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Accelerating INDIA'S TRANSPORT & LOGISTICS SECTOR A Corridor to Evolution



Journal of

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

(Statutory Body under an Act of Parliament)

www.icmai.in



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

Statutory Body under an Act of Parliament
www.icmai.in studies@icmai.in



Since 1944

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

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- COO
- CFO
- Director - Finance
- President - Finance
- Vice President - Finance
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- Strategic Head
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- Business Analyst
- Research Analyst
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placement@icmai.in
cpt@icmai.in
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ICMAI

The Institute of Cost Accountants of India

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- **THE INSTITUTE OF COST ACCOUNTANTS OF INDIA** (erstwhile The Institute of Cost and Works Accountants of India) was established in 1944 as a registered company under the Companies Act with the objects of promoting, regulating and developing the profession of Cost Accountancy.
- On 28 May 1959, the Institute was established by a special Act of Parliament, namely, the Cost and Works Accountants Act 1959 as a statutory professional body for the regulation of the profession of Cost & 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 recognized statutory professional organisation and licensing body in India specialising exclusively in Cost & Management Accountancy.

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.”

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.”

Institute Motto

असतोमा सद्गमय
तमसोमा ज्योतिर् गमय
मृत्योर्मा मृतं गमय
ॐ शान्ति शान्ति शान्तिः

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

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



Headquarters:

CMA Bhawan, 12 Sudder Street, Kolkata - 700016



Delhi Office:

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

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

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EDITORIAL OFFICE

CMA Bhawan, 4th Floor, 84, Harish Mukherjee Road,
Kolkata - 700 025
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Kolkata - 700 016, P. S. New Market, West Bengal

Contacts for Advertisement inquiries

Mumbai
Bobby Daniel
bobby@spentamultimedia.com
+91 95949 39474

Delhi
Arti Marwah
arti@spentamultimedia.com
+91 98184 48014

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PRESIDENT

CMA Bibhuti Bhushan Nayak
president@icmai.in

VICE PRESIDENT

CMA T C A Srinivasa Prasada
vicepresident@icmai.in

COUNCIL MEMBERS

CMA (Dr.) Ashish Prakash Thatte, CMA Ashwin G. Dalwadi, CMA Avijit Goswami,
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Secretary

CMA Kaushik Banerjee
secy@icmai.in

Additional Secretary (Delhi Office) & Head Studies

CMA (Dr.) Debaprosanna Nandy
addlsecy.delhi@icmai.in, studies.director@icmai.in

Additional Secretary (Headquarters, Kolkata)

CMA Arup Sankar Bagchi
addlsecy.kolkata@icmai.in

Director (Examination)

Dr. Sushil Kumar Pareek
exam.director@icmai.in

Director (Infrastructure)

CMA Rajat Kumar Basu
infrastructure.director@icmai.in

Director (PD & CPD)

CMA Nisha Dewan
pd.hod@icmai.in

Director (Technical)

CMA Tarun Kumar
technical.director@icmai.in

Director (Tax Research)

CMA Kushal Sengupta
trd.director@icmai.in

Director (Membership)

CMA Arunava Ganguly
membership.director@icmai.in

Director (Admin-Delhi)

CMA Simarjeet Chadha
admin.director@icmai.in

Additional Director (Journal & Publications)

CMA Sucharita Chakraborty
journal.hod@icmai.in

Additional Director (BFSI)

CMA Dibbendu Roy
bfsi.hod@icmai.in

Additional Director (Information Technology)

Mr. Ashish Tewari
it.hod@icmai.in

Additional Director (Career Counselling and Placement)

Dr. Pradipta Ganguly

Additional Director (Internal Control)

CMA Indu Sharma
intcontrol.hod@icmai.in

Additional Director (Finance)

CMA Soma Banerjee
finance.hod@icmai.in

Additional Director (Public Relations)

CMA T R Abrol
pr.hod@icmai.in

Joint Director (Legal)

Ms Vibhu Agarwal
legal.hod@icmai.in

Director (Discipline)

CMA R. K. Jain
discipline.director@icmai.in

Joint Director (CAT)

CMA Pardeep Kumar Khaneja
cat.hod@icmai.in

Joint Director (International Affairs)

Dr. Kimi Thareja
intlaffairs.hod@icmai.in

Joint Director (Board of Advanced Studies & Research)

CMA Tinku Ghosh Das

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From the EDITOR'S DESK

Accelerating India's transport and logistics sector is crucial for its economic development and global competitiveness. By infrastructure development through expansion and upgradation of highways and roads, railways, airports, ports and shipping, India can transform its transport and logistics sector into a more efficient, sustainable and globally competitive industry. Technological integration, regulatory reforms, sustainability initiatives, regional connectivity will not only boost economic growth but also enhance the country's status in the global supply chain.

India's logistics and industrial sector has seen impressive growth during the first half of 2024. This issue of Management Accountant carries several articles on the theme- Accelerating India's Transport & Logistics Sector - A corridor to evolution.

Accelerating India's Transport and Logistics Sector – A Corridor To Evolution focuses on the adoption of green logistics technology, smart cities and logistics parks and reflects India's commitment to sustainability and modernization. These innovations are reducing the carbon footprint of logistics operations, optimizing urban freight movement and enhancing the overall efficiency of the sector. India's transport and logistics sector has experienced a significant transformation over the past decade, becoming a critical driver of the nation's

economic progress.

Logistics Leverage and Evolution in Transportation Infrastructure perpetual Augmentation of the Expansion of Indian Economy performs a representative sectoral time-series analysis, establishing the sustainable expansion trajectory of the logistics infrastructure in India.

Advancing Sustainability: The Impact of Green Logistics Technology and Smart Logistics Parks on Future Cities Development states that logistics operations contribute to economic growth and urban effectiveness and therefore, eco-friendly approaches reduce environmental consequences and improve efficiency and service. This article delves into the impact of logistics technology and smart logistics parks on sustainable urban development.

Flagship Highway Project "Bharatmala" The Journey So Far explores the journey of the Bharatmala project. It also discusses the challenges encountered during its execution, including land acquisition, environmental clearances and financial constraints. The article also assesses the socio-economic impacts of the project, particularly in terms of regional development, job creation and the overall modernization of India's transportation network.

The article titled *From Smart Cities to Green Supply Chains: A New Era of Logistics* explores the convergence of green logistics, smart city infrastructure and advanced logistics parks as a cornerstone of sustainable urban

development. It concludes by highlighting the synergistic relationship between these components and their contribution to creating resilient, eco-friendly, and future-oriented cities.

Cost Management and Innovation: The Dual Pillars of India's National Logistics Policy, 2022 examines the policy's two pillars, innovation and cost management. The article also emphasizes how CMA support financial planning, performance evaluation, risk management, cost optimization, regulatory compliance, technology integration, and skill development.

Accelerating India's Transport: Green Logistics, Smart Cities, and Innovation unravels the usage of green logistics technologies in connection with smart city ecosystem endorsed by Kolkata City showing environmental, economic and social-centric dimensions.

The article *Exploring the Development Opportunities of Vizhinjam Mother Port: A Strategic Gateway for Maritime Growth* concludes Vizhinjam Port will greatly boost India's marine trade and establish it as a key centre for international shipping. India's trade capacity and efficiency will rise significantly due to this port's strategic location and modern amenities.

Environmental Cost-Benefit Analysis of Satellite Toll Collection System in India assesses the ecological expenses and advantages of using satellite toll collection systems in India. It offers suggestions for policy and practical application, as well as guidance for future research.

Apart from these thematic articles, this issue contains articles on various other contemporary matters.

We look forward to constructive feedback from our readers. Please send your comments and suggestions to editor@icmai.in.

A big thanks to our authors who have enriched the contents of this Issue.

Happy Reading!!!



President's Communique

CMA Bibhuti Bhusan Nayak

President

The Institute of Cost Accountants of India

"If you light a lamp for someone else, it will also brighten your path."

-- Gautama Buddha

My Dear Professional Colleague,

At the outset, I, on behalf of the Institute and all its stakeholders extend our heartiest congratulations and best wishes to Ms. Deepti Gaur Mukerjee, IAS on assuming charge as the Secretary to the Government of India, Ministry of Corporate Affairs. I am pleased to inform that I along with CMA Ashwin G. Dalwadi, Immediate Past President, ICMAI and CMA Manoj Kumar Anand, Council Member, ICMAI, called on Ms. Deepti Gaur Mukerjee on 3rd September, 2024 in New Delhi and discussed the matters related to the Institute and CMA profession.

Independence Day Celebration

I am delighted to inform that the Institute celebrated the 78th Independence Day with great enthusiasm and patriotism across its headquarters in Kolkata, Delhi Office, Regional Councils and Chapters nationwide. The celebration marked the Institute's ongoing commitment to contributing to India's economic growth by empowering cost and management accounting professionals.

I had the privilege of unfurling the National Flag during the Independence Day Celebrations organized at Headquarters, Kolkata, in the presence of Council members, Former Presidents, Regional Council Members of EIRC and employees of the Institute. The Campaign "Har Ghar Tiranga" was celebrated by the Headquarters, Regional Councils, Chapters and employees of the

Institute during 9th August to 15th August, 2024, by hoisting the national flags in their respective premises.

Meeting with Dignitaries

CMA Ashwin G. Dalwadi, Immediate Past President, ICMAI along with CMA Manoj Kumar Anand, Chairman, PD & CPE Committee, ICMAI and CMA Nishant Kumar Singh, Former Chairman, EIRC of ICMAI met Shri Chirag Paswan, Hon'ble Union Minister of Food Processing Industries on 22.08.2024 at his office to request implementation of cost audit in food processing and milk food industry.

CMA Rajendra Singh Bhati, Chairman, Public Relations Committee, CAT and Direct Taxation Committee, ICMAI along with CMA Santosh Pant, Chairman, NIRC of ICMAI, CMA Sunil Singh, Former Chairman, NIRC of ICMAI and CMA Amit Yadav, Chairman, Lucknow Chapter of ICMAI had a meeting with Dr. Dinesh Sharma, Hon'ble MP Rajya Sabha at Lucknow.

Highest-ever Student Admissions for the CMA Course

I am proud to announce a significant milestone in the history of the Institute, having achieved the highest-ever student admissions for the CMA Course for December 2024 term. With more than 41,000 new admissions, this record-breaking achievement underscores the growing recognition of the CMA profession as a vital contributor to the economic and financial management landscape of the nation. It also reflects the increasing awareness of the value and scope of the CMA qualification, which offers vast career opportunities in both the public and private sectors.

Peer Review Board

I am pleased to inform you that the Peer Review Board has started assigning the Reviews to the empanelled reviewers. I take this opportunity to congratulate the Peer Review Board of the Institute for this initiative and hope that the peer review process will be smooth and seamless. I urge the eligible PCMA's to apply to the Board in the prescribed format to empanel as Reviewer. I also urge the PCMA's to apply for the Peer Review of their respective firms by writing an email to the peerreviewboard@icmai.in at the earliest. For further assistance, you are advised to refer to the PRB webpage on the Institute's website at <https://icmai.in/icmai/PeerReviewSystem/index.php> and write to the PRB Secretariat at peerreviewboard@icmai.in for seeking any clarification / information.

CAT Course for retiring/retired Defence Personnel

I am glad to share with you that the new batches of CAT course for retiring/retired JCOs/OR & their equivalent in association with Directorate General of Resettlement (DGR), Ministry of Defence, Government of India as per the approved calendar of the DGR for the training year 2024-25 have commenced on 12th August, 2024 at our Lucknow and Ranchi Chapters, details of which are given in following paragraphs.

The inauguration ceremony in Ranchi took place on 24th August 2024, where I addressed the esteemed gathering in the presence of my council colleague, CMA Rajendra Singh Bhati, Chairman, Committee for Accounting Technicians. I am elated to share that Shri Sanjay Seth, Hon'ble Minister of State for Defence, Government of India, graced the event as the Chief Guest. He congratulated the Institute for providing a platform to defence personnel, which will assist them in resettlement after their retirement. Brig. Rajeev Kapur, SM, ADG, DRZ East, delivered the welcome address to the course students as the Guest of Honour. CMA Subhasish Chakraborty, Chairman of EIRC; CMA Bidyadhar Prasad, RCM-EIRC, CMA Prabhask Mishra, Chairman of the Ranchi Chapter; & Other Regional Council Members of EIRC and members of the Managing Committee of the Ranchi Chapter were also present at the inauguration.

The inauguration ceremony in Lucknow took place on 12th August, 2024 and was graced by the esteemed

presence of Brig Bikram Heeru, ADG, DRZ (Central), DGR, as the Chief Guest. In his address, Brig Heeru briefed the participants on the importance of acquiring new skills to enhance their employability in the civilian sector. He encouraged them to take full advantage of the course, highlighting how the CAT certificate will open up new career opportunities for them. Brig Heeru also expressed his gratitude to the Institute of Cost Accountants of India for their continued support and commitment to the welfare of ex-servicemen.

My Council colleague CMA Rajendra Singh Bhati, Council Member & Chairman (CAT), ICMAI, who was also present in the inaugural, thanked DGR, Ministry of Defence for showing confidence in the Institute and entrusting 12 batches of CAT Course for its calendar year 2024-25. He assured the Institute's commitment to impart quality training to the Defence personnel. He added that the Institute has already endeavoured to provide placement opportunities to the defence personnel undergoing the CAT Course. CMA Santosh Pant, Chairman, NIRC; CMA Amit Yadav, Chairman (Lucknow Chapter); Managing Committee Members of Lucknow Chapter and faculty members were also present during the inaugural programme.

CMA National Youth Commerce Olympiad (NYCO) 2024

I am happy to inform that the Directorate of Studies in association with Career Counselling & Placement Committee and CAT Directorate of ICMAI is organizing CMA National Youth Commerce Olympiad (NYCO) 2024). The online registrations have already started w.e.f. 16th August, 2024. This event represents a remarkable opportunity for young minds to showcase their talent, knowledge, and passion for commerce on a national stage. The CMA NYCO is not just a competition; it is a celebration of the intellectual prowess and academic excellence that our community holds dear. It aims to foster a spirit of learning, innovation, and healthy competition among students from across the country.

I request all members and students to actively participate in the event and make the CMA National Youth Commerce Olympiad 2024 a grand success. For more details and registration, please visit the NYCO portal: <https://icmai.in/nyco/Home.aspx>

MOU with International Financial Services Centres Authority (IFSCA)

I am happy to inform that ICAI has signed a Memorandum of Understanding (MOU) with International Financial Services Centres Authority (IFSCA) on 30th August, 2024 at Gandhinagar, Gujarat. The MOU was signed by CMA Dr. Kaushik Banerjee, Secretary, ICAI and Dr. Dipesh Shah, Executive Director (Development), International Financial Services Centres Authority (IFSCA) in the presence of CMA Ashwin G. Dalwadi, Immediate Past President, ICAI, Shri K. Rajaraman, Chairperson, IFSCA, Dr. Dipesh Shah, ED (Development), IFSCA, CMA Chittaranjan Chattopadhyay, Chairman, BFSI Board, ICAI and CMA Malhar Dalwadi, Former Chairman, Ahmedabad Chapter, ICAI.

Through this MOU, ICAI shall extend cooperation to IFSCA in developing GIFT-IFSC, as a “Global Finance and Accounting Hub”, collaborate and cooperate with IFSCA to facilitate the export of Book-keeping, Accounting, Taxation and Financial Crimes Compliance Services from the GIFT-IFSC. It will allow both the Institutes to jointly organize international and domestic events including conferences, seminars, and round table meetings with ICAI members and industry participants to increase awareness and promote GIFT-IFSC as a “Global Finance and Accounting Hub” and it also allow for jointly participating in international events and forums for promoting the export of Finance and Accounting related services from GIFT-IFSC in India. Both the Institutes may also jointly prepare knowledge papers/organized studies pertaining to the accounting framework, incorporating research work and feedback received from various stakeholders.

Seminar on “Recent Developments in Cost Record, Cost Report & Performance Report”

I am pleased to inform that the Bhubaneswar Chapter of the Institute has successfully conducted a seminar on the theme “Latest Development in the Cost Audit Framework & ABC for Maintenance of Cost Records & Cost Audit” on 11th August 2024 at CMA Bhawan, Bhubaneswar. Shri Babu Singh, Hon’ble MLA, Ekamra Constituency, Bhubaneswar inaugurated the Seminar as its Chief Guest. I had the pleasure of participating in the Seminar along with CMA T C A Srinivasa Prasad,

Vice President, ICAI, CMA Neeraj D. Joshi, Council Member, ICAI, CMA Damodara Mishra, Secretary, EIRC-ICMAI, CMA Uttam Kumar Nayak, Regional Council Member & Immediate Past Chairman, EIRC-ICMAI. The Seminar witnessed an active participation from more than 150 members. I congratulate CMA Ramesh Chandra Patra, Chairman and other members of the Managing Committee of Bhubaneswar Chapter-ICMAI on the successful conduct of the Seminar.

I wish prosperity and happiness to our esteemed members, students and their families on the occasion of Ganesh Chaturthi, Onam & Milad-un-Nabi and wish them success in all of their endeavours.

With warm regards,



CMA Bibhuti Bhusan Nayak
September 4, 2024

BRIEF SUMMARY OF THE ACTIVITIES OF VARIOUS DEPARTMENTS/ COMMITTEES/ BOARDS OF THE INSTITUTE DURING THE MONTH OF AUGUST 2024

BANKING, FINANCIAL SERVICES AND INSURANCE BOARD

The Banking, Financial Services & Insurance Board of the Institute and the BFSI department continued its various activities and initiatives in August 2024, a synopsis of which is presented herein under:

A. Certificate Courses of BFSI

- ⊙ Advance Certificate Course on Fintech: The admission for the 1st batch of Advance Certificate Course on Fintech has started.
- ⊙ Investment Management in collaboration with NSE Academy: The admission for the Level-1 (Fundamental Analysis & Valuations) Batch No. 2 of the Investment Management in collaboration with NSE Academy and Level-3 Batch No. 1 (Financial Derivatives & its application) are presently going on.

The admission window for the courses is stated as follows:

<https://eicmai.in/OCMAC/BFSI/DelegatesApplicationForm-BFSI.aspx>

B. Webinars

The following webinars were organized by the BFSI on various topics:

- ⊙ White Label Banking held on 2nd August, 2024: CMA (Dr.) P. Siva Rama Prasad, Former AGM, State Bank of India was the speaker.
- ⊙ Insurtech held on 9th August, 2024: CMA (Dr.) P. Siva Rama Prasad, Former AGM, State Bank of India was the speaker. CMA (Dr.) Tarun Agarwal, Former Director, National Insurance Academy and BFSI Board Member, ICMAI graced the occasion as the Guest of Honour. The webinar was also attended by CMA T.C.A. Srinivasa Prasad, Vice-President, ICMAI who provided the special address.
- ⊙ Climate Risk for Banks- Impact, Mitigation and Disclosure held on 24th August, 2024: CMA (Dr.) S.K.Gupta, CEO, Registered Valuers Organization was the speaker.
- ⊙ Due Diligence on Project Financing held on 30th August, 2024: Ms. R. Sumitra, Former Chief Credit Officer, Bank of Baroda was the speaker.

C. Publication of Aide Memoire on Infrastructure Financing (Revised and Enlarged 2nd Edition)

The online purchase link of the publication titled Aide Memoire on Infrastructure Financing (Revised and Enlarged 2nd Edition) is as follows:

https://eicmai.in/booksale_bfsi/Home.aspx

COOPERATIVE DEVELOPMENT BOARD

The Cooperative Development Board organized a webinar

on the topic “Empowering Communities: The Future of Small-Scale Cooperatives in a Sustainable World” on 14th August, 2024. Our guest facilitator for the session was Dr. Madhukar Sharma, Head, Center for International Relations and Governance, Maharashtra National Law University, Nagpur.

The webinar focused on the role of small-scale cooperatives in promoting sustainable development and community empowerment, examining how these cooperatives can contribute to a greener and more equitable future. The speaker talked about Sahkar Se Samridhi Scheme and explained the role of cooperatives in achieving socio-economic prosperity, particularly in rural and marginalized communities.

Dr. Madhukar emphasized on the existence of cooperatives in India, its principals, achievements as well as India’s active participation in the cooperatives.

The webinar was taken forward by CMA Navneet Kumar Jain, Chairman of the Board who apprised the members about the ensuing initiative of the CDB in bringing out a Guidance Note on various aspects governing the operations and management of Cooperative Societies.

MEMBERSHIP DEPARTMENT

During the month of August 2024, 87 new Associate memberships were granted and 41 Associate members were upgraded to Fellowship. Communications also made to aware the Members whose membership fees for the year 2024-25 have fallen due on and from 1st April 2024, to be paid on or before September 30, 2024. For any further clarification, it is requested to contact the membership department at: membership.director@icmai.in and membership@icmai.in, mentioning the membership number.

PROFESSIONAL DEVELOPMENT & CONTINUOUS PROFESSIONAL EDUCATION (PD & CPE) COMMITTEE

The Rajasthan Rajya Vidyut Prasaran Nigam Limited considered Cost Accountants Firms for conducting the Commercial Accounts Audit.

Please visit the PD Portal for Tenders/EOIs during the month of August 2024 where services of the Cost Accountants are required in Centre for Trade and Investment Law, Shri Saibaba Sansthan Trust, Troop Comforts Limited, Intelligent Communication Systems India Limited, North Eastern Electric Power Corporation Limited, Karnataka Urban Infrastructure Development and Finance Corporation Ltd (KUIDFC), Cement Corporation of India Limited, Armoured Vehicles Nigam Limited, HSCC (India) Ltd, National Textile Corporation Limited (NTC), Mineral Exploration and Consultancy Limited, Airports Authority of India, Bhubaneswar, North East Gas Distribution Company Limited, GAIL (India) Limited, Madhya Pradesh Power

Generating Company Limited, etc.

In the monthly series, Professional Development & CPE Committee conducted 8th Webinar discussion with practitioners on “Practical Approach for Stock and Book debt Audit for Banks” on 7th August 2024 with overwhelming response and active participation in the discussion by the Members. The speaker, CMA Anwar Hasan discussed the key practices and strategies for CMA professionals, also covered Procedural Compliances in conducting stock and book debt audit for banks. The Chairman, PD & CPE Committee talked about the implementation of Peer Review System of the Institute and encouraged the practitioners to register for the same.

A webinar was conducted on “The Future of Winning Organizations with True Cost and Profit Management Strategies” on 23rd August 2024, wherein deliberations by the speaker, Mr. André Sanseverino, discussed strategies to mitigate these challenges effectively, emphasizing the importance of aligning cost management with long-term profitability and sustainability goals.

Professional Development & CPE Committee associated with PHD Chamber of Commerce and Industry for the seminars on “Corporate Restructuring: Mergers & Acquisitions and Related Party Transactions, Interplay of Companies Act & SEBI Listing Regulations” and “Decoding the Latest GST Amendments Jurisprudence” at PHD House, New Delhi on 23rd August and 29th August 2024 respectively.

During the month of August, around 45 programmes in Physical mode and around 25 programmes in online mode were organised by the different Committees, Regional Councils and Chapters of the Institute on the topics of Navigating Financial Distress- The Role of Professionals under IBC and Forensic Audits, Throughput Costing, Shaping the Future of Taxation: Proposals for Overhauling the Income Tax Act, 1961, Latest changes in GST, Due Diligence on Project Financing, Handling of Show Cause Notices from GST” & “Process & Cost Optimisation - Case studies, Climate Risk for Banks - Impact, Mitigation and Disclosure, Evolving Landscape of Internal Audit, Business Responsibility and Sustainability Reporting and so on.

SUSTAINABILITY STANDARDS BOARD

The Sustainability Standards Board had organized the 14th webinar of Vasudhaiva Kutumbakam Series on the topic ‘Investing in Sustainable Projects ‘ on 9th August, 2024. Shri Atul Juvle, TeDx Speaker and General Counsel was the speaker for the webinar. The 15th webinar of Vasudhaiva Kutumbakam Series on the topic “Learn to Live a Sustainable Life” was organized on 23rd August, 2024. CMA (Dr.) Joffy George, Company Secretary, Kerala State Industrial Development Corporation was the speaker for the webinar. The admission for the 2nd batch of Certificate Course on ESG has now started.

The admission link is as follows:

<https://eicmai.in/OCMAC/SSB/DelegatesApplicationForm-SSB.aspx>

The Sustainability Standards Board released the August

2024 edition of its monthly newsletter Sukhinobhavantu.

The Download link is as follows:

https://icmai.in/upload/Institute/Updates/SSB_August_2024.pdf.

TAX RESEARCH DEPARTMENT

The Tax Research Department organized several important webinars during the month of August 2024 as presented below:

- The first webinar was conducted on 02.08.2024 and the Topic for the session had been “Deductions for Payments to MSEs under Income Tax Act – An Analysis”. This had been a detailed discussion on Section 43B(h), allowing deductions for timely payments to Micro and Small enterprises under the MSMED Act as introduced by Finance Act, 2023. This session also dealt with topics like: Classification of micro enterprise and small enterprise, Interest on delayed payment under Section 16 of the MSMED Act and its allowability under the IT Act, Implications of provisions of Section 43B(h) on capital expenditure, Implications of provisions of Section 43B(h) on GST component of payment to MSEs, Applicability of provisions of Section 43B(h) on wholesale and retail traders, Applicability of provisions of Section 43B(h) on unregistered micro and small enterprises among others.
- The second webinar was conducted on 06.08.2024 and herein the topic had been, “Appeals and Revision under the GST”. The main points that were discussed were: Whether any person aggrieved by any order or decision passed against him has the right to appeal, the time limit to file appeal to Appellate Authority, the powers of the appellate authority to condone the delay in filing appeal and allow additional grounds not specified in the appeal memo, communication of order passed by Appellate Authority, the amount of mandatory pre-deposit which should be made along with every appeal before Appellate Authority, Whether in an appeal the AA can pass an order enhancing the quantum of duty/ fine/ penalty/ reduce the amount of refund/ITC from the one passed by the original authority to name a few.
- The topic of the third webinar had been, “GST on Corporate Guarantee” conducted on 09.08.2024. The discussion included an understanding on Corporate Guarantee, GST applicability on Corporate Guarantee, GST Rate and HSN Code applicable etc. The notifications issued by CBIC on July 10 to give effect to the recommendations made in 53rd GST Council meeting held in June was also discussed in addition to the clarification that 1% charge on corporate guarantees between related parties applies yearly, not for each transaction.
- The fourth webinar was held on the 22.08.2024 on the topic “Gearing up to Tax Audit -2023-24”. The webinar included discussion on Understanding 44AB Tax Audit Requirements, Different Types of Tax

Audits and their purpose, Tax Audit Forms and their usages, how are tax audit reports furnished, when should a tax audit report be filed, penalty for delay or not filing a tax audit report, tax audit criteria, tax audit limit for a professional and due dates applicable.

Classes for the GST Course for college and university commenced at St. Anne's College Hyderabad (Batch: 2) on 09.08.2024 and at Taradevi Harakchand Kankaria Jain College (Batch: 3) on 12.08.2024.

The classes are continued for all the 7 taxation courses named below:

- i. Certificate Course on GST (Batch – 16)
- ii. Advanced Certificate Course on GST (Batch – 12)
- iii. Advanced Course on GST Audit and Assessment Procedure (Batch – 9)
- iv. Certificate Course on International Trade (Batch – 6)
- v. Certificate Course on TDS (Batch – 12)
- vi. Certificate Course on Filing of Returns (Batch – 12) and
- vii. Advanced Course on Income Tax Assessment & Appeals (Batch – 9)

The Tax Research Department has requested all Chapters of the Institute to submit their inputs and suggestions on the proposed New and simplified Income Tax Law. All Chapters are requested to participate wholeheartedly in this process and submit their suggestions by 15th September, 2024.

The quiz on indirect tax is conducted on every Friday pan India basis. The Taxation Portal is being updated regularly with the circulars, notifications and press releases. 165th (income Tax Special Edition) and 166th Tax Bulletin has also been published and circulated to the Government and corporates.

ICMAI MANAGEMENT ACCOUNTING RESEARCH FOUNDATION (MARF)

ICMAI MARF has successfully conducted a five days' Residential Training Program on "Cost Accounting Standards, Benchmarking, Tendering, Procurement & Contracting" for Indian Air Force Officers from 20-24 August 2024 at Kufri, Shimla. Training Program was inaugurated on 21st August 2024 by Air Cmde Kalpa Ghosh, Principal Director (Financial Planning). Chief Guest of the Valedictory Session on 23rd August 2024 was AVM (Dr.) Manoj Kumar Mehra, Assistant Chief of Air Staff (Financial Planning) followed by certificate distribution by him. AVM (Dr.) Manoj Mehra emphasized the need of knowledge by Air Force Officers of Costing Techniques, Methods, Cost Accounting Standards and Benchmarking & Escalating Techniques and the Training Program addressed these issues exceedingly well with practical examples which shall work as guide to them in procurement and capital acquisitions for IAF.

INSOLVENCY PROFESSIONAL AGENCY (IPA) OF THE INSTITUTE

The Insolvency Professional Agency of Institute of Cost Accountants of India (IPA ICMAI), in its endeavour to promote professional development and sharpen the skills of

the professionals, has constantly been conducting various professional & orientation programs across the country and publishing various publications and books for the benefit of stakeholders at large. IPA ICMAI has undertaken several initiatives, as enumerated below, during the month of August 2024.

- ⊙ Two-day Online Learning Session on "Unlocking the Power of Commercial Wisdom; Effective Decision Making by CoC" was held on 3rd August, 2024.
- ⊙ The 65th Batch of Pre-Registration Educational Course from 8th August to 14th August, 2024.
- ⊙ Workshop on "Not Readily Realisable Assets (NRRRA)" was conducted on 11th August 2024.
- ⊙ Seminar on Navigating Insolvency ARC's Expertise Asset Resolution was held on 13th August 2024 in Mumbai. The speakers, Mr. Sanjay Tibrewala, Mr. Dushyant Dave, and Mr. Sanjeev Pandey shared their valuable insights in the seminar.
- ⊙ Workshop on "Compliances to be made by IPs under IBC, 2016." was conducted on 18th August 2024.
- ⊙ To enhance the knowledge about the Filing of Liquidation & Voluntary Liquidation Forms" an online Workshop was conducted on 20th August 2024.
- ⊙ Workshop on Role & Responsibilities of Authorized Representatives under IBC, 2016 was conducted on 24th August 2024.
- ⊙ Workshop on "Judicial Pronouncements under IBC, 2016 was conducted on 30th August 2024.
- ⊙ Workshop on 'Guidelines for Committee of Creditors' was held on 31st August 2024, to enhance members' understanding of the Insolvency and Bankruptcy Code, 2016 through an engaging and informative session featuring expert speakers and interactive discussions.
- ⊙ In its endeavour to promote the profession, knowledge sharing and sensitisation of the environment, IPA ICMAI published Au-Courant (Daily Newsletter), a weekly IBC Dossier, and a monthly e- Journal which are hosted on its website.

ICMAI REGISTERED VALUERS ORGANIZATION (RVO)

ICMAI RVO has successfully organized one "50 Hour's training programs" for Securities or Financial Assets, one for Land and Building asset and one for Plant and Machinery and also organized 07 (seven) "Professional Development Programs" during the month of August, 2024. In its efforts to bring out relevant publications for development of the valuation profession, ICMAI RVO also released its monthly Journal – The Valuation Professional.

ICMAI SOCIAL AUDITORS ORGANIZATION (SAO)

ICMAI SAO has organized "1" Proficiency Development Program and organized "4" Professional Development programs during August, 2024. ICMAI SAO also released its monthly Journal – The Social Auditor.



Chairman's Communiqué

CMA Harshad Shamkant Deshpande
Chairman, Journal & Publications Committee
The Institute of Cost Accountants of India

"A life of joy and happiness is possible only on the basis of knowledge and science"

- Dr. Sarvepalli Radhakrishnan

Dear Esteemed Members and Readers,
Greetings!!!

I am honoured to address you for the first time as the Chairman of the Journal & Publications Committee. It is with great enthusiasm and a sense of responsibility that I step into this role, committed to upholding the high standards and integrity that our journal represents. I thank CMA B B Nayak, President & CMA TCA Srinivasa Prasad, Vice President, ICMAI for this honour.

Change in today's world is riding an accelerated pace and we need to pause and reflect it on the entire education system. That reminds me of the great words of wisdom by Aristotle, "Educating the mind without educating the heart is no education at all." Education is a dynamic process in which new-fangled thoughts are supplemented persistently to construct the education in progressive approach.

Our journal has always been a beacon of knowledge, innovation, and professional excellence in the field of Management Accounting. As we move forward, my vision is to further enhance the quality and relevance of the content we provide, ensuring it meets the evolving needs of our readers and the broader professional community.

In the coming months, we can expect to see a range of new initiatives aimed at enriching our journal. These will include:

- ⦿ *Enhanced Research and Practical Insights*: We will focus on publishing cutting-edge research and practical insights that can be directly applied to improve Management Accounting practices.
- ⦿ *Interactive and Engaging Content*: We have aimed to introduce more interactive elements, such as webinars, blogs, podcasts, and discussion forums, to foster a more dynamic and engaging learning experience. We have decided to organize a webinar every month on contemporary themes. This month the Department is organizing a webinar on the topic "*Contemporary Aspects of STRATEGIC MANAGEMENT ACCOUNTING*" on 12th September, 2024 to be deliberated by CMA (Dr.) Girish P. Jakhotiya, renowned Management Consultant, Mumbai. The Department is dedicated to the goal of connectivity and

focuses on incorporating new features by providing best efforts to reach the unreachable through persistent value addition.

- ⦿ *Diverse Perspectives*: We are committed to featuring diverse array of voices and perspectives from across the globe, reflecting the international leadership of CMA profession.
- ⦿ *Members' Contributions*: We encourage all members to actively contribute their knowledge and expertise. Members' participation is vital to the continued success and growth of our journal.
- ⦿ *Leadership in Management Accounting Journal*: The Management Accountant be positioned as Benchmark in the domain of Management Accounting journals across the world.

Having served as Editor of WIRC Bulletin for 3 years, I am extremely hopeful for a huge transformation in the Management Accountant Journal. I look forward to working closely with the Editorial team, contributors, and readers to make the Management Accountant as a benchmark magazine of Management Accounting. Together, we can continue to advance the field of Management Accounting and support the professional development of our members.

I wish to conclude my thoughts by congratulating the office bearers of Journal & Publications department for all their commitments and achievements. Our mission is to publish international standard professional journal and quality publications to raise public awareness about policy issues in business, trade, society and economy and to facilitate solutions that will contribute to national development with special emphasis on cost and management accounting. It is needless to mention that the concerned department has progressed towards design improvement, and the present professional design has received accolades from all quarters and members of the Institute.

We solicit your feedback, suggestions, and concerns for the overall development of the Journal and Publications Department. Please send us mails at editor@icmai.in / journal@icmai.in for various issues relating to Journal and Publications.

Thank you for your continued support and dedication.

Warm regards,

CMA Harshad Shamkant Deshpande
September 4, 2024

**THE INSTITUTE OF COST ACCOUNTANTS OF INDIA**

(Statutory Body under an Act of Parliament)

(Standing & Other Committees for the year 2024-2025)

(Quorum indicated is as per regulation 81 (1) of the CWA Regulations, 1959)

STANDING COMMITTEES**1. Executive Committee (Quorum: 3)****Chairman**

1. CMA Bibhuti Bhusan Nayak, President

Members

2. CMA T.C.A. Srinivasa Prasad, Vice President
3. CMA Manoj Kumar Anand
4. CMA Rajendra Singh Bhati
5. CMA Vinayranjan P
6. CMA Neeraj Dhananjay Joshi
7. CMA Ashwin G. Dalwadi

Secretary

CMA Dr. Kaushik Banerjee, Secretary

2. Examination Committee (Quorum: 2)**Chairman**

1. CMA Bibhuti Bhusan Nayak, President

Members

2. CMA T.C.A. Srinivasa Prasad, Vice President
3. CMA Neeraj Dhananjay Joshi
4. CMA Dr. Ashish P. Thatte
5. CMA Manoj Kumar Anand
6. CMA Avijit Goswami
7. CMA Dr. K Ch A V S N Murthy

Secretary

CMA Dr. Kaushik Banerjee, Secretary

3. Finance Committee (Quorum: 2)**Chairman**

1. CMA Bibhuti Bhusan Nayak, President

Members

2. CMA T.C.A. Srinivasa Prasad, Vice President
3. CMA Dr. Ashish P. Thatte
4. CMA Rajendra Singh Bhati
5. CMA Chittaranjan Chattopadhyay
6. CMA Suresh Rachappa Gunjalli
7. CMA Ashwin G. Dalwadi

Secretary

CMA Soma Banerjee, Additional Director

OTHER COMMITTEES**4. Board of Discipline u/s 21A(1)****Presiding Officer**

1. Shri P.K. Pujari, Retd. IAS

Member

2. CMA Dr. Ashish P. Thatte

Alternate Member

3. CMA Avijit Goswami

Secretary

CMA R.K. Jain, Director (Discipline)

5. Disciplinary Committee u/s 21B(1)**Presiding Officer**

1. CMA Bibhuti Bhusan Nayak

Members

2. CMA Manoj Kumar Anand
3. CMA Ashwin G. Dalwadi
4. Shri Saraswati Prasad, IAS (Retd.)
5. Mrs Meenakshi Sharma, IA&AS (Retd.)

