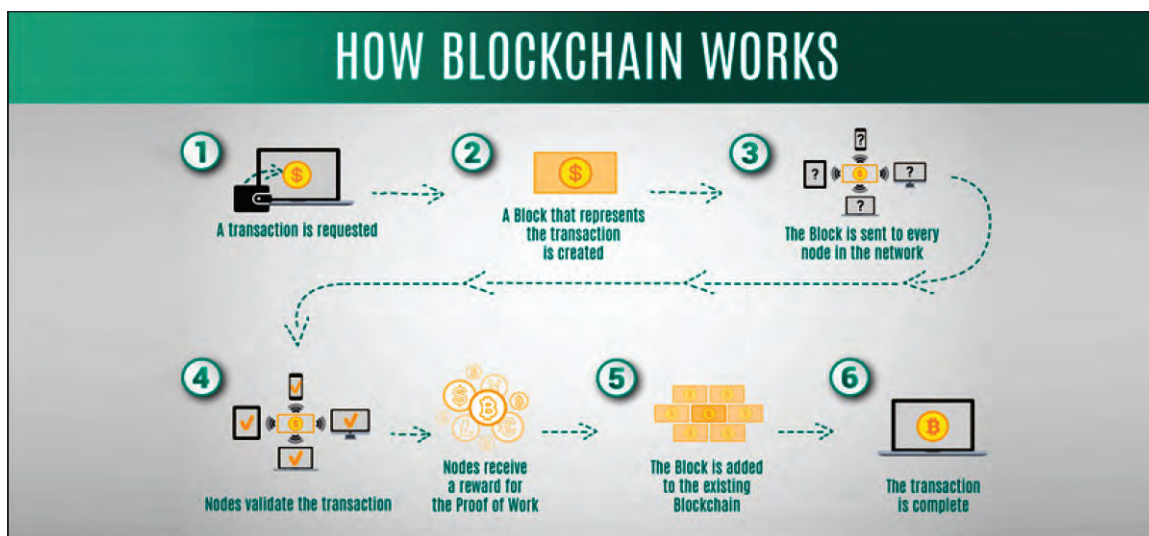
or digital events between two parties efficiently and in a verifiable and permanent way. According to Swan (2015), blockchain is like a giant spreadsheet for registering all assets and an accounting system for transacting them on a global scale.

### Modus operandi of Blockchain

Like the name suggests, a blockchain is a chain of blocks that contain information. It is a completely open and distributed ledger to record information with some interesting property- once any data is recorded in a blockchain it cannot be changed or tempered easily.

In a typical blockchain process, there are peer-to-peer nodes. When a transaction is requested, the request is sent to these nodes. Nodes then verify the transactions with a computer algorithm. If majority of the nodes verifies the transaction, a new timestamped block is created and added to the blockchain of all previously verified blocks. This completes the transaction and the ledger is updated. Thus unlike a traditional transaction (say fund transfer through bank), where a central third party (the bank) records it and provides a copy of the same to the participants of the transaction, in a blockchain process, the same is done without the involvement of a central third party intermediary. This improves the security as data on a centralized server may be vulnerable to any cyber attack or loss due to other technical reason. In addition blockchain also saves cost by eliminating the need of a central authority as record keeping with them may be a costly affair at times.

Figure 1: How blockchain works

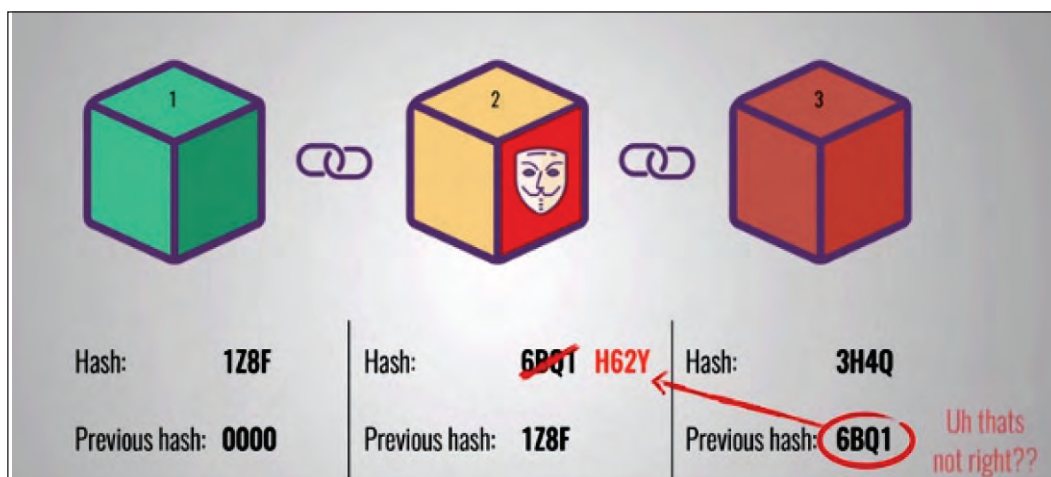


### Security Aspect of a Blockchain:

Blockchain is highly secured. In blockchain technology, each block contains data, a hash of its own and the hash of the previous block. Data in the block may vary depending upon the purpose. For example, in a Bitcoin transaction, the data will include the details of the sender, the receiver and the amount. Hash may be compared with fingerprints which are unique. Once the block is tampered its hash is changed and since the blocks are connected with each other by means of hash, all the following blocks become invalid as they will no longer contain the previous hash. Thus to tamper with blocks effectively, a person will have to recalculate the hashes of all the blocks. This is further restricted by a mechanism called 'proof of work'. This

mechanism slows down the creation of a block. In case of Bitcoin, it takes 10 minutes to create a proof of work. Thus when a block is changed, the person may need to generate the proof of work of all the following blocks. This makes the tempering process almost impossible. In addition to this, when a user joins the system he/she is given a full copy of the blockchain. Whenever a new block is added, it is sent to every nodes of the system. Each node, then, verifies the block to see whether it is tampered or not and eventually approve, if they are satisfied. In this way a consensus is achieved. Thus a fraud requires the acceptance of at least majority of the nodes to validate. This makes the fraud impossible to commit.

Figure 2: Blockchain is secured in terms of compatibility of has string



### Blockchain –How Will It Transform Accounting?

#### 1. Current State of Accounting Technology

From its inception, accounting has undergone many changes over the time. Changing business forms, depending upon the expansion needs of the business, has developed accounting procedures considerably. At the same time, overseas operations and cross border investments have necessitated convergence and/or harmonization of accounting practices across the nation. However, all the above developments were limited to changes in the procedures or practices only. Accounting, till date, has seen only limited changes due to technology except in the sphere of recording of transaction in digital mode.

Even then, digitalisation of the accounting system is still in its infancy compared to other industries. This is because, accounting requires exceptionally high level of regulatory compliance to ensure integrity. Entire system of accounting is required to be designed in a manner that fraud is

impossible or at least difficult to commit. Unfortunately, today also it relies on mutual control mechanisms, checks and balances to achieve this objective. Though record keeping has been digitized, the entry in the computer system is still done manually and this leaves the scope for unintentional errors and planned frauds. Among other things there are systematic duplication of efforts, extensive documentations and periodical controls. Accounting is still manual to a great extent and far from being automated. As a result, there are frequent instances of compromising with the truth.

#### 2. Blockchain and Distributed Ledger System to enhance the present state

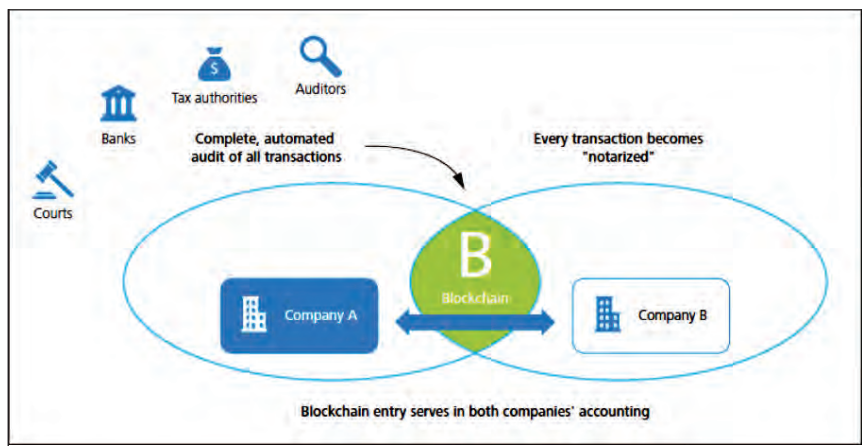
Blockchain is expected to transform the present accounting system in a number of ways, though the ultimate benefit of the same may be available only after a considerable improvement in the technology and large scale adoption at various levels.



At the initial level, blockchain technology may help us to do away with central third party authorities like Stock Exchange, National Payment System, Property Registers etc. who keep records of transaction between two parties and issue verifiable receipts or copy of the records. These verifiable receipts or copy of the records are used in accounting to record the transactions in the books of accounts. Since blockchain is a peer-to-peer network, using it will no longer require the service of a central authority. Transactions will be recorded securely in blocks and corporations will not require maintaining the physical or digital records of the same. This will reduce the cases of falsifying records to commit frauds to almost zero as tempering the blockchain will not be easy at all.

In accounting, at the second level of the technology, it may take the form of a shared ledger, popularly known as World Wide Ledger (WWL). WWL may be defined as an ultimate implementation of a searchable and verifiable blockchain accounting system where corporations will publish all their transactions and make them available for different regulators and stakeholders including shareholders. In this complete peer-to-peer system, all monetary transactions entered into by corporations will get verified and, if approved, will create a block. This will then be added to the chain with a hash. The transactions will then be open to all who are registered and verified in the network. As a result, corporations will no longer require maintaining separate set of books for recordkeeping as the transactions same will remain saved in the blockchain and can be accessed at any time.

**Figure 3: Blockchain Accounting implements Recording in a Shared Ledger**



Finally, at the extreme level, blockchain may facilitate real time blockchain accounting. In this form, a software solution may enable transactions of currency, financial derivatives and other digital instruments between two or more interested parties, stores the transactions in cryptographically protected blocks, the integrity of which will be verified. Moreover, it may be further automated to make payments and settlements on maturity of the instruments and record those transactions also. Virtually at this level, accountants' role may be limited to only areas of judgement like inventory valuation, selecting the depreciation or provision policy etc. They will no longer be the book-keepers. However, as stated earlier, this will require the technology to evolve beyond the present level.

### 3. Benefits of Blockchain Accounting

Blockchain accounting, even in its simplest form, will offer

a number of benefits. These are:

#### **a) Reducing the cost of maintaining records:**

Application of blockchain accounting will significantly reduce the cost of maintaining physical or digital records of transactions. Records will now be maintained in form of blocks in the blockchain and anyone having the appropriate authority will be able to access the same at any time.

**b) Authenticity of information:** Physical and digital records are susceptible to unauthorized alterations. This eventually increases the chance of fraud. Due to its complex technology, tempering blocks, which contains the data, will be next to impossible. This will ensure authenticity of all information in the blocks.

**c) Focus on value adding activities:** Since blockchain

accounting will do away with the traditional record keeping, this will free up the resources engaged in it. These resources may be alternatively channelized to different value adding activities of the organization.

**d) Reduction in frauds:** Since records will be temper proof and even if they are altered, they will be easily traceable, the chance of fraud will come down drastically. Moreover, in its advanced form of real time blockchain accounting, the transactions will be recorded automatically. This will certainly eliminate the chance of errors in the recording process.

**e) Eliminating the need for reconciliation:** Since transactions will be recorded on real time basis and ledgers will be updated instantly, there will be no need for any reconciliation.

**f) Real time reporting:** In its extreme form, blockchain accounting will enable real time reporting. Any stakeholder registered on the network will be able to access the required information about a company. The regulators will be able to collect any information about the reporting entity on real time basis.

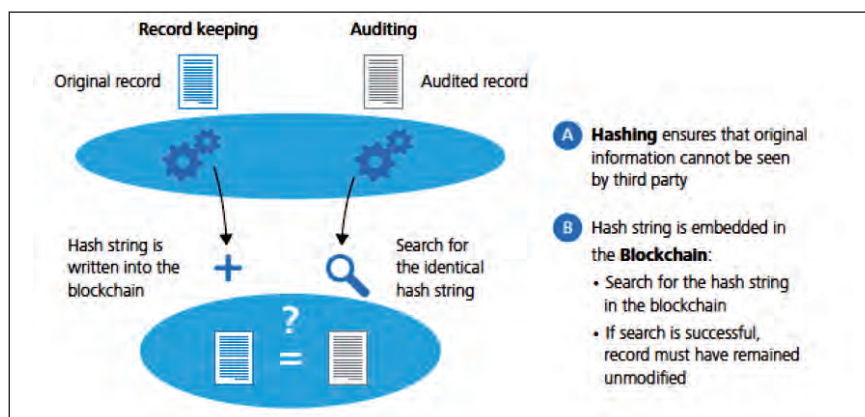
### Blockchain Accounting Will Transform Auditing

Not only accounting, blockchain is also expected to transform the auditing profession in a big way. This is because, auditing is a process of attesting the accounts and hence any change in the process of maintaining accounts is bound to have significant implication in the procedure of auditing.

So far, in a computerized information system (CIS) environment, auditing is done in two ways- auditing around computers (known as Black-box approach) and auditing through computers (known as a White-box approach). Under the former approach, the auditor relies on the existing control in the user department and verifies the output with the input manually with the assistance of computers. In case of the latter, both compliance and substantive procedure is done through computers. This system of computer assisted or computer driven auditing is going to receive a complete transformation with the advent of blockchain accounting.

In blockchain accounting, there will be no trusted third party. Transactions of tangible or intangible fixed assets and of financial instruments will no longer be recorded by an intermediary, rather they will be recorded in blocks in the blockchain in a secured manner. Hence these transactions will no longer be backed by physical transaction receipts which are subjected to forgery very easily. The auditor will be assured enough about the authenticity of these transactions and ownership of the assets. In addition to this, companies will now record their transactions in a shared ledger. The entries will be cryptographically secured and hence falsifying or concealing them will be almost impossible. The transactions will be automatically verified in an electronic way. This standardization will allow the auditor to verify a large portion of company data automatically. The auditor will just need to search for the hash string in the blockchain that identifies the relevant block containing the transaction data. If the hash is not tempered, then it will exist on the blockchain. Thus existence of the hash string will assure that the record have been unmodified.

**Figure 4: Auditor will search for Hash String to verify the transaction**



This will save the cost and time of the auditors and the auditors will be able to concentrate more on the complex transactions, compliance or internal control related issues. This will certainly be value adding to a great extent.

### Some Early Adopters of Blockchain Accounting

Considering its immense potential, some of the industry leaders have already attempted experimenting with blockchain in accounting. For example -

a) **IBM** has launched a secure cloud based platform for companies to test blockchain technology within their own supply chains to track high value items.

b) **Deloitte** established a blockchain development team called Rubix to develop client specific application using blockchain. PermaRec is one of such applications developed by this team, which is a triple-entry accounting system that allows Deloitte to record transactions between their clients and quickly audit them.

c) Ethereum Foundation has developed **Balanc3**, an application solely focused on triple-entry accounting.

d) **Tierion** is a blockchain cloud service that allows companies to create digital time-stamped receipts.

### Challenges in implementing blockchain accounting

Though blockchain accounting may offer a whole host of benefits and is capable of transforming accounting and auditing into newer levels of cost effectiveness, automation and highly dependable systems, there are certain challenges in implementing this technology.

a) Blockchain technology is highly dependent on internet. Hence improper infrastructure can play the spoilsport. Also higher level of cyber security is a must.

b) Accounting and auditing are largely dependent on regulations. Thus to ensure the full benefits of blockchain accounting, appropriate regulations should also have to be enacted in this process. The process should be so enabled that any change in the regulation can be quickly adopted.

c) The second level of application of blockchain accounting i.e. WWL requires the large scale adoption of blockchain accounting by corporations. Unless the technology is adopted by many corporations, its effectiveness will be limited.

