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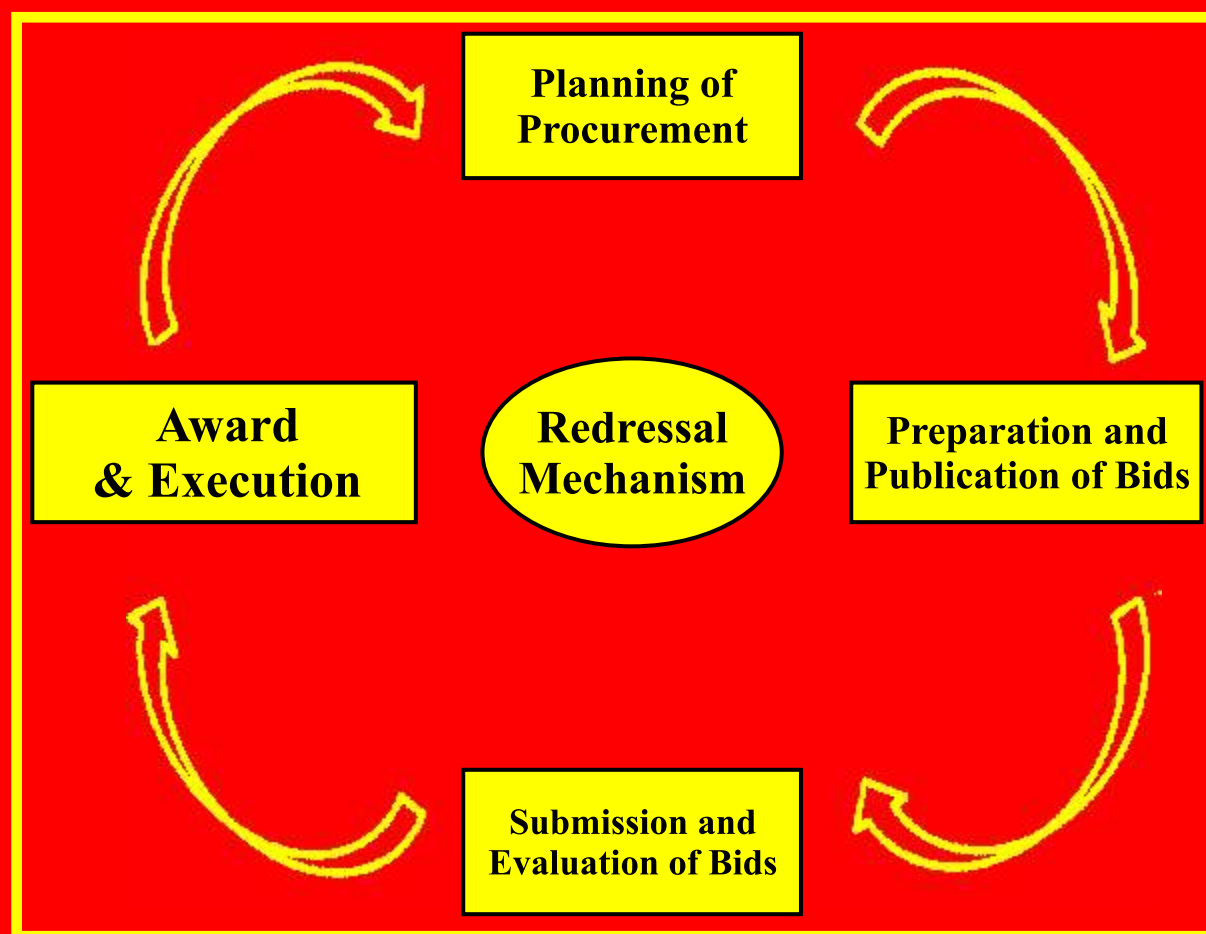
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MATERIALS MANAGEMENT REVIEW



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Public Procurement System in India



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BRANCH ACTIVITIES

CHANDIGARH BRANCH : 33rd Annual Day Celebrations,

Theme: Challenge the unchallenged - A Vision beyond SCM on Saturday, 23rd December 2017.



ALWAR BRANCH : "Two days Executive Development Program on Preventing Vigilance in Public procurement" during December 16-17, 2017 at Hotel Motidoongri Palace, Alwar.



MUMBAI BRANCH : National Summit on Public Procurement
8th December, 2017, Mumbai



From the Desk of The National President



Dear Fellow Professionals!

Greetings from your National President.

I hope you must have celebrated Christmas and New Year 2018 with your family and friends. I wish you all a very happy and prosperous 2018.

Chandigarh Branch has celebrated its 33rd Annual Day in a grand manner on the very apt theme “Challenging the Unchallenged – Vision beyond SCM”. IIMM Mumbai and Alwar Branch has also concluded seminar on Procurement in a befitting manner. I convey my good wishes to IIMM Mumbai, Alwar and Chandigarh branch for many more such programs.

In view of the changes in the education policy announced by the UGC particularly with regard to standalone institutions, I have requested all branch chairmen to brain storm and forward their recommendations so that we can redefine our education policy.

We will also be having Business Plan Meeting to work out the IIMM plan for various activities to be undertaken by the institute for the next two years. The major areas which need attention for all of us is the strategy for education, enhancement of membership, short term courses and consultancy projects besides developing network with prominent industrial houses to build up the strong brand image of our Institute.

Since we have received one more opportunity through extension granted by UGC for recognition of GDMM/PGDMM for Academic Session 2017-18, I will request all members to please spread this message among their industrial groups and organisations so that maximum professionals can join our GDMM/PGDMM programme.

We have brought changes in the eligibility criteria for the GDMM by adding diploma in Pharmacy and Hospital Management which should be encashed by approaching hospitals and hotels where professionals of Materials Management and Supply Chain Management are working.

I look forward for your suggestions regarding any of the points elaborated above so that we can include the same in our business plan meeting.

Thanking you and wishing all the best.



G. K. SINGH

National President - IIMM

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From the Desk of Chief Editor



Dear Members,

Public Procurement is one of the important functions of Govt. performed at both domestic and international level, constituting a significant proportion of Gross Domestic Product (GDP). Estimates made by various Govt. and Private Agencies indicate that overall government procurement accounts for as much as 20 to 30 percent of a country's GDP.

Public Procurement is a system-wide Integral activity of the Central and State Governments and their autonomous & statutory bodies, with a wide variety of requirements. Diversity in procurement practices has further been made more complex as India does not have a single public procurement policy or public procurement law. The efforts were made to Introduce Public Procurement Bill, however, the same could not be introduced and the bill was lapsed.

Article 299 of Constitution of India Governs the Public Procurement in India, which states that, contracts are legally binding on Government and have to be executed in writing by the officers, authorised to do so. Also Centre and State Governments draw their authority to contract for Goods and Services, from Article 298 of the Constitution of India. However, Constitution further does not provide any guidance on Public Procurement except protecting the fundamental rights of the citizens of India while treated them equally.

In absence of an overarching legislation on Public Procurement, procurement is largely governed by the General Financial Rules (GFR), 2017 (Recently Updated and Issued by Ministry of Finance in March 2017) and the Delegation of Financial Power Rules (DFPR), 1978, issued by the Department of Expenditure in the Ministry of Finance. The Indian Contract Act, 1872 and Sale of Goods Act, 1930, Indian Arbitration & Conciliation Act 1930, Right to Information Act, 2005 and, where competition issues are involved, the Competition Act, 2002 are other major legislations governing the contract and sale of goods in general, including goods services procured by the government.

Under the broad guidelines of the GFR, various departments and other public organisations have developed their own procurement manuals and procedures. The erstwhile Directorate General of Supplies & Disposals (DGS&D) has its own manual of procurement. Tamil Nadu and Karnataka are two states, who have adopted transparency laws for public procurement.

The Central Vigilance Commission (CVC) carry out Investigations under the prevention of Corruption Act 1988 and recommends action to the government against erring officials. The Comptroller & Auditor General (CAG) is an independent statutory body and its audit reports and recommendations are presented before the Parliament and respective State Legislatures. The Competition Commission of India (CCI), under the Competition Act, 2002 also monitors and prohibits anticompetitive behaviour on the part of bidders, such as bid rigging and cartelisation.

In order to promote Manufacturing in India through Missions like Make in India and development of small and micro enterprises, central govt. by notification can procure goods and services from MSME sector. MSME Act 2006 is also applicable to various PSUs and central Govt. Departments, wherein, every Central Ministry/PSU shall procure 20 percent of the total annual purchases of the products or services produced or rendered by MSEs.

A handwritten signature in black ink, appearing to be 'M.K. Bhardwaj'.

(DR. M.K. BHARDWAJ)



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MATERIALS MANAGEMENT REVIEW

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KEEPING PACE WITH TECHNOLOGICAL DYNAMICS

(Consumer's Convenience, Safety, Care and Benefit are all Crucial to Confirm 'Digital India' Success!)

DR SITARAM DIXIT

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E-Payments Pre & Post Demonetisation in India

One complete year has now passed by when India's Prime Minister Shri. Narendra Modi announced the demonetisation of the then existing high denomination currency viz., Rs. 1000 & Rs. 500, genuinely visualising of making India, a cash less or less cash country. The note-ban drive decision of the Modi Government, surely gave essential stimulus to consumers for adopting online financial payments, however the adoption rate of digital transactions soon plateaued out to previous levels, as cash became available. When the Government banned high denomination currency notes, it removed a vast amount of cash from the Indian economy, compelling people to use debit/credit cards or online internet methods for carrying out their financial transactions. Pulling out 86% of the available cash from the economy overnight, gave in to the typical "Push-up Factor" immediately boosting the use of digital platforms and once cash was back in circulation those who earlier dealt in cash happily went back to it.