Secretary

CMA R. K. Jain, Director (Discipline)

6. Disciplinary Committee u/s 21D**Presiding Officer**

1. CMA Bibhuti Bhusan Nayak, President

Members

2. CMA T.C.A. Srinivasa Prasad, Vice President
3. Dr. Shyam Agarwal, Government Nominee

Secretary

CMA Dr. Kaushik Banerjee, Secretary

7. Training & Educational Facilities Committee (Quorum: 3)**Chairman**

1. CMA Vinayaranjan P

Members

2. CMA Ashwin G Dalwadi

COUNCIL COMMITTEES

3. CMA Neeraj Dhananjay Joshi
4. CMA Dr. Ashish P. Thatte
5. CMA Manoj Kumar Anand
6. CMA Avijit Goswami
7. CMA Dr. V. Murali
8. CMA Dr. Paritosh Basu, Co-opted
9. CMA Dr. Niranjan Shastri, Co-opted
10. CMA Akhaya Kumar Swain, Co-opted

Secretary

CMA Dr. D.P. Nandy, Addl. Secretary

8. Journal & Publications Committee (Quorum:3)

Chairman

1. CMA Harshad Shamkant Deshpande

Members

2. CMA Dr. K Ch A V S N Murthy
3. CMA Rajendra Singh Bhati
4. CMA Avijit Goswami
5. CMA Suresh Rachappa Gunjalli
6. CMA Vinayaranjan P.
7. CMA Navneet Kumar Jain
8. CMA Dr. G. Naresh Reddy, Co-opted
9. CMA A. Chandrasekhar, Co-opted
10. CMA Y.H. Anegundi, Co-opted

Secretary

CMA Sucharita Chakraborty, Addl. Director

9. Professional Development & CPE Committee (Quorum: 3)

Chairman

1. CMA Manoj Kumar Anand

Members

2. CMA Neeraj Dhananjay Joshi
3. CMA Rajendra Singh Bhati
4. CMA Dr. V. Murali
5. CMA Vinayaranjan P.
6. CMA Suresh Rachappa Gunjalli
7. CMA Avijit Goswami
8. CMA D.S. Bhatia, Co-opted
9. CMA S.K. Varma Gadhiraaju, Co-opted
10. CMA Dr. Bijay Kumar Mohanty, Co-opted

Secretary

CMA Nisha Dewan, Director

10. Regional Council & Chapters Coordination Committee (Quorum: 3)

Chairman

1. CMA Dr. K Ch A V S N Murthy

Members

2. CMA Manoj Kumar Anand
3. CMA Vinayaranjan P.
4. CMA Chittaranjan Chattopadhyay
5. CMA Dr. V. Murali
6. CMA Rajendra Singh Bhati
7. CMA Suresh Rachappa Gunjalli
8. CMA Dr. Ashish P. Thatte
9. CMA Harshad Shamkant Deshpande
10. CMA C.L. Bansal, Co-opted
11. CMA G.V. Subramanyam, Co-opted
12. CMA Pramod Chauhan, Co-opted

Secretary

Shri Bhavesh Kumar Sinha, Joint Director

11. International Affairs Committee (Quorum:3)

Chairman

1. CMA Dr. Ashish P. Thatte

Members

2. CMA Avijit Goswami
3. CMA Suresh Rachappa Gunjalli
4. CMA Ashwin G Dalwadi
5. CMA Manoj Kumar Anand
6. CMA Rajendra Singh Bhati
7. CMA Dr. V. Murali
8. CMA Pravin Ambeskar, Co-opted
9. CMA Sandeep Goel, Co-opted
10. CMA Avaneesh Kumar Bharti, Co-opted

Secretary

CMA Yogender Pal Singh, Joint Director

12. Direct Taxation Committee (Quorum: 3)

Chairman

1. CMA Rajendra Singh Bhati

Members

2. CMA Dr. Ashish P. Thatte
3. CMA Manoj Kumar Anand
4. CMA Chittranjan Chattopadhyay
5. CMA Dr. V. Murali
6. CMA Suresh Rachappa Gunjalli
7. CMA Dr. K Ch A V S N Murthy
8. CMA Rajagopal, Co-opted
9. CMA Mrityunjay Acharjee, Co-opted
10. CMA Sachin Kathuria, Co-opted

Secretary

CMA Rajat Kumar Basu, Director

COUNCIL COMMITTEES

13. Indirect Taxation Committee (Quorum: 3)

Chairman

1. CMA Dr. Ashish P. Thatte

Members

2. CMA Navneet Kumar Jain
3. CMA Avijit Goswami
4. CMA Dr. K Ch A V S N Murthy
5. CMA Rajendra Singh Bhati
6. CMA Manoj Kumar Anand
7. CMA Dr. V. Murali
8. CMA Mallikarjun Gupta, Co-opted

Secretary

CMA Rajat Kumar Basu, Director

14. Committee for Accounting Technicians (Quorum: 3)

Chairman

1. CMA Rajendra Singh Bhati

Members

2. CMA Dr. Ashish P. Thatte
3. CMA Harshad Shamkant Deshpande
4. CMA Vinayaranjan P.
5. CMA Navneet Kumar Jain
6. CMA Chittaranjan Chattopadhyay
7. CMA Dr. K Ch A V S N Murthy
8. CMA Himanshu Agarwal, Co-opted
9. CMA Saurabh Singh Raghav, Co-opted

Secretary

CMA Pardeep Kumar Khaneja, Joint Director

15. Members' Facilities Committee (Quorum: 3)

Chairman

1. CMA Avijit Goswami

Members

2. CMA Harshad Shamkant Deshpande
3. CMA Dr. V. Murali
4. CMA Suresh Rachappa Gunjalli
5. CMA Dr. K Ch A V S N Murthy
6. CMA Vinayaranjan P.
7. CMA Navneet Kumar Jain
8. CMA Gulshan Kumar, Co-opted
9. CMA Srinivasa Raghavan, Co-opted
10. CMA N. Ramaskanda, Co-opted

Secretary

CMA Arunava Ganguly, Director

16. Infrastructure Committee (Quorum: 3)

Chairman

1. CMA Manoj Kumar Anand

Members

2. CMA Neeraj Dhananjay Joshi
3. CMA Navneet Kumar Jain
4. CMA Vinayaranjan P.
5. CMA Avijit Goswami
6. CMA Ashwin G Dalwadi
7. CMA Rajendra Singh Bhati

Secretary

CMA Kushal Sengupta, Director

17. Corporate Laws Committee (Quorum: 3)

Chairman

1. CMA Dr. V. Murali

Members

2. CMA Dr. Ashish P. Thatte
3. CMA Harshad Shamkant Deshpande
4. CMA Rajendra Singh Bhati
5. CMA Navneet Kumar Jain
6. CMA Dr. K Ch A V S N Murthy
7. CMA Avijit Goswami
8. CMA A. Sekar, Co-opted
9. CMA K. Chandrasekar, Co-opted
10. CMA Madhuri J., Co-opted

Secretary

Ms. Vibhu Agrawal, Joint Director

18. Information Technology Committee (Quorum:3)

Chairman

1. CMA T.C.A. Srinivasa Prasad

Members

2. CMA Neeraj Dhananjay Joshi
3. CMA Rajendra Singh Bhati
4. CMA Chittaranjan Chattopadhyay
5. CMA Vinayaranjan P.
6. CMA Suresh Rachappa Gunjalli
7. CMA Ashwin G Dalwadi
8. CMA Rajendra Joshi, Co-opted
9. CMA Nilesh Khandelwal Co-opted
10. CMA Ravikumar Ramachandran, Co-opted

Secretary

Shri Ashish Tewari, Additional Director

COUNCIL COMMITTEES

19. Members in Industry & PSUs Committee (Quorum: 3)

Chairman

1. CMA Avijit Goswami

Members

2. CMA Manoj Kumar Anand
3. CMA Navneet Kumar Jain
4. CMA Chittaranjan Chattopadhyay
5. CMA Vinayaranjan P.
6. CMA Suresh Rachappa Gunjalli
7. CMA Ashwin G. Dalwadi
8. CMA Gagan Bihari Swain, Co-opted
9. CMA Aleti Jammaya, Co-opted
10. CMA Prasanna Kumar Acharya, Co-opted

Secretary

CMA Dr. D.P. Nandy, Additional Secretary

20. Public Relations Committee (Quorum: 3)

Chairman

1. CMA Rajendra Singh Bhati

Members

2. CMA Neeraj Dhananjay Joshi
3. CMA Manoj Kumar Anand
4. CMA Harshad Shamkant Deshpande
5. CMA Navneet Kumar Jain
6. CMA Chittaranjan Chattopadhyay
7. CMA Dr. V. Murali
8. CMA Subodh Mawalankar, Co-opted
9. CMA Mahesh Giri, Co-opted

Secretary

CMA T.R. Abrol, Addl. Director

21. Management Accounting Committee (Quorum: 3)

Chairman

1. CMA Neeraj D. Joshi

Members

2. CMA Dr. Ashish P. Thatte
3. CMA Manoj Kumar Anand
4. CMA Navneet Kumar Jain
5. CMA Chittaranjan Chattopadhyay
6. CMA Vinayaranjan P.
7. CMA Suresh Rachappa Gunjalli
8. CMA Dr. K Ch A V S N Murthy
9. CMA Ashwin G. Dalwadi
10. CMA S.G. Narasimhan, Co-opted
11. CMA Dr. Narshimha Murthy, Co-opted

12. CMA Milind Date, Co-opted

Secretary

Dr. Pradipta Gangopadhyay, Addl. Director

22. Career Counselling & Placement Committee (Quorum: 3)

Chairman

1. CMA Vinayaranjan P

Members

2. CMA Dr. Ashish P. Thatte
3. CMA Avijit Goswami
4. CMA Manoj Kumar Anand
5. CMA Rajendra Singh Bhati
6. CMA Chittaranjan Chattopadhyay
7. CMA Suresh Rachappa Gunjalli
8. CMA Govind Sharma, Co-opted
9. CMA Vinay Maan, Co-opted
10. CMA Sunil Luthra, Co-opted

Secretary

Dr. Pradipta Gangopadhyay, Addl. Director

23. Cost Accounting Standards Board (Quorum: 8)

Chairman

1. CMA Neeraj Dhananjay Joshi

Members

2. CMA Rajendra Singh Bhati
3. CMA Navneet Kumar Jain
4. CMA Chittaranjan Chattopadhyay
5. CMA Suresh Rachappa Gunjalli
6. CMA Dr. K Ch A V S N Murthy
7. CMA Ashwin G. Dalwadi
8. CMA Manoj Kumar Anand
9. CMA B.B. Goyal
10. CMA Sankalp Wadhwa
11. CMA D.K. Sarraf
12. Shri B. Rajendran – Nominee SEBI
13. CMA Anjani Kumar Tiwari
14. CS Rupanjana De, Nominee ICSI
15. CA Anuj Kumar Goyal, Nominee ICAI
16. Nominee of MCA
17. Nominee of CBIC
18. Nominee of CBDT
19. Nominees of Global Accounting Bodies

Secretary

CMA Tarun Kumar, Director

COUNCIL COMMITTEES

24. Cost Auditing and Assurance Standards Board (Quorum: 5)

Chairman

1. CMA Ashwin G. Dalwadi

Members

2. CMA Neeraj Dhananjay Joshi
3. CMA Vinayaranjan P
4. CMA Manoj Kumar Anand
5. CMA Navneet Kumar Jain
6. CMA Suresh Rachappa Gunjalli
7. CMA Chittaranjan Chattopadhyay
8. CMA B.B. Goyal
9. CMA M.K. Mittal
10. CS Rajesh Chhaganbhai Tarpara, Nominee ICSI
11. CMA Ravindra Sekhar Khandavalli
12. CMA Gulshan Kumar
13. CMA K N Thakur
14. CMA Munish Goyal
15. Nominees of Industry Associations

Secretary

CMA Tarun Kumar, Director

25. Internal Auditing and Assurance Standards Board (Quorum: 5)

Chairman

1. CMA Chittaranjan Chattopadhyay

Members

2. CMA Harshad Shamkant Deshpande
3. CMA Rajendra Singh Bhati
4. CMA Avijit Goswami
5. CMA Dr. V. Murali
6. CMA Suresh Rachappa Gunjalli
7. CMA Dr. K Ch A V S N Murthy
8. CMA Kanti Lal Goyal
9. CMA Bhaskar Basu
10. CMA Ram Kumar K
11. CMA Pulak Shaha
12. CMA Nikunja Kishore Ch Nanda
13. CMA Rakesh Shankar Ravishankar
14. CMA Dr. V. Gopalan
15. CMA Nitish Kalra
16. CMA R K Sinha
17. CMA Niraj Jain
18. Nominee of Industry Associations
19. Nominee of Professional Institute
20. Nominee of CAG
21. Nominee of Bank
22. Nominee of Regulatory body

Secretary

CMA Simarjeet Chadha, Director

26. Banking, Financial Services & Insurance Board (Quorum: 5)

Chairman

1. CMA Chittaranjan Chattopadhyay

Members

2. CMA Dr. Ashish P. Thatte
3. CMA Harshad Shamkant Deshpande
4. CMA Rajendra Singh Bhati
5. CMA Vinayaranjan P
6. CMA Suresh Rachappa Gunjalli
7. CMA Dr. K Ch A V S N Murthy
8. CMA A.K. Shah
9. CMA Ashok Jain
10. CMA Dr. Kumararajan Sethurajan
11. CMA Sunder Ram Korivi
12. CMA P.N. Murthy
13. CMA Archana Singh
14. CMA Tarun Kumar Agrawal
15. CMA Dhiraj Sachdev
16. CMA Dr. Ramjass Yadav
17. CMA Nayan Mehta
18. CMA G. Srinivasan

Secretary

CMA Dibbendu Roy, Addl. Director

27. Board of Advanced Studies & Research (Quorum: 3)

Chairman

1. CMA Vinayaranjan P

Members

2. CMA Neeraj Dhananjay Joshi
3. CMA Manoj Kumar Anand
4. CMA Navneet Kumar Jain
5. CMA Suresh Rachappa Gunjalli
6. CMA Dr. K Ch A V S N Murthy
7. CMA Chittaranjan Chattopadhyay
8. CMA Ashwin G Dalwadi
9. CMA Bhargava Srinivasa Raghavan
10. CMA S.K. Sawal
11. CMA Rajiv Srivastava
12. CMA Senthil Kumar
13. Dr. Kalpesh Parikh
14. CMA Dhiraj Sachdev
15. CMA Dr. Ramjass Yadav
16. CMA Nayan Mehta
17. CMA G. Srinivasan
18. CMA Siva Kumar Saragadam

Secretary

CMA Sucharita Chakraborty, Addl. Director

COUNCIL COMMITTEES

28. Technical Cell (Cost Audit & Statutory Compliances) (Quorum: 3)

Chairman

1. CMA Manoj Kumar Anand

Members

2. CMA Neeraj Dhananjay Joshi
3. CMA Ashwin G Dalwadi
4. CMA Navneet Kumar Jain
5. CMA B.B. Goyal
6. CMA Parvathy Venkatesh
7. CMA Aseem Jain
8. CMA Sayed Mohammed Anwar Hasan
9. Advisor (Cost) or his nominated person
10. CMA Mohit Singhal

Secretary

CMA Tarun Kumar, Director

29. MSME & Start-up Promotion Board (Quorum: 4)

Chairman

1. CMA Suresh Rachappa Gunjalli

Members

2. CMA Neeraj Dhananjay Joshi
3. CMA Rajendra Singh Bhati
4. CMA Avijit Goswami
5. CMA Chittaranjan Chattopadhyay
6. CMA Dr. V. Murali
7. CMA Dr. K Ch A V S N Murthy
8. CMA Manoj Singh
9. CMA Jayaram Ramesh
10. CMA Angesh Tomar
11. CMA N.K. Nimkar
12. CMA Raman D
13. CMA Dushyant Dave
14. CMA Jayaram Ramakrishnan
15. Nominee from FOSMI
16. Nominee from MSME Chamber of Commerce
17. Nominee from National Institute for MSME

Secretary

CMA Dr. Sumita Chakraborty, Addl. Director

30. Agriculture Cost Management Board (Quorum: 4)

Chairman

1. CMA Chittaranjan Chattopadhyay

Members

2. CMA Neeraj Dhananjay Joshi
3. CMA Rajendra Singh Bhati
4. CMA Avijit Goswami

5. CMA Harshad Shamkant Deshpande
6. CMA Vinayaranjan P
7. CMA Dr. K Ch A V S N Murthy
8. CMA Dr. Sreehari Chava
9. CMA Santosh Sharma
10. CMA Raveender Nath Kaushik
11. CMA Sanjay Kumar Arya
12. CMA K.S. Kamalakara
13. CMA Rajesh Shukla
14. Nominee of NABARD
15. Nominee of IGNOU

Secretary

CMA Dr. Sumita Chakraborty, Addl. Director

31. Co-operative Development Board (Quorum: 4)

Chairman

1. CMA Navneet Kumar Jain

Members

2. CMA Ashwin G Dalwadi
3. CMA Avijit Goswami
4. CMA Chittaranjan Chattopadhyay
5. CMA Vinayaranjan P
6. CMA Suresh Rachappa Gunjalli
7. CMA Dr. Ashish P. Thatte
8. CMA K.K. Vyas
9. CMA Anjeev Kumar Jain
10. CMA T.K. Jaganathan
11. Shri Mohan Mishra
12. CMA Prahlad Sahai Yadav
13. Nomination from Co-Operative Ministry
14. Nomination from Co-Operative Ministry from Maharashtra
15. Nomination from Co-Operative Ministry from Karnataka
16. Nomination from Co-Operative Ministry from Punjab
17. Nomination from Co-Operative Ministry from WB
18. Nomination from Co-Operative Ministry from Gujarat
19. Nomination from National Council for Co-operative Training (NCCT)
20. Nomination from National Cooperative Development Corporation (NCDC)

Secretary

Dr. Kimi Thareja, Joint Director

32. Sustainability Standards Board (Quorum: 4)

Chairman

1. CMA Dr. Ashish P. Thatte

COUNCIL COMMITTEES

Members

2. CMA Neeraj Dhananjay Joshi
3. CMA Navneet Kumar Jain
4. CMA Avijit Goswami
5. CMA Dr. V. Murali
6. CMA Harshad Shamkant Deshpande
7. CMA Vinayranjan P
8. Dr. Ranjith Krishnan
9. Nominee of SEBI
10. Nominee of Professional Institutes (ICAI, ICSI)
11. Nominee of Industry Association (ASSOCHAM)
12. Nominee of GRI India
13. Practicing Cost Accountant
14. Practicing Company Secretary

Secretary

CMA Dibbendu Roy, Addl. Director

33. Task Force on Election Reforms (Quorum: 2)

Chairman

1. CMA Bibhuti Bhushan Nayak

Members

2. CMA Neeraj Dhananjay Joshi
3. CMA Dr. Ashish P. Thatte
4. CMA Chittaranjan Chattopadhyay
5. CMA Dr. V. Murali
6. CMA Ashwin G. Dalwadi

Secretary

CMA Dr. Kaushik Banerjee, Secretary

34. Task Force on Delhi Infra Development (Quorum: 2)

Chairman

1. CMA Ashwin G Dalwadi

Members

2. CMA Manoj Kumar Anand
3. CMA Navneet Kumar Jain
4. CMA Rajendra Singh Bhati
5. CMA Dr. K Ch A V S N Murthy
6. CMA Avijit Goswami

Secretary

CMA Dr. D.P. Nandy, Addl. Secretary

35. Task Force on Strategy & Planning for Vision 2047 (Quorum: 2)

Chairman

1. CMA Ashwin G Dalwadi

Members

2. CMA Neeraj Joshi

3. CMA Avijit Goswami
4. CMA Vinayranjan P
5. CMA Rajendra Singh Bhati

Secretary

CMA Dr. D.P. Nandy, Addl. Secretary

36. Committee on Artificial Intelligence (Quorum:4)

Chairman

1. CMA Neeraj Dhananjay Joshi

Members

2. CMA T.C.A. Srinivasa Prasad
3. CMA Rajendra Singh Bhati
4. CMA Chittaranjan Chattopadhyay
5. Dr. Rahee Walambe
6. CMA Ashutosh Saitwal
7. CMA Hrushikesh Shrotriya
8. CMA Subhasish Chakraborty
9. CMA Satish H Mehta
10. CMA Jayant Kumar Roy, Deputy General Manager (Information Technology), National Insurance Company Limited
11. Nominee from NITI Aayog: Ms. Anna Roy, Senior Adviser, Data Management & Analysis & Frontier Technologies, Managing Urbanisation
12. Nominee from Ministry of Electronics & Information Technology: Shri Abhishek Singh Additional Secretary
13. Nominee of CII: Ashish Mohan Executive Director – Technology, R&D, Innovation and Design Prof. Lord SK Bhattacharyya Centre

Secretary

Mr. Biplob Chaki, Joint Director

- President is Permanent Invitee to all the committees except Disciplinary Committees, Board of Discipline, Quality Review Board and committees represented by him as Chairman.

- Vice President is Permanent Invitee to all the committees except Disciplinary Committees, Board of Discipline, Quality Review Board and committees represented by him as Chairman.

Standing & Other Committees for the year 2024-2025 as available on 07.09.2024 under the following link:
https://icmai.in/upload/Institute/Council_Committee/Council-Committees-2024-2025-06092024.pdf



INDEPENDENCE DAY CELEBRATION

At Institute Office - Kolkata & Delhi





Felicitation of Shri Sanjay Seth, Hon'ble Minister of State for Defence, Government of India by CMA Bibhuti Bhusan Nayak, President, ICMAI and CMA Rajendra Singh Bhati, Council Member & Chairman, Committee for Accounting Technicians, ICMAI at Inaugural Programme of 4th batch of CAT Course (under DGR) on 24.08.2024 at Ranchi



Lighting of lamp by CMA Bibhuti Bhusan Nayak, President, ICMAI at Inaugural Programme of 4th batch of CAT Course (under DGR) on 24.08.2024 at Ranchi



Lighting of lamp by Shri Sanjay Seth, Hon'ble Minister of State for Defence, Government of India at Inaugural Programme of 4th batch of CAT Course (under DGR) on 24.08.2024 at Ranchi



Inaugural Programme of 4th batch of CAT Course (under DGR) for Defence Personnel on 24.08.2024 at Ranchi



CMA Ashwin G Dalwadi, Immediate Past President, ICMAI along with CMA Manoj Kumar Anand, Council Member & Chairman, PD & CPE Committee, ICMAI and CMA Nishant Kumar Singh, Former Chairman, EIRC of ICMAI met Shri Chirag Paswan, Hon'ble Union Minister of Food Processing Industries on 22.08.2024 at his office to request Implementation of Cost Audit in Food Processing and Milk Food Industry



CMA Rajendra Singh Bhati, Chairman, Public Relations Committee, CAT and Direct Taxation Committee, ICMAI along with CMA Santosh Pant, Chairman, NIRC of ICMAI, CMA Sunil Singh, Former Chairman, NIRC of ICMAI and CMA Amit Yadav, Chairman, Lucknow Chapter of ICMAI had a meeting with Dr. Dinesh Sharma, Hon'ble MP, Rajya Sabha at Lucknow



CMA Vinayaranjan P., Council Member, CMA K. Panduranga Rao, Regional Council Member-SIRC and CMA S. Papa Rao Ex-Council Member has met Shri P. Keshav, Minister of Finance of Andhra Pradesh and submitted a representation on behalf of the Institute



Dignitaries on the dais during the Felicitation Ceremony of President, ICMAI & Vice President, ICMAI organised by Eastern India Regional Council (EIRC) of ICMAI at EIRC Auditorium on 2nd August 2024. (R/L) CMA Subhasish Chakraborty, Chairman, EIRC-ICMAI, CMA Avijit Goswami, Council Member, ICMAI, CMA Bibhuti Bhusan Nayak, President, ICMAI, CMA T.C.A Srinivasa Prasad, Vice President, ICMAI, CMA Chittaranjan Chattopadhyay, Council Member, ICMAI, CMA Arati Ganguly, Vice Chairperson, EIRC-ICMAI



Signing of MOU between ICMAI and International Financial Services Centers Authority (IFSCA) on 30th August, 2024 at Gandhinagar, Gujarat. (L/R) CMA Chittaranjan Chattopadhyay, Council Member & Chairman, BFSI Board, ICMAI, CMA Ashwin G. Dalwadi, Immediate Past President, ICMAI, CMA (Dr.) Kaushik Banerjee, Secretary, ICMAI, Shri K. Rajaraman, Chairperson, IFSCA, Dr. Dipesh Shah, ED (Development), IFSCA and CMA Malhar Dalwadi, Former Chairman, Ahmedabad Chapter, ICMAI



Inauguration of CAT batch under DGR at Lucknow on 12th August 2024, in the presence of CMA Rajendra Singh Bhati, Council Member and Chairman (CAT) alongwith senior DGR officials



CMA Suresh Gunjalli, Council Member, ICMAI, CMA Girish K, RCM, SIRC-ICMAI, CMA G N Venkataraman, Former President, ICMAI and CMA Umesh Kini, Sr. Member met Sri Shelly Jindal, Pr. CCIT, Karnataka & Goa on 09.08.2024 to discuss on Professional Development Matters

ACCELERATING INDIA'S TRANSPORT AND LOGISTICS SECTOR – A CORRIDOR TO EVOLUTION

Abstract

India's transport and logistics sector is undergoing a dynamic transformation, evolving into a highly efficient and integrated system, essential for the country's economic growth. The sector, valued at \$160 billion in 2022, is projected to reach \$215 billion by 2027, spurred by strategic initiatives like the Bharatmala project and the implementation of the Goods and Services Tax (GST). These efforts have streamlined supply chains, reduced logistics costs, and enhanced national connectivity, critical for both economic and defense purposes. Additionally, innovations in green logistics, smart cities, and satellite-based toll collection are paving the way for a sustainable and modernized logistics landscape. As these initiatives continue to develop, India is positioning itself as a global logistics hub, driving economic progress and strengthening national security.

India's transport and logistics sector has undergone a significant transformation, evolving into a more efficient and integrated system. The logistics industry, valued at \$160 billion in 2022, is expected to reach \$215 billion by 2027, driven by Government initiatives like the "Bharatmala" project, which has developed over 35,000 km of highways, boosting connectivity across the nation.

The logistics cost in India, accounting for 14 per cent of the GDP, significantly impacts the pricing of goods. Efforts to reduce these costs, such as the implementation of the goods and services tax (GST) in 2017, have streamlined the supply chain by eliminating state-level taxes, thus reducing transportation delays.

Connectivity development is crucial for national security, enhancing defence logistics, and ensuring rapid mobilization of resources. The push for green logistics, smart cities, and logistics parks reflects a commitment to sustainability and innovation.

Furthermore, the introduction of satellite-based toll



CMA Sunil Kumar Palai

Head of Finance and Operations
Fractal Picture Private Limited
Mumbai
skumars2204@yahoo.co.in

collection systems is revolutionizing the transportation landscape, reducing congestion, and cutting down travel times.

In short, these initiatives are positioning India as a global logistics hub, enhancing economic growth and security.

India's transport and logistics sector has experienced a significant transformation over the past decade, becoming a critical driver of the nation's economic progress. This transformation is underpinned by strategic initiatives, technological advancements and policy reforms that have collectively enhanced the efficiency, connectivity, and sustainability across the sector.

TRANSFORMATION OF TRANSPORTATION AND LOGISTICS INDUSTRY – A DECADE JOURNEY

The logistics industry in India has seen robust growth over the past decade, driven by infrastructure development, digitalization, and increased investment. The sector's growth is reflected in the following key statistics:

Year	Industry Value (USD Billion)	Growth Rate (CAGR) (per cent)
2012	85	9.0
2017	125	8.5
2022	160	10.5
2027 (Projected)	215	10.5

India's logistics industry is growing at a compounded

annual growth rate (CAGR) of 10.5 per cent, with the market expected to reach \$215 billion by 2027. Key drivers include the implementation of e-way bills, electronic tracking systems and automated warehousing, which have enhanced the operational efficiency, reduced transit times, and lowered costs.

IMPACT OF LOGISTICS COST IN PRICING OF GOODS

Logistics costs in India are significantly higher compared to global standards, impacting the pricing and competitiveness of goods:

Country	Logistics Cost as % of GDP
India	14
United States	8
Germany	9
Japan	11

India's logistics costs account for 14% of GDP, compared to 8-11% in developed economies. High logistics costs add to the final price of goods, making Indian products less competitive in global markets. Efforts to reduce these costs—such as infrastructure improvements, policy reforms, and increased efficiency—are essential for enhancing India's trade competitiveness.

CONNECTIVITY DEVELOPMENT – FOR SECURING THE COUNTRY'S DEFENCE MECHANISM

Strategic connectivity development is crucial for both economic growth and national security. Projects like *Bharatmala* have played a significant role in this regard:

Defence Impact Area	Development Initiative	Outcome
Border Area Connectivity	<i>Bharatmala</i> and Border Roads Organization (BRO) projects	Enhanced rapid deployment of defence resources
Strategic Transport Corridors	Dedicated Freight Corridors (DFCs) and Expressways	Improved mobility and logistics efficiency for defence operations
Military Logistics Infrastructure	Airports, railways, and port expansions	Facilitated faster movement of military assets and personnel

Improved infrastructure in border areas and strategic

transport corridors ensures the rapid mobilization of defence forces and the efficient movement of defence equipment and personnel, bolstering India's defence capabilities.

FLAGSHIP HIGHWAY PROJECT – “BHARATMALA” THE JOURNEY SO FAR

The *Bharatmala* project is one of India's largest infrastructure initiatives, aimed at improving road connectivity across the country:

Project Component	Target	Achievements (As of 2023)
National Highways Development	65,000 km by 2025	35,000 km completed
Economic Corridors	26,200 km	15,000 km under construction
Border and International Connectivity	5,000 km	3,000 km completed
Port Connectivity Roads	2,000 km	1,200 km completed

The *Bharatmala* project has led to the construction of over 35,000 km of highways, significantly improving connectivity between economic hubs and remote areas. This initiative is expected to reduce travel time by 20-25 per cent, lower logistics costs, and enhance the efficiency of freight movement across the country.

GREEN LOGISTICS TECHNOLOGY, SMART CITIES, LOGISTICS PARKS – NEW GENERATION INNOVATION

Innovation is driving the future of India's logistics sector, with a focus on sustainability and efficiency. Key areas of innovation include:

Innovation Area	Key Developments	Impact
Green Logistics	Adoption of Electric Vehicles (EVs), alternative fuels, and energy-efficient practices	Reduced carbon footprint, lower fuel costs
Smart Cities	Integration of logistics hubs with urban planning	Optimized urban freight movement, reduced congestion
Logistics Parks	Development of integrated logistics parks	Enhanced warehousing and distribution efficiency, reduced operational costs

The adoption of green logistics technology, smart cities and logistics parks reflects India’s commitment to sustainability and modernization. These innovations are reducing the carbon footprint of logistics operations, optimizing urban freight movement, and enhancing the overall efficiency of the sector.

TRANSPORTATION LANDSCAPE IN INDIA

India’s transportation landscape is evolving with the integration of multi-modal logistics solutions, which include road, rail, air, and waterways:

Mode of Transport	Percentage of Freight Handled (2023)	Key Developments
Road	60	Expansion of highways, introduction of expressways
Rail	30	Dedicated Freight Corridors (DFCs), modernization of rail infrastructure
Air	5	Development of air cargo hubs, increased connectivity
Inland Waterways	5	Development of National Waterways, promotion of coastal shipping

The development of Dedicated Freight Corridors (DFCs) and inland waterways is reducing the dependency on road transport, which currently handles 60 per cent of the country’s freight. These initiatives are enhancing the efficiency of cargo movement and reducing logistics costs.

GST IMPACT ON LOGISTICS INDUSTRY

The introduction of the goods and services tax (GST) in 2017 has been a game-changer for the logistics sector:

Impact Area	Effect	Statistics
Transit Times	Reduced by up to 20 per cent	Average transit time reduced from 7 days to 5 days
Warehousing	Consolidation of smaller warehouses into larger regional hubs	Reduction in the number of warehouses from 20 to 7 per region
Supply Chain Efficiency	Streamlined operations and reduced costs	Cost savings of 5-10 per cent across supply chains

GST has streamlined supply chains by eliminating state-level taxes and creating a unified market. This has resulted in faster transit times, the consolidation of warehouses, and overall improvements in service quality and reliability.

SATELLITE-BASED TOLL COLLECTION

Satellite-based toll collection, such as the FASTag system, is revolutionizing highway management:

Benefit	Outcome	Statistics
Congestion Reduction	Faster travel times, reduced queues at toll plazas	Average time at toll plazas reduced from 10 minutes to 2 minutes
Revenue Collection Efficiency	Increased transparency and accountability	Toll collection efficiency improved by 15 per cent
Environmental Impact	Lower emissions due to reduced vehicle idling	Fuel savings of 30-50 liters per vehicle per year

The FASTag system has reduced the congestion at toll plazas, leading to faster travel times and fuel savings. This technology has also improved the efficiency of revenue collection and reduced the environmental impact of vehicle emissions. **MA**

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LOGISTICS LEVERAGE AND EVOLUTION IN TRANSPORTATION INFRASTRUCTURE- PERPETUAL AUGMENTATION OF THE EXPANSION OF INDIAN ECONOMY

Abstract

The logistics sector is an essential component of an economy, having a bidirectional causal relationship with its growth potential. India's GDP witnessed a significant five-fold growth in the last two decades, of which much can be attributed to the successful policy intervention, infrastructure improvement and perpetual capital formation. This study performs a representative sectoral time-series analysis, establishing the sustainable expansion trajectory of the logistic infrastructure in India. A move towards green and sustainable world-class infrastructure enabled by policy initiatives and increased budget outlays has further strengthened the logistic and transportation sector's role as a positive transmission channel to economic growth and inclusive development.

"The line between disorder and order lies in logistics..." – Sun Tzu

INTRODUCTION

India's growth from a USD 820 million economy in 2005 to a more than USD 4 trillion economy in 2024 is a spectacular feat in its own right. This five-fold increase is achieved despite several external as well as internal politico-economic shocks and challenges like the financial crisis of 2007-08, the European Debt Crisis of 2009-19, COVID-19 and many other interruptions of comparative smaller scale and limited spread. The venous pathways of a developing economy drive the growth momentum from infrastructure development and upgradation synchronized with the requirement of a growing economy. The transportation and logistics sector is of critical importance for the improvement of various macro-economic variables and has a multiplier effect on the economic development, social welfare and the creation of economic opportunities



CMA Avik Ghosh

Assistant General Manager
Reserve Bank of India
Kanpur
avikghosh@rbi.org.in



Ankit Magotra

Assistant Manager
Reserve Bank of India
Kanpur
amagotra@rbi.org.in

(Rodrigue, 2016). Further, there exists a bidirectional causal relationship between the logistics sector and economic growth (Muslija et al., 2021). Logistics is the process of efficient planning and effective execution of the movement of people and materials. The prime objective of the logistics sector is to cater to the mobility needs in terms of capacity, coverage and quality. The logistics ecosystem includes infrastructure (railway, road, ports, airports), processes (laws, rules, and regulations), and human resources. The efficient interaction of these sub-components enables economic development and inclusive growth.

POLICY INITIATIVES AND CURRENT STATUS

In India, multiple Ministries and Departments (Ministry

of Road, Transport and Highways, Ministry of Ports, Shipping and Waterways and Ministry of Civil Aviation, Ministry of Railways, Ministry of Posts) regulate the growth and development of the transportation and logistics sector. Given the importance of the sector to the economy, the budgetary allocations have increased more than nine-fold in the last decade. The cumulative increase in budgetary allocations resulted in world-class infrastructure creation and capacity building. Understanding the critical aspect of the transportation and logistics sector in developing the nation's economy, successive Governments have taken measures to modernize and develop the sector.

Various studies have pointed out appropriate and effective measures to improve the efficiency of the logistics sector. Inter-zone connectivity of economic zones, dedicated corridors, routes, last-mile connectivity options and long-haul trucking would improve freight and passenger movement (Sahu *et al.*, 2022). Growth in road length per thousand population positively correlates with the region's economic growth (Ng *et al.*, 2019). Further, road connectivity to the hinterland (last-mile connectivity) has negligible environmental effects (Asher *et al.*, 2020). Standardization of commercial transport fleets (trucks) needs to be done as smaller commercial vehicles lack cost-efficiency and cause more emissions. A move towards multi-axle heavy commercial vehicles is necessitated. With this in view, policy initiatives like Logistics Efficiency Enhancement Program (LEEP), National Logistics Policy (NLP, 2022), Onboard Driver Assistance and Warning System (ODAWS), Sagarmala Project, Parvatmala Project, Gati Shakti Mission, Atal Mission for Rejuvenation and Urban Transformation, National Air Cargo Policy, and National Electric Mobility Mission Plan were introduced, each addressing a specific challenge inherent to the sector. This targeted approach

to tackling the issues has generated synergistic outcomes, creating a feedback effect across several sectors of the economy. The overall emphasis is to develop a robust, adaptable, ecologically sensitive world-class infrastructure to maintain the growth of the economy. Accordingly, in addition to the development of the sector, initiatives to reduce the carbon footprint and fulfill the mandatory and voluntary international commitments have been taken, which include Ethanol Blended Petrol (EBP) Programme, Global Biofuels Alliance, adoption of Bharat Stage (BS) – VI Emission Standards, National Green Hydrogen Mission, National Electric Mobility Mission Plan 2020 (NEMMP), Forum for Decarbonizing Transport in 2021, Faster Adoption of Manufacturing of Electric Vehicles (FAME) Phase I and Phase II, further strengthening the logistics ecosystem. The Niti Aayog has also provided comprehensive framework and guidelines for zero-emission trucking in India (NITI Aayog *et al.*, 2022).

With these policy interventions and Government support, the logistics and transportation sector has seen significant progress in its infrastructure development and enlargement of its network serving all parts of the country. The network of roads and railways has both improved considerably over the years keeping in line with the requirements of the Indian economy (Chart 1). Further, the motor vehicle density has also improved in sync with the GDP per capita indicating aligned income and consumption patterns (Chart 2). The freight movement has increased due to increase in trade volumes (both external as well as internal). The dip is due to the COVID-19 pandemic, but a 'V' shaped recovery is witnessed, indicating the resilience of the sector and the Indian economy (Chart 3). The intra-city transport system (Urban as well as sub-urban passenger movement) indicates an increase in activity for personal as well as business commutes (Chart 4).

Chart 1: Length of Roads - Highways (PWD) and Length of Railway Track by Year

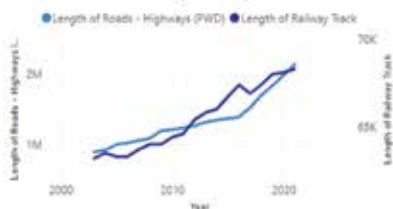


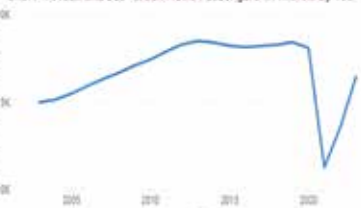
Chart 2: Per capita GDP and Total Registered Motor Vehicle per 100 km of Road Length by Year



Chart 3: Passenger and Cargo carried by Air by Year



Chart 4: Urban and Sub-Urban Metro Passengers (in million) by Year



REGRESSION MODELLING – RAILWAY FREIGHT

The modal mix of transportation is an effective indicator of logistic efficiency. As the cost of freight per metric ton kilometer is the lowest for railways, there is an intentional push towards increasing the modal share of railways. Keeping this in view, a representative sample is being taken for time series analysis of the daily railway freight revenue from July 2019 till November

2023. Auto-correlation Function (ACF) and Partial Autocorrelation Function (PACF) plots (Chart 5, 6) describe the dependence of the outcome variable i.e., the daily railway freight revenue on its past value and the possibility of an Autoregressive Moving Average (ARIMA) model to forecast it. Three auto-regressive lags and one moving average lag are visible through these plots.

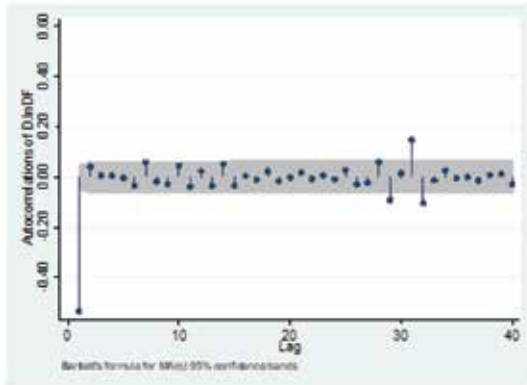


Chart 5

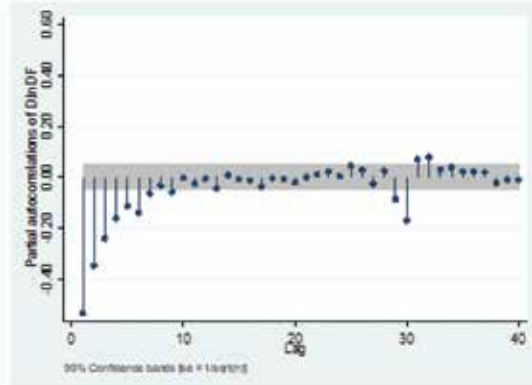


Chart 6

The ARIMA model of the daily Railway freight (DRF) depicts that all three lag orders are significant (at a 1 per cent level). All the lag orders have positive co-efficient, indicating that the lag orders up to three are contributing to the improvement/growth in prospective railway revenue (Table 1). Their magnitudes reflect the higher contribution of the most recent lag order. This representative empirical attempt is a sectoral subset and signifies the sustainability of the sector’s growth in terms of footprint and revenue. It also supports the prospective growth trajectory of logistics infrastructure in India.

Table 1: Regression Coefficients and Results

Sample: 13jul2019 - 29nov2023, but with gaps Number of obs = 1580
 Wald chi2(4) = 186887.36
 Log likelihood = -11475.61 Prob > chi2 = 0.0000

DailyFreight	Coef.	OPG Std. Err.	z	P> z	[95% Conf. Interval]	
DailyFreight _cons	3917.463	432.3715	9.06	0.000	3070.031	4764.896
ARMA						
ar						
L1.	.8582903	.0150045	57.20	0.000	.8288819	.8876987
L2.	.0735224	.009685	7.59	0.000	.0545402	.0925046
L3.	.0646178	.0141152	4.58	0.000	.0369525	.092283
ma						
L1.	-.812278	.0158751	-51.17	0.000	-.8433927	-.7811634
/sigma	344.7093	1.63918	210.29	0.000	341.4966	347.9221

Note: The test of the variance against zero is one sided, and the two-sided confidence interval is truncated at zero.

Thus, the empirical equation depicting the daily Railway freight (DRF) is as under:

$$DRF_t = 3917.46 + 0.858DRF_{t-1} + 0.073DRF_{t-2} + 0.064DRF_{t-3} + \epsilon_t - 0.812 \epsilon_{t-1}$$

INDIA MOVES TOWARDS SUSTAINABLE LOGISTICS INFRASTRUCTURE

World Bank published Logistics Performance Index (LPI) Report, 2023 shows India's considerable progress in LPI scores across all constituents as well as improvement in global ranking (*Arvis et al., 2023*). India has been successful in reducing its logistics cost as a percentage of GDP considerably¹, creating an efficient ecosystem for future growth. Further, the policy effectiveness is being reviewed through the Logistics Ease Across Different States (LEADS) Report, which categorizes States into achievers, fast movers, and aspirers based on perceptions. Adoption of global standards and learning from global peers would further augment capacity building and implementation of cutting-edge technology and processes. Addressing the issue of a skewed modal mix towards roads and the greater contribution of railways in freight carriage will generate a cost-effective and last-mile connected ecosystem. Also harnessing new-age technologies like intelligent transportation systems (ITS), electronic toll collection, intelligent traffic management, and V2X communication will streamline the processes and structured management of resources.

CONCLUSION

India's rise as the third largest economy in 2024 is due to impressive growth rates over the last two decades, underpinned by several reforms, new policies in line with global standards and the development of world-class infrastructure. Transportation and logistics have provided critical support to the country's growth trajectory, serving as the decisive driving factors to augment perpetual capital formation. There has been significant improvement in both transportation (public as well as private) and logistics (material) with the development of several expressways, highways, ports, trade corridors, multimodal logistic parks, etc. The capital expenditure and multiple policy interventions towards improving logistics infrastructure cast no doubt on the intent of the policymakers to give it a strong fillip. However, the improvement of transportation and logistics infrastructure needs to be commensurate with the requirements and conditions for further economic growth. Empirical evidence in this analysis pinpoints

"The venous pathways of a developing economy drive the growth momentum from infrastructure development and upgradation synchronized with the requirement of a growing economy"

the role of present-day sectoral contribution/performance in shaping the growth potential of the future. A detailed SWOT analysis must be carried out, identifying the key areas requiring special attention and further policy intervention. Additionally, operational efficiency, sustainable infrastructure and greening of the Transport and logistics sector will provide a competitive

advantage to India in infrastructure development, bolstering its role as a major transmission channel towards an all-encompassing and diversified economic growth.

Disclaimer: 'The views expressed in this article are purely personal views of the authors and not those of the Reserve Bank of India. MA

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¹ https://www.ncaer.org/wp-content/uploads/2023/12/NCAER_Report_LogisticsCost2023.pdf

ADVANCING SUSTAINABILITY: THE IMPACT OF GREEN LOGISTICS TECHNOLOGY AND SMART LOGISTICS PARKS ON FUTURE CITIES DEVELOPMENT

Abstract

This article delves into the impact of logistics technology and smart logistics parks on sustainable urban development. It underscores the importance of integrating eco-practices and advanced technologies, like vehicles and IoT systems to lessen the environmental impact of logistical activities. By examining the real-world applications and benefits of these innovations through a case study on the GMR Hyderabad Airport Logistics Park in India, the article underscores the need for collaboration among Governments, businesses, and communities to foster the transition towards logistics systems that are both sustainable and effective. This collective effort aims to foster eco-conscious cities for future generations.

INTRODUCTION

Logistics is growing because of globalization and online purchasing. However, this expansion has increased carbon emissions, transportation congestion and resource depletion, highlighting the need for proper practices. The demand for logistical systems rises with urban population, making sustainability essential for future urban development. This issue is addressed by green logistics technology, which reduces supply chain impacts. This technique improves logistics with eco-fuels, electric vehicles, sustainable packaging and enhanced data analysis. To balance economic growth with stewardship, smart cities combine technology and infrastructure to improve citizens' lives. Logistics reduces inefficiencies and promotes sustainable mobility in cities.

Integrating logistics into city planning improves resource management and promotes carbon reduction. Logistics hubs inspire creativity in cities by creating space for enterprises to use cutting-edge technology



CMA Soumen Dutta

Corporate Professional

Navi Mumbai

soumend.cfo01@mdpalumni.iimcal.ac.in

and green practices. These centres use technology and collaboration to streamline logistics and reduce environmental impact. Integrating eco-logistics systems and intelligent logistics centers helps global cities become more sustainable.

EXPLORING GREEN LOGISTICS TECHNOLOGY

Green logistics technology is about integrating eco-methods and strategies into the logistics and supply chain sectors. Nowadays, companies worldwide recognize the importance of adopting logistics practices in the light of increasing environmental issues such as climate change, pollution, and dwindling resources. The core goal of logistics is to minimise waste, emissions and energy usage in activities to contribute towards building a sustainable future with a reduced ecological impact.

ESSENTIAL ELEMENTS OF ENVIRONMENTALLY-FRIENDLY LOGISTICS

Reducing the impact of transportation and warehousing activities. Methods such as using fuel, integrating electric and hybrid vehicles, and optimising transportation routes can achieve this. Companies are increasingly interested in fleet management systems that leverage GPS and real-time data analysis to improve route efficiency, minimise travel distances, and reduce fuel consumption. By employing technologies

like telematics, organisations can closely monitor vehicle performance and driver conduct to promote friendly practices. A crucial aspect of logistics involves embracing eco-packaging solutions. Traditional packaging materials have the potential to generate waste and harm the environment. Businesses are now turning to packaging alternatives that're biodegradable, recyclable, or reusable to lessen their impact. This transition requires a reassessment of supply chain processes to integrate packaging as a core component of product distribution.

DATA ANALYTICS AND INTERNET OF THINGS

The Internet of Things (IoT) and data analysis have significantly impacted the logistics industry, enhancing operational transparency and optimizing resource allocation. Companies now have the ability to collect and analyse large volumes of data from various sources, leading to better decision-making. Organizations can identify inefficiencies through real-time monitoring of logistics processes and make improvements to enhance resource usage efficiency. IoT devices provide insights into inventory levels, transportation conditions and storage environments, contributing to friendly logistics efforts. It can significantly reduce waste and energy consumption by optimising warehouse operations and tracking goods movement over time.

