ICMAI
THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

Statutory Body under an Act of Parliament

www.icmai.in ncmac2024@icmai.in

First Ever Residential National Convention of ICMAI

61st

National Cost and Management Accountants' Convention, 2024 (NCMAC)

Viksit Bharat 2047

Synergizing Catalysts for Sankalp to Siddhi

THURSDAY TO SUNDAY

27th - 30th JUNE 2024

TENT CITY 2, EKTA NAGAR
STATUE OF UNITY, GUJARAT

Knowledge Pack

Behind Every Successful Business Decision, there is always a CMA

About the Institute

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

The Institute is having four Regional Councils at Kolkata, Delhi, Mumbai and Chennai, 117 Chapters in India and 11 Overseas Centres. The Institute is the largest Cost & Management Accounting body in the world with about 1,00,000 qualified CMAs and over 6,00,000 students pursuing the CMA Course. The Institute is a founder member of International Federation of Accountants (IFAC), Confederation of Asian and Pacific Accountants (CAPA) and South Asian Federation of Accountants (SAFA). The Institute is also an Associate Member of ASEAN Federation of Accountants (AFA) and member in the Council of International Integrated Reporting Council (IIRC), UK.

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 मृत्योर्मामृतं गमय ॐ शान्ति शान्ति शान्तिः	From ignorance, lead me to truth From darkness, lead me to light From death, lead me to immortality Peace, Peace, Peace

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MESSAGE

CMA Ashwin G. Dalwadi
President, ICMAI &
Chief Patron - 61st NCMAC, 2024

Dear All,

It gives me an immense pleasure to convey that 61st National Cost and Management Accountants' Convention from June 27 to 30, 2024 at Tent City 2, Ekta Nagar, Statue of Unity, Gujarat organized by our Institute on the theme "Viksit Bharat 2047: Synergizing Catalysts for Sankalp to Siddhi" highly aligns with the goal set by Hon'ble Prime Minister of India "Viksit Bharat @2047 to make India a developed nation by 2047, the 100th year of independence. A ***Knowledge Pack*** is also getting released to mark this occasion.

The Hon'ble Prime Minister of India emphasized the paramount importance of unity as the guiding principle for the next 25 years. He underscored that India's strength derives from its unity. As the nation approaches the milestone of its 100th year of independence in 2047, the aspiration is for the tricolour flag of a developed India to proudly flutter on the global stage. This ambitious vision aims to position India as one of the two largest economies globally by 2047.

I am confident that the Technical sessions would come-up with important recommendations offered by CMA fraternity in support of Government initiatives and socio-economic sustainability of the nation and how CMAs can act as a catalyst to give a massive push for the betterment of the economy.

I extend my warm greetings to the participants and wish the Convention a grand success.

Warm Regards,

CMA Ashwin G. Dalwadi

MESSAGE

CMA Bibhuti Bhusan Nayak
Vice President, ICMAI &
Chairman - 61st NCMAC, 2024

I am immensely happy to note that the Institute is organizing the 61st National Cost and Management Accountants' Convention from June 27 to 30, 2024 at Tent City 2, Ekta Nagar, Statue of Unity, Gujarat on the theme "Viksit Bharat 2047: Synergizing Catalysts for Sankalp to Siddhi".

Viksit Bharat @2047 is the vision to make India a developed nation by 2047, the 100th year of independence. The vision encompasses various aspects of development, including economic growth, social progress, environmental sustainability, and good governance.

The theme NCMAC underscores the transformation of CMAs from mere reporters of cost data to dynamic decision-makers and strategists within organizations. It highlights their ability to provide valuable insights that drive sustainable growth and efficiency.

I am sure, the deliberations from eminent speakers should be intellectually stimulating and professionally enriching.

Also, very happy to proclaim the release of the Knowledge Pack during the Convention. Commendable efforts have been made to make the publication useful for the participants and especially CMA professionals like us.

I extend my sincere appreciation for the eminent contributors for their sincere effort to publish this Knowledge Pack in time.

CMA Bibhuti Bhusan Nayak

MESSAGE

CMA Manoj Kumar Anand
Council Member, ICMAI &
Convener - 61st NCMAC, 2024

India is currently undergoing a significant transformation. Over the past decade, we have moved from being the tenth-largest economy to the fifth-largest, and there is potential for us to become the third-largest economy by 2028. The government's goal is to achieve a US$30 trillion economy by 2047, embodying the attributes of a developed India or Viksit Bharat.

The government has identified - empowerment of the youth, the poor, women, and farmers as four main pillars to achieve the vision Viksit Bharat. However, each of us also has a role to play in realising the government's vision.

ICMAI is professionally well-equipped to assist policy makers in government to adopt different and effective practices in industry to make local industry a global player. CMAs play a significant role in performance governance within organizations. They bring a unique skill set and expertise to the table which can be instrumental in helping organizations achieve their performance goals.

This year we are celebrating our 61st National Cost and Management Accountants' Convention on the theme "Viksit Bharat 2047: Synergizing Catalysts for Sankalp to Siddhi". The Convention aims to address the challenges in achieving the India Vision 2047 and highlight the pivotal role of CMAs in this endeavour.

I also take this opportunity to sincerely thank all the organizers of this event. And wish this event a grand success.

CMA Manoj Kumar Anand

MESSAGE

CMA Neeraj D Joshi
Council Member, ICMAI &
Co-Convener - 61st NCMAC, 2024

I am indeed very happy to bring forth the Knowledge Pack in our 61st National Cost and Management Accountants' Convention on the theme "Viksit Bharat 2047: Synergizing Catalysts for Sankalp to Siddhi".

A skilled youth workforce is beneficial for every industry and smart young professionals will contribute for betterment of Nation. Harnessing the Potential of Young Professionals, including CMAs, who can play a crucial role in realizing the vision of Viksit Bharat, where India aims to become a developed country by 2047. CMAs are well-regarded as the backbone of the Indian economy, renowned for their proficiency in fostering cost competitiveness, resource optimization, and cost-conscious management practices. With their expertise, CMAs are committed to contributing to nation-building and realizing India's vision of becoming a technology-driven, knowledge-based economy with robust financial foundations by 2047.

This Conference would provide a great opportunity for the resource persons, delegates or participants from the Government, academia and Industry, including Professionals & Management Experts to exchange ideas and interact with each other on emerging issues concerning the Government's vision Viksit Bharat @ 2047.

I firmly believe that there would be brainstorming interactive sessions.

I take this opportunity to extend warm welcome to the resource persons and delegates attending the convention. I wish this event all the success.

CMA Neeraj D Joshi

MESSAGE

CMA Chaitanya Mohrir
Chairman, WIRC &
Co-Chairman - 61st NCMAC, 2024

As climate changes intensify and social inequities persist, investors and stakeholders are demanding more than just green promises – they want measurable impact and responsible action. This year, ESG won't be a peripheral niche, but a central force shaping corporate strategies and investment decisions. It is becoming significant in the 'new world order' as sustainability challenges become more overwhelming to force all concerned to collectively play a role in promoting and implementing sustainable practices.

The professionals like CMAs can play a pivotal role in guiding organizations toward sustainable practices and effective risk management. They are well-equipped to assess the financial implications of various sustainability initiatives and risk mitigation strategies.

The event would address plethora of issues concerning the theme of the ICMAI National Cost and Management Accountants' Convention - 2024, Viksit Bharat 2047: Synergizing Catalysts for Sankalp to Siddhi. It highlights a remarkable transformation of CMA's role from financial reporters to strategic partners and visionaries who actively contribute to India's economic development, innovation, sustainability and growth. CMAs are pivotal in providing the vision needed to propel India towards a Viksit Bharat. Eminent experts, top-notch bureaucrats, policy makers and dignitaries from industry, academia and professional bodies will be giving their deliberations.

May I take this opportunity to convey my very best wishes for an effective, successful and productive Convention.

CMA Chaitanya Mohrir

EDITORIAL

Dear all,

I am immensely happy to and honoured to pen down the editorial column for the Knowledge Pack getting released at the 61st National Cost and Management Accountants' Convention (61 NCMAC), themed "Viksit Bharat 2047: Synergizing Catalysts for Sankalp to Siddhi" getting held at the Tent City 2, Ekta Nagar, Statue of Unity, Gujarat, aims to address the challenges in achieving the India Vision 2047 and highlight the pivotal role of CMAs in this endeavour.

The event is targeting pivotal domains, including Viksit Bharat 2047: Synergizing Catalysts for Sankalp to Siddhi; Viksit Bharat 2047 – Role of Cost and Management Accountants; Management Accountancy - Tool for effective Governance; Leveraging Technology towards a Sustainable FinTech Ecosystem and Developing Global Consultancy Indian Giants aiming to cultivate profound insights, facilitate knowledge exchange, and ignite collaborative dialogues among industry experts, academics and professionals.

Initiating, Sustaining and enhancing performance are the triangular foundation stones of the Corporate Governance Edifice. The FinTech ecosystem, is the DNA of the entity, providing the vital monetary resources at optimised cost, to strengthen the above edifice. It enables for expansion in right direction as directed by the business strategy of the enterprise. Cross entity learnings brought in, by external business expertise, provided through global best practices, support the enterprise in navigating through the Blue Ocean full of icebergs in the form of PESTEL forces. All these and more are discussed in the Technical sessions giving Integrated - value added takeaways to the participants.

The Technical Session 1: Management Accountancy - Tool for effective Governance emphasizes how there is a continuous evolution of CMA Techniques, driven by Technology Advances, aligning with the metamorphosis happening in the business environment. This has Resulted in development of new tools and techniques, which are distilled essence of best practices by successful entities. These enterprises have gone through the grind and emerged as leaders in the segments they are in. Some nuggets of these wisdom, illustrated with hands on case studies, are expected to bring out the concepts into practically implementable solutions at the ground level. Some of these techniques, which are the current favourites of the CEOs will be discussed in this session. If a concept or technique has to be successful, it should be backed by champions who live and breadth in the environment & who implement it. They are the vital connectors, who translate the different languages spoken by the cross functional teams into meaningful cost information for decision making. Who else are best suited than the CMAs, who unlike the finance professionals, analytically look at what is happening now and predict the future, and also push for an automated system of cost information delivered directly to the decision makers irrespective of their levels in the Corporate hierarchy.

Technical Session 2: Leveraging Technology towards a Sustainable FinTech Ecosystem would portray the future of fintech sustainability that hinges on the mainstream adoption of innovative technologies, including carbon-offsetting mobile solutions, green loans, and the rise of digital payments, paving the way for environmentally friendly cryptocurrencies and reducing the environmental impact across the financial sector. This evolution not only caters to the rising consumer demand for green and ethical financial services but also stands as a testament to the innovative potential of the fintech sector to contribute meaningfully to the global sustainability agenda. Green financial services opening up new avenues for inclusive and sustainable finance. In the context of sustainability and green finance, financial technology has the potential to accelerate the transition to a low-carbon economy, enhance environmental risk management, and promote responsible investment. CMAs can play a pivotal role in driving growth and success within the FinTech industry, positioning themselves as valuable strategic partners and trusted advisors to FinTech companies. CMA professionals can leverage their financial expertise to create tailored solutions that address specific customer pain points and deliver value-added services. Also, can help companies identify trends, patterns, and opportunities for optimization, enabling informed decision-making and driving business growth.

The Technical Session 3: Developing Global Consultancy Indian Giants would discuss that as the country is accelerating to be one amongst the leading economies of the world, the emergence of Indian MNCs in the Global Business Leadership Arena, illustrate the hard-fought premier position they have managed to reach, overcoming many a challenge, and converting them into opportunities. All these have been made possible through the development of entity-best practices by the professional teams, who have brought in such metamorphosis. We have seen such transformation in the leading management education institutions. Such radical changes have replaced the western case study models by the Indian ones. Any concept or technique for wider spread, needs carriers in the form of consultants. They understand the concept and popularise it across tailoring them to the entity under consultation.

I firmly believe, Participants can expect to gain insights, stimulate new ideas, and derive strategic inputs to bolster their businesses and professional practices. For the Institute and its members, it shall provide a pathway for setting strategies to remain relevant is the ushering era. The convention offers a platform for deeper appreciation of the significant role CMAs can play in realizing the national vision.

Would like to conclude with a remarkable quote made by Alvin Toffler, the well-known futurist – "The illiterate of the 21st century," Toffler wrote, "will not be those who cannot read and write, but those who cannot learn, unlearn and relearn".

Wish this Convention a huge success!!!

Thank you,

EXECUTIVE SUMMARY

Destined to be Viksit Bharat by 2047, India aims to make research, innovation and entrepreneurship the key drivers of its transformation. The world has now acknowledged the Indian Model of Development, which is rooted, futuristic and focused on sustainability. Our strength lies in recognizing the dynamics of both, market and welfare economy. For this purpose, policymaking has shifted to the 'Manufacturing Sector' outlining strategies and focus areas that need attention to make India, a manufacturing hub. The government has implemented some policies, such as 'Make in India', 'Invest in India', PLI Scheme, and FDI liberalisation for positioning India as the third largest economy in the future and achieve the target of being a Five Trillion Dollar economy.

The Digital Public Infrastructure domain today, acted as an enabler with 46% of global digital transactions being done in India. The start-up culture had taken firm roots with the numbers having risen manifold to 1.2 lakh more than 300 times rise in 9 years. Globally, India is number 3 in terms of total Unicorns created, behind China and United States. Bengaluru leads the list of cities in India with most unicorns at 46. It is followed by Mumbai (21 unicorns) and Gurgaon (15 unicorns). The government's focus on Deep Tech start-ups ecosystem in critical sectors like Defence, Drone & Space technology and Robotics; initiatives such as Green Hydrogen Mission, Indian semi-conductor mission combined with PLI schemes had manifested interest amongst prospective investors.

Moreover, National Education Policy 2020 (NEP 2020) has been instrumental in creating an ecosystem focusing on creativity, critical thinking, encouraging logical decision making and innovation. It encouraged multi-disciplinary and inter-disciplinary education. The NEP 2020 architecture aimed to promote innovation amongst student communities through Hackathons, Atal Tinkering Labs, Innovation Design and Entrepreneurship (IDE) Bootcamps, Prime Minister Research Fellowship (PMRF), development of new textbooks, Professors of Practice portal, establishment of Research and Development Cell (RDC) in HEIs, Atal Incubation Centers at universities, etc.

61st National Cost and Management Accountants' Convention (61 NCMAC) of The Institute of Cost Accountants of India themed on "Viksit Bharat 2047: Synergizing Catalysts for Sankalp to Siddhi" aims to address the challenges in achieving the India Vision 2047 and highlight the pivotal role of CMAs in this endeavour. CMAs have evolved into strategic partners, providing insights that go beyond numerical accounting data. The Convention would highlight a remarkable transformation of CMA's role from financial reporters to strategic partners and visionaries who actively contribute to India's economic development, innovation, sustainability and growth. CMAs are pivotal in providing the vision needed to propel India towards a Viksit Bharat. This theme underscores the vital role that CMAs play in shaping the future of businesses and the broader economy, transcending traditional boundaries and embracing a holistic and strategic outlook.

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Management Accountancy - Application of CMA Techniques in Governance

Life Cycle Costing – A prelude

Prelude: Assets, especially long-term assets causing considerable investments in them, are heavy weight cost drivers. Management accounting, with its self-defined role of adding strategic value to enterprise growth, uses Life Cycle Costing as a tool (an item of Total Cost Management toolset) to view this heavy weight cost driver (asset) from a life-time perspective and provide a sustainable competitive edge to the enterprise.

Optimizing Asset Management Through Life Cycle Costing

Introduction

Life Cycle Costing (LCC) is a crucial tool for evaluating the financial implications of an asset over its lifespan. Rapid technological advancements and obsolescence of components force industries to continuously upgrade and modernize existing systems to ensure equipment sustainment. Decisions made during the initial planning, design, and upgrade phases significantly influence the Total Cost of Ownership (TCO) of a system. This article reviews the literature on Life Cycle Costing models and applications to provide an overview of Life Cycle Costing employment and implementation feasibility in the Indian context, including defence procurements.

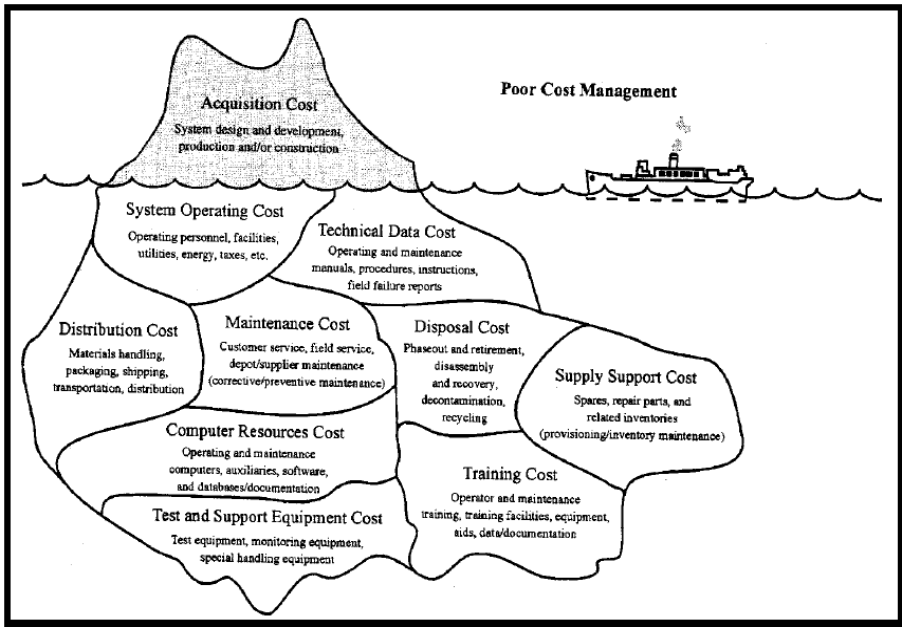
Objectives of Life Cycle Costing

The objectives of Life Cycle Costing are multifaceted:

1. Minimize Total Cost of Ownership: Life Cycle Costing aims to minimize the total cost of ownership of an asset by considering all costs involved over its lifespan, including acquisition, operation, maintenance, and disposal.
2. Support Management Decisions: Life Cycle Costing provides input to decisions regarding asset design, manufacture, installation, operation, maintenance, support, renewal/refurbishment, and disposal.
3. Identify Life Cycle Cost Drivers: Life Cycle Costing identifies the attributes of an asset that significantly influence life cycle cost drivers, enabling effective management.
4. Identify Cash Flow Requirements: Life Cycle Costing helps identify cash flow requirements for projects.

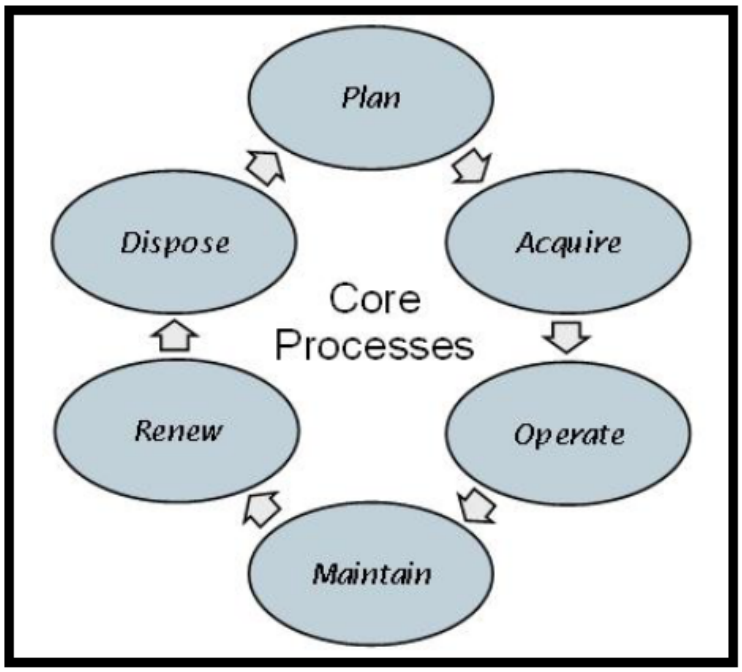
Life Cycle Costing and Total Cost of Ownership

LCC is a cost management tool that evaluates financial consequences over an asset's lifespan. It compares various options by identifying and assessing economic impacts over the life of each option. The total cost of ownership includes not only acquisition costs but also operation, maintenance, logistics, and other ownership costs, which can be higher than acquisition costs.



Scope of a Life Cycle and Life Cycle Costing

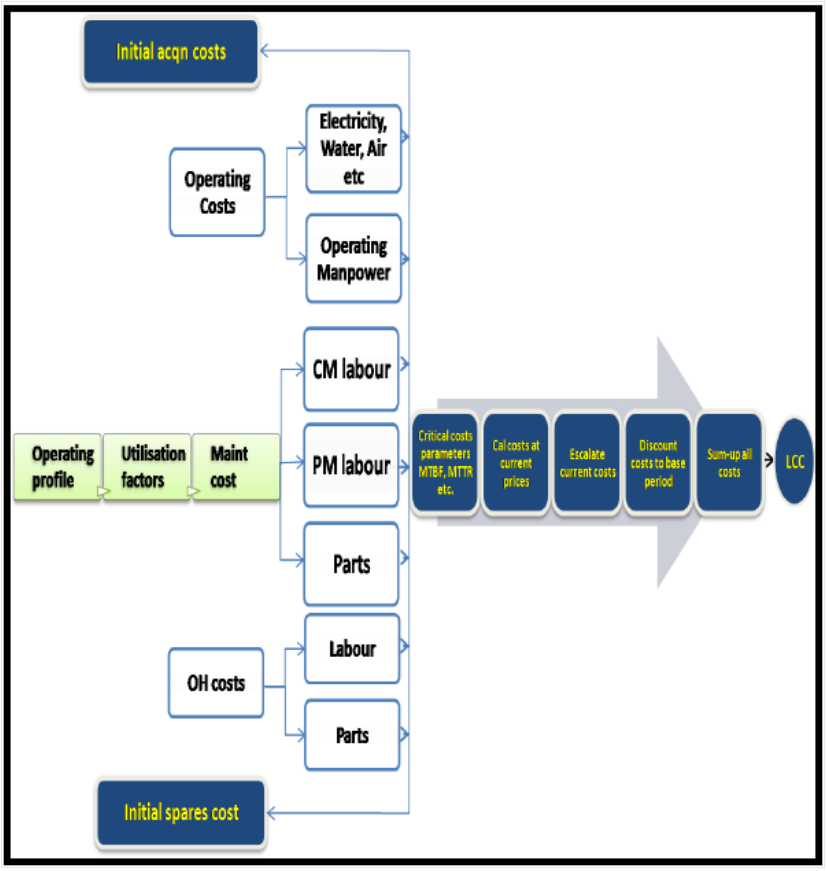
Life Cycle Costing is often described in general terms, but specific industry-related use of Life Cycle Costing methods is scarce. There are differences in approach between sellers and buyers, and Life Cycle Costing is an important factor in design and life cycle management. The basic elements involved in all Life Cycle Costing methods and models remain the same, including concept, design, production, installation, operation, maintenance, disposal, and miscellaneous data.



Steps in Formulation of Life Cycle Costing Model

The Kaufman eight-step approach is widely used in formulating Life Cycle Costing models:

a) Operating Profile: Describes the periodic cycle through which the equipment will undergo.
b) Utilization Factors: Indicate how equipment will function within each mode of the operating profile.
c) Cost Elements: Identify all cost elements or areas of cost.
d) Critical Cost Parameters: Identify factors that control the degree of costs incurred during the life of the equipment.
e) Current Costs: Calculate all costs at current rates.
f) Inflation Projection: Project costs forward at appropriate rates of inflation.
g) Discounting: Recognize that money has a time value and discount cash flows to the base period.
h) Summing Cash Flows: Calculate the total life cycle cost by summing all cash flows.



Life of an Asset/Equipment in Life Cycle Cost Model

The forecast life of an asset is a major influence on Life Cycle Costing analysis. There are five possible determinants of an asset's life expectancy: functional, physical, technological, economic, and social and legal life.

Cost Estimation Models

Commonly used Life Cycle Costing models include those that separate supplier costs from other costs and allow for multivariable "what-if" analysis. These models must accommodate the complexities of developing time-phased cost comparisons for multiple system design and upgrade options.

Conclusion

Life Cycle Costing is a critical tool for evaluating the financial implications of an asset over its lifespan. It is essential to consider all costs involved, including acquisition, operation, maintenance, and disposal, to make informed decisions. The Kaufman eight-step approach is widely used in formulating Life Cycle Costing models. The Indian context presents unique challenges, such as the need to compete in the world market and the importance of cost-effective options in the acquisition process. Further research is needed to crystallize the process and procedure for calculating Life Cycle Costing in the Indian context.