In October 2016, according to RBI the apex bank of India, debit card transactions were Rs. 21,941 crore and credit card payments Rs. 29,942 crore. Post-demonetisation in December 2016 debit card transactions jumped to Rs. 58,000 crore, credit card payments Rs. 31,150 crore. However, after about 10 months post demonetisation in August 2017 debit card transactions and credit card payments both stood at Rs. 36,000 crore level, each coming down substantially from November 2016 – January 2017 peak levels. Although it is a fact that people have again started transacting more in cash, the note ban has surely ensured that consumers also seriously consider digital payment system like BHIM (Bharat Interface for Money), UPI (United Payment Interface), IMPS (Immediate Payments Transfer), other Banking Platforms, etc., that are all in place for consideration at imminent adoption when in need.

Consumers and small businesses stopped on-line transactions with improving cash availability primarily to avoid taking tax numbers/pay taxes, avoid the prevalent tax collecting authorities/system that lacks trust security and is fraught with scams (as daily newspaper reports suggest) also the fact that the Government withdrew the relaxed incentive on transaction charge, in existence during the three-month window period. Digital security and safety also include protecting consumers'

payment details, financial assets, personal identity to prevent misuse and personal individual safety from frauds and personal well-being from the tax collecting authorities/system. One significant learning we gather from this is that, digital technology even becoming default or pervasive need not necessarily relate to a consumer's choice, satisfaction and trust. It could be true that consumers expect technology to deliver reliable, beneficial quality services but it does not mean that they have absolute faith or believe it to be in their best interest and/or can protect them from any impending harm.

CONSUMER: Is any individual purchasing or using goods or services, for personal, family or household purposes.

CONSUMER PROTECTION POLICIES: It comprises of the national laws and regulations, procedures, mechanisms & programs, including industry sector standards and codes of practice.

Consumer & Consumer Protection : All people have an inherent right to expect safe quality goods/services and expect fair treatment while finding solutions if things go wrong. We are all aware that this is possible, only when businesses deliver consistent quality goods/services and national consumer policy-makers take active steps, to implement effective consumer protection. In this respect, every country should have consumer protection policies providing adequate protection by not only encouraging ethical businesses, but also preventing abusive business practices, so that goods and services rendered are as per consumer needs.

Consumers expect policy guidelines formulated recognise the country's unique cultural, economic, social circumstances and environmental conditions, constituting relevant levels of consumer protection. This is possible only if the Government develops, provide and maintain, adequate infrastructure, implement, monitor and ensure consumer protection policy measures, that benefit every segment of the populace, including the vulnerable disadvantaged, existing in rural areas or in poverty. The Government should essentially also promote sustainable consumption; help create market conditions giving consumers larger choice, at lower prices, in addition to boosting the development of independent consumer groups furthering the cause of consumer protection.

The Digital World : Our world is becoming globalized,

experiencing speedy transformational change in determining required information, sharing, communicating, socializing, banking, shopping, etc., all creating choices, opportunities, conveniences and lower prices for consumers. Digital medium and mobile transactions have without doubt transformed consumer's lives. However, to ensure continuation of this opportunity growth in digital developments, users need to trust it enough so that it integrates itself into their routine life and not just remain as one of the many available options to deal with. Access and availability of an affordable, consistent, good quality broadband internet infrastructure, an important aspect of digital consumer's right, is also a central prerequisite for a country's economic development. Government, regulators, business, resolute co-ordinated efforts alone can ensure this especially in remote geographical areas.

A global survey for the year 2015 indicates that 47% of the world's population were online; 2.5 billion of those were in economically developing countries thereby indicating that 3.9 billion people, i.e., nearly 53% of the world's population were still not internet savvy. Recent estimates also suggest that less than 10% of people in the economically developed countries access internet, in comparison to over 80% in developed countries. Uneven coverage within countries, setup affordability and connection costs, device costs and unfair data caps are other issues with digitalisation and India is no exception.

Today over 40% of the world's population uses internet and with the current continued focus on access and inclusion, this is bound to increase. Hitherto, for mass acceptance of products and services, consumers trust in the digital economy is obligatory which unfortunately in some aspects is either lacking or hardly encouraging. Building trust cannot be laid-back and overlooking these issues, will only hamper further growth and integration of technology in people's routine.

On the demand side of economy, traditionally consumer initiatives alone gives impetus, to internet digital bargain, purchasing decisions, sharing information, creating content, commenting, ranking, reviewing, using and providing services, in peer-to-peer networks and digital platforms. However, despite this glut of opportunities to shape the digital economy, the rapid pace of change in technologies, is only leaving consumers confused of their choices, relatively disempowering them from behind the scene occurrences. Understanding consumer worries and expectations about the digital medium and striving to find ways to build trust, is by itself a big challenge for policy-makers. The most important point to note here is that, a consumer's voluntary participation alone will lead to a flourishing innovative digital technology regime, thereby making the next stage of digital development work, better than ever before.

Consumer Perceptions & Reality : The last two decades

in India has witnessed consumer optimism giving way to pessimism with an overall feeling of helplessness and decline in trusting business, media, Government and even some NGO's because of a general sentiment that these institutions are incompetent and so incapable to protect them from any adverse effects of globalization and technology change. Technology falls short on authenticity, transparency, protecting consumer data with most consumers convinced that commercial brands with access to their personal data will only use it unethically with the remaining majority not even aware of what information companies hold about them. Addressing consumer concerns by regular review and re-evaluation of the scope of personal data collection, its need, invasive marketing, discriminatory practices, privacy loss and exposure to an individual's security risks are also essential. Consumers should have clear knowledge on their personal data collected, its purpose, be fully alert of the implications of its use in the digital economy and know easy effective methods, to assert control or mitigate risks. Companies should provide consumers with simple secure techniques for access and control of their data to benefit from opportunities of sharing the same, in line with their preferences, expectations and legal rights.

In a digital economy, we may not be able to avoid data transmissions however, it is vital that consumers exert control over personal data flows and privacy preferences. It is the regulator's onus, to note the impact of multiple organisations collecting data of citizens and its effect on their legal rights. They should create appropriate frameworks, suitable to address problems that challenge automated decisions, ensuring that processes are lawful and decisions centred on sensitive information, are without any discrimination to race, gender or religion. Regulators should also ensure, that all information stored and/or transmitted, are with the highest rational standards of security, either by incentivising or strict monitoring, that force companies to adopt the best practices by design. Policy regulations for companies should also include independent data security assessment, through timely breach notification and prompt sanctioning of benefits or immediate compensation to aggrieved consumers.

Consumer Redress : In the event of breaches of security, consumers should have easy access to redress and these rights in the digital medium must be, at par with those available for other commerce forms. Firms offering online transactions ought to offer strong, accountable and fair internal dispute mechanisms, without undue delays and at a reasonable cost. Availability of independent redress mechanisms, for unresolved disputes is utmost essential. The digital world involves cross sectoral, cross border transactions, multiple providers, etc., and regulators should work across jurisdictions, to support cross assistance to resolve disputes, enhancing consumers' ability to compare and switch providers, support interoperable compatible

devices and software standards, with rights to access and transfer data between services. International policy on cross border data transfer should be co-ordinated, so that countries involved in transactions, have in place high standards of protection, in both substantive and procedural national laws.

Empower Consumers & Build Trust : The Indian Government and businesses to drive economic growth, is investing in e-commerce. Developing consumer trustworthy online payment systems therefore is a priority. Newspaper reports often talks about data breaches, stealing of digital personal records, bank account details, email addresses, online account identity, medical information, etc. Losing all this information could mean financial loss, identity theft and deep distress on finding private information in public domain. Powerful digital technology allows companies to collect, store and share vast quantities of consumers' personal data to support product functionality, but many are truly neither necessary nor required. Personal security and safety in the digital world necessarily should also cover particularly children consumers, who are vulnerable to harm or less able to manage online risks. It is difficult to spot hazards and/or new risk threats in sophisticated new and unfamiliar digital products now available, just by simple scrutiny and consumers need to understand the safety aspect, well enough before using any new products and services. Regulators in addition to raising awareness about online security, have to co-ordinate with companies to develop safe and secure system practices, easy for consumers to adopt. Providing a transparent personal data security with behind the scenes view of data usage, can also build some trust in the system.

The constantly evolving digital technologies blur traditional boundaries and cuts across nations with diverse sectoral rules and laws making it very difficult to identify the right answers. To increase consumers trust on business, it is necessary to willingly listen, understand consumer undercurrent demands, with a consumer-centric approach and respond to their expectations. Upholding digital consumer protection and treating them fairly, should be the corporate culture and fundamental objective in governance of digital providers and regulatory policy legislation should be such, that companies not adhering to it or practising adverse methods that harm vulnerable consumers be severely penalised. Truly, regulation is not an absolute solution, but still has a very crucial role in providing certainty and a strong foundation of protection guarantees, for consumers to participate confidently in the digital economy.

Consumer products embedded with sensors devices augmenting their functionality and thereby becoming 'smart' are growing in the consumer market. Smart capability equips objects, sense activity, collect data and exchange it with smartphones or other connected

devices, with remote centralised information systems. In order to take apt and necessary decisions, consumers should have complete knowledge; about the implications of their personal data usage, during product use and/or service relationship and how the various processes that allows access to the service, affect pricing and quality. Increase in internet access and wireless connectivity will spurt a gradual demand for such products, leading to reduction of software and data handling costs, making everyday items like utility meters, domestic appliances, consumer electronics, wearable fitness trackers, cars and home security systems, to all acquire the ability to connect to the internet and to one another.