ENSURING REGULATORY COMPLIANCE AND SAFEGUARDING BRAND REPUTATION

Green transportation technology enables businesses to comply with the growing regulations set by authorities around the world. Emphasising sustainability not only ensures compliance with the requirements but also serves as a powerful marketing tactic. Businesses that adopt eco-logistics practices often enjoy a reputation among consumers who prioritise environmental consciousness. The shift in consumer preferences is increasingly evident, with many customers willing to pay a premium for goods and services.

ADVANTAGES OF IMPLEMENTING ENVIRONMENTALLY - FRIENDLY LOGISTICS PRACTICES

The benefits of using eco-logistics technology extend beyond environmental considerations. Companies can save money by adopting logistics methods. Enhancing

"Green logistics technology is essential for creating sustainable cities that can handle rising urbanisation and environmental degradation"

fuel efficiency, minimizing waste and optimizing operations result in lowering the long-term expenses. Moreover, businesses often witness customer satisfaction through dependable delivery schedules and reduced environmental impact. Additionally, with the increasing inter-connectedness of supply chains, companies that

prioritise logistics are better positioned to excel in a fiercely competitive market environment. Businesses that prioritise sustainability attract both consumers and partners, providing them with a competitive advantage. Ultimately, green logistics technology contributes to the development of the logistics and supply chain sectors. By integrating sustainable approaches, organisations can diminish their footprint while enhancing the effectiveness, complying with regulations and fostering stronger ties with customers. Embracing eco-logistics isn't just essential; it presents an opportunity for companies to take the lead in an evolving economic landscape.

THE LOGISTICS REQUIREMENTS OF SMART CITIES:

Metropolitan areas, known as cities, utilise technologies and data analysis to enhance the well-being of residents, promote sustainable practices, and allocate resources effectively. Smart cities feature inter-connected infrastructures, sensor networks, and real-time data processing capabilities. These elements enable cities to adapt flexibly to changing conditions, optimise public service delivery and encourage citizen engagement. Due to growth, cities' logistics demands are rapidly evolving.

The expanding population increases the demand for goods and services, putting pressure on existing transportation systems. Urban logistics plays a role in supporting activities and ensuring efficient product movements. Smart city initiatives must address this challenge by implementing solutions that align transportation and logistics with development.

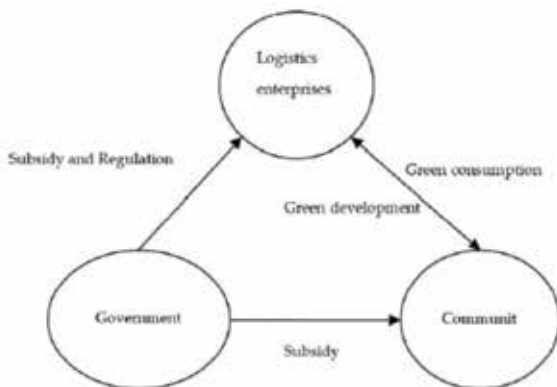
However, cities face challenges in managing logistics. Congestion is an issue as rising vehicle traffic leads to delays in deliveries, increased fuel consumption, higher emissions and poor air quality. Outdated infrastructure struggles to cope with the growing demand for goods transport. Inefficient cargo handling may result in resource wastage, contradicting the sustainability objectives of environments. Incorporating logistics into city planning helps to overcome challenges. This

approach fosters collaboration among stakeholders such as Government officials, businesses, and residents, ensuring the integration of logistic considerations into development policies.

By leveraging technologies like data analytics and IoT devices, cities can enhance processes, improve traffic management and establish efficient supply chains tailored to urban needs. To address issues, innovative solutions are emerging. The use of vehicles, bicycles, and autonomous drones for last-mile delivery boosts efficiency by reducing traffic congestion and pollution while enabling deliveries.

Multimodal transport systems play a role in integrating modes of transportation such as rail, road, and air to create efficient and resilient logistical networks within urban areas. As urban centres transition into cities, their logistical demands become increasingly complex. By incorporating logistics into planning and embracing cutting-edge technologies, cities can develop sustainable and organized environments that meet residents' needs while minimizing adverse environmental impacts. Smart city initiatives offer a path towards achieving these goals by promoting resilience and enhancing overall quality of life.

FIGURE 1
LOGISTICS ENTERPRISES ESTABLISH RELATIONSHIPS AMONG THE PARTICIPANTS IN GREEN DEVELOPMENT DECISION-MAKING.



SWOT MODEL EMPLOYED TO EVALUATE CURRENT STATE OF GREEN LOGISTICS

In 1985, Potter, a renowned management expert from Harvard University, wrote the book “Competitive Advantage,” which proposed methods based on SWOT analysis. Given its widespread use in several research studies, SWOT analysis is a commonly employed tool. SWOT analysis method combines internal and external information to evaluate the main purpose. It analyses

the internal strengths and weaknesses, as well as the exterior opportunities and threats, in order to determine the most acceptable strategic approach.

MATRIX STRUCTURE OF SWOT

	Strength(S)	Weakness(W)
Opportunity(O)	S+O= make the most of the advantage and take opportunity	W+O= improve the opportunity and overcome the disadvantage
Threat(T)	S+T= make full use of the advantage and keep away from the threats	W+T=reduce the inferior and evade from the threats

(Date Resource: analysis of green logistics in Yangtze River Delta based on SWOT)

Strength

The Indian Government prioritises sustainable development. The growing population and economic progress in India have put a significant strain on resources and the environment. As a result, ensuring sustainable development has become a crucial policy objective. This commitment is reflected in the Annual Budgets and budget speeches of the FM.

Weakness

The business enterprises and Government of India acknowledge the importance of green logistics. However, the logistics industry in India started relatively late compared to international standards. Green logistics, in particular, is just beginning to gain traction, resulting in limited knowledge among people. When comparing various aspects of green logistics with those of more developed countries, there is a significant gap in both technology and related policies.

Opportunities:

1. **An optimal development environment:** Since the implementation of economic reforms and opening up to international trade, the Indian economy has exhibited a positive and consistent growth trajectory. This has created a favourable atmosphere for the development of domestic green logistics.
2. **The global phenomenon of environmentally friendly logistics;** Green logistics align with the worldwide trend of societal growth, specifically the trend of globalisation. The emergence of green logistics presents a promising opportunity for Indian firms to integrate into the global community.
3. **Significant force exerted by the World Trade Organisation;** Following its accession to

the WTO, renowned global enterprises have progressively established their presence in India. Consequently, an increasing number of advanced foreign logistics concepts have been introduced to Indian enterprises, with a strong emphasis on environmentally friendly production, consumption, and circulation. This has significantly propelled the growth of green logistics in India. The adoption and implementation of green logistics will be embraced and executed more expeditiously by Indian businesses and the general population.

Threat

Barrier to sustainable consumption: Weak laws make Government eco-consumption supervision insufficient. We have lower green consumption standards than other developed nations. Profit-driven firms may prioritise profits over concerns. The Government may impose restrictions on these businesses. Unfortunately, our country lacks industry and product laws, as well as a clear procedure to reward or punish such activities. The EPA cannot battle pollution alone, given its competence. With pollution rising, regulatory institutions are essential to ensure environmental protection. Law and regulation deficiencies make environmental protection difficult. Despite limited authorities with large duties, complex sectoral or regional issues remain unaddressed. Some environmental regulators impose fines on companies that are deteriorating. This method tends to worsen issues. Indian green product management is confusing due to a lack of norms and tests. This ambiguity erodes customer product trust. Without regulations, our products' quality and technological expertise have decreased. Our products are now distinct from those of wealthy nations. The variety of local products falls short of consumers' growing needs and purchasing power.

LOGISTICS PARKS SERVE AS CENTRES FOR INNOVATION

By offering a variety of services and facilities, logistics parks aim to enhance logistics and supply chain operations. The main goal of these parks is to enhance the efficiency of moving, storing, and distributing goods while also promoting innovation and sustainability in the logistics industry.

Logistics offer a hub where businesses can access logistics infrastructure such as warehousing, transportation services, and value-added services; logistics parks facilitate smooth operations and collaboration among different stakeholders. Modern

logistics parks have characteristics that set them apart from warehousing solutions.

Robotics and automated systems play a crucial role in automating processes such as inventory management, sorting, and packaging. These technologies not only boost efficiency but also cut down labour costs and reduce errors. Furthermore, the integration of technologies and sustainable practices is critical to the design and operation of logistics parks. These facilities often utilise renewable energy sources like panels and eco-friendly materials to lessen their environmental impact.

The significance of logistics parks goes beyond efficiency; they also contribute significantly to reducing environmental harm. Companies can optimize transportation routes by consolidating activities in certain areas, leading to lower emissions and fuel consumption. Improved logistics systems play a role in enhancing supply chain management, leading to decreased inventory waste and more efficient use of resources. This in turn allows logistics parks to make an impact on the sustainability goals of both businesses and cities.

Internationally, various logistics parks showcase methods that boost their functionality and sustainability. For example, the Amazon Fulfillment Centre located in Dubai Logistics City is a cutting-edge facility that utilises robotics and automated systems to expedite order processing and reduce delivery times. Similarly, the London Gateway Logistics Park integrates technology with modal transportation systems that connect sea, road, and rail networks to efficiently streamline the movement of goods. These instances demonstrate the shift towards modernising logistics infrastructure to meet the increasing demands for effectiveness and sustainability.

Effective collaboration between the private sector entities is essential for establishing and operating logistics parks. Public entities play a role in providing infrastructure, regulatory frameworks, and incentives for companies to invest in sustainable practices. Meanwhile, private firms bring technologies and expertise into the mix, creating an environment for progress and growth. This collaborative approach ensures that logistics parks are able to effectively tackle logistics challenges while promoting prosperity and environmental responsibility.

In essence, logistics parks are innovation hubs that improve the effectiveness and eco-friendliness of the logistics and supply chain sectors. Through the adoption of automation, friendly technologies, and cooperation among parties, these sites play a key role in shaping the outlook of urban logistics and supporting sustainable

development objectives.

Green indicators encourage rationalisation of activities, such as CO₂ reduction, highlighting the need to combine emission reductions with cost savings.

FIGURE 2

Categorization of measures according to their monetary and ecological impact Source: Costs and Benefits of Green Logistics. 4flow Supply Chain Management Study 2013, collective work, 4flow, Berlin 2013.

Emission reduction	Positive	Ecological	Ideal
	Negative	Ineffective	Economic
		Negative	Positive
		Cost savings	

INDIAN CASE STUDY

This study examines the logistical environment in India and the obstacles encountered.

India's logistics sector is undergoing transformations due to the country's economic growth. This industry is expected to play a role in driving the nation's progress. Logistics, with a market size exceeding \$200 billion and a substantial contribution to the GDP, plays an important part in facilitating trade and movement across India's terrain. However, there are challenges faced by the industry, such as outdated infrastructure, high operational costs, and complex regulatory issues. Logistics providers in India must navigate a market marked by inefficiencies, leading to delays in deliveries and increased transportation expenses. Moreover, there is an increasing awareness of the need to address issues. The rising emissions from logistics practices have put pressure on both the government and industries to adopt more sustainable methods.

Economic Growth and Its Impact on Logistics

India's economy has been on a trajectory thanks to

the growth of retail, online shopping and the deepening integration of global markets. The surge in consumer demand for products and services has placed a burden on existing logistics networks. The expansion of industries such as pharmaceuticals, electronics and food processing fuels the rising need for logistics solutions. These sectors rely on adaptable logistics to meet their changing demands. Given the scenario, significant changes in the logistics sector are required to accommodate the expanding economy and enhance our global competitiveness.

Infrastructure and environmental impact challenges

India's transportation system is still dealing with obstacles like crowded roads, inadequate railway systems and a lack of storage space despite having received funding. These challenges lead to delayed deliveries and higher operational expenses. Furthermore, it is critical to address issues such as carbon emissions from diesel vehicles and a large amount of packaging waste. This highlights the importance of adopting eco-logistics methods.

Specific Case Study: GMR Hyderabad Airport Logistics Park

The GMR Hyderabad Airport Logistics Park (GHALP) is a project that focuses on adopting logistics methods to address these issues. Located adjacent to the Rajiv Gandhi International Airport, GHALP spans 1,200 acres. It is carefully designed to facilitate efficient cargo operations and distribution.

Essential Aspects of the GMR Hyderabad Airport Logistics Park

The GHALP design guarantees connections between transportation methods like air travel, roads, and railways. Inventory control and order processing require state-of-the-art storage and distribution facilities equipped with technology and feature capabilities. This extensive logistics system can adeptly handle various types of cargo, including goods, pharmaceuticals, and high-value items.

Adopting sustainable logistics practices

GHALP focuses on sustainability in its operations. The park implements eco-friendly practices, such as using panels for renewable energy and reducing reliance on fossil fuels. GHALP shows its commitment to the environment through waste management strategies, such as sorting waste at the source and collaborating with

partners to recycle packaging materials. In addition, the park encourages the use of vehicles for short-distance deliveries to reduce emissions.

Significance in Facilitating Key Sectors

GHALP is crucial in supporting the supply chains of industries like pharmaceuticals and aerospace. India is a production destination, and GHALP plays a key role in managing logistics for items that require precise temperature control. They focus on upholding global quality norms in order to comply with regulations. In the aerospace sector, the park facilitates the movement of components and materials, aiding in the growth of aircraft manufacturing.

An examination of the effects on the environment and local economy is underway

The setting up of GHALP has greatly benefited the economy by creating job opportunities and supporting the development of associated businesses. The logistics park has attracted investments reinforcing its position, as a logistics center in South India. In terms of impact GHALPs focus on sustainability plays a role, in reducing carbon emissions from logistics activities and promoting eco practices within the industry.

Insights Gained and Effective Strategies for Future Advancements in Indi:

The GMR Hyderabad Airport Logistics Park sets a standard, for logistics projects in India. Lessons learned include the importance of integrating sustainability

into logistics infrastructure, the need for connectivity to enhance effectiveness and the value of partnerships with stakeholders like Government bodies and industry members. The insights gained from GHALP can guide advancements, promote the shift, towards a greener and more effective logistics environment that fosters economic growth while reducing environmental harm as India advances its logistics industry.

CONCLUSION

Green logistics technology is essential for creating sustainable cities that can handle rising urbanisation and environmental degradation. Logistics operations contribute to economic growth and urban effectiveness; therefore, eco-friendly approaches reduce environmental consequences and improve efficiency and service. Logistics shapes surroundings, emphasising the need for cities to prioritise economic and resident-friendly measures. Changing logistics demands require constant innovation. This entails using automobiles, data analytics, and various transport systems to reduce carbon emissions and streamline operations. Innovation alone isn't enough; stakeholders must collaborate. This encompasses corporations, Governments, and communities. Creating coherent, sustainable urban logistics strategies is important.. Businesses must invest in sustainable logistics solutions going forward. Governments must promote supply chain sustainability through legislation and infrastructure. Consumers may help sustainable companies by supporting them. We can build smarter, greener cities that benefit citizens and the environment. MA

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FLAGSHIP HIGHWAY PROJECT “BHARATMALA” THE JOURNEY SO FAR

Abstract

The Bharatmala Pariyojana, launched in 2017, is a flagship highway development project by the Government of India aimed at enhancing the country's road infrastructure. As one of the largest infrastructure initiatives in India's history, Bharatmala seeks to construct approximately 65,000 kilometers of highways and roads across the country. The project is designed to improve connectivity between rural and urban areas, boost trade and economic growth and reduce travel time across key economic corridors. This article explores the journey of the Bharatmala project thus far, focusing on its objectives, phases, and achievements. It also discusses the challenges encountered during its execution, including land acquisition, environmental clearances and financial constraints. Moreover, the article assesses the socio-economic impacts of the project, particularly in terms of regional development, job creation, and the overall modernization of India's transportation network.

INTRODUCTION

The *Bharatmala Pariyojana*, conceptualized and initiated by the Government of India in 2017, represents a major leap in the nation's efforts to create a world-class road network. As the country's largest highway construction project, *Bharatmala* aims to overhaul and expand the existing infrastructure, ensuring seamless connectivity across India. This initiative is expected to significantly contribute to the nation's economic development by reducing logistical costs, promoting regional integration and facilitating smoother movement of goods and people.

HISTORICAL CONTEXT AND NEED FOR THE PROJECT

India's road network, though vast, has historically



CMA Geeta Dhingra

Accounts Officer (IFA)

O/o Sr. Chief Engineer, Civil

BSNL, Chandigarh

dhingra.geeta@yahoo.co.in

been plagued by inefficiencies and gaps in connectivity. Before the launch of *Bharatmala*, the country's highway development was largely disjointed, with a focus on individual States rather than a cohesive national strategy. The need for a unified approach to road construction and management became apparent as India's economy grew and urbanization accelerated. The Golden Quadrilateral project and the National Highways Development Project (NHDP) were initial steps towards improving the road infrastructure, but a more comprehensive plan was necessary to address the burgeoning demands of the economy.

OBJECTIVES OF THE BHARATMALA PROJECT

The *Bharatmala Pariyojana* was conceived with several key objectives as outlined in the following paragraphs. :

- 1. Economic Corridor Development:** To develop around 50 economic corridors across the country, reducing the distance and travel time between key economic centers.
- 2. Inter-Corridor and Feeder Route Development:** To ensure that even smaller towns and cities are well-connected to the primary economic corridors.
- 3. Border and International Connectivity:** To enhance road connectivity to neighboring countries, facilitating trade and movement across international borders.
- 4. Port and Coastal Connectivity:** To improve

connectivity to major ports and coastal regions, supporting the Government’s *Sagarmala* initiative and boosting maritime trade.

- 5. **Greenfield Expressways:** To construct new expressways to reduce congestion and support high-speed vehicular movement.
- 6. **Development of National Corridors:** To optimize the existing national highway network and ensure that it serves as the backbone of the country’s road infrastructure.

PHASES OF THE PROJECT

The *Bharatmala* project is structured in multiple phases, with Phase I being the most significant and expansive.

Phase I

This phase involves the construction and upgradation of approximately 34,800 kilometers of highways. The focus is on economic corridors, inter-corridor routes, and feeder roads. The estimated investment for this phase is around INR 5.35 lakh crore.

Phase-I of *Bharatmala Pariyojana* includes development of the following:

Sr. No.	Scheme	Length (km)	Cost (Rs. crore)
1.	Economic Corridors	9,000	120,000
2.	Inter-Corridors & feeder roads	6,000	80,000
3.	National Corridor Efficiency improvement	5,000	1,00,000
4.	Border & International connectivity roads	2,000	25,000
5.	Coastal & port connectivity roads	2,000	20,000
6.	Expressways	800	40,000
	SUB TOTAL	24,800	3,85,000
7.	Ongoing Projects, including NHDP*	10,000	1,50,000
	TOTAL	34,800	5,35,000

Phase II and Beyond

Subsequent phases will build on the foundation laid in Phase I, extending the network further and addressing remaining gaps. These phases will continue to emphasize economic corridors, port connectivity, and the development of expressways.

FUNDING AND FINANCING

The *Bharatmala Pariyojana* is funded through a combination of budgetary allocations, market borrowings and private sector investments. The National Highways Authority of India (NHAI) plays a crucial role in the execution and financing of the project. Innovative financing models, such as the Toll-Operate-Transfer (TOT) model, have been adopted to attract private investment and reduce the burden on public finances. Additionally, the project has received financial support from multilateral agencies like the World Bank and the Asian Development Bank (ADB).

PROGRESS AND ACHIEVEMENTS

Since its inception, the *Bharatmala* project has made significant progress. Key achievements are set out in the following paragraphs.

- 1. **Economic Corridors:** Several economic corridors have been identified and are under various stages of construction. These corridors are expected to streamline freight movement and reduce travel times significantly.
- 2. **Expressways:** Notable expressways like the Delhi-Mumbai Expressway and the Bangalore-Chennai Expressway are part of the *Bharatmala* project. These projects are expected to revolutionize the long-distance travel and trade within the country.



- 3. **Rural Connectivity:** The project has also focused on improving connectivity in rural areas, thereby ensuring that the benefits of improved infrastructure reach even the most remote regions.
- 4. **Technology Integration:** The project has embraced modern technology, including GPS-based toll collection, intelligent traffic

management systems and real-time monitoring of construction activities.

5. **Job Creation and Economic Impact:** The construction activities under *Bharatmala* have generated significant employment opportunities, contributing to regional economic development. The improved road network is also expected to boost the logistics sector and reduce transportation costs, making Indian goods more competitive in the global market.

CHALLENGES AND ROADBLOCKS

Despite the progress, the *Bharatmala* project has faced several challenges as under:

1. **Land Acquisition:** Acquiring land for highway construction has been a major hurdle, with delays due to legal disputes, opposition from local communities, and bureaucratic red tape.
2. **Environmental Concerns:** Road construction, especially in ecologically sensitive areas, has raised environmental concerns. Ensuring compliance with environmental regulations while maintaining project timelines has been challenging.
3. **Funding Constraints:** The sheer scale of the project requires massive financial resources. While innovative financing models have been introduced, there is still a significant reliance on public funding, which can strain government finances.
4. **Coordination with States:** Since the project spans multiple States, coordination between the Central and State Governments is crucial. Differences in priorities and administrative hurdles at the State level have sometimes slowed down progress.
5. **Quality and Safety:** Ensuring that the highways built under *Bharatmala* adhere to high standards of quality and safety is essential. There have been instances where poor construction practices have led to road accidents and deterioration of newly built infrastructure.

SOCIO-ECONOMIC IMPACTS

The *Bharatmala* project is expected to have far-reaching socio-economic impacts as explained hereunder.

1. **Regional Development:** By improving connectivity to remote and underdeveloped regions, the project is likely to stimulate economic activity and reduce regional disparities.
2. **Urbanization:** Enhanced road infrastructure will support the growth of new urban centers, particularly along economic corridors. This can help in decongesting existing urban areas and promote balanced urban development.
3. **Job Creation:** The construction and maintenance of highways under *Bharatmala* have already created numerous jobs. Moreover, improved connectivity is expected to attract industries to previously inaccessible areas, further boosting employment.
4. **Reduction in Transportation Costs:** By optimizing freight and passenger movement, the project is likely to reduce transportation costs, which can have a positive impact on the prices of goods and services.
5. **Enhanced Safety:** The construction of modern highways with better safety features is expected to reduce the number of road accidents, saving lives and reducing the burden on the healthcare system.

"The *Bharatmala Pariyojana*, with its ambitious scale and comprehensive approach, is poised to play a pivotal role in this journey"

FUTURE PROSPECTS

The future of the *Bharatmala* project looks promising, with several initiatives planned to build on the successes of the past years. The Government has expressed its commitment to completing Phase I by the designated timeline, while also planning for the subsequent phases. The emphasis will continue to be on leveraging technology, ensuring environmental sustainability, and improving coordination among various stakeholders.

As India moves towards becoming a \$5 trillion economy, the importance of robust infrastructure cannot be overstated. The *Bharatmala Pariyojana*, with its ambitious scale and comprehensive approach, is poised to play a pivotal role in this journey. By enhancing connectivity and reducing logistical bottlenecks, the project will not only drive economic growth but also contribute to the overall well-being of the nation's population.

CONTRIBUTION OF CMAS IN THE BHARTMALA PROJECT

1. Financial Planning and Budgeting

CMAs are responsible for developing detailed

financial plans and budgets for the various phases of the *Bharatmala* project. They ensure that the project is cost effective and that funds are allocated efficiently across different segments.

2. Cost Management

One of the key roles of CMAs is to control and monitor the costs associated with the project. They analyze cost variations, identify areas where costs can be optimized, and ensure that the project stays within the allocated budget.

3. Risk Management

CMAs help identify financial risks associated with the project, such as cost overruns, delays, and changes in economic conditions. They develop strategies to mitigate these risks and ensure financial stability of the project.

4. Compliance and Reporting

CMAs ensure that the financial practices and transactions related to the *Bharatmala* project comply with relevant regulations and standards. They are also responsible for preparing financial reports and statements that provide transparency to stakeholders.

5. Project Appraisal and Feasibility Analysis

Before any major financial commitment is made, CMAs conduct detailed appraisals and feasibility studies. They assess the economic viability of different segments of the project, helping in decision making processes.

6. Contract Management

CMAs play a role in managing contracts with various contractors and vendors. They ensure that financial terms are adhered to and they monitor payment schedules, cost escalations, and contract modifications.

7. Stakeholder Communication

CMAs serve as a link between financial stakeholders and the project management team. They provide accurate and timely financial information to investors, Government agencies, and other stakeholders, ensuring transparency and accountability.

8. Auditing and Internal Controls

CMAs implement and oversee internal controls to prevent fraud and ensure that the project's financial resources are used effectively. They may also be involved in internal audits to assess the financial health of the project.

9. Long term Financial Planning

Given the scale and duration of the *Bharatmala* project, CMAs contribute to long term financial planning, ensuring that the project remains financially sustainable over its entire lifecycle.

10. Funding and Financing Strategies

CMAs assist in devising strategies for securing funding and financing for the project. This includes exploring various sources of finance, such as government funds, loans, and public-private partnerships.

CONCLUSION

The *Bharatmala Pariyojana* represents a transformative step in India's infrastructure development journey. While the project has encountered several challenges, the progress made thus far is commendable. The successful implementation of this project will have a lasting impact on the country's economy, regional development and the quality of life of its citizens. Moving forward, sustained focus on resolving the existing challenges, coupled with a commitment to innovation and collaboration, will be crucial in realizing the full potential of the *Bharatmala* project. **MA**

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FROM SMART CITIES TO GREEN SUPPLY CHAINS: A NEW ERA OF LOGISTICS

Abstract

This article explores the convergence of green logistics, smart city infrastructure, and advanced logistics parks as a cornerstone of sustainable urban development. By integrating cutting-edge technologies and environmentally friendly practices, these inter-connected systems can optimize supply chain efficiency, reduce carbon emissions, and enhance overall urban livability. The article delves into specific technological innovations, such as electric vehicles, autonomous transportation, and data-driven logistics, and their role in transforming traditional logistics operations. Furthermore, it examines the potential of logistics parks as sustainable hubs that integrate renewable energy sources, waste management and green building design. The article concludes by highlighting the synergistic relationship between these components and their contribution to creating resilient, eco-friendly, and future-oriented cities.

INTRODUCTION

The confluence of urbanization, e-commerce boom and growing environmental concerns has necessitated a paradigm shift in the logistics industry. Green logistic technology, in tandem with smart city initiatives and strategically located logistics parks, is emerging as a potent force driving this transformation. This article delves into the intricacies of these inter-connected elements, exploring their impact on sustainable supply chains, urban efficiency, and economic growth.

GREEN LOGISTIC TECHNOLOGY: THE CORNERSTONE OF SUSTAINABILITY

Green logistic technology encompasses a wide array of innovations aimed at minimizing the environmental footprint of logistics operations. From electric and hybrid vehicles to advanced route optimization software, these technologies are revolutionizing the industry.



CMA (Er) T.D. Baskaran

Lead Functional Consultant
Barry Wehmiller Design Group
Sriperumbudur
baskaran.td@gmail.com

- ⦿ **Electric and Hybrid Vehicles:** Transitioning to electric and hybrid vehicles is a pivotal step towards reducing greenhouse gas emissions and air pollution. These vehicles offer significant fuel cost savings and lower maintenance requirements, making them an attractive option for logistics companies.
- ⦿ **Advanced Route Optimization Software:** Leveraging data analytics and artificial intelligence, these software solutions optimize delivery routes, reducing fuel consumption and carbon emissions. By minimizing empty miles and traffic congestion, they contribute to improved air quality and reduced traffic-related accidents.
- ⦿ **Sustainable Packaging Materials:** The use of eco-friendly packaging materials, such as biodegradable and recycled materials, is gaining traction. This shift not only reduces waste but also enhances brand image and customer satisfaction.
- ⦿ **Warehouse Automation and Energy Efficiency:** Implementing automation technologies in warehouses can optimize energy consumption and reduce labor costs. Energy-efficient lighting, heating, and cooling systems further contribute to sustainability efforts.

SMART CITIES: THE IDEAL ECOSYSTEM FOR GREEN LOGISTICS

Smart cities, characterized by their use of technology to enhance urban living, provide an ideal environment for green logistics to flourish. By integrating logistics operations with urban infrastructure, smart cities can optimize resource utilization and reduce environmental impact.

- ⊙ **Last-Mile Delivery Optimization:** Smart city infrastructure, such as intelligent transportation systems and sensor networks, can facilitate efficient last-mile delivery. Real-time traffic data and delivery location information enable optimal route planning, reducing delivery times and emissions.
- ⊙ **Urban Consolidation Centers:** Establishing urban consolidation centers can help to reduce the number of delivery vehicles on city streets. By consolidating shipments from different sources, these centers can optimize delivery routes and reduce congestion.
- ⊙ **Micro-fulfillment Centers:** Located closer to residential areas, micro-fulfillment centers can enable faster and more sustainable deliveries. These facilities, often equipped with automation technology, can handle a variety of products, from groceries to electronics.
- ⊙ **Shared Logistics Platforms:** Encouraging the sharing of logistics resources, such as vehicles and warehouses, can improve utilization rates and reduce costs. Smart city platforms can facilitate the matching of supply and demand for logistics services.

LOGISTICS PARKS: CATALYSTS FOR ECONOMIC GROWTH AND SUSTAINABILITY

Logistics parks, strategically located industrial areas equipped with modern infrastructure and facilities, play a crucial role in supporting efficient and sustainable supply chains. These parks offer a range of benefits to businesses and communities.

- ⊙ **Improved Supply Chain Efficiency:** By providing centralized locations for warehousing, distribution, and transportation, logistics parks streamline supply chain operations, reducing lead times and costs.
- ⊙ **Economic Growth and Job Creation:** These parks attract businesses and create employment opportunities, contributing to regional economic development.
- ⊙ **Sustainability Initiatives:** Many logistics parks incorporate green building practices and sustainable infrastructure, such as solar panels and rainwater harvesting systems.
- ⊙ **Public-Private Partnerships:** Collaboration between Government and private sector entities is essential for the successful development of logistics parks. Public-private partnerships can leverage resources and expertise to create world-class facilities.

CHALLENGES AND OPPORTUNITIES

While the integration of green logistic technology, smart cities, and logistics parks holds immense promise, several

challenges must be addressed. These include:

- ⊙ **High Initial Investment:** Implementing green technologies and building smart city infrastructure requires significant upfront costs.
- ⊙ **Lack of Standardized Regulations:** The absence of clear and consistent regulations can hinder the adoption of green logistics practices.
- ⊙ **Data Privacy and Security Concerns:** The collection and analysis of large volume of data for smart city applications raise concerns about data privacy and security.

Despite these challenges, the potential benefits of this integrated approach are substantial. By embracing innovation and collaboration, stakeholders can create a more sustainable, efficient, and resilient logistics ecosystem.

ROLE OF GOVERNMENT POLICIES AND INCENTIVES IN PROMOTING GREEN LOGISTICS

Government policies and incentives are critical in driving the adoption of green logistic technologies. To foster a sustainable logistics sector, governments can think of the following measures.

- ⊙ **Implement carbon pricing mechanisms:** Imposing a carbon tax or cap-and-trade system can incentivize businesses to reduce their carbon footprint.
- ⊙ **Offer tax breaks and subsidies:** Providing tax incentives for purchasing electric or hybrid vehicles, installing renewable energy sources in logistics facilities and adopting green technologies can accelerate their adoption.
- ⊙ **Invest in infrastructure:** Governments can invest in charging stations for electric vehicles, improving public transportation networks and developing smart city infrastructure to support green logistics.
- ⊙ **Create regulatory frameworks:** Establishing clear and consistent regulations for green logistics can provide a level playing field for businesses and encourage innovation.
- ⊙ **Support research and development:** Investing in research and development of green logistic technologies can drive innovation and create new business opportunities.

Example: The California Air Resources Board (CARB) has implemented strict emissions regulations for heavy-duty vehicles, which has spurred the development and adoption of cleaner technologies in the State's logistics industry.

IMPACT OF E-COMMERCE ON THE LOGISTICS INDUSTRY AND THE NEED FOR SUSTAINABLE SOLUTIONS

The rapid growth of e-commerce has placed immense

pressure on the logistics industry. To meet the increasing demand for fast and efficient delivery, while minimizing environmental impact, sustainable solutions are essential:

- ⊙ **Last-mile delivery challenges:** The increasing number of small, frequent deliveries creates challenges for traditional logistics models. Exploring options like electric delivery vehicles, micro-fulfillment centers, and drone delivery can help address these challenges.
- ⊙ **Packaging waste:** E-commerce generates significant packaging waste. Promoting reusable and recyclable packaging materials, as well as implementing take-back programs, can help reduce this waste.
- ⊙ **Reverse logistics:** Efficiently managing returns is crucial for e-commerce sustainability. Implementing reverse logistics systems that minimize transportation and waste can contribute to a circular economy.

Example: Amazon has invested heavily in electric delivery vehicles and sustainable packaging to reduce its environmental impact.

IMPORTANCE OF HUMAN CAPITAL DEVELOPMENT IN THE GREEN LOGISTICS SECTOR

A skilled workforce is essential for the successful implementation of green logistic technologies and strategies. Investing in human capital development is crucial for the following reasons.

- ⊙ **Training and education:** Providing training programs on green logistics, sustainable practices, and emerging technologies can equip the workforce with the necessary skills.
- ⊙ **Attracting talent:** Creating a positive and sustainable work environment can attract and retain talented professionals in the logistics industry.
- ⊙ **Promoting innovation:** Fostering a culture of innovation and continuous learning can encourage employees to develop new ideas and solutions for green logistics.

Example: Many universities and colleges offer logistics and supply chain management programs with a focus on sustainability, preparing students for careers in the green logistics sector.

EMERGING TECHNOLOGIES AND THEIR POTENTIAL IMPACT

Emerging technologies are transforming the logistics industry and offer new opportunities for sustainability.

- ⊙ **Drones:** Drones can be used for last-mile delivery, reducing traffic congestion and emissions. However, safety and regulatory challenges need to be addressed.

- ⊙ **Autonomous vehicles:** Self-driving trucks and delivery vehicles have the potential to improve efficiency and safety, as well as reduce driver fatigue and emissions.
- ⊙ **Internet of Things (IoT):** IoT devices can be used to track shipments, optimize inventory management, and improve energy efficiency in logistics facilities.
- ⊙ **Blockchain:** Blockchain technology can enhance supply chain transparency, traceability, and security, contributing to sustainability efforts.

Example: Companies like UPS and FedEx are experimenting with drone delivery for specific use cases, such as delivering medical supplies to remote areas.

Emerging technologies are reshaping the logistics landscape, promising increased efficiency, sustainability, and customer satisfaction. Let's explore some of these technologies in more detail:

Drones: Beyond the Hype

While the potential of drones for delivery is undeniable, several challenges persist:

- ▲ **Regulatory hurdles:** Consistent and clear drone regulations are essential for safe and widespread operations.
- ▲ **Infrastructure:** Robust infrastructure for drone landing, charging, and package handling is required.
- ▲ **Payload limitations:** Current drone technology often restricts the weight and size of packages that can be delivered.

Despite these challenges, drones are already making a significant impact in specific sectors, such as the following.

- ⊙ **Medical deliveries:** Drones can quickly transport life-saving medical supplies to remote areas.
- ⊙ **Disaster relief:** Drones can be used to assess damage and deliver essential supplies in disaster zones.
- ⊙ **Inventory management:** Drones can be used for warehouse inventory checks and management.

AUTONOMOUS VEHICLES: THE ROAD AHEAD

Autonomous vehicles hold immense potential for transforming the logistics industry:

- ⊙ **Increased efficiency:** Self-driving trucks can operate 24/7, reducing transit times and fuel consumption.
- ⊙ **Improved safety:** Autonomous vehicles have the potential to reduce accidents caused by human error.
- ⊙ **Reduced emissions:** Electric autonomous vehicles can contribute to a cleaner environment.

However, technical challenges, public acceptance, and regulatory frameworks need to be addressed before widespread adoption.

BLOCKCHAIN: TRUST AND TRANSPARENCY

Blockchain technology can revolutionize supply chain management by the following measures.

- ⊙ **Ensuring transparency:** Every transaction is recorded on a secure, decentralized ledger, providing traceability and accountability.
- ⊙ **Reducing fraud:** The immutable nature of blockchain makes it difficult to tamper with data.
- ⊙ **Improving efficiency:** Smart contracts can automate various supply chain processes, reducing paperwork and errors.

Applications of blockchain in logistics include:

- ⊙ **Supply chain visibility:** Tracking products from origin to destination.
- ⊙ **Counterfeit prevention:** Verifying the authenticity of products.
- ⊙ **Trade finance:** Facilitating secure and efficient financial transactions.

INTERNET OF THINGS (IOT): CONNECTING THE DOTS

IoT devices can collect and transmit data, enabling real-time monitoring and optimization of logistics operations:

- ⊙ **Asset tracking:** Real-time location tracking of vehicles, containers, and packages.
- ⊙ **Predictive maintenance:** Monitoring equipment condition to prevent breakdowns.
- ⊙ **Inventory management:** Accurate and up-to-date inventory data.
- ⊙ **Warehouse optimization:** Optimizing space utilization and energy consumption.

By leveraging IoT data, logistics companies can improve efficiency, reduce costs, and enhance customer satisfaction.

INTERNET OF THINGS (IOT): A LOGISTICS GAME-CHANGER

The Internet of Things (IoT) is revolutionizing the logistics industry by connecting physical assets, vehicles, and people through the internet. This inter-connected network generates vast amounts of data, enabling real-time tracking, predictive analytics, and optimized operations. Let's delve deeper into how IoT is transforming logistics.

Real-time Tracking and Visibility

- ▲ **Asset tracking:** IoT devices like GPS trackers and RFID tags provide real-time location data for containers, pallets, and vehicles. This visibility enhances supply chain transparency and enables proactive issue resolution.

- ▲ **Shipment monitoring:** IoT sensors can monitor temperature, humidity and other environmental factors during transit, ensuring product integrity and preventing spoilage.
- ▲ **Proof of delivery:** IoT devices can capture proof of delivery, including photos, signatures, and location data, streamlining the claims process.

Inventory Management and Warehouse Optimization

- ▲ **Inventory accuracy:** IoT-enabled sensors and RFID tags can automatically track inventory levels, reducing stockouts and overstocking.
- ▲ **Warehouse automation:** IoT devices can optimize warehouse operations by automating tasks like picking, packing and shipping.
- ▲ **Space utilization:** IoT sensors can monitor warehouse space usage, identifying areas for improvement and optimizing storage.

Supply Chain Optimization

- ▲ **Demand forecasting:** IoT data can be used to analyze sales trends and predict future demand, optimizing inventory levels and production planning.
- ▲ **Route optimization:** IoT-based systems can optimize delivery routes based on real-time traffic conditions and other factors, reducing fuel consumption and delivery times.
- ▲ **Supply chain collaboration:** IoT can enable seamless information sharing among supply chain partners, improving collaboration and efficiency.

Challenges and Considerations

While IoT offers immense potential, challenges such as data security, infrastructure, and cost must be addressed

- ▲ **Data security:** Protecting sensitive data from cyber attacks is crucial.
- ▲ **Infrastructure:** Reliable network connectivity is essential for IoT devices to function effectively.
- ▲ **Cost:** Implementing IoT solutions can involve significant upfront investments.

Case Studies and Examples

To illustrate the impact of IoT in logistics, let's consider some real-world examples:

- ▲ **Retailers:** Using IoT to track product movement from suppliers to stores, optimize shelf stocking and improve inventory management.
- ▲ **Logistics providers:** Implementing IoT solutions to monitor fleet performance optimize routes and enhance customer service.

- ▲ **Manufacturing companies:** Leveraging IoT to track production processes, improve quality control and reduce waste.

By addressing the challenges and capitalizing on the opportunities, the logistics industry can harness the power of IoT to create more efficient, sustainable, and customer-centric supply chains.

Example: The Fashion Industry

The fashion industry, with its complex supply chains, is leveraging IoT to improve visibility and sustainability. Fashion brands are using IoT-enabled RFID tags to track garments from raw materials to the final consumer, ensuring product authenticity and ethical sourcing. Additionally, IoT sensors can monitor environmental conditions during transportation, preventing damage to delicate fabrics.

Optimizing Store Operations

Inventory management: IoT-powered systems can track inventory levels in real-time, preventing stock outs and overstocking.

- ▲ **Smart shelves:** IoT sensors can monitor product placement, detect empty shelves and automatically generate replenishment orders.
- ▲ **Energy management:** IoT can optimize energy consumption by controlling lighting, heating, and cooling systems based on store occupancy and external conditions.
- ▲ **Loss prevention:** IoT devices can detect theft and shoplifting, reducing losses and improving security.

Example: Amazon Go

Amazon Go is a prime example of how IoT can revolutionize the retail experience. By using sensors, cameras and machine learning, the store enables customers to shop without traditional checkout lines. Customers simply pick up items they want and leave, with payment automatically processed through their Amazon account.

IoT in retail: Optimizing the supply chain

IoT is revolutionizing supply chain management in retail by providing real-time visibility, enhancing efficiency and reducing costs. Let's explore how IoT is transforming this critical aspect of retail operations:

Inventory Management and Optimization

- ▲ **Real-time inventory tracking:** IoT sensors and RFID tags can accurately track product movement from suppliers to stores, providing real-time visibility

"Drones can be used for last-mile delivery, reducing traffic congestion and emissions"

into inventory levels.

- ▲ **Demand forecasting:** By analyzing sales data and consumer behavior, retailers can predict demand patterns more accurately, optimizing inventory levels and preventing stock outs or overstocks.

- ▲ **Automated replenishment:** IoT-enabled systems can automatically generate purchase orders based on inventory levels, streamlining the replenishment process.
- ▲ **Reduced shrink:** IoT devices can help identify and prevent inventory loss through theft, damage, or errors.

Supply Chain Visibility and Collaboration

- **Shipment tracking:** IoT sensors can monitor the location and condition of shipments in real-time, providing visibility throughout the supply chain.
- **Supply chain collaboration:** IoT enables seamless information sharing between retailers, suppliers and logistics providers, improving collaboration and responsiveness.
- **Risk management:** IoT can identify potential supply chain disruptions, such as delays or quality issues, allowing retailers to take corrective actions proactively.

Example: Walmart's Supply Chain Transformation

Walmart has been a pioneer in leveraging IoT to optimize its supply chain. By using RFID technology and IoT sensors, Walmart has achieved significant improvements in inventory accuracy, reduced out-of-stocks, and enhanced supply chain visibility.

CONCLUSION

The convergence of green logistic technology, smart cities, and logistics parks represents a new era of innovation in the logistics industry. By addressing environmental concerns, enhancing urban livability and driving economic growth, this integrated approach offers a promising vision for the future. As technology continues to advance and societal priorities evolve, the importance of sustainable and efficient logistics is bound to increase. MA

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COST MANAGEMENT AND INNOVATION: THE DUAL PILLARS OF INDIA'S NATIONAL LOGISTICS POLICY, 2022

Abstract

An important initiative to revamp India's logistics industry, which has been plagued by exorbitant costs, inefficiencies, and disjointed infrastructure, is the National Logistics Policy (NLP) 2022. This study examines the policy's two pillars, innovation and cost management and projects how they will affect the logistics sector in India. The main goals of the policy are to lower logistics costs, raise India's ranking in the Logistics Performance Index and Data-driven logistics ecosystem. These initiatives include the Integrated Digital Logistics System (IDLS), Logistics Data and Analytics Centre (LDAC), Multimodal Logistics Parks (MMLPs) and dedicated freight corridors. The article also emphasizes how crucial Cost and Management Accountants (CMAs) are to this change, describing how they support financial planning, performance evaluation, risk management, cost optimization, regulatory compliance, technology integration, and skill development.