### Conclusion

Blockchain is arguably the most discussed technology of this decade and there is every reason for that. As a sort of indestructible and incorruptible ledger, blockchain accounting offers to record data in a way which can be simultaneously accessible by auditors and regulators. This

could potentially reduce the need for accountants to record transaction in separate locations with almost no way to consolidate and validate the same. Blockchain accounting is capable of providing a much more transparent and secured accounting framework to track transaction and assets. Hence traditional accounting is at the verge of a disruption which will redefine the role and need of accountants in an industry. Instead of record keepers, accountant will soon require to become interpreters and direct facilitators in decision making. **MA**

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# MANAGEMENT ACCOUNTING

## MANAGEMENT ACCOUNTANTS MARCHING DILIGENTLY INTO THE FUTURE: CONDUCTING DUE DILIGENCE WITH BIG DATA ANALYTICS



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The last decade, also the era of deal making, saw many a successful dealsuch as Time Warner-AT&T merger in 2016, Microsoft & LinkedIn in 2016, Pfizer Inc. & Wyeth in 2009. One of the common factors amongst them all- “an effective due diligence.” Due Diligence, a term that became popular in 1982 includes processes that have withstood the test of times<sup>1</sup>. The business environment is changing rapidly, the past is no longer the complete indicator of the future and the processes need to be adapted for an effective due diligence. Learning about its process, effectiveness, risks associated and the traps in the procedures are essential for performing due diligence right. Big Data Analytics helps avoid overlooking critical factors or rendering them inconsequential to the deal, which happens due to the ever changing circumstances, can cause massive damage to businesses rather than create value.

Some of the landmark international deals in the recent past like Teva-Allergan Generics, one of the biggest pharmaceutical deal of 2015; Bain & Company, a leading private equity firm; or Nestle, a leading conglomerate with huge success in Merger and Acquisition, have depicted the significance of conducting a detailed due diligence activity for concluding any successful restructuring deals in the contemporary world<sup>2</sup>.

- ✳ To better understand the role of Big data analytics in due diligence in today's world, we structure the article as under:
- ✳ Analytics, Robotics and Artificial Intelligence (AI) in Due Diligence.
- ✳ Due Diligence in the emerging markets with Big Data Analytics.
- ✳ Due Diligence in practice; The Tata-Thyssenkrupp joint venture.
- ✳ Due diligence as a process.

## Analytics, Robotics and Artificial intelligence (AI) in Due Diligence

### Analytics

Data is the most important aspect of the due diligence and with the advancing technology business analytics provides that insight, which helps the researchers in analysing financial data beyond financial statements. In a mergers and acquisition transactions, business analytics can be a blessing, as the data can be used accurate valuations using

models and scenario forecasting. Using business analytics for this process can help both the parties to analyse data sets on both ends. Some proper analytics can be helpful in showing the variance and deviation of forecasted data indicating whether the predicted value can be relied upon or not. A compressive dashboard can also be prepared using the business analytics for showing the relationship between different components helpful in decision making. The companies with a strong ERP system act as a catalyst in improving the overall data mining and identifying any loopholes in advance. Accordingly, companies who can adapt cutting edge technology like business analytics will be successful in future as it helps them to understand how they manage data and use it for decision making process<sup>3</sup>. The process has evolved over the years and will be rapidly evolving in coming future; hence the stakeholders are required to adapt and implement these new changes in their process to get the desired results.

In a Mergers and Acquisition transaction, a large number of documents (legal and commercial) need to be perused in a relatively short period of time and analytics software like NVivo can be gainfully used for qualitative data analysis. Also the past judgements of the honourable courts and word trends of similar legal documents can be used in conjunction with AI to find the relevant information.

### Robotics & Artificial Intelligence (AI)

Artificial intelligence i.e. AI has now become sought-after technological advent where organizations are using machine learning techniques to automate the process which generally took longer time with high human interference. Robotics is the branch of AI which can be used to implement the automation of most of the processes. In due diligence, robotics can be handy in reporting, where machines can read the reported document in compliance with the regulations. The contract review can also be done through machine learning, which effectively will be low cost & high-quality. The time involved in the process is also reduced significantly thereby, helping dealmakers in getting the market, especially emerging nations' trends quickly. Of course, the entire exercise of AI can be success if there is no compromise on the minute investigation in a due diligence process and ensures continue data flow system, both in pre and post due diligence activity.

### Due Diligence in Emerging Market

#### Due Diligence in Emerging Market Hedge Funds

With the changing times, hedge funds organization have started using due diligence as a critical component

in their activities. After major frauds in the past such as the infamous Bernard Madoff scandal (discovered in 2008), the organizations allocating hedge funds and the investors have started using big data analytics in the due diligence to mitigate the risk.

In hedge funds, the compliance process, IT infrastructure, valuation techniques and gathering data to other operational risks associated with the funds are termed as operational due diligence. However, there are frameworks designed to review the operational due diligence reviews implemented at the fund of hedge fund level. These frameworks styles are categorised as Dedicated, Shared, Modular and Hybrid<sup>4</sup>.

“Dedicated” is a framework where a dedicated team member is designated to evaluate operational risks involved in the hedge funds. “Shared” is a framework where there is no dedicated team member and the due diligence is done by the investor itself. The “Modular” framework includes classification of different functional components among different specialist with specific business knowledge. The “Hybrid” framework is the combination of above three frameworks<sup>4</sup>.

### Due Diligence in Merger and Acquisition ( M&A) Transactions

The purpose of due diligence in an M&A transaction is to investigate the company to be acquired thoroughly and also to ascertain whether the business is actually what it is claimed to be. Due diligence for M&A should be done

patiently in order to identify risks of black swans, if any, in the business<sup>5</sup>. Thus in the M&A transactions, there are two sides of due diligence—the buyer side due diligence and the seller side due diligence. The former focuses more on the information memorandum, market analysis, and operational due diligence, while the latter focuses more on the avenues available for maximum gain ceding more.

The due diligence in M&A also supports the valuation process and the accuracy of available data is tested. All financial documents, reporting standards of the target company should also be verified. The process starts with a first proposal indicating willing of both parties of engaging in the deal, after which, a non-disclosure agreement is signed, and a letter of intent is issued once the term sheet is finalised where deal terms are explained in detail. The letter of intent leads to a definitive agreement which confirms the deal.

### Due Diligence in the Private Equity ( PE) context

One of the key parameters for the due diligence in private equity is the performance of fund level returns diversified across different sectors<sup>6</sup>. Also, the private equity managers need different sector expert who can perform due diligence of the different sectorial funds, these functional experts help the managers to perform diligence in a systematic and more knowledgeable manner through the use of Predictive Analytics. The difference in perspective of due diligence of a PE firm and a Corporate/strategic buyer are as follows:

P/E player	Corporate player
More demanding due diligence at the outset due to lack of understanding of the new businesses.	A corporate player will often benefit from its intimate knowledge of the target company's industry
Focus is on <ul style="list-style-type: none"> <li>Value in totality</li> <li>External Growth opportunities</li> <li>Potential exit routes</li> </ul>	Focus is on <ul style="list-style-type: none"> <li>the high value assets of the target</li> <li>Synergies (potential) that may arise</li> </ul>
Have to be swift in order to gain maximum advantage	Under normal circumstances, can take their time for the entire process

### Due Diligence in Project Management

The core theme in project management is to develop quality control and due diligence lays the foundation of the whole process. This is helpful in establishing the reliability of different analysis done in any project including cost-benefit analysis and need-impact assessment. The further implications and road map to the project is decided from

the results of due diligence. To perform due diligence in project management, there are certain questions which need to be answered for proper evaluation of cost-benefit analysis. These questions are broadly related to:

- ★ What is the forecasted value of cost & benefits of the project and how it is calculated?





*The due diligence in M&A supports the valuation process and the accuracy of available data is tested. All financial documents, reporting standards of the target company should also be verified. The process starts with a first proposal indicating willingness of both parties of engaging in the deal, after which, a non-disclosure agreement is signed, and a letter of intent is issued once the term sheet is finalised where deal terms are explained in detail. The letter of intent leads to a definitive agreement which confirms the deal.*



- ★ How much will the expected value vary based on certain indicators i.e. the deviation of the actual versus the projected?

Such questions when addressed through big data analytics help a manager understand whether the estimates are likely to be overestimated or underestimated. This due diligence is part of an outside perspective which managers prefer as there can be a certain bias which managers and forecasters may be inclined to and can make honest mistakes. Therefore, a due diligence process with an outside view through analytics can be welcomed by forecasters and managers.<sup>7</sup>

### The Cultural Due Diligence

Cultural due diligence has recently gained popularity among the investors as over the years, people have seen cultural clash among the corporates once they merge or one party acquires another. The cultural clash arises due to due diligence oversight and not analysing the impact of corporate culture on organizational performance. Companies spend a lot of money and time in analysing physical documents, financials and other historical events of the company but neglecting cultural correlation among the dealing parties. To avoid such cultural clashes, companies should broadly include these parameters viz; key business drivers, infrastructure, organizational practices, leadership and management teams, supervisory & work practices and technology utilization. The data collection for cultural due diligence should be based on these parameters and then the qualitative analysis should be done primarily interviews and focus group. This will help understand whether the two corporates have cultural similarity or not. This will prevent the loss, one would have to bear once the deal is finalised<sup>8</sup>. In 2005, the same error was made by Sprint Corp. when they were trying to acquire Nextel Communications Inc. to boost its user base and revenue creating a wireless powerhouse. Nextel's casual culture did not fit well with Sprint's more corporate professional culture. The two companies struggled to blend not only cultures but even billing systems. This resulted in a loss of \$29.5 Billion which could have been avoided if proper due diligence would have been performed focusing on the cultural synergies through advanced analytics<sup>9</sup>. As the cultural due diligence is simply a subject of good business management and cultural clash should be seen coming by every manager involved in the process.

### Due Diligence in Practice: The THYSSENKRUPP TATA STEEL JOINT VENTURE

A recent and appropriate illustration of a well-executed

due diligence is would be the Thyssenkrupp AG and Tata Steel Limited Joint Venture (JV). The two industry leaders operating in total opposite territory, has decided to go for a JV. Both of these companies wanted to make a sustainable business in European market. With Thyssenkrupp aiming for economies of scale by partnering with Tata Steel to produce high quality steel and gain a significant market share. The JV will create the 2nd largest steel player in the European market. Since, both companies operated in different geographical location, due diligence will play an important role in the venture. The companies differ in the business model, operations, management and culture<sup>10</sup>.

The JV was initiated when both the companies started looking for a business partner, because of the lucrative nature of European steel market. The companies engaged into the origination phase and started evaluating the options and entry strategy. Once the clear vision and synergies were established, both companies signed the memorandum of understanding and decided to enter a 50-50 shareholding venture. The agreement was still in non-binding phase i.e. initial underwriting. The main agenda was to evaluate key challenges faced by both of the companies to build a sustainable business operation. The decisions were taken by the end of 2017 since the state of origination which states that, the company will widen its portfolio, focus on innovation, quality, technology and cost leadership<sup>11</sup>.

The deal was in pre-diligence phase till the memorandum of understanding (MoU) was signed, and has been in phase 1 of due-diligence process since then. A new two-tier governance structure has been formed, one being supervisory board focusing solely operation and other being management board creating synergies across the leaders from both the group. Another important aspect which is taken into consideration by both of the companies is the client. Since the industrial customers of Tata steel will also gain the benefit of Thyssenkrupp AG Original Equipment Manufacturer (OEM) will take the synergy to next level.

The financials are also in favour of both companies. As per the document released by Tata steel, the JV has estimated the initial cost synergy of €400-600m per annum of a steady state basis and henceforth doubling the profit. The strong European portfolio was expected to help Tata steel to focus on its native place operation in India and scale up its business<sup>10</sup>. But the challenges posed by the company be it regulatory, geographical, management or cultural all of which can only be solved through due diligence. This is how important due diligence and can be used to analysis different scenarios.

## The due Diligence PROCESS THROUGH BIG DATA ANALYTICS

Due Diligence is undertaken before the investors binds to a contract<sup>12</sup>. As the following chart indicates, how due diligence should be performed in different phases.



### Pre-Diligence

The effectiveness of the process can be significantly improved if the investor has the sufficient information way before the agreement is finalised. This phase is started even before the investor is engaged with its target company. Initial talks decide the course of the deal, but before the talk begins, the investor should put in an effort to analysis the cost and other factors involved in the deal. In this phase a complete checklist of the documents is prepared which is very helpful for the investors so that the information required for the deal can be verified. Also, any informal information which is received from unverified sources should be recorded immediately and verified in later stages. This process of note-taking can be very helpful to make data centrally available through the file for later stages of the process<sup>2</sup>.

### Approaching the Target

Once the target is approached, the intention of due diligence should be made clear. This approach brings transparency in the deal which is the essential part of the process. Now, that the investor has background information about the target, the investor can ask all the relevant questions inside out to solve all the queries. In the same phase, an investor can also request for the data officially. This data will verify the information gathered in the preliminary stage. The investigator who is gathering information should be attentive to not only gather information what is asked but also every piece of information which seems relevant<sup>2</sup>.

### Analysing Financials and Trends

Reviewing financials of the company or the product you are investing in is the best way to know your target better. The revenues, profits, margin and capitalization tell the health of the company and a historical comparison should be done to confirm the same. Apart from fundamental

ratios, ratios like P/E, P/S should be checked to confirm the financial health of the company. Also, trends can be helpful to see if the margin is rising, falling or constant. Usually, all the information required to conduct this step can be found in the financial report of the company. (3). The key areas of attention are broad; net worth, working capital management, sustainability of current revenues, capital structure and accounting policies. These parameters will help the investigator to find out if the current revenues are adequate and will the profit levels be increasing.

## Competitors and Industries

Now, once the financial health of the target has been established, industry sizing and competitors helps you to take more informed decisions. Competitors analysis clearly shows the where the target lies in the spectrum<sup>13</sup>.

## Legal & Regulatory Due Diligence

One of the most important thing in the process is to manage legal due diligence. There can be certain issues in the whole process which needs to be addressed and it should be done during the process and not at the end. All documents should be closely reviewed and updated periodically and should be asked for if there is some missing one<sup>14</sup>. It is imperative to analyse the impact of compliances from all sections, inter-alia anti-money laundering or anti bribery and corruption laws. Any pending litigation and its impact should also be covered in the process. The regulatory compliance procedure should be verified properly. An investor should know if the target properly follows all the compliance related to all local regulations including environmental issues.

Currently in India, place of effective management (PoEM), introduced with effect from April 2016, is an essential part of any merger or acquisition and must be included in legal & regulatory due diligence. The PoEM is defined as the place where the value creation takes place. This was introduced to prevent leakage of taxes. The ramifications are huge and the previously followed structures to invest in India and avoid taxes will not work anymore. For example:

- A company registered in USA holds all its board meetings in India
- Two employees of a company do all the work in India while the company has just a registered P.O. box in Singapore
- Indian company sets up a subsidiary unit in Mauritius with the same directors as the parent unit and the value creation takes place in India

In all the above cases the foreign companies can be deemed by virtue of the new provisions to be tax residents in India and their global incomes can be taxed in India at the rate of 40%.

## Conclusion

Risk mitigation and value creation are the reason why due diligence is performed by most of the organizations. All the industry and company risks should be considered in totality while executing both the buy side and the sell side due diligence. Big Data Analytics can help the management accountants plays a crucial role in filling in all the information gaps and thus providing valuable insights which has a deep impact on the merits of the due diligence process. **MA**

## Footnotes

<sup>1</sup>[http://ink.library.smu.edu.sg/cgi/viewcontent.cgi?article=4304&context=lkcsb\\_research](http://ink.library.smu.edu.sg/cgi/viewcontent.cgi?article=4304&context=lkcsb_research)

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<sup>4</sup>[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1409851](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1409851)

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<sup>10</sup> Thyssenkrupp Tata Steel Joint Venture: Nerves of steel

<sup>11</sup><http://www.tatasteel.com/media/5004/tata-steel-thyssenkrupp-jv-final.pdf>

<sup>12</sup> Flow Chart Source - <http://www.toniic.com/step-3-conducting-due-diligence/>

<sup>13</sup><https://www.investopedia.com/articles/stocks/08/due-diligence.asp>

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## CRITICAL ANALYSIS OF IMPORTANT PROVISIONS UNDER GST ACT AND ITS IMPACT ON DIFFERENT STAKEHOLDERS



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*Goods and Services Tax has been implemented w.e.f. 1st July, 2017. A period of 9 months has passed and various changes have been introduced in the Act even after its implementation. An attempt has been made in this Research Paper to critically analyse some important provisions in GST as compared to the earlier laws and its impact on various stakeholders. It is interesting to study whether really these provisions have eliminated defects in the earlier laws or have made the situation more complex. The author has attempted to highlight the differences and similarities in GST law and earlier laws and its impact on various stakeholders.*



Indian economy has witnessed a major reform in Indirect Taxes in the form of introduction of Goods and Services Tax (GST) w.e.f. 1st July, 2018. In the past years also, Tax reforms were introduced and several steps were taken in this direction. In spite of these reforms, the Indirect Taxes had following defects which were in existence in the law -

- a) India did not have a national market due to invisible barriers of Central Sales Tax, Entry Tax and State Vat and visible barriers of check posts.
- b) Central Sales Tax (CST) was payable @ 2% and it was a cost to the buyer.
- c) Cascading effect of taxes was not eliminated fully.
- d) Movement of goods from one State to other was not tax free and also time consuming.
- e) Variations in VAT rates, forms and procedures among the states.