New developments bring about both increased opportunities and risks for consumers. Consumer products embedded digital technology, do enable it to connect to the internet subject to licences, but also have a worrying functionality namely, subjected to greater controls over use, sharing or modification, largely dependent on the provider's definition of product 'lifetime' and suitable use, that prevails especially in case of dispute. It is vital that digital product companies, follow international standards of manufacture, provide after sales essential security updates for a reasonable specified period, follow clear liability rules and ensure that consumers are fully compensated, in case of any harm encountered due to safety and/or security reasons.

Realising consumer rights in a situation with complex lines of accountability and liability, remote automated contract enforcement issues, difficulties in changing provider, is beyond data privacy and security questions creating further confusion over exactly, what a consumer can or can't do with a product they have purchased. Consumers owning or using such products, with very little input or only isolated decisions from them but relying more on software today find it difficult, in identifying as to who is responsible, when something goes wrong. The maze of countless links, within a complex network of manufacturers, apps and ISP's only makes it more problematic.

Consumer protection and empowerment regulation, for digital medium users is fundamental to address online complexity of security, liability, incompatibility and affordability. Equivalent to the feature, type and variety of digital services and products, protection levels should be same, for online or offline purchase activities. It is important to note that evidence-based and outcome-focused interventions and solutions are necessary, as they have better impact on consumer satisfaction. An open complementary global measurable digital economy standard, in addition to a proportionally strong, effective and easily accessible legal mechanisms, that provide sanction against abuse and technical failures, thus protecting consumers from fraud and unfair online treatment errors, is necessary to build consumer trust and confidence. More importantly, a regulatory

mechanism-keeping pace with the pervasive nature of any technology change, that also makes sure that consumers are clear on their ownership and guaranteeing rights to fair use, due process and proportionality are essential elements, in building trust and confidence among consumers.

Digital Education & Awareness : Internet has revolutionised the way we buy and sell goods, with many of us enjoying the benefits of online shopping. Problems in commerce are unavoidable. We are all familiar with complaints of faulty goods, poor services, fake or counterfeit goods, substandard or dangerous products, poor service delivery or goods contrary to promotional advertisement descriptions, etc. In e-commerce, many companies are involved making it troublesome and difficult to identify the player legally responsible for any discrepancy and consumer experience confirms that legislation, regulation and redress standards are ineffective at keeping pace with digital economy. The lack of clarity on consumer protection and redress, poor regulation mechanism in cross-border, e-commerce with persisting problems is still a deterrent for making digital dealings a way of life.

The first step towards change is awareness. The second step is acceptance – Nathaniel Branden

If you want to keep the customer for life, shock them with a random act of kindness or exceptional customer service experience – Melonie Dorado

THE MORE VARIETY, THE BETTER SOCIETY

Practical, clear, accurate and credible standard information about products and its functionality, providers, processes and consumer rights, should be easily available to consumers, so that they understand adverse implications if any, of their online activities to aid informed decision-making, without complexity and confusion. Digital policy should be such that they are easy to understand and manage, especially with respect to issues and apprehensions of consumers participating in the digital world.

Digital consumer education entails, not only knowing online rights, but also be competent on relevant participative knowledge skills and behaviours, to make effective use of digital devices, like computer desktops, laptops, tablets, smartphones, etc., for actively collaborating and communicating in a functional digital society. Additionally, it is also necessary that people develop skills to manage both risks and opportunities for making informed choices, know exactly where they have to go for assistance and take effective steps to protect or improve their online identity. It is important to note that consumer education and awareness to develop skills and confidence for managing risks and opportunities, is complementary to effective regulation and is not an alternative.

Right to Choose : Competition and choice too plays an important role, in providing quality and/or fairly priced products meeting consumer's needs, helping drive improvements across sectors. The Government has the obligation, to maintain competitive markets, for delivering a digital world consumer can trust. Establishing rights to portability, adhering to comprehensive specification standards in privacy and sharing data preferences is necessary. In the digital economy, in addition to the abuse of dominant market positioning, new challenges unique to each sector exists and addressing these are indispensable for consumers benefit and overall economic growth.

Consumer's confidence to support digital opportunities could increase, only if they are aware that digital business providers meet established standards and the accompanying safeguards if things go wrong. A company becomes trustworthy when it conducts its business activities responsibly, by willing to admit faults and be accountable, deal people with honesty and all fairness, is transparent in talks, open about supply chains and treats employees well. A company at the forefront of digital technology has the additional responsibility of understanding the risks and benefits of their innovations and demonstrate proactively, their commitment to responsible practice.

Inference : Technology and innovation has always been dynamic in nature, bringing both opportunities and difficulties for consumers. Understanding the emerging risks and detriments, in a clear balanced manner and mitigating it through appropriate protections, is utmost essential, otherwise any potential benefits of an innovative technology, will only be undermined. Consumer confidence and trust in the digital system are pivotal to deliver social economic benefits for consumer citizens. However, this will succeed only if further developments available, are trustworthy enough to integrate into people's routine life. The responsibility for ensuring protection of consumers' online rights, upholding autonomy and personal freedom, requires collaboration among Governments, international organisations and businesses across nations.

Consumer laws and regulations just like technology, should keep pace with the technological dynamics, we witness. Every individual today, is a part of the digital world and it is up to all of us to make it a better trustworthy one. It is imperative to engage, address and resolve critical issues, with utmost urgency, without procrastinating as otherwise wrong and incorrect system practices will quickly take roots firmly, becoming a damaging operating system norm, resisting any positive change later. It is critical that Governments, global industries, local small businesses, international groups, civil society and people as consumers and citizens, commit to work jointly, to attain the best possible practices and offerings, enhance and build on it to create a trusted and safe digital world that upholds consumer rights foremost.

●●●



COST OF QUALITY

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Cost of Quality (COQ) can be defined as Costs associated with quality-related efforts and deficiencies – these include assuring, preventing, detecting, and remediating product issues related to quality. Quality involves in creating, maintaining, upgrading and delivering a product having some standards that meets or exceeds the expectations of the customers.

In doing so, certain costs are incurred to perform quality related activities such as quality planning & management; Statistical Process Control; investments in quality related information systems; Inspection & Testing; Tracking the causes and effects of the problem; quality improvements; Monitoring Progress; Scrap and Rework Costs; Complaints & Warranty Costs etc.

Broadly Cost of Quality (COQ) can be classified into two categories –

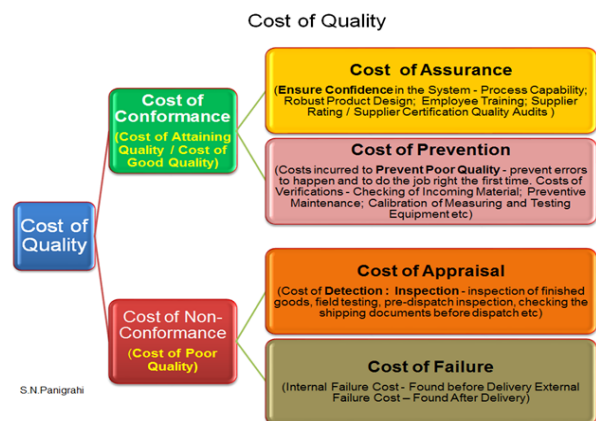
- Cost of Conformance (COC) or Cost of Good Quality (COGQ) and
- Cost of Non-Conformance (CONC) or Cost of Poor Quality (COPQ).

Cost of Conformance (COC) or Cost of Good Quality (COGQ) can be defined as Costs associated with doing quality job, conducting quality improvements, and achieving quality goals. These are the costs that aim at assurance of quality and prevention of bad quality. That means Cost of Conformance has two sub-divisions : Cost of Assurance and Cost of Prevention.

Cost of Assurance : These costs are associated with the quality requirements, systems and procedures, control measures and audits to ensure appropriate quality standards are used and complied such as money spent on establishing methods and procedures; Process Capability Studies; robust Product Design; proper employee training in performing good quality job; supplier rating / supplier certification (assessment and approval of suppliers of products and services), Quality audits (confirmation that the quality system is functioning correctly) acquiring tools, and planning for quality. **Quality assurance provides confidence in the system that ensures quality of deliverables.**

Cost of Prevention: The costs that arise from efforts to keep defects from occurring at all - **prevent errors to happen and to do the job right the first time.** Prevention costs may include Costs of Verifications - checking of incoming material, processes, products, and services to ensure that they conform to agreed specifications;

Preventive Maintenance; Calibration of measuring and test equipment etc. **These are planned and incurred before actual operation and money is all spent before the product is actually built.** The focus on prevention tends to reduce preventable costs of bad quality.



Cost of Non-Conformance (CONC) or Cost of Poor Quality (COPQ) is the costs associated with all activities and processes that do not meet agreed performance and/or expected outcomes. These costs would disappear if every task were always performed without deficiency. These costs have two sub-divisions : Cost of Appraisal and Cost of Failure.

Cost of Appraisal : Money spent to review completed products against requirements. Appraisal includes the **cost of inspections, testing, and reviews.** This **money is spent after the product is built but before it is shipped** to the user or moved into customers place. They could include: inspection of finished goods, field testing, pre-dispatch inspection, checking the shipping documents before dispatch etc

Cost of Failure : All costs associated with defective products produced and or that have been delivered to the user. These costs are further sub-divided into Internal Failure Costs and External Failure Costs.