Importance of Life Cycle Costing in Indian Projects

Life cycle costing is crucial in Indian projects due to the following reasons:

a) Cost Visibility: Life cycle costing helps to identify and quantify all costs involved over the life of an asset,

including those that are not immediately visible, such as maintenance and disposal costs.

b) Optimization: Life cycle costing enables the optimization of design and operational decisions to minimize the total life cycle cost, ensuring that the system is designed and operated in a cost-effective manner.

c) Decision-Making: Life cycle costing provides valuable insights for decision-making, enabling stakeholders to make informed choices about asset acquisition, operation, and maintenance.

Common Pitfalls in Conducting Life Cycle Cost Analyses

The most common pitfalls in conducting life cycle cost analyses in India include:

a) Lack of Awareness: One significant pitfall is the lack of awareness about Total Cost of Ownership (TCO) and the importance of life cycle costing in sustainment at the acquisition stage.

b) Limited Research and Solutions: There is a lack of impetus for carrying out research and offering solutions to reduce Total Cost of Ownership, hindering the effective implementation of life cycle costing practices.

c) Focus on 'Know How' over 'Know Why': Industries in India tend to focus more on 'Know How' rather than 'Know Why', leading to a gap in understanding the fundamental principles and importance of life cycle costing.

d) Low Penetration of Life Cycle Costing: Preliminary inputs suggest a low penetration of the life cycle costing concept as a decision-making tool in Indian industries, indicating a gap in utilizing this valuable tool effectively.

e) Inadequate Consideration of Disposal Costs: Failure to adequately consider disposal costs during the lifespan and at the end of the asset's life cycle can lead to underestimation of the total life cycle costs.

f) Uncertainty and Sensitivity: Uncertainty in input data, assumptions, and estimates can significantly impact the accuracy of life cycle cost analyses. Factors like changes in operational assumptions, technological advances, and errors in estimating relationships can introduce uncertainties in the analysis.

g) Limited Comparative Studies: The need for more comparative studies in a wider sample is crucial to draw definitive conclusions for the successful implementation of life cycle costing in the Indian context.

Addressing these pitfalls is essential to enhance the effectiveness and accuracy of life cycle cost analyses in India, ensuring informed decision-making and cost optimization over the lifespan of assets.

Initial Design Decisions Impact the Overall Life Cycle Cost

Initial design decisions significantly influence the overall life cycle cost in Indian projects. The decisions made during the initial planning, design, and upgrade phases can significantly impact the Total Cost of Ownership (TCO) of a system. This is because the initial design and planning phases set the stage for the entire life cycle of the asset, including its operational and maintenance costs.

Impact of Initial Design Decisions

a) System Performance: Initial design decisions directly affect the performance of the system, which in turn impacts operational costs. For example, a system designed for high reliability and maintainability will have lower maintenance costs over its lifespan compared to one with lower design standards.

b) System Complexity: Complexity in design can lead to higher operational and maintenance costs due to increased complexity in maintenance

procedures and the need for specialized personnel.

c) Component Selection: The selection of components during the initial design phase can impact the overall life cycle cost. For instance, choosing components with longer lifetimes or lower maintenance requirements can reduce the total life cycle cost.

d) Upgrade and Refurbishment: Initial design decisions can also influence the feasibility and cost of future upgrades and refurbishments. For example, designing a system with modular components can make it easier and less expensive to upgrade or replace individual components.

e) Disposal Costs: The design of a system can also impacts disposal costs. For instance, designing a system with recyclable materials or minimizing hazardous waste generation can reduce disposal costs.

Initial design decisions have a profound impact on the overall life cycle cost in Indian projects. It is essential to consider these factors during the initial planning, design, and upgrade phases to ensure that the system is designed and operated in a cost-effective manner. Life cycle costing is a critical tool for evaluating the financial implications of an asset over its lifespan and should be integrated into the decision-making process to optimize system design and operation.

Best Practices for Minimizing Life-Cycle Costs

The best practices for minimizing life-cycle costs in Indian projects include:

a) Early Planning and Design: Incorporate life cycle costing into the initial planning and design phases to ensure that all costs are considered and optimized.

b) Total Cost of Ownership (TCO): Consider the Total Cost of Ownership, which includes not only acquisition costs but also operation, maintenance, logistics, and disposal costs, to make informed decisions.

c) Life Cycle Costing Models: Utilize life cycle costing models that consider all cost elements and parameters, such as inflation, discount rates, and disposal costs, to accurately estimate life cycle costs.

d) Cost Estimation and Forecasting: Conduct thorough cost estimation and forecasting to ensure that all costs are accurately predicted and managed.

e) Risk Management: Identify and manage risks that can impact life cycle costs, such as technological obsolescence, changes in operational assumptions, and errors in estimating relationships.

f) Comparative Analysis: Conduct comparative analyses of different options to identify the most cost-effective solution for a project.

g) Sustainability and Environmental Considerations: Incorporate sustainability and environmental considerations into the design and operation of systems to reduce long-term costs and minimize environmental impact.

h) Maintenance and Support: Ensure that maintenance and support strategies are designed to minimize costs and optimize system performance over its lifespan.

i) Upgrade and Refurbishment: Plan for upgrade and refurbishment options to extend the life of systems and reduce the need for costly replacements.

j) Disposal and Recycling: Plan for responsible disposal and recycling of systems and components at the end of their life cycle to minimize environmental impact and reduce costs.

k) Collaboration and Communication: Foster collaboration and communication among stakeholders to ensure that all costs are considered and managed effectively throughout the project lifecycle.

l) Continuous Monitoring and Evaluation: Continuously monitor and evaluate project costs and performance to identify areas for improvement and optimize life cycle costs.
m) Training and Education: Provide training and education to personnel involved in project management and maintenance to ensure that they understand the importance of life cycle costing and can effectively manage costs.
n) Integration with Other Tools and Techniques: Integrate life cycle costing with other tools and techniques, such as reliability, maintainability, and availability (RMA) analysis, to ensure that all aspects of system performance are considered.
o) Case Studies and Comparative Analysis: Conduct case studies and comparative analyses of different projects to identify best practices and optimize life cycle costs in Indian projects.

How Can Indian Projects Leverage Technology to Reduce Life-Cycle Costs

Indian projects can leverage technology to reduce life-cycle costs through various strategies and initiatives. Here are some key ways in which technology can be utilized to optimize life-cycle costs in Indian projects:

a) Predictive Maintenance: Implementing predictive maintenance technologies, such as Internet of Things (IoT) sensors and data analytics, can help in predicting equipment failures before they occur, reducing downtime and maintenance costs.
b) Digital Twins: Utilizing digital twin technology can create virtual replicas of physical assets, enabling real-time monitoring, simulation, and optimization of asset performance, leading to improved efficiency and reduced maintenance costs.
c) Automation and Robotics: Integrating automation and robotics in manufacturing and operational processes can enhance productivity, reduce manual labour costs, and improve overall efficiency, thereby lowering life-cycle costs.
d) Energy Efficiency Solutions: Adopting energy-efficient technologies and solutions, such as smart lighting, HVAC systems, and renewable energy sources, can significantly reduce operational costs over the life cycle of a project.
e) Cloud Computing: Leveraging cloud computing for data storage, processing, and collaboration can streamline operations, improve scalability, and reduce infrastructure costs in Indian projects.
f) Supply Chain Optimization: Implementing advanced supply chain management systems powered by technology can optimize inventory management, reduce lead times, and minimize procurement costs, contributing to overall cost savings.
g) Asset Tracking and Management: Utilizing asset tracking technologies, like RFID and GPS, can improve asset visibility, maintenance scheduling, and utilization, leading to cost efficiencies and extended asset life.
h) Simulation and Modelling: Using simulation and modelling tools for design, planning, and operational scenarios can help in optimizing processes, identifying cost-saving opportunities, and reducing risks in Indian projects.
i) Blockchain Technology: Implementing blockchain technology for secure and transparent transactions, smart contracts, and supply chain traceability can enhance efficiency, reduce fraud, and lower transaction costs over the life cycle of a project.
j) Data Analytics and AI: Harnessing the power of data analytics and artificial intelligence (AI) for predictive maintenance, decision-making, and process optimization can drive cost

reductions and operational efficiencies in Indian projects.

By strategically integrating these technological solutions and innovations into project planning, design, and operations, Indian projects can effectively reduce life-cycle costs, improve sustainability, and enhance overall project performance.

Indian Startups Specializing in AI for Life-Cycle Cost Management

There are several Indian startups specializing in AI for life-cycle cost management. Here are a few examples:

a) Predii: Predii is an Indian startup that uses AI and machine learning to predict equipment failures and reduce downtime and maintenance costs. They provide predictive maintenance solutions for industries such as manufacturing, energy, and logistics.
b) Fleet Complete: Fleet Complete is another Indian startup that uses AI and IoT to optimize fleet operations and reduce costs. They provide fleet management solutions for industries such as logistics, transportation, and construction.
c) EcoEnergy: EcoEnergy is an Indian startup that uses AI and data analytics to optimize energy consumption and reduce waste. They provide energy efficiency solutions for industries such as manufacturing, energy, and real estate.
d) GreenTech: GreenTech is an Indian startup that uses AI and data analytics to optimize energy consumption and reduce waste. They provide energy efficiency solutions for industries such as manufacturing, energy, and real estate.
e) TrackR: TrackR is an Indian startup that uses AI and IoT to track and manage assets. They provide asset tracking and management solutions for industries such as logistics, transportation, and construction.
f) AssetWorks: AssetWorks is an Indian startup that uses AI and data analytics to optimize asset management and reduce costs. They provide asset management solutions for industries such as manufacturing, energy, and real estate.

These startups are leveraging AI and other technologies to optimize life-cycle costs and improve operational efficiency in various industries.

Industries in India Are Benefiting the Most from AI in Life-Cycle Cost Management

The manufacturing, energy, and defence industries in India are benefiting the most from AI in life-cycle cost management:

Manufacturing Industry:

a) AI-powered predictive maintenance systems are being used to predict equipment failures and reduce downtime and maintenance costs.
b) AI-powered automation and robotics are enhancing productivity, reducing manual labor costs, and improving overall efficiency.
c) AI-powered supply chain optimization systems are optimizing inventory management, reducing lead times, and minimizing procurement costs.

Energy Industry:

a) AI-powered energy efficiency solutions are optimizing energy consumption and reducing waste.
b) AI-powered asset tracking and management systems are improving asset visibility, maintenance scheduling, and utilization.

Defence Industry:

a) Military assets like tanks, aircraft, ships, submarines, missiles, and C4ISR systems have huge initial acquisition costs, but the operating and

maintenance costs over their 30–40-year life-cycle can be substantially higher.

b) Deciding about the acquisition or development of defence assets with a view to life-cycle cost makes sense for optimal use of scarce financial resources.

Other industries like logistics, transportation, and construction are also benefiting from AI-powered asset tracking, fleet management, and supply chain optimization solutions.

Organizations Using AI in Life-Cycle Cost Management

Manufacturing Industry:

a) Predii: Predii is an Indian startup that uses AI and machine learning to predict equipment failures and reduce downtime and maintenance costs.
b) Fleet Complete: Fleet Complete is another Indian startup that uses AI and IoT to optimize fleet operations and reduce costs.
c) EcoEnergy: EcoEnergy is an Indian startup that uses AI and data analytics to optimize energy consumption and reduce waste.

Energy Industry:

a) GreenTech: GreenTech is an Indian startup that uses AI and data analytics to optimize energy consumption and reduce waste.
b) TrackR: TrackR is an Indian startup that uses AI and IoT to track and manage assets.
c) AssetWorks: AssetWorks is an Indian startup that uses AI and data analytics to optimize asset management and reduce costs.

Role of a Management Accountant (CMA)

Here are some ways a Management Accountant can implement Life Cycle Costing (LCC) in the Indian economy and the sectors they can contribute to:

a) Raising Awareness: Management Accountants can play a key role in raising awareness about the importance of Total Cost of Ownership (TCO) and the need to consider life cycle costs at the acquisition stage, particularly in industries that have traditionally focused on initial acquisition costs.
b) Conducting Research: Management Accountants can conduct research to identify solutions for reducing TCO and provide guidance on implementing Life Cycle Costing practices. This research can be particularly valuable in industries like manufacturing, energy, and defense.
c) Developing Life Cycle Costing Models: Management Accountants can develop industry-specific Life Cycle Costing models that accommodate the complexities of developing time-phased cost comparisons for multiple system design and upgrade options. These models can be tailored to the unique challenges and requirements of different sectors.
d) Providing Training: Management Accountants can provide training to personnel involved in project management and maintenance to ensure they understand the importance of Life Cycle Costing and can effectively manage costs throughout the asset's life cycle.
e) Integrating Life Cycle Costing with Other Tools: Management Accountants can integrate Life Cycle Costing with other tools and techniques, such as reliability, maintainability, and availability (RMA) analysis, to ensure that all aspects of system performance are considered in the decision-making process.
f) Conducting Comparative Studies: Management Accountants can conduct comparative studies across a wider sample of projects and industries to

draw definitive conclusions about the successful implementation of Life Cycle Costing in the Indian context.

Some key sectors where Management Accountants can contribute to the implementation of LCC in the Indian economy include:

a) Manufacturing: Implementing Life Cycle Costing can help manufacturers optimize their operations, reduce maintenance costs, and improve overall efficiency.
b) Energy: Life Cycle Costing can help energy companies optimize their energy consumption, reduce waste, and improve the sustainability of their operations.
c) Defence: Applying Life Cycle Costing principles can help the defence sector make more informed decisions about asset acquisition and management, ensuring that scarce financial resources are used effectively.
d) Infrastructure: Life Cycle Costing can be used to evaluate the financial implications of infrastructure projects over their lifespan, enabling more informed decision-making and cost optimization.

By leveraging their expertise in cost management and financial analysis, Management Accountants can play a crucial role in implementing Life Cycle Costing practices across various sectors of the Indian economy, ultimately leading to improved efficiency, cost savings, and sustainable growth.

References

1) Life Cycle Costing in the Indian Context by Ravinder Singh and Rajesh Matai (PDF 1)
2) Queries on perplexity.ai (https://www.perplexity.ai/collections/LCC1-PPLX-Ix3eTqY1ST6JA5xud_G_Zw)

Performance Budgeting for Sustainable Success – A prelude

Prelude: Performance, or achieving results aligned to purpose, is the goal of any enterprise. Management accounting, with its self-envisioned role of adding significant value to enterprise performance, uses Performance Budgeting as a framework (an item of Total Cost Management toolset) to design, assess and advise enterprise to deliver triple bottom-line value to the diverse stakeholders sustaining competitive edge for the long run.

In the following pages we look at Performance Budgeting at two levels:

Level 1: Foundations of Performance Budgeting: Concepts, Techniques, Tools, and Enablers.
Level 2: Practical Applications: Use Cases of Performance Budgeting.

Foundations of Performance Budgeting: Concepts, Techniques, Tools and Enablers

1. Concept

Performance Budgeting (PB) is a strategic financial management process that aligns the allocation of resources with the achievement of specific performance outcomes. Unlike traditional budgeting, which focuses primarily on inputs and expenses, Performance Budgeting emphasizes results and accountability. The main objective is to improve efficiency, effectiveness, and transparency in public and private sector organizations by linking funding to measurable performance indicators.

2. Techniques and Tools Used

Techniques

- Zero-Based Budgeting (ZBB): Requires justification for all expenditures, starting from a "zero base."
- Activity-Based Budgeting (ABB): Focuses on the costs of activities necessary to produce goods or services.
- Outcome-Based Budgeting: Allocates resources based on the outcomes or results that need to be achieved.
- Program Budgeting: Resources are allocated to specific programs with clear objectives and performance targets.

Tools

- Key Performance Indicators (KPIs): Metrics used to assess the effectiveness of various initiatives.
- Balanced Scorecards: A strategic planning and management system that organizations use to communicate what they are trying to accomplish.
- Benchmarking: Comparing performance metrics to industry standards or best practices.
- Performance Dashboards: Visual tools that provide at-a-glance views of KPIs and other critical data points.
- Objectives and Key Results (OKRs): A goal-setting framework used to define and track objectives and their measurable outcomes. They are often used in conjunction with the BSC to provide a more detailed view of performance.
- Performance Management Systems (PMS): Comprehensive systems that integrate various performance metrics and tools to help organizations manage and track performance. They often include features like goal setting, performance tracking, and reporting.
- Strategy Maps: Visual representations of an organization's strategy, like the BSC. They help to align goals and objectives across different departments and levels of the organization.
- Management by Objectives (MBO): A performance management system that centres on creating a set of organizational objectives, which are then used as guideposts for creating individual employee objectives.
- HR Performance Management Systems: Provide a framework for evaluating the performance of employees, linking, and aligning individual performance levels to the strategy of the organization.

3. Best Practices

- Clear Objectives: Define specific, measurable, achievable, relevant, and time-bound (SMART) objectives.
- Stakeholder Engagement: Involve stakeholders at all levels to ensure buy-in and support.
- Regular Monitoring and Reporting: Establish a robust system for tracking

performance and reporting on progress.
- Continuous Improvement: Use performance data to make informed decisions and drive continuous improvement.
- Training and Development: Equip staff with the necessary skills and knowledge to implement and sustain PB practices.
- Technology: Leverage technology to streamline the budgeting process, track performance data, and facilitate data-driven decision-making

4. Emerging Developments

- Integration with Big Data and Analytics: Leveraging advanced analytics to gain deeper insights into performance data.
- AI and Machine Learning: Using AI to predict trends and optimize resource allocation.
- Sustainability Performance Metrics: Incorporating environmental and social governance (ESG) criteria into PB frameworks.
- Digital Transformation: Adoption of digital tools and platforms to enhance data collection, analysis, and reporting.
- Cloud-Based Solutions: Cloud-based solutions are becoming popular for PB, offering greater flexibility, scalability, and cost-effectiveness

5. Challenges in Implementation

- Cultural Shift: Implementing PB requires a significant cultural shift, as it demands a focus on outcomes rather than inputs.
- Data Quality: The quality of performance data is critical to the success of PB. Poor data quality can lead to inaccurate assessments and ineffective decision-making.
- Stakeholder Engagement: Engaging stakeholders and ensuring their buy-in is essential for the success of PB.
- Resource Constraints: Limited financial and human resources to implement and sustain Performance Budgeting practices.
- Complexity: Managing the complexity of integrating PB into existing financial and operational systems.

6. Industries that Can Best Adopt Performance Budgeting

Public Sector

- Government Agencies: For improving accountability and transparency in public spending. Performance Budgeting helps government agencies ensure that taxpayer funds are used effectively to achieve policy objectives.
- Healthcare: To optimize resource allocation and improve patient outcomes. Performance Budgeting in healthcare focuses on improving the quality of care, reducing costs, and enhancing patient satisfaction.
- Education: To enhance the quality of education and ensure efficient use of funds. Performance Budgeting in education aims to improve student performance, increase access to education, and make better use of resources.

Private Sector

- Manufacturing: For optimizing production processes and reducing costs. Performance Budgeting in manufacturing helps identify inefficiencies, streamline operations, and improve product quality.
- Retail: To align resource allocation with sales performance and customer satisfaction. Performance Budgeting in retail focuses on enhancing customer experience, increasing sales, and managing inventory effectively.
- IT Services: For managing projects effectively and improving service delivery. Performance Budgeting in IT services helps allocate resources to

high-priority projects, monitor project performance, and ensure timely delivery.

7. ERP and Other Software Tools

ERP Systems

- SAP: Offers comprehensive tools for integrating Performance Budgeting into enterprise resource planning.
- Oracle ERP Cloud: Provides modules for performance management and budgeting.
- Microsoft Dynamics 365: Includes features for financial planning and analysis.

Software Vendors

- Adaptive Insights: Specializes in business planning cloud software.
- Anaplan: Provides a connected planning platform for various business functions.
- Tableau: Offers data visualization tools that can be integrated with Performance Budgeting processes.
- FreeBalance Accountability Suite: provides comprehensive budget preparation, scenario planning, review, approval, and reporting functionality.
- Questica Budget: a powerful, multi-user budget preparation and management system that includes performance budgeting capabilities.
- Fyle: a performance-based budgeting tool that helps organizations allocate resources based on strategic priorities and performance targets

8. Financial and non-financial KPIs Used Typically in Performance Budgeting

Financial KPIs

- Revenue Growth: Measures the increase in sales over a period.
- Cost Efficiency: Ratio of output to input costs.
- Return on Investment (ROI): Evaluates the profitability of investments.
- Operating Margin: Measures operational efficiency.

Non-Financial KPIs

- Customer Satisfaction: Assessed through surveys and feedback.
- Employee Engagement: Measured through engagement surveys and turnover rates.
- Process Efficiency: Time taken to complete specific tasks or processes.
- Innovation Rate: Number of new products or services developed.

How a Typical Performance Budget Looks Like

A typical performance budget is structured to clearly outline the objectives, resources, and performance metrics of an organization or program. It ensures that every expenditure is justified by a corresponding outcome, facilitating transparency and accountability. Here is a detailed look at the components and examples of a typical performance budget:

1. Mission Statement

The mission statement provides a concise summary of the organization's purpose and primary objectives. It sets the overall direction and aligns the performance budget with the organization's strategic goals.

Example: *The mission of the Health Services Department is to enhance the health and well-being of the community by providing accessible, high-quality healthcare services.*

2. Performance Goals

Performance goals are specific, measurable targets that the organization aims to achieve within the budget period. These goals should be aligned with the mission statement and strategic objectives.

Example:

- **Goal 1:** Increase the immunization coverage rate from 75% to 90% by the end of the fiscal year.
- **Goal 2:** Reduce the average patient waiting time in outpatient clinics from 60 minutes to 30 minutes.

3. Resource Allocation

This section details the financial and non-financial resources allocated to achieve the performance goals. It includes budgetary allocations for various programs, departments, or activities.

Example:

- **Program 1: Immunization Program**
  - Budget Allocation: ₹50,00,000
  - Resources: Vaccines, medical staff, outreach campaigns
- **Program 2: Outpatient Services Improvement**
  - Budget Allocation: ₹30,00,000
  - Resources: Additional medical staff, new scheduling software, training for staff

4. Performance Indicators

Performance indicators are metrics used to measure progress toward achieving the performance goals. These indicators should be specific, relevant, and quantifiable.

Example:

- **Immunization Program:**
  - **Indicator 1:** Immunization coverage rate (percentage of the target population immunized)
  - **Indicator 2:** Number of immunization outreach campaigns conducted

- **Outpatient Services Improvement:**
  - **Indicator 1:** Average patient waiting time (in minutes)
  - **Indicator 2:** Patient satisfaction score (based on surveys)

5. Evaluation and Feedback

Evaluation and feedback mechanisms are established to assess performance and make necessary adjustments. This section includes processes for monitoring progress, reporting results, and implementing corrective actions.

Example:

- **Monthly Progress Reports:** Regular updates on the progress of each program, including performance against indicators.
- **Quarterly Reviews:** Comprehensive reviews of performance data, identifying areas for improvement and adjusting strategies as needed.
- **Feedback Mechanisms:** Collecting feedback from patients and staff to identify issues and improve service delivery.

Example: Detailed Performance Budget for a Healthcare Department

Mission Statement: To improve public health outcomes by providing efficient, effective, and accessible healthcare services to all community members.

Performance Goals:

1. Increase the immunization coverage rate from 75% to 90% by the end of the fiscal year.
2. Reduce the average patient waiting time in outpatient clinics from 60 minutes to 30 minutes.
3. Improve patient satisfaction scores from 80% to 90%.

Resource Allocation:

- **Immunization Program**
  - **Budget Allocation:** ₹50,00,000
  - **Resources:** Vaccines, medical staff, outreach campaigns
  - **Justification:** To achieve the goal of increasing immunization coverage, additional resources are required for purchasing vaccines and conducting outreach campaigns.
- **Outpatient Services Improvement**
  - **Budget Allocation:** ₹30,00,000
  - **Resources:** Additional medical staff, new scheduling software, training for staff
  - **Justification:** Reducing patient waiting time necessitates hiring more staff and implementing new scheduling software.
- **Patient Satisfaction Enhancement**
  - **Budget Allocation:** ₹20,00,000
  - **Resources:** Patient feedback systems, staff training on patient care, facility upgrades
  - **Justification:** Improving patient satisfaction involves upgrading facilities and enhancing the quality of care through staff training.