The GST subsumed various Central and State taxes viz. Central Excise Duty, Service Tax, Central Sales Tax, State Value Added Tax, Contra Veiling Duty, various cesses etc.

As a result of this consolidation of various levies into one levy, the operations and compliance procedure of the industries is expected to be smooth. At this point, it is important to study whether the GST has really improved the working of the tax payers and has brought ease in doing business.

### Objectives of the study

An attempt is made here to critically review important provisions under GST Act as compared with the erstwhile provisions and analyse its impact on various stakeholders. Also, the objective is to analyse whether the defects in the earlier law are really removed or not in the GST regime.

#### 1. Taxable Event

This aspect has dramatical change as compared to the earlier laws. In Central Excise, the taxable event was "Manufacture", for Service tax it was "Provision of service" and for Value Added Tax the taxable event was "Sale of goods". Similarly, Octroi or Local Body Tax (LBT) was payable at the time of entry of goods in the Corporation limits. Luxury tax was levied on Hotel room rents.

#### Manufacture under Central Excise :

As per Section 2(f) of the Central Excise Act the term "Manufacture" had three different meanings -

- a) activities which are incidental or ancillary to the completion of the product.
- b) Processes defined as "Deemed Manufacture" in the Central Excise Tariff and
- c) In respect of specified goods in the Third Schedule where packing, repacking, labeling, re-labelling, putting MRP or changing MRP was considered as a manufacturing activity.

Thus, to determine the applicability of excise duty, manufacturing activity should have been undertaken with reference to above criteria. There were many disputes on this issue as to whether a particular activity is manufacture or not. In the landmark judgment in the case of Union of India Vs. Delhi Cloth Mills Co.Ltd ( 1990 (27) ECR 151 SC ) it has been held by the Supreme court as under :

- a) The resultant product after the processing should be known in the market as a new product.
- b) The processes undertaken should result into bringing a different and identifiable product.
- c) 'Manufacture' implies a change, but every change is not manufacture and yet every change of an article is the result of treatment, labour and manipulation.

It is interesting to note that Labelling, relabeling, packing, repacking is not a manufacturing activity in the normal course. However, if the same activity is carried out in respect of specified goods as mentioned in the Central Excise Tariff as "Deemed Manufacture", or in respect of goods listed in Schedule III of the Central Excise Tariff, it would be considered as "Manufacturing activity" and would attract excise duty. This created confusion amongst the manufacturers.

Thus, the single activity "manufacture" had different dimensions. It should be appreciated that the Taxable event issue and thereby applicability of excise duty was beyond the understandings of a common man.

### **Definition of Service –**

The Service tax came into force in India in the year 1994. However, the definition of Service came into force only in July, 2012.

*Section 65B(44) of the Finance Act, defined "Service" means any activity carried out by a person for another for consideration, and includes a declared service. ,*

The definition excluded activities like Transfer of title in goods or immovable property, gift, Employer / Employee relationship, fees charged by Courts or Tribunals from the scope of Service.

Interpretation of the above definition will realize that the scope of service was very wide. It covered services mentioned in Section 66E of the Finance Act as "Declared

Service". One of the activity covered under Declared Service - **agreeing to the obligation to refrain from an act or to tolerate an act** or a situation or to do an act had many dimensions. This covered a number of activities like – penal charges recovered, demurrages recovered, Notice Pay recovered, any sum received for not doing a act etc. and were beyond the understanding capacity of a common man.

Further, for determining taxability of any service, reference to Section 66D (Negative List) was very much necessary. This section specified about 34 services which were exempt from service tax. Thus, the applicability of service tax was also complex and difficult to understand.

### **Taxable Event in GST :**

The taxable event in GST is "Supply of Goods and or services". Thus, any supply of goods and/or service is subject to tax. Thus, we have moved away from complexity of taxable events under different laws to a single point in GST i.e. Supply.

As per Section 7 of the CGST Act scope of "Supply" includes –

- (a) all forms of supply of goods or services or both such as sale, transfer, barter, exchange, licence, rental, lease or disposal made or agreed to be made for a consideration by a person in the course or furtherance of business;
- (b) Import of services for a consideration.
- (c) The activities specified in Schedule I, made or agreed to be made without consideration; and
- (d) the activities to be treated as supply of goods or supply of services as referred to in Schedule II.

The definition also provides for clarifying that activities specified in Schedule III are not be considered as Supply of goods or services.

From the above definition, it will be clear that the taxable event in GST is simple and at the same time it has a wide scope also.

In the scope of Supply mentioned above there is a reference to – **supply made in the course of or furtherance of business**. This reference has widened the scope of supply to a large extent. This is very important and favourable point in GST.



## 2) Valuation :

The Valuation under Central Excise law was very much complicated. Section 4 of the Central Excise Act dealt with valuation provisions and it provided that the duty should be paid on the Transaction value provided – (a) Price is the sole consideration and (b) assessee and the buyer are not related.

Section 4A – provided for valuation of excisable goods on a different basis – i.e. MRP basis. These provisions were very critical and difficult to understand. In respect of goods covered under Schedule III, tax was to be paid on MRP less specified abatement percentage. Such provisions were introduced in the year 1997 obviously to collect more revenue from branded goods.

### **Valuation based on Installed capacity –**

Section 3A of the Central Excise Act had provisions relating to charging of excise duty on installed capacity. These provisions were made applicable for Pan Masala.

From the above analysis it can be summarized that there were different methods of valuation in Central Excise. Those were –

- ★ Transaction Value – Normally the selling price. Accepted only if the parties are not related and price was the sole consideration.
- ★ Tariff Rate – Instead of value, the duty was payable on UOM viz. Kgs, Meters etc.
- ★ MRP based valuation
- ★ Installed Capacity method.

The valuation issues were further made complicated due to provisions of Valuation Rules which prescribed different rules for cases which were not covered under the provisions of Section 4 referred above. The same are explained in brief –

- a) In case of transactions between related parties, the value was to be determined as per the value of goods for unrelated party. The definition of related party was to be carefully studied for ascertaining the applicability of this provision.
- b) In case of removal of goods to depot, the price was to be adopted from the similar price of goods at depot at the time of removal.

- c) In case of inter unit clearances, the price was to be adopted on Cost + 10% basis. In this case, interest was required to be paid on differential duty paid after finalization of value of inter unit clearances at the end of the financial year.

The issues involved in valuation were so complex that various litigations have taken place and Apex Court or High Courts have given landmark judgments in this respect. The various amendments that have been made in the law were on the basis of these judgments.

### **Valuation in Service tax –**

In service tax also, the valuation was a complicated issue. As per the provisions of Sec. 67, where the service was provided for a consideration in money, then the service tax was to be charged on the value of such consideration for such service provided or to be provided. Thus, the total consideration received plus equivalent consideration not received in money was subject matter of service tax.

Service tax valuation in respect of Works Contract Service were much complicated. Works Contract service was bifurcated as Original Works and Maintenance work. Different rates were prescribed for these categories. There was **alternative method** of valuation in Works Contract Service and here actual value of service involved in the contract was to be determined and service tax was to be paid on that value. Further reverse charge provisions were applicable to this service which made the whole issue too complex.

### **Valuation in GST :**

Section 15 (1) of the CGST Act deals with Valuation of goods and services. The basic provision is similar to earlier law – i.e. Tax to be paid on the Transaction Value.

Section 15 (2) provided for inclusion of items like Taxes, duties levied under any other law, Amount that the supplier is liable to pay, incidental expenses, interest or late fee, subsidies directly linked to the price etc.

Thus, similar to the earlier provisions, the **transaction value** is considered for value for the purpose of payment of tax for supply of goods and services. Also, the two conditions prescribed for this purpose are similar to the earlier provisions – i.e. price is the sole consideration and parties are not related.

However, in the sub-rule (d) and (e) of Sub Rule 2, two important changes are prescribed which provide for including interest, late fee, penalty for delayed payment and subsidies received linked to price as part of consideration for payment of tax. **These provisions will have long term effect and there is a room for lapse on the part of tax payer.** This provision seems to be unjustifiable, as the interest is a finance charge and hence it should not be a part of the consideration.

Also, subsidies are received at much later date from the date of supply. Hence, the tax payer has to keep watch on such payments received at a later date. Hence, these provisions are prone to litigation.

**Valuation in respect of related parties and cases where price is not the sole consideration in GST –**

Rule 27 and Rule 28 deal with Value of supply of goods or services where the consideration is not wholly in money and where supply is to a related party respectively. These rules provide that in such situation, the value shall be determined as under –

- i) Open Market Value of such goods, or
- ii) In absence of Open Market Value, the value equivalent to the consideration not received in money should be added to the Transaction Value, or
- iii) Value of like goods or services, or
- iv) If value cannot be determined by above methods, the same shall be determined as Cost + 10%.

There are two important proviso to these rules which are –

- a) The value shall, at the option of the supplier, be an amount equivalent to ninety percent of the price charged for the supply of goods of like kind and quality by the recipient to his customer not being a related person.
- b) **Provided further that where the recipient is eligible for full input tax credit, the value declared in the invoice shall be deemed to be the open market value of the goods or services.**

A careful reading of these provisions will indicate that the valuation rules in respect of transactions not covered

under Section 15 are very dynamic and very simple to understand. In GST, a new concept of Open Market Value has been introduced which is easily understandable. The alternative options like value of Like goods or services is based on Customs valuation Rules and the same is also easily understandable. The last option given Cost + 10% basis in such situation which is similar to earlier provision in case of inter unit clearances.

**These provisions have almost brought the valuation to Transaction Value even in case of Related Party transactions.**

All these provisions have made the valuation provisions very simple and easy to understand for a common man.

**3) Input Tax Credit (ITC) –**

Input tax credit was allowed under Cenvat Credit Scheme and the same was allowed for utilisation for payment of duty / service tax on final product / output services. The credit was allowed on Inputs, Capital Goods and Input Services used for manufacture of goods or for providing output service.

**Eligibility criteria –**

(I) As per Rule 2(k) of the Cenvat Credit Rules inputs eligible for credit were –

- i) all goods used in the factory by the manufacturer of the final prout; or
- ii) any goods including accessories cleared along with the final product.
- iii) all goods used for generation of electricity or steam or pumping of water for captive use; or
- iv) all goods used for providing any output service; or
- v) all capital goods which have a value upto ten thousand rupees per piece, but excludes.....

(II) As per Rule 2(l) of Cenvat Credit Rules Input Services eligible for credit were –

- i) Services used by a provider of output service for providing an output service; or
- ii) Used by a manufacturer, whether directly or

indirectly, in or in relation to the manufacture of final products and clearances of final products upto the place of removal and includes ..... but excludes .....

(III) Rule 2(a) of Cenvat Credit Rules defines capital goods and the credit was allowed on goods covered under Chapter 82, 84, 85, 90, 6805, 6804. It also covered goods like Pollution Control Equipments, Spares parts of machinery, Water Tank, Jigs and Fixtures etc. Specified motor vehicles were also covered provided they were used for specified purposes only.

From the reading of the above definitions, it will be clear that these definitions were very complicated. Various inclusions, exclusions and conditions were prescribed in the definitions. The important provisions in this respect were –

- i) Input credit was restricted to the inputs used in the factory of production.
- ii) Capital goods credit was allowed mainly in respect of specified goods covered under chapter 82, 84, 85 and 90 and parts of such goods. Credit was not allowed in respect of office equipments, office furniture and other assets.
- iii) Capital goods was allowed 50% in the first year and 50% in the next financial year.
- iv) In respect of services, credit was restricted on services like catering, rent a cab, health services, health insurance etc (even if provided to own employees).

Thus to determine the eligibility and ineligibility of Cenvat Credit was a big problem before the assessee. Often, cases occurred that the credit was taken on items not eligible for credit. Disputes were raised on this point and lot of energy was spent on litigation resulting in payment of interest and penalty. Also due to wrong classification of capital goods as Inputs, excess credit was claimed.

In Value Added Tax also credit was not allowed fully on inputs like Lubricant oils, Furnace oil and in respect of certain capital goods like furniture and office equipments.

## Input tax Credit in GST :

- a) Section 2(59) of the CGST Act defines Inputs means any goods other than capital goods used or intended to be used by a supplier in the course or furtherance

of business.

- b) Section 2(60) of the CGST Act defines Input Service means any service used or intended to be used by a supplier in the course or furtherance of business.
- c) Section 2(19) of the CGST Act defines Capital goods means, the value of which is capitalized in the books of account of the person claiming the input tax credit and which are used or intended to be used in the course or furtherance of business.

The above definitions are very wide and simple. As compared to the earlier definitions this fact must be appreciated that the Input and Capital Goods definitions in GST do not restrict the credit in any way. However, Section 17 of the CGST Act provides for apportionment of Input Tax Credit and Blocked Credit. Sub Rule (5) of this section restricts the credit relating to motor vehicles to any other purpose than the specified activities viz. catering, transportation etc. Also, service tax credit has been denied to services like catering, rent-a-cab, health insurance similar to earlier provisions.

In GST, input tax credit is allowed on inputs used in the course or furtherance of business. This scope is definitely wider than the earlier scope which restricted the credit only to the inputs used in the factory of the manufacturer. As explained earlier, the terminology – Furtherance of business has a much wider coverage than the earlier definition.

Further, the 100% capital goods credit is now available on all equipments, machines, facilities, furniture etc. used in the factory including administrative offices. The criteria for eligibility is – capitalization in the books of account. There are no restrictions like VAT provisions.

Thus, credit availability will be much more wider in GST and this will reduce the cascading effect substantially. Now, the suppliers can claim maximum credit on inputs and capital goods easily and this leaves minimum scope for litigation. More eligibility of credit means lower price of the products resulting in reduction in final price of the finished goods.

However, disallowance of service tax credit on certain services like catering, rent a cab, health services etc. which are essentially used for the purpose of business only, is against the principles of GST as it disrupts the smooth flow of credit. There is no valid reason for such disallowance. Further, such restriction is against the definition which



covers – “In the course of furtherance of business”. Hence, when the law projected new concepts, new procedures etc. the old provisions should not have been brought in GST. This vital approach is missing in these provisions.

#### ***Additional conditions for eligibility of credit –***

In GST, Section 16 of the CGST Act provides for availing Input tax credit, subject to fulfillment of following conditions –

- a) The material or services are received by the recipient.
- b) The supply is accompanied by a valid tax invoice or such other prescribed document.
- c) The supplier has paid the taxes to the government account.
- d) The supplier has filed a valid return.

The last two conditions are new conditions in GST law which are very important. In Excise law, the credit availment had no relation with the payments done by the supplier and filing of return by him. The earlier facility of filing of return by disclosing liability is no more available to the suppliers. Hence, this provision will help in bringing financial discipline amongst all the suppliers. Further, provision to clause (d) provides that the recipient of goods and services should pay to the supplier within 180 days is also very important. If payment is not made in this period, the recipient has to reverse the credit claimed earlier along with interest.

If all the above provisions are analysed critically, it will be seen that they are very vital in bringing discipline among the suppliers and everyone is required to pay the taxes in time and file the return in time. Then and then only, there will be a smooth flow of credit to all the recipients of goods and services. The suppliers who are non compliant in GST, will not get further business from their customers.

#### ***4) Reverse Charge :***

In the earlier law, there was no provision for payment of excise duty or Value Added Tax under Reverse Charge. Section 68(2) of the Finance Act had provision for payment of service tax under Reverse Charge. Notification No. 30/2012 dt. 20.06.2012 prescribed various taxable services wherein the recipient is liable to pay the tax under reverse Charge. Major services covered under RCM were – Insurance / Recovery / Marketing Agents, Goods Transport Agency, Sponsorship, Directors services etc.