Internal Failure Costs – These are the **Costs generated before a product is shipped but after a product is made and inspected** and found non-conformance to requirements, such as - Product/service design failure costs (internal - Design corrective action; Rework due to design changes; Scrap due to design changes); Purchasing failure costs (Purchased material reject disposition costs; Purchased material replacement costs; Supplier corrective action; Rework of supplier rejects;

Uncontrolled material losses); Operations (product or service) failure costs (Material review and corrective action costs - Disposition costs - Troubleshooting or failure analysis costs (operations) - Investigation support costs - Operations corrective action; Operations rework and repair costs – Rework – Repair; Re-inspection / retest costs; Extra operations; costs of Scrap (operations); Downgraded end product or service; Internal failure - labour losses; Other internal failure costs

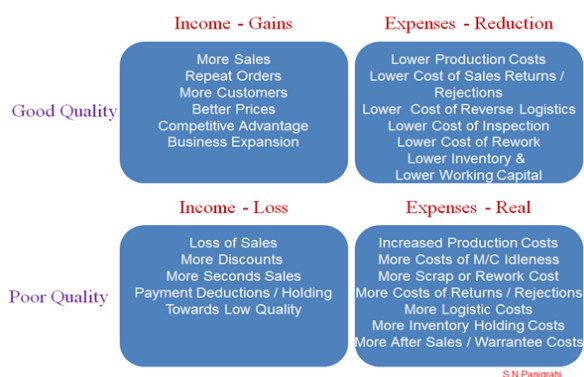
External Failure Costs—Costs generated **after a product is shipped** as a result of non-conformance to requirements, such as Complaint investigation/customer or user service; Returned goods; Retrofit costs; Recall costs; Warranty claims; Liability costs; Penalties; Customer/user goodwill; Lost sales; Other external failure costs

Cost of Quality as % of Sales: Quality costs may arise in many ways and anywhere in a company. For Example the procurement department may acquire substandard components that may result in unacceptable final products. There may be product design issues that begin in the engineering department, as well as manufacturing problems that can create product flaws. In addition, the dispatch department may have incorrectly entered a customer order, so that the customer receives the wrong product. The accounts department may enter wrong credit to a different supplier's account that may result in un-recoverable amount. These issues all result in quality costs.

These apart there are some costs incurred towards quality improvement efforts like streamlining processes for consistently delivering defect-free products or services on time; training people for quality consciousness; improve productivity levels; costs towards investments in quality related infrastructure & equipments.

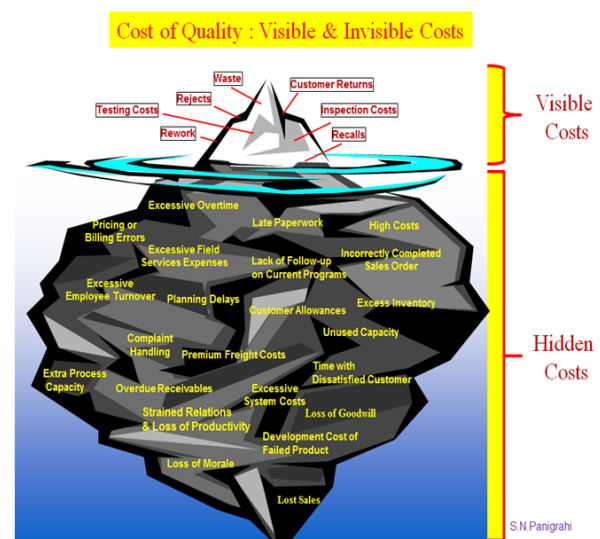
Put together the Total Quality Costs may comprise a major portion of the total expenses of a business, many organizations have true **quality-related costs as high as 15 to 25 percent of sales revenue**, though mostly they are hidden within the normal cost and may not be visible fully and may not be recorded specifically.

Quality's Effect on Income and Expenses : Quality related out comes (benefits or Loss) and costs can be treated in financial terms as Income and Expenditure as shown below.



Tangible & In-tangible – Visible & Hidden Costs of Quality: There are some costs which are very visible and recorded in normal accounting systems like cost of customer rejections, cost of returns, inspection costs, cost of waste and scrap, testing costs, inspection costs, customer visits to resolve quality issues, discounts on defects; cost of re-work, cost of recalls and reverse logistics etc. These are tangible costs.

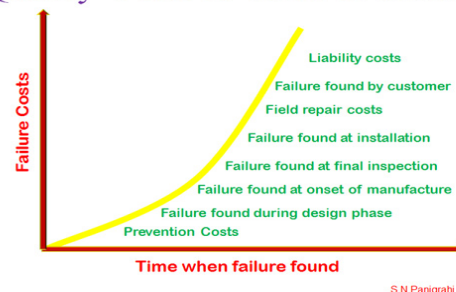
However there are many hidden costs which are invisible (mostly un-recorded or un-estimated or un-measurable) like delays and stoppages caused by defectives; customer goodwill / reputation; strained customer relationships and loss of future sales orders; loss of morale due to frictions between departments; cost of complaints handling; un-used or idle capacity due to faults; excessive employee turnover; incomplete sales order; development costs of failed products etc.



Major “ICEBERG Costs” are hidden. We need to find out and minimize those costs

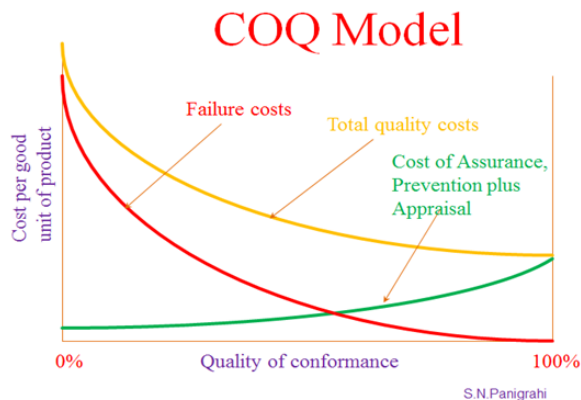
Cost of Quality & Time of Incidence : From the below chart we may observe that the cost due to quality related failure go on increasing as the failure is found in later stages of process or product cycle. Cost of prevention is lowest and the cost is going on increasing as the failure is found subsequently in design phase or manufacture or final product inspection or at customers place or claims arise. Therefore it is better to prevent quality related problems at the early stages otherwise the cost of non-compliances shall go high.

Quality Costs & Time of Incidence



COQ Model : Quality is an investment and therefore quality efforts must be financially accountable. It is not the measurement, but the analysis and comparison for monitoring, control and strategic decisions that we can use the measured COQ. Applying the concepts of COQ measurement, analysis and corrections consistently can help reduce the cost of quality.

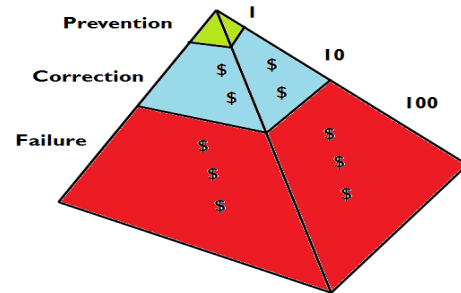
The Cost of Quality (COQ) model constructs a chart displaying prevention, appraisal, and failure costs over time in order to demonstrate the cost of poor quality. The model is based on the theme that prevention is better than cure. As we make more investments in quality assurance and prevention activities, then the incidents of failures will come down resulting in drastic reduction in total cost of failure. Cost of failure will not incur if the quality is free from faults. At this point the total cost of quality becomes equal to cost of quality assurance plus cost of prevention. Therefore it is worth to make investments in quality assurance and prevention efforts which yield more benefits by reducing quality faults. This model provide better clarity on the CoQ-metric and it's constituents – the understanding of which is essential for establishing a quality management strategy for the organization to improve quality of products, services and ultimately the brand image.



Goals of COQ: As seen from the above chart with increasing investment on Cost Assurance and Prevention activities the Cost of Failure is drastically falling down and resulting in overall reduction in Total Quality Cost. Therefore the objective of Cost of Quality is to increase in the Investments on Quality Assurance and Prevention activities.



The 1-10-100 Rule : As per this rule one dollar spent on prevention will save \$10 on appraisal and \$100 on failure costs. This rule helps one to prioritize expenditure on prevention, which is sure to bring in greater returns.

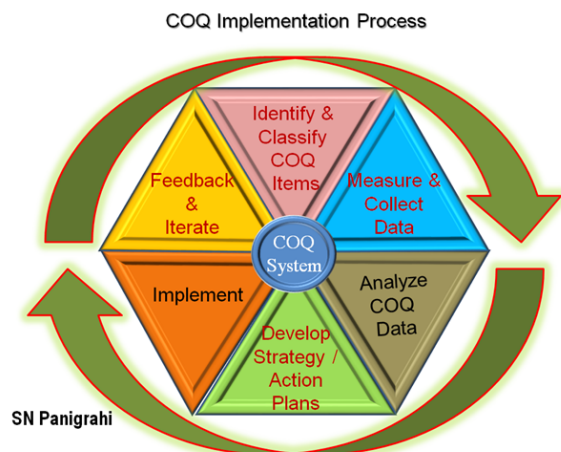


Measuring Cost of Quality : The mitigation of quality issues can greatly increase the profitability of a business, as well as enhance the level of customer satisfaction. However the moot questions are how to measure cost of quality or failure?; How to measure Return on Quality when business is spending money on quality? To answer these we have to apply fundamental business management concepts, including financial principles, to the measurement of quality.

$$\begin{aligned} \text{Total Cost of Quality} &= \text{Cost of Compliance (COC)} \\ &+ \text{Cost of Non- Compliance} \\ &= \text{Cost of Assurance} + \text{Cost of Prevention} \\ &+ \text{Cost Of Appraisal} + \text{Cost of Failure} \end{aligned}$$

Steps in measurement of Cost of Quality :

- Identify COQ item
- Determine Category of Quality Cost
- Create Measurement System that captures categories of quality costs
- Collect the Data
- Analyse the Data
- Take Strategic Decisions about Investments on quality improvements with the objective of reducing COQ and maximizing benefits.
- Take Feedback and Iterate



The quality cost can be measured through various quality indicators and expressed in terms of cost like value/cost, time (usually linked to cost of labor) and quality of work results etc. For example cost of rework can be measured by multiplying number of man hours spent for the rework by labour rate and material cost if any may be added. Cost of customer rejected and returned material can be calculated by adding all costs associated with material, transactional & logistics and other miscellaneous costs. Similarly quality related training cost can be worked out by assigning all costs related to such training. In this fashion category wise costs can be worked out and assigned.