Performance Indicators:

- **Immunization Program**
  - **Indicator 1:** Immunization coverage rate (percentage of the target population immunized)
  - **Target:** 90%
  - **Indicator 2:** Number of immunization outreach campaigns conducted
  - **Target:** 20 campaigns

- **Outpatient Services Improvement**
  - **Indicator 1:** Average patient waiting time (in minutes)
  - **Target:** 30 minutes
  - **Indicator 2:** Patient satisfaction score (based on surveys)
  - **Target:** 90%
- **Patient Satisfaction Enhancement**
  - **Indicator 1:** Patient satisfaction score
  - **Target:** 90%
  - **Indicator 2:** Number of staff training sessions conducted
  - **Target:** 12 sessions

Evaluation and Feedback:

- **Monthly Progress Reports:** Track progress on immunization rates, waiting times, and patient satisfaction scores.
- **Quarterly Reviews:** Analyse performance data, identify gaps, and adjust strategies.
- **Patient Feedback Surveys:** Conduct regular surveys to gather patient feedback and make improvements based on the findings.

Graphical Representation:

Program	Budget Allocation (₹)	Performance Indicator	Target
Immunization Program	50,00,000	Immunization coverage rate	90%
		Number of outreach campaigns	20
Outpatient Services	30,00,000	Average patient waiting time (minutes)	30
Improvement		Patient satisfaction score	90%
Patient Satisfaction	20,00,000	Patient satisfaction score	90%
Enhancement		Number of staff training sessions	12

10. Management Accountant's (CMA) Role

As a Designer

- **Developing Frameworks:** Creating robust PB frameworks that align with organizational goals.
- **Setting KPIs:** Identifying and defining relevant financial and non-financial KPIs.

As an Analyst

- **Data Analysis:** Analysing performance data to identify trends and insights.
- **Forecasting:** Predicting future performance based on current data and trends.

As an Assessor

- **Performance Evaluation:** Assessing whether performance goals are being met.
- **Reporting:** Communicating performance results to stakeholders and recommending improvements.

Practical Applications: Use Cases of Performance Budgeting

Manufacturing Sector

Performance Definition: Performance in the manufacturing sector is defined as the ability to produce high-quality products efficiently and effectively, while meeting customer demands and reducing costs.

Dimensions:

Quality Performance: Measured by the percentage of goods that pass final inspection, scrap rate, and client satisfaction.

Delivery Performance: Measured by delivery reliability and delivery speed.

Flexibility Performance: Measured by the capability to alter production volume and modify products.

Cost Performance: Measured by the amount of resources used to produce the product.

KPIs:

Quality Performance: Percentage of goods that pass final inspection, scrap rate, and client satisfaction.

Delivery Performance: Delivery reliability and delivery speed.

Flexibility Performance: Capability to alter production volume and modify products.
Cost Performance: Amount of resources used to produce the product.

Case Study Reference:

Tehran University of Medical Sciences: Implemented a performance-based budgeting system to allocate funds based on performance criteria.

Construction Sector

Performance Definition: Performance in the construction sector is defined as the ability to complete projects efficiently and effectively, while meeting customer demands and reducing costs.

Dimensions:

Quality Performance: Measured by the quality of construction work, compliance with building codes, and client satisfaction.

Delivery Performance: Measured by the timely completion of projects and delivery speed.

Flexibility Performance: Measured by the capability to alter project scope and modify construction methods.

Cost Performance: Measured by the amount of resources used to complete the project.

KPIs:

Quality Performance: Quality of construction work, compliance with building codes, and client satisfaction.

Delivery Performance: Timely completion of projects and delivery speed.

Flexibility Performance: Capability to alter project scope and modify construction methods.

Cost Performance: Amount of resources used to complete the project.

Case Study Reference:

University of Manchester: Developed a comprehensive model (HMCPPM) to hierarchically measure performance from the contractor perspective at the project level.

Healthcare Sector

Performance Definition: Performance in the healthcare sector is defined as the ability to provide high-quality medical services efficiently and effectively, while meeting patient demands and reducing costs.

Dimensions:

Quality Performance: Measured by patient outcomes, patient satisfaction, and quality of care.

Delivery Performance: Measured by the timely delivery of medical services and delivery speed.

Flexibility Performance: Measured by the capability to alter medical procedures and modify treatment plans.

Cost Performance: Measured by the amount of resources used to provide medical services.

KPIs:

Quality Performance: Patient outcomes, patient satisfaction, and quality of care.

Delivery Performance: Timely delivery of medical services and delivery speed.

Flexibility Performance: Capability to alter medical procedures and modify treatment plans.

Cost Performance: Amount of resources used to provide medical services.

Case Study Reference:

Tehran University of Medical Sciences: Implemented a performance-based budgeting system to allocate funds based on performance criteria.

Infrastructure Sector

Performance Definition: Performance in the infrastructure sector is defined as the ability to build and maintain infrastructure efficiently and effectively, while meeting customer demands and reducing costs.

Dimensions:

Quality Performance: Measured by the quality of infrastructure construction, compliance with building codes, and client satisfaction.

Delivery Performance: Measured by the timely completion of infrastructure projects and delivery speed.

Flexibility Performance: Measured by the capability to alter project scope and modify construction methods.

Cost Performance: Measured by the amount of resources used to complete the project.

KPIs:

Quality Performance: Quality of infrastructure construction, compliance with building codes, and client satisfaction.

Delivery Performance: Timely completion of infrastructure projects and delivery speed.
Flexibility Performance: Capability to alter project scope and modify construction methods.

Cost Performance: Amount of resources used to complete the project.

Case Study Reference:

University of Manchester: Developed a comprehensive model (HMCPPM) to hierarchically measure performance from the contractor perspective at the project level.

Logistics Sector

Performance Definition: Performance in the logistics sector is defined as the ability to move

goods efficiently and effectively, while meeting customer demands and reducing costs.

Dimensions:

Quality Performance: Measured by the quality of logistics services, compliance with regulations, and client satisfaction.

Delivery Performance: Measured by the timely delivery of goods and delivery speed.

Flexibility Performance: Measured by the capability to alter logistics procedures and modify delivery routes.

Cost Performance: Measured by the amount of resources used to move goods.

KPIs:

Quality Performance: Quality of logistics services, compliance with regulations, and client satisfaction.

Delivery Performance: Timely delivery of goods and delivery speed.

Flexibility Performance: Capability to alter logistics procedures and modify delivery routes.

Cost Performance: Amount of resources used to move goods.

Case Study Reference:

Malaysia Institute of Transport: Examined the issues and reviews by practitioners and found 7 key components that translated it into operations performance objectives.

World Bank: Developed the Logistics Performance Index (LPI) to measure on-the-ground trade logistics performance.

IT Sector

Performance Definition: Performance in the IT sector is defined as the ability to provide high-quality IT services efficiently and effectively, while meeting customer demands and reducing costs.

Dimensions:

Quality Performance: Measured by the quality of IT services, compliance with regulations, and client satisfaction.

Delivery Performance: Measured by the timely delivery of IT services and delivery speed.

Flexibility Performance: Measured by the capability to alter IT procedures and modify delivery routes.

Cost Performance: Measured by the amount of resources used to provide IT services.

KPIs:

Quality Performance: Quality of IT services, compliance with regulations, and client satisfaction.

Delivery Performance: Timely delivery of IT services and delivery speed.

Flexibility Performance: Capability to alter IT procedures and modify delivery routes.

Cost Performance: Amount of resources used to provide IT services.

Mini Case Studies

Case study 1: Tehran University of Medical Sciences

Tehran University of Medical Sciences implemented a performance-based budgeting system in 2005. The system included the following components:

Accounting Approach Change: The university changed its accounting approach from cash-based to accrual-based.

Establishment of Cost Price System: The university established a cost price system to calculate the cost of services.

Implementation of Performance-Based Budgeting: The university implemented performance-based budgeting to allocate funds based on performance criteria.

Productivity Management: The university implemented productivity management to optimize resource allocation and improve efficiency.

Case study 2: Designing a Performance Measurement System at Nike

Nike's European Operations department developed a prototype balanced scorecard system tailored to the company's needs. Key insights:

Developing performance measurement systems should be understood as a coordination effort rather than just a design effort.

Parallel initiatives and standardized metrics play an important role.

Continuous improvement and normalization/aggregation of measures are critical.

The lessons learned, while not universally applicable, provide helpful guidance for similar performance measurement initiatives in service organizations.

Case study 3: KPI Case Studies: Success and Failure

An article by Intrafocus examined real-world KPI case studies to extract practical lessons. Two examples:

TechGrow, a tech company, successfully aligned KPIs to grow their customer base by 25% while also improving customer satisfaction. They ensured organization-wide KPI awareness, had regular check-ins, and quickly addressed underperforming KPIs.

HealthFirst, a healthcare provider, used KPIs to reduce patient waiting times by 15%. They not only tracked waiting room times but also used the data to make operational changes like adjusting staff schedules. They also implemented a KPI for timely patient follow-ups.

Case study 4: Dutch Municipalities

Dutch municipalities have successfully integrated non-financial performance indicators into their budget documents to bridge the gap between financial and non-financial goals.

Performance Budgeting Implemented by Government Departments

Case study 5: Indian Case Study: Kerala's Local Government

Kerala, a state in southern India, is known for its progressive governance and robust public service delivery mechanisms. In the late 1990s, Kerala implemented a decentralized planning process, which included the adoption of performance budgeting at the local government level. This initiative aimed to enhance transparency, accountability, and efficiency in public spending.

Key Features:

- **Decentralized Planning:** Local self-governments (LSGs) were given autonomy to plan and execute development projects based on local needs.
- **Participatory Approach:** Citizens were actively involved in the planning process, ensuring that budget allocations reflected community priorities.
- **Outcome-Based Budgeting:** LSGs were required to link budget allocations to specific performance outcomes and report on their achievements.

Results:

- **Improved Public Services:** The focus on performance outcomes led to significant improvements in public

service delivery, including health, education, and infrastructure.
- **Enhanced Accountability:** Regular monitoring and reporting mechanisms increased accountability among local officials and ensured that funds were used effectively.
- **Replicable Model:** Kerala's approach to decentralized planning and performance budgeting has been recognized as a best practice and is being replicated in other Indian states.

Select Outcome in Numbers:

Health Sector:

- **Immunization Coverage:** The immunization coverage rate in Kerala increased from 85% in 2000 to over 95% by 2010, significantly reducing the incidence of vaccine-preventable diseases.
- **Infant Mortality Rate:** The infant mortality rate (IMR) in Kerala decreased from 17 per 1,000 live births in 2000 to 12 per 1,000 live births in 2010, one of the lowest in India.
- **Maternal Mortality Ratio (MMR):** The MMR in Kerala dropped from 87 per 100,000 live births in 2000 to 42 per 100,000 live births in 2010.

Education Sector:

- **Student Enrolment:** School enrolment rates for children aged 6-14 increased from 92% in 2000 to nearly 100% by 2010.
- **Pass Percentage:** The pass percentage in secondary school examinations increased from 68% in 2000 to 82% in 2010.
- **Infrastructure Improvements:** Over 90% of government schools had access to basic amenities such as toilets, drinking water, and electricity by 2010.

Case study 6: Global Case Study: New Zealand's Public Sector Reform

New Zealand is renowned for its innovative public sector reforms, particularly its adoption of performance budgeting in the 1980s. These reforms were part of a broader strategy to improve the efficiency and effectiveness of government services through better resource management and accountability.

Key Features:

- **Output-Based Budgeting:** New Zealand's approach focused on linking budget allocations to specific outputs rather than just inputs. Government departments were required to specify the outputs they would deliver and the cost associated with each.
- **Performance Contracts:** Senior officials entered into performance contracts that outlined specific deliverables and performance targets. Their compensation was tied to the achievement of these targets.
- **Regular Audits and Reviews:** Performance against budgets and targets was regularly audited by independent bodies, ensuring transparency and accountability.

Results:

- **Increased Efficiency:** The focus on outputs and performance targets led to more efficient use of resources and improved service delivery.
- **Transparency and Accountability:** Performance contracts and regular audits ensured that public officials were accountable for their performance, leading to better governance.
- **International Recognition:** New Zealand's public sector reforms have been widely recognized and adopted by other countries seeking to improve their governance frameworks.

Select Outcome in Numbers:

Social Services:

- **Unemployment Rate:** The unemployment rate in New Zealand decreased from 7.8% in 1991 to 6.1% in 1996, shortly after the implementation of performance budgeting.
- **Beneficiary Reduction:** The number of welfare beneficiaries reduced by approximately 20% between 1991 and 1996, indicating improved employment outcomes and reduced dependency on social assistance.

Infrastructure Development:

1) **Road Safety:** The number of road fatalities decreased from 651 in 1990 to 397 in 1996, reflecting the success of targeted investments in road safety measures.
2) **Travel Time Reduction:** Average travel times on key routes improved by 15% from 1990 to 1996, due to enhanced infrastructure and better traffic management.

Overall Public Sector Efficiency:

- **Operational Cost Savings:** The operational costs of several government departments were reduced by 10-15% within the first five years of implementing performance budgeting.
- **Public Satisfaction:** Public satisfaction with government services improved significantly, with surveys indicating an increase from 65% satisfaction in 1991 to 80% satisfaction in 1996.

Performance Budgeting Implemented at Country level*

Among the useful case studies for countries to evaluate are the following four countries, which have introduced or are moving toward performance-based budgeting:

Case 1: Mali

The pressure to initiate the development of program budgeting in Mali came from the National Assembly which, in 1995, urged the government to "adopt a budgeting system and a budget presentation which would allow them not only to check and evaluate the consistency and coherence of budgetary proposals with existing national programs or plans but also to monitor progress of the government in general, and the line ministries in particular, toward the achievement of the objectives set in those programs and plans." The ministry of finance started a phased approach to introducing program budgeting starting with a few ministries in 1997 and completing all ministries a few years later. The resulting program budgets are sent to parliament but in a separate annex to the main budget. Programs are identified within each ministry and are aligned to the various missions that the ministry is given within the government. Support for this budget improvement process in Mali, other than in parliament, has come from having a champion in the person of the budget director and subsequent minister of finance, who took care to build the technical capacity within the ministry to guide the new approach. While the development of program budgeting in Mali has followed a classic route, it has yet to become the basis of the approved budget, which has so far limited its usefulness as a budgetary management tool.

Case 2: Ethiopia

The pressure to introduce a program structure to the budget in Ethiopia came from the prime minister, who wanted a mechanism to evaluate performance of ministries, particularly in the context of civil service reforms such as strategic planning and management and service delivery improvement. In Ethiopia, the civil service reforms went ahead without appropriate improvements in the budgetary process, i.e., ministries were undergoing major changes without any corresponding improvements in the way their budgets were being prepared or executed. In 2005, the ministry of finance, at the request of the prime

minister, initiated work on introducing program budgeting on a pilot basis in three ministries. The number of ministries covered has been progressively expanded since then. The design of programs builds on the work already carried out on strategic plans for these ministries, with the intention of aligning resource allocation with the new directions being implemented under those plans. The main champion in the ministry of finance has been the minister, although the pressure for change has come from the prime minister. There has, so far, been only limited involvement of parliament. The development of program budgeting in Ethiopia is still in early days.

Case 3: South Africa

While South Africa is not a Low-Income Country, the introduction of program budgeting there makes for an interesting case study. Pressure to improve the budgetary system came in the late 1990s on the back of broader democratic reforms. It has been fully combined with the introduction of an Medium-Term Expenditure Framework, and has been accompanied by moves on the audit side to performance audit. The presentation of the budget has now been fully converted to a presentation by programs, with descriptions, objectives, and expected outputs and indicators, along with the financial estimates. This budgetary approach has been implemented at the central and regional government levels and is considered one of the better implementations of program budgeting.

Case 4: Slovenia

Slovenia This case study, while also not of a Low-Income Country, illustrates the pros and cons of gradual versus the "Big Bang"' approach to introducing program budgeting. An issue that often arises with such an initiative is how to handle the interim period between the pilot phase and the full introduction in all ministries, particularly how to reflect the new approach in budget documents. Slovenia is one case where the "Big Bang" worked, but it was a fortunate convergence of circumstances that made it possible: imminent EU accession, both minister and budget director as champions, and resident advisor support from International Monetary Fund. As a result, after just one year of pilot work, the minister decided to establish a program structure for the whole government and reflect them in the budget documents, thereby avoiding any problems with how to handle the interim period. The downside, however, is that some aspects of the new approach have yet to become fully entrenched in line ministries, especially those that saw this initiative as a top-down exercise. The circumstances that permit a "Big Bang" approach are not often replicated, however, especially in Low-Income Countries.

* Technical Notes and Manuals 09/01 | 2009 (IMF)

Performance Based Budgeting: Implementation in Guangdong Province, China: A case study

The document discusses the implementation of Performance-Based Budgeting (PBB) in Guangdong Province, China. The case study highlights the key points, results, and insights from the implementation process.

Key Points in Implementation

1) Top-Down Approach: The Finance Department launched six pilot projects for performance evaluation, selecting programs based on criteria such as the President's or Governor's attention, fiscal significance, and strong incentives to support Performance Based Budgeting.
2) Cultural Shift: The reform aimed to create a different managerial mentality in the bureaucracy, emphasizing public accountability and results-oriented management. Officials were encouraged to think and work differently, focusing on performance rather than just inputs.
3) Technical Challenges: Defining "performance" for different departments, benchmarking performance, and expanding the pool of expertise on performance evaluation were significant technical challenges. The Finance Department needed to develop an inventory of performance measures and provide training to analysts.
4) Incentives: Positive incentives, such as financial rewards and public recognition, were used to encourage government officials to focus on performance. Negative incentives, like delay in promotion or public embarrassment, were used more cautiously due to the potential for strategic behaviours.
5) Capacity Building: The Finance Department recognized the need to build administrative capacity, including data collection and analysis, and provided training programs to help budget analysts and program analysts use performance information effectively.

Results Achieved

1) Tourism Department: The Tourism Department, which had a history of performance measurement, showed strong support for Performance Based Budgeting and was proactive in its implementation. One of its programs, "Supporting Poor Areas with Tourism Development," was selected for the Performance Based Budgeting pilot project.
2) Transportation Department: The Transportation Department, which was new to Performance Based Budgeting, faced significant challenges due to lack of experience and data. It relied mostly on qualitative evaluation and struggled to define and measure program goals and performance.
3) Overall Progress: Despite challenges, the Performance Based Budgeting pilot project contributed to better strategic planning and shifted the budgeting focus from inputs to results. However, the progress was limited by the constraints on staff and administrative capacity.

Insights Drawn from the Case Study

1) Securing Top Leaders' Support: Strong commitment and support from top leaders are crucial for successful implementation of Performance Based Budgeting. The Finance Department secured support from the President and Governor of Guangdong Province from the beginning of the reform.
2) Time and Patience: Performance Based Budgeting reforms require time and patience. The Guangdong reformers set a modest goal at the early stage of the reform, focusing on learning, education, experimentation, and information dissemination to enhance officials' understanding of Performance Based Budgeting.
3) Cultural Shift: A cultural shift is necessary to embrace "results-oriented" management. Performance Based Budgeting is not just about data collection and reporting; it requires a transformation of the organizational culture.
4) Capacity Building: Building administrative capacity, including data collection and analysis, is essential for effective implementation of Performance Based Budgeting. The Finance Department recognized the need for capacity building and provided training programs.

Other Important Points

1) Global Context: Performance Based Budgeting is not unique to China. Many countries, including developed and developing nations, have implemented Performance Based Budgeting reforms to reduce waste, enhance government efficiency, and increase public satisfaction with public programs.
2) Challenges: Performance Based Budgeting reforms create many new challenges for policymakers and require tremendous time and resource commitments in implementation. The Guangdong case study highlights the technical, cultural, and administrative challenges faced during the implementation process.
3) Lessons Learned: The case study emphasizes the importance of securing top leaders' support, building administrative capacity, and creating a cultural shift to ensure the success of Performance Based Budgeting reforms. It also highlights the need for patience and a realistic approach to implementation.

Project Cost Accounting – A prelude

Prelude: The nature of businesses is rich but varied. However, much governance and reporting requirements wish them to be homogenous and fit into the straight jacket of fixed 12 monthly cycle, except industrial manufacturing, no other business falls in line. Project based industries are a classic example that defy a 12-month calendar driver regimen.

Management accounting, in its quest to add strategic value to enterprise growth, had retrofitted traditional industrial accounting techniques into a new avatar called Project Cost Accounting (PCA) and had made it an item of Total Cost Management toolset to aid its mission.

In the next few pages, we will look at some of the select tools that PCA uses in project heavy sectors of the economy to provide the users accurate and timely information and insights for decision making and governance and thus deliver sustainable competitive advantage.

Project Cost Accounting (PCA) – an Overview

Project Cost Accounting (PCA) is a method used to track, record, and analyse all costs associated with a specific project. This includes direct costs (e.g., labour, materials) and indirect costs (e.g., overheads). PCA is essential for ensuring that projects are completed within budget and for providing accurate financial insights to stakeholders.

Select Techniques in Project Cost Accounting

1. **Earned Value Management (EVM):**
2. **Activity-Based Costing (ABC):**
3. **Agile Cost Management:**

In the next section, these techniques are explained in greater detail along with where they have been used.

Best Practices in Project Cost Accounting

1. **Detailed Project Planning:**
    - **Practice:** Develop comprehensive project plans that include all potential costs and resource needs.
    - **Example:** A civil engineering firm in India creates detailed blueprints and cost estimates before initiating construction projects.

2. **Regular Monitoring and Reporting:**
    - **Practice:** Implement regular monitoring and reporting mechanisms to track project costs against budgets.
    - **Example:** An IT services company conducts weekly cost reviews to ensure software development projects stay on budget.

3. **Risk Management:**
    - **Practice:** Incorporate risk management strategies to anticipate and mitigate potential cost overruns.
    - **Example:** A renewable energy company in India includes contingency budgets in their solar plant projects to account for unexpected costs.

4. **Use of Key Performance Indicators (KPIs):**
    - **Practice:** Define and monitor KPIs to measure project cost performance and identify areas for improvement.
    - **Example:** An automotive company tracks KPIs such as cost variance and budgeted cost of work performed (BCWP) to manage R&D projects.

Challenges in PCA

1. **Accurate Cost Estimation:**
    - **Challenge:** Estimating costs accurately in the initial stages of the project can be difficult due to uncertainties.
    - **Illustration:** Infrastructure projects in India often face challenges in initial cost estimation due to land acquisition issues and regulatory changes.

2. **Integration with Other Systems:**
    - **Challenge:** Ensuring seamless integration of Project Cost Accounting tools with existing ERP or financial systems can be complex.
    - **Illustration:** A large pharmaceutical company in India struggles with integrating PCA data with its legacy ERP system.

3. **Managing Changes in Scope:**
    - **Challenge:** Handling changes in project scope without significant impact on the

budget requires flexibility and robust change management processes.
    - **Illustration:** A construction project in India experiences scope creep due to additional client requirements, necessitating reallocation of resources and budget adjustments.

4. **Data Accuracy and Timeliness:**
    - **Challenge:** Maintaining accurate and timely data for effective cost management is critical.
    - **Illustration:** A tech firm in India finds it challenging to keep real-time data updates due to multiple ongoing projects and dispersed teams.

Tools for PCA

1. **Microsoft Project:**
    - **Features:** Comprehensive project management tool that includes cost tracking, resource allocation, and reporting.
    - **Illustration:** A construction firm in India uses Microsoft Project to manage timelines and budgets for large infrastructure projects.

2. **Oracle Primavera:**
    - **Features:** High-end project management software with strong cost management capabilities, ideal for large and complex projects.
    - **Illustration:** An Indian oil and gas company uses Oracle Primavera to manage exploration and drilling projects, ensuring cost efficiency.

3. **SAP Project System (PS):**
    - **Features:** Integrated module in SAP ERP systems, offering detailed cost tracking and reporting functionalities.
    - **Illustration:** A major Indian telecom company uses SAP PS to manage network expansion projects, ensuring detailed cost monitoring and control.

4. **Zoho Projects:**
    - **Features:** Cloud-based project management software popular among SMEs for its affordability and ease of use.
    - **Illustration:** An Indian SME uses Zoho Projects to manage a marketing campaign, tracking expenses and resource utilization in real time.

2.0– An expanded view into Select Tools of Project Cost Accounting (PCA)

2.1 Earned Value Management (EVM)

Earned Value Management (EVM) is a project management technique that integrates project scope, time, and cost to provide an accurate picture of project performance and progress. Earned Value Management helps in measuring the actual performance of a project against the planned performance, allowing project managers to forecast future performance and project outcomes.