*Section 9(3) of the CGST Act has provisions regarding payment of tax on supply of goods and or services on reverse charge. Further Section 9(4) of the CGST Act has a provision that any supply of goods and/or services by an unregistered supplier to a registered supplier, the tax thereon shall be paid by the registered recipient. Regarding provisions relating to reverse charge in respect of intra-state goods and services received from unregistered suppliers, it can be stated that these provisions are complicated and tax payers faced numerous difficulties in collecting the data for this purpose and pay tax in time. Hence, the Government has withhold these provisions till 30th June, 2018.*



Table appended to this notification prescribed different percentage of service tax to be paid by the recipient and by the service provider for different services. It will be noticed that the provisions were very much complicated. No single rule was made applicable in this respect. Different rules / provisions were provided by same type of service. Hence, a common man was unable to understand the same and implement correctly.

## Reverse Charge in GST :

The provisions in GST are much more complicated. Section 9(3) of the CGST Act has provisions regarding payment of tax on supply of goods and or services on reverse charge. Further Section 9(4) of the CGST Act has a provision that any supply of goods and or services by an unregistered supplier to a registered supplier, the tax thereon shall be paid by the registered recipient.

As per Notification 13/2017 Central Tax (Rate) dt. 28.06.2017 major services which are covered under reverse Charge are – Goods Transport Agency, Advocates,

Sponsorship, Director Services, Insurance Agents etc. As compared with the earlier services, Manpower Supply, Works Contract Service and Rent a cab service are not included under Reverse Charge in GST. Services by Author, music Composer are newly added in GST.

In GST, for Reverse Charge the earlier confusions have been eliminated. The entire tax is to be paid by the service recipient and no differentiation of the status of the assessee is relevant.

Regarding provisions relating to reverse charge in respect of intra-state goods and services received from unregistered suppliers, it can be stated that these provisions are complicated and tax payers faced numerous difficulties in collecting the data for this purpose and pay tax in time. Hence, the Government has withhold these provisions till 30th June, 2018.

## 5) Impact on Cash Flow –

Though, various taxes have been subsumed in GST, overall the impact is that there is increase in tax burden.

The following table shows the impact of different taxes as they existed earlier and now in GST.

Particulars	Intra State		Inter State		Depot		Imports	
	Before	After	Before	After	Before	After	Before	After
1.Basic value	1000	1000	1000	1000	1000	1000	1100	1100
2.Excise/CGST/IGST	125	140	125	280	125	280	137	308
3.Total	1125	1140	1125	1280	1125	1280	1237	1408
4.VAT/CST/SGST	152	140	22	0	0	0	50	0
5.Octroi	38	0	34	0	38	0	38	0
6.Total value	1315	1280	1181	1280	1163	1280	1325	1408
7. Less : Set off	277	280	125	280	125	280	187	308
8.Net cost	1038	1000	1056	1000	1038	1000	1138	1100
9. Total Taxes paid	315	280	181	280	163	280	225	308

In the above table, the author assumed the taxable value at Rs. 1000/- for each transaction for comparison purpose. For imports the value is considered after adding Customs duty. For Depot supplies, initially excise duty was paid and VAT was paid for sale from Depot. For comparison purpose, the initial outflow is considered.

It will be observed from the above table (Sr.No.9) that in GST there is higher outflow of taxes in different types of transactions, except intra state supplies. Also, in the table (Sr. No. 8) shows the landed cost of the product after set off. It will be noticed that in GST, the cost has reduced due to elimination of cascading effect.

## 6) Tariff Classification –

In Central Excise, classification was based on Central Excise Tariff and 8 digit classification was mandatorily done by all manufacturers. The rate structures were very much stabilized and 12.5% excise duty rate was prescribed to majority of the products except some goods viz. vehicles, paper, pharmaceuticals etc. This eliminated the classification disputes to a great extent.

In GST, the classification is based on HSN / Customs Tariff as the Excise Tariff is no more valid. Five rates are prescribed as 0%, 5%, 12%, 18% and 28%. Though, the tariff classification is 8 digits, Government has mandated to mention only 4 digits in the tax invoice.

As different rates of taxes are prescribed for goods falling within a chapter, correct classification of goods has become important once again. E.g. For Chapter Heading 1005, 1006 is appearing under 0% (unbranded goods) table and the same heading numbers are appearing for 5% rate (for branded goods). Thus, the classification has to be done with utmost care. The relevant conditions need to be read carefully before applying any specific rate.

### **Exemption Notifications -**

In GST, there are about 42 exemption Notifications as against 147 Tariff notifications in the excise law. Hence there is a large reduction in exemption notifications resulting in smooth flow of taxes and input tax credit. This will definitely improve the tax collection process. The issues of claiming wrong exemption are automatically reduced to a large extent in GST.

## 7) E-way Bill –

In the GST Act, there are provisions of E-way Bill to be given by every supplier for every supply transaction having value more than Rs. 50000/-. These provisions are now made effective from 1st April, 2018. For intra state supply the date of implementation will be notified by the respective state governments. All the state governments are also expected to implement these provisions for Intra State supplies latest before 30/06/2018. E way bill provisions replace the earlier Road Permit provisions.

### **Long term impact of E-way bill provisions :**

1. The problems in issuing E-way bills will hamper the smooth movement of goods and there is a fear that the trucks will be held up for want of this document.

2. The E-way bill provisions are set back for hassle free movement of goods.

3. The limit of Rs. 50000/- is very meager and the time span of 1 day for 100 kms. is also very short. This will definitely put the supplier and Transporter in trouble.

Thus, the complexities of E-way bill and its effectiveness need to be checked in the coming months.

## 8) Unique features of GST :

As compared to the earlier law, Integrated GST, Anti Profiteering provisions and Matching concept are unique features of GST. IGST has reduced cost burden and headache of C forms etc. Anti profiteering measures have made mandatory for the suppliers to pass on the tax benefit to the end customer. Matching concept will bring financial discipline amongst the suppliers and will check the tax evasion.

### **Impact on various stakeholders –**

After the comparison as above, its impact on various stakeholders is discussed as under –

#### **A) To Tax payers :**

1. GST is expected to bring overall financial discipline in the businesses as tax payment will be prioritized over other payments in view of matching concept.
2. The concept of “Supply” as point of taxation is very wide, easy and has resolved many disputable issues in earlier laws.
3. Number of returns to be filed in GST are substantially reduced as compared to earlier laws. Also, all the returns are now to be filed with single authority.
4. The principles of valuation have been simplified and will increase the ease in doing business.
5. The Input Tax Credit is more or less on the same old principles except eligibility of capital goods credit. The tax payers are getting more input tax credit than earlier provisions.
6. The cash flow is adversely affected on account of higher cash outflow.
7. The peculiar features of IGST has encouraged the

businessmen to restructure their businesses by consolidating number of depots.

8. Tariff disputes will definitely increase in GST .

## **B) Impact on Government –**

1. The threshold limit at Rs. 20 lacs is very low and has widened the tax base to a large extent. Hence the Government earnings are increasing.
2. The revenue collection will be prompt and in time.
3. More and more tax payers are coming under the tax net voluntarily. This will automatically reduce tax evasion.
4. More staff can be deputed for audit and investigation wings.

## **C) To Society :**

The society at large is expecting to get the benefits of GST transferred to the end customer.

Services have become costlier to the common man as the service tax rate of 15% has been increased to 18% in GST.


## **D) To the Economy :**

As the scope of supply is widened, economic growth is expected to increase.

India has not experienced high rise in inflation after introduction of GST as compared to other countries.

## **Conclusion**

From the above, it can be concluded that GST has been introduced as a major reform in indirect taxes. As compared to the earlier provisions, in major areas, earlier shortcomings have been removed.

Provisions of GST are in line with the slogan – One Nation One Tax. However, some new thoughts could have been introduced. Government is also positive in bringing uniform rates for majority of products. The government still needs to take action on Matching concept. Nevertheless, the online compliances on GST Portal, some drastic measures such as review mechanism for Non compliant tax payers, filing of return only after payment of tax etc. to control tax evasion are welcome steps in this direction and their benefits will be definitely seen the years to come. 

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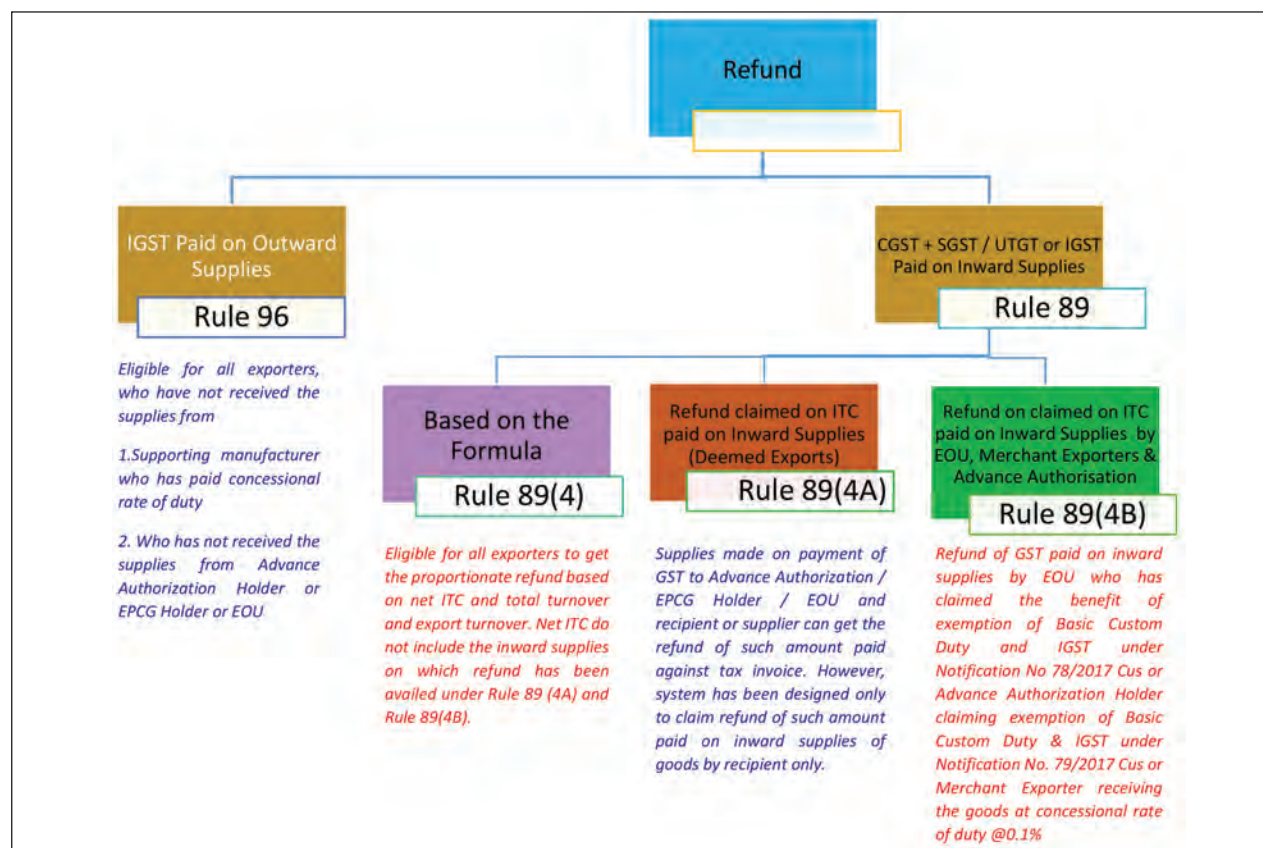
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## REFUND OF GST PAID BY EXPORTERS ON INWARD OR OUTWARD SUPPLIES

**E**xporters are entitled to obtain the refund of CGST + SGST / UTGST or IGST paid on inward supplies, when such inward supplies are used for the purpose of export of goods or services or both. Similarly,

exporters are also entitled to obtain the refund on IGST paid on exports on outward supplies of goods or services or both. It is ensured incidence of tax is not borne by the exporters.



**CMA A. B. Nawal**  
Council Member and  
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CBIC has issued the most awaited clarification vide circular number 45/19/2018 GST dtd. 30.05.2018. Highlights of the said circular are given below:

1. The said restriction is not

applicable to an exporter who has procured goods from suppliers who have not availed the benefits of the specified notifications for making their outward supplies. Further, the said restriction is also not applicable to an exporter who has procured goods from suppliers who have, in turn, received goods from registered persons availing the benefits of these notifications since the exporter did not directly procure these goods without payment of tax or at reduced rate of tax.

2. Thus, the restriction under sub-rule (10) of rule 96 of



*Restriction under sub-rule (10) of rule 96 of the CGST Rules is only applicable to those exporters who are directly receiving goods from those suppliers who are availing the benefit under notification No. 48/2017-Central Tax dated the 18th October, 2017, notification No. 40/2017-Central Tax (Rate) dated the 23rd October, 2017, or notification No. 41/2017-Integrated Tax (Rate) dated the 23rd October, 2017 or notification No. 78/2017 Customs dated the 13th October, 2017 or notification No. 79/2017-Customs dated the 13th October, 2017. Further, there might be a scenario where a manufacturer might have imported capital goods by availing the benefit of Notification No. 78/2017-Customs dated 13.10.2017 or 79/2017-Customs dated 13.10.2017. Thereafter, goods manufactured from such capital goods may be supplied to an exporter. It is hereby clarified that this restriction does not apply to such inward supplies of an exporter.*



the CGST Rules is only applicable to those exporters who are directly receiving goods from those suppliers who are availing the benefit under notification No. 48/2017-Central Tax dated the 18th October, 2017, notification No. 40/2017-Central Tax (Rate) dated the 23rd October, 2017, or notification No. 41/2017-Integrated Tax (Rate) dated the 23rd October, 2017 or notification No. 78/2017 Customs dated the 13th October, 2017 or notification No. 79/2017-Customs dated the 13th October, 2017.

3. Further, there might be a scenario where a manufacturer might have imported capital goods by availing the benefit of Notification No. 78/2017-Customs dated 13.10.2017 or 79/2017-Customs dated 13.10.2017. Thereafter, goods manufactured from such capital goods may be supplied to an exporter. It is hereby clarified that this restriction does not apply to such inward supplies of an exporter.

4. Though, the said clarification does not resolve the issues raised above except for purchase of capital goods by the supplier against notification no. 78/2017 Cus or 79/2017 Cus both dtd 13.10.2017 and goods are supplied to the exporters. The restriction will not be applicable to the exporters.

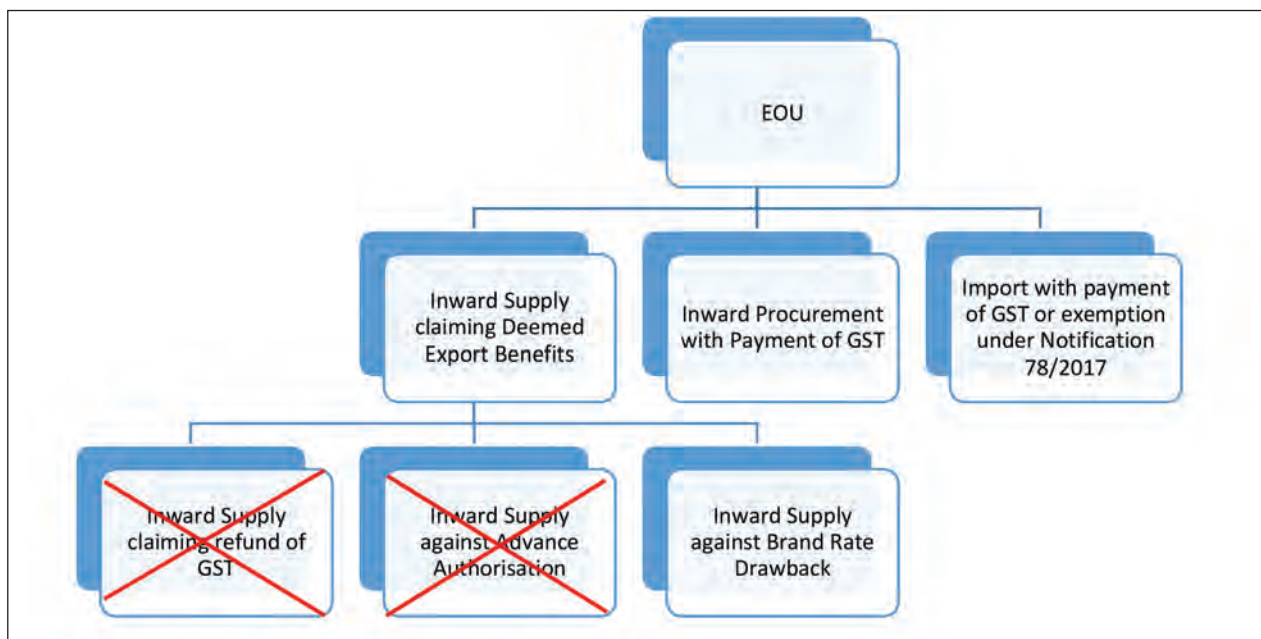
5. Refund of un-utilised ITC of compensation cess availed in cases where final product is not subject to levy

of compensation cess on account of zero rated supply.