Analysis of Cost of Quality provides insight into the effectiveness of the management of quality and a means of determining problem areas, opportunities, savings, and action priorities.

Return on Quality (ROQ) : Minimizing Cost of Quality : Maximizing Profits

ROQ - an approach that evaluates the financial return of investments in quality. Poor quality causes higher costs of products or services and at the same time also leads to customer dissatisfaction and loss of business. Reducing or eliminating the cost of poor quality is one of the best ways to increase a company's profit.

W. Edwards Deming proposed that improving quality reduces cost and improves profitability. Therefore investments on improving quality has greater positive returns in terms of increased sales, getting Repeat Orders, expanding Customers base, Commanding better Prices, gaining Competitive Advantage, getting opportunity in Business Expansion.

$$\text{Returns on Quality} = \frac{\text{Benefits of Improved Quality}}{\text{Total Investments on Quality}}$$

Returns on Quality is maximized when benefits of improved quality is more with minimal investments on quality.

Return on Quality (ROQ)



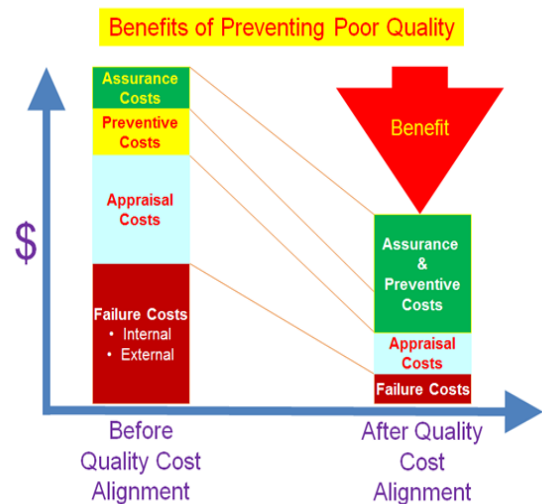
S.N.Panigrahi

From the chart below it is evident that by improving quality efforts of Assurance and Prevention, though there is small increase in these costs, the associated costs

of quality failure and appraisal are drastically fallen down and therefore sharp fall in total quality cost resulting in net benefits.



Quality improvements can lead to benefits of net cost reductions. Net Cost of Quality is the difference of cost conformance and savings by avoiding non-conformance. That is by making investments in quality assurance and prevention efforts lead to net cost savings as cost reductions on account of quality non-compliance is much more than the cost incurred on assurance and prevention activities.



S.N.Panigrahi

Quality in Place for Each Function

Management must manage the different business functions in a manner that will provide maximum benefit to all parties concerned. These functions are inter-dependant and must be managed continuously to reap maximum benefits. The quality of performance of these functions is important so as to stay competitive, and must be monitored and evaluated. Therefore, quality systems must be in place for each function may it be General Management; Procurement & Logistics; Marketing; Production; Financial; Human Resources; Public Relations; Administration; Risk Management; IT Management or Information/Knowledge Systems. Quality is pervasive everywhere and impacts every business and in turn everyone's life.

Conclusion :

An important conclusion drawn from this paper is that understanding of the cost of quality is extremely important for any business in establishing an organizational quality management strategy and making calculated decisions of investing on quality related improvements and grab ample opportunities to show case the quality image.

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WAY FORWARD VALUE CHAIN IN WASTE MANAGEMENT; AN AGENDA FOR SUSTAINABILITY

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Abstract : Waste Management is the collection, transport, processing, recycling or disposal, and monitoring of waste materials.^[1] The term usually relates to materials produced by human activity, and is generally undertaken to reduce their effect on health, the environment or aesthetics. Waste management is also carried out to recover resources from it. Waste management can involve solid, liquid, gaseous or radioactive substances, with different methods and fields of expertise for each.

Waste Management Practices differ for **developed and developing nations**, for **urban and rural areas**, and for **residential and industrial** producers. Management for **non-hazardous** residential and **institutional waste in metropolitan areas** is usually the responsibility of local government authorities, while management for non-hazardous commercial and industrial waste is usually the responsibility of the generator.

Industrial revolution followed by the advances in information technology during the last century has radically **changed people's lifestyle**. Although this development has helped the human race, mismanagement has led to new problems of **contamination and pollution**. The technical prowess acquired during the last century has posed a **new challenge in the management of wastes**. For example, personal computers (PCs) contain certain components, which are highly toxic, such as chlorinated and brominated substances, toxic gases, toxic metals, biologically active materials, acids, plastics and plastic additives. The hazardous content of these materials pose an environmental and health threat. Thus proper management is necessary while **disposing or recycling e--wastes**.

Many of these products can be **reused, refurbished, or recycled and recued** in an **environmentally sound manner so that they are less harmful to the ecosystem**. This paper highlights the hazards of wastes in value chain, the need for its appropriate management and options that can be implemented.

Key Words: (Waste, Recycling, Technology, Environment, Ecosystem, Sustainability)

India's growth story, especially in the last few decades has also resulted in a rapid increase in both domestic

and industrial waste.

The main driver for **domestic waste** is the **rapid urbanization** that is slated to change India from a largely rural to a majority urban country in the next decade (2020). In contrast rural waste is largely agricultural in nature and is dispersed over half-a-million habitations making them 'manageable'. However, rural areas do suffer as '**pollution sinks**' for the encroaching urban sprawl.

The rapid growth of the Indian industry has led to increased industrial waste generation. Coal ash from thermal power stations accounts for more than 70% of all industrial waste.

Solid waste management (SWM) has three basic components, namely, collection, transportation and disposal. The objective of SWM is to reduce the quantity of solid waste disposed off on land by recovery of materials and energy from solid waste in a cost effective and environment friendly manner.

Lack of financial resources, institutional weaknesses, improper choice of technology and public apathy towards waste has made the prevalent system of waste management far from satisfactory. For instance, the practice of uncontrolled dumping of waste on the outskirts of towns and cities have created serious environmental and public health problems that threaten water quality and urbanisation itself.

This unsatisfactory state of affairs is mirrored even in the industrial (hazardous) sector, where the challenges are steeper in terms of treatment and disposal of hazardous waste. Waste is predominantly disposed off in landfills, and partly by incineration. **3R (reduce, reuse, recycle)** is seldom used in practice, despite being part of the policy envelope for a while.

Waste in Urbanizing India : Over 160,000 Metric Tons (MT) of municipal solid waste is generated daily in the country. Per capita waste generation in cities varies from 0.2 kg to 0.6 kg per day depending upon the

size of population. This is estimated to increase at 1.33% annually.

1. The total waste quantity generated by the year 2047 is estimated to be about 260 million tons per year.

It is estimated that if the waste is not disposed off in a more systematic manner, more than 1,400 km² of land, which is equivalent to the size of city of Delhi, would be

2. required in the country by the year 2047 for its disposal.
3. The Indian industrial sector generates an estimated 100 million tons/year of non-hazardous solid wastes, with coal ash from thermal power stations accounting for more than 70 million tons/year.
4. Over 8 million tons/year of hazardous waste is generated in India. About 60% of these wastes, i.e., 4.8 million tons/year is estimated to be recyclable and the remaining 3.2 million tons/ year is non-recyclable.

Therefore, authorities face the challenge of reinforcing their available infrastructure for efficient waste management and ensuring a scientific disposal of the wastes. The key will be to start looking at means and technologies to recover resources from waste management.

Market Assessment : Estimates of the municipal¹ and hazardous² waste market were above •1.5 billion and around •171 million respectively. In light of India's economic dynamism in the interregnum, the combined market must now be over •3.7 billion (apart from nuclear waste management that is not in the purview of SWM)

There is an increasing presence of the private sector in the SWM particularly **for door-to door collection of solid waste, street sweeping in a limited way**, secondary storage and transportation and for treatment and disposal of waste. **Cities which have pioneered in public private partnerships (PPPs) in SWM include Bangalore, Chennai, Hyderabad, Ahmadabad, Surat, Guwahati, Mumbai, Jaipur and more.**

The Government of India at the central level, has funded various initiatives to address SWM by providing assistance to the tune of •372.3 million under 12th Finance Commission (•329.4 million under the 11th Finance Commission).

Policy and Regulatory Framework : The Ministry of Environment and Forests (MoEF) and the pollution control boards: Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs) together form the regulatory and administrative core of the sector.

As SWM is part of public health and sanitation - according to the Indian Constitution - it falls under the state list. As this activity is of local nature, it is entrusted to the Urban Local Bodies (ULBs). The management of municipal solid waste is one of the most important obligatory functions of the urban local bodies.