Key Components of EVM

1. **Planned Value (PV):**
    - **Definition:** The estimated value of the work planned to be done by a certain date.
    - **Example:** For an IT project in India scheduled to develop a software module over 6 months, if the planned cost for the first month is ₹5 lakhs, then the Planned Value at the end of month one is ₹5 lakhs.

2. **Earned Value (EV):**
    - **Definition:** The value of work performed by a certain date.

- **Example:** If the IT project completes work worth ₹4 lakhs by the end of the first month, then the Earned Value is ₹4 lakhs.

3. **Actual Cost (AC):**
   - **Definition:** The actual cost incurred for the work performed by a certain date.
   - **Example:** If the actual expenditure for the work done in the first month is ₹6 lakhs, then the Actual Cost is ₹6 lakhs.

4. **Cost Variance (CV):**
   - **Formula:** CV = EV - AC
   - **Example:** For the IT project, CV = ₹4 lakhs - ₹6 lakhs = -₹2 lakhs. A negative CV indicates cost overrun.

5. **Schedule Variance (SV):**
   - **Formula:** SV = EV - PV
   - **Example:** SV = ₹4 lakhs - ₹5 lakhs = -₹1 lakh. A negative SV indicates the project is behind schedule.

6. **Cost Performance Index (CPI):**
   - **Formula:** CPI = EV / AC
   - **Example:** CPI = ₹4 lakhs / ₹6 lakhs = 0.67. A CPI less than 1 indicates cost inefficiency.

7. **Schedule Performance Index (SPI):**
   - **Formula:** SPI = EV / PV
   - **Example:** SPI = ₹4 lakhs / ₹5 lakhs = 0.8. An SPI less than 1 indicates schedule inefficiency.

Case Study: Indian

Metro Rail Project in Mumbai

1. **Project Overview:** A major infrastructure project aimed at expanding Mumbai's metro rail network.
2. **EVM Implementation:**
   - **Planned Value (PV):** Initial PV for a segment of the project was ₹100 crores by mid-year.
   - **Earned Value (EV):** By mid-year, the EV was ₹85 crores, indicating only 85% of the planned work was completed.
   - **Actual Cost (AC):** The AC was ₹110 crores, indicating cost overruns.
   - **Analysis:**
     - **Cost Variance (CV):** -₹25 crores (EV - AC = ₹85 crores - ₹110 crores)
     - **Schedule Variance (SV):** -₹15 crores (EV - PV = ₹85 crores - ₹100 crores)
     - **CPI:** 0.77 (EV / AC = ₹85 crores / ₹110 crores)
     - **SPI:** 0.85 (EV / PV = ₹85 crores / ₹100 crores)
   - **Outcome:** The project was behind schedule and over budget, prompting corrective actions such as resource reallocation and budget adjustments.

Case Study: Global

NASA's Mars Rover Project

1. **Project Overview:** A space exploration mission to land a rover on Mars.
2. **EVM Implementation:**
   - **Planned Value (PV):** PV at a certain milestone was $500 million.
   - **Earned Value (EV):** EV was $450 million, indicating that 90% of the planned work was completed.
   - **Actual Cost (AC):** AC was $480 million, indicating a slight cost overrun.
   - **Analysis:**
     - **Cost Variance (CV):** -$30 million (EV - AC =

$450 million - $480 million)
    - **Schedule Variance (SV):** -$50 million (EV - PV = $450 million - $500 million)
    - **CPI:** 0.94 (EV / AC = $450 million / $480 million)
    - **SPI:** 0.90 (EV / PV = $450 million / $500 million)
  - **Outcome:** The project was slightly over budget and behind schedule, leading to adjustments in project management strategies to ensure timely completion within the new budget.

2.2 Agile Cost Management (ACM)

Agile Cost Management (ACM) is an approach to project cost management that aligns with Agile methodologies, emphasizing flexibility, continuous improvement, and iterative processes. Agile Cost Management enables organizations to adapt to changing project requirements and market conditions, ensuring efficient use of resources and adherence to budget constraints.

Key Principles of ACM

1. **Iterative Budgeting:**
   - **Description:** Budgets are created and adjusted in small increments throughout the project lifecycle, rather than being fixed at the outset.
   - **Example:** A software development team in India revisits and adjusts its budget every sprint (usually 2-4 weeks) to reflect changes in project scope and resource needs.

2. **Value-Driven Expenditures:**
   - **Description:** Prioritizing spending on high-value features and activities that provide the greatest return on investment.
   - **Example:** An e-commerce company in India focuses its budget on developing features that enhance user experience and increase conversion rates, based on customer feedback and market trends.

3. **Transparent Cost Tracking:**
   - **Description:** Continuous monitoring and reporting of costs to ensure transparency and facilitate quick adjustments.
   - **Example:** An Indian fintech startup uses real-time dashboards to track project expenses, providing stakeholders with up-to-date financial insights.

4. **Collaborative Financial Planning:**
   - **Description:** Involving cross-functional teams in financial planning to ensure alignment with project goals and business objectives.
   - **Example:** A healthcare IT project in India includes input from developers, project managers, and finance teams during budget planning sessions.

Case Study: Indian

Case Study: Infosys Agile Transformation

1. **Project Overview:** Infosys undertook a major Agile transformation to improve its software development processes.

2. **ACM Implementation:**
   - **Iterative Budgeting:** Budgets were revisited at the end of each sprint, allowing for adjustments based on project progress and changing requirements.

- **Value-Driven Expenditures:** Focus was placed on delivering features that directly addressed client needs and had the highest business impact.
- **Transparent Cost Tracking:** Infosys used Agile project management tools like Jira and Confluence to provide real-time visibility into project costs and progress.
- **Collaborative Financial Planning:** Cross-functional teams, including developers, project managers, and financial analysts, worked together to plan and manage project budgets.

3. **Outcome:** The transformation led to improved project delivery times, better alignment with client needs, and more efficient use of resources, ultimately enhancing client satisfaction and project profitability.

Case Study: Global

Case Study: Spotify's Agile Approach

1. **Project Overview:** Spotify adopted Agile methodologies to enhance its product development and respond quickly to market changes.

2. **ACM Implementation:**
   - **Iterative Budgeting:** Budgets were adjusted frequently to accommodate new features and market demands.
   - **Value-Driven Expenditures:** Prioritized funding for features that improved user engagement and experience.
   - **Transparent Cost Tracking:** Utilized dashboards and reporting tools to maintain transparency in project costs.
   - **Collaborative Financial Planning:** Included input from various departments, ensuring that financial planning aligned with strategic goals.

3. **Outcome:** Spotify's Agile approach enabled rapid innovation, efficient allocation of resources, and sustained growth in its user base and market share.

2.3 Activity-Based Costing (ABC)

Activity-Based Costing (ABC) is a costing methodology that assigns overhead and indirect costs to related activities, and then allocates these costs to products, services, or projects based on their consumption of those activities. ABC aims to provide a more accurate cost representation by focusing on the relationship between costs, activities, and products, enabling better decision-making and resource allocation.

Key Principles of ABC

1. **Identify Activities:**
   - Determine all activities involved in the production or service delivery process.
   - **Example:** In a manufacturing company in India, activities might include machine setup, quality inspection, and packaging.
2. **Assign Costs to Activities:**
   - Accumulate costs for each identified activity.
   - **Example:** Costs such as machine depreciation, salaries of quality inspectors, and packaging materials are assigned to their respective activities.
3. **Determine Cost Drivers:**
   - Identify factors that cause the cost of activities to increase (cost drivers).
   - **Example:** The number of machine setups, hours spent on inspections, and number of units packaged.

4. **Allocate Costs to Products/Services:**
    - Allocate activity costs to products or services based on their usage of the activities (cost drivers).
    - **Example:** If Product A requires more machine setups and quality inspections than Product B, Product A will be allocated a higher share of these costs.

Case Study: Indian

Case Study: ABC Implementation in a Textile Manufacturing Company

1. **Company Overview:** A textile manufacturing company in Tamil Nadu, India.

2. **ABC Implementation:**
    - **Identify Activities:** Dyeing, weaving, quality control, and finishing.
    - **Assign Costs to Activities:** Costs such as dye chemicals, machine maintenance, labour for weaving, and inspection costs.
    - **Determine Cost Drivers:** Litres of dye used, machine hours for weaving, inspection hours.
    - **Allocate Costs to Products:** Different fabric types (cotton, silk, synthetic) are allocated costs based on their specific activities and usage.

3. **Outcome:**
    - **Improved Cost Accuracy:** More precise allocation of overhead costs to different fabric types.
    - **Enhanced Decision-Making:** Better pricing strategies and identification of cost-saving opportunities.
    - **Increased Profitability:** Ability to focus on high-margin products and reduce costs in less profitable areas.

Case Study: Global

Case Study: Activity Based Costing Implementation at Boeing

1. **Company Overview:** Boeing, a global aerospace manufacturer.

2. **Activity Based Costing Implementation:**
    - **Identify Activities:** Design, assembly, quality testing, and logistics.
    - **Assign Costs to Activities:** Engineering salaries, assembly line costs, testing equipment depreciation, and transportation.
    - **Determine Cost Drivers:** Design hours, assembly hours, testing cycles, and shipment volume.
    - **Allocate Costs to Products:** Different aircraft models (commercial, military) are allocated costs based on their specific activities and usage.

3. **Outcome:**
    - **Enhanced Cost Visibility:** Detailed cost information for each aircraft model.
    - **Better Resource Allocation:** More efficient use of resources and improved budgeting.
    - **Competitive Pricing:** Ability to price products more competitively by understanding true cost structures.

Case Study: MSME - Activity Based Costing Implementation in a Construction Company

1. **Company Overview:** A mid-sized construction company in India involved in residential and commercial projects.

2. **Activity Based Costing Implementation:**
    - **Identify Activities:** Site preparation, foundation laying, structural work, electrical and

plumbing installation, finishing work.
    - **Assign Costs to Activities:** Equipment rental, labour costs, materials, subcontractor fees.
    - **Determine Cost Drivers:** Square footage, labour hours, material quantities, subcontractor hours.
    - **Allocate Costs to Projects:** Different construction projects (residential buildings, commercial complexes) are allocated costs based on their specific activities and usage.

3. **Outcome:**
    - **Improved Project Costing:** More accurate allocation of overhead costs to individual projects.
    - **Better Project Management:** Enhanced ability to track project costs and identify cost-saving opportunities.
    - **Higher Profit Margins:** Improved pricing strategies and cost control leading to higher profitability.

Most Effective Techniques for Specific Industries

- **Construction:** EVM is highly effective due to its ability to track project progress against planned costs and schedules, crucial in large-scale construction projects.
- **Information Technology:** Agile Cost Management, with its Agile methodologies, aligns well with the iterative and dynamic nature of software development projects, enabling flexibility and responsiveness to changing requirements.
- **Manufacturing:** Activity Based Costing provides insights into the true costs of production activities, helping manufacturers optimize resource allocation and improve profitability.
- **Healthcare:** Activity Based Costing allows healthcare providers to understand the costs associated with different medical procedures and services, facilitating better pricing strategies and resource allocation.
- **Financial Services:** Earned Value Management is beneficial for managing complex projects in the financial sector, ensuring adherence to budgetary constraints and regulatory requirements.
- **Retail:** Agile Cost Management enables retailers to adapt quickly to changing market demands and customer preferences, delivering value-driven solutions in a fast-paced environment.
- **Transportation:** Earned Value Management is crucial for transportation projects, such as infrastructure development or fleet expansion, ensuring efficient use of resources and timely completion.
- **Telecommunications:** Activity Based Costing helps telecom companies allocate costs more accurately across their diverse product and service offerings, improving cost management and pricing decisions.
- **Energy:** Earned Value Management is effective in energy projects, such as oil and gas exploration or renewable energy infrastructure, where cost and schedule control are paramount.
- **Hospitality:** Agile Cost Management allows hospitality businesses to respond swiftly to customer feedback and market trends, delivering innovative and customer-centric solutions.

Top Technology Tools

These software tools offer varying levels of functionality and scalability to meet the needs of different organizations and projects. It is essential for organizations to evaluate their specific requirements and choose a tool that aligns with their goals and objectives.

ERP Systems Suitable for PCA

Several Enterprise Resource Planning (ERP) systems offer modules or functionalities suitable for Project Cost Accounting (PCA), including integration with Earned Value Management (EVM), Agile Cost Management (ACM), and Activity-Based Costing (ABC). Here are some ERPs that are commonly used for PCA and their integration capabilities:

1. **SAP ERP:**
    - **Suitability for** Project Cost Accounting**:** SAP ERP is widely recognized for its robust financial accounting and project management capabilities, making it suitable for PCA across various industries.
    - **Integration with** Earned Value Management**,** Agile Cost Management**, and** Activity-Based Costing**:** SAP offers add-on modules and functionalities that can integrate with EVM, ACM, and ABC practices. For example, SAP Project Systems (PS) module supports project planning, budgeting, and cost tracking, while SAP Profitability and Cost Management (PCM) module supports ABC analysis. EVM integration may require customization or third-party solutions.

2. **Oracle ERP Cloud:**
    - **Suitability for** Project Cost Accounting**:** Oracle ERP Cloud provides comprehensive financial management functionalities, including project accounting and cost management features suitable for PCA.
    - **Integration with with** Earned Value Management**,** Agile Cost Management**, and** Activity-Based Costing**:** Oracle ERP Cloud offers native integrations with EVM through its Project Portfolio Management (PPM) module, which includes capabilities for project

planning, budgeting, and performance tracking. ACM principles can be applied through Agile methodologies supported by Oracle Cloud's Project Management module. ABC analysis can be performed using Oracle's cost management and reporting tools.

3. **Microsoft Dynamics 365:**
    - **Suitability for** Project Cost Accounting**:** Microsoft Dynamics 365 offers modules for project accounting, budgeting, and resource management, making it suitable for PCA requirements.
    - **Integration with** Earned Value Management**, Agile Cost Management, and** Activity-Based Costing**:** Dynamics 365 integrates with third-party project management tools like Microsoft Project for Earned Value Management, functionalities. Agile methodologies can be implemented through Dynamics 365's project management and collaboration features. ABC analysis may require additional customization or integration with third-party tools.

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Unlocking Sustainable Value – A prelude

Prelude: Unlocking value for multiple stakeholders is the enlightened modern objective of the enterprise. Management accounting, in its role of strategic advisor to the enterprise, uses Value Mapping as a tool to enable the enterprise deliver sustainable value to its identified multiple stakeholders.

In the following pages we look at Value Mapping at two levels:

Level 1: Foundations of Value Mapping: Concepts, Techniques, Tools, and Enablers.
Level 2: Practical Applications: Use Cases of Value Mapping.

Foundations of Value Mapping: Concepts, Techniques, Tools and Enablers

CONCEPT

Value Mapping (VM), as exemplified by Deloitte's Sustainable Value Map (SVM), is a strategic framework that provides a comprehensive approach to understanding and managing value creation across multiple stakeholder groups. Unlike traditional financial metrics that focus solely on shareholder value, the Value Mapping expands the scope to include the value generated for employees, customers, the environment, and society at large. The core premise of the Sustainable Value Map is that sustainable value creation requires a balanced consideration of the needs and interests of all stakeholders. By mapping the value flows and interdependencies between these groups, organizations can make more informed decisions, optimize resource allocation, and drive long-term, holistic value creation.

TECHNIQUES AND TOOLS USED

The Value Mapping utilizes a range of techniques and tools to capture and analyse value creation across stakeholder groups. These include:

1. Stakeholder Mapping: Identifying and categorizing the key stakeholder groups, their needs, and their influence on the organization.
2. Value Driver Analysis: Determining the critical factors that drive value creation for each stakeholder group.
3. Value Flow Mapping: Visualizing the flow of value between the organization and its stakeholders, including financial and non-financial value exchanges.
4. Scenario Planning: Exploring different future scenarios and their potential impact on value creation for various stakeholders.
5. Balanced Scorecard: Integrating financial and non-financial performance metrics to measure and track value creation.
6. Value Proposition Canvas: A visual tool to define how products and services create value for customers. It helps in aligning product offerings with customer needs
7. Customer Journey Mapping: Maps out the customer's interaction with a company's products or services, highlighting key touch points and areas for improvement.
8. Voice of the Customer (VoC) Analysis: A method to capture customers' expectations, preferences, and aversions. This can be done through surveys, interviews, and focus groups.
9. SWOT Analysis: Identifying strengths, weaknesses, opportunities, and threats to better understand the competitive landscape and internal capabilities.
10. Kano Model: A framework to categorize customer preferences into basic needs, performance needs, and excitement needs, helping prioritize features and improvements.

BEST PRACTICES

Successful implementation of the VM requires adherence to several best practices, including:

1. Stakeholder Engagement: Actively involving and collaborating with all stakeholder groups to understand their needs and priorities.
2. Data-Driven Approach: Leveraging robust data and analytics to quantify and track value creation across stakeholder groups.
3. Integrated Decision-Making: Ensuring that value creation for all stakeholders is considered in strategic and operational decision-making.
4. Continuous Improvement: Regularly reviewing and updating the SVM to

adapt to changing business and stakeholder dynamics.

5. Leveraging Technology: Using advanced analytics and customer relationship management (CRM) systems can enhance the accuracy and effectiveness of Value Mapping.

EMERGING DEVELOPMENTS

The Value Mapping is continuously evolving to address emerging trends and challenges. Some of the key developments include:

1. Sustainability Reporting: Integrating the V Value Mapping with sustainability reporting frameworks, such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB).
2. Digital Transformation: Leveraging digital technologies, such as data analytics and visualization, to enhance the Value Mapping 's capabilities and insights.
3. Stakeholder Engagement Platforms: Developing dedicated platforms to facilitate ongoing dialogue and collaboration with stakeholders.
4. Artificial Intelligence (AI) and Machine Learning (ML): AI and ML can analyse large datasets to identify trends and patterns that inform value creation strategies.

CHALLENGES IN IMPLEMENTATION

Implementing the VM can be challenging, and organizations may face several obstacles, including:

1. Organizational Mindset: Shifting from a shareholder-centric to a multi-stakeholder mindset can be a significant cultural change.
2. Data Availability and Quality: Obtaining reliable and comprehensive data on value creation for all stakeholder groups can be a complex undertaking.
3. Balancing Competing Interests: Reconciling the sometimes-conflicting needs and priorities of different stakeholder groups can be a delicate process.
4. Integrating with Existing Processes: Aligning the Value Mapping with existing management systems and decision-making processes can require significant organizational change.
5. Resource Allocation: Allocating sufficient resources, including time and budget, to the Value Mapping process is often a significant challenge.
6. Measuring Intangible Value: Quantifying aspects such as brand perception and customer satisfaction can be difficult but is crucial for effective Value Mapping

VALUE MAPPING BEST FIT FOR INDUSTRIES

The VM can be effectively adopted across a wide range of industries, particularly those with significant environmental and social impact, such as:

1. Energy and Utilities: Assessing the value created for local communities, the environment, and society, in addition to shareholders and customers.
2. Manufacturing: Evaluating the value generated for employees, suppliers, and the local ecosystem, alongside financial performance.
3. Healthcare: Measuring the value created for patients, healthcare providers, and the broader community, in addition to financial metrics.
4. Consumer Goods: Analysing the value created for customers, employees, and the environment, alongside traditional financial performance.

ERP AND OTHER SOFTWARE TOOLS

Several enterprise software solutions, including ERP systems, are integrating Value Mapping - related functionalities to support organizations in their value mapping efforts. Some notable examples include:

1. SAP Sustainability Performance Management: Provides tools for measuring, managing, and reporting

on sustainability-related value creation.
2. Oracle Sustainability Reporting Cloud Service: Enables organizations to track and report on their environmental, social, and governance (ESG) performance.
3. Microsoft Dynamics 365 Sustainability Manager: Helps organizations measure, manage, and report on their sustainability initiatives and their impact on stakeholders.
4. Salesforce: A leading CRM platform, Salesforce helps organizations capture and analyse customer data, driving informed decision-making.

Value Mapping **FLOW**

A typical VM flow using the Value Mapping framework involves the following steps:

1. Stakeholder Identification: Identify the key stakeholder groups, their needs, and their influence on the organization.
2. Value Driver Analysis: Determine the critical factors that drive value creation for each stakeholder group.
3. Value Flow Mapping: Visualize the flow of value between the organization and its stakeholders, including financial and non-financial value exchanges.
4. Performance Measurement: Develop a balanced set of financial and non-financial key performance indicators (KPIs) to measure and track value creation.
5. Scenario Planning: Explore different future scenarios and their potential impact on value creation for various stakeholders.
6. Decision-Making and Action: Integrate the insights from the Value Mapping into strategic and operational decision-making to optimize value creation.

OPPORTUNITIES FOR MANAGEMENT ACCOUNTANTS

Management accountants can play a crucial role in the design, analysis, and assessment of Value Mapping initiatives, such as the Value Mapping. Opportunities for management accountants include:

1. Designer: Helping to develop the Value Mapping framework, including the identification of stakeholder groups, value drivers, and performance metrics.
2. Analyst/Advisor: Providing data-driven insights and recommendations to optimize value creation across stakeholder groups.
3. Assessor: Evaluating the effectiveness of the Value Mapping in driving sustainable value creation and recommending improvements.

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Practical Applications: Use Cases of Value Mapping

THE STAKEHOLDERS

In a Value Mapping (VM) scenario, stakeholders are individuals or groups who are directly or indirectly impacted by the organization's activities. These stakeholders can include:

1. Shareholders: Investors who have a financial stake in the organization.
2. Employees: Individuals who work for the organization and are impacted by its operations.
3. Customers: Individuals or organizations that purchase goods or services from the organization.
4. Suppliers: Companies that provide raw materials, goods, or services to the organization.
5. Environment: The natural environment and ecosystems that are affected by the organization's activities.
6. Community: Local communities and society at large that are impacted by the organization's operations.
7. Government: Regulatory bodies and government agencies that oversee the organization's activities.

Examples of Stakeholder Mapping

Stakeholder mapping involves identifying and categorizing stakeholders based on their level of influence and interest in the organization. Here are some examples:

1. High Influence, High Interest: Shareholders, senior management, and key customers.
2. High Influence, Low Interest: Suppliers, regulatory bodies, and local government.
3. Low Influence, High Interest: Employees, local community, and environment.
4. Low Influence, Low Interest: General public, competitors, and industry associations.

VALUE DRIVER ANALYSIS

Value Driver Analysis (VDA) is a critical component of Value Mapping that identifies the key factors that drive value creation for each stakeholder group. VDA involves analysing the relationships between the organization's activities and the value generated for each stakeholder.

Examples of Value Driver

Value drivers can include:

1. Product Quality: The quality of goods or services produced by the organization.
2. Customer Satisfaction: The level of satisfaction among customers with the organization's products or services.
3. Employee Engagement: The level of engagement and motivation among employees.
4. Environmental Sustainability: The organization's environmental impact and sustainability efforts.
5. Cost Reduction: The reduction of costs through efficient operations and supply chain management.

VALUE FLOW MAPPING

Value Flow Mapping (VFM) is a visual representation of the flow of value between the organization and its stakeholders. Value Flow Mapping helps identify the key activities, processes, and relationships that drive value creation.

Examples of Value Flow Map

Value flow maps can include:

1. Process Flowcharts: Visual representations of the organization's processes and activities.
2. Value Stream Maps: Visual representations of the flow of value between the organization and its stakeholders.
3. SWOT Analysis: Visual representations of the organization's strengths, weaknesses, opportunities, and threats.

SCENARIO PLANNING (SP)

Scenario Planning (SP) is a strategic planning approach that involves developing scenarios to anticipate and prepare for potential future events or trends. SP helps organizations identify potential risks and opportunities and develop strategies to mitigate or capitalize on them.

Types of Scenario Planning

Types of Scenario Planning include:

1. Predictive Scenario Planning: Predicting future events based on historical trends and data.
2. Prescriptive Scenario Planning: Developing scenarios based on specific goals and objectives.
3. Exploratory Scenario Planning: Exploring potential future scenarios and their implications.

Examples of Scenario Planning

Examples of Scenario Planning include:

1. Predictive Scenario Planning: Developing scenarios for potential economic downturns or changes in market trends.
2. Prescriptive Scenario Planning: Developing scenarios for achieving specific business objectives, such as increasing market share or reducing costs.
3. Exploratory Scenario Planning: Exploring potential scenarios for emerging technologies or changes in consumer behaviour.