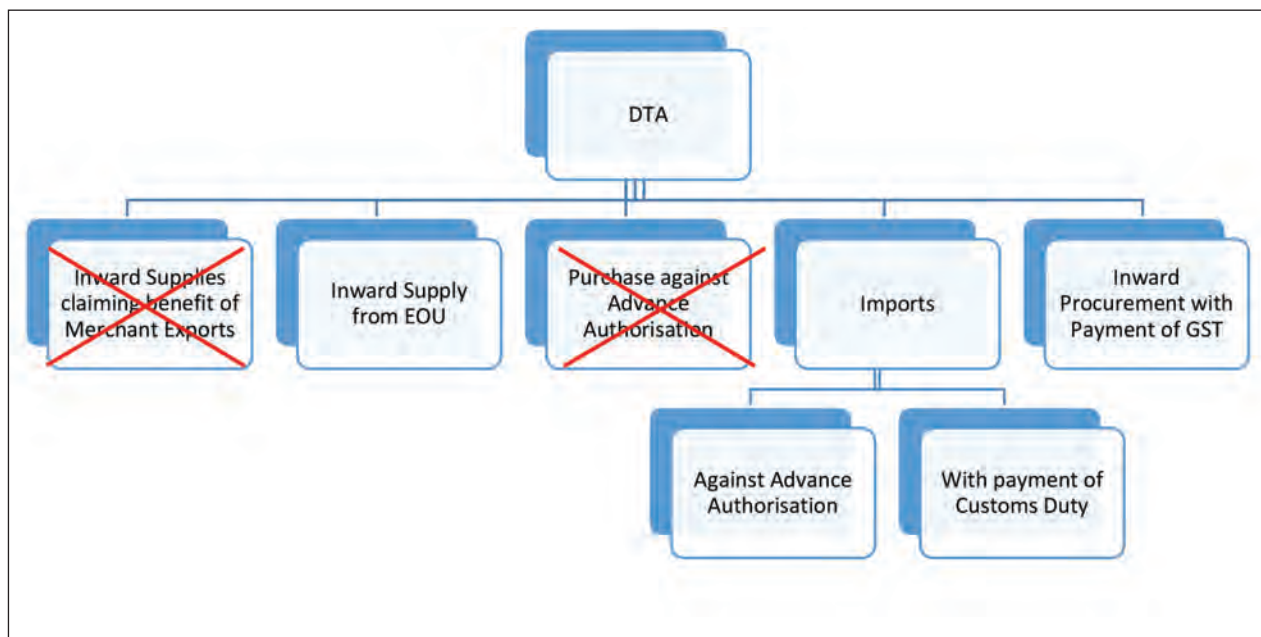
6. It is further clarified that LUT should not be insisted for zero rated supply of exempted on non-GST goods i.e. non-taxable goods

Taxpayer being Merchant Exporter also	Taxpayer having DTA Unit	Taxpayer having EOU Unit
<b>No refund of IGST paid on outward supplies under Rule 96 can be made, if inward supplies are received at concessional rate i.e. 0.1%</b>	Taxpayer having DTA unit is entitled for refund of IGST paid on outward supplies provided the inward supplies has not been received under Advance Authorisation otherwise such refund under Rule 96 is available. Alternatively refund under Rule 89 can be claimed	Taxpayer having EOU Unit can claim the refund of IGST paid on exports provided inward supplies has not been received under Advance Authorisation, otherwise refund under Rule 89 only can be claimed. Similarly, when supplies are received from EOU, Advance Authorisation
<b>In all other cases, refund under Rule 96 will be entitled</b>		

If EOU wish to claim the refund of I GST paid on exports, then EOU will have to ensure that there is no inward supply claiming refund of GST or inward supply against advance authorization otherwise EOU will have to apply refund under Rule 89 only. Below chart provides more clarity.



Similarly, domestic unit wish to claim the refund of IGST paid on exports, then DTA will have to ensure that there is no inward supply claiming benefit of merchant exports and Inward supplies against Advance Authorization otherwise DTA will have to apply refund under Rule 89 only. Below chart provides more clarity:



Clarification is needed whether it is for individual supplies or exporters have been put to the exporters without any time limit for claiming refund under Rule 96 of CGST Rules 2017. **MA**

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# IMPACT OF GST ON FINALIZATION OF ACCOUNTS

It is important for every Auditor and Auditee to remember John F. Kennedy's statement during accounts finalization – "To State the facts frankly is not to despair the future nor indict the past. The prudent heir takes careful inventory of his legacies and gives a faithful accounting to those whom he owes an obligation of trust". Hence it is imperative that the Company's financial statements, a reporting formality through which the full year's performance is being consolidated for stakeholders' review, reflects a true and fair view of the actual State of affairs of the Company.

Accounts relating to financial year ending 31st March 2018 gains special momentum due to the introduction of Goods and Services Tax on 1st July 2017. So effectively the audit design for a company's compliance requirements would be different for Quarter 1 ending 30th June 2018 and remaining 9 months. Major Audit checkpoints for quarter 1 in effect would have been highlighted by the auditors and complied with by the taxpayers by 27th December 2017 itself. The reason being for the purpose of transitioning the Input tax credits into the GST regime, all registered persons under GST, other than composition dealers would have filed GST TRAN-1 for the period ending 30th June 2018 on 27th December 2017. Most of the legacy issues relating to non-filing of service tax and VAT returns would have also been resolved by now, since for filing of GST TRAN-1, an affirmation that previous 6 months returns under the old regime has been filed should be given. Hence, though GST TRAN-1 would have caused austere pressure in the month of December, but it would definitely ease out the year-end heaviness for both the auditors and taxpayers.



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### Income Tax Act, 1961 Vs Goods and Services Tax Act, 2017:

In the long term, to bring a sync between the Income tax returns and GST returns and to discipline the assesses in reporting the same figures to both the authorities, all Individuals / HUF filing ITR-3 (Those having income from proprietary business or are carrying on profession and the Return may include income from House property, Salary/Pension and Income from other sources) and ITR-4 (Those having income from business or profession and who have opted for the presumptive income scheme as per Section 44AD, Sec 44ADA and Section 44AE of the Income Tax Act, 1961) should report GST registration number and turnover.

### Companies Act, 2013 Vs Goods and Services Tax Act, 2017:

The compliance requirements with respect to the Books of Account has been stated in both the Companies Act, 2013 as well as Goods and Services Tax Act, 2017. Following is an attempt to understand the similarities and peculiarities between the two legislations.

#	Basis of distinction	Companies Act, 2013	Goods and Services Tax Act, 2017
1	Section reference – Record Maintenance	Sec 128 & 2(13)	Sec 35 of CGST Act, 2017 and Rule 56 of CGST Rules, 2017
2	Applicability	Every Company registered under Companies Act, 2013	Every person registered under Goods and Services Tax Act, 2017
3	Place of Maintenance of books	Registered office of the Company as registered with the Registrar of Companies.	Principal place of business as mentioned in the Certificate of Registration.
4	Can books be maintained elsewhere?	Yes. Books may be kept at such other place in India as Board of Directors may decide via passing of resolution in the duly held Board Meeting of the company.	No. But if more than one place of business is specified in the certificate of registration, the accounts relating to each place of business shall be kept at such places of business
5	Books liable to be maintained	Records maintained in respect of <ul style="list-style-type: none"> <li>all sums of money received and expended by a company and matters in relation to which the receipts and expenditure take place</li> <li>all sales and purchases of goods and services by the company</li> <li>the assets and liabilities of the company; and</li> <li>the items of cost as may be prescribed under Sec 148 in the case of a company which belongs to any class of companies specified under that section</li> </ul>	True and correct account of: <ul style="list-style-type: none"> <li>Production / manufacture of goods</li> <li>Inward supply of goods / services / both</li> <li>Outward supply of goods / services or both</li> <li>Stock of goods</li> <li>Input tax credit availed</li> <li>Output tax payable and paid</li> <li>Goods / services imported / exported</li> <li>Supplies attracting payment of tax on reverse charge</li> <li>Advances paid, advances received, related adjustments</li> </ul>
6	Period of maintenance of books	For a period of not less than 8 financial years immediately preceding the financial year.  If the company is in existence for a period less than 8 years, books should be kept for its period of existence.	For a period until the expiry of 72 months from the due date of furnishing of annual return for the year pertaining to such accounts and records

### General Checklist – FY 2017-18:

The following are the important points to be verified during the current year before the finalization of books. Though the list is not exhaustive, major points of significance are covered.

#### 1. Registration requirements:

According to Sec 22 of the CGST Act, 2017, every person having an aggregate turnover of not less than Rs 20 Lakhs in a financial year shall be liable to get registration in the state / union territory in which he is making such taxable supply. If in case the taxable supply is made from any of the special category states (Arunachal Pradesh, Assam, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Himachal Pradesh, Uttarakhand), registration would get attracted if the Aggregate turnover is greater than Rs 10 Lakhs. If a person supplies goods / services / both from multiple states, and one such state is a special category state, the aggregate turnover computation would be Rs 10 Lakhs and not Rs 20 Lakhs.

The major change from the previous tax regime is for the service providers, for whom State wise registration is required and not Centralized registration. Hence the auditor should satisfy himself that the client has taken GST registration if the turnover limit for FY 2017-18 is achieved. If not qualify the audit report in terms of non-compliance.

Apart from Sec 22, certain cases of compulsory registration is mentioned in Sec 24 of CGST Act, 2017. Irrespective of the aggregate turnover exceeding Rs 20 Lakhs or not (Rs 10 Lakhs in case of special category states), the following category of persons shall be forced to compulsory registration. Hence the Auditor would have to ensure that his client, if engaged in providing any of the below taxable supplies would have to compulsorily take registration.

- Persons making Inter-state supply of goods (Persons making Inter-state supply of services has been given exemption from compulsory registration vide Integrated Tax Notification no. 10/2017 dated 13th October 2017)
- Persons taking registration and making taxable supply as a casual taxable person
- Persons receiving Government notified goods and or services under Sec 9(3) of CGST Act, 2017 for which the recipient and not the supplier is liable to discharge tax under reverse charge mechanism. Such goods and services have been notified by way of Central Tax rate

notification no. 4/2017 dated 28th June 2017, Central Tax rate Notification no. 13/2017 dated 28th June 2017, Central Tax rate notification no. 43/2017 dated 14th November 2017, and Central Tax Rate Notification no. 3/2018 dated 25th January 2018.

- Registered Persons receiving goods and / or services from unregistered persons is liable for registration under Sec 9(4) of CGST Act, 2017. However this provision has been temporarily suspended till 30th June 2018 vide Central Tax rate Notification no. 38/2017 dated 13th October 2017 and Central Tax rate notification no. 10/2018 dated 23rd March 2018. All notifications would have prospective implications and only clarifications can be retrospective, hence any purchases from one or all unregistered persons for a value of more than Rs. 5,000 per day between 1st July 2017 and 12th October 2017 would have Sec 9(4) applicability.
- Non-resident taxable persons making taxable supplies. "Non-resident taxable person" is a person who occasionally undertakes transactions involving supply of goods or services or both, whether as principal or agent or in any other capacity without any fixed place of business or residence in India.
- Persons required to deduct tax u/s 51 of CGST Act, 2017. Any supply made by a person to a department / establishment of the Central/State Government, Local Authority, Government Agencies, or such persons as recommended by GST council for a contract value exceeding Rs 2,50,000 would attract Tax deduction at source @ 1% of the payment made to the supplier. The liability to deduct Tax has been suspended till 30th June 2018 by way of CBEC press release on 10th March 2018. However mandate to registration continues.
- Persons acting as an agent or otherwise making taxable supply of goods / services/both on behalf of other taxable persons.
- Input Service distributor
- Persons supplying goods and / or services through electronic commerce operator who is required to collect tax at source u/s 52. The liability to collect tax at source has been suspended till 30th June 2018 by way of CBEC press release on 10th March 2018. However mandate to registration continues.

- Electronic commerce operator
- Persons supplying online information and database access or retrieval services from outside India to an unregistered person.

## 2. Time of supply:

The time of supply forms an important basis for determining when a tax liability should be booked on a particular supply. Point of taxation is different for goods and for services and has been discussed in detail in Sec 12 and Sec 13 of Central Goods and Services Tax Act, 2017. Time of supply for forward supply, supply relating to reverse charge, supply of vouchers and residuary cases has been separately listed. Appropriate application of provisions according to the kind of supply should be verified and certified by the auditor on finalization.

Sec 12 and Sec 13 discusses on a criteria termed as “date of issue of invoice” unlike “date of issue” in the earlier regime for determining the time of supply. Actual reading of the law may cause the tax officers to demand the taxpayers to maintain a record of date of which invoice is issued when it is a different from the date of invoice. Hence some mechanism to record the same should be devised by the taxpayer and verified by the auditor.

## 3. Composite and mixed supplies:

There is always a practice of the Fast Moving Consumer Goods (FMCG) Industry in India to make a bundle of goods available to its customers rather than selling a product separately. Service Industry is also off late following the track of giving a freebie on availing a particular service. Goods and Services Tax Act, 2017 has made special provisions for taxability when two or more taxable goods and /or services are being supplied.

In case of supply of two or more taxable goods and /or services, which are naturally bundled and one supply of the bundle is a principal supply and others are ancillary supplies, then tax rate as applicable to the Principal supply would be applied to the bundle of supply.

If in case the condition of natural bundling is missing, and there is an artificial bundling of two or more supplies for a single price then the highest tax rate applicable to the supply in the lot, would be applied to the full bundle.

Identification of Principal supply component may seem theoretically simple, but practically very difficult. Hence if in case the facts are not properly proved, supply regarded

as composite supply, would be treated as mixed supply by the tax officials and highest rate in the bundle would be applied to the complete supply. Hence it is imperative for the auditor to advise the client that it is better to have a price earmarked for each good / service and not do any bundling unless absolutely necessary.

## 4. Payment within 180 days:

Input tax credit is a right that does not ‘vest’ until the last of conditions in section 16(2) are completed and until then the right to input tax credit is inchoate but not a vested-right. Rights that are not yet vested can lapse by limitation unless effective steps to actualize those rights are taken by the person. And once the right is vested, it becomes indefeasible except by operation of inherent conditions-subsequent.

Second Proviso to Sec 16(2) clearly mentions that the recipient would be eligible for the input tax credit only on payment to the supplier for the supply within 180 days from the date of issue of invoice. In case of failure, such input tax credit shall be reversed. This payment within 180 days is applicable for all import transactions, since no specific exclusion has been provided u/s 16(2) for of CGST Act, 2017. This condition is not applicable for the following:

- Supply on which tax is payable under Reverse Charge u/s 9(3) of CGST Act, 2017
- Supply on which tax is payable under Reverse Charge u/s 9(4) of CGST Act, 2017
- Supplies between distinct persons under Schedule I when such supply is made without consideration. For instance, Chennai Branch office supplies to Bangalore Branch office without any consideration. However for the purpose of GST, valuation provisions are applied and value is assigned for the purpose of computation of GST. Such transactions having deemed valuation between distinct persons are given exemption from payment within 180 days.

Hence for the financial year ending 31st March 2018, any supply received before 1st October 2017 has to be settled, otherwise input tax credit availed in that regard needs to be reversed. List of such transactions should be prepared by the auditor and reported as part of the audit report.

## 5. Composition levy:

In order to incentivize the small players, Composition levy scheme was introduced for persons whose yearly

turnover exceeds Rs 20 Lakhs but does not exceed Rs 50 Lakhs. Goods manufacturers covered under this scheme were liable to pay composition tax, which is a percentage of Aggregate turnover. 2% GST (1% CGST, 1% SGST) was applicable to goods manufacturers and 1% GST (0.5% CGST, 0.5% SGST) for goods traders. This facility was not extended to service providers. There were three important changes brought about in the Composition scheme. The upper limit for composition levy was increased from Rs 50 Lakhs to Rs 1 Crore vide Central Tax notification **no. 46/2017** dated 13th October 2017. Hence if the aggregate turnover had exceeded Rs 50 Lakhs between 1st July 2017 and 12th October 2017, Composition scheme could not have been availed. Rs 1 crore slab applies only effective 13th October 2017.