Legislation : Under the Environmental Protection Act (EPA) 1986, MoEF has issued several notifications to tackle the problem of hazardous waste management.

These include:

1. Municipal Wastes (Management and Handling) Rules, 2000, whose aim was to enable municipalities to dispose municipal solid waste in a scientific manner.
2. Hazardous Wastes (Management and Handling) Rules, 1989, which brought out a guide for manufacture, storage and import of hazardous chemicals and for management of hazardous wastes.
3. Biomedical Waste (Management and Handling) Rules, 1998, were formulated along parallel lines, for proper disposal, segregation, transport etc. of infectious wastes.
4. Hazardous Wastes (Management and Handling) Amendment Rules, 2000, a recent notification issued with the view to providing guidelines for the import and export of hazardous waste in the country.

Although nearly a decade has lapsed since the time limit for implementation of the rules ran out in December 2003, yet there are cities which have not initiated any measures at all. Given the lack of in-house capability of municipal authorities and paucity of resources, there have been successful attempts to outsource certain services and resort to private sector/NGO participation in providing SWM services such as door-to door collection, street sweeping, secondary collection of waste, transportation of waste, composting of waste and power generation from waste and final disposal of waste at the engineered landfill.

However, the present capacity of municipalities in India to manage the privatization process is quite limited. There is need for developing in-house financial and managerial capability to award contracts to private sector and monitoring services provided by the private operator since the onus of ensuring proper service delivery and compliance of standards lies with the local bodies.

The Key Drivers for Sector Growth

1. Progressively stricter norms for the sector (especially for industrial and hazardous wastes).
2. Public interest litigations and the rulings of the courts (Supreme Court) for domestic wastes.
3. Scarcer (and further) landfill space is forcing the authorities to use appropriate technologies and better management.
4. Grant components for SWM in Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT).

Indicative Opportunity Spaces : Solid waste sector offers many possibilities to foreign companies with low-cost technologies, products or services. There is an urgent

need in most cities to change, restructure or intensify the waste collection systems. There is a need for promoting new ideas and concepts of SWM in waste collection, segregation and waste transportation.

This concerns hazardous waste and biomedical waste, too. Due to the lack of capital, so far low-cost treatment technologies, such as “dumpsite treatment” (if any treatment at all), and composting technologies have been used. The role of waste recovery and recycling has not been essential, because rag pickers have taken care of valuables and recyclables. The lack of land and increasing waste quantities require new technologies, which are applicable for mixed SWM and competitive. It is quite probable that outdoor composting will increase its role in the future, in case, reasonable use can be found for the compost end-product. The prospects for anaerobic digestion (or for anaerobic composting as called in India) are also promising but are highly dependent on the reasonable utilization of heat energy.

Some opportunity spaces are outlined below:

1. Joint ventures with Indian firms to offer integrated solutions in waste treatment, including performing feasibility studies, designing, technical consulting and providing operation and online maintenance services.
2. There is a demand for technologies and services for effective waste collection, transportation and disposal, and its treatment and recycling.
3. Engineering and consulting services on waste collection and transportation, landfill treatment, waste treatment plants, outdoor composting, anaerobic digestion of waste and sewage sludge, biological-mechanical waste treatment and waste to energy.
4. **3R technologies** and solutions for high polluting sectors, such as thermal power stations, chemical and pharmaceutical industries
5. Design, manufacture and installation of various types of waste management systems

Fiscal Incentives:

1. **Tax Holiday:** A 10 year, 100% deduction of profits and gains is available for companies operating in waste projects.
2. **Tax / Duties Relief:**
 - Direct taxes: 100% depreciation within 1st year of project installation.
 - Exemption / reduction in excise duty.
 - Exemption from Central Sales Tax, and customs duty concessions on the import of material, components and equipment used in “Renewable Energy” RE projects.
 - Duty-free import of renewable energy equipment.

- Exemptions from electricity taxes.

PPP Models in SWM

1. Collection, Transportation & Cleaning	Management contract / BOOT
2. Development of Transfer Station/ MRTS & Transportation	BOOT / DBFOT
3. Waste Processing facility	BOOT/DBFOT/BOO
4. Development of Sanitary Landfill & Post Closure Maintenance	Management contract / DBFOT
5. Integrated MSWM system (with combination of above)	Mostly on BOOT

Government Initiatives:

1. For initiating SWM programs government’s JNNURM program to fund cities for developing urban infrastructure and services.
2. During the year 2011-12 Ministry of New and Renewable Energy is implementing a programme on Energy Recovery from Municipal Solid Waste (MSW). The scheme provides financial assistance for setting up of five Pilot projects for power generation from MSW. Financial assistance at a flat rate of Rs. 2 crore per MW, subject to ceiling of 20% of project cost and Rs. 10 crore per project, whichever is less.

Managing waste and protecting environment is an obligation each of us have towards the planet and the society of which we are part. A career in waste management allows you fulfil this obligation while you actually get paid for it. In this increasingly urbanised and resource constrained world, waste management is of utmost importance for sustainable development. It is also important for protecting the environment and maintaining ecological balance. Hence, waste management is emerging as promising career option. This field offers opportunities for employment as well as entrepreneurship.

Waste is increasing exponentially these days in a range of forms like domestic, industrial, biomedical, agricultural, hospital, nuclear, construction and electronic wastes. This is a cause for serious concern to our ecology. Improper disposal and treatment leads to serious health and environment issues. Waste management provides techniques and technologies that are useful in reduction, reuse and recycle of different kinds of products.

Nature of work : Managing waste presents a huge challenge. The field is vast and provides enormous scope for innovation. Therefore, the opportunities in this field are diverse, challenging, enriching, exciting and of course, rewarding. Some of the tasks that waste management specialists take up are:

1. Collect garbage and segregate it
2. Transport the segregated material to treatment plants, recycle units or land fills

3. Ensure that the material is transported without contaminating the air, land or water
4. Harvest chemicals and components for reuse
5. Innovate to devise eco-friendly recycling and disposal solutions
6. Work with scientists, environmentalists, activists and NGOs to devise realistic schemes and methods to deal with waste management issues.
7. Motivate business organisations to eliminate hazardous waste and extract more value from goods
8. Lobby with the government to promote waste management policies
9. Educate masses about the importance of waste management and methods to do it
10. Conduct R & D activities in the area
11. Promote ecological awareness among children and inculcate in them the good habits that preserve the environment.

Conclusion : This article has argued against the large-scale import of **recyclable wastes** by developing Asian nations based on the proposition that they provide cheap resources required for economic growth. This is mainly because international trade in wastes, although promising resources for the developing countries, also endogenizes in its model the inefficient waste treatment in these countries, which keeps the international prices of recyclables cheap compared to the virgin material. Once developing countries implement strict environmental standards and set up advanced recycling and treatment facilities, the recyclable resources would cease to be cheap and the waste trade model would look vulnerable. The article instead reasoned that there is no alternative to robust international cooperation for dissemination of knowledge and technology and building of capacity and institutions in the developing countries as per the principles of **“waste hierarchy.”** The **3R concept** proposed by Japan envisages all these but also unnecessarily stresses trans boundary movement (or trade) in wastes. This is a major drawback of an otherwise useful proposition.

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CUSTOM EXCHANGE RATES

(All rates per unit) w.e.f. 26th December, 2017

CURRENCY	IMPORT	EXPORT
Australian Dollar	49.95	48.20
Bahraini Dinar	175.75	164.20
Canadian Dollar	50.80	49.10
Chinese Yuan	9.90	9.60
Danish Kroner	10.40	10.00
Euro	77.40	74.75
Hong Kong Dollar	8.30	8.05
Kuwait Dinar	219.40	204.95
Newzealand Dollar	45.75	44.10
Norwegian Kroner	7.75	7.45
Pound Sterling	87.10	84.10
Qatari Riyal	18.10	17.10
South Arabian Riyal	17.65	16.55
Singapore Dollar	48.45	46.85
South African Rand	5.20	4.85
Swedish Kroner	7.75	7.50
Swiss Franc	66.05	63.85
UAE Dirham	18.05	16.85
US Dollar	64.90	63.20
Japanese Yen	57.40	55.50
Kenya Shilling	64.90	60.65

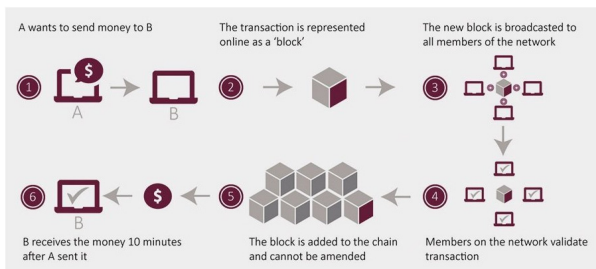
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BLOCK CHAIN TECHNOLOGY AND ITS IMPACT IN TRANSPORTATION AND LOGISTICS INDUSTRY

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Concept of block chain: A block chain facilitates secure online transactions. A block chain is a decentralized and distributed digital ledger that is used to record transactions across many computers so that the record cannot be altered retroactively without the alteration of all subsequent blocks and the collusion of the network.

The distributed ledger : The distributed ledger is a synchronized database stored simultaneously on thousands or computers worldwide; there are thousands of identical copies of the ledger around the world at any given time. The principle of a distributed ledger is key to understanding the impact of this technology; it acts as a central repository of all transactions which represents at any point in time a single source of truth for all the members of this network.