STAKEHOLDER MAPPING TECHNIQUES

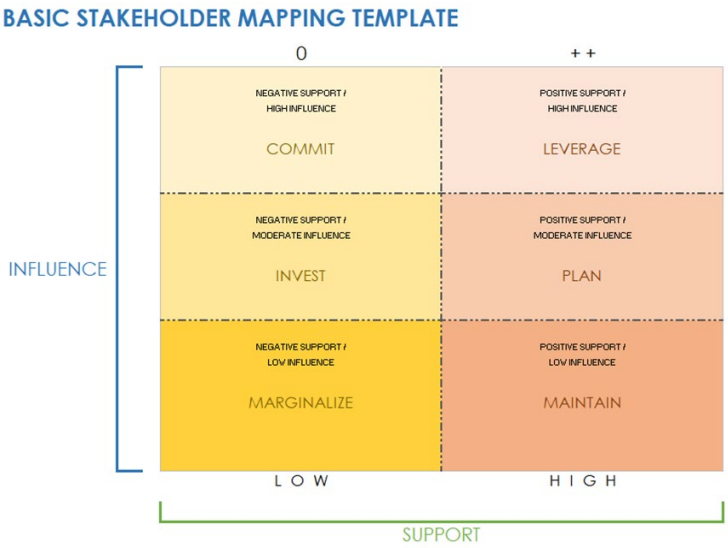
Some of the most effective stakeholder mapping techniques:

1. Sociogram: A graphical representation that uncovers the underlying relationships and connections between stakeholders.
2. Force Field Analysis: Visually depicts the strengths of stakeholder support and opposition, allowing you to gauge the levels of influence.
3. Interest-Influence Matrix: Maps stakeholders based on their level of interest and influence, helping prioritize engagement efforts.
4. Tiered System: Categorizes stakeholders into primary, secondary, and tertiary groups based on their level of involvement and impact.
5. Champion, Neutral, Detractor: Classifies stakeholders as champions (supportive), neutral, or detractors (opposed) based on their alignment with your organization's stance.
6. Power-Interest-Attitude Matrix: A 3D matrix that considers stakeholders' power, interest, and attitude, providing a comprehensive view of their engagement profile.
7. Salience Venn Diagram: Evaluates stakeholders based on their possession of three key attributes: power, legitimacy, and urgency, as proposed by Mitchell, Agle, and Wood.

Some examples of stakeholder mapping templates:

1. **Basic Stakeholder Mapping Template:**

This template helps gauge each stakeholder's degree of influence, interest, and impact on a project. It includes a simple visual representation of hierarchies and can be used to identify whose interest and influence is high, low, or somewhere in between.

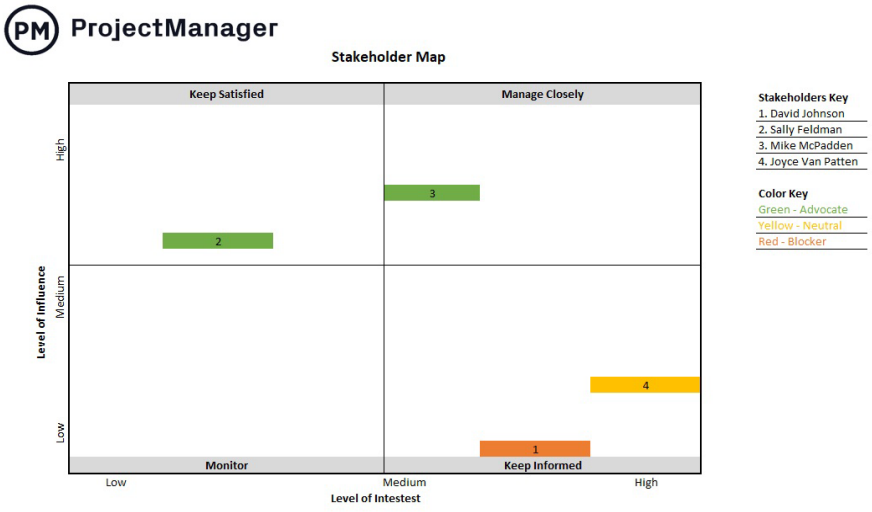


2. **Stakeholder Influence Map Template:**
This template helps map each key influencer's degree of control or sway over a project. It includes sample roles reflecting influence hierarchies and can be used to determine who might need additional data, a proof of concept (POC), or more frequent communication.

3. **Stakeholder Engagement Map Template:**
This template captures details around stakeholder interest in and influence over a project. It includes a visual representation of stakeholders and their relationships, helping to understand each stakeholder's interest in a project and the level of engagement required.

4. **Stakeholder Map Example:**
This template helps identify stakeholders and their relationships within a project or organization. It includes a visual representation of stakeholders and their interest in a project, as well as the level of engagement required.

5. **Stakeholder Mapping Template:**
This template helps organize and understand people who have influence or interest in a product, project, or idea. It includes a visual tool that categorizes people based on their power and interests, enabling easier buy-in.



6. Stakeholder Map Template for Excel:
This template conveys details about stakeholders in a visual way that helps inform decision-making. It includes a customizable visual map that can be adjusted to the size of a project.
These templates provide a range of tools for stakeholder mapping, from simple visual representations to more detailed and customizable templates.

USE CASE EXAMPLES

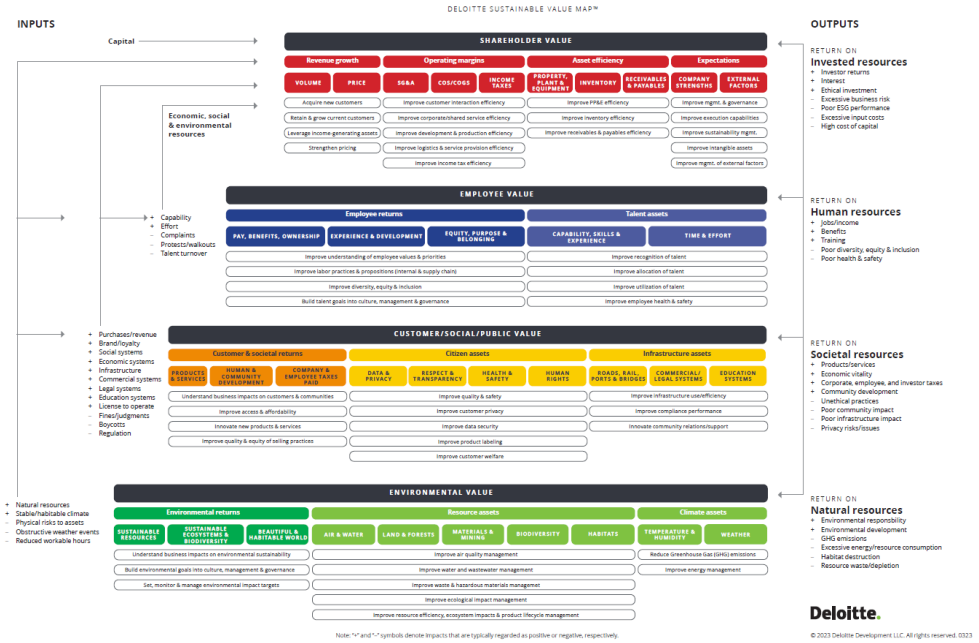
1) **Tata Motors**
Tata Motors utilized Value Mapping to align its products with customer needs. By gathering extensive customer feedback, they developed the Tata Nexon, a compact SUV that addressed key customer pain points. This approach led to a significant increase in market share and customer satisfaction.

2) **Flipkart**
Flipkart, one of India's leading e-commerce platforms, implemented Value Mapping to enhance the user experience. Through customer journey mapping and VoC analysis, they identified areas for improvement, such as delivery speed and customer support, leading to higher customer retention and loyalty.

3) **Global Car Manufacturer**
Background: A global car manufacturer was looking to improve its desktop virtualization and reduce costs.
Methodology: The manufacturer implemented VMware Horizon to deliver desktop virtualization for 2,100 concurrent users from two data centres.
Results: The implementation resulted in tangible business benefits and cost savings.

4) **Amazon**
Amazon's focus on customer value through Value Mapping has driven innovations like Prime delivery, personalized recommendations, and robust customer service, making it a global leader in e-commerce.

SUSTAINABLE VALUE MAP (SVM)



The Sustainable Value Map (SVM) of Deloitte is a framework that provides a comprehensive, multi-stakeholder view of value creation. It incorporates three key features:

1. ROI-Based Approach: The Sustainable Value Map uses a return on investment (ROI) framework to facilitate the consideration of value creation for each stakeholder group. This approach provides baseline ROI frameworks for each stakeholder group, including shareholders, employees, customers, society, and the environment.
2. Linked ROI Frameworks: The Sustainable Value Map includes examples of potential resource and impact flows across stakeholder groups. This helps to determine the "input/output" relationships between the value creation frameworks.
3. System View: The Sustainable Value Map puts the value frameworks and inputs/outputs on a single page, promoting the orchestrated management of value creation across stakeholders.

Value Creation Frameworks: The Sustainable Value Map includes four value creation frameworks:

1. Shareholder Value: This framework focuses on the financial performance of the company and includes metrics such as revenue growth, operating margins, and asset efficiency.
2. Employee Value: This framework highlights the resources employees provide to the company and the outcomes they expect in return. It includes metrics such as employee engagement, talent development, and retention.
3. Customer/Social/Public Value: This framework emphasizes the positive and negative impacts of a company's products and services on customers and society. It includes metrics such as customer satisfaction, social responsibility, and community engagement.
4. Environmental Value: This framework focuses on the natural and climate resources provided by environmental systems and the outcomes of business activity on these resources. It includes metrics such as carbon emissions, water usage, and waste reduction.

Key Considerations: The Sustainable Value Map highlights several key considerations for companies to address:

1. Stakeholder Viewpoints: Companies should consider the viewpoints of all stakeholders, including employees, customers, society, and the environment.
2. Key Impacts: Companies should identify the most substantial and important positive and negative impacts across all stakeholder groups.
3. Trade-Offs: Companies should recognize and manage trade-offs across stakeholders, balancing and mitigating these trade-offs at project and portfolio levels.
4. Resource Access: Companies should ensure longer-term access to key resources such as talent, natural resources, and community support.
5. Performance Measures and Balanced Scorecards the SVM recommends expanding performance measures and balanced scorecards to address a multi-stakeholder view. This includes metrics such as financial performance, operational performance, and improvement actions through cause-and-effect relationships.

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Leveraging Technology towards a Sustainable FinTech Ecosystem

Building inclusive and Sustainable FinTech Industry: Role of CMAs

Overview of India's Digital Economy: India's rapid adoption of digital technologies in banking and financial services.

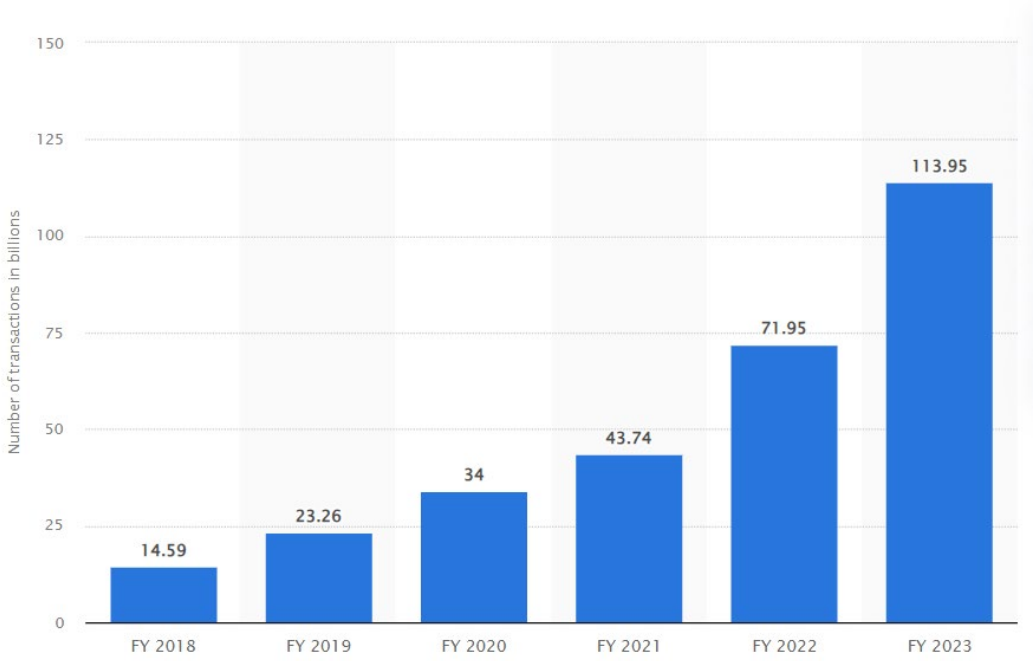
Over the years, payment methods have evolved significantly, shifting from bartering and precious metals to digital payments, thanks to technological advancements and changing societal preferences.

A prime example is the Unified Payments Interface (UPI), which saw remarkable growth in May 2023, processing 9.41 billion transactions worth INR 14.89 lakh crore ($181 billion). This translates to about 3,600 transactions per second, a 58% year-on-year increase. According to a 2022 ACI Worldwide report, India led globally in real-time payment transactions with 48.6 billion transactions in 2021, far outpacing China.

UPI has significantly changed how Indians handle small, everyday transactions, with more people using digital payments for purchases like a Rs. 8 for cup of tea or a Rs. 150 for a bag of vegetables.

The Reserve Bank of India's Annual Report for 2023-2024 highlights a remarkable growth in digital payments. In March 2024 alone, UPI transactions soared to 13 billion, marking a 44.3% increase in volume. This surge reflects the RBI's commitment to innovation, as seen in the introduction of several new payment solutions. One notable initiative is the rollout of UPI-Lite, which uses Near Field Communication (NFC) technology to make offline transactions even more convenient.

Total number of digital payments across India from financial year 2018 to 2023



(source: https://www.statista.com/statistics/1251321/india-total-volume-of-digital-payments/)

One of the major roles launched by Reserve Bank of India is PRAVAAH Initiative (Platform for Regulatory Application, Validation and Authorisation). PRAVAAH is a secure and centralised web-based portal for any individual or entity to seek authorisation, license or regulatory approval on any reference made by it to the Reserve Bank.

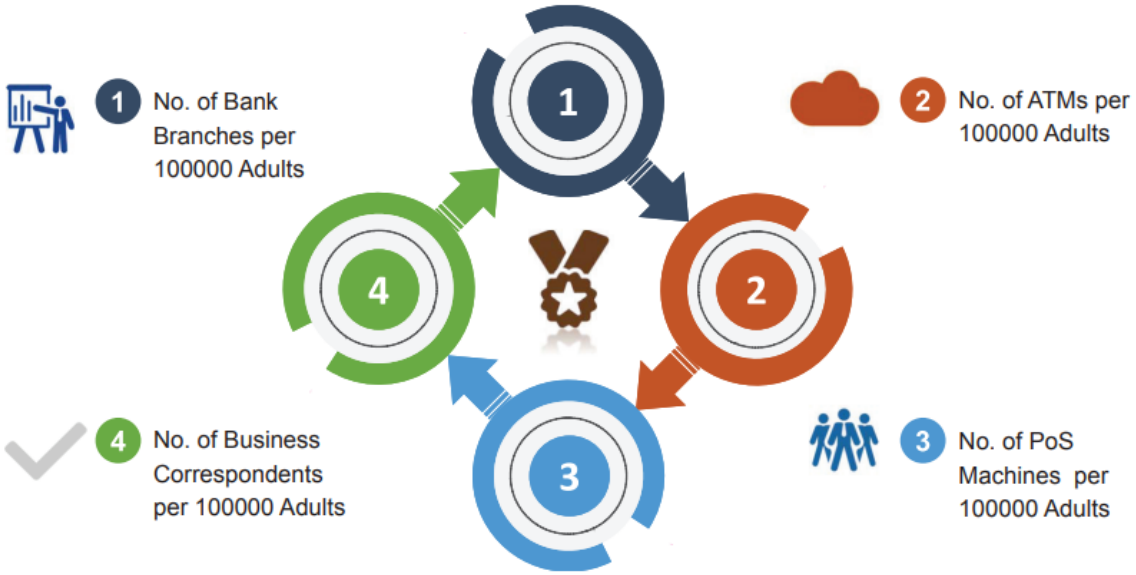
The role of FinTech in promoting sustainable economic growth

India has long relied on cash for most of its transactions, but fintech is transforming how consumers and businesses conduct their financial activities. This shift has accelerated economic development by making everyday transactions faster, more accurate, affordable, transparent, and convenient. Today, fintech has expanded into nearly every area, including investing, payments, management, financing, insurance, and real estate. The success of fintech is driven by a strong focus on customer service, emphasizing transparency, efficiency, low costs, user-friendliness, accessibility, and speed.

Ensuring financial services are accessible to all segments of the population

Strengthening financial inclusion has been a key development goal for both the Government of India and the country's four financial sector regulators (RBI, SEBI, IRDAI, and PFRDA). Financial literacy plays a crucial role in this effort by enabling customers to make informed decisions, ultimately contributing to their financial well-being.

Broad Indicators to Measure Access to Financial Services



Pradhan Mantri Jan Dhan Yojana (PMJDY): Indian policymakers have shown strong dedication to promoting inclusive growth, notably through the launch of the Pradhan Mantri Jan Dhan Yojana (PMJDY) under the National Mission for Financial Inclusion. Introduced in August 2014, it marked a pivotal moment in the country's efforts toward financial inclusivity. This initiative utilizes the widespread banking network and technological advancements to ensure that every household can access fundamental financial services, effectively bridging the gap in banking accessibility.

Last mile delivery: Recognizing that rural customers often cannot afford to miss a day's work to visit a bank, it is essential to make sure that the distance and time it takes to reach these banks do not discourage them. To

address this, banks have introduced policies to expand their reach, such as allowing formal financial institutions to use agents and Business Correspondents (BCs). While BCs have helped reach customers in remote areas, ensuring customer protection, offering suitable products, raising financial awareness, monitoring agents' activities, and maintaining the sustainability of the agent/BC network now require policy attention.

Another significant stride towards enhancing financial inclusion in India occurred with the introduction of the India Post Payments Bank (IPPB) in September 2018. Leveraging the extensive network of the Department of Posts, comprising 1.55 lakh Post Offices and over 3 lakh postmen and Grameen Dak Sewaks, IPPB aims to expand financial inclusion initiatives across the nation.

A recent CAFRAL report forecasts that fintech lending will overtake traditional bank lending by 2030. To achieve this, digital lending solutions need to be extended beyond metropolitan areas, reaching small businesses and consumers in Tier-III cities and beyond.

Dedicated Lending to SMEs: The Digital Lending Association of India (DLAI) anticipates the establishment of a dedicated India Fintech Credit Fund (IFCF) to support small and medium-sized fintech companies. This financial backing would encourage expansion beyond Tier-III cities. By fostering growth in underserved areas, the fund aims to position these fintech firms as catalysts for economic development in untapped markets. The impact would be seen not only in the financial health of the companies receiving these loans but also in the transformation of India's socio-economic landscape.

Revolutionizing Fintech: The Open Network for Digital Commerce (ONDC) is set to pave the way for fintech innovations, presenting new opportunities for startups focused on lending technology. Alongside this, the expansion of UPI to incorporate credit functionalities is poised to transform the lending landscape, potentially leading to consolidation and rationalization in the sector.

Use of Artificial Intelligence in the Financial Industry

In the finance sector, numerous companies are leveraging AI applications in practical ways to address their challenges and save time and money. Here are a few real-world examples of how companies are utilizing AI for effective operations:

AI-powered tools like 'Virtual Financial Advisors and Chat Bots' are automating customer support services. Consumers now interact with chatbots to get the answers they need.

Applications such as 'Contract Analyser' use AI to detect fraudulent activities by identifying anomalies. For instance, if a customer applies for multiple identical loans within a short time frame, the AI application flags it as suspicious.

AI-driven applications like 'Churn Prediction' handle most of the routine tasks of analysts, allowing them to focus on more critical issues. These applications work in the background to identify recurring and smaller problems, and they help companies analyse large volumes of data efficiently in real time.

In the finance sector, AI technologies are also extensively used to assess the creditworthiness of individuals. AI-powered applications help prevent overcharging or undercharging risky customers by checking their credit scores in real time, thus aiding in making informed lending decisions.

Challenges Faced by CMAs

In the rapidly evolving world of FinTech, Cost and Management Accountants (CMAs) face a unique array of challenges. They must adeptly navigate through the complexities of integrating new technologies, ensuring compliance with ever-changing regulations, safeguarding against cybersecurity threats, and optimizing costs—all while upholding the

integrity of financial data. Here are some of the key challenges faced by CMAs in the FinTech sector:

1) **Efficient Cost Management:** Cost management is at the core of a CMA's role, particularly in the FinTech realm. This involves carefully evaluating the expenses associated with adopting and maintaining technology, allocating resources efficiently, and streamlining financial processes to minimize operational costs while delivering top-notch services.

2) **Balancing Innovation with Risk**: Innovation drives growth in FinTech, but it also introduces new risks. CMAs must strike a balance between fostering innovation and managing risks effectively. This includes assessing the potential risks of new products and services and implementing controls to mitigate them without stifling creativity.

3) **Integrating New Technologies:** Integrating cutting-edge financial technologies into existing systems poses a significant challenge. CMAs must ensure seamless integration, aligning these technologies with the organization's financial objectives. This requires not only technical expertise but also training staff and adapting processes to maximize the benefits of innovation.

4) **Ensuring Data Integrity:** With the increasing reliance on data analytics and AI, ensuring the accuracy and integrity of financial data is paramount. CMAs must establish robust data governance frameworks to maintain data quality and consistency. This involves setting protocols for data collection, storage, and analysis to ensure reliable and actionable insights.

5) **Navigating Regulatory Changes:** The regulatory landscape in FinTech is constantly evolving, posing challenges for CMAs in ensuring compliance. Staying updated with regulations related to data protection, AML, KYC requirements, and financial reporting standards is essential. CMAs must proactively monitor regulatory developments and adapt their practices accordingly.

6) **CMAs to learn continuously:** In the fast-paced world of FinTech, CMAs must continuously update their skills and knowledge to keep pace with technological advancements. This involves staying informed about emerging technologies such as blockchain, AI, and big data analytics, and integrating them into financial management practices to gain a competitive edge.

By addressing these challenges, CMAs can play a pivotal role in steering FinTech companies towards sustainable growth and long-term success, ensuring that they remain competitive and compliant in a rapidly changing financial landscape.

Opportunities for Cost and Management Accountants (CMAs)

In the rapidly evolving landscape of the FinTech industry, Cost and Management Accountants (CMAs) are presented with diverse opportunities to contribute their expertise. From advising on digital transformation strategies to developing innovative financial models and enhancing data analytics capabilities, CMAs play a pivotal role in driving innovation and growth within FinTech companies. Here are three key opportunities for CMAs in the FinTech sector:

1) **Developing New Financial Models and Services:** CMAs can play a key role in developing new financial models and services to meet the evolving needs of FinTech customers. This includes designing innovative products, such as digital wallets, peer-to-peer lending platforms, and robo-advisory services, to cater to changing market demands. CMAs can leverage their financial expertise to create tailored solutions that address specific

customer pain points and deliver value-added services.

2) **Enhancing Data Analytics Capabilities:** CMAs can enhance data analytics capabilities within FinTech companies to provide deeper insights into financial performance and customer behaviour. This involves leveraging advanced analytics techniques, such as predictive modelling, machine learning, and data visualization, to extract meaningful insights from large volumes of financial data. CMAs can help companies identify trends, patterns, and opportunities for optimization, enabling informed decision-making and driving business growth.

3) **Advising on Digital Transformation Strategies:** CMAs can leverage their expertise to advise FinTech companies on digital transformation strategies. This involves identifying opportunities to leverage technology to streamline processes, improve efficiency, and enhance customer experiences. CMAs can provide valuable insights on the adoption of digital tools, platforms, and solutions to drive innovation and achieve strategic objectives.

By capitalizing on these opportunities, CMAs can play a pivotal role in driving growth and success within the FinTech industry, positioning themselves as valuable strategic partners and trusted advisors to FinTech companies.

Case Studies of Successful Implementation of FinTech models

Case Study 1: National Payments Corporation of India (NPCI) and AI Integration in UPI

Background: The Indian banking sector has been working diligently to popularize digital payments, gaining significant traction post-demonetization and with the Digital India initiatives. To facilitate digital transactions, the National Payments Corporation of India (NPCI) introduced the Unified Payment Interface (UPI), a revolutionary and cost-effective solution for providing digital payment services to all. The proliferation of smartphones, technological advancements, and robust internet connectivity have highlighted the benefits of mobile payment facilities for smartphone users, financial institutions, and banks. In pursuit of a paperless and cashless economy, UPI, with its virtual payment address system established by NPCI, stands out as an innovative method for fund transfers. Therefore, it is crucial to evaluate its potential in contributing to the realization of a digital economy.