Vide Central Tax Notification No.1/2018 dated 1st Jan 2018, two amendments were listed, namely, Composition tax was amended to be charged as percentage of taxable turnover rather than turnover of the state in case of goods traders. However the tax rate applicable between 1st July 2017 and 31st December 2017 is to be computed as a percentage of turnover of the state and not taxable turnover. The benefit offered in Notification no. 1/2018 is only prospective. Secondly, Single rate of composition levy 1% GST (0.5% CGST, 0.5% SGST) was made applicable to both goods manufacturers and goods traders. Between 1st July 2017 and 31st December 2017, composition tax for goods manufacturers is only 2% GST (1% CGST, 1% SGST) and not 1% GST (0.5% CGST, 0.5% SGST)

## 6. Appropriate utilization of Input tax credit:

Taxpayers need to be mindful of the specific blocked credits specified in Sec 17(5). Certain items are conditionally allowed (like life Insurance, rent a cab, health insurance, etc.) and certain items have a blanket disallowance (like club membership, personal use goods, etc.). Auditors need to ensure that tax paid on such items are not availed, otherwise qualify the report accordingly subject to materiality.

Interestingly, Sec 16 of CGST Act, 2017 provides that the credit of tax paid on inputs can be used only when the

supply is made to “him” and in the course and furtherance of “his” business. The terms “him” and “his” gains momentum because of the concept of distinct persons. One branch can avail the input tax credit relating to that supplies made to that branch only and only when it is used in the course of furtherance of its business only and not relating to any other branch. For instance tax paid on advertisement expenditure incurred by Delhi branch for increasing its sales can be taken by Delhi Branch only. It cannot be availed by Chennai branch for any reason. Such points needs to be verified by the auditors in companies having multiple branches.

## 7. Advances payment to suppliers:

In case of service tax regime, service tax is payable on accrual or cash basis whichever is earlier. This provision is now extended to goods. The time of supply provisions for goods (Sec 12) and services (Sec 13) under Goods and Services Tax regime provides that GST is payable on advances also. However availing credit on tax paid on such advances is out of question, since Sec 16 provides that receipt of goods and /or services is mandatory to avail credit. Hence compliance in this regard has to be noted.

## 8. Input Tax Credit on Assets purchased:

Goods and Services tax provides that tax paid on capital goods purchased can be availed fully in the same year of purchase, unlike the earlier provision of 50% in the 1st year and 50% in the subsequent year. If a capital asset is purchased on 1st May 2017 and only 50% input tax credit is availed as per the earlier laws between 1st April 2017 to 30th June 2017, the tax payer is entitled to transition the balance 50% as GST and utilize the same in the current year itself (between 1st July 2017 and 31st March 2018).

## Reconciliation of GST records with Financial Books:

It is important that the GST returns and the financial records speak the same language. Any incongruity between the two records would raise doubts on the certification offered by the auditors that the financial statements give a true and fair view of the state of affairs of the company. Following high level check of the GST records and the financial records can be made and an audit trail maintained:

#	GST Records	Financial records
1	Input tax credit (GSTR-2A)	Input tax credit (Books of Account)
2	E-cash ledger (PMT-05)	E-cash ledger (Books of Account)



3	E-Credit ledger (PMT-02)	E-credit ledger (Books of Account)
4	E-Liability ledger (PMT-01)	E-Liability ledger (Books of Account)
5	GST paid under Reverse Charge Mechanism	Entries in Statement of Profit and loss
6	GST Output tax liability to be reconciled considering	Advances received on goods / services provided
7	HSN wise Turnover Summary (GSTR-1)	Stock Register, Purchase Invoices
8	Quantity & Description of Stock declared (TRAN-1)	Stock Register as on 30 <sup>th</sup> June 2017

### GENERAL CHECKLIST – before start of next financial year:

Based on the FY 2017-18 turnover, certain basic housekeeping decisions like invoice numbering, application for composition scheme needs to be taken.

#### 1. HSN applicability for invoice numbering

Requirement to mention Harmonized System of Nomenclature (HSN) digit code as part of invoice numbering is based on turnover of FY 2017-18.

Turnover of FY 2017-18	HSN Digit code
< Rs 1.5 Crores	No HSN Code need to be mentioned
Rs 1.5 Crores to Rs 5 Crores	2 Digit HSN Code
> Rs 5 Crores	4 Digit HSN Code

#### 2. Composition scheme applicability:

Decision on whether fresh application for composition scheme for FY 2018-19 is to be made or withdrawal of already existing composition registration for FY 2018-19 should have been taken by now. And hence frequency of return filing for FY 2018-19 is decided and appropriate planning measures can be done.

Particulars	Applicable form	Application before	Frequency of GST returns
New Registration	GST CMP-02	31st March 2018	Quarterly
Cancellation of Registration	GST CMP-04	7th April 2018	Monthly

### Anti-Profitteering Clause

Sec 171 of the CGST Act, 2017 provides that any reduction

in the tax rate / benefit of Input tax credit shall be passed on to the customer by way of commensurate reduction in prices. If any profit is made out of such reduction by the supplier, it would get into the lens of the anti-profitteering authority.

To ensure that there is not any sudden spike without justification, auditors may satisfy themselves by comparing the following financials of the taxpayers:

- Gross Profit Percentages of FY 2017-18 vs FY 2016-17
- Gross Profit Percentages of Q2, Q3, Q4 2017-18 with Q1 2017-18

An honest attempt has been made to provide a bird eye's view of the important provisions to be covered in the audit finalization in line with the GST provisions, though the list may not be exhaustive. As Socrates has rightly pointed out "The Secret of Change is to focus all of your energy, not on fighting the old, but on building the new" – we should concentrate on keeping abreast with the new changes life offers us as professionals and adapt to it to add value to our customers as well as the profession. **MA**

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## COMMUNIQUE FROM THE COST AUDITING AND ASSURANCE STANDARDS BOARD (CAASB) OF THE INSTITUTE

The Cost Auditing and Assurance Standards Board (CAASB) of the Institute has decided to enhance the awareness of Standards on Cost Auditing (SCAs) and also to build capacity of members of the profession on the same.

- In order to achieve this objective, the CAASB has planned to organise programs / seminars on SCAs all over the Country. Queries raised by the members / participants during these programs will form the base for developing the Frequently Asked Questions (FAQs) on the SCAs. One such program has already been organised at Hyderabad on May 27, 2018. More such programs are coming up in other places also. The details will be informed to the members well in advance. Members are also encouraged to send their queries on SCAs 101 – 104 to the CAASB at [caasb@icmai.in](mailto:caasb@icmai.in)
- In order to get the members acquainted with the SCAs, CAASB has invited eminent experts to develop background papers and articles on the SCAs 101 – 104. The background papers on these SCAs are published in this edition of Management Accountant. Members can go through the same and get benefitted.
- CAASB has also developed the powerpoint presentations on the SCAs 101-104, which are available on the CAASB portal of the Institute's website. These ppts will be used during the programs / seminars on SCAs to be organised by the Institute/ RCs and Chapters. Members are requested to go through the ppts and send their response at [caasb@icmai.in](mailto:caasb@icmai.in)

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### Article- 1

## PRACTICAL TOOL ON STANDARD ON COST AUDITING 101 (SCA-101) PLANNING AN AUDIT OF COST STATEMENTS

**CMA D. Zitendra Rao**  
Practicing Cost Accountant

### Background

- ✓ Companies Act 2013 recognized the term "Cost Auditing Standards" to be issued by the Institute of Cost accountants of India (Sec.148(3))
- ✓ The Cost Auditing and Assurance Standards Board (CAASB) constituted by The Institute of Cost Accountants of India is entrusted with the responsibility of developing the Standards.
- ✓ 4 (Four) Standards on Cost Auditing known as SCA 101 to SCA 104 are made mandatory with effect from 11th Sept 2015.
- ✓ MCA has recognized the need for Cost Auditing Standards and mandated the compliance by the Members in Practice.
- ✓ What is the recourse on Non Compliance – Cost Accountant in practice would be subjected to Disciplinary proceedings.

### 1.0 SCA – 101: Planning an Audit of Cost Statements

#### - Summary

- ✓ Plan the Function for its effectiveness
- ✓ Achievement of the Audit Objective is important
- ✓ Pre-requisites such as Offer Letter – Clarity at Scope are must even before entering the phase of Planning.
- ✓ Changes in the strategy/plan to be documented on continuous basis
- ✓ Framework is generally the provisions of Companies act and the Rules issued there under
- ✓ Strategy and Plan to include – Industry Specific Aspects – Nature and Size – Timelines for report submission – IT environ as well

#### 2.0 Points

- ✓ A Cost Auditor has to put in efforts to have 3 phase approach viz., Planning, Performing and Reporting.
- ✓ In this regard the Auditor has to seek suitable time and

date from the client for the **preliminary discussion** either in the March or April of a fiscal (i.e. at the earliest) to check with

- Appointment formalities and Understanding the terms and scope of the assignment
- Concluding the contents of Engagement Letter AND the Audit Strategy/Audit Plan - to be submitted by the cost auditor.
- ✓ Soon after the Preliminary Meet the following documents are to be submitted to the client
  - Cost Audit Engagement letter indicating the Responsibility of the Management and Responsibility of the Auditor
  - Audit Strategy / Audit Plan (ASAP)
- ✓ In a follow up meet these Engagement Letter and ASAP Documents are to be frozen
- ✓ **Audit objective:** The Audit Objective is to give an opinion on the Cost Sheets and Cost Statements, records, documents prepared and maintained by the company as per the accepted Cost Accounting Principles and in adherence with Cost Accounting Standards. This has to be brought in more specifically in the Audit Strategy/Audit Plan document.
- Audit Plan / Strategy though are discussed separately in the Standard – for simple understanding (presuming the entity to be a small one), I intend to combine in this maiden version.
  - ❖ Scope, Timing and Direction to the cost audit
  - ❖ Cost audit timelines segregating into
    - Performing
    - Plant Visit
    - Guidance for Ann. Preparation
    - Examination of Cost Statements
    - Communication and Reviewing
      - ➔ Orientation
      - ➔ Finalization of Cost Audit Report
      - ➔ Discussions and conclusions
  - ❖ Special aspects shall also be discussed in the preliminary discussion meet- such as
    - New initiatives taken up by the company during the year
    - Discussion on Cost Accounting Policy

of the company  
➤ IT Environment and the Data Integrity

- ✓ Identification of Team
  - The Principal Partner and Associate identified to carry on the Cost audit and related services need to be confirmed. One may say - depending upon the need Trainees will be allocated
- ✓ Visit of facilities at Plant – May be the coverage can be spelled out as below:
  - Verification of the Plant Activity log sheets
    - ❖ Daily MIS.
    - ❖ Maintenance log sheets.
    - ❖ Man power attendance records.
    - ❖ Implementation of daily data card.
  - Spares issued during the year
    - ❖ Analyzing those having life time of more than a year.
    - ❖ Analyzing high value stores items.
    - ❖ Accounting treatment followed for such high value items.
    - ❖ Status of replaced old spares.
  - Planning for raw Materials.
    - ❖ Estimated annual demand.
    - ❖ Study of stock levels.
    - ❖ Difference in book stock & Physical stock reconciled and appropriately adjusted to consumption.
- ✓ Guiding the company to compile the Annexure to cost audit Report which includes
  - The Annexure to the Cost audit Report is in 4 parts viz., Part A, Part B, Part C and Part D. Part B/C (as the case may be) if not applicable for the activities of a specific company – the same has to be informed.
  - Finalization of Part A (Para 3) to conclude the activities to be covered in cost sheet and those activities falling into reconciliation.
  - Review of Cost accounting Policy of the company with the think tank for improvement or for cross check with the Financial accounting policies
  - Concerns of Part D - Para 6 can be addressed for by seeking a note on IDT approach of the company and

by reviewing the show cause notices if any

## ✓ Performing - Audit process

- Discussion on questionnaire to be given as a part of Audit procedure

- ❖ A questionnaire can be sent to the company on the 30 points discussed in CRA -1
- ❖ Management Views are to be solicited on these points.

- Discuss on the reconciliation issues if any between the Turnover discussed in Indirect tax Returns and Para 4 of Part A
- Discussion and Identification of Critical costs and establishment of Control Dynamics
- Verification of Part B

- ❖ Quantitative Data to be checked with company records
- ❖ Identify the No cost Items to Reconcile the Financial Profit to Cost profit
- ❖ Cost Centre wise data dump from the TALLY or ERP to be cross checked with the data tabulated in the excel work book
- ❖ Mapping the Data to Product specific Cost Sheets for the relevant FY and comment on Profitability.
- ❖ Cross checking the data for the previous year numbers
- ❖ Finally – also verify whether the periodical Cost Sheets are made and kept in the company records

- Examine the work sheet adopted for valuation of Inventories in the process of financial accounts closures and statutory audit.

- Review Part D Para 3 and Para 4 taking the Financials of the company as a whole.

- ❖ Focus at the Distribution of Value added (in D3) and comment on its share towards the Employee Cost – as this is the typical Value addition and its trends.
- ❖ Focus at the ratios (in D4) and comment on the trends. Negative Ratios are to be treated as NIL

- Cross check the Data in Part D – Para 1 and Para 2 to that of Para B2.

- Obtain the 3CD Report for the previous FY. if there are any related party transactions – cross check with

the data Compiled in Part D(5)

- Study the note on Indirect tax matters, submitted by the company, and identify the system lapses, if any.

## ✓ Other Issues

- Fraud Risk Considerations, if any – An appropriate Management Representation to be taken for.
- Examination of Information Technology environment and suggesting the improvements
- Review of Long Term Purchase Agreements entered if any
- Study of the show cause notices issued if any by Indirect Tax Authorities
- Review of Internal Audit Reports

- ❖ Input Output Ratios reported if any
- ❖ Lapses on internal control if any

- Risk of Misstatement – Focus will be given to the following

- ❖ Factory/Unit specific apportionment of the overheads
- ❖ Costing values for captive consumption purpose
- ❖ Accuracy of Step ladder approach for varied stages of a product(s)
- ❖ Physical Stock Verification process

- Obtaining the Management Representation Letter for varied observations.

- The Cost Auditor has to adopt the profitability as declared by the Management for the products not covered under cost audit.

## 3.0 Conclusion

- ✓ Clarifications required if any would be sought for thru e-mail

- ✓ Handing over the draft Report to the management for necessary action at their end

- ✓ Once the Annexure to the Audit Report is approved by the Board – Cost Audit Report would be submitted suitably for noting and to explain on qualifications if any

- ✓ Role of the company on approval

- The entire report needs to be converted in to an XML File using the XBRL taxonomy that was



hosted by MCA.

- File the XML file using the CRA 4 form
- Communicate the acknowledgment to the Cost auditors.

#### 4.0 Time Lines of Cost Audit Activity can be mapped to the following activities.

- ✓ Developing audit strategy/ plan and meeting with the Management
- ✓ Signing the Engagement letter
- ✓ Plant Visit and relevant activities
- ✓ Commencement of Cost audit field work
- ✓ Review by Engagement Partner - progress
- ✓ Issue draft cost audit report

✓ Discussion on cost auditor's Report, if any

✓ Management Representation Letter

✓ Audit Committee/ Board of Directors to approve cost statements

✓ Audit Committee to discuss on the Cost audit report

✓ Signing the statements and cost auditor's report

✓ XBRL filing by the company

#### 5.0 Finally ...

- ✓ The practices are to be performed – early birds will have the advantage of mitigating the Risks if any
- ✓ Practice the Standards to prove the performance and establish a learning curve.

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### Article- 2

## BACKGROUND PAPER ON STANDARD ON COST AUDITING 102 (SCA-102) COST AUDIT DOCUMENTATION

**CMA S S Sonthalia**

Practicing Cost Accountant and Insolvency Professional

Section 148 of the Companies Act, 2013 contains the provisions relating to cost audit of companies as prescribed. Further section 148(3) provides that the Cost auditor appointed by Board of directors of the company shall conduct audit complying with the provisions of Cost auditing standards. Government of India, Ministry of Corporate Affairs, vide their letter No. 52/33/CAB/2013 dated 10th September 2015 has granted Central Government's approval to the following Cost Auditing Standards:

1. Cost Auditing Standard-101 on Planning an audit of Cost Statements;
2. Cost Auditing Standard-102 on Cost Audit Documentation;

3. Cost Auditing Standard-103 on Overall objectives of the independent cost auditor; and

4. Cost Auditing Standard-104 on Knowledge of business, its processes and the business.

The above standards are applicable from 11th September, 2015.