The ledger effectively replaces a central 'trusted' intermediary which is represented by a bank in the transfer of money or the official land registry in the case of land ownership transfers. In other words, the Block chain could 'cut the middle man' and replace several key services offered by banks and credit card circuits including money storage or transfer. At a higher level of abstraction, the distributed ledger can be seen as a tamper proof method to share information. If widely implemented, Block chain could transform the way society interacts not only in financial transactions, but in day-to-day life; just as the internet brought about instant digital communication, the Block chain can bring near instant and secure digital asset transfer and movement.

Transparency, Security and Speed are key advantages

- A transparent, single source of truth – If any member of the network tries to make a change to a block everyone else in the chain can see where the change happened and can decide whether this is an authorized change.
- Tamper proof information – In practice, say the distributed ledger is shared across 5,000 computers and a hacker wanted to change some information recorded in one of the blocks, they would have to hack all 5,000 computers simultaneously. This is an arduous task.
- Instantaneous transfer – Reconciliation and payment of transaction happens in less than 10 minutes versus an average of a few days for third-party systems.

Limitations at the current stage of development : The lack of scale and the technical limitations at this stage of technological development lead to a number of challenges which the technology will need to overcome. These include:

- Size – each block of the chain can only contain 1MB of data
- Volume – Block chain is restricted to handling 7 transactions per second while VISA has the peak capacity to handle 56,000 transactions per second.
- Lack of maturity – the lack of scale means high marginal cost compared to existing systems

Block Chain in Logistics: In late 2016, R3 members Wells Fargo and the Commonwealth Bank of Australia tested block chain in running a global transaction on smart contracts in order to ship cotton from the U.S. to China. However, the process was put to a halt once the goods were successfully delivered, and the involved entities announced that they were generally happy with the outcome, but was not quite ready to embrace the technology completely.

This experiment continued in the Netherlands, where the Port of Rotterdam cooperated with a dozen local entities and educational facilities to operate a somewhat similar project, which, however, is set to last for two years unlike the short-living experiment by Wells Fargo and the Commonwealth Bank. A couple of major international companies have used Hyper ledger Fabric by IBM to test the abilities of block chain: Denmark-based

Maersk sought to increase the efficiency of its document flow and cargo management, while Walmart in the U.S. decided to trace the origins and the delivery of a pork shipment from China. It has also patented a block chain-powered solution for delivery by drones.



Block chain has interested other major players in the field, like Amazon and Alibaba, yet there is little news concerning any particular moves by those companies in this direction. Altogether, most projects that attempt to employ block chain in logistics use corporate funds, and therefore remain mostly centralized. A2B Direct is a platform currently operating in Eastern Europe, where it is unofficially known as 'freight Uber.' It runs a working platform for freight forwarding that does work in a somewhat similar fashion to Uber: it allows for tracking deliveries and staying in touch with the driver, and takes care of the paperwork.

However, the company opted to integrate block chain into the platform in order to enhance its capabilities and reduce costs even further. In its crowd sale, yet to be held, the company seeks to raise •500 thousand to •3 million for expansion into Western European and North American markets. The extent of this eventual expansion mostly relies on the amount of finance that the company manages to attract. Block freight, on the other hand, is founded by the industry's seasoned experts, and uses Ethereum-based smart contracts and a tradeable token for all transactions within the network in order to tackle the issues of fraud and smuggling, and efficiently track shipments. As opposed to A2B, the project is still under development, and there are several investment rounds planned for the company's token sale campaign that seeks to raise \$1.9 million.

Conclusion:

The challenges faced by the existing international transportation and logistics agents are very serious. With the industry being one of the most important elements of common welfare, its needs require very serious consideration and should be addressed. Block chain technology, on the other hand, offers solutions for the entire industry and is widely regarded as the up-and-coming deliverance from most of the problems that it experiences. However, currently it is mostly about testing the waters, and there are only a handful of projects that

seek to provide comprehensive solutions. This may relate to the fact that block chain is a relatively new technology and has not garnered enough supporters in the corporate world and among the general public. Still, with more and more projects, companies, and even nation states getting on board with the innovations, and crypto currency rallies reaching the ears of more and more people, the general support for the technology is likely to grow over time, and the emergence of a universally acclaimed solution for logistics that employs block chain might be a matter of just a few years. The block chain is essentially a distributed ledger that exists in multiple nodes on a network, rather than in a single, centralized location (very similar to that of the internet itself).

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CROWD FUNDING IN SUPPLY CHAIN MANAGEMENT

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Crowd funding supply chain models benefits: The entire pre-new tests the market and obtains feedback from the prototype they show on the campaign. They ensure they have a minimum number of consumers prior to production. Calculation of specific needs (raw material, hardware). Reduce cost of stock success that targets an issue as the entrepreneur may not have the necessary resources and capacities to meet such a large demand. Entrepreneur who failed to have an accurate plan, and schedule of activities to be carried out in order to meet the demand they initially calculated and set as a goal for their campaign.

Crowd funding can be interesting method to purchase technological products. Individuals who are tech-advocates prefer to buy a unique product. A realistic planning (viability) use alternative media (social media) to reach potential customers.

Crowd funding is a relatively new form of financial source for entrepreneurs and companies seeking for funds to carry out other project, obtaining such funds by drawing small contribution using internet platform and intermediaries.

Crowd funding has given entrepreneur and investors greater access to start up capital crowd funding in supply chain is used not only by start-up but also by established companies to find the launch of a new product in supply chain. Most crowd funding projects offer backers (sponsors/investor) some kind of reward in supply chain projects. Projects that find product development usually offer the finished product as an incentive to backers.

Most crowd funding in supply chain have in common a need for fulfillment, and at the end of every funded warehouse, there will be full products that have to get into the hands of backers, (investor/sponsor/underwriter/who promote financial pattern) shipping products, and putting them into a box and strapping and pulling on labels is crowd funding fulfillments, and is the closest contact with the customers who may be with your loyal customers as the business grows, and careful fulfillment will be able to send your product to the necessary destination with success in supply chain.

In e-commerce of supply chain fulfillment of crowd funding is one to be considered as the best as provider can track the warehouse product, once they arrive from the manufacturer with supply of the list of backers and of the crowd funding fulfillment in warehouse will match the stock and the stock will be pack and ship your products. In crowd funding fulfillment (receiving of

receipt packages, and shipping orders of goods) companies have expertise to dealing with bulky or oversized package, and they can also suggest most economical shipping options, and even negotiate volume discounts with shipping and transporters.

Outsourcing your crowd funding fulfillment can provide quality control, and eliminate, many mistakes, in packing and shipping, that lead to unhappy backers, crowd funding fulfillment warehouse can make sure that material arrive in good condition and customary packing can be adhered to products.

Supply chain includes a promise for delivery of goods. If the retailer does not collect enough orders to justify manufacturers or vendors orders, then the amount collected or goods have to be returned, and the customers who get involved with crowd funding, usually are highly tolerant, when their payments or goods, made does not necessarily result in delivery of the product, but the situation must be made clear, if the order has taken place they are willing to wait, but if they are not contended, and will not forget the ordered quantity, so that some suppliers link up of setting up a crowd funding of pre-order of products in supply chain.

Inventory management is the most complicated challenge for any retailer or manufacturer, additional inventory is a nightmare, forcing stock, price changes, and turning it into obsolete stock, and finally to be written off, so retailers give preference to sales and a limit to risks by hedging their purchase. The retailers holds up the purchase of the products, until the shoppers have ordered the available product or item, with the retailer with an average period of time or lead time, for the order, to be dispatched from the warehouse, at a time when most shoppers expect their orders within the week, but sometimes it goes beyond the customers' expectations, and thus runs into resultant over supply chain.

When the company starts inventory to be transported to warehouse, so as to stock the products as quickly as possible though the products or materials are owned by vendors, and since payment, and pre-ordered products or materials which are stocked, are not a part of the stock, but which will alter the movement of products or materials, have to find a way so it is to be found that the method or crowd funding of how to store and manage the goods, data or how much is the demand for products or materials, and thus manage orders, which has taken too much time, and the idea of crowd funding brings a

sense to supply chain.

Exports in supply chain have a very high return, as it also requires plenty of investment, and the need for capital is intensive to cover the costs, creative disruptive network, meeting the standards of distributor network of the products, and also exporters need finance to meet the cost of export transactions, and shipping, logistics and trade compliances. Global companies need sufficient capital and resources to manage, such risks as potential exchanges rate and their instability, and this is where finance can be sourced for rapidly growth of supply chain can use crowd funding platform to connect a wide range of accredited investors and funds who invest in supply chain activities.

Delayed delve very is one of the issues in supply chain that can be irked to an event mostly with around except for mishandling, receiving broken, damaged, products, as this explains the vital role of warehouse, making a positive experience, an efficient logistic and make the whole operation unsuccessful, and bring in failure at the professional level, and a responsible, and a proficient one would certainly given an edge to the organization as supply chain management needs a competent journey package, and it should be most cost effective and fulfillment of cost, handling shipping cost, happens to be one of the biggest cost, that affect the business, and besides it is directly proportional to growth of business, and as more business expands to further horizons, bigger is the delivery lost, and the mission is critical to achieve economic safe shipping, and that demands fulfilled. Shipping, organizations should have better experience, and good technological background, and as a matter of fact a crowd funding success would be very necessary, unless the product has reached the end user in time, and in good condition, and this is necessary for an efficient logistic company in supply chain, and it

becomes necessary to map the client, choose a good location, where majority of the customers are connected within.

Taxes and duty come into play in supply chain crowd funding as this escalates the total cost, and the fulfillment of the organization should have a good crowd funding resources, and must fulfill the regulations of destination.