The Reserve Bank of India has unveiled a plan to incorporate Artificial Intelligence into digital payments, highlighting the use of the Unified Payments Interface (UPI) for Conversational Payments. This initiative introduces an innovative and user-friendly way to conduct transactions. The new feature allows payment requests to be made directly within chat or message conversations, facilitating seamless daily interactions and instant money transfers.

India, so far, has agreements for UPI payments with seven nations such as Sri Lanka, Mauritius, UAE, Singapore, Bhutan, France, and Nepal. The Reserve Bank of India (RBI), in collaboration with NPCI International Payments Ltd. (NIPL), has set plans to expand the Unified Payments Interface (UPI) to over 20 countries by the financial year 2029. According to the central bank's annual report, the government is also exploring collaborations for the Fast Payment System (FPS) with regions such as the European Union, the South Asian Association for Regional Cooperation (SAARC), and other multilateral linkages. The report highlights that the government is working on initiatives to enhance the global reach of UPI and RuPay.

"In line with the goals for Viksit Bharat 2047, the Reserve Bank, along with NPCI International Payments Ltd. (NIPL), aims to extend UPI to 20 countries, starting in 2024-25

and targeting completion by 2028-29," stated the RBI in its annual report.

Case Study 2: Digital and Mobile Banking - SBI YONO (You Only Need One)

Description: Implementation of Digital and Mobile Banking Solutions

With increase in mobile banking, the challenges in facing SBI was to ensure data security, managing the high volume of digital transactions, and providing a consistent user experience across devices.

SBI worked with IBM to design intelligent workflows and build a robust system of security and stability to support its mobile banking solutions. Intelligent workflows now apply technologies such as AI, automation, blockchain, 5G, advanced analytics and cloud to change the trajectory and very nature of SBI work, adding greater visibility, real-time insights, and the power to remediate problems across multiple business functions.

The true potential of YONO lies in people—not only the growing financial freedom of India's population but the partners outside the bank who build new apps and capabilities on the YONO platform.

Source: https://www.ibm.com/case-studies/state-bank-of-india

Case Study 3: HDFC Bank's Eva

AI Solution: Eva, an AI-powered chatbot

HDFC Bank has developed an AI-based chatbot, "Eva," built by Bengaluru-based Senseforth AI Research. Since its launch in March 2017, Eva (which stands Electronic Virtual Assistant) has addressed over 2.7 million customer queries, interacted with over 530,000 unique users, and held 1.2 million conversations within the first three years of launch.

Eva can assimilate knowledge from thousands of sources and provide simple answers in less than 0.4 seconds, the bank said. Within the first few days of its launch, Eva has answered more than 100,000 queries from thousands of customers from 17 countries across the globe.

"With the launch of Eva, the bank's customers can get information on its products and services instantaneously. It removes the need to search, browse or call. Eva also becomes smarter as it learns through its customer interactions. Going forward, Eva would be able to handle real banking transactions as well, which would enable HDFC Bank to offer the true power of conversational banking to its customers," the bank stated in a company news release.

"Eva will complement our existing digital platforms in enhancing experience for our customers," said Nitin Chugh, Country Head – Digital Banking, HDFC Bank.

Source for HDFC bank case study (https://emerj.com/ai-sector-overviews/ai-applications-in-the-top-4-indian-banks/)

Case Study: Transformative Role of AI in Enhancing Port Operations in India

Introduction

In recent years, Indian ports have undergone significant transformations driven by the integration of artificial intelligence (AI) and digital technologies. This case study explores how these advancements have improved operational efficiency, transparency, and overall ease of doing business at Indian ports, focusing on the initiatives led by the Indian Ports Association (IPA).

Background

Indian ports play a crucial role in the country's trade and economy. However, they have historically faced challenges such as congestion, lengthy customs processes, and inefficiencies in cargo handling. To address these issues and improve India's ranking in the World Bank's Ease of Doing Business index, the IPA has spearheaded several digital initiatives.

Digital Initiatives and AI Integration

1) RFID-Based Gate Automation:

Objective: To streamline the entry and exit of cargo, reducing congestion and wait times.
Implementation: RFID technology was introduced to automate gate operations. Trucks carrying cargo are equipped with RFID tags that are scanned at entry and exit points, enabling seamless and quick processing.

Outcome: This has significantly reduced manual checks and paperwork, expediting the movement of goods.

2) Real-Time Cargo Tracking:

Objective: To enhance transparency and efficiency in cargo handling and tracking.
Implementation: Advanced tracking systems utilizing IoT devices have been deployed to provide real-time updates on cargo status. This includes monitoring the location, condition, and movement of goods within the port premises.

Outcome: Stakeholders, including port authorities, shipping companies, and customers, can now access real-time data, leading to better decision-making and coordination.

3) IoT Infrastructure:

Objective: To optimize port operations through data-driven insights.
Implementation: IoT sensors and devices have been installed across various points in the port to collect data on parameters such as equipment performance, cargo movement, and environmental conditions.

Outcome: The data collected is analysed using AI algorithms to predict maintenance needs, optimize resource allocation, and improve overall operational efficiency.

Impact on Ease of Doing Business

1. Reduced Turnaround Time: The integration of AI and digital technologies has significantly cut down the turnaround time for ships and cargo at ports. This has led to quicker loading and unloading processes, enhancing the overall efficiency of port operations.
2. Enhanced Transparency: Real-time tracking and automated processes have increased transparency, building trust among stakeholders, and reducing the likelihood of discrepancies and delays.

3. Cost Efficiency: By minimizing manual interventions and optimizing resource use, these technologies have reduced operational costs for both the port authorities and the businesses using port services.
4. Improved Compliance and Security: Automated systems ensure better compliance with regulatory requirements and enhance security through accurate tracking and monitoring of cargo.

Challenges and Future Directions

1. Integration with Legacy Systems: One of the major challenges faced was integrating new digital systems with existing legacy infrastructure. Continuous efforts are needed to upgrade and modernize these systems.
2. Training and Adaptation: Ensuring that port staff are adequately trained to use new technologies remains crucial. Regular training programs and workshops are necessary to facilitate smooth adaptation.
3. Scalability and Expansion: As trade volumes grow, there is a need to scale up these technologies to handle increased traffic and complexity. Future initiatives should focus on expanding the digital infrastructure to other ports across India.

Conclusion

The adoption of AI and digital technologies at Indian ports, led by initiatives from the IPA, has brought about a significant transformation in port operations. These advancements have not only improved the ease of doing business but have also positioned Indian ports as modern, efficient, and competitive on the global stage. Continuous innovation and investment in digital infrastructure will be key to sustaining these improvements and addressing future challenges.

Source: Article re-written from the below

https://ipcsa.international/news/2021/03/19/indian-ports-association-leads-the-effort-in-digitalisation-for-efficiency-transparency-and-ease-of-doing-business/

Additional reading material

1) Artificial Intelligence (AI) in India: Platforms, Policy Papers, and Reports (https://www.dwih-newdelhi.org/en/topics/ai/artificial-intelligence-ai-in-india/artificial-intelligence-ai-in-india-platforms-policy-papers-and-reports/)
2) Ease of Doing Business in India: Rapid Rewind (https://ciiblog.in/ease-of-doing-business-in-india-rapid-rewind/)

Transformative Trends in India's BFSI Sector

The Indian banking and finance sector reflects a story of resilience, innovation, and significant strides towards digital transformation. Navigating through the ups and downs of the pandemic's economic impact, this year has been pivotal in shaping a more robust and technologically advanced financial landscape in India. From policy reforms to achieving new milestones in digital transactions, the sector has played a crucial role in steering the country's economic recovery and growth.

The Indian banking sector in FY 2022-23 held total assets of ₹138.38 lakh crore in the public sector and ₹83.39 lakh crore in the private sector. Public sector banks contributed 58.81% to the total banking assets, which also includes foreign banks. In terms of interest income, public sector banks dominated with over 48.05% contribution, reaching ₹8.41 lakh crore, while private sector banks recorded ₹5.74 lakh crore in the same period.

Union Budget 2023-24

The fiscal year commenced with the Union Budget 2023-24, setting a tone of optimism and growth for the banking and finance sector. Major announcements included an increased focus on digital banking, support for Micro, Small, and Medium Enterprises (MSMEs), and initiatives for financial inclusion. A significant allocation was made towards setting up digital banking units in 75 districts, symbolizing a commitment to enhancing digital penetration in the banking sector. Additionally, the budget proposed several measures to streamline the tax regime, offering relief to small taxpayers and boosting consumer spending.
In terms of the banking sector, the government's decision to recapitalize public

sector banks infused new vigor, enhancing their lending capacity. The emphasis on infrastructure financing, with the setting up of a Development Finance Institution (DFI), was seen as a pivotal step in facilitating long-term infrastructure projects, crucial for India's growth trajectory.

The union budget 2023-24 highlighted the new tax regime undergoing significant alterations. The country's employed individuals have eagerly anticipated a straightforward and easily compliant direct tax system. According to the revised structure, individuals are exempt from paying income tax on earnings up to Rs 7 lakh per annum in the new tax regime.

New Tax Rates	
Total Income(Rs)	**Rate (per cent)**
Up to 3,00,000	Nil
From 3,00,000 to 6,00,000	5
From 6,00,001 to 9,00,001	10
From 9,00,001 to 12,00,000	15
From 12,00,001 to 15,00,000	20
Above 15,00,000	30

Policy Reforms and Regulatory Changes

This year marked a significant year for policy reforms and regulatory changes in India's banking sector. The Reserve Bank of India (RBI) played a critical role, with a series of policy rate adjustments aimed at balancing growth and inflation. The repo rate adjustments, which have been kept 6.5% by the Monetary Policy Committee (MPC), were carefully calibrated, reflecting the central bank's commitment to maintaining monetary stability while supporting economic recovery.

Regulatory changes introduced this year had a profound impact on banking operations. The RBI's tightened norms on Non-Performing Assets (NPAs) reflected a stringent stance on asset quality. Moreover, the introduction of new guidelines for digital lending aimed at protecting consumer interests while fostering a healthy digital finance ecosystem.
The year also witnessed a push towards greater compliance with international banking standards, including Basel III norms. These regulatory measures were pivotal in enhancing the resilience and transparency of the banking system, ensuring a more stable financial environment.

Digital Banking and Technological Advancements

Indian banking is incomplete without mentioning the exponential growth in digital banking and technological advancements. The sector saw an unprecedented surge in online banking services, mobile banking apps, and digital payment solutions. Banks collaborated extensively with fintech companies, leveraging their technology to offer innovative services like instant loans, digital KYC, and AI-driven customer support.

Digital wallets and payment systems, especially Unified Payments Interface (UPI), saw a significant increase in adoption, driven by the convenience and security they offered. The RBI's introduction of 'Digital Rupee' trials marked a new era in the country's financial technology landscape, potentially revolutionizing how transactions are conducted.

UPI's Growth and the 10 Billion Transaction Milestone

One of the most remarkable stories of this year was the UPI crossing the 10 billion transaction milestone. This achievement underscored UPI's

dominance in the digital payment space in India. The year saw a consistent increase in UPI transactions, both in volume and value, driven by its ease of use, interoperability, and wide merchant acceptance.

UPI's growth not only facilitated consumer convenience but also played a significant role in promoting digital financial inclusion across the country.

The economic implications of UPI's success are far-reaching. It has not only reduced the dependency on cash but also opened new avenues for small and medium-sized businesses to participate in the digital economy.

The State Bank of India recorded nearly 3 billion UPI transactions in Q4 2023, holding the highest share in the UPI market. HDFC Bank and Bank of Baroda followed with 870 million and 643 million transactions respectively. PhonePe led the UPI payments app market with a 46% share, followed by Google Pay at 36% and Paytm at 13%.

Financial Inclusion and MSME Support

This year, the Indian government and the RBI continued their focus on financial inclusion and support for MSMEs. Various initiatives were launched to extend banking services to the unbanked and underbanked segments of the population. These included expanding the network of banking correspondents, introducing low-cost digital banking solutions, and promoting microfinance.

Special emphasis was placed on supporting MSMEs, which are the backbone of the Indian economy. The government introduced several credit schemes and subsidy programs to ease the financial burden on small businesses. The Emergency Credit Line Guarantee Scheme (ECLGS) and the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) were instrumental in providing collateral-free loans to MSMEs.

These measures not only helped in reviving small businesses post-pandemic but also played a crucial role in job creation and economic diversification.

Challenges and Outlook

Despite the numerous achievements, the banking sector in India faced several challenges in 2023. The management of NPAs remained a critical issue, with banks striving to strengthen their asset quality. Compliance with evolving regulatory norms also presented a challenge, requiring significant adjustments in operational strategies.

Looking ahead, the banking sector is expected to continue its trajectory of growth and innovation in 2024. The focus is likely to remain on digital transformation, cybersecurity, and sustainable banking practices. The sector is also poised to play a vital role in supporting India's ambitious economic growth targets.

The Indian Fintech industry is estimated to be at US$ 150 billion by 2025. India has the 3rd largest FinTech ecosystem globally. India is one of the fastest-growing Fintech markets in the world. There are currently more than 2,000 DPIIT-recognized Financial Technology (FinTech) businesses in India, and this number is rapidly increasing.

To sum it up

The Indian banking and finance sector stands at a juncture of significant transformation and growth. The year was marked by remarkable milestones, policy reforms, and technological advancements that have set the stage for a more inclusive, efficient, and resilient financial ecosystem. The sector's role in shaping India's economic future looks more promising than ever, as it continues to adapt, innovate, and thrive in an increasingly digital world.

Source: https://bfsi.eletsonline.com/2023-retrospective-transformative-trends-in-indias-bfsi-sector/

Developing Global Consultancy
Indian Giants

Comprehensive Analysis of Healthcare Costing in India: Case Studies and Insights

India's healthcare system presents unique challenges and opportunities for cost management. The following case studies illustrate various facets of healthcare costs, highlighting innovative solutions, disparities, and the impact of public and private sector initiatives within the Indian context.

Case Study 1: Cost Analysis of Public Health Programs

Program: National Rural Health Mission (NRHM)

Objective: Evaluate the cost-effectiveness of NRHM in enhancing rural healthcare.

Findings:

- **Operational Costs:** The study identified substantial expenses related to infrastructure development, healthcare worker training, and operational logistics.
- **Outcome:** Despite high initial investments, the program significantly improved healthcare accessibility and maternal-child health outcomes, demonstrating the long-term cost benefits of investing in rural health infrastructure.

Case Study 2: Private vs. Public Hospital Costs

Comparison: Cost of major surgeries (e.g., cardiac surgery) in public versus private hospitals.

Objective: Understand the cost disparities between public and private healthcare providers.

Findings:

- **Private Hospitals:** Higher costs driven by advanced technology, superior facilities, and specialized staff.
- **Public Hospitals:** Lower costs but faced challenges like inadequate infrastructure, longer waiting times, and variable service quality.
- **Conclusion:** While private hospitals offer superior services, public hospitals remain crucial for low-income populations. Strengthening public hospitals can help balance the cost-quality gap.

Case Study 3: Cost Management in a Private Hospital Chain

Organization: Apollo Hospitals

Objective: Analyze the cost management strategies of one of India's leading private hospital chains.

Findings:

- **Technological Investments:** Adoption of Electronic Health Records (EHR) and telemedicine reduced administrative costs and improved patient management.
- **Operational Efficiency:** Streamlined processes, centralized procurement, and economies of scale led to cost reductions.
- **Outcome:** Enhanced operational efficiency without compromising care quality, contributing to sustainable growth and profitability.

Case Study 4: Insurance and Out-of-Pocket Expenditure

Focus: Impact of health insurance on reducing out-of-pocket (OOP) expenses.

Objective: Evaluate how insurance schemes like Ayushman Bharat influence healthcare costs for patients.

Findings:

- **Insurance Coverage:** Significantly reduced OOP expenses for covered treatments, making healthcare more affordable.
- **Challenges:** Issues related to awareness, accessibility, and delayed reimbursements to hospitals.
- **Outcome:** While insurance schemes are effective in reducing immediate costs, ensuring widespread coverage and timely reimbursements is vital for long-term sustainability.

Case Study 5: Cost-Effective Healthcare Delivery Models

Model: Aravind Eye Care System
Objective: Explore the cost-efficient delivery of eye care services.

Findings:

- **Economies of Scale:** High volume of surgeries and standardized procedures reduced per-unit costs.
- **Cross-Subsidization:** Revenue from paying patients subsidized free or low-cost services for underprivileged patients.
- **Outcome:** A self-sustaining model providing high-quality, affordable eye care, showcasing the potential for cost-effective healthcare delivery.

Case Study 6: Impact of Telemedicine

Program: eSanjeevani

Objective: Assess the cost benefits of telemedicine services implemented during the COVID-19 pandemic.

Findings:

- **Cost Reduction:** Lowered travel and accommodation costs for patients, decreased the burden on tertiary care centres.
- **Increased Access:** Enabled remote consultations, ensuring continued care during lockdowns.
- **Outcome:** Telemedicine proved to be a cost-effective solution with potential for integration into regular healthcare services.

Conclusion

These case studies illustrate the complexities and opportunities in managing healthcare costs in India. Innovations in technology, strategic investments, and efficient delivery models play crucial roles in optimizing costs while ensuring quality and accessibility of healthcare services across the country.

Investment Management in Infrastructure: A Comprehensive Guide

Front-end planning (FEP), also known as front-end engineering design (FEED) or pre-project planning, is a crucial phase in infrastructure projects. This stage involves laying the groundwork for the entire project, ensuring that all aspects are carefully considered and planned. Effective FEP is vital for successful project execution, as it helps mitigate risks, manage costs, and achieve desired outcomes. Below is an overview of the key components of FEP in infrastructure investment management, supplemented with relevant case studies.

1. Scope Definition

Project Objectives: Clearly define the goals, outcomes, and deliverables of the project. Stakeholder Identification: Identify all parties involved or affected by the project, including government agencies, local communities, investors, and contractors.

Scope of Work: Specify the boundaries of the project, detailing what is included and excluded to prevent scope creep and ensure focused execution.

Case Study: Mumbai Metro

The Mumbai Metro project, aimed at easing traffic congestion, successfully defined clear objectives, and involved extensive stakeholder engagement. This clarity helped manage expectations and align efforts from the outset.

2. Feasibility Studies

Technical Feasibility: Assess whether the project is technically viable with the available technology and resources.

Economic Feasibility: Conduct cost-benefit analyses, return on investment (ROI) calculations, and other financial assessments to ensure the project is economically sound.

Environmental Impact: Evaluate the environmental consequences and ensure compliance with relevant regulations.

Case Study: Solar Power Plant in Gujarat
The Gujarat Solar Park project included comprehensive feasibility studies that confirmed the technical and economic viability of the solar installations, while also addressing environmental concerns through sustainable practices.

3. Risk Management

Risk Identification: Identify potential risks and uncertainties that could affect the project.

Risk Analysis: Evaluate the likelihood and impact of these risks.

Risk Mitigation: Develop strategies to minimize or manage identified risks effectively.

Case Study: Delhi-Mumbai Industrial Corridor

This ambitious infrastructure project incorporated robust risk management strategies to address financial, environmental, and logistical risks, ensuring smoother execution and resilience against unforeseen challenges.

4. Project Strategy

Execution Plan: Outline the approach for project delivery, including methodologies, timelines, and milestones.

Contract Strategy: Decide on contract types, procurement strategies, and legal considerations to protect the interests of all parties.

Resource Planning: Plan for the necessary resources, including labor, materials, and equipment, to ensure timely and efficient project execution.

Case Study: Bangalore International Airport

The project's strategic execution plan included phased development and public-private partnerships, which facilitated efficient resource allocation and risk-sharing.

5. Cost Estimation and Budgeting

Cost Estimates: Prepare preliminary cost estimates based on the defined scope and feasibility studies.

Budget Development: Develop a comprehensive budget that includes contingencies and allowances for potential changes.

Case Study: Chennai Metro Rail

Accurate cost estimation and budget management were crucial in the Chennai Metro Rail project, allowing for effective financial oversight and adjustments as needed.

6. Design and Engineering

Conceptual Design: Develop initial design concepts and configurations.
Preliminary Engineering: Conduct preliminary engineering analyses to support the design concepts.

Design Specifications: Prepare detailed design specifications and criteria to guide the project.

Case Study: Hyderabad Outer Ring Road

The project's success was largely attributed to meticulous design and engineering planning, which provided a strong foundation for subsequent construction phases.

7. Permitting and Regulatory Approvals

Regulatory Compliance: Ensure the project complies with all relevant laws and regulations.

Permitting: Obtain the necessary permits and approvals from authorities.

Case Study: Mumbai Trans Harbour Link

Navigating complex regulatory landscapes, this project secured all necessary permits, demonstrating the importance of early and thorough compliance efforts.

8. Stakeholder Engagement

Communication Plan: Develop a plan for regular communication with stakeholders throughout the project lifecycle.

Feedback Mechanisms: Establish ways to gather and respond to stakeholder input and concerns.

Case Study: Yamuna Expressway

Engaging stakeholders early and continuously in the Yamuna Expressway project helped in addressing concerns promptly and maintaining support throughout the project.

9. Sustainability and Environmental Considerations

Sustainable Practices: Incorporate sustainable practices and materials into the project design.

Environmental Protection: Plan for minimizing environmental impact and enhancing sustainability.

Case Study: Kochi Water Metro

The Kochi Water Metro integrated sustainable practices, such as using eco-friendly materials and renewable energy sources, setting a benchmark for environmentally conscious infrastructure projects.

10. Quality Assurance and Control

Quality Plan: Develop a plan to ensure quality throughout the project lifecycle.

Standards and Procedures: Establish standards and procedures to maintain quality and ensure project deliverables meet specified criteria.

Case Study: Delhi Metro

The Delhi Metro project's commitment to stringent quality assurance and control measures resulted in high safety standards and operational excellence.

Conclusion

Front-end planning is integral to the success of infrastructure projects, providing a structured approach to project initiation and development. By investing time and resources in thorough FEP, stakeholders can achieve better project outcomes, reduce risks, and manage costs effectively. The case studies provided demonstrate the practical application of FEP principles, offering valuable insights for future infrastructure investments.

Reference material

1) Cost Management in Infrastructure Projects: An Empirical Study" by Anil Kumar Gupta
2) Article "The Role of Front-End Planning in Major Infrastructure Projects in India" by K. C. Iyer and K. N. Jha
3) Article "Cost Overruns and Time Delays in Infrastructure Projects: Extent, Causes, and Remedies" by M. Ramachandran

Opportunities and Strategies in Social Sector Consulting in India

India's social sector spending has seen a robust annual growth of 13% over the last five years, reaching approximately Rs 23 trillion ($280 billion) in FY 2023, which is 8.3% of the country's GDP. However, this still falls short of the Niti Aayog's estimated requirement of 13% of GDP to meet the 17 UN Sustainable Development Goals (SDGs) by 2030. While public spending constitutes the majority (95%) of this expenditure, private philanthropy has also grown, with significant contributions from CSR and high-net-worth individuals.

Education

Education is pivotal in balancing India's socio-economic fabric. The nation is committed to providing free and compulsory education to children aged 6-14 years, as mandated by legislation. Efforts are ongoing to strengthen higher and technical education, with the Central Advisory Board of Education (CABE) advising on these matters. The New Education Policy integrates these objectives fully.

Consulting Opportunities:

- **Improving Educational Outcomes:** Enhancing student performance and learning achievements.
- **Teacher Training:** Developing programs to enhance the skills and competencies of educators.
- **Curriculum Development:** Creating modern and relevant curricula that meet current educational needs.
- **Technology Integration:** Implementing technology solutions in schools to enhance learning.

Healthcare

India has made significant strides in healthcare, with life expectancy rising and maternal and infant mortality rates declining. However, disparities exist across states, and the healthcare system faces challenges such as quality, accessibility, and affordability. The Ayushman Bharat program aims to address these issues, but its full impact is yet to be seen.

Consulting Opportunities:

- **Public Health Initiatives:** Improving public health outcomes through targeted programs.
- **Healthcare Delivery Systems:** Enhancing the efficiency and effectiveness of healthcare services.
- **Access to Medical Services:** Expanding the reach of medical services, especially in underserved areas.

Sanitation

The Swachh Bharat Mission has been a landmark initiative, achieving 100% sanitation coverage by constructing over 100 million household toilets. This movement reflects India's commitment to improving public health and hygiene.