INDIAN LOGISTIC SECTOR AN OVERVIEW

“**L**ogistics” refers to value addition, handling, storage, and transportation of goods between places of manufacturing and consumption as well as related services. The nodes and connections that make up the logistics infrastructure are easily recognized as ports, stations, warehouses, MMLPs-Multimodal Logistics Parks, and other commercial spaces. These nodes and connections are connected by a variety of carriers via railways, roads, waterways, pipelines, air routes, etc.

Due to its ability to facilitate the smooth transportation



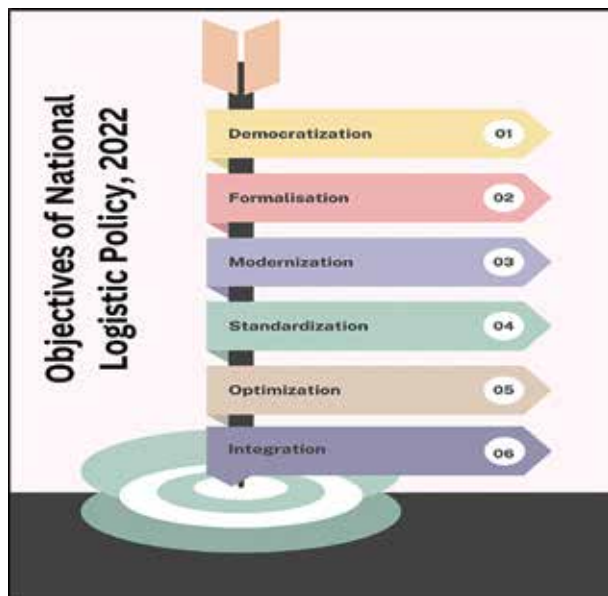
CMA Quiser Aman
Practicing Cost Accountant
Ranchi
quiseraman@gmail.com

of goods and services across India's vast territory, the logistics sector is essential to the country's dynamic economic landscape. India's logistics sector has to be transformed in order to meet its ambitious economic targets, which include reaching a GDP of US dollar 5.5 trillion by 2027. With its crucial role in assisting a wide range of industries, including manufacturing, agriculture, and electronic commerce, the logistics market is both full of opportunities and challenges. According to a study published at the LogiMAT India logistic fair, the Indian freight and logistics sector is expected to grow at an annual rate of 8.8 per cent, from USD 317.26 billion in 2024 to USD 484.43 billion by 2029.

The logistics industry in India has experienced tremendous growth and scrutiny in the last few years. Measures such as LPI (Logistic Performance Index) have been used to monitor India's progress. In 2023, it ranked 38th out of 139 countries, up from 54th in 2014. A shift in manufacturing due to government initiatives like “Make in India,” increased e-commerce penetration, implementation of the GST/E-way bill, the National Logistic Policy and new emission norms, to name a few, is expected to propel the steady growth of the Indian logistics industry. The much-anticipated National Logistics Policy (NLP), a comprehensive cross-sectoral framework to modernize the nation's logistics infrastructure and establish an integrated logistics ecosystem, was unveiled by the Indian Government in September 2022.

CONTEXT AND JUSTIFICATION OF THE NATIONAL LOGISTICS POLICY

India's logistics industry is essential to the country's economy because it makes it possible for goods and services to move freely throughout its vast territory. But this industry has a lot of obstacles to overcome, like expensive logistics, disjointed infrastructure and complicated regulatory frameworks. In order to tackle these problems and bolster the nation's aspirational economic objectives, the National Logistics Policy (NLP) 2022 was presented. This Policy is designed to create a more integrated, efficient, and competitive logistics ecosystem in India, ultimately supporting the country's broader economic objectives.



Source: logistics.gov.in

PILLAR 1: COST MANAGEMENT

Cost management is a central focus of the National Logistics Policy (NLP) 2022. The Policy outlines several strategic measures to reduce logistics costs by enhancing efficiency across various aspects of the logistics sector.

A. Developments in Inventory Control

De-risking Supply Chains: To reduce risks and guarantee supply chain continuity, robust infrastructure must be built. This objective is supported by the policy's emphasis on infrastructure development, which lowers costs and provides protection from disruptions.

Enhanced Transit Speed: Adopting more intelligent enforcement strategies and improving infrastructure planning can help to cut down transit times, minimize delays and save inventory management expenses.

Digitalization for Improved Reliability: Supply chains become more dependable and visible when digital tools for tracking and monitoring inventory are promoted. This increases predictability and makes replenishment order management easier.

B. Enhancements in Storage and warehousing

Structure for Logistics Parks: To expedite approval procedures and draw in investment, a formal framework for logistics parks is presented. By guaranteeing the best possible use of storage facilities, this framework lowers costs and improves operational effectiveness.

Efficiency and Quality Improvements: The Policy seeks to enhance warehousing productivity, efficiency and service quality by integrating digital technologies like artificial intelligence (AI) and machine learning (ML), promoting standards and rewarding excellence.

Optimal Warehouse Development: By utilizing the PM *Gati-Shakti* NMP framework, the Policy encourages the construction of warehouses with effective spatial planning. It makes it easier for private investments to improve infrastructure and increase storage capacity.

C. Increasing the Effectiveness of Transportation

Sector-Level Strategies for Effective Logistics: The policy tackles issues like material handling and rolling stock innovations as well as first- and last-mile connectivity. By encouraging cooperative use of the infrastructure and astute enforcement tactics to reduce detentions, it improves efficiency and reducing cost

Multimodal Infrastructure Development: Establishing interconnected infrastructure, such as dedicated freight corridors and Multimodal Logistics Parks (MMLPs) is essential to cut logistics costs. These amenities make it easier to switch between different modes of transportation, which raises overall productivity and lowers operating expenses.

Optimal Modal Mix: The NLP promotes switching to more economical and ecologically friendly forms of transportation. Through the integration of various modes of transportation, including air, sea, rail, and road, the Policy seeks to minimize expenses, streamline operations, and lessen its environmental impact.

D. Simplifying Order Processing and Regulatory Issues

Unified Digital Platform: By integrating multiple

digital solutions and streamlining regulatory procedures, a unified digital platform for logistics systems can be created which will increase productivity and cut expenses.

Closing Policy Gaps: Closing policy gaps in current liability and policy frameworks helps to establish a regulatory environment that is conducive to investments in and development of infrastructure.

Improved Industry-Government Interface: Facilitating communication between Government organizations and industry participants encourages infrastructure investment and development. This enhanced interface promotes a more growth-friendly atmosphere and assists in removing regulatory obstacles.

Standardization and Simplification: To improve integration and interoperability, the policy promotes standardization and simplification of regulatory procedures. The goal of digitalization initiatives is to cut expenses and administrative burdens.

PILLAR 2: INNOVATION

Innovation is a crucial pillar of the NLP aimed at modernizing the logistics sector through advanced technologies and new practices.

A. New Technologies and Automation

Artificial Intelligence and Machine Learning: These technologies are pushed as having the ability to completely transform logistics through process optimization, trend prediction, and enhanced decision-making.

Usage of Automation and Drones: To improve logistics operations, the Policy promotes the use of automation and drone technologies. This entails deploying sophisticated material handling systems, automating warehousing procedures, and deploying drones for last-mile delivery.

B. Integration of Technology

Logistics Analytics and Data Center (LDAC): Making educated decisions, increasing operational effectiveness and spotting cost-saving possibilities are all made possible by centralizing data and utilizing big data analytics. Demand and inventory forecasting are further aided by predictive analytics.

Digital logistics systems: To improve operational efficiency, real-time tracking, blockchain technology and artificial intelligence and machine learning (AI/ML) are combined in the Integrated Digital Logistics System (IDLS). Improved data visibility, fewer transaction disputes and cost-saving route optimization are all supported by

this system.

C. Digital Solutions and Regulatory Innovation

Support for Digital Solutions: Encouraging a thriving ecosystem of cutting-edge technologies and digital solutions helps to modernize the logistics industry by making sure that new innovations are successfully incorporated into pre-existing systems.

Unified Digital Platform: By combining different digital systems related to logistics, a unified digital platform can be created, which encourages creative thinking and improves productivity all around.

D. Development of Multimodal Infrastructure

Modernizing ports and highways: This facilitates faster cargo handling, lowers transit times, and increases capacity and efficiency. Developing this infrastructure is essential to implementing cutting-edge logistics techniques.

Parks for Multimodal Logistics (MMLPs): In order to facilitate effective logistics operations, the development of MMLPs encourages the integration of various modes of transportation and improves infrastructure. This includes intermodal connectivity, cutting-edge facilities, and strategic locations.

ROLE OF COST AND MANAGEMENT ACCOUNTANTS

Cost and Management Accountants (CMAs) play a crucial role in ensuring the successful implementation of the National Logistics Policy 2022. Their expertise in financial management, cost control, and strategic planning makes them invaluable in the logistics sector. Here are some areas where CMAs can contribute:

Financial Planning and Budgeting

The National Logistics Policy cannot be successfully implemented without efficient financial planning and budgeting. Logistics firms can benefit from CMA assistance with creating comprehensive budgets, projecting cash needs, and guaranteeing efficient resource distribution. They can also assist in keeping an eye on the performance of the budget and making the required modifications to meet financial goals. CMAs can assist businesses in more efficient financial management and investment planning by offering precise financial forecasts.

KPIs and Performance Measurement

To assess how well logistics operations are performing, CMAs can create key performance indicators (KPIs). CMAs can spot areas for improvement and put corrective

measures in place by keeping an eye on KPIs like inventory levels, delivery times, and transportation costs. Better decision-making can also be facilitated by them by offering insights into the financial effects of operational choices. CMAs can make sure that logistics operations are in line with the company's strategic goals by regularly conducting performance reviews.

Efficiency and Cost Optimization

In-depth cost audits can be carried out by CMAs to find inefficiencies in logistics processes. To find areas where costs can be cut, they can examine a variety of cost factors, including inventory management, warehousing, and transportation. CMAs can assist businesses in lowering logistics costs and increasing profitability by putting cost-cutting strategies into place. They can also help with the creation of benchmarks and cost models that allow expenses to be compared to industry norms.

Training and Skill Development

CMAs can support efforts aimed at developing skills by creating certification programs and training courses for logistics workers. Their proficiency in financial analysis, strategic planning, and cost control can help in developing a workforce with the necessary skills for the logistics industry. In order to improve the skills and performance of logistics professionals, CMAs can also mentor and coach them. Through continuous training and development initiatives, CMAs can guarantee that their workforce possesses the skills needed to meet the demands of a logistics landscape that is changing quickly.

Adherence to Regulations

The National Logistics Policy places a strong emphasis on business-friendly regulations and facilitation. CMAs can assist businesses in navigating the complicated regulatory environment and guarantee that customs, GST, e-way bill, and other legal requirements are met. To reduce regulatory risks, they can help with internal control implementation and compliance audits. CMAs can guarantee that businesses are always in compliance with pertinent laws and regulations by keeping up with the most recent regulatory changes.

Integration of Technology

One of the main objectives of the National Logistics Policy is the adoption of digital technologies. In order to improve operational efficiency, CMAs can help logistics companies implement technological solutions like ERP systems, data analytics platforms, and automated reporting

"Gati-Shakti NMP framework, the Policy encourages the construction of warehouses with effective spatial planning"

tools. They can offer advice on managing the implementation process and choosing the best technological solutions. CMAs can assist businesses in making better decisions, cutting expenses, and increasing overall efficiency by utilizing technology.

CONCLUSION

The National Logistics Policy, 2022 represents a transformative initiative designed to address the inefficiencies and high costs that have long plagued India's logistics sector. By focusing on cost management and innovation, the NLP aims to overhaul the logistics infrastructure, enhance operational efficiency and position India as a global logistics hub. Cost management efforts include optimizing transportation, warehousing, inventory management, and regulatory processes, while innovative strategies involve embracing new technologies and creating a unified digital ecosystem.

Cost and Management Accountants play a pivotal role in this transformation. Their expertise in financial planning, cost control, risk management, and technology integration is crucial for driving the successful implementation of the NLP. Through cost optimization, performance measurement, and regulatory compliance, CMAs help streamline logistics operations and foster a more efficient and competitive logistics environment. As the Indian logistics sector continues to evolve, the collaborative efforts of policymakers, industry stakeholders, and CMAs will be essential in realizing the goals of the National Logistics Policy and achieving the nation's ambitious economic targets. **MA**

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ACCELERATING INDIA'S TRANSPORT: GREEN LOGISTICS, SMART CITIES AND INNOVATION

Abstract

This article unravels the usage of green logistics technologies in connection with smart city ecosystem endorsed by Kolkata City and showing environmental, economic and social-centric dimensions. Kolkata's move to electric vehicles, solar-powered logistics hubs and smart traffic systems has helped it to cut emissions drastically and boost urban efficiency. The first holistic perspective on this trailblazing initiative represents a blueprint for sustainable urban development; it could set an example for cities worldwide wanting to attain the same.



CMA Soumendra Roy

Assistant Professor
Globsyn Business School
Kolkata

soumendra.roy@gmail.com

INTRODUCTION

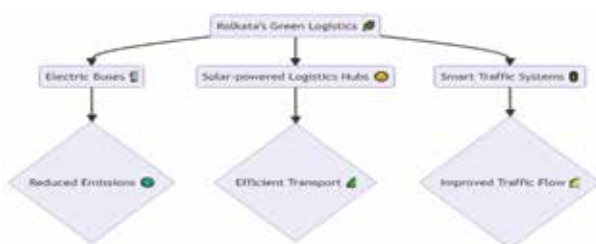
Background and Context

Kolkata, a growing Smart City is applying green logistics technology for a better urban lifestyle to become future-ready. Kolkata is breaking from the past and leading by example, Kolkata as a city exemplifies this union of tradition and innovation is becoming a role model in sustainable urban development.

FIGURE 1

KOLKATA'S GREEN LOGISTICS AND SMART CITY INITIATIVES

(SOURCE: [HTTPS://IAMKOLKATA.CO.IN/ICONIC-STREETS-MARKETS/THE-NEW-SMART-GREEN-TOWN](https://IAMKOLKATA.CO.IN/ICONIC-STREETS-MARKETS/THE-NEW-SMART-GREEN-TOWN))



Objectives

This article examines the environmental, economic and

social impacts of green logistics technologies in Kolkata on urban sustainability by drawing insights that may be applicable to other cities seeking smart, sustainable growth.

Key Questions

- ⊙ How are green logistics technologies implemented in Kolkata?
- ⊙ What are the benefits and challenges associated with these technologies?
- ⊙ How do these innovations impact Kolkata's sustainability and livability?

Significance of the Topic

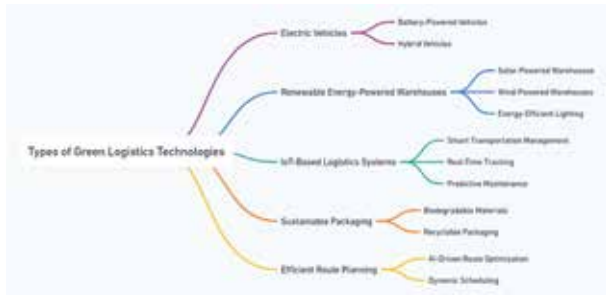
Understanding Kolkata's approach to integrating green logistics offers a blueprint for other cities, highlighting practical strategies for achieving sustainability and resilience in urban environments through innovative technological solutions.

GREEN LOGISTICS TECHNOLOGY

Definition and Types

Examples of green logistics technologies include various solutions to minimize environmental footprint and increase efficiency. That may be electric vehicles over fuel-powered transport, renewable energy and solar/wind power warehouses or IoT based logistics which provides an optimized route with real time monitoring. Therefore, in Kolkata these technologies will be instrumental to bring about a more sustainable urban logistics.

FIGURE 2
TYPES OF GREEN LOGISTICS TECHNOLOGIES
(SOURCE: [HTTPS://VUPHONG.COM/
GREEN-LOGISTICS](https://vuphong.com/green-logistics))



Real-Life Examples in Kolkata

Green logistics is Kolkata's future. On important routes, the electric bus service has significantly lower emissions and noise levels. As evidenced in one scene, solar-powered logistics hubs could enable industrial operations to run on renewable energy (as also seen in New Town). Besides, induction of electric rickshaws into congested neighborhoods has helped to reduce traffic congestion and improve the air quality, which shows Kolkata's emphasis on sustainable urban transport. The electric bus service has significantly lower emissions and noise levels on important routes.

Benefits and Challenges

There are several advantages to adopting green logistics in Kolkata. Lower emissions mean cleaner air and a better quality of life in cities. Less energy used means less cost and a better use of resources. IoT driven systems are supported by an increase in operational efficiency which facilitates timely deliveries and optimized logistics operations. Yet, bottlenecks remain on the path to a green logistics industry featuring expensive initial investments in terms of greening infrastructure and technology, as well as prerequisites for requisite ecology supporting structures. Overcoming these barriers is needed to scale up such innovations city-wide.

Technological Integration in Smart Cities

Kolkata's example of green logistics technologies integrated in smart city has shown how urban sustainability can be pursued through innovation. The smart implementation of traffic management system based on real-time data and analytics will help in reducing congestion and ultimately lower emissions. The deployment of streetlight, and logistics hubs under renewable energy projects are other driving forces to sustainable urbanism. That combined integration helps to save on operations; it is also a model for other cities. Kolkata is paving the path for an urban future which uses technology to be sustainable, combining logistics with smart city initiatives.

SMART CITIES

Key Components

The digital infrastructure, renewable energy, efficient transportation and data analytics that are getting deployed in a smart city, smart grid, sustainable transport and land use planning are key elements to providing smart and livable adaptive cities.

Concept and Definitions

Smart cities turn communities into adaptive environments rich with ICT and IoT elements, improving the quality of life in a sustainable way. Traffic and energy are managed by data-driven methods, delivering equilibrium of efficient urban ecosystem.

Kolkata as a Smart City

From enacting smart meters and electric buses to green logistics hubs, Kolkata is at the forefront of the nation's drive for smarter, greener cities — a move positioning it as an urban center that sustainably breeds convenience in citizens while nurturing socioeconomic diversity.

Role of Technology

For the metamorphosis of Kolkata into a smart city, technology is going to be fundamental. Through real-time data collection, resources can be managed effectively and public services enhanced. An illustration — the introduction of smart traffic systems in Kolkata has cut congestion and pollution significantly, illustrating how technology can be used to help solve urban problems efficiently and sustainably.

LOGISTICS PARKS

Concept and Importance

Construction of logistics parks can consolidate transportation and storage, thereby saving cost, enhancing efficiency while reducing the environmental impact. Creating a circular economy in smart cities like Kolkata involves implementing circular economic solutions that are ready, willing and be able to meet the demands of fast-growing urban populations, benefiting from sustainable city development strategies.

Examples from Kolkata

The Dankuni Logistics Hub in Kolkata is a role model of a modern warehouse with advanced features like solar power, automated warehousing and EV charging stations to improve efficiency and reduce environmental footprint. It shows the commitment for green logistics.

Innovations and Developments

Kolkata's logistics parks lead in innovation with

automated warehousing, EV charging stations, and solar installations, boosting efficiency and sustainability. These advancements increase accuracy, speed, and reduce fossil fuel reliance, showcasing Kolkata’s commitment to green urban logistics.

Impact on Urban Logistics

Urban logistics: Creation of an eco-system through establishment of logistic parks in Kolkata serves to minimize traffic and emissions, as the parks’ centralized operations lead to a healthier city. These help in ensuring easy and efficient movement of goods from or to the city, both within the cities as well as at entry/exit points thus adding value to the last mile facility contributing towards KMA’s smart city initiatives.

INTEGRATION AND SYNERGIES

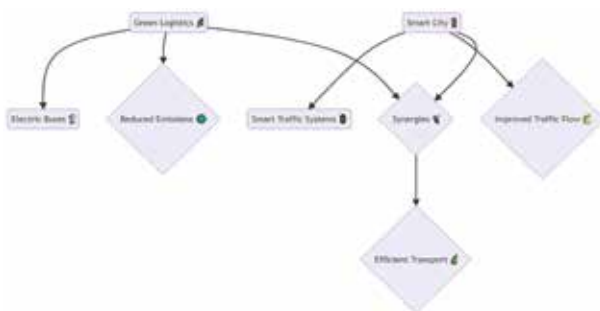
Connecting Green Logistics and Smart Cities

Such green logistics integrated with smart city efforts in Kolkata can complement sustainability. Drive the Future — EVs and smart grid technology, along with IoT enabled logistics systems will not just enhance efficiency but also reduce our carbon footprint in this future-wise city of a tomorrow that aligns innovation with environmental stewardship at The CEEW Council for Energy, Environment and Water, New Delhi.

FIGURE 3

SYNERGIES BETWEEN GREEN LOGISTICS AND SMART CITY INITIATIVES

(SOURCE: SMART CITIES WORLD - LOGISTICS - LOGISTICAL TRANSPORT SYSTEMS MARKET TO EXCEED €4BN BY 2027)



Case Study — Success of both mobile app and chatbot entities integrating

E-buses and new-age solar-powered logistics hubs are integrating green and smart deliveries from the port of Kolkata, making trade here greener. While reducing emissions, improving air quality and logistics’ efficiency are important goals in their own right; they also serve as models that other cities might imitate.

Integrating the Approach together

Smart grids and IoT are being utilized by Kolkata to reduce emissions and improve air quality. If all electric bicycles are charged from solar panels, the energy consumed will be lower and it offers a more sustainable urban environment to live in.

Challenges and Solutions

Kolkata has adopted Government incentives, public private financing and continued innovation among other interventions to overcome barriers of high costs and infrastructure requirements to ensure sustainable development of green logistics while scaling-up within the smart city framework.

ENVIRONMENTAL IMPACT

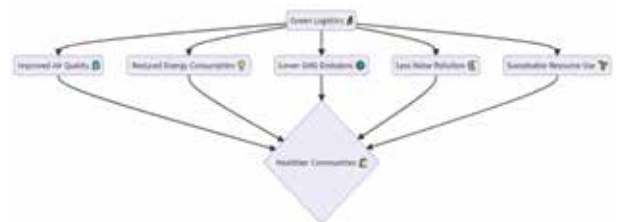
Analysis of Benefits

Kolkata’s eco-green logistics technologies drive the city towards sustainability. Electric cars slash greenhouse gases, while solar-powered logistics hubs reduce energy use improving the quality of life. It is a pioneering green urban planning and sustainable development in Kolkata through six targeted projects.

FIGURE 4

ENVIRONMENTAL BENEFITS OF GREEN LOGISTICS

[SOURCE: ENVIRONMENTAL LOGISTICS OR GREEN LOGISTICS: WHAT IS IT AND ITS BENEFITS? (ACROSSLOGISTICS.COM)]



Reduction in Emissions

The shift to electric buses and solar-powered logistics hubs has greatly reduced the carbon footprint. The move to electric vehicles from diesel has led directly to a significant reduction in CO2 emissions. This step has not only helped in air quality enhancement but also became a benchmark for other cities trying to lessen their carbon foot print and moving towards sustainable transportation.

Examples from Kolkata

Electric rickshaws in Kolkata result in clearer air with less noise and solar panels on logistics hubs reduce energy consumption. More than that, these green technologies promote sustainability and create a model for the rest of India.

Challenges/Major Implementation Bottlenecks Issues Mitigation

A combination of subsidies from the Government, community involvement in solution development and implementation, technology enhancements hosted by young entrepreneurs, and pilot projects for sustainable replication can ensure the last-mile distribution sector by adopting more reliable means of transporting goods without leading to high operational costs.

ECONOMIC IMPACT

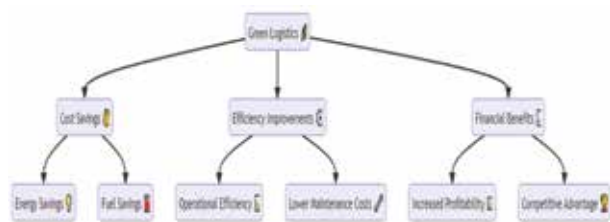
Cost Savings

The use of green logistics technologies in Kolkata has led to cost savings and reduction in CO₂ emissions. The electric vehicles consume less fuel thereby reducing the refueling process causing a lowered operation cost. Energy expenses have shrunk since the solar-powered logistics hubs were introduced, which translates into a major financial advantage. Those savings strengthen the economic argument for sustainable tactics (in the holistic ecological sense) so that what is good for the environment can also be good on a balance sheet. Kolkata is seen as an illustrative example as to how green logistics can be environmentally safe and yet profitable by minimizing dependence on fossil fuels and enhancing energy efficiency.

FIGURE 5

ECONOMIC IMPACT FLOWCHART

[SOURCE: THE GREEN ECONOMY AS A POLICY APPROACH TO SUPPORT SUSTAINABLE DEVELOPMENT. | DOWNLOAD SCIENTIFIC DIAGRAM (RESEARCHGATE.NET)]



Efficiency Improvements

Green logistics technologies such as EVs and smart systems in Kolkata help to deliver rapid speeds at minimal costs, streamlining the supply chain processes thereby assisting businesses with sustainable operational efficiency. It is a shining example of urban logistics management. Green logistics solutions from Kolkata, including electric buses and solar-powered hub lower 25 per cent of fuel costs and energy tariff thereby providing the economic benefits and cost efficiency.

Challenges and Mitigations

Despite the advantages, Kolkata encounters several

challenges. Overall, the first one is the financial accessibility and significant step stone costs. The second crucial factor is the development of necessary infrastructure, while the third determinant is the adaptation of appropriate technologies. By periodically assessing the economic benefits, policies and the possibility of sustainability in the green approaches, it is possible to ensure that investments are repaid and cover long-term strategies. This goal is achievable through the implementation of financial stimuli.

SOCIAL IMPACT

Community Benefits

Green logistics technologies in Kolkata will enhance public health, reduce air pollution and improve transportation efficiency. Sustainable electric vehicles and smart systems provide a cleaner, safer environment for communities to live in. This is an accurate reflection of the kind of quality-of-life goal that Kolkata has set its sights upon.

Improvements in Public Health

The reduced pollution level due to the switch in Kolkata means less CO₂ and particulate emissions into the atmosphere, leading to an improvement of air quality as well public health. This change reduces respiratory problems such as asthma.

Tackling the Challenges

Overcoming challenges like public acceptance, resistance to new technologies and the utility of incentives through media campaigns and community engagement, Kolkata can boost its green ecosystem by generating broad economic benefits that encourage greener production.

CONCLUSION

Moving forward, Kolkata should invest in and develop green logistics technologies to maintain progress. This is critical for urban sustainability in the long term. Cities elsewhere could learn from Kolkata and a few others which have achieved success, in order to make their endeavours more effective for environmentally friendly waste management.

Green logistics integrated with Smart City initiatives can lead to the creation of sustainable, healthy and adaptable urban areas. Kolkata is a prime example of this convergence demonstrating how progressive and sustainable practices can birth freshness in an otherwise decadent city. The approach Kolkata has adopted is replicable and translatable in urban areas around the world where it can generate substantial environmental and social benefits. MA

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EXPLORING THE DEVELOPMENT OPPORTUNITIES OF VIZHINJAM MOTHER PORT: A STRATEGIC GATEWAY FOR MARITIME GROWTH

Abstract

Vizhinjam is set to become India's largest mother port, capable of handling the world's largest ships and significantly increasing the country's maritime trade capacity. Its development will make it an important hub in the world's shipping network and lessen India's reliance on foreign ports for transshipment, like Colombo. Larger vessels and larger cargo quantities will be handled with the use of sophisticated infrastructure, which will simplify logistics and save costs for Indian importers and exporters. This extension would improve the robustness of India's maritime infrastructure, reduce congestion at ports like Cochin, and promote regional growth. Vizhinjam will become a top-tier port featuring substantial upgrades like deep-draft berths, cutting-edge container processing facilities, better connectivity, and rigorous security measures. These developments will attract worldwide trade, promoting Vizhinjam as a premier gateway for international merchandise. Simultaneously, it will drive economic growth and consolidate India's pivotal place in foreign trade.

The logistics industry is vital to the Indian economy and plays a significant role in the growth and development of the nation. Around 22 million people are employed in this industry, which accounts for 13–14 per cent of the GDP (IBEF, 2024). Its efficacy has a direct impact on the cost of goods and services, which in turn influences how competitive Indian businesses are globally. Seaports are essential to the logistics industry, serving as key hubs for global trade by facilitating the efficient movement, storage, and transfer of goods between regions. Their



CMA (Dr.) T. Rajesh

Professor
PG Department of Commerce
Government College Nedumangad
Thiruvananthapuram
rajeshvjd@rediffmail.com



Pooja Sasi V S

Research Scholar
PG Department of Commerce
Government College Attingal
Thiruvananthapuram
poojavs1312@gmail.com



Adwaith Gopan

Research Scholar
Department of Economics
Government College Attingal
Thiruvananthapuram
adwaithgopan07@gmail.com

strategic locations, advanced technologies, and logistical services support economic growth by ensuring smooth operations, reducing transportation costs, and enhancing supply chain efficiency.

India, one of the world's largest peninsulas, is a thriving centre for international trade. India is attracting the attention of international corporations as a possible hub for global trade operations since it has so many important ports that support the country's growing economy. India's sea ports, including 13 major and about 200 minor ports along its 7,500-kilometer coastline are crucial for trade and economic development, handling significant cargo traffic with modern infrastructure. Kerala, located on India's southwestern coast, has several key seaports that significantly impact the State's economy and trade. Major ports include Cochin Port, a crucial hub for shipping and maritime trade, and the Vizhinjam Port, which is set to become a major transshipment hub due to its strategic location and deep-water capabilities.

A STRATEGIC GATEWAY FOR INDIA'S MARITIME FUTURE - VIZHINJAM PORT

Vizhinjam International Seaport, India's inaugural deep-water container transshipment port, is strategically positioned merely 10 nautical miles from the key international maritime route that connects Europe, the Persian Gulf and the Far East. Its proximity to this vital shipping route enables it to function as a global transshipment hub. The port's natural depth of over 20 meters allows mother ships to dock without the need for costly dredging. Vizhinjam, located at the southernmost point of India, is ideally positioned to consolidate and transfer cargo from Indian and regional origins to mainline vessels more affordable than via Colombo, providing long-term marine and economic benefits for the nation.

Vizhinjam Port is set to boost the regional economic growth through job creation, infrastructure development and enhanced trade capabilities. It will promote coastal shipping, ease road congestion, and strengthen India's naval presence. By complementing major ports like Cochin, it will improve efficiency and attract global shipping lines, enhancing India's global trade connectivity and competitiveness.

THE LANDSCAPE OF COCHIN PORT AND ITS PROSPERITIES WITH VIZHINJAM PORT

Cochin Port, one of India's largest natural harbours, has a rich history of maritime activity and cultural

diversity (Odegard, 2019). It is a significant link that allows mainline services to connect about 50 per cent of EXIM trade directly to the Mediterranean, Europe, the Far East, and the Middle East (The Hindu, 2024). The Port features advanced facilities, including the Vallarpadam Container Terminal, Multi-User Liquid Terminal (MULT), South Coal Berth (SCB), Online Port Operating System, RFID/QR code-based access control, ERP-based gang, equipment allocation, and advanced security scanners. The port offers water supply and bunkering facilities to vessels enhancing the port's capability to cater to diverse maritime and logistical needs. (Cochin Port Authority, 2024)

As of March 2024, Cochin Port has greatly increased India's overseas trade by playing a crucial part in the country's maritime trade. In comparison with the 2022–2023, the port handled 32.94 million metric tonnes (MMT) of throughput from April 2023 to February 2024, representing a 5.03 per cent increase. Petroleum, Oil, and Lubricants (POL) saw a 7.72 per cent increase in throughput, reaching 20.95 MMT. Furthermore, container throughput increased by 7.09 per cent to 679,000 TEUs (twenty-foot equivalent units) (Cochin Port Authority, 2024).

Apart from the significance, the port has various infrastructural challenges like, draft restrictions, historical sandbar obstructing access for large ships, limited container handling infrastructure and inadequate warehousing and storage facilities (Business Line, 2023). Despite these issues, the port continues to adapt to modern maritime trade demands.

Vizhinjam International Seaport can play a complementary role in the growth of Cochin Port, rather than being seen as a direct competitor. Vizhinjam's deep draft and strategic location make it an ideal hub for transshipment, relieving Cochin Port from handling large transshipment cargo and allowing it to focus on bulk cargo, liquid cargo and cruise tourism. This specialization fosters regional economic growth, attracting investments and improving infrastructure, which benefits both ports. Collaborative opportunities in technology sharing, joint marketing and coordinated logistics services can enhance their competitiveness. This complementary relationship boosts the capacity and efficiency of Kerala's port infrastructure, establishing the region as a strategic maritime hub.

PORT OF COLOMBO: INDIA'S CURRENT TRANSSHIPMENT HOME

Colombo is one of the major ports in the Indian Ocean

and the only container port in Sri Lanka. Over the past three years, the volume of trade in the port soared compared to its pre-covid numbers, as transshipment volumes hit 562,527 twenty-foot equivalent units (TEU) in January 2024, achieving 25.5 per cent year-on-year growth from the previous year's figures (Magli, 2024). The total container output increased to 646,407 TEU, which was 602,435 TEU in 2021, an increase of 8 per cent (Daily Mirror, 2021; Magli, 2024). The high traffic in the region is due to its location, as it is situated at the crossroads of the Indian Ocean directed to Europe, serving as a mediator for India and its European trading partners. About 75 per cent of the port's transshipments are either from India or to India, which strongly implies that it is the base for Indian consignments (Kavirathna et al., 2021). Apart from geographical advantages, relative cheapness provides an additional competitive edge to the port (Chen & Yang, 2019).

Despite being Sri Lanka's largest port, Colombo faces serious competition within the country, as the Hambantota port serves as India's east coast mediator for transshipments and has a relatively low operational cost. The economies of scale that the port currently enjoys may not be sustained for long, as the people have started migrating more to Colombo, leading to an increase in land prices and the cost of other services (Chen & Yang, 2019). Capacity constraints are one of the major concerns that ports currently face. The port currently has seven million TEUs, and in 2021, its throughput peaked at 7.25 million TEUs, forcing it to operate at full capacity (Daily Mirror, 2021). Dissanayake and Mudunkotuwa (2021) critiqued the poor infrastructural quality of ports, which can lead to increased transportation times, higher costs, reduced reliability shipments, and inefficiencies in port to inland waterway transportation (Dissanayake & Mudunkotuwa, 2021). The port is also going through severe financial limitations since the Government of Sri Lanka and the Sri Lankan Ports Authority (SLPA) have borrowed funds from countries like China for its expansion, which has experts concerning the former losing control of the port to the latter (Kavirathna et al., 2021). For India, all these reasons, especially the last one, acted as a strong motive to find its own transshipment port, which they finally achieved by identifying Vizhinjam.

"The logistics industry is vital to the Indian economy and plays a significant role in the growth and development of the nation"

IS VIZHINJAM AN END TO INDIA'S TRANSHIPMENT WOES?

The introduction of the Vizhinjam port will definitely affect the traffic of Colombo due to the former's location on the west coast of India. India will now have a port to keep its consignments from the western region, thus reducing its port charges. Unlike other ports in India,

Vizhinjam is a transshipment port with a natural depth of 18 km, which is similar to that of Colombo, further increasing concerns about the latter. While other ports in the Indian and East Pacific Oceans will have to face fierce competition from

Vizhinjam, Colombo will be adversely affected. With Vizhinjam expected to handle 75 per cent of India's transshipment needs, India can reduce their dependence on Colombo.

INFRASTRUCTURAL ENHANCEMENTS FOR INTERNATIONAL COMPETITIVENESS OF VIZHINJAM PORT

Transforming Vizhinjam into a standard international port requires comprehensive infrastructural development to meet global standards. The port must be capable of handling large volumes of cargo efficiently and sustainably while ensuring seamless connectivity and robust security measures. The ports of Cochin and Colombo, while crucial to regional maritime trade, face significant challenges due to limited infrastructure like inadequate deep-draft berths, outdated container handling facilities, lack of warehousing, etc. To address these issues, the development of Vizhinjam Port is proposed with a focus on advanced infrastructural facilities.

The following improvements would help to alleviate congestion, streamline logistics, and reduce transit times and costs, positioning Vizhinjam as a world-class port that can meet the demands of modern global trade

- ⊙ Regular dredging to maintain and deepen the port's channels.
- ⊙ Modern radar, lighthouse, and GPS systems for safe navigation of ships.
- ⊙ Fully developed Bunkering facilities for re-fuelling the ships.
- ⊙ Well equipped modern container terminals with state-of-the-art cranes and automated systems for efficient loading and unloading of containers.

- ⊙ Adequate warehousing facilities for various types of cargo.
- ⊙ Proper waste management systems, shore power for ships to reduce emissions, and water recycling plants to minimize environmental impact.
- ⊙ Dry docks and repair facilities for vessel maintenance.
- ⊙ Pilotage and Towage for guiding ships safely into and out of the port.
- ⊙ Use of Internet of Things (IoT) devices and data analytics to optimize port operations.
- ⊙ Adoption of Blockchain technology for secure and transparent transactions.

Conclusion

Vizhinjam Port will greatly boost India's marine trade and establish it as a key centre for international shipping. India's trade capacity and efficiency will rise significantly due to this port's strategic location and modern amenities, as well as decreasing the reliance on Colombo Port for transshipment activities. Vizhinjam will not only streamline logistics but also lessen costs and transit times for Indian exporters and importers by directly managing greater amounts of foreign freight. Vizhinjam's expansion will also reduce traffic at current ports, strengthen the overall robustness of India's port system, and open up new commercial prospects due to higher trade volumes and associated ventures.

The port's operating efficiency and sustainability should be ensured by planned infrastructural enhancements, including deep-draft berths, cutting-edge

container handling facilities, enhanced connectivity and strong security measures, making it a world-class shipping hub. Put together, these initiatives will boost economic expansion and solidify India's standing in international business. **MA**

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Corporate Corner

Congratulations!!!



Heartiest Congratulations to CMA R. K Dash, Director (Finance), Garden Reach Shipbuilders & Engineers Ltd. on being honoured “BEST CFO Award” in Best Returns (Mid Cap) category by DSIJ 2024.

We wish CMA R. K Dash, the very best for all his future endeavors.

ENVIRONMENTAL COST-BENEFIT ANALYSIS OF SATELLITE TOLL COLLECTION SYSTEM IN INDIA

Abstract

This article assesses the ecological expenses and advantages of using satellite toll collection systems in India. The study evaluates the effects of satellite toll systems on emissions, transportation flow and resource efficiency by analyzing secondary data. The results suggest that implementing satellite toll collection systems can lead to notable environmental advantages, such as considerable decreases in CO₂ emissions and enhanced traffic flow. These benefits, when combined, contribute to improved air quality and reduced fuel usage. Nevertheless, the report also highlights significant environmental drawbacks, including the energy consumption required for satellite operations and the difficulties related to electronic waste. The overall environmental impact remains favorable, endorsing the implementation of satellite toll systems as a sustainable substitute for conventional approaches. The article offers suggestions for policy and practical application, as well as guidance for future research.

INTRODUCTION

India's fast urbanization and economic expansion have resulted in a substantial rise in vehicle traffic, which has raised environmental issues, namely related to emissions and air quality. Conventional toll collecting methods, which involve physical toll booths and manual processing, lead to traffic congestion, higher emissions and wasteful fuel usage. On the other hand, satellite toll collecting systems provide a contemporary alternative by employing satellite technology to optimize toll collection procedures without requiring physical infrastructure. This study examines the ecological expenses and



Dr. Mrinal Gaurav

Department of Commerce
Yogoda Satsanga Mahavidyalaya
Ranchi

mrinalgrv@gmail.com



CMA Hemant Kaushik

Department of Commerce
Yogoda Satsanga Mahavidyalaya
Ranchi

hkdelhi@gmail.com

advantages linked to satellite toll collecting systems in India, with the goal of assessing their efficacy in fostering sustainability in the transportation industry. The study utilizes secondary data from Government papers, academic literature, and industry publications to assess the effects of various systems on reducing emissions, enhancing traffic flow, and optimizing resource utilization. The research offers insights into the potential of satellite toll collecting systems to mitigate unfavorable environmental consequences and enhance the overall transportation sustainability by comparing their environmental performance with existing techniques. The purpose of the results is to provide information to policymakers, stakeholders, and researchers regarding the feasibility and advantages

of implementing satellite toll technology in India's developing transportation sector.

SATELLITE TOLL COLLECTION SYSTEM

Satellite toll collection systems employ GPS and satellite technologies to autonomously levy charges on cars for road usage, eliminating the need for traditional toll booths. These systems utilize satellite signals to monitor the positions of vehicles and calculate toll fees depending on the distance traveled or specific routes taken. They obviate the necessity of halting and resuming vehicles at conventional toll plazas, thereby improving traffic circulation and diminishing congestion. Satellite toll collection systems provide a more efficient and environmentally friendly option for tolling by integrating with existing infrastructure and utilizing electronic toll tags or onboard devices. This improves user convenience and operational efficiency compared to traditional tolling techniques.

ENVIRONMENTAL IMPACT OF TRANSPORTATION SYSTEMS

Transportation systems have a substantial impact on the environment due to the release of air pollutants, greenhouse gases, and the consumption of resources. Road transport in India contributes around 13.5 per cent of the total carbon dioxide (CO₂) emissions. This sector is responsible for releasing pollutants such as nitrogen oxides (NO_x), carbon monoxide (CO), and particulate matter (PM) into the atmosphere. These emissions deteriorate the quality of the air and contribute to the phenomenon of climate change. In addition, the construction and upkeep of transportation infrastructure results in the disturbance of habitats and an escalation in resource consumption. Increased traffic congestion intensifies fuel use and emissions, further amplifying the environmental impact. It is essential to address these effects in order to promote sustainable mobility practices and enhance environmental well-being.

LITERATURE REVIEW

Prior research has thoroughly investigated the ecological effects of transportation systems. *Shahet et al.* (2020) emphasized that conventional toll collection methods have a substantial impact on automotive emissions because of the idling and congestion that occur at toll plazas. In a similar vein, *Singh and Gupta* (2018) discovered that electronic toll collecting systems have the potential to decrease CO₂ emissions by as much as 30 per cent by limiting the occurrence of stop-and-go traffic. *Andersson and Jonsson* (2019) showed that satellite toll collection systems have the potential to

significantly decrease emissions and fuel consumption by enabling smoother traffic flow and reducing the need on physical infrastructure. In addition, *Kumar et al.* (2021) observed that satellite toll collection also offers environmental advantages such as reduced noise pollution and lowered need for road maintenance, hence adding to overall sustainability. These studies highlight the environmental benefits of current toll collection devices compared to traditional techniques.