The governing idea behind Standard on cost audit documentation is to place guidance on the documentation requirements relating to evidences leading up to the pre-formation and formation of opinion by the auditor.

#### Audit documentation

- ✓ Audit documentation means the records, in physical

or electronic form, including working papers prepared by the team and information / data obtained and retained by the Cost auditor, in connection with the performance of the audit. On analysis of the above one can find that:

- ✓ Audit documents mean compliance documents and the records obtained from the client in connection with the audit as a part of audit evidence for examination and formation of any opinion including the working papers prepared by audit team as a note or working sheet.
- ✓ Audit documentation is the maintenance of records with respect of each and every audit assignment.
- ✓ The records could be in physical form or in electronic form.
  - ➔ If it is in physical form it should be properly bound or kept in file/folder so that it can be retained for required period of time for future reference.
  - ➔ If it is in electronic form care to be taken to ensure that the data is protect against accidental deletion, or tampering.

Audit documents can be broadly divided in to the following categories.

- ✓ Documents ensuring compliance of rules and regulations connected to audit.
- ✓ Documents exhibiting that the audit was properly planned and executed.
- ✓ Documents containing details and evidence collected prior or during the course of audit for formation of audit opinion and logical conclusion of audit assignment.

## Documents ensuring compliance of rules and regulations connected to audit

The audit document in this category covers the following:

- ✓ The cost accountant desired to be appointed as an auditor is to first ensure that he is having the valid certificate of practice and there is no disciplinary proceedings is pending against him. If he is a partner of a firm, all the partners are holding valid certificate of practice and are not in full time employment.
- ✓ There is communication from the company asking the for the consent letter from the cost accountant / firm for appointment as the cost auditor of the company.
- ✓ Consent latter from the cost accountant certifying that he is eligible to be appointed as cost auditor and do not

attract any of the disqualification contain in section 141 read with section 148(5) of Companies Act 2013.

- ✓ Resolution of Board of Directors regarding appointment of cost auditor.
- ✓ Ensuring filling of Form - 2 by the company with regard to appointment of cost auditor with MCA.

## Documents exhibiting that the audit was properly planned and executed

Documents under this category includes

- ✓ Finalization of audit program by cost auditor in consultation with the company.
- ✓ Documents containing information that the audit has actually been started as per the schedule program.
- ✓ Break up of audit program with respect to specific audit activities such as -
  - ➔ Verification of material cost
  - ➔ Verification of employees cost
  - ➔ Verification of R&D cost
  - ➔ Verification of quality control cost
  - ➔ Visit to various departments and shop floor in the factory premises

## Documents containing details and evidence collected prior or during the course of audit for formation of audit opinion and logical conclusion of audit assignment.

Documents under this category vary from industry to industry. However in respect of a manufacturing company the illustrative issues are –

- ✓ Check list of information required for the company in respect of following
  - ➔ Unit wise and location wise and consolidated copy of detailed trial balance of the company
  - ➔ Copy of audited financial statement (P/L Account and Balance sheet including grouping of expenses)
  - ➔ Month wise production data
  - ➔ Month wise sales data
  - ➔ Details of materials consumed containing item wise list showing opening balance, purchase during the year, consumption made during the year and closing stock with value.
  - ➔ Details of employees cost department wise.
  - ➔ Month wise consumption of power including quantity consumed
  - ➔ Details of other Income and miscellaneous receipts
  - ➔ Physical verification report of raw materials and

finished goods.

- ➔ Details of pollution control and CSR activities expenses
  - ➔ Details of Prior period and arrear payments, if any.
  - ➔ Details of insurance claim, if any made during the year including unsettled insurance claims of earlier years.
  - ➔ Letters of confirmation of stock with subcontractors.
  - ➔ Abstracts of significant contracts for supply of materials including terms of supply.
  - ➔ Noting of Significant matters arising during the audit, the conclusions reached thereon, and significant professional judgments made in reaching those conclusions.
- ✓ Contents and forms of audit documentation depends upon number of factors such as:
- ➔ The size and complexity of operations of the auditee.
  - ➔ Extent of computerization of financial and cost records.

- ➔ The assessed risks of material misstatement of cost.
- ➔ Any other factors of specific nature of auditee.

Audit documentation must address the following issues with respect to the audit assignment.

- ✓ Evidence of the cost auditor's basis for a conclusion about the achievement of the overall objectives and performance / reporting of the cost auditor; and
- ✓ Evidence that the cost audit was planned and performed in accordance with Cost Auditing Standards and applicable legal and regulatory requirements.

The Cost Audit Documentation should be retained for at least ten years from the date of the Cost Audit Report.

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### Article- 3

## BACKGROUND PAPER ON SCA-103 STANDARD ON COST AUDITING ON OVERALL OBJECTIVES OF THE INDEPENDENT COST AUDITOR AND THE CONDUCT OF AN AUDIT IN ACCORDANCE WITH STANDARDS ON COST AUDITING

**CMA Balwinder Singh**  
Council Member, ICAI & Member,  
Cost Auditing and Assurance Standards Board

### Objectives of this Standard

The objective of this Standard is to lay down the overall objectives of the Cost Auditor and ensuring the Conduct of the Audit of Cost Statements in accordance with the Standards on Cost Auditing.

### Coverage

This Standard on Cost Auditing deals with the following:

- Objectives of the Cost Auditor
- Nature and scope of a Cost audit
- Responsibilities of Cost Auditor

The Standard also describes management responsibility for the preparation and presentation of the Cost Statement, to identify the Cost Reporting framework and to lay down Cost Accounting policies.

### Effective Date

The Standard is effective for audits on or after September 11, 2015.

### Objectives of the Cost Auditor

The objectives of Cost Auditor are:

- To obtain reasonable assurance that the cost statements

are free from material misstatement.

- To enable the auditor to express an opinion whether the Cost Statements are prepared, in accordance with Cost Accounting Standards (CAS) and Generally Accepted Cost Accounting Principles (GACAP)
- To enable the auditor to express an opinion that the cost of product, activity or service, cost of production, cost of sales and margin gives a true and fair view of the cost.
- To report on the cost statements in the form required by law or by the Standards on Cost Auditing, as the case may be.
- To enable an auditor to submit observations and suggestions as may be required by regulator or otherwise.

## Principles prescribed under this Standard:

### 1. Audit and Ethics:

The cost auditor shall comply with the ethical requirements pertaining to independence in respect of cost audit engagements. The cost auditor should comply with relevant ethical requirements as per Code of Ethics issued by the Institute of Cost Accountants of India. The fundamental principles with which the auditor is required to comply are:

- Independence
- Integrity
- Objectivity
- Professional competence
- Confidentiality and
- Professional conduct.

The cost auditor's independence from the entity safeguards the cost auditor's ability to form an opinion without being affected by influences that might compromise that opinion. Independence enhances the auditor's ability to act with integrity to be objective and to maintain an attitude of professional skepticism. It may be noted that the provision of services for maintenance of cost records, design and implementation of Cost Systems and internal audit are considered to erode the independence.

### 2. Conduct of audit:

While conducting an audit, the cost auditor shall comply with each of the Standards on Cost Auditing relevant to the audit. The Standards on Cost Auditing deal with general responsibilities of the cost auditor, as well as cost auditor's further considerations relevant to the application of those responsibilities to specific topics. In performing an audit, the cost auditor may be required to comply with legal or regulatory requirements in addition to Standards on Cost

Auditing. In such cases in addition to complying with each of the Standards on Cost Auditing relevant to the cost audit, it may be necessary for the cost auditor to perform additional audit procedures in order to comply with the legislative and regulatory requirements. It may be noted that the Standards on Cost Auditing do not override law or regulations that govern audit process. The form of the cost auditor's opinion will depend upon the applicable cost reporting framework and any applicable laws or regulations such as Companies Act and Rules prescribed thereunder.

### 3. Full Compliance of Standards on Cost Auditing:

The cost auditor shall not represent compliance with the Standards on cost auditing in the cost auditor's report unless the auditor has complied fully with all of the Standards on Cost Auditing relevant to the audit.

### 4. Power to deviate from requirement of Standards on Cost Auditing:

In exceptional circumstances, the cost auditor may judge it necessary to depart from a relevant requirement in a Standard on Cost Auditing. The need for the auditor to depart from a relevant requirement is expected to arise only where the requirement is for a specific procedure to be performed and, in the specific circumstances of the audit, that procedure would be ineffective in achieving the aim of the requirement. In such circumstances, the auditor shall perform alternative audit procedures to achieve the aim of that requirement.

### 5. Professional Skepticism

An attitude of professional skepticism means the cost auditor makes a critical assessment, with a questioning mind, of the validity of audit evidence obtained and be alert to audit evidence that contradicts or brings into question the reliability of documents and other information obtained from management.

An attitude of professional skepticism is necessary throughout the cost audit process for the auditor to reduce the risk of using faulty assumptions in determining the nature, timing and extent of the cost audit procedures and evaluating the results thereof. While making inquiries and performing other cost audit procedures, the cost auditor should not be satisfied with less-than-persuasive audit evidence. Representations from management are not a substitute for obtaining sufficient appropriate audit evidence to be able to draw reasonable conclusions on which to base the cost auditor's opinion.

A cost auditor should accumulate audit evidence necessary to conclude that there are no material misstatements in the



Cost Statements taken as a whole. A Cost auditor is required to obtain reasonable assurance relating to the whole audit process. A cost auditor cannot obtain absolute assurance because there are inherent limitations in an audit that affect the cost auditor's ability to detect material misstatements. These limitations result from factors such as the following:

- Use of sample testing
- Inherent limitations of internal control
- Most audit evidence is persuasive rather than conclusive.
- The work undertaken by the cost auditor to form an audit opinion is affected by judgment, in particular regarding, deciding the nature, timing and extent of audit procedures and assessing the reasonableness of the estimates made by management in preparing the Cost Statements.
- Presence of unusual circumstances which increase the risk of material misstatement beyond that which would ordinarily be expected

It may be noted that an audit is not a guarantee that the Cost Statements are free from material misstatement, because absolute assurance is not attainable. Further, an audit opinion does not assure the future viability of the entity nor the efficiency or effectiveness with which management has conducted the affairs of the entity.

#### 6. Sufficient appropriate audit evidence

The auditor shall obtain sufficient appropriate audit evidence to reduce audit risk to an acceptably low level and thereby enable the auditor to draw reasonable conclusions on which to base the auditor's opinion.

Organisations face variety of business risks based on the nature of their operations and industry, the regulatory environment in which they operate, and their size and complexity. Management is responsible for identifying such risks and responding to them. However, not all risks relate to the preparation of the Cost Statements. The auditor is ultimately concerned only with risks that may affect the cost statements.

The cost auditor obtains and evaluates audit evidence to obtain reasonable assurance about whether the Cost Statements give a true and fair view or in accordance with the applicable cost reporting framework. The concept of reasonable assurance acknowledges that there is a risk that the audit opinion is inappropriate. The cost auditor reduces audit risk by designing and performing audit procedures to obtain sufficient appropriate audit evidence to be able to draw reasonable conclusions on which to base an audit

opinion. Reasonable assurance is obtained when the auditor has reduced audit risk to an acceptably low level.

The audit process involves the exercise of professional judgment in designing the audit approach, through focusing on what can go wrong (i.e., what are the potential misstatements that may arise) and performing audit procedures in response to the assessed risks in order to obtain sufficient appropriate audit evidence.

The cost auditor is concerned with material misstatements, and is not responsible for the detection of misstatements that are not material to the Cost Statements taken as a whole. The cost auditor considers whether the effect of identified uncorrected misstatements, both individually and in the aggregate, is material to the Cost Statements taken as a whole. Materiality and audit risk are related

In order to design audit procedures to determine whether there are misstatements that are material to the cost statements taken as a whole, the cost auditor considers the risk of material misstatement at two levels:

- (1) The overall cost statement level and
- (2) In relation to cost heads, items of cost and disclosures and the related assertions.

The cost auditor considers the risk of material misstatement at the overall cost statement level, which refers to risks of material misstatement that relate pervasively to the Cost Statements as a whole and potentially affect many assertions.

The cost auditor also considers the risk of material misstatement at the cost heads, items of cost and disclosure level because such consideration directly assists in determining the nature, timing, and extent of further audit. The cost auditor seeks to obtain sufficient appropriate audit evidence at the cost heads, items of cost, and disclosure level in such a way that enables the auditor, at the completion of the audit, to express opinion on the Cost Statements taken as a whole at an acceptably low level of cost audit risk.

#### . Responsibility for the Cost Statements:

The cost auditor shall determine whether the Cost Reporting Framework followed by management in preparing cost statements is in line with the Companies Act and the Rules prescribed thereunder. The requirements of the Cost reporting framework determine the form and content of the Cost Statements and what constitutes a complete set of Cost Statements. For certain Cost reporting frameworks, a single cost statement as such and the related explanatory notes

constitute a complete set of Cost Statements.

The Cost auditor is not responsible for preparing and presenting the cost statements in accordance with the applicable Cost reporting framework including inter-alia:

- (a) Designing, implementing and maintaining internal control relevant to the preparation and presentation of Cost Statements
- (b) Selecting and applying appropriate Cost accounting policies; and
- (c) Making cost estimates that are reasonable in the circumstances.

The cost auditor is responsible for forming and expressing an opinion on the Cost Statements prepared by the management.

### 8. Known instances of Non-compliance:

The cost auditor shall request management to provide written representation that all known instances of non-compliance or suspected non-compliance with laws and regulations governing Cost Accounting, Cost Records and Cost Audit have been disclosed to the cost auditor. The representations provide necessary audit evidence about management knowledge of identified or suspected non-compliance with laws and regulations whose effects may have a material effect on the cost statement however, written representation do not provide sufficient audit evidence on their own, and accordingly do not affect the nature and extent of other audit evidence that is to be obtained by the cost auditor.

### 9. Non achievement of objective:

If an objective in a relevant Standard on Cost Auditing cannot be achieved, the auditor shall evaluate whether this prevents the auditor from achieving the overall objectives of the auditor and there by requires the auditor, in accordance with the Standards on Cost Auditing, to modify the auditor's opinion.

### Conclusion

Misstatement is a difference between the amounts, classification, presentation or disclosure of a reported cost statement item and the amount, classification, presentation, or disclosure that is required for the item to be in accordance with the applicable cost reporting framework. Misstatements can arise from error or fraud.

Where the cost auditor expresses an opinion on whether the cost statements give a true and fair view, misstatements also include those adjustments of amounts, classifications, presentation, or disclosures that, in the cost auditor's judgment, are necessary for the cost statements to be presented fairly, in all material respects, or to give a true and fair view.

Where assurance cannot be obtained in respect of true and fair, the cost auditor should qualify the opinion and in extreme cases disclaim an opinion.

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### Article- 4

## BACKGROUND PAPER ON STANDARD ON COST AUDITING 104 (SCA-104) KNOWLEDGE OF BUSINESS, ITS PROCESSES AND THE BUSINESS ENVIRONMENT

**CMA S Subhashini**

Practising Cost Accountant

*“The objective of the Cost Audit and Assurance Standard on Knowledge of Business, its Processes and the Business Environment is to enable Cost Auditor to have knowledge of the client's business which is sufficient to identify and understand the events, transactions and practices that, in the*

## ***Cost Auditor's judgment may have a significant effect on the examination of cost statement or on the preparation of the Cost Audit Report."***

- ✓ As per Section 148(3) of the Companies Act, 2013 – Cost Audit shall be conducted by a Cost Accountant in practice who shall be appointed by the Board and the Auditor conducting the cost audit shall comply with the cost auditing standards.
- ✓ Hence, compliance with the Cost Auditing Standards has been mandated by the Companies Act, 2013 and it is very essential on the part of the Cost Auditor to understand the Business Process and operations, the Environment in which the Business is functioning and also internal control policies of the Company.
- ✓ As part of the Cost Audit Program, the first level discussion should be held with the Senior Management Team of the Company to get first-hand information on the entire business operations of the Company.
- It is important to obtain the Process flow chart and also the organisations chart to form part of the Audit Documentation and this has to be done not only for new Cost Audit assignments but also for the subsequent years as this document will throw light on the changes in the process, internal re-structuring and mapping of various responsibility centres in the organisation for ensuring internal regulations and control.
- The Process Flow Chart should be comprehensive to include Shop Level Production Flow, Work Centres, Process input-out flow, Product Matrix, Installed capacity of Plant, Labour Matrix, Machine Capacities, HT of Plant and Power Factor. This will form the basic Business Process Document.
- In the context of Cost Audit, this document will play a critical role in ascertaining cost centre and profit centres which will form the basis in determining the product costing.
- ✓ Understanding the Business Process and the Key determinations for profitability of the operations of the Unit and also Product Level contribution will support the Audit engagement in terms of assessing the accuracy of the Cost Statements presented for Audit on which the Cost Auditor is expressing his opinion.
- ✓ In the era of Technology, various Audit tools are available to the Auditors to analyse the input-output flow of the process and also to lay hands on third party confirmations as an Audit Tool.
- The Cost Auditor should be well versed with the current technology which is being adopted in the Company to independently verify the classes of transactions and also supported their analysis, that are significant to the cost Statement.
- When it comes to Third Party confirmations, in the present GST scenario the Cost Auditor has excellent tools in terms of GSTR reports that is available online for every organisation in which the entire transaction history can be matched with the books of accounts.
- The GSTR 2A which is auto populating the Outward supplies of various vendors from whom the Company would have done purchases will form an excellent audit tool in the hands of the Cost Auditor to verify and ensure that the purchases has actually been made as it is a report from a Third Party transaction data.
- As the Raw material & Consumables form the major portion of the Cost of Production in case of manufacturing Units and Input Services in the case of an Service Industry, which can now be verified with the Vendor's returns which will be an Audit check mechanism which can be incorporated to increase the effectiveness of Cost Audit.
- ✓ When Cost Audit is based on thorough understanding of the Business Process and the Management Information System, value addition to Companies in the form of best product-mix; optimum utilisation of resources; standardisation of operations; efficiency of labour and performance of the organisation vs. industry standards can be presented to the Board for enhanced operational efficiency of the Company.
- ✓ Cost Audit will be seen not as a cost but as an asset.