Consulting Opportunities:

- **Sanitation Facilities:** Enhancing sanitation infrastructure in both rural and urban areas.
- **Clean Drinking Water:** Ensuring access to safe and clean drinking water.

Rural Development

Consulting opportunities in rural development include strategic decision-making, funding arrangements, and sustainable development models. Programs aimed at improving rural livelihoods, infrastructure, and access to services are critical.

Environmental Sustainability

Initiatives focusing on climate change mitigation, sustainable agriculture, and conservation efforts are vital. Partnering with environmental NGOs, government bodies, and international organizations can drive significant impact.

Consulting Opportunities:

- **Climate Change Mitigation:** Developing strategies to reduce carbon footprints and promote renewable energy.
- **Sustainable Agriculture:** Promoting practices that enhance productivity while preserving the environment.
- **Conservation Efforts:** Protecting natural resources and biodiversity.

Strategies for Entering the Social Sector Consulting Market

1. **Networking and Partnerships:**
    - Build relationships with government officials, NGOs, and international organizations.
    - Attend industry conferences, workshops, and seminars to connect with potential clients and partners.

2. **Understanding Local Context:**
    - Develop a deep understanding of the socio-economic conditions, cultural dynamics, and policy environment in India.
    - Customize solutions to meet the specific needs and challenges of different regions and communities.

3. **Leveraging Technology:**
    - Utilize technology for innovative solutions in data collection, monitoring, and evaluation of social projects.
    - Offer digital transformation services to traditional NGOs and government bodies.

4. **Building a Strong Team:**
    - Assemble a team with diverse expertise including public policy, social work, economics, and technology.
    - Provide continuous training to stay updated with the latest trends and methodologies in the social sector.

5. **Impact Measurement:**
    - Develop robust frameworks for measuring the impact of social projects.
    - Use data-driven insights to demonstrate the effectiveness of interventions to stakeholders and funders.

6. **Funding and Sustainability:**
    - Identify and secure funding from government grants, international donors, and private sector CSR initiatives.
    - Develop sustainable business models that ensure the long-term viability of social projects.

Resources for Opportunities

- **Government Portals:**
    - National Rural Livelihoods Mission (NRLM)
    - National Skill Development Corporation (NSDC)
    - Ministry of Health and Family Welfare

- **NGO Platforms:**
    - GuideStar India
    - GiveIndia
    - NGO Darpan

- **International Organizations:**
    - World Bank
    - United Nations Development Programme (UNDP)

- Asian Development Bank (ADB)

- **Job Portals and Consulting Firms:**
  - DevNetJobs India
  - NextBillion
  - Social Impact

Next Steps

- Research specific projects and areas where your expertise is most needed.
- Reach out to potential partners and clients to explore collaboration opportunities.
- Stay updated with the latest developments and funding opportunities in the social sector.

By leveraging your expertise and building strong partnerships, you can make a significant impact in the social sector in India.

Reference material

1) Commentary on "India 2024: Policy priorities for the new government" (https://www.brookings.edu/articles/india-2024-policy-priorities-for-the-new-government/)

Social Sector Consulting Opportunity

Introduction

India's social sector spending over the last five years experienced a robust annual growth of 13% and stands at approximately Rs 23 trillion ($280 billion) in FY 2023 (8.3% of GDP), says a report titled 'India Philanthropy Report 2024' by strategic philanthropy foundation Dasra written in collaboration with Bain & Co. Public spending constitutes most of the social expenditure (95%). However, India continues to fall short of Niti Aayog's estimated spending (13% of GDP) needed to meet the 17 UN Sustainable Development Goals (SDGs) commitments by 2030, which include eradication of poverty, quality education and healthcare, gender equality, and climate action.

While the Indian donor base is broadening, CSR and HNI/affluent donations are growing moderately. Private philanthropy grew 10% in FY 2023, to Rs 1.2 trillion ($15 billion) as per the report. This faster growth (vs FY 2018–2023's 5% annual growth) was driven by growth in family philanthropy (15%) and retail (12%). In fact, CSR spend on Social Sector is a major contributor ranging from Education, Health Care, Sanitation, Rural development through adoption of villages etc.

Consulting opportunities in the social sector in India are numerous and can span across various areas such as education, healthcare, sanitation, rural development, and more. Here are some avenues and strategies to explore if you're looking to enter or expand in this field:

Core Areas of Social Sector

- ***Education Sector:***

Education plays a significant and remedial role in balancing the socio-economic fabric of the Country. Since citizens of India are its most valuable resource, our billion-strong nation needs the nurture and care in the form of basic education to achieve a better quality of life. This warrants an all-round development of our citizens, which can be achieved by building strong foundations in education.

In line with the goal of nation building, India has been committed to providing free and compulsory education to all children. Towards this end, Indian Parliament has enacted a legislation making free and compulsory education a Right of every child in the age group 6-14 years. Efforts are being made to create a robust and vast system of higher and technical education. The Central Advisory Board of Education (CABE) is the highest advisory body to advise the Central and State Governments in the field of education. The New Education Policy fully integrates the objectives.

While Both State and Central Governments have their school, Private institutions are equally present in all areas. Immense opportunity for consulting exist in Projects focusing on improving educational outcomes, teacher training, curriculum development, and technology integration in schools. Work with government bodies, NGOs, or private educational institutions.

- ***Health Care:***

India has made significant improvements in the health outcomes of its people. Life expectancy at birth increased to 69.6 years in 2020, from expected 47.7years in 1970. MMR declined from 301 to 130 per 100 000 live births between 2003 and 2014-16, and IMR declined from 68 in the year 2000 to 24 per 1000 live births in 2016. However, progress is uneven across states, and demographic and epidemiological changes means, the country faces a double burden of disease and an ageing population. The top three causes of death in 2019 were ischaemic heart disease, COPD and stroke.

India has a mixed health-care delivery system. Policy recommendations in the 1940s laid the foundation for a government-funded, three-tiered public health system to deliver preventive and curative health care services. By the 1980s the private sector's role in health began to gain prominence. Today, nearly 70% of all outpatient visits, about 58% of all inpatient episodes are provided by either for-profit or not-for-profit private providers. Quality of care, accessibility and affordability of health care services, medicines and diagnostics are a challenge. There are also differences in health outcomes between states. Several policy initiatives since the 2000s have been launched to strengthen India's health system towards providing UHC and improving health outcomes and the Ayushman Bharat programme is attempting to tackle these issues at both hospital and outpatient settings, it is still too early to look at its impact. (Source WHO Report)

Consultants are engaged in Initiatives aimed at improving public health, healthcare delivery systems, and access to medical services. Collaboration with public health departments, hospitals, and international health organizations.

- ***Sanitation:***

The evolution of sanitation in India is a rich tapestry woven with ancient wisdom and modern initiatives. From the Sindhu Valley civilization's innovative toilet construction to contemporary nationwide movements, the journey reflects a commitment to improving public health and hygiene.

Responding to the imperative for comprehensive sanitation coverage, the Swachh Bharat Mission was launched on October 2, 2014, by the Hon'ble Prime Minister, with a focus on making India Open Defecation Free (ODF). This monumental endeavour mobilized millions, resulting in it becoming the largest mass movement and behavioural change programme in the world that led to the construction of over 100 million individual household toilets within five years, achieving 100% sanitation coverage by 2019. Tremendous opportunity for Programs to enhance sanitation facilities and provide clean drinking water in rural and urban area Partner with municipal corporations, NGOs, and international bodies like UNICEF or WHO. Rural Development provide opportunity to provide consulting in strategic decisions, funding arrangements, new models to sustain the development program.

Other Areas of Social Sector

There are many other areas which are under Social sector which provides immense opportunity for rendering services through consulting expertise. Some of them are:

- *Environmental Sustainability:*
  - ✓ Initiatives focusing on climate change mitigation, sustainable agriculture, and conservation efforts.
  - ✓ Partner with environmental NGOs, government bodies, and international organizations.

- *Strategies for Entering the Social Sector Consulting Market:*

  Networking and Partnerships:

  - Build relationships with key stakeholders in the sector including government officials, NGOs, and international organizations.
  - Attend industry conferences, workshops, and seminars to connect with potential clients and partners.

  Understanding Local Context:

  - Develop a deep understanding of the socio-economic conditions, cultural dynamics, and policy environment in India.
  - Customize solutions to meet the specific needs and challenges of different regions and communities.

Leveraging Technology:

- Utilize technology to provide innovative solutions for data collection, monitoring, and evaluation of social projects.
- Offer digital transformation services to traditional NGOs and government bodies.

Building a Strong Team:

- Assemble a team with diverse expertise including public policy, social work, economics, and technology.
- Provide continuous training to stay updated with the latest trends and methodologies in the social sector.

Impact Measurement:

- Develop robust frameworks for measuring the impact of social projects.
- Use data-driven insights to demonstrate the effectiveness of interventions to stakeholders and funders.

Funding and Sustainability:

- Identify and secure funding from government grants, international donors, and private sector CSR initiatives.
- Develop sustainable business models that ensure long-term viability of social projects.

Resources for Opportunities:

Government Portals:

- National Rural Livelihoods Mission (NRLM)
- National Skill Development Corporation (NSDC)
- Ministry of Health and Family Welfare

NGO Platforms:

- GuideStar India
- GiveIndia
- NGO Darpan

International Organizations:

- World Bank
- United Nations Development Programme (UNDP)
- Asian Development Bank (ADB)

Job Portals and Consulting Firms:

- DevNetJobs India
- NextBillion
- Social Impact

Road Ahead:

- Research specific projects and areas where your expertise is most needed.
- Reach out to potential partners and clients to explore collaboration opportunities.
- Stay updated with the latest developments and funding opportunities in the social sector.
- By leveraging your expertise and building strong partnerships, you can make a significant impact in the social sector in India.

Investment Management in Infrastructure

Introduction

India in the last decade embarked on Infrastructure development in a Big way. A government initiative to invest over $1.4 trillion in infrastructure projects by 2025.Covers sectors like energy, roads, railways, and urban infrastructure. With a focus on modernizing transportation networks, upgrading urban amenities, and expanding digital infrastructure, the government has launched several transformative initiatives. From the development of highways, railways, and airports to the promotion of waterways and ropeway systems, these efforts are aimed at fostering inclusive and sustainable development across the nation. India has achieved significant milestones in infrastructure development, including the inauguration of the world's longest highway tunnel, the **Atal Tunnel**, and the construction of the world's highest railway bridge, the **Chenab Bridge**. Additionally, India has set records by unveiling iconic landmarks like the **Statue of Unity** – the world's tallest statue and embarked on transformative projects like the **Zojila Tunnel**, Asia's longest tunnel, for all-weather connectivity in Ladakh.[1] Further, from the architectural excellence of the Atal Setu in Mumbai, Bogibeel Bridge over Brahmaputra, Jaiswal Bridge and Dhola- Sadiya Bridge in the northeast, the infrastructure landscape in New India is reaching unprecedented heights.

Types of Infrastructure Projects:

- Transport: Roads, highways, railways, airports, and ports.
- Energy: Power generation (renewable and non-renewable), transmission, and distribution networks.
- Urban Infrastructure: Smart cities, affordable housing, water supply, and sanitation.
- Telecommunications: Broadband networks, fiber optic cables, and mobile towers.

Let that be Roads and Buildings, Transportation including Airports, Railways, Metro etc. Power including Renewable power with huge capacities built in Solar as well as Wind energy etc.

Key Stakeholders:

- Government: Central and state governments, municipal bodies, and public sector undertakings (PSUs).
- Private Sector: Domestic and international companies, construction firms, and technology providers.
- Financial Institutions: Banks, investment firms, insurance companies, and pension funds.
- Multilateral Agencies: World Bank, Asian Development Bank (ADB), and other development finance institutions.

Under Interim Budget 2024-25, capital investment outlay for infrastructure has been increased by 11.1% to Rs.11.11 lakh crore (US$ 133.86 billion), which would be 3.4 % of GDP. FDI in construction development (townships, housing, built-up infrastructure and construction development projects) and construction (infrastructure) activity sectors stood at US$ 26.54 billion and US$ 33.52 billion, respectively, between April 2000-December 2023. In order to boost the sector and to reach the objectives, several measures have been initiated for Investments into this sector. This involves the strategic allocation of capital to various infrastructure projects to achieve financial returns while supporting the country's economic development. Given the government's focus on infrastructure development and the need for substantial investment in sectors like transportation, energy, water, and urban infrastructure, this

area presents significant opportunities for investors.

Sustainable infrastructure – India's path to a resilient future

India has the target of ensuring net-zero emissions by 2070 and 45% reduction in emission intensity of its GDP by 2030. The transportation sector remains a significant contributor to carbon emissions in the country, with around 14% share in greenhouse gas (GHG) emissions. The massive implications of the sector on the climate makes it imperative to embrace sustainable practices. Hence, the government is emphasizing on developing a low-carbon and sustainable transportation sector to continue its development trajectory while balancing the pledged climate goals. The transportation sector has been embracing various green initiatives such as electrification, installation of renewable energy sources, waste management, and carbon neutrality targets, etc. to reduce and mitigate environment footprint. Tools such as GHG emissions calculator and Unified Logistics Interface Platform have been introduced to track and measure emissions, in addition to introducing policies such as Green Highway Policy and Harit Sagar, to promote sustainability initiatives. The government is moving towards various environmentally sustainable practices but there is still a long way to go. It will need to embrace eco-friendly technologies, invest more in renewable energy, and prioritize sustainable development to not only contribute to the country's climate goals but also unlock new opportunities for growth and innovation in the sector. Private sector investments in green projects are a necessity, driven by the demand for sector expertise, technological advancements, and access to patents. Public and private collaboration can invest in digital tools, data analytics and ensure information sharing on all projects to capture quantitative data, KPIs and develop sustainability scorecards. The transport sector has a critical role to play but needs to be better incentivized to play its part.

The government has brought in several initiatives to attract private sector investments particularly in the areas of ease of doing business and mitigating risks in PPP frameworks.

Policy

- Adoption of a liberal FDI policy to attract foreign investments with majority of transport sectors open to 100% FDI. The government also undertakes a periodic review of the FDI policy to ensure that it remains investor friendly.
- Setting up of the digital Pro-Active Governance and Timely Implementation (PRAGATI) initiative to fast-track regulatory approval process for major projects.
- Well-developed framework for Public-Private-Partnerships (PPP) in the highway sector. The Asian Development Bank has ranked India as the first spot in PPP operational maturity and has designated India as a developed market for PPPs.
- Increasing the concession period for projects to reduce the risk for private players.

Tax incentives

- 100% Income Tax exemption in any consecutive 10-year period out of 20 years of operations for road construction projects.

Systems and processes

- Gati Shakti Master Plan to integrate 16 different ministries to integrate planning and execution of infrastructure projects and fast track clearances.
- Implementing single window clearance (NSWS) to streamline process for obtaining regulatory approvals and clearances on a single portal, before starting a new business.44
- Online submission of documents, digital approvals, and project

monitoring through online platforms contribute to faster clearances.

- The Insolvent and Bankruptcy Code (IBC) has created a comprehensive and uniform process for insolvency resolution for all companies and partnerships.
- Facilitating the ease of exit for business by setting up of Centre for Processing Accelerated Corporate
- Exit (C-PACE), a dedicated facility to speed up the voluntary closure of companies

Investment models

- Government has introduced InvITs to facilitate the monetization of completed and revenue-generating infrastructure projects.
- Monetization of assets to involve the private sector in the operation and maintenance of existing infrastructure assets, the government
- aims to generate funds for new projects and improve overall efficiency. This also allows private sector to pick-up smaller projects in these sectors.
- In capital intensive projects such as logistics parks, the government is providing land at free of cost along with basic rail/road connectivity.

National Monetisation Pipeline (NMP)

The NMP envisages an aggregate monetisation potential of Rs 6-lakh crore through the leasing of core assets of the Central government in sectors such as roads, railways, power, oil and gas pipelines, telecom, civil aviation etc, over a four-year period (FY 2022-25). The Monetization through NMP only includes core assets, excluding monetization through disinvestment of non-core assets. Currently, only assets of central government line ministries and CPSEs in infrastructure sectors have been included. The government is currently in the process of coordinating and collating asset pipelines from states to expand the scope of the NMP, incorporating assets at both the central and state levels in due course. To streamline the process, the monetization of non-core assets, including land, real estate, and infrastructure, is being transferred from the Department of Investment and Public Asset Management (DIPAM) to the Department of Public Enterprises (DPE) within the Ministry of Finance. This pipeline is intended to support investments under the National Infrastructure Pipeline (NIP) worth Rs 111 trillion in six years through FY25.The timeline for the NMP has been strategically set to be co-terminus with the remaining period under the National Infrastructure Pipeline (NIP).

Recently, the Centre has decided to conduct an Asset Recycling Drive under the National Monetization Pipeline (NMP), aiming to generate resources for new investments in infrastructure.

- The Centre's asset recycling drive is expected to generate around Rs 1.5 trillion in the fiscal year 2024-25.
- Transactions with monetisation values of around Rs 0.97 trillion were completed in 2021-22, and Rs 1.32 trillion in 2022-23.

The Ministry of Road Transport and Highways (MoRTH) plan for asset monetization aligns with broader efforts to mobilise funds for infrastructure development and modernization across the country. By monetizing assets such as highways, bridges, and toll plazas, the ministry aims to attract private investment and facilitate the implementation of critical infrastructure projects. Currently, MoRTH monetises its assets under three different modes -- toll-operate-transfer (TOT) model, Infrastructure Investment Trust (InvIT) and project-based financing, in order to provide all categories of investors an opportunity to invest in assets pertaining to highways and associated infrastructure.

Infrastructure Investment Trusts (InvITs):

InvITs allow pooling of funds from various investors for infrastructure projects. Infrastructure investment trusts in India are investment vehicles that enable individual and

institutional investors to invest in infrastructure projects, providing a way to pool resources for large-scale projects. They function similarly to mutual funds, but they are specifically designed to manage income-generating infrastructure assets.

Key Features of InvITs:

Structure:

- Sponsor: Promoter of the InvIT who sets up the trust.
- Trustee: Custodian of the assets, ensuring that the InvIT operates in the best interests of the unit holders.
- Investment Manager: Manages the assets and investments of the trust.
- Project Manager: Oversees the operations of the infrastructure projects.

Types:

- Public InvITs: Listed on stock exchanges, allowing retail investors to participate.
- Private InvITs: Not listed and usually targeted at institutional investors.

Regulation:

Governed by the Securities and Exchange Board of India (SEBI) under the SEBI (Infrastructure Investment Trusts) Regulations, 2014.

InvITs are required to invest primarily (at least 80%) in completed and revenue-generating infrastructure projects.

Advantages:

- Provides regular income distribution to investors.
- Offers liquidity as units can be traded on stock exchanges.
- Enables diversification of investment portfolio with exposure to infrastructure assets.
- Tax-efficient structure for investors and sponsors.

Major InvITs in India:

- IRB InvIT Fund:
  - ✓ Focuses on toll-road assets.
  - ✓ One of the first InvITs to be listed in India.

India Grid Trust (IndiGrid):

- Concentrates on power transmission assets.
- Offers stable cash flows and long-term growth potential.

IndInfravit Trust:

- Invests in road assets.
- Backed by global institutional investors.

Power Grid Infrastructure Investment Trust:

- Managed by Power Grid Corporation of India Limited
- Focuses on power transmission networks
- Investment Considerations
- Yield and Income Distribution

InvITs typically distribute a significant portion of their income as dividends to unit holders, making them attractive for income-focused investors.

Capital Appreciation:

- Potential for capital gains through appreciation in the value of the underlying infrastructure assets.

Risk Factors:

- Regulatory changes, economic conditions, and project-specific risks can impact the performance of InvITs
- Interest rate fluctuations can affect the attractiveness of the yields offered by InvITs.

Liquidity:

- Listed InvITs offer liquidity similar to stocks, but the trading volumes can vary, affecting ease of entry and exit.
- Suitable for large investors, allowing significant investment in private InvITs.

Regulatory and Market Outlook:

- The Indian government and SEBI have been encouraging the development of InvITs to boost infrastructure investment.
- Recent reforms and policy measures aim to enhance transparency, governance, and investor protection in the InvITs market.

Infrastructure Investment Trusts in India offer a unique opportunity for investors to gain exposure to the infrastructure sector, providing both income and potential for capital appreciation. As the Indian economy continues to grow, the demand for robust infrastructure will drive the growth and performance of InvITs, making them an attractive investment option. Similarly, there are many other Funds which are funding infrastructure projects and also managing the assets where there is an opportunity.

Real Estate Investment Trusts (REITs):

A Real Estate Investment Trust (REIT) primarily focus on income-generating real estate, which includes infrastructure like office buildings, shopping malls, and logistics centers. Real estate is a good investment option because it allows you to diversify your portfolio beyond bonds and stocks. This investment option allows both big and small investors to invest their money in REITs and earn profits accordingly. Moreover, REIT shares are attractive due to their two characteristics:

- Strong dividend
- Long-term capital appreciation

Properties included in a real estate investment trust (REIT) are:

- Data centers
- Infrastructure
- Healthcare facilities
- Housing complexes and other properties

Below is a curated list of the best real estate stocks in India in 2024:

Name of the Company	Market Cap (in Cr)	Share Price
DLF Ltd	₹1,92,344	₹747.4
Oberoi Realty Ltd	₹54,693	₹1,304
Godrej Properties Ltd	₹64,200	₹2,266.4
Prestige Estates Projects Ltd	₹51,578	₹1,196.5
Sobha Ltd	₹13,990	₹1,396.9
Phoenix Mills	₹44,546	₹2,367.05
Brigade Enterprises Ltd	₹22,569	₹950.25
Mahindra Lifespace Developers Ltd	₹8,662	₹558.9
Sunteck Realty Ltd	₹6,627	₹429.9
Embassy Office Parks REIT	₹32,216	₹354.92

Note: *The data in the list is from 24th January 2024*
Source: https://www.smallcase.com/collections/what-is-reit/

Why Invest in a REIT?

- REITs offer a mechanism for private investors to share in the revenue generated by commercial real estate without actually going out and purchasing the commercial real estate.

- REITs provide investors with a consistent income stream by investing in properties that generate consistent rental income. This makes them less risky in comparison with other financial instruments.
- The best part about REIT investing is that they provide the benefit of diversification without worrying about the ownership and maintenance of immovable properties.

Types of REITs

The following are the types of real estate investments that you can try to invest in REIT India.

Equity
Equity is one of the most popular types of REITs. Mostly, it focuses on running and overseeing commercial buildings that produce income. Moreover, rent is a typical source of income in this area.

Mortgage
Mortgage REITs, commonly known as "mREITs," are associated with lending money to proprietors and extending mortgage facilities. These REITs make money by charging interest on the money they lend to business owners.

Hybrid
Hybrid REITs allow investors to diversify their portfolios by investing in both equity and mortgage REITs. Here, both rent and interest are the primary sources of income for investors.

Private REITs
Private REITs are real estate funds or companies that are not traded on National Securities Exchange and are also not registered with the SEBI. Only institutional investors can purchase or invest in these REITs.

Publicly traded REITs
Real estate investment trust shares are traded on the National Securities Exchange and registered with the SEBI (Securities & Exchange Board of India). These shares can be purchased by individual investors through the NSE.

Public non-traded REITs
Non-traded REITs that are publicly traded are not traded on the National Stock Exchange but are registered with SEBI. These REITs are more stable because they don't get affected by market fluctuations.

How to Invest in REIT in India?

In India, you can invest in REITs India, in three ways:

- **Equity:** REIT stocks India and REITs mutual funds provide investors with a way to invest in the real estate market without purchasing individual properties. Additionally, REIT stocks are often considered more liquid and diversified than direct real estate investments.

- **Mutual Funds:** REIT mutual funds are a type of mutual fund that invests in real estate investment trusts (REITs) and other real estate securities. These REITs stocks sand funds are managed by professional portfolio managers who use their expertise to select and manage a diversified portfolio of REITs shares in India and other real estate-related securities.

- **ETFs or Exchange Traded Funds:** REIT ETFs are a type of investment fund that invests in a diversified portfolio of real estate investment trusts and other real estate-related securities.

Factors to Consider Before Investing in REITs

- **No Tax Benefit:** The REIT dividends earned through the trust is subject to tax.
- **Highly volatile:** The majority of REITs investment in India get affected by

market fluctuations. Therefore, risk-averse investors should analyze the investment's return-generating capacity before investing.

- **Low capital appreciation:** In the case of a REIT real estate investment trust, the likelihood of capital appreciation is quite low. This is because they only reinvest 10% of their earnings and return about 90% to investors.