RESEARCH METHODOLOGY

This study uses a qualitative research design and secondary data to analyze the environmental cost-benefit of the Indian satellite toll collection system. The technique emphasizes acquiring, analyzing, and interpreting previous data from multiple sources to understand the system's environmental impacts.

Data Collection

The researcher gathered secondary data from trustworthy sources, including academic journals, Government reports, industry publications and case studies. Important primary data sources include Government reports from the Ministry of Environment, Forest, and Climate Change and Ministry of Road Transport & Highways, Academic journals like *Transportation Research Part D: Transport and Environment* and *Journal of Transport and Environmental Studies* that publish expert-reviewed articles, and Transportation sector associations and technology businesses publish reports. This also uses case studies to compare deployments in different nations, focusing on environmental results.

Analytical Techniques

The cost-benefit analysis (CBA) methodology was used, including the following stages:

Costs and Gains Identification: We recognized all satellite toll collection system environmental costs and advantages. Costs include energy, electronic waste, and operating dangers. Reduced pollution, traffic, and resource use are benefits.

Costs and Gains Quantification: All costs and benefits were quantified using accessible data. Emission reductions were determined using secondary data on car emissions and traffic patterns. Comparable technology implementations were used to assess energy and electronic waste.

Monetization: Environmental impacts were quantified and priced whenever possible. Metrics were used to assess emission reductions and estimate electronic

garbage management expenses.

Calculating Net Impact: The net environmental impact was calculated by comparing measurable benefits to expenses. This required creating a balance sheet to list positive and negative environmental impacts.

Sensitivity Analysis: Critical assumptions and parameters were analyzed to determine how they affected results. This helped assess results strength and reliability.

Analyzed specific situations and compared them to increase reliability: The study utilized case studies of satellite toll collection systems from various countries. Comparative analysis highlighted environmental influences' similarities and differences. These case studies provided the context and confirmed the findings' applicability to India. Based on substantial secondary data, this approach ensures a thorough assessment of satellite toll collecting systems' environmental impacts.

COST OF SATELLITE TOLL COLLECTION FOR ENVIRONMENT

Energy and resource use: The satellites and base equipment of satellite toll collecting systems use a lot of energy. A satellite network uses 150 GWh of electricity annually, according to *Kumaret al. (2021)*. Energy consumption from non-renewable sources releases greenhouse gases, indirectly harming the ecosystem. Satellite technology requires the extraction and refining of natural resources, which depletes resources and degrades the environment.

E-Waste Disposal: Manufacturing toll tags, satellite components, and hardware for satellite toll collecting systems generates e-waste. The *United Nations University (2020)* reports that e-waste is one of the fastest-growing waste streams worldwide, growing 3-4 per cent annually. Due to the presence of lead, mercury, and cadmium in electronic components, improper disposal can pollute the land and water. Reduced environmental impacts require efficient e-waste management and recycling, but they are costly and complicated.

Environmental Threats: Satellite toll collection systems pose various environmental risks. Inactive satellites and broken pieces orbiting Earth are major hazards. Space garbage increases the risk of collisions with operating spacecraft, causing more junk and worsening the situation. Satellite launch and decommissioning generate rocket emissions that pollute the environment and destroy the ozone layer (*Klinkrad, 2019*). A resilient network of ground stations is needed to transmit data from satellites, which may cause localized

environmental impacts owing to land use changes and infrastructure construction.

BENEFITS OF SATELLITE TOLL COLLECTION FOR THE ENVIRONMENT

Decreased Air Pollution: Satellite toll collecting systems reduce air pollution by reducing vehicle stops and restarts at toll booths, which increase emissions. Due to vehicle idling and acceleration, conventional toll collecting methods increase CO₂, NO_x, and PM emissions, according to *Shah et al. (2020)*. *Singh and Gupta (2018)* found that electronic toll collecting can reduce CO₂ emissions by 30 per cent. Satellite systems could offer equivalent or even larger benefits by eliminating the need for traditional toll plazas.

Reduction in Traffic congestion: Satellite toll collection reduces highway and main route congestion. *Andersson and Jonsson (2019)* found that satellite toll systems minimize fuel usage and emissions by smoothing traffic because automobiles can maintain speed, congestion reduction saves travel time, reduces fuel waste and emissions thereby improving air quality.

Improved Resource Efficiency: Satellite toll collection reduces the need for toll booths and plazas, improving resource efficiency. Construction and maintenance of these structures need a lot of energy. The switch to a satellite-based system eliminates these needs, reducing resource use. *Kumar et al. (2021)* noted that traditional toll facilities require concrete, steel, and energy, which harms the environment. Satellite systems save resources and reduce construction's environmental impact.

Overall Environmental Improvements: Environmental quality improves due to decreasing emissions, transportation congestion and resource efficiency. Satellite systems reduce the environmental impact of toll collecting, promoting sustainable transportation. *Shah et al. (2020)* and *Singh and Gupta (2018)* also found that reducing emissions and contaminants improves air quality, which benefits public health. These benefits align with global sustainability goals and demonstrate the environmental benefits of modern toll collection.

COST-BENEFIT ANALYSIS OF SATELLITE TOLL SYSTEM

Environmental Cost Calculation: Satellite toll collection systems' main environmental costs are satellite energy consumption and electronic component fabrication and disposal. Satellite systems consume 150 GWh annually, according to *Kumar et al. (2021)*.

Electronic toll tags and satellite equipment also generate e-waste. Electronic waste is rising 3-4 per cent annually, according to the *UN University* (2020). Garbage disposal and recycling are challenging, which may pollute the ecosystem.

Determine Environmental Benefits: By reducing car emissions and traffic congestion, satellite toll collecting benefits the environment. *Shah et al.* (2020) estimate that replacing toll booths with satellite systems might reduce CO₂ emissions by 30 per cent, saving India 1.2 million tons of CO₂. In addition, *Andersson and Jonsson* (2019) found that satellite toll collecting improves traffic flow and reduces fuel use by 10 per cent. Fuel savings and emissions reductions result from this fuel usage reduction. Satellite toll systems improve resource efficiency. This transition reduces building materials and energy, reducing infrastructure development's environmental effect (*Kumaret al.*, 2021).

Ecological Impact: To assess environmental impacts, we compare measurable pros and cons. Together with the 10 per cent fuel savings, the annual CO₂ reduction of 1.2 million tons is a major benefit. At \$50 per ton of CO₂ using the social cost of carbon, emission reduction alone generates \$60 million annually. Satellite operations consume \$15 million in energy annually at an average industrial rate of \$0.10 per kWh. E-waste management costs \$5 million, bringing the annual cost to \$20 million.

Sensitivity Analysis: According to sensitivity analysis, even if the key assumptions alter, such as a 20 per cent increase in energy costs or a smaller-than-expected emission reduction, the environmental impact is still positive. Even if CO₂ decreases by 20 per cent, the financial gain is \$40 million, providing a positive advantage compared to costs.

FINDINGS

Interpretation of Results: Satellite toll collecting systems in India have far greater environmental benefits than costs, according to the report. Avoiding stop-and-go traffic at toll booths reduces car emissions, especially CO₂, NO_x, and PM. Improved vehicle movement reduces fuel use and traffic congestion, improving public health and the environment.

Comparing Previous Research: The findings support the findings of *Andersson and Jonsson* (2019) and *Shah et al.* (2020) that electronic toll systems have similar benefits. Studies in diverse locations suggest

that modern toll collection systems can lessen road transportation's environmental impact. Comparing worldwide case studies supports the environmental benefits of satellite toll systems in India.

Policy Implications: The positive environmental impact highlights the need for policymakers to consider satellite toll collecting as a viable alternative to conventional tolling. This strategy meets India's Paris Agreement greenhouse gas emission reduction obligations and sustainable development and technological progress goals. Satellite toll collecting policies should include sustainable electronic waste management and renewable energy use.

Implementation Ideas: Satellite toll collecting systems provide environmental benefits, but they must overcome many challenges. These include the initial large investment, technological infrastructure and electronic waste management. To ensure satellite toll system

success, Government authorities, technology suppliers and waste management corporations must work together. To attain widespread acceptance and adherence, public understanding and stakeholder engagement are essential.

Limitations and Future Research: Secondary data may limit the study's accuracy and completeness. To verify findings, future studies should focus on original data and pilot initiatives. Analyzing the socio-economic effects of satellite toll collecting systems, including toll revenues and user approval, might help explain their effects.

CONCLUSIONS

The environmental cost-benefit analysis of Indian satellite toll collection systems is favorable. Substantial decreases in car emissions, traffic congestion and fuel usage enhance air quality and promote public health. These benefits align with India's global commitment to reduce greenhouse gas emissions and achieve environmental and sustainability objectives. Satellite toll systems demonstrate resource efficiency by conserving materials and energy due to their reduced infrastructure compared to traditional toll booths. It is imperative for sustainable practices and legislation to address the environmental expenses associated with satellite energy use and electronic waste. In general, the implementation of satellite toll collecting systems has the potential to enhance the environmental sustainability of India's transportation sector. Policymakers should give high priority to the

"Substantial decreases in car emissions, traffic congestion and fuel usage enhance air quality and promote public health"


implementation of these systems, while simultaneously addressing the need for initial investments, technological infrastructure, and the management of electronic waste. In order to validate these findings and examine the socio-economic impacts of satellite toll collecting systems, it is necessary to carry out real-world pilot projects and collect primary data. This comprehensive approach will enable the transition to modern tolling technologies to be environmentally sustainable and practical. **MA**


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Interview

CMA Hira Nand

Director (Finance)
National Fertilizers Limited
Noida

CMA Hira Nand was born on 05.02.1966. Shri Hira Nand holds the position of Director (Finance) and CFO in the Company. He is Cost and Management Accountant by profession. He is also a Law graduate from Bhopal University.

Prior to his appointment as Director (Finance) & CFO in NFL, he was holding position of ED (Finance & Accounts) in NFL, he has also worked as ED (F&A) at Ramagundam Fertilizers & Chemicals Limited. Earlier, he has also worked with

ONGC Petro additions Limited (OPaL), KRIBHCO and Model Economic Township Ltd. (a wholly owned company by Reliance Industries Ltd). He has a rich experience of more than 30 years. He worked in areas of Corporate Finance & Treasury in mobilization of funds from market including forex risk management, capital & revenue budgeting, accounts and taxation, fertilizer pricing related regulatory matters etc.

Q1. As the vision of your company suggests "to be a leading Indian company in fertilizer and beyond..." recently National Fertilizer Ltd has been given status of Navratna Company. We would like you to share few analytical factors of this journey of achievement?

Ans. Achieving the status of a Navratna company is a significant milestone for National Fertilizers Limited (NFL), reflecting its prominent position and strategic importance within the Indian industrial landscape. NFL is 2nd largest Urea player of the country, Company is continuously enhancing its product basket and its geographical reach in India, now company's pan India presence along with strong dealer network has enabled us to capture significant market shares of fertilizers business in India.

Robust financial performance is a critical criterion for Navratna status, as it signifies the company's ability to manage resources effectively and sustain profitability. Strategic investments in joint venture, including revamping of closed urea plant of FCI at Ramagundam and enhancing the distribution networks, have played a significant role in the growth. These investments enhance the company's ability to deliver products efficiently across India. Company's alignment with public sector reforms and initiatives aimed at enhancing the performance of state-owned enterprises has supported its journey. A strong brand presence and positive market perception reinforce NFL's status. The company's leadership has played a pivotal role in setting goals, implementing strategies, and achieving milestones. The journey of NFL towards achieving Navratna status has been characterized by a combination of strong financial performance, operational excellence, strategic investments, and alignment with government policies.

Q2. Being the Director Finance of the prestigious Navratna Company, what is the perspective of NFL future plan to maintain rather growth of the company in pan India level?

Ans. As the Director Finance of prestigious Navratna company, maintaining and driving growth across a pan-India level involves a strategic blend of financial prudence, operational efficiency, and market adaptation. Enhancing logistics and distribution networks is essential for timely and efficient delivery of products. We are focusing on optimizing its supply chain and leveraging

technology to streamline distribution processes, reducing lead times and costs. Company is committed to adopting sustainable practices in its operations; this includes reducing the environmental impact of production processes, improving energy efficiency, and minimizing waste. Company is strengthening its IT infrastructure to reduce its operational cost for sustainable growth of the company.

Maintaining and driving growth for NFL on a pan-India level involves a comprehensive approach that combines strategic investment, innovation, sustainability, and strong stakeholder relationships.

Q3. "Vikshit Bharat 2047" aims in self dependence on agricultural sector, giving emphasis on production of fertilizer, high yield seeds, please appraise us how NFL is gearing up to be a part of the Vikshit Bharat 2047 journey.

Ans. The "Vikshit Bharat 2047" initiative envisions a future where India achieves significant self-reliance in its agricultural sector, particularly focusing on enhanced production of fertilizers and high-yield seeds. National Fertilizers Limited (NFL) is aligning itself with this vision through various strategic initiatives to bolster agricultural self-dependence. NFL is investing in modernizing and upgrading its fertilizer production facilities to increase efficiency and output. This includes adopting advanced technologies and processes to enhance production capabilities and reduce environmental impact. To be Atmanirbhar Bharat in availability of fertilizers, company promoted a joint venture aiming to increase Urea production in the country to ensure a steady supply of urea to Indian farmers, supporting their productivity and ultimately food security.

NFL is consistently producing beyond its installed capacity thereby demonstrate operational efficiency & its ability to meet the growing need of the agricultural sector. NFL is having strong infrastructure in seed segment to facilitate farming community with high qualities seeds of various crops. The company relentlessly focuses on promoting balanced and efficient use of fertilizers to maintain soil health and prevent degradation. Educating farmers on best practices for nutrient management is part of NFL's broader strategy to enhance agricultural sustainability. NFL aligns its strategies with government policies to ensure that

the company's efforts are in sync with national goals and contribute effectively to the broader vision of "Vikshit Bharat 2047."

NFL's commitment to the "Vikshit Bharat 2047" vision is evident through its multifaceted approach involving capacity expansion, seed development, sustainability efforts, farmer education, and technological innovation.

Q4. Some of the units of NFL have won flagship awards in different sectors like Energy conservation, environment management, green tech energy conservation. Could you please share activities of various units of NFL as well as mission of the organisation as a whole?

Ans. NFL has earned recognition through various flagship awards for its efforts in energy conservation, environmental management, and green technology. Several NFL units have implemented energy-efficient technologies, including the installation of advanced burners, high-efficiency compressors, and energy-efficient lighting systems. To promote sustainability through environmentally responsible practices, NFL is committed to reducing its environmental footprint by implementing energy-efficient technologies, effective waste management, and green practices. NFL's recognition through awards in energy conservation, environmental management, and green technology reflects its dedication to sustainability and innovation.

Q5. Government continued effort on progress of MSME sector, creating employment and self reliance, please share your views on how Atmanirbhar Bharat Abhigyan will be successful through productivity and resilience in agriculture.

Ans. The Atmanirbhar Bharat Abhiyan, or the Self-Reliant India Mission, is a comprehensive initiative by the Government aimed at promoting self-reliance and economic resilience across various sectors, including agriculture. The MSME (Micro, Small, and Medium Enterprises) sector plays a pivotal role in this vision, especially in the context of agriculture, which is a cornerstone of the Indian economy. Providing financial support and incentives to agro-based MSMEs helps them invest in technology, expand operations, and improve productivity. Training programs and skill development initiatives for MSME entrepreneurs and workers in the agricultural sector enhances

their capabilities and efficiency. Supporting startups and entrepreneurs in the agriculture sector through incubation programs and mentorship fosters innovation and growth.

Simplifying regulations and improving the ease of doing business for MSMEs in agriculture sector to align with requirement is driving growth and innovation in this sector. The agriculture sector is also getting boost through leveraging of public-private partnerships to implement agricultural projects and initiatives.

Q6. Brand name "Kisan" and "Kisan Beej" created by NFL, could you please share with our readers the success story of these names among farmers.

Ans. Certainly! The brand names "Kisan" and "Kisan Beej" are significant in the Indian agricultural sector, primarily because of their association with the National Fertilizers Limited (NFL), one of India's leading fertilizer companies. "Kisan" translates to "farmer" in Hindi, making the name inherently relatable and meaningful in the Indian context where agriculture plays a crucial role. Both brands have built a reputation for reliability over the years. Farmers trust "Kisan" for its consistent quality of fertilizers and plant nutrients, while "Kisan Beej" is recognized for providing high-quality seeds that boost crop yields. The company provides advisory services and support to help farmers address issues related to crop management and soil health, further cementing the value of the "Kisan" and "Kisan Beej" brands. Over the years, "Kisan" and "Kisan Beej" have become household names among Indian farmers.

Q7. As we know that you have vast and rich experience in the fertilizer and chemical industry, we would like you to share with us some of your experiences which posed vital and challenging in your professional journey.

Ans. The fertilizer industry is heavily regulated, and compliance with various regulations related to pricing, subsidies, and environmental standards poses a significant challenge. Changes in regulatory policies impact pricing structures and financial performance, at NFL and other organizations; I dealt with complex fertilizer pricing regulations and subsidy mechanisms. Ensuring compliance while optimizing pricing strategies

required constant engagement with regulatory bodies and in-depth analysis of policy changes, this experience honed my skills in regulatory affairs and financial strategy alignment. One of the significant challenges in the fertilizer and chemical industry is dealing with market volatility, for instance, fluctuations in global commodity prices, such as those for crude oil or natural gas, currency fluctuations can have substantial impacts on production costs and pricing strategies. During my tenure, particularly in roles involving Corporate Finance & Treasury, managing forex risk and capital mobilization became crucial. I was involved in implementing hedging strategies to mitigate the impact of currency fluctuations and developing financial models to predict and manage market risks.

Throughout my career, I have been responsible for overseeing capital and revenue budgeting, which involved evaluating investment opportunities, prioritizing projects, and ensuring alignment with strategic goals. These experiences taught me the importance of strategic planning and resource management in achieving long-term financial health. Balancing the expectations of diverse stakeholders, including shareholders, regulatory bodies, employees, and customers is another complex area, where each group has different priorities / interests and those are to be addressed effectively.

My journey through the fertilizer and chemical industry has been marked by a series of challenges that have shaped my professional development. From managing financial risks and regulatory compliance to driving innovation and leading teams, each experience has contributed to my understanding of the industry and my ability to navigate complex situations. These experiences have reinforced the importance of strategic thinking, adaptability, and effective leadership in achieving organizational goals and fostering long-term success.

Q8. Being a successful CMA, please share few words on success strategy and advice for fresh qualified CMAs.

Ans. As a Cost and Management Accountant (CMA), the journey to achieving excellence in this profession involves a blend of strategic thinking, continuous learning, and effective management. My advice for fresh qualified CMA is to stay updated

with the latest developments through continuous education, professional courses. Develop strong analytical skills to interpret complex financial data and provide actionable insights, proficiency in data analysis tools and techniques will enhance the ability to support strategic decision-making. Strong relationships with colleagues, management, and external partners, effective collaboration and teamwork are essential for successful project execution and organizational impact. Encourage innovative thinking and propose new approaches to improve financial processes, cost control, and operational efficiency. Build and maintain a strong professional network within the accounting and finance community, engage with peers, mentors, and industry professionals through conferences, seminars, and professional associations.

Understanding how digital transformation impacts finance and accounting functions, being adapt in technology will help staying competitive and relevant in a rapidly changing environment.

Finally, uphold the highest standards of professional ethics and integrity.

Q9. What are the various ways your organization can integrate with our Institute for professional development?

Ans. Integrating NFL with institute for professional development can provide significant benefits to both parties. Such integration can enhance the skills and knowledge of individuals in the industry, while also fostering collaboration between a leading company and educational institutions. Thus, NFL and institute work together to achieve mutual goals in professional development by Conducting workshops and seminars on specialized topics related to fertilizers, chemicals, and corporate finance, leveraging the expertise of both NFL professionals and academic faculty. These seminars provide students and professionals with insights into industry trends, challenges, and best practices. Another area can be internship for students within NFL to gain hands-on experience in various departments such as finance, operations, and marketing, to bridge the gap between academic learning and real-world application. However, NFL had a practice of imparting practical training to the CMA aspirants on internship basis.

MA

The New Era of Bullion Trading: Market Reforms through India International Bullion Exchange (IIBX) and Navigating Customs Duty Changes



Ramakrishnan Padmanabhan

General Manager
International Financial Services Centres Authority
Gift City, Gandhinagar
ramakrishnan.pad@ifsc.gov.in

Background

The idea of a bullion exchange in GIFT IFSC was proposed by NITI Ayog Committee in its report on “Transforming India’s Gold Market” in February 2018.

The Committee recommended that establishment of an International Bullion Exchange in International financial services centres (IFSCs) have two big advantages:

- ⊙ A regulatory regime that provides global credibility
- ⊙ Sufficient exemptions from capital controls to make the global contract feasible.

The Committee also recommended that the setting up of a Bullion Exchange in the GIFT-IFSC can provide the following:

- ⊙ Allow import of gold in India through GIFT City.
- ⊙ Create a set of vaults in GIFT-IFSC for gold that adhere to standards set by the regulator.
- ⊙ Vaults to work with the proposed Bullion Exchange being setup in India for distribution of the same in the local markets.
- ⊙ Allow trading with global markets, which can create a vibrant marketplace that helps in price discovery, with potential for India to be the price setter in the gold commodity.

Abstract

The Government of India and the International Financial Services Centres Authority (IFSCA) have undertaken strategic initiatives to establish the India International Bullion Exchange (IIBX), a revolutionary platform set to transform bullion trading in India. With its prefunded model, IIBX provides a strong safeguard against unpredictable duty changes, ensuring enhanced liquidity, transparency, and price discovery. To support IIBX, the Government of India and IFSCA have enabled the participation of qualified jewellers, suppliers, and TRQ holders. As Indian banks begin to engage with IIBX, it may be opportune time for a reassessment of traditional consignment models and move towards more resilient, sustainable and secure bullion trading ecosystem. In a bold move, the Government of India in its Union Budget 2024 slashed the duties on gold and silver from 15% to 6%, sparking both excitement and uncertainty in the bullion market. We explore the sweeping implications of this change, particularly for nominated banks operating on consignment models, who may now face significant financial risks. Discover how the IIBX is set to become a game-changer in the gold and silver market, ensuring stability and fostering a vibrant, transparent marketplace in India's evolving financial landscape.

Most of the recommendations in the NITI Ayog Report have been implemented, beginning with a regulatory regime that provides global credibility. The International Financial

Services Centres Authority (IFSCA) was established on April 27, 2020, under the International Financial Services Centres Authority Act, 2019, for formulating a regulatory framework that provides global credibility for all financial services activities, including, the regulations for establishment of an International Bullion Exchange. The International Financial Services Centres Authority (Bullion Exchange) Regulations, 2020 were notified on December 11, 2020.

The International Financial Services Centres Authority (IFSCA) spearheaded the creation of the India International Bullion Exchange (IIBX), supported by five major Market Infrastructure Institutions (MIIs) to create a sustainable exchange-based business model. The National Stock Exchange (NSE), India International Exchange (INX, a subsidiary of BSE), Multi Commodity Exchange (MCX), National Securities Depository Ltd (NSDL), and Central Depository Services Ltd (CDSL), which are institutions of immense credibility as exchanges and depositories have come together to establish a bullion trading and clearing platform at the International Financial Services Centre (IFSC) in GIFT City. The IIBX was officially recognized as a Bullion Exchange and Bullion Clearing Corporation on December 10, 2021.

The Hon'ble Prime Minister inaugurated the India International Bullion Exchange (IIBX) on July 29, 2022, at GIFT City's IFSC. During the launch, the Prime Minister stated:

"India is a very big market in the field of gold and silver today. But, should that be the only identity of India? The identity of India should also be that of a market maker. IIBX is an important step in this direction. IIBX will also provide opportunities to trade in gold directly through the exchange. As the gold trading market becomes organized, the demand for gold in India will also impact and determine the gold prices."

The IIBX aims to enhance liquidity, transparency, and price discovery in bullion trading through several mechanisms:

1. It serves as a centralized platform for market participants, facilitating efficient matching of buy and sell orders through price-time priority, thus improving market efficiency and liquidity.
2. It offers standardized contracts with defined sizes, quality specifications, and delivery terms, reducing transaction costs and ensuring uniformity in trading terms for all participants.
3. Through continuous trading activities in both spot and derivatives, IIBX contributes to price discovery, enabling informed decision-making for market participants.
4. Robust market surveillance mechanisms are in place

to detect irregularities and market manipulations, maintaining market integrity and investor confidence. Under the regulatory oversight of IFSCA, IIBX operates transparently, ensuring fair and orderly trading and enhancing market credibility.

5. By granting access to a diverse range of participants, including traders, jewellers, brokers, banks, and financial institutions, IIBX fosters healthy competition, liquidity, and efficient price discovery.

Overall, IIBX plays a pivotal role in advancing liquidity, transparency, and price discovery in bullion trading through its centralized marketplace, standardized contracts, regulatory oversight, and inclusive market access.

Initiatives by the Government

To facilitate volumes on IIBX, various steps have been taken by the government which include the following:

- ⦿ Enabling Qualified Jewellers (QJs) with a Net Worth Criteria of INR 25 Crore to import directly through IIBX.
- ⦿ Enabling import of bullion (gold/silver) under India-UAE CEPA directly through IIBX for 'Qualified Jewellers and valid Tariff Rate Quota (TRQ) holders.
- ⦿ Implementing ICEGATE at GIFT-IFSC customs for availing concessional rate of duty by QJs and TRQ holders under India-UAE CEPA.
- ⦿ Exempting TRQ holders from IGCR Rules 2022 for import of gold through IIBX.
- ⦿ Government of India had also initiated stakeholder consultations on January 2024, chaired by Hon'ble Finance Minister to facilitate the participation of Indian banks on IIBX.

IIBX- The new gateway integrating international and domestic markets

The IIBX has emerged as a significant platform facilitating the participation of both domestic and international market participants, effectively creating a unified marketplace for conducting bullion transactions.

Since the late 1990s, the physical supplies of gold and silver were predominantly controlled by a limited number of suppliers and importers under the conventional models of import. However, there is a paradigm shift with the introduction of new supply channels through IIBX, enabled by government initiatives and regulations from IFSCA.

IIBX has disrupted the prevalent structures of trading that largely support opaque bilateral bullion transactions, compelling a shift towards a transparent exchange-based ecosystem. Within this ecosystem, participation of clients, members, trading, risk management, clearing and settlement processes are objectively overseen by IIBX, rather than being contingent on institutional ties

and bilateral agreements.

There is an expectation that large bullion-supplying banks, nominated banks and other entities will progressively adopt the transparent and credible exchange ecosystem offered by IIBX, surpassing traditional bilateral models of conducting bullion businesses.

Thanks to the initiatives led by the government and IFSCA, the IIBX has experienced an uptick in trading volumes and witnessed a rise in the participation of members and clients. Below are outlined some of the key developments across various aspects of the exchange:

a. Trading Volumes

Since the inception of IIBX in July 2022, the total volumes of gold traded had crossed 26 tonnes, while silver volumes stand at 1137 tonnes as on August 6, 2024. The disintermediation advantage facilitated by IIBX has attracted bullion dealers and jewellers with an alternative avenue for importing gold and silver, distinct from the conventional method of importing through nominated banks and agencies under the consignment model.

b. Participants

- i. **Qualified Jewellers and Suppliers:** The exchange has successfully drawn in a significant number of participants, including 133 'Qualified Jewellers' and 25 active 'Qualified Suppliers'. Most of the suppliers are based in Dubai, as there is currently no mandatory requirement for nominated banks to import gold and silver through IIBX, and the consignment model for gold and silver imports remains operational. Suppliers and jewellers are participating in the IIBX due to government incentives, such as concessional duties and exemptions for TRQ holders to import gold through IIBX, which promote the use of this transparent platform. Qualified Jewellers and Qualified Suppliers are required to adhere to the guidelines issued by IFSCA and IIBX in order to participate in the exchange ecosystem and extensive and enhanced due diligence is conducted on their participation.
- ii. **TRQ holders under India-UAE CEPA:** In order to facilitate participation on IIBX for the importation of gold under the India-UAE Comprehensive Economic Partnership Agreement (CEPA), the Directorate General of Foreign Trade (DGFT) under the Ministry of Commerce authorized the import of gold by valid TRQ holders on November 20, 2023. Subsequently, the IFSCA operationalized this directive through its circulars dated December 13, 2023. Apart from the 'Qualified Jewellers'

who may also hold quotas under the India-UAE CEPA, a total of 296 TRQ holders have been granted permission to import gold through IIBX. The issuance of these TRQ quota licenses by DGFT occurred in May 2024 and is anticipated to enhance gold trading volumes on IIBX during the fiscal year 2024-25. The total quota allocated for the fiscal year 2024-25 was 160 tonnes, and a significant portion of import volumes is anticipated to be facilitated through trading on IIBX.

- iii. **Participation of India banks on IIBX:** The Reserve Bank of India (RBI) in February 2024, has permitted Indian banks' branches located at GIFT-IFSC, designated as International Banking Units (IBUs), to function as Trading Clearing Members (TCMs) on IIBX. State Bank of India has achieved the distinction of being the first Indian bank to assume the role of a TCM on IIBX. Other prominent banking institutions with branches established at GIFT City, such as ICICI Bank, HDFC Bank, among others, are also poised to participate as TCMs on IIBX in the near future.

Furthermore, RBI has granted permission to nominated banks engaged in the importation of gold and silver to participate on IIBX as Special Category Clients (SCCs).

It is expected that large foreign banks and financial institutions are likely to participate on IIBX once the Indian banks commence operations on IIBX.

c. Products

The exchange has introduced new gold and silver products for hedging, such as futures trading, with the aim of increasing trading volumes and enable resident entities to hedge gold and silver prices. It may be noted that the RBI has already permitted the resident entities to hedge price risks on IFSC exchanges. Consequently, a significant amount of gold hedging may occur through IIBX which eventually may ensure India to become a price influencer.

d. Vaulting infrastructure

IFSCA has granted registration to three highly secured and state-of-the-art vaulting facilities located at GIFT-IFSC, boasting a combined capacity of approximately 420 tonnes for gold and 2200 tonnes for silver. Furthermore, an additional facility in Chennai is now activated which is having the capacity of approx. 20 tonnes and silver approximately 200 tonnes. This facility in Chennai is the first vaulting infrastructure established outside

GIFT-IFSC, catering specifically to the delivery needs of gold and silver in the southern region of India.

Budget 2024: Unravelling the Impact of Drastic Customs Duty Cuts on Nominated Banks and the sustainability of Bullion Imports in the current model

In a dramatic policy shift, in the Budget 2024, the Indian government had slashed the customs duty and Agricultural and Infrastructure Development Cess on gold and silver from a hefty 15% to a mere 6%. This sweeping 9% reduction translates into a staggering drop in duties in absolute terms in today's price—INR 5,90,000 per kilogram for gold and INR 5,340 per kilogram for silver. While this may seem like a golden opportunity for importers, it's creating a whirlwind of uncertainty for nominated banks.

Picture this: February 2024, nominated banks, operating on consignment models with global bullion banks, potentially imported 700 tonnes of silver. These consignments, backed by customer margins in guarantees and cash, may now lie in domestic vaults. However, the sudden duty reduction has thrown a wrench into their carefully calculated risk management plans. Without full margin backing from their clientele, banks could face a jaw-dropping loss of around INR 370 Crores.

Gold, too, is not spared. If 8 tonnes of gold are sitting in domestic vaults, potentially imported under the previous duty regime, and client margins fall short, nominated banks might be staring at probable losses of INR 470 Crores. The stress levels within the banks' risk departments may be soaring as they grapple with these potential financial black holes.

This scenario begs a critical question: Is the consignment model, especially for non-manufacturing entities, worth the risk?

Nominated banks are caught in a speculative storm, unable to hedge on domestic exchanges, making them perilously dependent on traders for whom they ordered the consignments. With customs tariff changes known in advance, importers could exploit these fluctuations, turning the whole process into a high-stakes gamble.

IIBX: The Golden Shield Against Customs Duty Chaos

Amid the turbulence of customs duty funding, the India International Bullion Exchange (IIBX) may be the answer for the nominated banks with its prefunded model for gold and silver imports. In this system, nominated banks must ensure all funds, including customs duties, are secured in INR before transactions are executed. This approach shifts the entire risk to the clients, providing banks with a solid risk management shield against unpredictable duty changes. The Reserve Bank of India authorized Nominated Banks to participate in the IIBX on February 9, 2024. Following

this, the IFSCA issued the necessary guidelines for their participation on April 19, 2024.

Regulators must seize this moment to reassess the consignment model. Despite its apparent simplicity, the inherent risks are enormous. Banks are not just intermediaries; they are pivotal players in the financial ecosystem. Moving to a prefunded exchange model could fortify their stability and promote a more resilient market structure.

In this fiscal storm, the stakes have never been higher. The future of gold and silver imports in India hinges on banks being trusted and well-regulated entities. It's now up to both the banks and regulators to reassess the risks and adapt to the evolving financial landscape.

Conclusion

The recent reduction in customs duty and cess on gold and silver presents significant risks for nominated banks operating under consignment models. These banks could face substantial losses if customs duties are not covered by cash margins from their clients. The India International Bullion Exchange (IIBX) provides a viable solution with its prefunded model, ensuring all funds are secured before transactions, thus mitigating financial risks.

Nominated banks, their internal risk teams, and regulators may need to reassess the consignment model and its associated risks, including the potential for speculative gold and silver imports. They should adopt the prefunded exchange model to better serve bullion dealers by ensuring full funding of the bullion through the exchange. The consignment model should be reserved for importing gold for jewellers and exporters who ensure value addition and require working capital finance in the form of gold metal loans.

Notably, the exchange ecosystem boasts 25 suppliers, whereas the consignment ecosystem has only 7 to 8 active global suppliers despite being in operation for over 15 years. Wouldn't an exchange model be an ideal solution to ensure more suppliers and reduce procurement costs?

This shift will enhance market stability and transparency, ensuring a sustainable and transparent trade of gold and silver imports in India. **MA**

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Fusionistic Convergence of AI to Blockchain TechStack - Turning Opportunities into Realities

Abstract

Integration of two or more technologies is not a new phenomenon. Robots are created by integrating four technologies collectively called mechatronics and then made intelligent by adding AI tools. However, the fusionistic convergence of the two titans of the digital world, viz., Blockchain and AI, is not a reality in many cases. New opportunities to maximise value creation and minimise value destruction can be created with the collaborative fusion of the two technologies under the strict drive and supervision of the Smart Contract embedded in any blockchain platform's digital systems. The author has tried to ideate and narrate several such probable application use cases that can be experimented to generate more value with a total focus on ESG and DEI. Specific findings, conclusions, and recommendations of research scholars have also been cited in support of the ideated propositions.

Introduction

Thousands of zettabytes of digital space and thousands of kilometers of physical paper space have already been consumed and stored with writings on Blockchain technology-based platforms, Artificial Intelligence, and their applications. As these two technologies evolve and advance with more capabilities, more applications-oriented knowledge continues to be added, and breakthrough solutions are being created. The latest three are Generative AI, Spatial Computing, and Quantum AI. AI and blockchain continue to sustain with ever-enhancing power and capabilities for intelligent, advanced, and innovative applications for digital transformation and value creation.

There are some anxieties amongst users and even solution builders about AI's specific far-reaching adverse impacts. However, most technology experts believe exercising appropriate care and caution while building solutions, complying with regulatory codes of standards with universal altruism and oversights, and complying



CMA (Dr.) Paritosh Basu

Senior Director (Services)

Stragility Consulting Pvt. Ltd., Mumbai

paritosh13286@outlook.com

with country-specific legal compliance can minimize the effects. AI is also emerging as an indispensable technology for specific applications like healthcare. Blockchain is predicted to move forward from a transformative to a foundational technology of this century because of its potential to qualitatively improve any country's societal and economic foundation with more diversity, equity, and inclusivity (DEI).

The author has also written about these two technologies and their multivarious and multisectoral applications in the second enlarged edition of his Book¹ and other research-based papers which are readily available. Therefore, given the shortage of space, various features and utilities of Blockchain and AI as digital technologies are not being repeated in this paper. Anyone with some knowledge of what can be done by separately using blockchain and AI can contemplate what great tasks can be performed if a cluster of AI tools collectively is added to a Blockchain platform to become an added layer to the Blockchain platforms technology stack.

Objective

After briefly narrating a blockchain technology platform's functional and data management system, this paper will examine the justifications for adding a layer of the artificial intelligence technology stack to the blockchain platform. The cardinal principle for combining two objects is that the combined unit must generate additional value and more opportunities/avenues for generating values. For a merger and acquisition transaction, investment bankers adopt a simple formula to justify the acquiring company's (AC) investment to bring the target company (TC) under its ownership. The formula is that the value of the combined company/group should be more than the mathematically

added individual values of AC and TC or $\text{Value}_{AC+TC} > \text{Value}_{AC} + \text{Value}_{TC}$.

This paper aims to similarly appreciate whether new opportunities for more value generation can be created by adding a layer of AI Technology Stack (AI TechStack) to a blockchain technology platform. According to the author, this is possible, albeit to be validated by real-life case studies. Efforts will be made to understand and justify this claim from the perspective of blockchain and AI technology users. Certain complex propositions of digital solution builders will be briefly explained, and a few new ones will be added as the author ideates and perceives the same to be possible. In the end, the conclusions and recommendations of certain research scholars will be reviewed to support the propositions in this paper.

Blockchain TechStack and Data Management

Any blockchain platform's technology stack (TechStack) is an integrated set of intricate digital technologies that work in unison following the designed principles of a no-trust decentralised environment, including encryption and data storage facilities. The functional domain across all TechStack layers is auto-driven by all-pervasive provisions of smart contracts without any human interventions by any central controller/administrator. This is what is at the central software system of the platform. The smart contracts are scripted into the software to cover business processes and compulsively ensure compliance with all applicable legal and regulatory requirements. Thus, the transactional data provided by such a system is always free from any bias or distortion and is reliable, relevant, traceable, and auditable.

The typical technology stack of any blockchain platform can be broken down into several tiers. Appendix 1, at the end of this paper, provides a graphical display of the technology layers of a typical blockchain. Readers may observe a data layer of transactions towards the bottom of the graphic. The transactional layer of any blockchain platform for financial and non-financial events, identity management, tokenization, etc., generates as much transactional data with underlying documentary evidence for as many events it records.

Any transaction can sequentially get added to the chain of transactional blocks of previous transactions only after the designated participant grants consent identified with a public key. Each such transactional data is added to the chain chronologically and logically, following a pre-defined data structure. There can be the following two scenarios of data storage:

- ⊙ **On-Chain Storage:** All transactional data and underlying digitised documentary evidence are stored on the blockchain platform itself, and
- ⊙ **Off-Chain Storage:** All transactional data are stored in an integrated database, and underlying documents are stored in a separate document library with all related transactional references for easy tracking and

retrieval. Only the metadata for the transactions are stored in the blockchain platform itself,

But in both types of storage systems, the following are done for security, safety, and trackability:

- ⊙ **Reference Tagging:** All data and documents are duly tagged with the related transactional references for easy constant surveillance, tracking and retrieval,
- ⊙ **Encryption:** All data and documents are encrypted with complex algorithms for safety and security,
- ⊙ **Immutability:** Changes of any data and document of any type for any reason can only be made by passing another transaction, with tagged reference to the earlier one, after due consent from the concerned parties to nullify or modify the previous ones as appropriate. This process ensures the immutability and reliability of all data and documentary evidence, including for acceptability in the court of law in the event of any litigation and
- ⊙ **Data Sharing:** Related quantitative and financial data along with related digitised documents are transferred to the wallet at the node of each of the concerned participants of the blockchain platform in any transaction for onward transfer and recording into their respective books of accounts.

Thus, the data layer in the TechStack of any blockchain platform is designed to auto-administer and conduct storage management of all transactional information and digitised documents. The system also includes structuring data before storage with 'Merkle Tree,' Hash Tagging, and Hash Chain. All these provide facilities for tracking, monitoring, and retrieving the data following an appropriate logic for any individual participant during a given period. For example, the data can be for Letters of Credit (L/Cs) or their usage for bill discounting during a given period, or L/Cs issued by a particular bank during a defined period, for which the related export-import transactions are performed in a blockchain platform.

Why to Add AI TechStack to Blockchain TechStack

Accuracy, reliability, relevance, currency, traceability, immutability, and auditability of data are essential for success in any AI application that draws meaningful insights from those data. If the data is provided from the database of a blockchain platform, data scientists can remain peaceful and anxiety-free about all these aspects. From the perspective of participating parties, data will always remain available for all transactions performed through blockchain platforms.

The data of any blockchain system will further reinforce the power of AI-based tools for self-learning and creativity. This would render the system acceptable and adaptable for multi-dimensional purposes. According to the author, over time, the solution builders will also be able to provide

participants with access to process their respective wallet's data using the 'AI Layer' various data processing facilities added to the blockchain platform. All these can be done without disturbing the data of other participants in any manner whatsoever.

Kamales Lardi, Forbes Council Member², believes that "In the current digital economy, data is produced exponentially by people, channels, platforms, and devices. AI models used for decision making provide little transparency, where large data sets are pumped into systems, and results are produced in the form of analysis, reports or recommendations. This can create an issue of trust and raises questions about the system's credibility However, combined with blockchain technology that offers clear data provenance and audit trails, transparency and traceability of data and potential interoperability across various platforms, I believe the result could produce more trustworthy AI-based systems for analysis and decision-making".

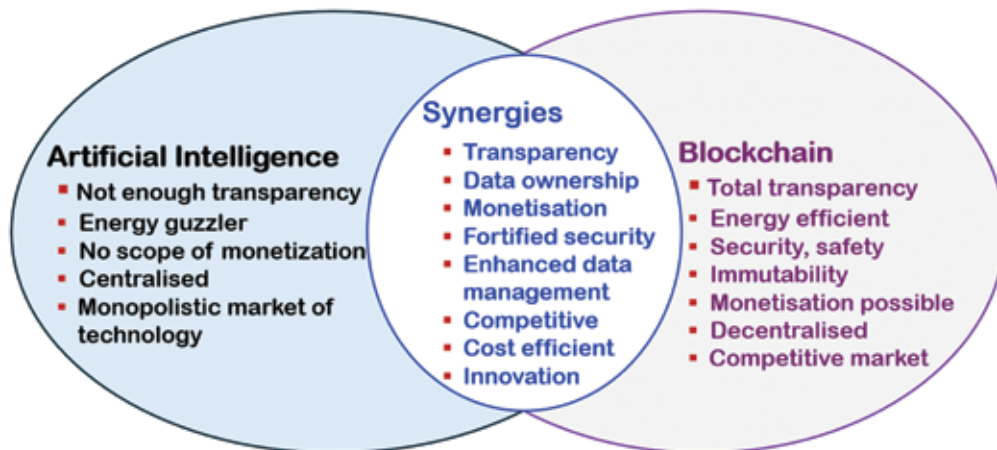
The above powerful statement, recorded in a Forbes Council publication, evokes confidence in Blockchain. One can look forward to a situation in which organisations will increasingly prefer only those systems that provide

more safety and security to the most valuable assets in the ongoing digital economy, which is data, metaphorically called the digital gold of the current Industry 4.0 era. All these will enhance the power of the user organisation to explore all opportunities and potentials. The path to success for the same can be charted using the insights drawn from pervasive analyses of data drawn from the repository of blockchain platforms.