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## EASTERN INDIA REGIONAL COUNCIL



The Region conducted the 12 days preplacement orientation programme for the Dec 2017 qualified students, which commenced on 19th March'2018 and concluded on 30th March, 2018. The inaugural programme was chaired by CMA P.M. Chandraiah, MD, BCPL, CMA Amitabh Mukherjee, GM (F), RVNL, CMA Harijiban Banerjee and CMA Amal Kr. Das, past presidents of the Institute. The valedictory session was graced by CMA A.K. Basu, Director (F) of MSTC. EIRC had organized a seminar on 23rd March, 2018 on the theme "FEMA & Foreign Trade Policy". Speaker was CMA





Timir Baran Chatterjee, Tax Consultant and on 29th March'2018, EIRC organized a seminar on the theme "Companies Amendment Act, 2017 & Rules 2018". CS Ravi Verma was the speaker on the subject. The region organized a seminar on 13th April 2018 on "NCLT & NCLAT". CMA Subhasish De was the resource person of the seminar.

### The Institute of Cost Accountants of India – Bhubaneswar Chapter



The Chapter organized soft skill and communication skill development programs at its conference hall on 7th April, 2018 and 8th April, 2018 for students. Shri Manish Dwivedi, one of the reputed Soft Skill Trainer at Bhubaneswar guided students by applying various techniques regarding the same. The chapter organized a seminar on 'E-Way Bill under GST' at its premises on April 22, 2018. CA Bibek Kumar Halwai, Partner, KPHB & Associates, Chartered Accountants was the resource person on the occasion and discussed in details and interacted with participants of the programme. The Chapter celebrated its 49th Annual Function on 29th April, 2018 at its premises and one Mega Blood Donation Camp had also been organized in association with Commissionerate Police Bhubaneswar-Cuttack and Rotary Club of Bhubaneswar Friends. Shri Priyadarshi Mishra, Hon'ble MLA, Bhubaneswar (North) Constituency, Khordha, Odisha inaugurated and graced the Annual Function and



Mega Blood Donation Camp as "Chief Guest". CMA Manas Kumar Thakur, Immediate Past President, CMA Niranjana Mishra, Council Member & Chairman, Taxation Committee of the Institute and CMA Shiba Prasad Padhi, Past Chairman & Present Regional Council Member graced the occasion



as "Guest of Honour". Few meritorious students of the chapter have also been awarded with trophies along with cash prizes and certificate of appreciation/excellence for their outstanding performance in December, 2017 term examination. A grooming session and an orientation programme for qualified CMAs of the Chapter for December 2017 examination had been conducted and CMA Niranjana Mishra, Council Member and Chairman, Taxation Committee and CMA Satya Sunder Mahasuar, Manager (Fin), NALCO guided the students for the programme.

## NORTHERN INDIA REGIONAL COUNCIL



NIRC organized a seminar on "ROLE OF INSOLVENCY PROFESSIONALS IN IBC" on January 7, 2018 at CMA Bhawan, New Delhi. The key note speaker was CMA Manoj Kulshrestha, Practicing Cost Accountant & CMA Madhusudan Sharma. The speakers covered various topics like role of insolvency professionals, code of conduct, penalty, protection, key issues facing IPs, important case laws related to IPs. NIRC conducted a seminar on 'Valuation & Cost Audit in Competitive Industry' and 'A Friendly Chess



Session between the members' on January 28, 2018 at CMA Bhawan. In the first technical session "Valuation" was covered by CMA Gagan Ghai. In the second technical session, CMA Manoj Kulshrestha explained in detail about cost audit in competitive industry environment. The Region on February 3, 2018 conducted a seminar on 'Discussion on Budget' at CMA Bhawan. Key note speakers were CMA Jatin Sharma and Mr. Rajeev Ahuja. Speakers provided detailed information about the budget and their



implications. NIRC celebrated second Lady Summit on the occasion of International Women's Day in Indian Islamic Centre on March 8, 2018. Chief Guest Smt Neema Bhagat, Mayor EDMC, Smt Sumaira Khan, Editor News Zee-Media, Smt Deepti Vashishtha, Senior Guest Coordinator, Rajya Sabha Television and CMA Sanjay Gupta, President of the

Institute, the Guest of Honour inaugurated the ceremony and said that in the present scenario the role of women is appreciable and they are serving well in the society. CMA Rajendra Singh Bhati, Treasurer NIRC said that the program had been organized keeping in mind the role of women in different sections of the society.

### The Institute of Cost Accountants of India -Jaipur Chapter



The Chapter organized 12 Days pre-placement orientation program from 19th March to 30th March 2018 for students of Rajasthan who passed CMA Final Course in December 2017 Examination. CMA S.L. Swami, secretary of the chapter took feedback of the program and boosted morale of the students for success in their campus placement. The chapter organized a seminar on "Corporate Governance" and "Capital Gain" on 24th March, 2018 at its premises. In the first technical session, CS Manmohan Pareek, Compliance Officer, AU Small Finance Bank explained in detail about Corporate Governance. In the second technical session,

CA Vijay Agarwal, Secretary Tax Consultants Association explained various amendments in Income Tax Act relating to capital gains and gave various tips for tax planning. The chapter organized visit to the Plant of Mayur Uniquoters Ltd, Dhodsar, near Reengus on 11th April, 2018 for students pursuing CMA Final Course. During the visit students were explained in detail the manufacturing process and also the system of costing applied there.

## SOUTHERN INDIA REGIONAL COUNCIL

The Institute of Cost Accountants of India - Cochin Chapter



The Chapter organized Kerala State Cost Convention on April 26, 2018 on 'Cost Engineering - A Key Driver to Business Growth', 'New India 2025 - Role of CMAs' and 'Transforming Business through Analytics in Digital World' and Shri Harish Madan, Deputy General Manager, Global Cost Engineering, JCB India, CMA M. Sathya Kumar and Shri Sathish Peethambaran, Associate Director, Data & Analytics,



Ernst & Young were the moderators of the Convention. The chapter organized a career counselling programme on May 4, 2018 at Cochin and there were factory visits for students conducted by the chapter on April 2018. There was an Intermediate HTC Batch on May 16, 2018 at CMA Bhawan, Centre for Excellence, Chalikkavattom, Vyttila.

The Institute of Cost Accountants of India – Coimbatore Chapter



The Chapter opened a stall at the Educational Expo organised by local news paper from 7th April, 2018 till 9th April, 2018 and conducted career counselling for the students who visited the expo. On 24th April, 2018, the chapter conducted a PDP on "INSOLVENCY & BANKRUPTCY CODE 2016". Speaker CMA A.R. Ramasubramania Raja highlighted the opportunities for CMAs in the programme. Industry Oriented Training Program session for the current batch of Final students was conducted at the chapter on 28th April, 2018. The concluding session was held on 5th May, 2018.



## WESTERN INDIA REGIONAL COUNCIL

The Institute of Cost Accountants of India- Pimpri Chinchwad Akurdi Chapter



The Chapter conducted a full day seminar on “GST & Foreign Trade Policy – Recent Amendments & Implications” on April 28, 2018 at Pune. The program was inaugurated at the hands of Chief Guest , Shri Shravan Hardikar, Commissioner, Pimpri-Chinchwad Municipal Corporation. Chief Guest for the event, Shri Shravan Hardikar said that GST will be a value addition for business. CMA Mahendra Bhombe, Chairman in his address said that the seminar aimed to address the emerging issues faced by the professionals and industries of GST & Foreign Trade Policy.

CMA L D Pawar briefed on the fact that there are new opportunities for CMAs in GST Implementation and CMA Himanshu Girotra, GM-PVBU, Tata Motors in his address congratulated all for keeping such type of seminar. CMA Brij Mohan Sharma in his address stressed on the fact that GST & FTP are important for the growth of all public and private sectors, businesses, industries etc. The technical session commenced with CMA (Dr) Waman Parkhi, Partner, KPMG on the intricate issues on important recent amendments from the introduction of GST and Recap of amendments in GST, its impact and implications. The third technical session commenced with CA Y Ravikumar on GST and FTP- Interplay and Implications. CMA Vidyasagar, CFO, Jafa Comfeed India Pvt Ltd, CMA Ajay Kumar, CFO, Minda Stoneridge Instruments Ltd, CMA Himanshu Dhar, GM-Business Planning & Controlling- TML, CMA Rajesh Shukla, Head Indirect Tax-TML & Member of (SIAM), CII & FICCI and CMA K Jayaprakash,, CFO, Mahindra CIE Automotive Limited discussed their views on the subject.



# FROM THE RESEARCH DESK

## Blockchain Technology: Scope for CMA Professionals and Practitioners

- Businesses and investors, more than ever, are looking to alternative means of diversifying their financial interests, and cryptocurrency is one way they can do this. The blockchain enables people to move money from one country to another easily, and so, users of cryptocurrencies can live in all parts of the globe. As businesses begin to accept cryptocurrencies in greater numbers, they will need trained professionals in cryptocurrency technologies to track their assets properly.
- Bitcoin exchange companies can be a potential employer of professionals with a certification in Bitcoin. These firms provide the online wallets that enable people to buy and sell with one another, and they manage vast amounts of transactions.
- In recent years, blockchain technology has evolved far beyond bitcoin and is now being tested in a broad range of business and financial applications. Blockchain technology could bring new challenges and opportunities to the audit and assurance profession. Auditing is an annual exercise. Blockchain may help auditors improve the frequency of the process, maybe on a quarterly or monthly basis. In fact with this new-age technology, even a real-time audit can be given a thought. Moreover, as the frequency of the audits improves, there are little chances that the transactions can be adjusted in advance of scrutiny. Additionally, this will help the auditors enhance their understanding of the business as the engagement is no longer based on a snapshot at a given time of the year. It will facilitate prediction of trends or future risks. Consequently, this will increase confidence among the auditors and help them evaluate a fair picture. It will also provide time to deepen understanding of the overall business model, rather than reducing the audit to a tick-box compliance exercise. Furthermore, blockchain is believed to have arrived at the right time to promote activities such as the extended audit report that are laying emphasis on developing this deeper understanding of the business.
- Getting accustomed to Blockchain technique, professionals like CMAs can apply their expertise in the following sectors:
  - ❖ **Asset Management-Trade Processing and Settlement:** Traditional trade processes within asset management (where parties trade and manage assets) can be expensive and risky, particularly when it comes to cross-border transactions. Each party in the process, such as broker, custodian, or the settlement manager, keeps their own records which create significant inefficiencies and room for error. The blockchain ledger reduces error by encrypting the records. At the same time, the ledger simplifies the process, while canceling the need for intermediaries.
  - ❖ **Insurance-Claims processing:** Claims processing can be a frustrating and unrewarding procedure. Insurance processors have to wade through fraudulent claims, fragmented data sources, or abandoned policies for users to state a few – and process these forms manually. Room for error is huge. The blockchain provides a perfect system for risk-free management and transparency. Its encryption properties allow insurers to capture the ownership of assets to be insured.
  - ❖ **Blockchain Healthcare:** Personal health records could be encoded and stored on the blockchain with a private key which would grant access only to specific individuals. Receipts of surgeries could be stored on a blockchain and automatically sent to insurance providers as proof-of-delivery. The ledger, too, could be used for general health care





management, such as supervising drugs, regulation compliance, testing results, and managing healthcare supplies.

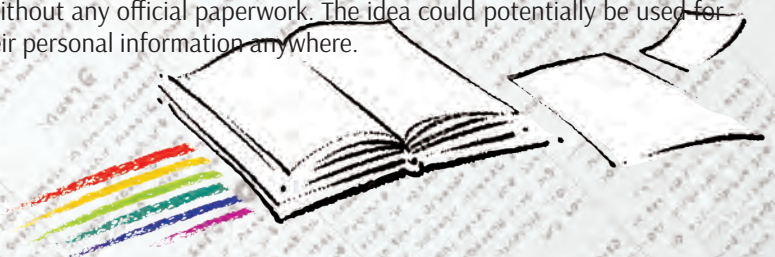
❖ The application of Blockchain technology is diverse and its utility can be seen in healthcare, supply chain, banking services, manufacturing, real estate, digitizing land records etc. This means gradually all walks of life will be pervaded by this technology and operations will be designed keeping these in mind. This implies that companies in most of the sectors in India will hire professionals who can work on Blockchain technology.

❖ Post demonetization in India, we have witnessed the proliferation of Fintech/ Digital payment firms. Gradually, credit settlement, insurance claim settlement, loan disbursal, micro financing etc. will depend on various forms of technology and Blockchain is one of them. Studies have shown that Blockchain technology, with its Distributed ledger Technology (DLT), can facilitate quicker claim settlement, easier customer enrollment, fraud control etc.

❖ **Non-Performing Assets (NPA) Management:** Blockchain technology can successfully prevent process frauds in banks, because no one single authority has full control over the movement of assets. If the core banking system is integrated with blockchain, any breach of limits can be immediately tracked and stopped. A blockchain based system also provides high traceability with the records of transaction being made available in the transaction history, throughout the lifetime. This makes the system transparent and auditable, hence more immune to frauds. India's largest public sector bank, State Bank of India **created a blockchain-based exchange for Non-Performing Assets (NPA's)** and launched in association with 30 banks, this platform assists the banks in data-driven price discovery.

### *Interesting Facts about Blockchain Technology:*

- Blockchain was invented by **Satoshi Nakamoto** in 2008 to serve as the public transaction ledger of the cryptocurrency bitcoin. The invention of the blockchain for bitcoin made it the first digital currency to solve the double-spending problem without the need of a trusted authority or central server.
- Blockchain Technology is something that has already caught everyone's attention across the globe and India is no exception. Blockchain is an 'open ledger' which records and manages transactions. Each record is called a 'block' and contains details of the transaction timestamp along with a link to the previous block. This protects the data from being manipulated retrospectively. Moreover, since each transaction is recorded over a distributed ledger in an encrypted manner, the technology is designed to be secure.
- Top companies across the globe such as IBM, Microsoft, Intel, JP Morgan Chase are recruiting Blockchain developers in huge numbers. Closer home, Reliance Infocomm, Yes Bank, Bajaj Electricals and Mahindra Group have employed Blockchain in many of their operations. The distributed ledger system is believed to lower operational cost. Hence it is expected that these corporations will need lot of professionals for transition from old to new technology.
- **Walmart** has started using blockchain technology to track where mangos, berries, and some other products come from so it can determine where bad food originated during a recall. The company is working with **International Business Machines (IBM)** to track the food, and in one test Walmart was able to determine where bad food came from in just two seconds, as opposed to results taking nearly a week under their current system.
- **Microsoft** and **Accenture** recently teamed up to create a prototype ID system for a United Nations project aimed at providing legal identification to more than 1 billion people in the world. This blockchain-based ID would be especially useful for refugees who have left their home without any official paperwork. The idea could potentially be used for anyone though, to allow travelers to access their personal information anywhere.





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