Key Features of REIT Stocks

Real Estate Investment Trusts, commonly known as REITs, present distinct features that make them a noteworthy investment option.

- **Real Estate Exposure:** REITs offer investors a way to indirectly invest in real estate without the need for direct property ownership. This allows for diversification without the challenges of property management.

- **Regular Income Streams:** One of the defining features of REITs is their obligation to distribute a significant portion of their income as dividends. This characteristic makes them an attractive option for investors seeking consistent income.

- **Liquidity and Accessibility:** Unlike physical real estate, REITs provide liquidity as they are traded on stock exchanges. This makes them easily accessible for investors looking to buy or sell without the complexities of property transactions.

- **Professional Management:** REITs are managed by experienced professionals who handle property acquisition, management, and other operational aspects. This can be appealing to

A real estate investment trust offers a steady flow of funds to investors and provides them with the benefits of diversification. Apart from this, you don't need a huge amount of funds to begin REIT investing. Hence, if you want to diversify your portfolio, you can start investing in REITs. Moreover, conduct extensive research before making any investment to protect yourself and make sure that this investment is only a small portion of your overall portfolio.

SEBI Regulations:

Guidelines for InvITs and REITs to ensure transparency, governance, and investor protection.

Government Incentives:

- Tax benefits, subsidies, and viability gap funding (VGF) to encourage private investment.
- Easier land acquisition and environmental clearances to expedite project implementation.
- Challenges and Risks

Regulatory Hurdles:

- Complex approval processes and bureaucratic delays.
- Frequent changes in policies and regulations.

Funding and Financing:

- High capital requirements and long gestation periods.
- Difficulty in securing long-term financing at favourable terms.

Project Execution:

- Risks related to land acquisition, environmental clearances, and project management.
- Cost overruns and delays due to unforeseen circumstances.

Market Risks:

- Economic downturns, interest rate fluctuations, and inflation impacting project viability.
- Competition from other investment destinations and sectors.
- Opportunities and Future Outlook

Renewable Energy:

- Government targets for increasing renewable energy capacity.
- Investment opportunities in solar, wind, and hybrid energy projects.

Smart Cities and Urban Development:

- Initiatives to develop smart cities with modern infrastructure and technology integration.
- Projects focusing on sustainable urbanization, public transport, and waste management.

Digital Infrastructure:

- Expansion of broadband networks, data centers, and telecommunications infrastructure.
- Investment in emerging technologies like 5G and Internet of Things (IoT).

Logistics and Warehousing:

- Growth in e-commerce driving demand for logistics and warehousing facilities.
- Development of integrated logistics parks and multimodal transport hubs.

Conclusion

Investment management in India's infrastructure sector offers substantial opportunities for long-term growth and returns. By leveraging innovative investment vehicles, strategic partnerships, and government support, investors can play a crucial role in building the nation's infrastructure while achieving their financial objectives. Effective risk management and a deep understanding of the regulatory landscape are essential to navigate the complexities of this dynamic sector.

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ESG: A key Board room agenda

CMA (Dr.) S K Gupta
Chief Executive Officer
ICMAI Social Auditors Organization

The Perspective

Our world faces a number of global challenges: climate change, transitioning from a linear economy to a circular one, increasing inequality, balancing economic needs with societal needs. Investors, regulators, as well as consumers and employees are now increasingly demanding that companies should not only be good stewards of capital but also of natural and social capital and have the necessary governance framework in place to support this. More and more investors are incorporating ESG elements into their investment decision making process, making ESG increasingly important from the perspective of securing capital, both debt and equity. The era of growing geo-political uncertainties, nationalism and populism are giving rise to economic and commercial uncertainties. In this scenario, ESG is emerging as one of the best lens to see the organization's resilience, adaptability and sustainability. It is emerging as a priority for investors who are now building an ESG framework to study companies and decide their course of action. ESG initiatives go beyond just doing the right thing. They may improve society's perceptions of the company, build competitive positioning, and increase market value.

Interest on the part of investors and other corporate stakeholders in environmental, social and governance ("ESG") matters has surged in recent years, and the current economic, public health and social justice crises have only intensified this focus. ESG, at its core, is a means by which companies can be evaluated with respect to a broad range of socially desirable ends. ESG describes a set of factors used to measure the non-financial impacts of particular investments and companies. At the same time, ESG also provides a range of business and investment opportunities.

Understanding ESG

The term ESG, or environmental, social and governance factors, was coined by the Global Compact in 2004. However, the notion of incorporating all non-financial factors in business has been around for much longer; some might point to 2001 as the beginning of mainstream ESG with the launch of FTSE4Good indices. The term "ESG" was popularized in the 21st century and often comes up in the same conversation as sustainability and corporate social responsibility (CSR). However, while sustainability and CSR function more as philosophies or end-goals, ESG is more tangible; it encompasses the data and metrics needed to inform decision-making for companies and investors alike.

Environmental, social and governance (ESG) is a broad concept with no standard definition, but most can agree on the scope of the issues it covers; how a company performs as a steward of nature, how a company manages relationships where it operates and ultimately, how ethically it acts.

Unsurprisingly, ESG is also quickly rising to the top of board agendas. ESG — environmental, social, and governance — is a rapidly growing and complex landscape. From diversity to supply-chain due diligence to reducing carbon emissions, ESG cuts across vastly different corporate functions. ESG came from the recognition that a company's financial statements don't tell a prudent investor everything they need to know about the risks that a company should be managing. Although CSR, ESG and sustainability may

overlap in their outcomes (for example, they all emphasize social benefit and environmental protection), they differ in their primary purpose and impact areas, but actually "CSR nudges me to contribute to my community; ESG satisfies investors that environmental, social or governance issues won't blindside them; and sustainability is what I embed into my core business strategy and decision-making processes."

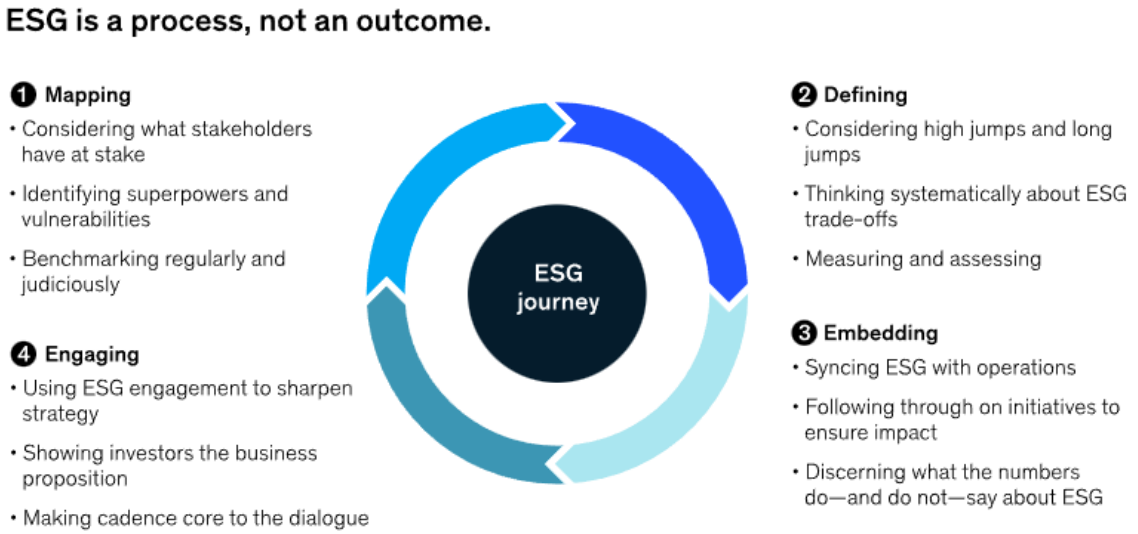
- The E in ESG, environmental criteria, includes the energy your company takes in and the waste it discharges, the resources it needs, and the consequences for living beings as a result. Not least, E encompasses carbon emissions and climate change. Every company uses energy and resources; every company affects, and is affected by, the environment.
- S, social criteria, addresses the relationships your company has and the reputation it fosters with people and institutions in the communities where you do business. S includes labor relations and diversity and inclusion. Every company operates within a broader, diverse society.
- G, governance, is the internal system of practices, controls, and procedures your company adopts in order to govern itself, make effective decisions, comply with the law, and meet the needs of external stakeholders. Every company, which is itself a legal creation, requires governance.

Just as ESG is an inextricable part of how you do business, its individual elements are themselves intertwined. For example, social criteria overlaps with environmental criteria and governance when companies seek to comply with environmental laws and broader concerns about sustainability. Our focus is mostly on environmental and social criteria, but, as every leader knows, governance can never be hermetically separate. Indeed, excelling in governance calls for mastering not just the letter of laws but also their spirit—such as getting in front of violations before they occur, or ensuring transparency and dialogue with regulators instead of formalistically submitting a report and letting the results speak for themselves.

ESG is not a discrete set of issues, but a powerful process for managing risk and leveraging business advantage. Investors and other key stakeholders recognize that ESG is a proxy for effective risk oversight, and there is increasing pressure on board members to focus on ESG issues. ESG grew out of investment philosophies clustered around sustainability and, thereafter, socially responsible investing. Early efforts focused on "screening out" (that is, excluding) companies from portfolios largely due to environmental, social or governance concerns, while more recently ESG has favorably distinguished companies that are making positive contributions to the elements of ESG, premised on treating environmental and social issues as core elements of strategic positioning.

ESG agenda in the Board Room

Environmental, social and governance (ESG) continues to evolve as a strategic business imperative. ESG investing trends and developments are creating opportunities for companies to better integrate ESG initiatives into core strategies and governance processes to enhance performance as well as attractiveness to investors, customers, current and potential employees. Many boards of directors are considering their approaches to environmental, societal and governance (ESG) topics and, more particularly, how ESG can contribute to the long-term success of their businesses. Such introspection is partly in reaction to demands from shareholders and other stakeholders.



The board's role is to develop a strategy for the enterprise's long-term success; ESG is the critical element to long-term success. ESG (environmental, social, and governance) performance as criteria for investment has a growing impact on value preservation, value creation, and, ultimately, the future of the corporation itself. Directors are bound by fiduciary duties, which many argue now extend to considering ESG factors when providing oversight of strategy and risk. The impact a company can have on its surrounding ecosystem has become vividly clear, whether it's on a global scale or within its local community. At the same time, people have become increasingly concerned about ESG issues such as climate change, human rights and executive compensation. And so, embedding sustainability in business is top-of-mind for executives and investors alike in today's eco-conscious business landscape.

The broad scope and dual nature of ESG—which facilitates the creation of opportunities for business or reputational value, while also managing risks associated with ESG impacts—present a significant governance challenge for boards. The Rise of Boardroom ESG explores the following questions:

- What is ESG (Environmental, Social, Governance) and Climate Governance and how does this relate to the board's role?
- What practices should competent boards have in place to build ESG and Climate Governance in their organizations from the perspective of directors and corporate secretaries?
- How is the rest of the world responding? What are international developments and perspectives on ESG Governance and the implications for Canadian governance?

- How are capital markets making use of ESG information and how does it affect investor decision-making?
- What processes do we have for the identification of ESG opportunities and impending risks?
- Do we comprehensively understand the material ESG risks and parameters?
- Do we have the ability to integrate the identified ESG parameters to our vision, goals and metrics?
- Does the Board have the skills and the necessary information to guide the management on the way forward?
- Does our ESG criteria also cover governance matters like board diversity, board performance and ethics apart from topics like climate change, data security, labor practices, etc.?
- How can we increase our engagement on ESG matters, both internally and externally?
- How can we effectively communicate the company's "ESG story" to all stakeholders?

What response actions can the Board consider?

- **Level setting:** Agree on the definition of ESG and its importance to the company
- **Assessment:** Determine which ESG risks and opportunities are of significance to the company Integration: Encourage integration of material ESG issues to business strategy
- **Stakeholder communication:** Shape the ESG communication keeping in mind investors and other stakeholders in the context of long term value creation
- **Board oversight:** Ensure that the board has the right composition, structure and processes to oversee ESG in the context of long term value creation
- **Strategy:** Are ESG risks and opportunities integrated into the company's long-term strategy? How is the company measuring and monitoring its progress against milestones and goals set as part of the strategy?

Top ESG issues which boards should address include:

- **Climate change** is a systemic risk for all organizations and all boards must address climate change as a macro disruptor of the economy and their organizations;
- **Income inequality,** covering both CEO and workforce compensation. This links to how organizations manage their human capital and whether workers are valued and recognized as an asset, not just a cost;
- **Ethical practices** such as the ethical implications of emerging digital technologies, and organizational diversity and inclusion;
- **Stakeholder governance** is an essential board practice; boards need to be much closer to the organization's stakeholders to understand their issues and expectations – having diverse stakeholders on the board can address this;

ESG considerations no longer a 'nice to have' but a must

Sustainability and ESG are no longer the sole responsibility of a company's sustainability officer or other corporate executives. Today, investors expect that the board will be fully engaged on ESG, as it has been shown that companies with robust board oversight tend to do a better job managing ESG risks. As identified by the World Economic Forum in 2018, eight of the top ten global risks are ESG related. Therefore, as agents of long-term enterprise value and risk oversight and with a legal duty to act in good faith and in the best interests of the company, boards must understand how their risk oversight role specifically applies to ESG related risks. ESG is no longer a 'nice to have', but a must.

Boards that adapt ESG will prosper

Our world faces a number of global challenges: climate change, transitioning from a linear economy to a circular one, increasing inequality, balancing economic needs with societal needs. Investors, regulators, as well as consumers and employees are now increasingly demanding that companies should not only be good stewards of capital but also of natural and social capital and have the necessary governance framework in place to support this. More and more investors are incorporating ESG elements into their investment decision making process, making ESG increasingly important from the perspective of securing capital, both debt and equity.

As social and environmental issues continue to affect consumer and investor behavior and capital is re-allocated towards those enterprises with clear ESG strategies, boards must adapt to a more 'conscious capitalism' where ESG - when adopted effectively - can limit risk and contribute to improved returns. When it comes to ESG, the stakes are rising—as are the growth opportunities. The conversation isn't new, it's expanding. ESG oversight is about more than checking a box. It's about creating sustainable advantage and value. To do that, your board needs to see the full picture.

Environmental, social and governance (ESG) issues are increasingly seen by shareholders as a window into the future. And a clear hierarchy is emerging. Leading companies view ESG issues as a business imperative. They manage risks while capitalizing on opportunities, including sharing their story and vision for the future, setting themselves up for long-term success and value creation in the process. Laggards still think of ESG as a check-the-box exercise grounded in philanthropic activities. An important thing to remember is that ESG isn't a separate, independent, niche problem; it has fundamental effects on your approach to doing business (i.e., building products to be recycled, designing processes so they can be monitored for compliance with internal and external goals, etc.). Together, these are helping create frameworks for effectively approaching these issues using a system composed of people, processes, and tech working together to help companies effectively incorporate ESG as an essential component of their overall strategy, risk, and governance programs.

ESG standards and frameworks

In recent years, a number of groups, such as the Sustainability Accounting Standards Board, the TCFD, the Global Reporting Initiative, and the World Economic Forum International Business Council, have issued ESG-related reporting disclosures. Others, including the IFRS Foundation, are considering how to incorporate sustainability information in corporate reporting.
Just as financial reporting is prepared in accordance with US GAAP, IFRS, or another accounting framework, ESG standards and frameworks allow companies to disclose standardized information. They provide consistency and comparability, and they benefit from due process, enabling investors to make more informed decisions.

Determining the right oversight structure for ESG oversight

Directors should consider implementing an ESG oversight structure that ensures their decision-making process is adequate and will withstand the parameters of the business judgment rule. Hence, some boards may consider creating a specific committee to which they delegate specific responsibilities in order to benefit from centralized and integrated recommendations respecting ESG. Other boards may choose to deal with such matters at the board level and ask that new matrices be included in the risk management dashboards presented to them. An honest appraisal of ESG includes a frank acknowledgment that getting it wrong can result in massive value destruction. Being perceived as "overdoing it" can sap a leader's time and focus. Underdoing it is even worse. Companies that perform poorly in

environmental, social, and governance criteria are more likely to endure materially adverse events. Businesses need to play the long game. That means they need to satisfy the needs of their customers, employees, and communities—these days, often a global community—in order to maximize value creation. Thriving businesses concerned with long-term horizons fuel a virtuous cycle. They create jobs, increase tax revenue, and raise standards of living. ESG helps generate wealth,

Using a protocol in ESG oversight

When satisfied they have the right oversight structure and composition, boards should consider setting up a protocol to assist directors in properly discharging their duties of loyalty and care, taking into account ESG factors. As mentioned above, having such a protocol in place may prove useful as directors will be judged by the process they follow. Such a protocol could include the following steps·

- **Mapping:** Identifying and categorizing ESG factors is a key first step in helping directors discharge their duties. This enables directors to map out areas that need particular attention and decisions that might require further reflection. Many of these factors will have been flagged through issuers' legal compliance or risk management systems.
- **Weighing:** Once various factors have been mapped, directors should do their best to weigh them carefully and determine their impact on the corporation in a given situation, taking into account various stakeholders.[15] In some instances, the motivation to prioritize certain factors will be influenced by legal requirements or the management of specific risks. Conflicts are to be expected when weighing such factors.
- **Deciding:** After weighing various ESG factors and their expected impact on the corporation, directors should determine which course of action is in the corporation's best interest.
- **Documenting:** As directors remain accountable for their decisions, and different stakeholders might have conflicting views on what's in the corporation's best interests in a given situation, directors should maintain accurate and adequate records of their decision-making process.

ESG Score and Rating

ESG scores are determined by third-party firms that have their own methodologies to identify a company's ESG rating. Currently, this isn't a process that is streamlined across the board, and different companies have their own way of determining a company's ESG rating. ESG scores and ratings are important because they give an overall picture of the company's performance in these three areas. These scores help inform potential or current investors and can even help inform governments as to whether they want a company operating within its borders. A higher ESG score also aligns with a company being more sustainable, having happier employees, and being more productive and profitable. There are some criticisms of ESG ratings — most notably that the scores and analysis aren't streamlined and there can be variations between how companies give out ratings. ESG ratings also encompass a lot of broad topics in the workplace, making it difficult to standardize the scores across every company and industry. It can also be difficult for older companies to make the changes necessary for a high ESG score — especially around automation and building changes.

Barriers to pursuing ESG Governance and suggested strategies to address them.

- **Barriers:** Information overload for boards, Lack of board turnover (inhibits diversity), Lack of business case, Lack of internal resources and expertise, Difficulty in making structured governance changes, Lack

of ESG Governance benchmarking for industry peers

- **How to address the barriers:** Boards and management should prioritize and focus on material ESG issues, Boards and Governance Committees should formalize the structures needed that will endure even with management turnover

Conclusion

The era of stakeholder capitalism and ESG will have consequences that reach much farther than we can anticipate today. ESG is here to stay and will continue to disrupt business models; and the boards that lead and direct companies with the right approach by overcoming such biases will ensure the success of companies into the future. ESG is not just about "doing good"; it's a top business imperative. Ultimately one of the board's most critical tasks is safeguarding the company's reputation, and ESG goals and outcomes directly impact the company's reputation with the public and employees. In short, boards should consider taking responsibility for ESG and ensure they have the right people to do so. They should consider developing protocols to identify which factors are important and integrate them into their decision process and compensation plans. They should also make sure reporting is adequate and be mindful of potential liability. ESG is more than just metrics, regulations and frameworks. At its core, ESG is an actionable way to measure progress and take steps towards a more sustainable future. The ESG debate makes it clear that the way supports its clients we do business is changing and it is going to continue to change significantly in the months and years ahead. No company can prosper nowadays if it is not involved in the community and the people around it. Companies need to take an active role in the community, beyond just making a profit.

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The Evolution of Sustainable Finance: From ESG to Impact Investing

Ms. Pallavi Singh
ESG and Sustainability Professional

The Perspective

Sustainable finance has experienced a remarkable transformation in recent years, shifting from the traditional realm of Environmental, Social, and Governance (ESG) investing towards a more dynamic and results-oriented approach known as "Impact Investing." This evolution signifies a pivotal moment in the world of finance, where not only profits but also measurable positive outcomes are given precedence.

ESG investing, which formed the foundation for integrating ethical and sustainable considerations into investment decisions, primarily focuses on evaluating a company's performance in crucial areas: environmental sustainability (E), social responsibility (S) and corporate governance (G). While ESG criteria serve to mitigate risks and align investments with values, their primary emphasis often lies in avoiding harm rather than driving substantial change. Impact investing, however, takes a proactive stance. It seeks investments that not only meet ESG criteria but also generate measurable, positive social or environmental outcomes. One of the distinguishing features of impact investing is its unwavering focus on quantifiable results. Investors now demand tangible evidence of their investments' contributions to solving critical societal or environmental challenges.

The shift from "Avoiding Harm" to "Creating Positive Change" is essential because it moves beyond merely steering clear of harmful practices to actively participating in addressing the world's most pressing challenges. Here's why impact investing is gaining ground:

- **Addressing Global Challenges:** Impact investing is a proactive approach that aims to tackle urgent global challenges like climate change, social inequality and access to essential services head-on. By channeling capital towards solutions, it directly contributes to mitigating these challenges.
- **Tangible Positive Outcomes:** Impact investing places a strong emphasis on measurable and positive social or environmental outcomes.
- **Attracting a Diverse Range of Investors:** Investors are now actively seeking opportunities that align with their values and goals, enabling them to make a direct and meaningful contribution to the issues they care about most.
- **Mitigating Long-Term Risks:** By addressing environmental and social concerns, impact investing can help mitigate long-term risks thus maintaining the stability and sustainability of financial portfolios.
- **Dynamic Evolving Scenario:** Governments and regulatory bodies are increasingly introducing policies and guidelines related to impact investing, fostering further growth in the sector.

While impact investing holds immense promise, it also faces challenges:

- **Complexity of Impact:** Measuring the impact of investments, particularly in social and environmental areas, can be intricate. Different projects may have multifaceted impacts that are challenging to quantify accurately.
- **Lack of Standardization:** The absence of standardized metrics and methodologies for impact measurement leads to inconsistency

and difficulty in comparing and assessing impact across different investments.

- **Time Lag**: Measuring long-term impacts can be challenging, as the full extent of social or environmental effects may not become apparent for many years, making it difficult to evaluate success in the short term.
- **Data Availability:** Reliable and comprehensive data on impact metrics can be limited, especially in developing regions or for specific social issues, making it challenging to assess investments accurately.
- **Subjectivity:** Some aspects of impact measurement can be subjective, leading to potential hazards in assessing the significance of certain outcomes.
- **Green washing:** Some entities lack transparency in their reporting, making it difficult for investors to verify the accuracy of their sustainability claims and distinguish genuine impact from marketing tactics.
- **Regulatory Gaps:** Inadequate regulation and oversight can create a favorable environment for green washing to persist, as there may be limited consequences for false claims.

Dealing with the challenges associated with impact measurement and green washing is crucial to ensure that investments genuinely contribute to creating a better world. This requires a concerted effort from various stakeholders across the financial industry, regulatory bodies, and the broader global community which involves:

- **Standardization of Impact Measurement:** Encourage the development of standardized impact metrics and methodologies for various industries and sectors.
- **Transparency and Disclosure:** Advocate for greater transparency in reporting impact data and encourage organizations to disclose their methodologies and data sources for impact measurement.
- **Third-Party Verification**: Promote third-party verification and audits of impact data to ensure accuracy and prevent green washing. Support organizations that provide independent impact assessment services.
- **Regulatory Oversight:** Advocate for stronger regulatory oversight to prevent green washing and ensure that impact investments meet specified standards.
- **Industry Collaboration:** Promote collaboration among industry stakeholders to establish best practices and share knowledge. Encourage industry associations to develop ethical guidelines and codes of conduct.
- **Technology Role play:** Invest in technology solutions that facilitate impact measurement, data collection, and reporting, making it more efficient and accurate. Promote the use of block chain and other technologies for transparent and immutable impact data tracking.
- **Rating Agencies:** Collaborate with rating agencies with forward looking approach which goes beyond public disclosure and take into account the concept of externalities and impact.

Conclusion

In conclusion, while ESG investing marked a significant step toward integrating sustainability and ethics into financial decision-making, impact investing represents the next level of commitment to creating positive change in the world. With its emphasis on measurable impact and alignment of values, impact investing is gaining momentum as a powerful force for good in the realm of finance. As investors increasingly recognize the potential for both financial returns and positive societal and environmental outcomes, the shift towards impact investing is likely to continue its upward trajectory.

Notes

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Delhi Office
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