Opportunities for Synergistic Benefits from Convergence and Fusion

Although artificial intelligence is a centralised system, it can effectively function in a decentralised environment with the help of an extracting, transforming, and loading (ETL) tool. These tools can be made functional for drawing data from one or more computing systems, curating, and preparing the same for meaningful applications of AI tools. Those AI tools can be Deep Dive Analytics (DDA), Machine Learning (ML), Deep Learning (DL), Neural Networks (NN), and Generative AI. On the other hand, in a Blockchain environment, the added AI layer to the Blockchain TechStack does not need to perform much prior exercise to prepare the data before applying the AI tools.

Illustrative Synergies from the Fusion of AI and Blockchain



Source: Graphic created by the author

According to a publication in Appinventiv³, "The fusion of AI and Blockchain can potentially revolutionize supply chain logistics, healthcare, and cybersecurity, among other areas. the advancements backed by their intersection are truly unparalleled. AI and Blockchain are now converging to unleash incredible possibilities. Together, they are poised to revolutionize various industries and unlock unprecedented potential. The combination of AI and Blockchain is not just the sum of their strengths but rather a multiplication of their impact."

Thus, the fusion of AI into blockchain TechStack cobbles up a strong and healthy alliance that can create much more impact than the simple summation of benefits from the

two technologies. The above graphic is self-explanatory regarding the synergies generated from the fusion of AI into Blockchain TechStack. The multiplication of the impacts arising from the synergistic integration of the two systems can generate many more perceivable benefits than what can be narrated in words. Given the space limitation, readers may extend their thoughts to visualise all those synergistic benefits, taking the above graphic as the basis.

The following graphic illustrates some of the significant components of the digital technology stack of Artificial Intelligence. Two of the substantial investment and revenue cost savings that will arise from the fusion of AI into Blockchain TechStack can be visualised from the first two

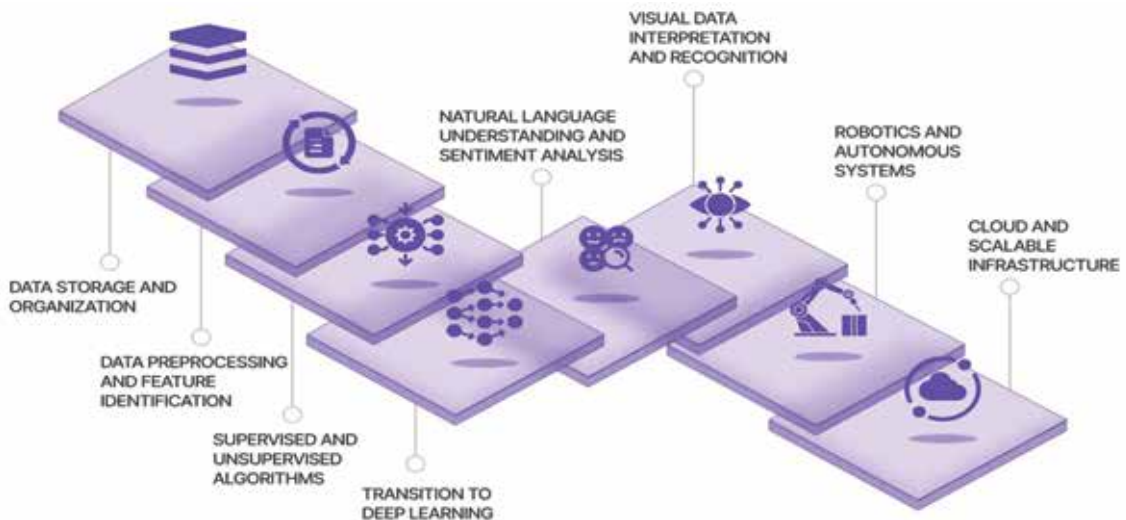
blocks of the following graphic:

- The avoidance of additional storage space and security measures for keeping the second set of data created with the application of ETL and
- Reduced efforts, electricity consumption, and costs for data pre-processing and identifying features to prepare it for the application of AI tools.

Another significant advantage of such fusion is the need-based integration of the Internet of Things (IoT)

and artificially intelligent IoTs or AIoTs into this network. This is possible because blockchain technology can accommodate IoTs in the P2P network of Participants, for which IoTs are also considered another set of event-based information providers. Such applications are mostly seen in blockchain-based solutions for Healthcare, Smart Cities, Life Science, and Supply Chain Management, including track and trace facilities. Combining the three technologies also helps protect IoTs and AIoTs from cyber-attacks and securely preserves the information collected through the IoTs in the encrypted blockchain database.

Illustrative Components of AI Technology Stack



Source: <https://markovate.com/blog/ai-tech-stack/>

RPA for KYP Process

Completing the process for 'Know Your Participant' before admitting any new individual or organisation as a participant of the blockchain platform for conducting transactions is a must for any private, public, and hybrid blockchain. For this, any new entrant, like in the case of completing KYC for Banks, must provide certain predefined and structured information and upload certain documents in support of the same. Robotic process automation (RPA) of this KYP system as the first layer of technology for the blockchain platform is possible with the help of the AI TechStack integrated into the Blockchain. The tools like OCR, NLP, Image Recognition, etc., of the AI TechStack can help automate the process and validate the documents by accessing data.

Smart Contract to Activate Tools of AI TechStack

According to the author, another set of benefits that can be generated by combining AI and Blockchain TechStacks is operating the AI tools more effectively. The database is readily available without any need to curate, transform, and prepare the data for the application of AI tools. Hence,

the tool can be run at programmed intervals to meet the specific and unique requirements of individual participants of the blockchain platform and outcomes sent to the participant's wallet. Such a process can also be effective for supervised and unsupervised ML, DL, BDA, Neural Networks, Generative AI, etc. Appropriate provisions can be scripted in the Smart Contract, enabling individual participants to activate and run the Tools in the above AI TechStack.

Use of Generative AI Tools

Generative AI Tools like Chat GPT of Open AI, Gemini of Google, etc., are now used by ordinary people. Readers may be aware that the success of such GenAI tools depends upon two factors. The first one is framing the query for the task to be performed by the tool and the data and information base to be used. Readers must have experienced that errors, gaps, and distortions creep in when tasks are prompted to any Generative AI tool through any browser like Chrome, and the tool uses data and information from the open source.

The outputs from an in-built Generative AI tool into the AI TechStack, integrated into any Blockchain TechStack,

will, in all probability, not provide such erroneous and substandard outputs. The apparent reason is that the transactional database, other information to be used, and documents to be analysed are from the repository of the Blockchain Platform. At the point of the related transaction, such data gets generated, and documents are loaded under strict supervision and surveillance power built into the Smart Contracts that auto-administer the blockchain platform in compliance with all related legal and regulatory requirements.

Therefore, any strategic decision in a blockchain environment based on the output of any in-built AI tools will always be based on the purposeful and reliable inference drawn from the proper data, information, and document analysis. Readers may know that fifteen Indian banks have incorporated a company to run a blockchain platform for Trade finance transactions. Let it be assumed that, ten years later, RBI would want to frame any macroeconomic policy on any aspect of trade finance-related issues; it can base its decisions on the inferences drawn from analyses of all transactional data from that blockchain. Similarly, each participant bank can also use such built-in GenAI tools to make strategic decisions specific to their banks on various functional aspects of trade finance operations.

Blockchain for IoT and Drone Networks

In an earlier paragraph, the proposition for including IoTs and AIoTs was explained for various purposes. Any network of IoTs can be handled with the help of a blockchain as an added cluster of participants like that of individual or organisational participants in a P2P network. The inputs received from that IoT network can be administered through a blockchain, and the information and data inputs can further be processed in the AI TechStack for various strategic purposes.

Similar to P2P network IoTs, Drones can also be handled and administered by a Blockchain platform for multivarious usage in agriculture, surveillance of sovereign borders, supply chain management, etc. The drones can be added with edge computers, and the functional data and images collected by the drone can be channelised through the blockchain TechStack and information processed by the AI TechStack for various strategic and decision-making purposes.

Technology Fusion to Enhance Security and Safety

The intended benefits of any individual technology tool can further be affirmatively impacted if AI TechStack and Blockchain TechStack collaborate to create agile tools for surveillance of the combined TechStack-based system. It is accepted that cyber criminals and hackers use AI-based tools for hacking and spawning ransomware

post penetration into the target's computing system. It is accepted that hacking any blockchain platform is the rarest of rare events. In that situation, the fusion of AI into Blockchain TechStack can create collaborative systems for further securing the combined platforms and the database by positing AI-based agile software gatekeepers and anti-malware and ransomware spawning abilities to block attacks. Such digital gatekeepers can effectively be deployed at the API points to ensure interoperability between two blockchain platforms.

Spatial Computing

The fusion of Blockchain TechStack and AI TechStack can facilitate the implementation of spatial computing relatively easily and open up various new possibilities for digital transformation. A spatial computing system (SCS) embraces all immersive technologies, viz., augmented reality (AR), virtual reality (VR), and mixed reality (MR). According to a World Economic Forum⁸ (2024) publication, an SCS permits users to transcend “.....*traditional two-dimensional interactions and engage with a dynamic three-dimensional world. This shift is more than technological — it's a redefinition of experience, turning passive viewers into active participants in blended physical and digital experiences.*” If a Blockchain platform is made the central administrator of all the technologies and the user participants, the author believes that the implementation of SCS will become much more manageable. One should keep in mind that the metaverse's digital technologies include blockchain. However, this proposition needs to be tried and tested with real-life use cases

Synergistic Integration of AI and Blockchain – Literature Review

Scholars' conclusions supporting the convergence and fusion of AI into Blockchain are evident from many published research papers. Mohammad (2024)³ studied the impacts of synergistic integration of Blockchain and AI based on case studies in finance, healthcare, and supply management. His paper highlighted that “.... *AI-driven optimization can overcome traditional blockchain limitations, such as scalability and energy efficiency, while also enhancing the security and functionality of blockchain networks.*”

Girija et al. (2023)⁴ concluded that various dimensional aspects of the integration of three technologies, viz., Blockchain, AI, and IoT, are being empirically investigated in greater detail by researchers for more privacy of data and safety benefits by securing the IoTs. In the research paper, Guergove and Radwan (2021)⁵ concluded that “.... *successful and effective integration will enhance the development of new business models as well as the digital*

transformation of market corporations. Accordingly, new approaches to convergence should ensure that executives address the demands of new technology to obtain significant gains in efficiency.” They have hastened to add that integrating blockchain platforms and AI would pose many challenges, including scalability, that must be resolved to attain success.

In their research paper, Singh et al. (2022) concluded that the combined use of blockchain and AI technology can bridge the existing gaps in transportation systems management and can fruitfully handle the existing challenges. According to them, “The convergence of both technologies is likely to yield significant advantages and provide a common distributed platform for data sharing, reliability, and decision-making.” Odeyemi et al.⁷ (2024) concluded that immense potential can be generated by combining blockchain and AI technologies. When systematically harnessed, the combined capabilities of the two will open up vast possibilities, e.g., detecting fraudulent activities, reinforcing systems for identity verification and authentication, and further streamlining systems and processes, including legal and regulatory compliances. Their work has highlighted the transformative impacts that can be generated by a fusion of the two technologies towards creating a trusted financial ecosystem. More research-based conclusions and recommendations could have been added had there been no limitation of writing space.

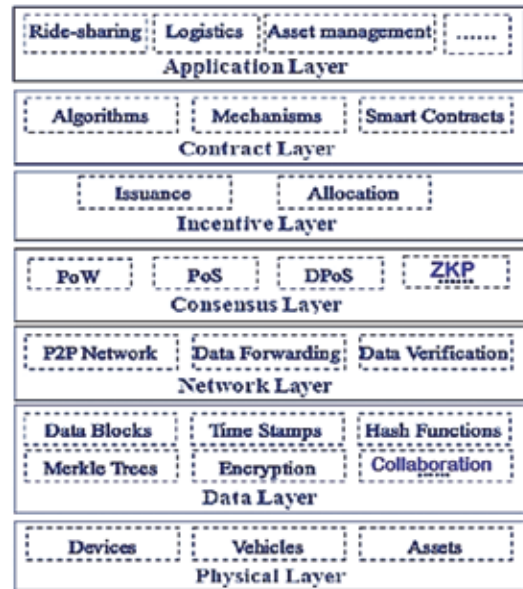
Readers, by now, may be convinced that the author’s claims in this paper that many opportunities can be created and turned into realised possibilities to derive significant synergistic benefits from the fusionistic combination of AI TechStack with the blockchain TechStack. This convergence and combination can facilitate the resolution of many problems while designing digital solutions and positioning agile and critical safety measures and digital gatekeepers. Such a fusion holds immense potential and promises to create enormous beneficial impacts and generate more value in tangible terms by maximisation of value creation and minimisation of value destruction.

Recommendation for Research

This paper contains many propositions and probabilities that can be converted to realised realities. However, each proposition should be subject to more empirical study and validation through case study-based applications. Industry, corporations, and startups are requested to help researchers collaborate and take up new projects for each proposition. Their project work must include issues related to inter alia scalability, maximisation of value creation, and minimisation of costs with a specific focus on ESG and DEI-related objectives to be achieved.

Appendix – I

Standard Layers of a Blockchain Platform



Source: https://www.researchgate.net/figure/An-ITS-Oriented-Blockchain-Model_fig4_332320425

The author has added ZKP and Collaboration in Incentive and Network Layer. MA

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TOWARDS VIKSIT BHARAT@2047 WITH STRONG FOOTING AND LONG-TERM PLANNING

Abstract

Viksit Bharat@2047 is the vision of Government of India under the leadership of Prime Minister Shri Narendra Modi to make India a developed nation by 2047. Our strength in core values and prowess in modern technology are the tool kits for us to reach the goal post. Our past has given us a strong footing. The kingdom of Rama proverbially known as Rama Rajya is celebrated because it ensured health, prosperity, fairness, justice and equality for all. This article starts with the inspiration of supreme governance concepts drawn from the Ramayana literature. The later part of the article studies the contemporary issues and analyses the ways to stay alert to grab the opportunities and to guard from the threats.

INTRODUCTION

Viksit Bharat@2047 is the vision of Government of India under the leadership of Prime Minister Shri Narendra Modi to make India a developed nation by 2047, the 100th year of independence. The vision has created awareness among people, young and old, and has inspired them to look ahead, think and participate in the action plan.

The Union Budget 2024-25, presented on July 23, 2024, identifies the following areas for focusing the growth strategies on, to achieve 'Viksit Bharat'¹:

1. Productivity and resilience in agriculture
2. Employment and Skilling
3. Inclusive human resource development and social justice
4. Manufacturing and services
5. Urban development
6. Energy security
7. Infrastructure



CMA Lalitha Sitaraman

Ph.D. Scholar

IIT - Madras

Chennai

lalitha_sitaram@yahoo.com

8. Innovation, Research & Development
9. Next generation reforms

Higher educational institutions and professional and technical institutions are taking part in this growth journey by focusing on the topic of Viksit Bharat@2047 in various forums and are consolidating the suggestions for the consideration of the Government of India. Indian Institute of Technology, Madras (IIT-M) is involved as one of the nodal institutes for consolidating the deliberations on sectoral vision for Viksit Bharat@2047. This article is a modest contribution by the author to the thought process on Viksit Bharat and the views expressed are the personal views of the author.

Our past has given us a strong footing. The kingdom of Rama proverbially known as Rama Rajya is celebrated because it ensured health, prosperity, fairness, justice and equality for all. This article starts with the inspiration of supreme governance concepts drawn from the Ramayana literature. The concepts given here are from Valmiki Ramayana (Author : Sage Valmiki, Language : Sanskrit), Ramavatharam, popularly known as Kamba Ramayanam (Kavi Chakravarthi Kambar, Tamil) and Rama Charita Manas (Sant Tulsidas, Hindi). While there are many general governance concepts in Ramayana, following particular topics are touched upon here:

- ⊙ Duties and responsibilities of governance professionals
- ⊙ Participatory decision making
- ⊙ Succession planning

- ⊙ Principle of equality
- ⊙ Professionalism in the roles and functions of representatives
- ⊙ Fair treatment for representatives.

The later part of the article studies the contemporary issues and challenges and analyses the ways to stay alert to grab the opportunities and to guard from the threats.

RAMAYANA CONCEPTS

Standards for the care of a Ruler(as in the Ramayana) which can be applied in general to a Ruler / CEO / Chair-person / Person-in-charge etc.

The kindness, care and concern of King Dasaratha towards his subjects is explained in Kamba Ramayanam² in Bala Kandamin the verses between 168 and 179. Verse 171 equates his kindness to his subjects to that of a mother to her child. In verse 179, Kambar compares King Dasaratha's care and concern for his kingdom to those of a poor farmer for his small piece of land.

Standards for personal qualities and actions of Ministers(as in the Ramayana) which can be applied in general to Ministers / Directors / CFOs/Managers / Professionals / Experts / Consultants / Advisors etc.

In Ayodhya Kandam, Kambar describes the qualities of the Ministers of Dasaratha in the verses between 1404 and 1408 as follows:

- ⊙ The Ministers are well educated.
- ⊙ They won't deviate from the path of neutrality even if there would be a personal loss.
- ⊙ They had overcome anger and ego.
- ⊙ They espouse the cause of righteousness and justice.
- ⊙ They have a fine knowledge by reading rare books.
- ⊙ They value their self-respect a lot.
- ⊙ While taking actions, they weigh the pros and cons of the situation and timing, compare them with various political wisdom (Raja Neeti) books they had read, meditate on God and make a firm recommendation to their king which will bring repute to him.
- ⊙ They always speak truth and don't hesitate to speak truth even if they have to incur the wrath of their king.
- ⊙ They know the past and the present of the situation and act with foresight in their advice to the king.
- ⊙ While advising their king, they act like a doctor who diagnoses the root cause of the disease before

arriving at the remedies.

Participative decision making

Whenever a decision is to be taken, the King convenes a meeting of learned persons, Ministers, elders and other stakeholders like merchants. Description of such a meeting convened by King Dasaratha is given in Kamba Ramayanam's Ayodhya Kandam in the verses between 1411 and 1445. Later the meeting duly convened by King Ravana also is described in detail in Yuddha Kandam of Kamba Ramayanam in the verses between 6205 and 6315. But the sad thing about Ravana's meeting is that he didn't listen to the righteous advice given by his younger brother Vibhishana in the meeting.

Succession Planning

King Dasaratha decides to anoint Rama as King and convenes a meeting of Ministers, merchants and elders to propose his idea and elicit their views. Ramacharitamana³ poetically narrates this succession plan as the consequence of his happening to notice white hair near his ears⁴, vide second chaupai of Ayodhya Kand.

Principles of equality and inclusiveness

The greatness of Ayodhya city, its fertility due to the Sarayu River, its infrastructure and the healthy and wealthy life style of people are explained in 75 verses from verse 93 to 167 in Bala Kandam of Kamba Ramayanam. In the Kingdom of Ayodhya, there is no policing because there is no theft; none gives anything because there is none to receive anything (verse 165). Since all people are learned and wealthy, there are no disparities like educated and uneducated and haves and have-nots (verse 166).

Rama's advice to Bharata in ruling the Kingdom

Rama tells Bharata in Ayodhya Kanda of Ramacharitamana that the ruler - subject relationship should be like that of the mouth with other organs of the body. Even though the mouth eats and drinks, there is no particular benefit for the mouth and the nourishment goes to all parts of the body.

Hanuman as emissary of Rama

Hanuman is sent as an emissary by Rama to Lanka to find Sita. When Hanuman arrives at Lanka and finds Sita in the Ashoka Vana after a long search, at each stage he thinks well before acting. He deliberates that an emissary should act according to the brief of his master and should not spoil the purpose of the mission

by reckless acts⁵, vide sarga 30 of Sundara kanda of Valmiki Ramayana. For each act he rehearses a lot in the mind and is cautious that his actions should not be counterproductive. He weighs the pros and cons of the choices before him prior to acting. After achieving the main mission of finding Sita and conveying Rama's message to her, he deliberates that an emissary needs to know allied and supplementary information related to his main mission. Hence he gathers information on Lanka's security and the strength of King Ravana to pass it on to Rama, vide sarga 41 of Sundara kanda of Valmiki Ramayana.

Emissary in the context of a corporate can be viewed as a director, an agent or a representative and in the context of a nation he/she may be viewed as an envoy, ambassador or a representative.

Vibhishana's advice and pleading to Ravana on how an emissary has to be treated

When Ravana was too angry to listen to the genuine advice of Hanuman to surrender Sita to Rama, he ordered his servants to kill Hanuman. But Vibhishana makes the timely intervention and impresses upon Ravana that emissaries are representatives of their masters and that they should not be given the capital punishment. He recommends lesser rigorous punishment for Hanuman and the mighty Ravana agrees vide sarga 52 of Sundarakanda of Valmiki Ramayana. This tactful, fearless and righteous act of Vibhishana stands as a testimony to high standards of Raja Neeti.

Rama Rajya

Rama Pattabisheka sarga's 95th and 96th shlokas⁶ narrate that there was neither fear of disease nor fear of untimely death in Rama Rajya.

Thus, we observe that Ramayana's guidelines remain relevant for today's governance too.

PRESENT DAY CHALLENGES

The threat of generative AI and remedy in the form of reskilling:

Frequent refurbishing of our values with time-tested literary works like Ramayana helps us to face the new challenges encountered by us every other day. The foremost challenge today seems to be Generative Artificial Intelligence or Generative AI in short, which comes after the first stage of AI called Narrow AI. Though the phrase 'artificial intelligence' was coined in the year 1955, it took us a long time to realise it in day-to-day life. We started encountering it in the past decade in the form of robots, chatbots, virtual reality,

augmented reality etc. But even before we fully came to terms with and started basking in the benefits of narrow AI, the Generative AI started encroaching upon our life with least notice!

Generative AI refers to AI tools that can create original works such as text, video, images and music, vide the website of PennState University⁷. All these are realities already and some of the negative consequences are as follows:

- ⊙ We do come across AI created texts which we could identify at times by its lack of coherence! Educationists started worrying about possible writing of a thesis by AI.
- ⊙ Deepfake videos have become menacingly common, adding to the workload of law enforcement agencies and causing a strain on their resources. Social harmony and peace are affected by deepfakes.
- ⊙ AI has started mimicking the voices of yesteryear singers. Recently there were two news items in the newspaper, The Hindu, on AI created mimicked voices. In one case the producer mimicked the voice of a late singer without the permission of the family which prompted them to issue a legal notice⁸. In another case involving different parties, the film maker took the family's permission and compensated them too⁹. Music lovers are worried about possible mediocrity in songs in due course, due to lack of human originality.

The proliferation of Generative AI models makes people worry about the possibilities of AI surpassing their knowledge, causing job losses and intruding their privacy. Many countries are taking steps to introduce laws reining over AI. European Union voted to approve 'The AI Act' in June, 2023, vide Washington Post¹⁰. The fear of job losses in India has recently been acknowledged by the Secretary of Ministry of Electronics and Information Technology too in an event of Confederation of Indian Industry but he gave a reassurance that reskilling of people will reduce job losses, vide The Hindu¹¹.

Visualisation for MSME sector

In India, MSME sector contributes to about 50 per cent of exports and to about 29 per cent of GDP, vide PIB data¹². The labour-intensive nature of the MSME must be preserved to provide large scale employment. Former Finance Commission Chairman Shri Arvind Panagariya too has pitched for job-intensive investment in India, vide The Hindu¹³. MSME industries can be guided for better corporate governance and cost-effective methods.

Visualisation for FinTech Sector

Considering the paradigm changes happening in many of the sectors, especially in the Fintech sector, the only solution for long term plan seems to be to stand alert in readiness to take advantage of opportunities and to safeguard from threats.

"Rama tells Bharata in Ayodhya Kanda of Ramacharitamanas that the ruler - subject relationship should be like that of the mouth with other organs of the body"

the real key for the growth of the nation. Growing as children and bringing up children have both become very vulnerable and challenging nowadays. Parents have to spend a lot of quality time with their children. They should not hesitate to exercise a rigorous control over their children in the budding years. That of course does not mean a suffocating or

snubbing control but means a growth-oriented control, making children understand that the control is for their benefit.

Visualisation for Entrepreneurs

There is a widespread view that fresh graduates should take up more entrepreneurial ventures rather than waiting for employments. While this is a welcome awareness, there should also be preparation. Just as anybody can't make a profession in singing or drawing just for the whims and fancies of the art, it should be realised that entrepreneurship also needs some born traits, aptitudes and formal grooming. Apart from the personal qualities like hard work, integrity, discipline and simplicity, some formal training for the knowledge of economics, finance and commerce is necessary for meaningful entrepreneurship. Just making a foray into entrepreneurship without these pre-requisites will only add to the woes and silent sufferings of the family members, non-performing loans of banks and sluggishness of the economy. Educational authorities like NCERT and AICTE may consider modifying the course curricula suitably. It may not be out of place to mention here that there is a lot of scope for improving the educational standards in general.

Visualisation for healthcare for all

Though the accessibility to insurance has improved, the healthcare costs are beyond the affordability of even middleclass people. For example, as on date, for a health insurance policy of ₹ 10 lacs, a senior citizen couple (without any domiciliary treatment) has to pay an annual premium of ₹ 1.14 lacs and the premiums are skyrocketing each year. Government can consider Universal Health Coverage for people of all ages as a social welfare measure.

Role for today's young parents and prospective parents

Actually, the captioned people are the real architects of Viksit Bharat@2047. Today's teenagers will be in their thirties or in early forties in the year 2047 and thus will be in their peak period of contribution. A child born today will be of 23 years in the year 2047 ready to make prime contribution. The shaping of such children holds

Role for higher income group people

The ever-widening gap of financial and economic inequalities is inherently dangerous for the harmony of the society which may give rise to more crimes. People who have surplus income and wealth beyond reasonable levels may find a way to share a portion of their pie with needy people and thus ensure healthy income redistribution.

Views of youngsters

As Viksit Bharat@2047 is a collective exercise, views of some youngsters were solicited:

One plus-two student, who keenly follows the current affairs and has a flair for economics, came forward with the following suggestions:

- ⊙ Free education and healthcare
- ⊙ Good infrastructure
- ⊙ Ease of doing business
- ⊙ Housing for all
- ⊙ Unemployment allowance

His suggestion for unemployment allowance may be very much relevant in the circumstances of possible job losses due to AI.

One college student, who had her school education in a Kendria Vidyalaya and is a budding engineer now, came forward enthusiastically with the following suggestions:

- ⊙ Equipping labs in Government institutions with latest technologies and kits and ensuring constant modification of the labs
- ⊙ Eliminating slums from both urban and rural areas - this could be done by monitoring the illegal immigrations that happen every other day
- ⊙ Opposition parties must play a constructive role and will do well in supporting the Government in

international matters, emergencies and disasters.

One young NRI professional, who takes a keen interest in the growth story of India, has the following aspirations for Viksit Bharat@2047:

- ⦿ Remote voting for NRIs
- ⦿ Nation-wide sub-one-minute emergency response (Fire, police and ambulance)
- ⦿ Tenfold increase in number of qualified doctors, nurses and hospitals and tenfold decrease in healthcare costs
- ⦿ Preservation if not growth of our agricultural and forest land and not destroying them in the name of growth

One young qualified Company Secretary puts the onus on the people and insists on people adhering to the virtues of punctuality, integrity, hard work etc. She visualises a Japanese type of dedicated growth participation from people.

CONCLUSION

It is often said that a job well begun is half finished. We have begun our action plan comprehensively 23 years ahead of our goal period. That is a good sign. Whatever may be the trends and challenges, adhering to core values will give us the necessary strength. Let us stay alert in readiness and build a robust Viksit Bharat@2047. **MA**

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AUTOMATION AND AI ADOPTION: CATALYSTS TO ENHANCE MANAGEMENT ACCOUNTING

Abstract

The rapid advancement in automation and AI is revolutionizing management accounting, enhancing efficiency, accuracy, and strategic decision-making. Automation streamlines repetitive tasks, while AI provides deep insights into financial trends, enabling proactive market management and risk mitigation. Real-time access to financial data ensures timely, accurate reporting and promotes transparency and collaboration through advanced data visualization tools. AI-driven decision support systems offer valuable recommendations for budget allocation, investment decisions, and cost management.

Automation reduces labor costs and errors, freeing management accountants for analytical and strategic roles. AI enhances predictive analytics, improving cash flow forecasting and resource management, and enhances accuracy and fraud detection. The integration of AI with emerging technologies like blockchain and cognitive computing holds immense promise. By embracing these transformative technologies, organizations can achieve unprecedented efficiency, accuracy, and strategic foresight, ensuring sustained success in a dynamic market.

INTRODUCTION

The rapid advancement in automation and artificial intelligence (AI) is transforming numerous industries, and management accounting is no exception. These cutting-edge technologies are not merely supplementary tools but are revolutionizing the traditional management accounting principles, and taking us to a new era of enhanced efficiency, accuracy and strategic decision-making.

Automation can streamline repetitive and



CMA Arun Padmanabhan

Assistant Director

Ministry of Finance, Bangalore

Arunpadmanabhan111@gmail.com



Shubham Khandelwal

Assistant Manager (Economics)

Pension Fund Regulatory and Development Authority, GOI

Delhi

shubhambg213@gmail.com

time-consuming tasks such as data entry, invoice processing and transaction recording. These activities, while crucial, often divert valuable resources away from more strategic endeavours. AI, with its capabilities in predictive analytics and data interpretation, provides deep insights into financial trends and outcomes. These insights enable analyst/accounts to anticipate market dynamics, manage various risks more effectively.

Furthermore, real-time access to financial report through automated systems ensures that management accountants work with the most up-to-date information, facilitating timely and accurate reporting. AI-driven decision support systems offer valuable recommendations, aiding in budget allocation/appropriation, investment decisions and cost management.

However, the integration of these technologies is not without challenges. Initial investment costs, the need for continuous learning, change management and

data privacy concerns are significant considerations. Despite these challenges, the benefits far outweigh the drawbacks. As automation and AI continue to evolve, their integration with other emerging technologies like Blockchain and “cognitive compute” will further strengthen the role of management accounting in driving organizational success.

THE ROLE OF AUTOMATION IN MANAGEMENT ACCOUNTING

Cost Reduction

Automation in management accounting significantly reduces costs by lowering labor expenses and minimizing costly errors. The initial investment in automation technology is quickly recouped through these savings. Automation accelerates accounting processes, completing tasks that once took hours or days in just minutes, allowing Management Accountants to handle more work without additional resources.

Productivity gains from automation are substantial. Freed from repetitive tasks, Management Accountants can now focus on interpreting financial data, identifying trends, and providing insights that support decision-making, which is crucial for maintaining competitiveness in a rapidly changing market.

Real-Time Data Visibility

Traditional accounting processes often experience delays between transactions and their recording, leading to decisions based on outdated information. Automation enables continuous, real-time updates, ensuring Management Accountants always work with most current data. This real-time access allows for timely and accurate reporting, empowering the top management to make informed decisions quickly in response to market changes or internal developments.

Automation also enhances transparency and collaboration. Automated systems meticulously track and record every transaction, creating an accessible audit trail crucial for regulatory compliance and stakeholder clarity. These systems often include robust data visualization tools, transforming complex financial data into intuitive formats like dashboards, charts, and graphs. This clarity facilitates better communication and understanding across departments, enabling executives and managers to grasp financial trends and insights without deep accounting knowledge.

Enhanced Transparency and Collaboration

Enhanced transparency and collaboration are significant benefits of automation in management

accounting. Automated systems meticulously track and record transactions, creating an accessible audit trail crucial for regulatory compliance and stakeholder clarity. These systems often include robust data visualization tools, transforming complex financial data into intuitive dashboards, charts, and graphs. This clarity facilitates better communication and understanding across departments, enabling executives and managers to quickly grasp financial trends and insights without deep accounting knowledge.

Streamlined Compliance and Risk Management

In addition to cost reduction and enhanced productivity, automation also streamlines compliance and risk management. Automated systems adhere strictly to Accounting Standards and regulatory requirements, reducing the risk of non-compliance and consequent penalties. They continuously monitor financial transactions, detecting anomalies early to prevent frauds and errors, thereby safeguarding the company’s financial integrity. Automated compliance checks and risk assessments save significant time, allowing the Management Accountants to focus on resolving issues rather than identifying them.

FUTURE PROSPECTS OF AI AND AUTOMATION IN MANAGEMENT ACCOUNTING

The realm of management accounting has traditionally been associated with meticulous record-keeping, data crunching, and generating financial reports. AI is no longer confined to science fiction; it’s rapidly becoming a powerful tool in the hands of Management Accountants, empowering them to look beyond routine tasks and delve into the realm of strategic foresight.

AI and machine learning can analyse large datasets more effectively than traditional methods, providing deeper insights and more accurate forecasts. These technologies can also learn from historical data to predict future trends, helping Management Accountants in strategic planning and decision-making.

Integration with other technologies, such as Blockchain, offers additional benefits. Blockchain technology can provide a secure and transparent way to record financial transactions, further enhancing the accuracy and integrity of financial data.

As automation technology continues to evolve, Management Accountants must stay abreast of these developments and continuously update their skills. Embracing automation not only improves efficiency and productivity but also positions Management Accountants

as strategic partners in their organizations, contributing to overall business success.

This transformation hinges on the following three key areas where AI is revolutionizing management accounting.

1. Enhanced predictive analytics: Anticipating the future, not just recording the past

AI-powered predictive analytics break free from traditional constraints by leveraging sophisticated algorithms and machine learning. These tools analyze vast amounts of historical data to identify trends and forecast future financial performance with remarkable accuracy. For instance, AI can predict cash flow trends months in advance, enabling Management Accountants to anticipate market shifts, proactively manage risks, and develop data-driven strategies for long-term financial stability. AI can analyze customer buying patterns, economic indicators, and competitor behaviour to predict future sales, optimizing inventory management, resource allocation and pricing decisions. Additionally, forecasting cash flow trends helps businesses to manage working capital effectively, securing funding or accelerating collections to prevent operational disruptions.

2. Improved accuracy and fraud detection: Safeguarding financial integrity with ai vigilance

Accuracy is paramount in financial management. Even minor errors in data can have cascading consequences for decision-making. AI technologies, such as machine learning and natural language processing are significantly enhancing the accuracy of financial data analysis. These tools act as intelligent assistants, meticulously scrutinizing data for anomalies and inconsistencies. *This vigilance goes beyond simple data entry errors; AI can detect more complex issues like multi-level layer and placement or fraudulent activities.*

Machine learning algorithms can analyse vast datasets of financial transactions and identify patterns that deviate from the norm. These deviations might indicate potential fraudulent activity, such as duplicate invoices, suspicious purchases, or unauthorized payments. The earlier such activities are detected, the less damage they can inflict on a company's financial as well as reputation.

3. Advanced decision support systems: From data overload to data-driven decisions

Modern businesses face an overwhelming volume of data. AI-driven decision support systems revolutionize this process by acting as intelligent companions that analyse vast amounts of data, identify patterns, and

suggest optimal actions. These systems help with tasks such as budget allocation, investment decisions, and cost management by analysing historical data, market trends and competitors' performance. AI systems can provide data-driven recommendations for resource allocation, allowing Management Accountants to become strategic partners in decision-making.

For instance, AI can analyse production data, identify areas of inefficiency and suggest strategies for cost reduction in real time basis rather than waiting for monthly or quarterly accounts finalization. This allows companies to optimize resource allocation, streamline operations, and improve their bottom line.

CHALLENGES IN IMPLEMENTING AUTOMATION AND AI

While the potential benefits of automation and AI in management accounting are undeniable, the road to implementation is not without its obstacles. Before companies can fully harness the power of these transformative technologies, they must navigate a series of challenges that require careful consideration.

1. The Price of progress: The initial investment for automation and AI solutions can be significant, covering not just technology acquisition but also integration and maintenance. Integrating new systems with existing infrastructure can be complex and time-consuming, especially if legacy systems are incompatible. This often requires additional investments in software upgrades or data migration. Moreover, workforce reskilling is necessary, as Management Accountants must learn new skills to effectively use these technologies. This includes training on data analysis tools, programming languages, and understanding AI's capabilities and limitations. Companies must foster a culture of continuous learning to ensure their workforce can adapt.

2. The skills gap: Bridging between human and machine, successful adoption of automation and AI depends on a skilled workforce. While these technologies automate routine tasks, Management Accountants with strong analytical and strategic skills are essential for interpreting data insights and translating them into actionable strategies. However, many organizations face a skills gap, with accountants lacking the knowledge to leverage AI effectively. Companies need to invest in training programs that equip accountants with the skills to manage and analyze AI outputs. This includes understanding technical aspects and critically evaluating AI-generated insights to identify potential biases.

3. Data privacy and security concerns:

The use of automation and AI in management accounting heightens the focus on data privacy and security. Companies collect and store vast amounts of sensitive financial data, necessitating robust cyber security measures to prevent breaches and cyber attacks, which can lead to financial losses, reputational damage and legal repercussions. A multi-pronged approach to data security is essential, including firewalls, intrusion detection systems, data encryption and strict access controls to ensure only authorized personnel access sensitive information.

4. Ethical considerations and governance: Ethical implications of using AI in management accounting have to be addressed, such as biases in AI algorithms and the need for transparent decision-making processes. Robust governance frameworks are needed to ensure ethical AI use.

CASE STUDIES AND REAL-WORLD EXAMPLES

In this section we will discuss examples of companies that have successfully implemented automation and AI in their accounting practices, along with the tangible benefits they have experienced:

Deloitte

Deloitte has developed an AI-based tool called “Argus” which uses machine learning to review contracts and extract key accounting information. Implementation of Argus has reduced time spent on manual contract review by up to 50 per cent, improved accuracy and has freed accountants to focus on more strategic tasks.

KPMG

KPMG’s “Clara” is an AI-driven audit platform that integrates data and analytics capabilities to enhance the audit process. This has enhanced audit quality, increased efficiency, and the ability to provide deeper insights into clients’ financial health.

PwC

PwC uses “Halo”, an AI tool that analyses large datasets from a client’s financial records to identify anomalies and trends which has led to improved audit accuracy, better risk management and more insightful financial analysis.

"Automated systems meticulously track and record every transaction, creating an accessible audit trail crucial for regulatory compliance"

Xero

Xero, cloud-based accounting software, integrates AI to automate tasks such as invoice processing and reconciliation, resulting in reduced manual data entry, lower error rates, and significant time savings for small

business owners.

EY (Ernst & Young)

EY has developed an AI-based system to automate the process of reviewing lease contracts and ensuring compliance with Accounting Standards. This has resulted in increased efficiency, reduced compliance risks and cost savings on labour-intensive tasks.

FUTURE PROSPECTS OF AUTOMATION AND AI IN MANAGEMENT ACCOUNTING

1. Integration with Blockchain technology

The integration of automation and AI with Blockchain technology holds significant promise for management accounting. Blockchain can enhance transparency, security, and accuracy in financial transactions. Automated and AI-driven systems can leverage Blockchain to create immutable records, streamline audits, and reduce reconciliation efforts.

2. Evolution of cognitive accounting

Cognitive accounting, driven by AI, represents the next frontier in management accounting. Cognitive accounting systems can understand and interpret complex financial data, provide context-aware insights, and assist in strategic decision-making. These systems have the potential to revolutionize the role of Management Accountants by enabling them to focus on higher-value tasks.

3. Increased adoption of robotic process automation (RPA)

Robotic process automation (RPA) is gaining traction in management accounting for automating repetitive tasks. RPA bots can perform tasks such as data extraction, reconciliation, and report generation with high accuracy and speed. The adoption of RPA is expected to grow, further enhancing operational efficiency in management accounting.

CONCLUSION

The integration of automation and AI represents a pivotal advancement in management accounting.

Automating tedious tasks like data entry and transaction recording yields significant cost savings and enhances operational efficiency, freeing Management Accountants to focus on in-depth analysis and strategic planning. This shift enables data-driven decisions, granting companies a competitive edge.

Real-time data visibility, a key benefit of automation, grounds decision-making in the latest financial information, essential in today's fast-paced business environment. Automated systems also enhance transparency and collaboration, improving compliance and risk management and providing stakeholders with clear, timely insights into the company's financial health. AI-powered predictive analytics and decision support systems enable Management Accountants to anticipate market shifts, manage risks proactively, and optimize resource allocation with precision.

Despite the benefits, challenges exist, such as initial investment and integration costs, the need for continuous workforce upskilling, and data privacy and security concerns. Investing in technology and employee development is crucial. Embracing AI, automation, and emerging technologies like Blockchain and cognitive computing can elevate management accounting, offering unparalleled transparency, security and strategic foresight. While challenges remain, the rewards far outweigh the risks, positioning organizations for sustained success in a dynamic market. **MA**

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Obituary



The Institute and its members deeply mourn the demise of CMA Shirish Mohite, Member of the Institute who left for heavenly abode on 05 September, 2024. He was the Past Chairman of Navi Mumbai Chapter of the Institute.

May his family have the courage and strength to overcome the irreparable loss.

The First Lady Cost Accountant in India



CMA (CA) Geetha Paramasivam

Practising Chartered Accountant
Coimbatore

geethaparam@gmail.com

There are approximately 98,500 CMAs in India in 2024. Out of this nearly 40 per cent are Lady CMAs. Has any of us thought over as to who was the first woman CMA in India? In the CA institute, MS. SIVABOGAM was the first lady CA. But little is known about the first lady CMA, Mrs. Gnanam Krishnan. She was not only the first lady CMA but also the first woman in India to complete two professional courses, CA and Cost Accountancy.

Here goes her life story. Gnanam was born in the year 1924 in a small hamlet in Tamil Nadu in India. Women in that period were married before reaching puberty. Girls were not allowed to study after fifth standard. In Chennai, lawyer Sivarama Krishna Iyer with a progressive mind educated his daughter Gnanam at Queen Mary's College until Intermediate. Gnanam was 16 years old. She was then married to Mr. L.M. Krishnan, who worked for Hindustan Aeronautical Limited (HAL) in Bangalore, India.

Gnanam joined Presidency College for B.Sc. She could not complete her B.Sc. because she became pregnant. Two boys and two girls were born in 1942, 1943, 1945, 1947. Years rolled in the upbringing of the children. But the fire of knowledge was burning inside Gnanam and it came out at the appropriate time.

Her husband changed his job to Parry and Co. and the family moved its residence to Chennai. Gnanam joined Nagpur University and did B.A. (By post). Inspired by her brother Mr. Shankaran who had just finished his CA course, Gnanam thought "Is CA course meant only for gents? Why cannot I do CA?" Gnanam decided to study CA course.

Fraser & Ross was a renowned auditing firm in Chennai in which Gnanam did her CA articleship and completed CA course in early 1950s. Then she turned her attention to Cost Accountancy field which was not stepped into by any lady. She joined Cost accountancy (ICWA those days) institute and successfully completed her course with flying colours in 1950s.

Those days and even today, studying CA and Cost Accountancy was and is very, very difficult. There are 2 levels of exams. One can move on to the next stage only after completing one phase. If you fail a paper, you will

have to rewrite the entire group. If 100 people have written an exam, only four will pass. There were no coaching centers in those days. There was no set of questions asked in the exams that had taken place. In such difficult fields, with the encouragement of her husband and family members, Gnanam determined to study and came out with success.

An incident is an example of her full involvement. Gnanam was studying for exams in Fraser & Ross and was deeply engrossed in her book. That time a fire broke out in an area of the office. The fire was spreading. The locals were running hither and thither to put out the fire. People had to come and shake Gnanam to get up and run. Such was her involvement. With the utmost commitment, firmness, determination, and confidence and hard work, Gnanam successfully completed Chartered Accountancy and Cost Accountancy courses. Thus she became the first woman in India to complete two professional courses, CA and Cost Accountancy.

Gnanam started her practice as a CA and later switched to practice as a Cost Accountant. By law, a person can work in any one field, be it a CA or a Cost Accountant. With tremendous commitment, she chose the hardest and the most difficult field of Cost Accountancy. The job of a cost accountant is not just a desk job but one has to go to factories and does work. In this difficult field, she had worked as a consultant and Cost auditor in many parts of India for many companies for more than 40 years.

The Government of India set up an Expert Committee in 1970 to make recommendations to the Government of India on matters relating to taxes affecting the industry. They formed a committee with the best persons in the industry and Gnanam was appointed as one of the members to give suggestions and solutions.

Gnanam died in 1997, leaving ever lasting impression on the lives of others and worked as a COST ACCOUNTANT till her last breath.



Mrs. Gnanam Krishnan



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- Business Networking sessions
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VIRTUAL MANAGEMENT ACCOUNTING SERVICES: A GROWTH CATALYST FOR SMEs

Abstract

Management accounting empowers businesses with internal financial insights for informed decision-making. Traditionally catered by a full-time in-house professional, this role is crucial for the growth of SMEs but is often neglected due to cost constraints, lack of awareness, and talent limitations.

Virtual management accounting services bridge this gap by offering cost-effective access to specialized expertise and improved efficiency through automation and real-time data. This allows SMEs to focus on core activities, make strategic decisions and achieve sustainable growth through services like financial analysis, business advisory, tax planning and industry-specific solutions. Essentially, virtual management accountants act as strategic partners, providing financial guidance SMEs need to thrive.



CMA Naveen Jain

Practicing Cost Accountant

Delhi

naveen.jain@cmanaveenjain.com

INTRODUCTION

Management accounting is essentially the financial language that businesses use to communicate internally. Unlike financial accounting, which focuses on creating external reports for stakeholders like investors and creditors, management accounting provides information directly to THE management for making informed decisions.

In the last few decades, globalization, technological advancement, and heightened customer expectations have transformed the business landscape into a complex, dynamic and highly competitive arena. As the business environment continues to evolve, the role of Management Accountants has also evolved and become increasingly crucial for organizational sustainability and growth.

KEY AREAS

Following are some key areas where management

accountants can empower the business.

Enhanced Decision Making: By providing data-driven insights, forecasting and performance measurement tools, MAs help leaders make informed and strategic choices.

Cost Management and Efficiency: Techniques like activity-based costing and process improvement analysis lead to cost control and optimized operations.

Strategic Planning and Implementation: MAs ensure financial alignment with strategy, facilitates scenario analysis for various market conditions and aid in risk management.

Sustainability and Corporate Responsibility: MAs support sustainability reporting and ethical practices, promoting transparency and accountability.

Profitability Analysis: Understanding product/service and customer profitability allows for better pricing strategies and focused resource allocation.

Investment and Capital Budgeting: Investment appraisal tools and capital allocation techniques ensure resources are directed towards projects with the highest return potential.

WHY FULL TIME MANAGEMENT ACCOUNTANTS

To effectively fulfill this multifaceted and specialized role, organizations require dedicated full-time Management Accountants.

Following are some key factors to justify the full-time

role of a Management Accountant in any organization:

- ⊙ **Specialized Expertise:** Management Accountants possess specialized skills in financial analysis, budgeting, forecasting, and cost management. Having a dedicated in-house professional ensures this expertise is readily available.
- ⊙ **Deep Understanding of Business Operations:** A full-time Management Accountant can develop an in-depth understanding of the organization's operations, enabling them to provide more strategic financial advice.
- ⊙ **Efficiency and Responsiveness:** In-house Management Accountants can respond quickly to data requests and provide timely financial information for decision-making.
- ⊙ **Data Security:** Sensitive financial data is protected within the organization, reducing the risk of data breaches.
- ⊙ **Long-Term Perspective:** Full-time Management Accountants can contribute to the organization's long-term strategic planning and financial goals.

While large organizations with substantial financial resources commonly employ full-time Management Accountants as indispensable assets, *this role is notably absent in India's SME sector*. Despite being a cornerstone of the Indian economy, the underutilization of management accounting significantly hampers the growth and efficiency of SMEs

KEY REASONS FOR THE GAP

- ⊙ **Financial Constraints:** SMEs often face financial limitations, making it difficult to allocate resources for dedicated management accounting roles.
- ⊙ **Lack of Awareness:** Many SME promoters and managers are unaware of the benefits of management accounting and its potential impact on business performance.
- ⊙ **Focus on Survival:** Due to intense competition and economic challenges, SMEs prioritize short-term survival over long-term strategic planning.
- ⊙ **Limited Access to Talent:** Finding qualified Management Accountants in rural and semi-urban areas, where most SMEs operate, can be challenging.
- ⊙ **Complexity Perception:** SMEs often perceive management accounting as a complex and irrelevant to their business.

IMPACT OF THIS GAP ON SMEs

- ⊙ **Sub-optimal Decision Making:** Without accurate and timely financial information, SMEs may make sub-optimal decisions.
- ⊙ **Inefficient Resource Allocation:** Limited understanding of cost structures can lead to inefficient resource utilization.
- ⊙ **Missed Growth Opportunities:** Lack of financial analysis can hinder the identification of new business opportunities.
- ⊙ **Increased Risk:** Without proper financial control, SMEs are more vulnerable to financial risks.

To fill this gap, virtual management accounting services have emerged as a game-changer for small and medium enterprises (SMEs). By leveraging remote expertise, these services offer a host of benefits that can significantly contribute to the growth of SMEs.

HOW VIRTUAL MANAGEMENT ACCOUNTING SERVICES CAN DRIVE SME GROWTH

Cost Efficiency

- ⊙ **Reduced Overhead Costs:** SMEs can eliminate the expenses associated with hiring and maintaining an in-house management accounting team, such as salaries, benefits, and office space.
- ⊙ **Pay-as-you-go Model:** Most virtual accounting services operate on a subscription or project-based model, allowing SMEs to scale their accounting needs according to their business growth.

Access to Expertise

- ⊙ **Specialized Knowledge:** Virtual management accounting firms employ skilled professionals with expertise in various industries and accounting practices. SMEs can tap this knowledge to make informed business decisions.
- ⊙ **Best Practices:** These professionals bring industry best practices to the table, helping SMEs to improve their financial management processes.

Improved Efficiency and Productivity

- ⊙ **Automation:** Virtual management accounting services often utilize advanced accounting software and automation tools, streamlining financial tasks and reducing manual errors.
- ⊙ **Real-time Data:** SMEs gain access to real-time financial data, enabling faster decision-making

and better control over their finances.

Enhanced Focus on Core Business

- ⊙ **Time Savings:** By outsourcing management accounting functions, SMEs can free up valuable time and resources to focus on core business activities, such as product development, sales, and marketing.
- ⊙ **Strategic Focus:** With accurate and timely financial information at their fingertips, business owners can devote more time to strategic planning and growth initiatives.

Scalability

- ⊙ **Flexible Services:** Virtual management accounting services can easily adapt to the changing needs of a growing SME. As the business expands, the team can be scaled accordingly.
- ⊙ **Support for Growth:** Virtual management accountants can provide guidance and support during periods of rapid growth, helping SMEs to navigate financial challenges and opportunities.

KEY SPECIALIZED SERVICES OFFERED BY VIRTUAL MANAGEMENT ACCOUNTING FIRMS

Financial Analysis and Planning

- ⊙ **Budgeting and forecasting:** Developing comprehensive financial plans.
- ⊙ **Cash flow management:** Optimizing cash flow to ensure business liquidity.
- ⊙ **Financial modelling:** Creating financial models for scenario analysis and decision-making.
- ⊙ **Cost analysis:** Identifying cost-saving opportunities and improving profitability.
- ⊙ **Performance analysis:** Evaluating business performance using key financial metrics.

Business Advisory

- ⊙ **Strategic financial planning:** Aligning financial goals with business objectives.
- ⊙ **Risk management:** Identifying and mitigating financial risks.
- ⊙ **Financial consulting:** Offering expert advice on financial matters.

"Virtual management accountants can provide guidance and support during periods of rapid growth"

Tax Planning and Compliance

- ⊙ **Tax return preparation:** Preparing and filing tax returns accurately and timely.
- ⊙ **Tax compliance:** Ensuring adherence to tax regulations and avoiding penalties.

Specialized Services

- ⊙ **Data analysis and reporting:** Utilizing data to generate actionable insights.
- ⊙ **Financial systems implementation:** Selecting and implementing accounting software.
- ⊙ **Process improvement:** Streamlining financial processes for efficiency.
- ⊙ **Fraud prevention:** Implementing measures to protect against financial fraud.

Industry-Specific Services

- ⊙ **E-commerce accounting:** Handling specific accounting challenges for online businesses.
- ⊙ **Retail accounting:** Managing inventory, sales, and cost of goods sold.
- ⊙ **Manufacturing accounting:** Tracking production costs and inventory management.

CONCLUSION

While management accounting is crucial for informed decision-making and business growth, particularly for SMEs, these businesses often lack the resources or awareness to hire a full-time professional.

The solution is virtual management accounting services. By leveraging these services, SMEs can gain access to expertise, improve efficiency and focus on core business activities, all at a cost-effective rate. Essentially, Virtual Management Accountants act as strategic partners, empowering SMEs to make sound financial choices and achieve sustainable growth. MA

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UNLOCKING THE POTENTIAL OF INDUSTRIAL ENGINEERING IN COST OPTIMIZATION

Abstract

Industrial engineering involves application of engineering principles and techniques of scientific management to ensure high levels of productivity at optimum cost in industrial enterprises.

Industrial engineers (IEs) work on productivity improvement and this has to lead to decreased cost at the unit level for activities and in turn for the products that are consumed in these activities. The ultimate proof of productivity improvement is reduced costs reflected in the reported unit cost of products.

IEs must be able to identify and target areas that would yield the greatest in terms of cost savings. They should be able to visualize the consequences of their current action clearly and also check whether it has yielded the desired results in terms of cost savings.

This article outlines the areas for IEs to focus upon to achieve real and permanent reduction of cost.

INTRODUCTION

Industrial engineering (IE) may be defined as, “A branch of engineering management concerned with how to make or do things better, crisscrossing a range of disciplines associated with manufacturing industrial or consumer products. This may involve increasing efficiency, reducing production costs, improving quality, while ensuring the health and safety of employees, protecting the environment and complying with government regulations.”

Towards this goal, industrial engineering uses a toolbox full of principles and methodologies like Lean, Six Sigma, and Operational Excellence.

Industrial engineering optimizes the interaction between people, machines/assets, and their environment to reduce costs, eliminate waste, and minimize defects.

Before delving into the role of industrial engineers in cost optimization, it is important to understand what



CMA (Dr.) R. Jayaram

Professor

IFMR GSB (Krea University), Sri City

jayaram.ramakrishnan@krea.edu.in



CMA (Dr.) G. Balasubramanian

Senior Professor and Advisor

IFMR GSB (Krea University), Sri City

balasubramanian.gopalswamy@krea.edu.in

‘cost optimization’ actually means. Cost optimization is the process of identifying and implementing strategies to reduce costs while maintaining or improving the quality of products or services. This can involve streamlining processes, eliminating waste, and finding more efficient ways to utilize resources.

As may be observed from above definitions one of the key concerns of industrial engineers (IEs) is to work on productivity improvement which in turn is expected to lead to decreased cost at the unit level for activities and by default for the products that consume these activities. The ultimate proof of productivity improvement is reduced costs reflected in the reported unit cost of products.

IEs must be able to identify and target areas that would yield the greatest in terms of cost savings. They should be able to visualize the consequences of their current action clearly and also check whether it has yielded the desired results in terms of cost savings.

The aim of this study is to help IEs identify key areas to focus upon for achievement of real and permanent reduction of costs.

COST REDUCTION – THE ACTIVITY BASED PERSPECTIVE

IEs work with multiple variables and cost is one variable that if not studied and factored properly, no project can succeed. It is this variable cost today more than ever that governs the work of what IEs do. Successful engineers understand that technical work is merely a part of cost driven business process. Hence cost becomes an important variable that needs to be studied, analyzed and optimized like any other engineering variable.

For real cost reduction to happen there has to be restructuring of the way the work is done. This involves changing the way activities are used or performed and this is where industrial engineers step into the fray. The traditional accountant's way of trying to "manage by numbers" (budget & variance analysis) while paying little attention to the underlying activities that result in resource consumption is like putting the cart before the horse and is not expected to yield any sustained and significant cost savings.

Again due to constraints in resources, a firm cannot focus on multiple areas simultaneously for cost reduction. It has to focus on low hanging fruits plus those areas where the benefits would be maximized.

SUGGESTIVE GUIDELINES ON COST REDUCTION

The objective of this article is to offer a few guidelines to industrial engineers and Management Accountants to focus upon in this drive for cost reduction.

1. Reduce time and effort required to perform an activity

A key element of improving is to reduce the time and effort required to perform activities. This can emanate from process/product improvement. The question is where should IEs focus when it comes to time reduction? Practical wisdom suggests that focus should be on reducing machine turnaround times (Set up) of your manufacturing process instead of focusing on reducing the overall run time. Although decreasing run times reduce overall lead times, shortened machine setup times will reduce your organization's manufacturing costs as well as increase your flexibility to meet customer demands.

This implies the need to adopt SMED (Single minute exchange of dies) which focuses on

reducing set up times to single digits (less than 10 minutes)

A successful SMED program will have the following benefits:

- ⊙ Lower manufacturing cost (faster changeovers mean less equipment down time, greater utilization & consequently lower activity rates)
- ⊙ Smaller lot sizes (faster changeovers enable more frequent product changes and lesser cost of inventory holding)
- ⊙ Improved responsiveness to customer demand (smaller lot sizes enable more flexible scheduling)
- ⊙ Smoother startups (standardized changeover processes improve consistency and quality)

This concept was in fact developed by a Japanese industrial engineer Shigeo Shingo. It is not unusual to witness a 90 per cent reduction in time, across companies if implemented in right earnest.

For SMED to be successful the following aspects need to be focused upon

- a. Employee training
- b. Eliminating conflicts in employee assignments
- c. Appropriate placement of tools/dies
- d. Repeated practicing of set up routines

Reduction in changeover times can also come from change in material specifications. A machined casting manufacturer could eliminate the need for rust preventive coating by changing the raw material from Aluminium to Zinc.

Reduction in time could also come not from the relevant activity but from a preceding activity. For example, a conscious choice to use a more sophisticated die may mean lesser machining effort.

From a cost management perspective it is a proven fact that the scope for cost reduction is higher when applied to batch and product related activities as compared to unit level activities

2. Eliminate non value adding activities

This requires the IE to map all activities (value stream mapping) into value adding (VA), non value adding (NVA) but essential and NVAs which are candidates for elimination

NVAs are activities that are not valued for by customers and are also not essential to run the organisation.

Potential areas to look at are

- a. Elimination of material handling activities through layout changes
- b. Elimination of multiple levels of inspection for incoming and in process materials and products by working with suppliers at their end as well as redesigning parts/components responsible for quality issues

3. Select low-cost activities

Designers of products/processes often have choices amongst competing activities and this offers a huge scope to reduce costs

Typical choices before the IEs or process designers include

- a. Machine versus labour intensive process design. Here the projected volumes and quality requirements would play a major role
- b. Special purpose machines (SPMs) versus multipurpose machines. Again, the projected volumes and product life cycle of the product would play a decisive role in decision making. SPMs cost less and are cost effective provided the product has a reasonable life cycle and volumes are available. However, if both the above parameters are uncertain then it would be better to go for multipurpose machines

It is pertinent to note that each of the design choices has a different set of resources associated with it due to which the activity cost is bound to differ.

4. Share activities wherever feasible

Product designers, to the extent feasible need to look at common parts (same component used in multiple models). This is referred to as standardization and the potential direct and indirect cost savings from this exercise is enormous. Standardization leads to elimination of cost of several activities, part number creation and maintenance, scheduling, vendor relationship management which will be shared by products using them.

It is important to note that only those parts need to be unique which contribute to differentiation of products and for which customers are willing to pay a price.

The same analogy works for process designers as well who could do well by combining multiple parts with similar designs into work cells thereby reducing capex and also ensuring optimal utilization of machine lines. This reduces costs by sharing activities like supervision, scheduling, testing, training and documentation too

5. Redeploy unused resources

It is important to understand that merely adopting the above measures would not result in reduced costs without reducing the resources deployed against the above activities. This means the resources (Men and machines) freed up need to be purposefully redeployed elsewhere. This can be done by developing the business or by deploying them to other activities where there is resource requirement of similar nature. If either of the above options are not available the resource needs to be removed from the company.

To understand the import of point 5 we may consider a small example. Company X was a newly set up casting company and processes were yet to stabilize. They had a Quality – In process team whose cost was Rs 5 lacs per month. It was made up of a manager and 4 executives; it also had small amount of depreciation and power costs identified against it. The team had its hands full and the driver for costs was the number of inspections made by the team in a month which averaged around 25000 parts.

Subsequent process improvements and increased control measures ensured that the team moved from a policy of 100 per cent inspection for majority of parts to a sample basis. One year down the line the team was rewarded and also an Assistant Manager was taken on board to help with audit issues. The costs of In-process team now stood at Rs 6 lacs per month but their inspection effort had gone down from 25000 parts to almost 5000 per month.

The activity cost/inspection which was Rs 20 per part to start with, now stood at Rs 120 per part. All the improvement measures did not translate into lower costs as there had been no redeployment of resources (manpower primarily) in accordance with the activity level which had dipped by 80 per cent.

This is the case with most companies today where despite well-meaning measures being taken the same does not translate into lower costs for the activity and consequently product.

6. Digital enablement

Due to the advancement in information technology coupled with cost effectiveness, many of the processes can be automated thereby completely eliminating non-value adding activities. Digital enablement goes even beyond automation. It makes machines to communicate with each other. Internet of things (IOT) is a classic example. Machines are connected through internet so that the data generated by the machines are automatically transferred to other machines to trigger certain processes and update a central database. Machines, especially critical equipment's conditions are constantly monitored, early warning signals generated and corrective actions initiated well in-advance to prevent major breakdowns. Digital enablement brings down the cost by eliminating NVAs and human interventions besides resource substitution wherein high cost resources are substituted with less expensive resources as core processes are handled by process automation.

7. Value engineering the cost structure

With an activity-based approach, each activity can be examined with two critical questions. One is whether the activity is value adding or non-value adding? Second is whether it is performed efficiently or not? The result of this exercise many times can reveal that the most non-value adding activity is performed most efficiently due to better quality equipment and manpower deployed in those activities. The approach will be to shift

"The ultimate proof of productivity improvement is reduced costs reflected in the reported unit cost of products"

those resources to value adding activities performed inefficiently. This approach will help in cost reduction focused on value enhancement.

CONCLUSION

Taiichi Ohno's book titled Workplace Management outlines the ways and means of implementing Toyota Production system (TPS). Chapter 23 thereof deals with the question, "How to produce at lower cost? One of the main fundamentals of the Toyota System is to make 'what you need, in the amount you need, by the time you need it', but to tell the truth there is another part to this and that is 'at lower cost'. But that part is not written down.

The aim of this article is to help IEs identify that part which has not been written down but has been experienced by practitioners of activity based costing for past three plus decades in manufacturing. MA

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CORPORATE REBUILDING THROUGH DEMERGER: A CASE STUDY BASED ON STRIDES PHARMA SCIENCE LTD.

Abstract

With the increasing popularity and relevance of sustainability, disclosing the Business Responsibility and Sustainability Report is gradually becoming mandatory for the listed organizations. Therefore, it is necessary to determine whether companies are undertaking the exercise of spin-off to specifically increase their ESG scores. Thus, the impact of spin-off on environmental, social, governance and overall ESG scores have been evaluated for Strides Pharma Science Ltd. Raw ESG data have been collected from Bloomberg database and then analyzed. Findings reveal that the decision of demerger was taken in order to enhance the ESG scores of Strides Pharma Science Ltd. Besides, demerger did not have significant effect on stock returns of Strides Pharma Science Ltd.

INTRODUCTION

Demerger or spin-off can be termed as a process where an existing organization segregates or bifurcates one of its division or segment for creation of an independent and new entity (Banerjee, S. & Rakshit, D., 2023). Demergers are strategic transactions in which a parent company gives all of its shares in a subsidiary to its current shareholders on a pro rata basis. This establishes the subsidiary as a separate legal entity, free to make its own decisions and carry out its own business operations, without interference from the parent firm.

The demerger concept gained momentum in India when, in Paragraph 87 of the Union Budget for 1999-2000, the then-Finance Minister, Yashwant Sinha accentuated the exercise of spin-offs with a view to assist the organizations in enhancing shareholder's wealth and tax advantage. As a consequence, the beginning of the 21st century in this country witnessed a wave of spin-offs



Dr. Samrat Banerjee

Assistant Professor
St. Xavier's University
Kolkata

samrat.banerjee@sxuk.edu.in



CMA Debdas Rakshit

Professor
University of Burdwan
Bardhaman

drakshit@com.buruniv.ac.in

aimed at enhancing corporate values by boosting levels of efficiency and performance. According to Sisodiya (2001), in the Indian context, corporate demergers are predominantly driven by two motives: family settlement and strategic gain. Corporate sustainability has been assessed depending on ESG scores for companies of different countries to make the corporate community aware of the ESG framework (Linnenluecke, 2022). Recent studies have been analysed worldwide to establish an association between financial health and ESG framework (Whelan et al., 2021). Business entities with greater ESG scores will possibly gain more competitive advantages. They are more likely to enhance their operating efficiencies, thus widening the scope of infiltrating global markets (Kotsantonis et al., 2016).

REVIEW OF LITERATURE

Siew, R. (2012) investigated the impact on the financial performance of listed Australian companies due to ESG disclosure practices. ESG scores were collected from 2008 to 2010 and financial performance encompassed profitability and equity valuation, which were represented by few financial ratios. Taking into account both one year and long term slack investigations, a lower positive correlation was found between them. Furthermore, errors in the forecast were found to have a weak negative association with the ESG scores. It was also suggested that such weak results indicate the insufficiency of sustainability practices that could affect financial performance owing to ESG disclosure. *Rakshit, D. & Banerjee, S.* (2022) examined whether excess returns can be generated for shareholders of the demerged entities owing to announcement of demerger, by applying event history methodology. Findings suggested a notice able link between the announcements and deviation in returns. *Rakshit, D. and Banerjee, S.* (2023) investigated into the effect on financial health of the demerged entities owing to demerger with the help of sample paired t test. Results revealed demerger only as a short-term strategic decision. *Banerjee, S. & Rakshit, D.* (2023) evaluated the effect of demerger on stock price movement and long-term sustainability of Compton Greaves Power & Industrial Solutions Ltd. For this purpose, event study methodology and analysis based on raw ESG scores were done. The results revealed no considerable impact of demerger on abnormal returns. Furthermore, it was noticed that spin-off was a strategic decision particularly to enhance the sustainability of Crompton Greaves Power and Industrial Solutions Ltd.

RESEARCH GAP

In the Indian context, hardly any study has been conducted on the association of demerger with sustainability of demerged entities. Furthermore, no such study to the best of our knowledge has been conducted on Strides Pharma Science Ltd. concerning ESG scores and share price movement.

OBJECTIVES

1. To demonstrate the impact of spin-off on overall ESG scores of Strides Pharma Science Ltd.
2. To ascertain whether demerger generates significant returns for the shareholders of Strides Pharma Science Ltd.

Methodology

Raw data of ESG scores have been collected from

Bloomberg Database in order to determine the immediate as well as long-term effect of spin-off on environmental, social and governance scores based on the raw scores collected. A time window of 1 year and 2 years before and after spin-off has been taken into consideration for the above-mentioned purpose. Control enterprises have not been taken into consideration as our main motive is to analyze whether ESG scores of Strides Pharma Science Ltd. is specifically increasing owing to spin-off or not. Furthermore, for justifying the third objective, stock prices of Strides Pharma Science Ltd. and market prices based on NIFTY 50 are obtained from Capitaline Database. For the purpose of evaluating the specific impact of demerger, corresponding control company named Piramal Enterprises Ltd. has been taken into consideration. Market model of event study methodology has been employed to calculate abnormal returns of Strides Pharma Science Ltd.

ANALYSIS AND FINDINGS

We will analyze the after-effect of spin-off on overall ESG disclosure scores for Strides Pharma Science Ltd.

Overall Impact on Environmental, Social and Governance (ESG) Disclosure Score

Table 1 presents the summary results for the immediate and sustainable impact for Strides Pharma Science Ltd. involved in spin-off.

TABLE 1: IMMEDIATE IMPACT OF SPIN-OFF ON ESG DISCLOSURE SCORE

DEMERGED COMPANY	RESULTING COMPANY	LAST YEAR OF PERIOD 1	FIRST YEAR OF PERIOD 2
STRIDES PHARMA SCIENCE LTD.	SOLARA ACTIVE PHARMA SCIENCES LTD.	36.9480	39.4025

Source: Author’s own generated data

Table 1 shows that ESG disclosure score has increased immediately after spin-off, which clearly indicates the after-effect of spin-off on ESG score.

TABLE 2: SUSTAINABLE IMPACT OF SPIN-OFF ON ESG DISCLOSURE SCORE

<i>Demerged Company</i>	<i>Resulting Company</i>	<i>Average of Period 1</i>	<i>Average of Period 2</i>
Strides Pharma Science Ltd.	Solara Active Pharma Sciences Ltd.	37.2095	39.4025

Source: Author’s own generated data

CASE STUDY

Table 2 reveals that ESG disclosure score has increased over a period of 2 years after spin-off, which clearly indicates the after-effect of spin-off on ESG Score.

Therefore, it can be asserted that spin-off had a significant impact on ESG disclosure scores.

Therefore, it can be asserted that both immediate and sustainable impact of spin-off on ESG disclosure score is overall significant.

Now, we have also analyzed whether Strides Pharma Science Ltd. is going through spin-off specifically to enhance ESG score or for other reasons.

Strides Pharma Science Limited is a pharmaceutical company of India, which is involved in manufacturing of pharmaceutical products, over-the-counter drugs and nutraceuticals. The company demerged into a company named Solara Active Pharma Sciences Ltd., which deals with manufacture of active pharmaceutical ingredients. The environmental disclosure score of Strides Pharma Science Limited has increased which indicates that the process of manufacture of pharmaceutical ingredients lead to carbon emissions, waste disposal and pollution; hence the company decided to demerge into a separate entity which resulted in reduction of emissions. It can be observed that the social disclosure score of Strides Pharma Science Limited have increased post spin-off considering a time window of both 1 year and 2 years post spin-off which again indicates that the employees are satisfied with the demerger, which may lead to a lower employee attrition rate. Furthermore, it can be observed that the governance disclosure score remained same after spin-off. Thus, the overall ESG score of Strides Pharma Science Limited increased because of the increase in environmental and social disclosure score after spin-off which clearly indicates that the company has taken the strategic decision of spin-off to emphasize on sustainability.

TABLE 3: IMPACT OF DEMERGER ON STOCK RETURNS OF STRIDES PHARMA SCIENCE LTD.

<i>Event Window</i>	<i>Abnormal Returns of Strides Pharma Science Ltd.</i>	<i>Abnormal Returns of Piramal Enterprise Ltd.</i>
-10	0.007913125	-0.022568552
-9	0.008305837	-0.022589025
-8	0.010799217	0.010614797

-7	-0.024043693	0.010935699
-6	-0.006239526	-0.011224967
-5	-0.026300232	-0.003706624
-4	0.008447787	-0.008369318
-3	-0.007763674	-0.010503229
-2	0.004021905	-0.018722573
-1	-0.003717097	0.016891997
0	-0.04577451	0.022489253
1	-0.006106814	-0.009464564
2	0.010074084	-8.44917E-05
3	-0.035828093	-0.010095075
4	0.013419868	0.02257099
5	0.03920805	-0.004684437
6	-0.013543979	-0.004458223
7	-0.018356758	-0.016887814
8	-0.006152545	-0.008456766
9	0.004803232	-0.007596075
10	0.004738847	0.006035875

Source: Author's own tabulation

Table 3 shows that the abnormal returns for Strides Pharma Science Ltd. are negative for 11 days out of 21 days and for its control enterprise abnormal returns are negative for 15 out of 21 days which clearly portrays that the investors' reaction for both the companies was not favourable owing to the demerger announcement. As both demerged entities and their control company generated negative abnormal returns for majority of the event window period, it can be asserted that the effect

of demerger on stock returns of Strides Pharma Science Ltd. is not significant.

CONCLUSION & POLICY IMPLICATIONS

It can be inferred that demerger did not have significant effect on stock returns of Strides Pharma Science Ltd. Furthermore, demerger has impacted the ESG scores of Strides Pharma Science Ltd. considering a time window of two years. Besides, it can be concluded that Strides Pharma Science Ltd. took the decision of spin-off particularly to enhance their ESG score.

This research has few implications. A company can take the decision of spin-off and separate a division, segment or branch of it if that particular segment is incurring losses. The loss making division can affect the overall ESG score of the organization. In such a situation, spin-off may enhance the ESG score of the organization. Secondly, a loss affected segment can also lead to an increase in turnover of employees. This grave problem may also be solved if a company carries out the exercise of spin-off and segregates that affected segment. Thirdly, a company may take the decision of spin-off in order to deviate its focus from diversified businesses and focus on a particular division as a strategy of core competence. MA

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Obituary



The Institute and its Members deeply mourn the demise of CMA Suresh Nana Patil, M. No. F-11448, Member of the Institute who left for heavenly abode on 21st August, 2024. He was a Retired CMA and Member of Kolhapur-Sangli Chapter of the Institute. May his family has the courage and strength to overcome the irreparable loss.



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Down The Memory Lane

September, 2014



Meeting with Hon'ble Union Minister for Urban Development, Shri M Venkaiah Naidu on the ONAM festival day September 6, 2014, in Chennai, by CMA H Padmanabhan, Chairman SIRC and CMA V Kalyanaraman, past president of the Institute and SAFA



CMA (Dr.) A S Durga Prasad, President of the Institute lighting the lamp on the commencement of the 'Corporate Cost Management Week' in Hyderabad on September 9, 2014. Others seen are CMA DLS Sreshti, Council Member, CMA Ch. Venkateswarlu, Vice Chairman SIRC, CMA Radha Krishna Komaragiri, Chairman, Hyderabad chapter, and CMA S Nagendra Kumar, Secretary, Hyderabad chapter

September, 2004



PC Gupta, Hon'ble Union Minister of Company Affairs lighting the inaugural lamp of the National Seminar on Concept Paper on The Companies Act, 25 September 2004, Kolkata

From Left: Pravakar Mohanty (Vice President), P. C. Gupta, Dr. H.R. Subramanya (President), Nishith Adhikary (Law Minister, Govt. of West Bengal), Dr. Sanjiban Bandyopadhyaya (Chairman-CEP, ICWAI), BM Sharma (CCM)

Dr. H.R. Subramanya, President presenting memento to PC Gupta

From Left: Dr. Sanjiban Bandyopadhyaya, PC Gupta, Dr. HR Subramanya, Pravakar Mohanty, BM Sharma



Down The Memory Lane

September, 1994



Dr. M.Channa Reddy, the Governor of Tamil Nadu and Administrator of Pondicherry, the Chief Guest inaugurating the Silver Jubilee Celebrations of Neyveli Chapter held on 12 and 13 September, 1994 while V.R. Iyer, President, ICWAI, S.P. Varma, CMD, NLC Ltd, V. Rajamani, Director, Finance, D. Sudhakaran Nair, Chairman, Neyveli Chapter and V. Chandrasekaran, Secretary, Neyveli Chapter look on

September, 1984



The Programme organized by the Institute at Bhutan on Marketing Management and Management Accountant under the Course Directorship of Shri N.K. Bose, President of CAPA on September 1984

The Programme organized by the Institute in collaboration with the ICICI and IFCI on Industrial Sickness: Causes and Remedies at Manali during September 1984



Silver Jubilee Celebrations of Neyveli Chapter of Cost Accountants is in progress

September, 1974



The Chief Guest with the Managing Committee Members of the K.G.F Chapter of Cost Accountants.

The KGF Chapter of Cost Accountants organised a meeting at the 'Earthmover Club' on 2nd September, 1974, at 5.30 p.m. to felicitate Shri V. Kalyanaraman and Shri N.G. Raghavendra Rao for their unanimous election as President of the Institute of Cost & Works Accountants of India, and as Chairman of the Southern India Regional Council, respectively



President Shri R.L. Bhatia and Smt. Bhatia sitting with Faculty Members Shri R.J. Goel, Course Director with Group of Participants and Officers of the Institute at programme on Industrial Sickness-Causes and Remedies at Manali

Source: Extracted from the various issues of The Management Accountant Journal

Five day Residential Training Program on "Cost Accounting Standards, Benchmarking, Tendering, Procurement & Contracting"

ICMAI MARF under the leadership of CMA Bibhuti Bhusan Nayak, President, ICMAI and Chairman MARF has successfully conducted a five day Residential Training Program on "**Cost Accounting Standards, Benchmarking, Tendering, Procurement & Contracting**" from 20th - 24th August 2024 at Kufri, Shimla. Chief Guest of the Valedictory Session on 23rd August 2024 was AVM (Dr.) Manoj Kumar Mehra, Assistant Chief of Air Staff (Financial Planning) followed by certificate distribution by him.

Inauguration of Training Program on 21st August 2024 was done by Air Cmde Kalpa Ghosh, PD Indian Airforce in presence of CMA J K Budhiraja, CEO, ICMAI MARF and training participants.



6th from L-R AVM (Dr.) Manoj Kumar Mehra, Assistant Chief of Air Staff (Financial Planning) at Valedictory Session for Residential MDP, Kufri, Shimla from 20th - 24th August 2024



Air Cmde Kalpa Ghosh, Principal Director (Financial Planning), IAF, Inaugurating Residential MDP, Kufri, Shimla from 20th - 24th August 2024 along with CMA J K Budhiraja, CEO, ICMAI MARF



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NEWS FROM THE INSTITUTE

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THE INSTITUTE OF COST ACCOUNTANTS OF INDIA BHUBANESWAR CHAPTER

The Chapter conducted a Career Awareness Programme at Sadguru Commerce Academy, Nimapara on 02.08.2024. CMA P.C.Sahoo, Officer and Shri H.K. Biswal, AAO of the Chapter highlighted about the CMA course and its career opportunities. CMA Bibhuti Bhusan Nayak, President, ICMAI interacted with students in the classroom at the ICMAI-Bhubaneswar Chapter. He was accompanied by CMA Sudhanshu Kumar Sahu, Guest Faculty & Past Chairman and CMA Ramesh Chandra Patra, Chairman of the Chapter.



The Chapter conducted a seminar on the theme "Latest Developments in the Cost Audit Framework & ABC for Maintenance of Cost Records and Cost Audit" on 11th August 2024 at CMA Bhawan, Bhubaneswar. The seminar was inaugurated by Shri Babu Singh, MLA, Ekamra Constituency, Bhubaneswar as the chief guest in the presence of several distinguished guests of honour and special guests including CMA Bibhuti Bhusan Nayak, President, ICMAI, CMA T C A Srinivasa Prasad, Vice President, ICMAI, CMA Neeraj D Joshi, Council Member, ICMAI and expert on the topic, CMA Damodara Mishra, Secretary, ICMAI-EIRC, CMA Uttam Kumar Nayak, Regional Council Member & Immediate Past Chairman, ICMAI-EIRC and CMA Ramesh Chandra Patra, Chairman, ICMAI Bhubaneswar Chapter. In the technical session, CMA Neeraj D Joshi, Council Member, ICMAI, CMA Niranjan Mishra, Former Council Member, ICMAI and Practicing Cost Accountant and CMA Shyam Sundar Sonthalia, Former Chairman, ICMAI-EIRC and Practicing Cost Accountant spoke in detail on the topic as resource persons and provided critical insights into the latest developments in the Cost Audit framework and the essentials of Activity-Based Costing (ABC) for maintaining cost records and audits. With the support of Managing Committee Members of the Chapter including CMA Sarat Kumar Behera, Vice-Chairman, CMA Barada Prasan Nayak, Secretary, CMA Soumya Ranjan Jena, Chairman, PD

Committee, CMA Surya Narayan Tripathy, Member & Past Chairman and CMA Avinash Kotni, Chairman CC & SF Committee and Treasurer, the seminar concluded with a grand success. In commemoration of the seminar, a press meet was also organized by the Bhubaneswar Chapter.



A press meet held on 11.08.2024 at CMA Bhawan to highlight the Seminar on "Latest Developments in Cost Audit Framework & ABC for Maintenance of Cost Records & Cost Audit" and recent development of the Institute. CMA Bibhuti Bhusan Nayak, President and CMA TCA Srinivasa Prasad, Vice President, ICMAI, CMA Damodar Mishra, Secretary, ICMAI-EIRC, CMA Uttam Kumar Nayak, Immediate Past Chairman, ICMAI-EIRC, CMA Ramesh Chandra Patra, Chairman, ICMAI-Bhubaneswar Chapter and CMA Soumya Ranjan Jena, Chairman, PD Committee of the Chapter highlighted about the seminar and recent developments of the Institute and Bhubaneswar Chapter.



The Chapter celebrated the 78th Independence Day at CMA Bhawan, Bhubaneswar in a grand way. Cdr. Biswajit Nayak (Retd.), Indian Navy unfurled the National Flag as "Chief Guest" and delivered a motivational talk to the students on the theme "Youth Leadership: Paving the Way to a Glorious Bharat in 2047." The celebration was marked by a series of activities including a quiz, debate and song competition organized for the Foundation, Intermediate and Final students. These events showcased the talents and enthusiasm of the students, who participated in large numbers.



The Chapter conducted a CMA Career Awareness Programme cum Seminar on the title “Basic Concepts on GST” at Department of Commerce, Jupiter Degree College, Khordha on 13.08.24. CMA Rashmi Ranjan Sarangi, Guest Faculty & member of the Chapter delivered on the topic as “Resource Person”. The Chapter organized some more CMA Career Awareness Programmes on 14.08.2024, 20.08.2024, 22.08.24, 24.08.24, 25.08.24, 27.08.24, 28.08.24, and 29.08.24 at different institutions at Bhubaneswar. These programmes guided and interacted with students, discussed various benefits and opportunities available in pursuing the CMA course alongside their graduation studies and also highlighted its relevance in the corporate world.



The Chapter conducted an inspiring interaction session with the CMAs on 24.08.24 who qualified in the December 2024 term examination. CMA Ramesh Chandra Patra, Chairman of the Chapter and CMA Damodar Mishra, Secretary, ICAI-EIRC interacted with the newly qualified CMAs. The new CMAs were encouraged to take associate membership of the Institute, membership of the Chapter and to actively participate in Chapter’s activities to enhance their professional growth.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA SOUTH ODISHA CHAPTER

The chapter observed Income Tax Day celebration week-2024 (Ayakar Divas) on the theme of “Six Decades of Income Tax Act-1961, A look Back and way forward” on 30.07.2024 at the Chapter Conference Hall. CA Amarkanta Padhy, a leading CA in practice inaugurated and graced as chief guest. Sri Swaraj Sahu, Leading Advocate and Tax consultant delivered a lecture as resource person. CMA Narasingha Chandra Kar, Chairman of the Chapter delivered the welcome address and CMA Akshya Kumar Swain, Secretary of the Chapter delivered the keynote address. CMA Dharmendra Kumar Padhy, Chairman-MDP Committee proposed a formal vote of thanks while CMA Ashwini Kumar Patro, Vice Chairman of the Chapter facilitated the programme.

Fresh batch of oral coaching classes was inaugurated by the Chapter on 26.07.2024 at its premises. CMA Narasingha Chandra Kar, Chairman of the chapter, CMA Akshya Kumar Swain, Secretary of the chapter, CMA Lipu Panda, Chairman, Oral Coaching spoke in detail regarding CMA course, its future prospectus both in service and practice and its importance. CMA Ashwini Kumar Patro, Vice-Chairman of the Chapter facilitated the programme. CMA Narasingha Chandra Kar, Chairman of the Chapter who delivered the welcome address, advised the students to maintain discipline and patience with full dedication for a time span of 3 years to become a professional accountant. He also explained

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the future prospects of CMA profession both in service and practice. CMA A.K. Swain, Secretary of the Chapter in his address made a comparison between CMA course before 10 year and its current status, the pass percentage, time planning etc to complete the course. CMA Lipu Panda, Chairman Coaching Committee spoke about the facilities available at the Chapter, library, students' activities etc. He also advised the students to attend oral coaching classes regularly. He also proposed a vote of thanks.



NORTHERN INDIA REGIONAL COUNCIL

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA JAIPUR CHAPTER

The Chapter has been conferred with Best Chapter Award in Northern Region again for the year 2023-24 in Category "A" Chapters for remarkable achievements in

different areas. On behalf of the members of the Chapter, award was received by Chairman, CMA (Dr.) Deepak Kumar Khandelwal and Treasurer, CMA Harendra Kumar Pareek at NIRC New Delhi on 3rd August 2024.



The Chapter organised Seminar on 10th August 2024 on the Topic "Evolving Landscape of Internal Audit" in association with The Institute of Internal Auditors, Jaipur Audit Club. Chief Guest of the Seminar was CMA R.K. Dwivedi, Director Finance, BHEL. Ms. Sana Baqai, President IIA India, Delhi Branch was Guest of Honour. Key Speaker of 1st Technical Session was Mr. Nikhel Kochar from IIA India. In the second session there was Panel discussion on "Red Flags in Manufacturing Industry & Procurement Function". Panelists of this session were CMA Swapnil Bhandari, Past Chairman of Jaipur Chapter, CMA Vikas Kumawat, CFO, Derawala Industries Ltd, Mr. Gaurav Bhatia from IIA India. Moderator of Panel discussion was Mr. Apoorv Mathur, President, IIA Jaipur Audit Club. Program was conducted by CMA Purnima Goyal, Secretary Jaipur Chapter.



78th Independence Day has been celebrated with full zeal and enthusiasm at Jaipur Chapter on 15th August 2024. Chairman of the Chapter, CMA (Dr.) Deepak Kumar Khandelwal hoisted the National Flag alongwith Members, Faculties and Staff. The program was conducted jointly by CMA (Dr.) Deepak Kumar Khandelwal, Chairman and CMA Purnima Goyal, Secretary.



SOUTHERN INDIA REGIONAL COUNCIL

THE INSTITUTE OF COST ACCOUNTANTS OF INDIA BENGALURU CHAPTER

Professional Development Programmes on different dates of August 2024 and CMA Vivek Mishra, Mr. Vikram Satyadev, Founder - Stocks-n-Trends, Mr. Navin J, Stocks-n-Trends were the speakers of the programme.

Practitioners' Forum Programme on "Celebrating Academic Excellence - Honoring our Successful Achievers of June 2024 Examination shaping the Future of Taxation - Proposals for Overhauling the Income Tax Act, 1961" was held at Bengaluru Chapter Premises on 31.08.2024 and CMA Abhijeet S Jain, Chairman BCCA, CMA Rajesh Devi Reddy Secretary BCCA, CMA Santosh G Kalburgi, Chairman PF & Treasurer BCCA and CMA G. N. Venkatraman, Former President ICAI were the speakers of the programme.

Career Counseling programmes were organized on 03.08.2024 and 27.08.2024 at different colleges in Bengaluru.

Inauguration of 116th Batch of Oral Coaching Classes held at The Indian Institute of world Culture, Bengaluru on 07.08.2024. Chief Guest was Dr. V. Prabhu Dev, Director MQI College of Management, Guest of Honour was CMA Y. H. Anegundi, Former Chairman BCCA, CMA Abhijeet S. Jain, Chairman BCCA, CMA Rajesh Devi Reddy, Secretary BCCA. CMA G. N. Venkatraman, Former President ICAI attended the programme.

Members' Meet with newly elected SIRC Chairman, CMA Vishwanath Bhat on 06.08.2024 and Chief Guest was CMA Vishwanath Bhat, Chairman SIRC, Guest of Honour was CMA Suresh R Gunjalli, Council Member & CMA Girish Kambadaraya, and Chairman PD Committee SIRC attended the Meet. Meeting with Joint Commissioner of Income Tax, Bengaluru for discussion issues related to queries about empanelment on 27.08.2024. Brand Building of CMA Course at various colleges was organized in August 2024 in Bengaluru.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA COIMBATORE CHAPTER

Chairman CMA (Dr.) R. Maheswaran addressed the Students of PSG College of Arts and Science and highlighted about the CMA Course and motivated them to pursue the same for the betterment of future. In his presidential address, CMA Viswanath Bhat focused on the essential skills that students need to develop to meet market demands after becoming CMAs. He addressed questions from students on how to interact with experienced CMA members, encouraging them to seek out opportunities to engage with senior professionals to build both knowledge and communication skills. The programme concluded with a vote of thanks from CMA Subramaniam Kumar, Secretary of the chapter, followed by the National Anthem.

The Chapter organized a Professional Development Programme on August 10, 2024, focusing on the topics "Optimizing Business Processes for Growth" and "Process Optimization Using Emerging Technologies." The event featured CMA Viswanath Bhat, Chairman of SIRC of ICAI, as the guest of honour. The guest speakers were Mr. KrishnakumarThangavelu, CEO

and Managing Director of Madhampatty Group of Companies, Coimbatore, and Mr. R. Karthikeyan, Manager Technology Consulting, Protivity Global Business Consulting, Coimbatore.

Independence Day Celebration was conducted on August 15, 2024. On 17th August, 2024, a students' programme was conducted for the third time consecutively to show case the talent of the students. Three teams made their presentation and explained the topics very clearly. The Chairman, Vice Chairman, Secretary, Treasurer and some faculties attended and graced the occasion.

A Career Awareness Programme on the CMA Course was conducted by the Chapter in KPR College of Arts Science and Research on 16th August, 2024. On behalf of the Chapter, Chairman, CMA (Dr.) R. Maheswaran gave an orientation programme to the students and explained in detail about the CMA Course and its benefits in terms of employment and practice.

The chapter held a GST workshop on August 24, 2024, as part of its Professional Development Program. The workshop focused on the themes "Handling Show Cause Notices under GST" and "Process & Cost Optimization – Case Studies." Sri P.A. Parameswaran I.R.S, Assistant Commissioner of GST & Central Excise (Retd.), was the chief guest, alongside guest speaker Mr. R. Karthikeyan, IT Process Consultant from Coimbatore. The Chapter jointly conducted an One Day International Seminar on "ENVISIONING 2047: ROLE OF DIGITAL CURRENCIES IN ACHIEVING VIKSIT BHARAT" in association with Sri Ramakrishna College of Arts & Science, Coimbatore on 29th August, 2024. On behalf of the Chapter, Vice Chairman, CMA Surya Prakash U. attended the programme and gave a special address to the students and audience.

The Chapter arranged an industrial visit on 31st August 2024 for the benefit of budding ICAI students at Arya Vaidhya Pharmacy, Kanjicode, Kerala to give them a feel of shop floor experience in a manufacturing industry. Around 130 students participated in this visit and gained good knowledge of the manufacturing set up with live experience of processes.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA TRIVANDRUM CHAPTER

The Chapter conducted a Professional Cricket League with the Institute of Chartered Accountants of India Thiruvananthapuram Branch on 3rd July 2024 at Trivandrum. The Chapter celebrated the 7th anniversary of the Goods and Services Tax (GST) in India. GST has revolutionized the taxation system in our country, promoting ease of doing business and ensuring a unified market. In light of the same, as a part of GST Day Celebration ICMAI Trivandrum Chapter hosted a Quiz program for Students on 5th July 2024. The Chief Guest of the program was Sri. E P Pradeep, Deputy Commissioner, State GST Department, Kerala, inaugurated the event. CMA Sarat Nair U, Chairman, CMA Rejeesh V S, Professional Development Committee Chairman, CMA Hima R S Nair, Journal & Publication Committee Chairperson were present in the occasion. Sri E P Pradeep Dy. Commissioner, State GST Dept. briefed about the concept of One Nation One Tax to the Members & students, followed by a Quiz Competition was conducted for students, lead by CMA S. S. Thanu, Faculty Member Trivandrum Chapter. Cash prizes were given to the winners of the Quiz competition. As per the direction from the Co-operative Development Board, ICMAI, International Day of Cooperatives Standee was displayed and photos taken along with the standee is sent to HQ.

The Chapter conducted a professional Development Program in online mode on the Topic Committee Report on Cost Accounting Records and Cost Audit & way forward by CMA Sankalp Wadhwa, CASB Member on 24th July 2024.

The chapter conducted Career Counseling programs in the month of July 2024 & August 2024 in St. Jude College, Thoothoor, Chinnathurai, Tamilnadu, MMS Govt College for Arts & Science, Malayinkeezhu, Trivandrum, National College, Ambalathar, Trivandrum, KNM govt. Arts & Science College, Trivandrum, Govt. Womens' College, Vazhuthacaud, Trivandrum, MG College, Trivandrum, Mother Teresa College,

Kattakkada, Navabharath HSS, Attingal, NSS College Nilemel, SN Higher Secondary School, Uzhamalakkal, CMA Manoharan Nair G S, CMA Pramode Chandran P G, CMA Lakshmi V, CMA Victor Francklin and CMA Vishal T George were the Resource Persons.

The Chapter celebrated 78th Independence Day. CMA Sarat Nair U, Chairman hoisted the National Flag. Members, Students & Staff attended the Flag hoisting ceremony.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA TIRUCHIRAPALLI CHAPTER

The Chapter celebrated the 78th Independence Day on 15th August 2024 with great fervour and pride at the Chapter premises. The event began with the hoisting of the National Flag by CMA K. Rajagopal, Past Chairman, SIRC. The event concluded with the singing of the National Anthem, filling the atmosphere with a sense of pride and respect for the nation.

The Chapter organized a Professional Development program on 15th August 2024 on the topic “Budget 2024 - Amendments in the Income Tax Act” at its premises. The program began with a welcome address by CMA C. Jayaraman, Treasurer of the Chapter. The Chief Guest, CMA T. Ananthasayanam, General Manager Finance,

BHEL Tiruchirappalli, interacted with the members, highlighting the necessity of organizing such programs on a continuous basis. He underscored the importance of lifelong learning and staying updated with the latest developments in the industry. Faculty introduction was done by CMA Aarif Khan, PD Committee Chairman. Eminent speaker, CA Santhosh, made a detailed presentation on the topic. His presentation covered various significant aspects of the amendments, including Income from salary, Income from house property etc. The session was highly interactive, with active participation from the participants, making the event more enriching and informative. The program concluded with a vote of thanks proposed by CMA M. Mohanraja, Secretary of the Chapter.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA RANIPET VELLORE CHAPTER

The Chapter celebrated the 78th Independence Day with great enthusiasm. The event commenced with the hoisting of the National Flag by Chairman, CMA S. Sezlian, followed by the National Anthem, in the presence of students, faculty members, and staff. Dr. Natarajan, HoD of National College, Trichy, delivered the welcome address. CMA S. Sezlian, in his address, highlighted the importance of Independence Day in the history of the nation. The celebrations featured several events for students, including outdoor games, a quiz competition conducted by Dr. Natarajan, and mind drilling games conducted by Chairman S. Sezlian. The program concluded with the distribution of prizes, followed by the vote of thanks proposed by Mr. A. Sivakumar, Assistant Coordinator of the Chapter.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA MYSURU CHAPTER

The Chapter organized Independence Day celebration on 15.08.2024 at its premises.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA KOZHIKODE-MALAPPURAM CHAPTER

The Chapter organized a highly informative webinar on the topic "Insights into Committee Report on Cost Records & Audit Framework" on 1st August 2024. CMA Askar Ali PC, Chairman of the Chapter welcomed the dignitaries. Secretary of the Chapter, CMA Vijith P presided over the function. The event was graced by Sh. Rupesh Singh, Senior Specialist, Industry-I, Niti Ayog, as the guest of honour, while CMA Navneet Kr. Jain, Council Member, ICMAI, delivered the keynote address. CMA Jeewan Chandra, Regional Council Member NIRC of ICMAI, was the co-speaker. The event provided valuable insights into the evolving landscape of cost records and audit frameworks, highlighting the importance of staying updated with industry standards and practices. Training & Placement Committee Chairman, CMA Adarsh KP proposed the vote of thanks.

The Chapter celebrated 68th Independence Day with a Flag Hoisting ceremony led by Chairman, CMA Askar Ali PC. After the ceremony, Chairman Askar Ali and Immediate Chairperson, CMA Shireen C delivered inspiring speeches, reflecting on the day's significance.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA COCHIN CHAPTER

The Chapter organized its seventh Cost Convention on 26th July 2024 at Radisson Blu Hotel, Cochin. The convention was inaugurated by the Revenue Minister of Kerala, Mr. K Rajan, who emphasized the importance of integrating sustainability into development efforts. The theme of the convention, "Catalysing India's Transformation," resonated throughout the day's sessions, highlighting the country's strategic pivot towards sustainable growth and development. The technical sessions were led by esteemed speakers, including: Dr. K. Raviraman, Member, Kerala State Planning Board, Mr. Praveen Venkataramanan, Managing Director, NITTA Gelatin India Ltd, CMA Vishwanath Mishra, Financial Analyst, Ministry of Electronics and Information Technology, Government of India, Mr. Amit Sigh, Partner, Deloitte and CMA A.N. Raman, Renowned Management Consulting Professional. There was a panel discussion moderated by CMA (Dr.) K. Sreekumar. The event commenced with a warm welcome address by CMA

Meena George, Chairperson of the Cochin Chapter, who set the tone for the day. The convention concluded with a vote of thanks delivered by CMA George P. Mathew, expressing gratitude to the distinguished guests, speakers, and participants for their contributions in making the event a success.



The Chapter conducted a webinar on "Budget Analysis – 2024" on 2nd August 2024. The virtual event attracted a diverse audience of professionals, academicians, and students eager to gain insights into the nuances of this year's Union Budget. The keynote speaker for the event was Prof. (Dr.) P. A. Mathew, Chairman and Principal of Grace International Academy. With his vast expertise in economics and public policy, Dr. Mathew provided a comprehensive and insightful analysis of the Union Budget.

The Chapter celebrated the 78th Independence Day on 15th August 2024 at its Center for Excellence Chalikkavattom. The celebration was marked by a deep sense of patriotism and unity as members, staff, and students gathered to commemorate this significant day in India's history. The event commenced with the flag hoisting ceremony led by CMA Meena George, Chairperson of the Chapter. The Indian tricolor was raised high as the national anthem played, filling the atmosphere with pride and reverence for the nation. The day was a reflection of unity, patriotism and dedication to the nation's development, marking another memorable moment for the Chapter.



The Chapter organised a CFO Meet on 10th August, 2024 for its Students. The highlight of the event was the interaction with CMA Hema Gopalakrishnan, AGM, CIAL, Nedumbassery.



WESTERN INDIA REGIONAL COUNCIL

Professional Development Committee of WIRC organised highly informative & insightful CPE on Detail Discussion on "Committee Report on Cost Accounting Records and Cost Audit" and way forward on 13th July 2024 at WIRC Office, Mumbai to provide a platform for cost accountants and industry professionals to discuss and analyze the recommendations provided by the committees, understand their impact on various industries & profession. The speaker for the discussion was CMA (Dr.) Ashish Thatte, Council Member, ICAI who provided a comprehensive overview of the Committees Report and invited the suggestions from the members. CMA Nanty Shah, Treasurer WIRC was present on the occasion.

Professional Development Committee of WIRC organised insightful Webinar on "MSME & Opportunities for CMAs" on 11th July 2024 to explore the evolving landscape of Micro, Small, and Medium Enterprises (MSMEs) and the vital role that Cost and Management Accountants can play in supporting and growing this sector. CMA (Dr.) Chaitanya Shah, Practicing Management Advisor SMEs was the speaker. He provided a comprehensive overview of the current scenario of MSMEs in India, discussing key challenges such as access to finance, regulatory compliance, and market competitiveness. Also shed light on the recent government initiatives aimed at boosting the MSME sector, such as the "Atmanirbhar Bharat" package and various schemes for credit support. Further he emphasized how CMAs, with their expertise in cost management, financial analysis, and strategic planning, can significantly contribute to the growth and sustainability of MSMEs, also provided a clear perspective on the numerous opportunities available

for CMAs within the MSME sector. After an extensive and successful Question Answer session, the webinar concluded with a vote of thanks.

Professional Development Committee of Western India Regional Council of ICAI organised “Webinar on BRSR and BRSR Core” on 19th July 2024. Dr. Mohd MerajInamder, Assistant Professor, NISM was the speaker. He deliberated on introduction to the BRSR framework, emphasizing its role in promoting responsible business practices. The session highlighted how cost accountants can assist organizations in achieving compliance, enhancing transparency, and ensuring accurate and comprehensive reporting. He also elaborated on how BRSR Core serves as a foundational element in sustainability reporting, driving companies towards long-term value creation. The webinar concluded with an interactive Q&A session and vote of thanks.

Professional Development Committee of WIRC organised a Webinar on “Gem Procurement - A Must Know for CMAs” on 20th July 2024. CMA Chitralee Goswami, Chief General Manager, Head Corporate Finance Services, ONGC was the speaker. CMA Arindam Goswami, Vice Chairman & Chairman, P.D. Committee, ICAI-WIRC welcomed all the members. He highlighted the performance of Professional Development Committee during the year and expressed sincere gratitude to the Office Bearers of WIRC, RCMs and CCMs for their support during the year. CMA Chaitanya Mohrir, Chairman WIRC, CMA Neeraj Joshi & CMA Manoj Kumar Anand, Council Members also addressed the members on the occasion. CMA Nanty Shah, Treasurer WIRC proposed Vote of thanks.

The 'Rising Stars of CMA Series' Session 6 was held on 21st July 2024 on the auspicious occasion of Guru Purnima, a day dedicated to expressing gratitude towards teachers and mentors. The session began with a warm welcome from CMA Mihir Narayan Vyas, Hon. Secretary & Chairman Students Coordination Committee. CMA Chaitanya Mohrir, Chairman WIRC initiated the session with the Guru Mantra, invoking blessings and expressing respect for the teachers and mentors who play a vital role in shaping the future of students and address the students and addressed the students. In his speech, he emphasized the importance of dedication and perseverance in the journey of becoming a successful Cost Accountant. He encouraged students to make the most of the opportunities provided by the institute and to remain focused on their goals. CMA Mihir Narayan Vyas, Hon. Secretary & Chairman Students Coordination Committee highlight the performance of the Students Coordination Committee of the year 2023-24 and recapped the various events, seminars,

and programs organized for the benefit of students, emphasizing the committee's commitment to supporting student development. He also expressed his gratitude towards the Chairman of WIRC, the entire team, and the staff members for their unwavering support and contributions to the success of the committee's initiatives. The highlight of the session was inspiring interview of Rising Star “CMA Aniruddh Shinde” moderated by CMA CFP Mohit Nagdev. He shared his CMA journey and experiences with the students. This session highlighted the journey of Aniruddha, a distinguished rank holder in both the Intermediate and Final examinations of the CMA course. The session concluded with words of encouragement and inspiring the students to remain committed to their goals and to continue striving for excellence in their CMA journey.



WIRC of ICAI organised “Career Counselling Program” at various colleges in July and August’24. CMA Binoy Thomas, Practising Cost Accountant and CMA Rashmi Mudgal, Practising Cost Accountant addressed the students and highlighted the CMA Course and its prospects. They shared their experience and describe the importance of CMA Course for the bright future in costing. WIRC organised an Inaugural Program for Oral Coaching Classes for Foundation, Intermediate & Final for July to December 2024 batch at various centers in Mumbai on August 12, 2024.

Independence Day celebrated at WIRC office on 15th August 2024. WIRC Staff members and Students participated in the celebrations.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA BARODA CHAPTER

The Chapter, arranged an Industrial Visit to Amul Plant situated at Anand, Gujarat on 02/08/2024. All 105 students participated in this visit. Chapter Chairman, CMA Priyank Vyas, Chapter Secretary, CMA Amruta Vyas and CMA Mohit Nagdev accompanied with the students.

Cygnus World School, Vadodara organized a career fair for their students on 03/08/2024 at the school premises. The Chapter participated in the event. Chapter Chairman, CMA Priyank Vyas and CMA Hirav Shah attended the event and informed about the CMA course.

The Chapter organized a flag hosting ceremony on 15/8/2024 on the occasion of Independence Day. Flag Hosting was done by CMA Priyank Vyas, Chairman of the Chapter.

Anand Vidya Vihar School, Vadodara organized a career fair for their commerce students on 17/08/2024 at the school premises. Representatives from the Institute of Cost Accountants of India, Institute of Chartered Accountants of India, Institute of Company Secretaries of India provided guidance their students. Chapter Chairman, CMA Priyank Vyas and Chapter Vice Chairman, CMA Kartik Vasavada attended the event and provided the valuable information about the CMA course.

The Chapter arranged various activities regarding Placement and Training. Large number of Members & Students took benefit of this placement.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA SURAT-SOUTH GUJARAT CHAPTER

The Chapter hosted a Workshop on 26th June 2024 on the theme "Taxation in India - KalAajaurKal." The Workshop featured CMA Sanjay Bhargave, (Former CCM) as the keynote speaker. CMA Nanty Shah-(WIRC Treasurer) felicitated CMA Sanjay Bhargave. Around 25 participants were in attendance, benefiting greatly from the insightful session.

The Chapter hosted a CPE & Workshop on 06th July 2024, on the theme "Scope of Companies Act for Cost Accountant". The programme featured CMA Deepali Lakdawala, (Hon. Secretary), as the keynote speaker. CMA Mohit Dhorajiya (Member) felicitated CMA Deepali Lakdawala, (Hon. Secretary).

The Chapter held a Press Meet at its premises on 11th JULY 2024. CMA Kailash C. Gupta (Chairman), CMA Kishor Vaghela (Vice Chairman), CMA Vipinkumar Patel (Treasurer) CMA Mahesh Bhalala (MC Member) participated in the Meet. The Press Meet was held for the declaration of the Foundation Results for JUNE 2024 term. The Chairman of the Chapter along with the Managing Committee members present congratulated all the Foundation Passed students and guided them for their further future prospects.

The Chapter hosted a CPE & Workshop on 21st JULY 2024, on the theme "From Data to Decisions: MIS Analytics through Advanced Excel". The programme featured Mr. Irfan Sherasia, as the keynote speaker. CMA Kailash C. Gupta (Chairman) & CMA Deepali Lakdawala, (Hon. Secretary) felicitated the speaker Mr. Irfan Sherasia.

The Chapter hosted another CPE & Workshop on 27th JULY 2024, on the theme "Analysis of Union Budget 2024". The programme featured CA Manoj Makhania as the keynote speaker. CMA Deepali Lakdawala (Hon. Secretary) felicitated the speaker CA Manoj Makhania.

The fresh batch of oral coaching classes for the term for July Dec 2024 was inaugurated on 01st August 2024 at the Chapter premises. Dr. Rameshdan Gadhvi (Registrar VNSGU-Surat) was the chief guest on the occasion. Along with him CMA Kailash C. Gupta (Chairman), CMA Kishor Vaghela (Vice-Chairman), CMA Deepali Lakdawala (Hon. Secretary), CMA Vipinkumar Patel (Treasurer) CMA Bharat Savani (Imm. Past Chairman) inaugurated the oral coaching classes. CMA Kailash C. Gupta (Chairman), CMA Kishor Vaghela (Vice-Chairman), CMA Deepali Lakdawala (Hon. Secretary), CMA Vipinkumar Patel (Treasurer) and CMA Bharat Savani (Imm. Past Chairman) felicitated the chief guest Dr. Rameshdan Gadhvi. Dr. Rameshdan Gadhvi blessed the students in his eloquent address to the students. CMA Deepali Lakdawala proposed a formal vote of Thanks.

The Chapter celebrated the 78th Independence Day at its premises on 15 Aug. 2024. Shri Parimal Rana (Asst. Commissioner-CGST) the chief guest hoisted the flag. CMA Nanty Shah (RCM-Hon. Secretary), CMA Kailash C. Gupta (Chairman), CMA Kishor Vaghela (Vice-Chairman), CMA Deepali Lakdawala (Hon. Secretary), CMA Vipinkumar Patel (Treasurer) CMA Bharat Savani (Imm. Past Chairman) & CMA Mahesh Bhalala (Managing Committee Member) were among those who attended the programme. CMA Nanty Shah, CMA Kailash C. Gupta, CMA Deepali Lakdawala and CMA Bharat Savani felicitated the chief guest Shri Parimal Rana. Shri Parimal Rana, CMA Nanty Shah, and CMA Kailash C. Gupta addressed the students and members. There was also a chess tournament on same day.

The Chapter hosted a Press Meet at its premises on 23rd August 2024. CMA Nanty Shah, (RCM-Hon. Secretary), CMA Kishor Vaghela (Vice-Chairman), CMA Deepali Lakdawala (Hon. Secretary), CMA Vipinkumar Patel (Treasurer), CMA Bharat Savani (Imm. Past Chairman), CMA Mahesh Bhalala (Managing Committee Member) & CMA Ashvin Ambaliya (Managing Committee Member) participated in the Meet. The Press Meet was being held for the declaration of the INTER And FINAL Results of JUNE 2024 term.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA INDORE DEWAS CHAPTER

The Chapter celebrated the 78th Independence Day with great pomp and show. In the presence of a large number of members and students, the flag was hoisted by the Vice Chairman, CMA Rahul Jain who congratulated all the members and students on the 78th Independence Day. On this occasion, CMA Pankaj Raizada, CMA Ravindra Dubey, CMA Vijay Joshi, CMA Nirmal Kushwah and CMA Inder Singh Pawar addressed the members and students. They called upon the students to participate enthusiastically in all the programs organized by the chapter. They said that some time out of your time should also be taken out for the country and social service. Chapter's secretary CMA Pankaj Raizada expressed his gratitude.

The Chapter inaugurated the fresh batch of oral Coaching classes.

The Chapter organized a CPE on 17/08/24 on Advance Audit Tools and Techniques in Excel format. The speaker was CMA Shubham Dosi.

The Chapter organized another CPE on 24/08/24 on Latest Changes in GST. The Speaker was CMA Mihir Turkhiya.





THE INSTITUTE OF COST ACCOUNTANTS OF INDIA
NASHIK CHAPTER



The Chapter conducted a Program on Recent Amendments in GST on 2nd August 2024 at CMA Hall, Prasanna Arcade, Nashik during 04.00 to 06.00 pm. Speaker for the seminar was CMA Rahul Chincholkar. Program started with the welcome speech by Chairman CMA Amit Jadhav, who also introduced the speaker. CMA Rahul Chincholkar explained about the new amendments in GST and answered the questions raised by participants.

The Chapter successfully celebrated the Felicitation Programme for all Passed students in June 2024 term examination results on 28th August 2024 at HRD Hall, Old Agra Road, Nashik. The Programme started with the welcome and felicitation of Chief Guest of CMA Nanty Shah, Hon. Secretary, and ICAI-WIRC by Chairman CMA Amit Jadhav. CMA Nanty Shah guided the students and also cleared the important points about the Cost Audit. He also congratulated all the students. Chapter Chairman, CMA Amit Jadhav guided the students and explained about mentor-mentee schemes and appealed to all the students to get the benefit of the

same to improve their career. Foundation, Intermediate and Final pass students were felicitated by CMA Nanty Shah. Vote of Thanks was delivered by CMA Maithili Malpure, Chairperson Student Coordination Committee. Committee members, oral coaching faculties, students along with their parents were present at the programme.

The chapter had organised a small trekking activity for students and members on 3rd August 2024. All arrangements organised by CMA Navnath Gangurde, Chairman, sports and cultural committee.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA
PIMPRI CHINCHWAD AKURDI CHAPTER



On 29th July 2024, the Chapter conducted a Career Counseling Program at Dr. D.Y. Patil College of Arts, Science & Commerce, Pimpri. The session began with a warm welcome by Prof. Vidya Baviskar, who introduced the guest speaker, CMA Sagar Malpure, Chairman of the Chapter. The Vice-Principal, Dr. Kishor Nikam, felicitated CMA Malpure with a bouquet, expressing gratitude for his visit and sharing valuable insights with the students. CMA Sagar Malpure opened the session by discussing the dynamic role of Cost and Management Accountants (CMAs) in the manufacturing sector. He further elaborated on the growing demand for CMAs in various industries, highlighting the successful placement of students in recent campus recruitment drives conducted by the Western India Regional Council (WIRC) of ICAI. The program concluded with a vote of thanks, acknowledging the insights shared by CMA Sagar Malpure and the keen interest of the students. The event was successful in inspiring many young minds

to consider the CMA course as a viable and promising career option, fostering a deeper understanding of the profession and its significance in the modern business environment.

The Chapter proudly celebrated India's 78th Independence Day on 15th August 2024 at CMA Bhawan, Pimpri, Pune. The event began with a spirited flag-hoisting ceremony led by the Chief Guest, CMA Biswajit Chaki, CFO of Yazaki India Pvt. Ltd., accompanied by the singing of the National Anthem, which filled the atmosphere with a sense of patriotism and pride. The ceremony was graced by the presence of Chairman, CMA Sagar Malpure, along with esteemed members, dedicated professionals, enthusiastic students, diligent Managing Committee Members, and the hardworking staff of the PCA Chapter. Following the flag-hoisting, CMA Biswajit Chaki took the opportunity to engage with the students in an interactive session. Drawing from his extensive experience as CFO, he shared valuable insights into his role and responsibilities, emphasizing the critical role that Cost and Management Accountants (CMAs) play in corporate governance, financial planning, and cost management. He highlighted how CMAs contribute significantly to strategic decision-making, risk management, and driving profitability in a dynamic business environment. The celebration concluded on a sweet note with the distribution of sweets, symbolizing the unity and harmony that mark this significant day.



THE INSTITUTE OF COST ACCOUNTANTS OF INDIA AHMEDABAD CHAPTER

The IPA of the Institute organized a seminar on Insolvency and Bankruptcy Code 2016 at ICAI-Ahmedabad on 5th July 2024. CMA Mitesh Prajapati, Secretary of the Chapter gave the welcome address. CMA Ashish Bhavsar, Member felicitated Mr. G. S. Narasimha Prasad, Managing Director, IPA-ICMAI by offering a memento. CMA Sunil Tejwani, Treasurer of the Chapter felicitated Ms. Karishma Rastogi, Manager-IPA-ICMAI by offering a memento. Mr. G. S. Narasimha Prasad felicitated the speakers CMA George Samuel and CMA Yogesh Chatwani and also CMA Mitesh Prajapati, Secretary-of the Chapter. Karishma Rastogi, felicitated CMA Sunil Tejwani, Treasurer of the Chapter. Mr. G. S. Narasimha Prasad addressed the participants on the subject matter. CMA George Samuel extensively spoke on “The Insolvency Revolution, preparing for the unknown”. CMA Yogesh Chatwani spoke on “Navigating the future of Insolvency, Opportunities and Obstacles.” Ms. Karshma Rastogi, spoke on “Opportunities for professionals under the code and various processes under IBC”. The seminar was interactive and useful for the professionals. Large number of CMA members and other professionals participated in the seminar. CMA Sunil Tejwani, Treasurer proposed the vote of thanks.

The Chapter organized a CEP on “53rd Council Recommends & Recent development in GST Act” on 12th July’ 2024. CMA Malhar Dalwadi, Member welcomed and felicitated the speaker Advocate Samir Siddhapuria by offering a memento to him. The speaker made a detailed presentation and explained the subject lucidly.

The chapter organized a CEP on “Detailed discussion on Committee Report on Cost Accounting Records & Cost Audit & Way Forward” during 13th, 16th and 18th July’2024. CMA Ashwin Dalwadi, President was the chief guest at the program. Chapters 1 to 6, Chapters 7 to 10 and Chapters 11 to 13 & Annexure 1 to 4 were discussed respectively. There was a detailed interaction between the participants on the subjected topic.

The Chapter organized a live streaming session on Union Budget 2024 on 23rd July’2024 from its premises.

The Chapter organized Power BI workshop for CMA students during 1st July’24 to 6th July’24. Prof. Shreyansh Khatri was the faculty for the workshop.

The Chapter commenced a fresh batch of Oral coaching classes for Foundation and Intermediate for December 2024 exam from 15th July, 2024.

The Chapter organized Flag hoisting Ceremony and Blood Donation Camp on the 78th Independence Day of India on 15th August 2024. CMA Uttam Bhandari, Chairman, CMA Nikunj Shah, Vice Chairman, CMA Mitesh Prajapati, Secretary, CMA Sunil Tejwani, Treasurer, other Management Committee Members, Members, Students and staff Members were present at the Flag hoisting ceremony. The flag hoisting was followed by National Anthem. A Blood donation camp was also a part of the 78th Independence Day celebrations.

The Chapter organized Press Meet on 23rd August 2024 in connection with the results of the June’24 exam Intermediate and Final. Reporters from leading

electronic media and print media attended the press meet. Chairman, CMA Uttam Bhandari and Secretary & Chairman Oral Coaching Committee, CMA Mitesh Prajapati addressed the reporters from electronic and print media.



NOTES FOR AUTHORS

Referencing is a crucial aspect of writing a journal article to avoid plagiarism. ‘Plagiarism’ refers to the act of using someone else’s work or ideas without giving proper credit to the original source. To avoid plagiarism in your writing, you must properly reference all the sources that you use in your research.

- ☉ **Choose a referencing style:** There are many different referencing styles, such as APA, MLA, Chicago, and Harvard, each with its own specific format and rules. Choose the style that is most appropriate for your field and stick to it consistently throughout your paper.
- ☉ **Cite your sources:** Cite the sources of information you use in your text by giving the author’s name, publication date, and page number(s) for direct quotes or paraphrased material.
- ☉ **Use a reference list:** At the end of your paper, include a reference list that lists all the sources you have used in alphabetical order. This will give your readers a complete list of the sources you consulted in your research.
- ☉ **Be accurate:** Ensure that the information you provide in your references is accurate and complete. This includes the author’s name, publication date, title, and source of the information.
- ☉ **Paraphrase carefully:** When paraphrasing, make sure to put the information into your own words, but still give proper credit to the original source.

By following these tips, you can effectively reference your sources in your journal article and avoid plagiarism. Remember that proper referencing is not only important for avoiding plagiarism, but it also helps to support your arguments and show the depth of your research.

Direct & Indirect Tax Updates - August 2024

DIRECT TAXES

- **Notification No. 97/2024 dated 7th August 2024:** In exercise of the powers conferred by clause (46) of section 10 of the Income-tax Act, 1961 (43 of 1961), the Central Government hereby notifies for the purposes of the said clause, ‘Kalyan Karnataka Region Development Board’ (PAN AAAGH0732F), a Board constituted by the Government of Karnataka, in respect of the following specified income arising to that Board, namely: (a) Grants received from State Government of Karnataka (b) Interest on bank deposits.

This notification shall be effective subject to the conditions that Kalyan Karnataka Region Development Board (a) shall not engage in any commercial activity (b) activities and the nature of the specified income shall remain unchanged throughout the financial years and (c) shall file return of income in accordance with the provision of clause (g) of sub-section (4C) of section 139 of the Income-tax Act, 1961.

- **Notification No. 98/2024 dated 7th August 2024:** In exercise of the powers conferred by clause (46) of section 10 of the Income-tax Act, 1961 (43 of 1961), the Central Government hereby notifies for the purposes of the said clause, ‘Karnataka State Natural Disaster Monitoring Centre’ (PAN:AAATD2434P), a body constituted by the State Government of Karnataka, in respect of the following specified income arising to that body, namely: (a) Grant –in-aid received from State Govt. and Govt. of India (b) Income received from data sharing activities, and (c) Interest on bank deposits

This notification shall be effective subject to the conditions that Karnataka State Natural Disaster Monitoring Centre (a) shall not engage in any commercial activity (b) activities and the nature of the specified income shall remain unchanged throughout the financial years and (c) shall file return of income in accordance with the provision of clause (g) of sub-section (4C) of section 139 of the Income-tax Act, 1961.

- **Notification No. 99/2024 dated 12th August 2024:** In exercise of the powers conferred by clause (46) of section 10 of the Income-tax Act, 1961 (43 of 1961), the Central Government hereby notifies for the purposes of the said clause, ‘West Bengal Transport Workers’ Social

Security Scheme’ (PAN AAALW0133G), a body established by the Government of West Bengal in respect of the following specified income arising to that body, namely: (a) Amount received in the form of Government grants (b) Amount received as cess under the West Bengal Motor Transport Workers’ Welfare Cess Act, 2010 (West Bengal Act V of 2010) and rules framed thereunder (c) Amount received as registration fees paid by the registered beneficiaries and (d) Interest earned on bank deposits.

This notification shall be effective subject to the conditions that West Bengal Transport Workers’ Social Security Scheme (a) shall not engage in any commercial activity (b) activities and the nature of the specified income shall remain unchanged throughout the financial years and (c) shall file return of income in accordance with the provision of clause (g) of sub-section (4C) of section 139 of the Income-tax Act, 1961.

- **Notification No. 100/2024 dated 12th August 2024:** In exercise of the powers conferred by clause (46) of section 10 of the Income-tax Act, 1961 (43 of 1961), the Central Government hereby notifies for the purposes of the said clause, ‘Unique Identification Authority of India’ (PAN AAAGU0182Q), a statutory Authority established under the provisions of the AADHAAR Act, 2016 by the Government of India, in respect of the following specified income arising to the said Authority, as follows: (a) Grants/Subsidies received from Central Government (b) Fees/ Subscriptions including RTI Fee, Tender Fee, Sale of Scrap, PVC card (c) Authentication, Enrolment and Updation service charges received (d) Term/Fixed Deposits and (e) Interest on bank deposits.

This notification shall be effective subject to the conditions that Unique Identification Authority of India (a) shall not engage in any commercial activity (b) activities and the nature of the specified income shall remain unchanged throughout the financial years and (c) shall file return of income in accordance with the provision of clause (g) of sub-section (4C) of section 139 of the Income-tax Act, 1961.

- **Notification No. 101/2024 dated 30th August 2024:** In exercise of the powers conferred by clause (ii) of sub-section (1) of section 35 of the Income-tax Act, 1961 (43 of 1961) read with Rules 5C and 5E of the Income-tax

STATUTORY UPDATES

Rules, 1962, the Central Government hereby approves 'Advanced Manufacturing Technology Development Centre (PAN: AAEEAA9272B), Chennai' as 'Other Institution' under the category of 'University, College or Other Institution' for 'Scientific Research' for the purposes of clause (ii) of sub-section (1) of section 35 of the Income-tax Act, 1961 read with rules 5C and 5E of the Income-tax Rules, 1962.

- **Circular No. 08/ 2024 dated 5th August 2024:** Non-applicability of higher rate of TDS/TCS as per provisions of section 206AA/206CC of the Income-tax Act, 1961, in the event of death of deductee/collectee before linkage of PAN and Aadhaar. In order to redress such grievances of the taxpayers, the Board, hereby specifies that in respect of cases where higher rate of TDS/TCS was attracted under section 206AA/206CC of the Act pertaining to the transactions entered into upto 31.03.2024 and in case of demise of the deductee/collectee on or before 31.05.2024 i.e. before the linkage of PAN and Aadhaar could have been done, there shall be no liability on the deductor/collector to deduct/collect the tax under section 206AA/206CC, as the case maybe. The deduction/collection as mandated in other provisions of Chapter XVII-B or Chapter XVII-BB of the Act shall be applicable.

INDIRECT TAXES

GST

- **Notification No. 16/2024–Central Tax dated 6th August 2024:** In exercise of the powers conferred by clause (b) of sub-section (2) of section 1 of the Finance Act, 2024 (8 of 2024), the Central Government hereby appoints, (a) the 1st day of October, 2024, as the date on which the provisions of sections 13 of the said Act shall come into force (b) the 1st day of April, 2025, as the date on which the provisions of sections 11 and 12 of the said Act shall come into force.

CENTRAL EXCISE

- **Notification No. 20/2024 - Central Excise dated 16th August 2024:**

In exercise of the powers conferred by section 5A of the Central Excise Act, 1944 (1 of 1944) read with section 147 of the Finance Act, 2002 (20 of 2002), the Central Government, on being satisfied that it is necessary in the public interest so to do, hereby makes the following further amendments in the notification of the Government of India in the Ministry of Finance (Department of Revenue), No. 18/2022-Central Excise, dated the 19th July, 2022. In the said notification, in the Table, (i) against S. No. 1, for the entry in column (4), the entry "Rs. 2100 per tonne" shall be substituted.

CUSTOMS

- **Circular No. 10/2024-Customs dated 20th August 2024:** Use of ICETABs for efficient examination and clearance process. CBIC has decided use of ICETAB for speedy examination of import consignments. In brief, ICETAB is a mobile tablet device for use by Customs Officers for facilitating quick upload of the examination report on the go in real time basis and making the examination process transparent and faster. ICETAB contains an exclusive Mobile Application to enable examining officers to view RMS Instructions, capture upto four images of cargo examination for integration with the Bill of Entry, submit examination report immediately on completion of the cargo examination.
- **Circular No. 11/2024-Customs dated 25th August 2024:** Implementation of automation in the Customs (Import of Goods at Concessional Rate of Duty or for Specified End Use) Rules, 2022 in respect of EOUs.
- **Circular No. 12/2024-Customs dated 31st August 2024:** Implementation of the Sea Cargo Manifest and Transshipment Regulations

Sources: incometax.gov.in, cbic.gov.in

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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

October 2024	Theme Forensic Audit: A Step Ahead	Subtopics <ul style="list-style-type: none"> ⊙ Forensic Audit - A step ahead of Internal Audit ⊙ Operational Red Flags- key indicators for Forensic Audit ⊙ Legislature, SEBI guidelines governing Forensic Audit ⊙ Forensic Auditors - A multi facets professional ⊙ Banking Regulation Act and Forensic Audit ⊙ Applicability of Forensic Audit in different Industries ⊙ Earmarked judgements/case laws under Forensic Audit in India ⊙ CMAs - Corporate Partner as Forensic Professional ⊙ Forensic Audit Report - Metamorphosis of Traditional Audit Report
November 2024	Theme Energy Consumption Management: A holistic approach to greener future	Subtopics <ul style="list-style-type: none"> ⊙ Energy Management & ESG ⊙ Challenges of Energy Management ⊙ Understanding Energy Management for achieving Energy Security ⊙ Renewable Energy Source - A gateway to energy independence ⊙ Energy Management Software - dynamic & strategic tool for corporates ⊙ Role of CMAs in Energy Audit ⊙ Strategic Management of Energy Consumption - a damage control mechanism ⊙ Urban Energy Planning - Synchronization of demand & supply chain ⊙ Solar Power Generation and Energy Management ⊙ Solar Energy Technology and its roles in Sustainable Development
December 2024	Theme Vikshit Bharat 2047: Transform India to Developed Nation	Subtopics <ul style="list-style-type: none"> ⊙ Strategic plan to achieve Vikshit Bharat 2047 ⊙ Envision India after 100 years of Independence ⊙ Vikshit Bharat - Ensuring Farmer Welfare ⊙ Vikshit Bharat - New Momentum for Nari Shakti ⊙ Vikshit Bharat - Empowering India's young professionals ⊙ Vikshit Bharat - Honouring the marginalized ⊙ Vikshit Bharat - Northeast - A Growth Engine ⊙ Infra at speed and scale ⊙ Environment and Sustainability ⊙ Nuclear Energy - A transformative energy source of Vikshit Bharat ⊙ Budget 2024-25 - Highlights to achieve Vikshit Bharat 2047
January 2025	Theme Banking in India - Today & Tomorrow	Subtopics <ul style="list-style-type: none"> ⊙ UPI - A way forward for cashless Banking ⊙ Portfolio management - A new segment of Banking ⊙ Banking with the Advent of ML and AI ⊙ Infrastructure Financing: Role of Banks and ways to address them ⊙ Peer to peer lending a new paradigm for retail loans ⊙ Reform, enhance the effectiveness of auditing process ⊙ Bank merger - Impact on credit growth ⊙ MSME credit assessment model for PSBs ⊙ RRBs heading for new face off through IPO ⊙ Neo Banking ⊙ Role of CMAs in Due Diligence Audit, Risk Based Internal Audit and Stock Audit

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

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



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CMA Bhawan, 4th Floor, 84 Harish Mukherjee Road, Kolkata - 700025, India
Board: +91 33 2454 0086 / 87 / 0184 Tel-Fax: +91 33 2454 0063

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RESEARCH BULLETIN

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Call for Research Papers/Articles

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Guidelines to submit full Paper

- Soft Copy of the full paper should be submitted in double space, 12 font size, Times New Roman, keeping a margin of 1 inch in four sides, MS Word (.doc) format.
- Each paper should be preferably within 5000 words including all.
- An abstract of not more than 150 words should be attached.
- The cover page should contain the title of the paper, author's name, designation, official address, contact phone numbers, e-mail address.

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5. Innovations in Supply Chain Management
6. Capital Markets in India
7. Banking & Insurance
8. Green Entrepreneurship and Circular Economy
9. Startups and Sustainable Development Goals (SDGs)
10. CSR
11. Corporate Governance
12. Insurtech and Regtech
13. Blockchain and Decentralized Finance (DeFi)
14. GST
15. Building Resilient Cooperatives

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