Warehousing and courier services require logistic companies shortlisted that are to provide enough warehouse facilities, collaboration to the destination, that meet the current as well as projected volumes of consignment, and this needs good crowd funding in supply chain, and this requires a major tie with well known good courier companies, and warehouses becomes a necessary.

Internet has already seen a tremendous impact on supply chain management, and a number of information technology companies have successfully used internet, to lower the cost, and value addition in the business, companies can also locate new suppliers by using their website, and internet online stores have become a competitor to brick and mortar retail stores, and manufacturing companies do not need distributors, and stores to store or market its products, and using their websites they will be able to reach the customer. Crowd funding such organization has become a designated part, as without pre-orders from customers the internet based e-commerce companies will not bring the product or materials to reality in the projects of supply chain, as some of these projects have experienced considered delay, either in delivery, or execution or reverse logistics, of the products or materials, and this have made crowd funding in these projects to have become a necessity in supply chain.

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COMMODITY INDEX

Commodities	Days's Index	Prev. Index	Week Ago	Month Ago
Index	2514.8	2509.1	2497.6	2523.6
Bullion	4574.7	4556.7	4518.1	4742.9
Cement	1885.1	1885.1	1991.3	2014.8
Chemicals	2685.5	2643.4	2643.4	2517.2
Edible Oil	1636.7	1634.3	1635.4	1644.2
Foodgrains	2202.7	2205.1	2193.9	2206.1
Fuel	2436.9	2421.3	2412.9	2391.0
Indl Metals	1906.3	1906.3	1812.7	1744.7
Other Agricom	2230.2	2230.2	2241.0	2309.6
Plastics	1675.2	1682.0	1682.0	1661.6

Source: ETIG Database dated 26th December, 2017.

MOBILE COMMERCE ADOPTION AND CONSUMER BEHAVIOUR IN DELHI/NCR

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Abstract : Seeing the kind of growth and sales figures mobiles have taken up in India, Mobile commerce is the only sector that is scaling up multiple times, year on year. Large number of online discounts and sales, like flipkart's big billion sale, that is held every year during the festival season attracts majority of consumers using the mobile internet. The research has been carried out over vast areas to find out the find out a consumer's behaviour and adoption to the new technology and practices coming up in the mobile commerce landscape. The research paper aims to identify the factors influencing the purchase decisions.

A questionnaire was prepared that asked a consumer his demographic details, along with his concerns like security, multimedia usage, access controls, etc. And his behaviour and psychology when he is planning to buy something online. The data is gathered after reviewing the questionnaire filled by 150 students in the NCR region. Factors like cost of the mobile phone, the internet speed, daily mobile phone battery consumption patterns were also found out and how they differ in different age groups.

The pattern of the research increases the understanding of the factors that influence the purchasing decisions and behaviour, segregating the Indian buyers into a few categories based on their behaviour and may help digital marketers formulate strategies to increase their user engagement and hence the final conversions.

Type of Contribution : Empirical

Business Function : Mobile Commerce

Industry Dimension : Internet

Characteristics of Indian Market & Delhi / NCR landscape

According to Amrish Rau, General Manager of First Information India and also ICICI Merchant Solutions, India has a net user base of over 50 million individuals. The infiltration of ecommerce is low compared to markets like the US as well as the UK however is expanding at a much faster pace with a lot of new participants. The industry consensus is that development and penetration goes to an inflection factor with essential vehicle drivers that are :

1. Enhancing broadband Web (expanding at 35% Month on Month) as well as 4G infiltration.
2. Change of lifestyle being affected by the western countries and a desire to upgrade oneself.
3. International Retailors, brands coming into smaller

cities of India, and when talking about a place like Delhi/NCR , there is no brands in the M-commerce / Mobile landscape that doesnot has a presence here.

4. Hectic lifestyles, city traffic congestion and also lack of time for offline purchasing, that moves the users to buying online.

II. METHODOLOGY

Statement of the Problem : In one more record by Boston Consulting Team, it has actually been forecasted that M-commerce and banking are set to "take off" in India. At present, there are 893.84 million mobile customers in the country, compared with the 240 million people holding bank accounts, 20 million credit cards, 88000 financial institution branches and 70,000 cash factors. It better points to the fact that though one third of Indian houses do not have bank account, 42% of these have at least one mobile handset, and 90% of these could be used for standard monetary transactions.

In Places like Delhi/NCR , most of individuals have a bank account but they still make use of cash money for 90-95% of their petty needs. The objective of this item of research was to extend as well as foster the use of M-commerce in Delhi NCR. In order to attain this function, measurable strategy has actually been required to check the "Mobile phone users doing M-Commerce". The end result of this research would certainly be beneficial to personal and public telecommunication organizations, digital companies, banks, and other related institutions.

Procedures and Participants : The best method that could be used to judge this type of a problem statement is the empirical research method where real life data of 150 participants who filled the questionnaire is analysed to find out the nature and pattern of consumer's behaviour. Based on the outcomes, we try to predict the end conclusion supported by specific facts and figures.

Reliability : In statistical terms, the typical method to look at reliability is based upon the idea that specific products (or sets of items) ought to generate outcomes constant with the total survey. Reliability is simply the ability of the questionnaire to produce the same outcomes under the exact same problems. Reliability could be approximated by means of different methods.

Sample : People from different demographic areas across Delhi NCR were chose to establish a fair practice , 150 participants participated and some of them filled the questionnaire's hard copy and some of them submitted it via the online form.

Classification of respondents on the basis of gender (In

percentage)

Male 59%
Female 41%

Classification on the basis of Age

Less than 15 years 5%
15-30 years 12.5%
30-45 years 60%
Above 45 years 22.5%

Classification on the basis of education level

Under Graduate (Class 12 & Below) 15%
Graduates 25%
Post Graduates 40%
Professionally Qualified 80%

Average Monthly Income

Less than 15 thousand 15%
15 -30 thousand 40%
30 -50 thousand 25%
More than 50 thousand 20%

Purpose of using internet

Communication 29%
Information Gathering 22%
Entertainment 27%
Shopping 21%

Popular categories of items purchased online

Books/CDs/Software 22%
Apparels 19%
Electronics/Mobiles/Home Appliances 14%
Jewellery 9%
Tickets 21%
Travel Packages 9%
Others 6%

Factors motivating to shop Online

Time saving and convenient 24%
24*7 available 16%
Discounts/ price deals 10%
Easy Price comparison 18%
Cash on delivery 12%
30 days return policy 6%
Wider Variety 12%

Testing of Hypothesis : Chi square test was used to test the hypothesis given below:

Ho: Products purchased / internet services used over mobile phones are preferred as compared to desktops and are on the increasing demand and are independent over them.

H1: Products Purchased / Internet Services used over mobile phones are dependent over desktop transactions too and not as a standalone transactions/tasks.

Results of chi square Test for statistical analysis

Occupation/ Service Used	Online- Shopping	Internet Banking	Payments	Browsing Only	Total
Student	13(9.61)	04(9.19)	07(7.31)	11(8.89)	33
Housewife	9(9.17)	05(11.04)	13(6.46)	8(10.33)	39
Service	13(15.57)	23(18.05)	12(11.95)	12(14.43)	52
Business	13(13.35)	18(15.98)	08(9.52)	12(12.15)	55
Professionals	12(12.30)	19(14.74)	04(08.76)	12(11.20)	51
TOTAL	60	71	44	55	230

Values indicated in brackets are expected values.

Significance level = 0.05 , i.e. 5%

$\chi^2 = 19.729$

$Df = 12$ [$df = (rows-1) \times (columns-1)$ i.e. $(4-1) \times (5-1) = 3 \times 4 = 12$]

$P = 0.082$

Since $P > 0.05$, Null Hypothesis is accepted and alternate hypothesis is rejected.

Conclusion : Mobile phones are increasingly preferred as a medium to use the internet for a lot of services as compared to desktops, However increasing mobile infrastructure , internet speed and security would give user's much more confidence for the same.

Findings: Due to low telephony costs, no. of mobile internet users are increasing. Though mobile is preferred for shopping, users still give preference to manual shopping in a lot of cases.

Majority of respondents were happy with the internet as a medium for shopping/services.

Those who have not done online shopping/transactions earlier are still not confident to do them and need reliable source to assure the safety.

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Exploring the Critical Success Factors for Mobile Commerce

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GST'S REAL GAIN IS EFFICIENCY AND SUSTAINABILITY

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The implementation of the Goods and Services Tax (GST), considered to be the most important policy change in India since economic liberalisation, has the potential to bring about large-scale economic impact. The initial commentary on the GST has revolved around benefits in terms of uniformity of tax structure, removal of cascading effect, efficient tax administration and improvement in government finances. On the flip side, the short-term impact of the transition is seen as a cause of lower growth in the economy. However, as we navigate through the current period of disruption, I believe that the narrative will change to productivity gains, formal jobs and better competitiveness. There is a need to delve a bit deeper to understand the forces at play.

With the benefit of hindsight, we now know that the impact of demonetisation went beyond unaccounted money; the real gain came from digitisation and formalisation of the economy, accompanied by an unprecedented move from physical to financial assets. The recapitalisation of public sector banks has been partly enabled by this tide of massive liquidity available with the banking system. Similarly, beyond efficiency transformation in taxation, the impact of the GST-led initial disruption has been underestimated because millions of enterprises are expected to make a shift in their approach towards cash, compliance and customer interaction. The GST is likely to have a positive impact by way of increase in competitiveness and productivity through improvement in quality of jobs, access to formal credit and significant reduction in the overall tax burden.

The effects of the GST on compliance and resulting teething issues for small businesses are well-documented globally. Notwithstanding the pain associated with this adjustment and compliance challenges, these changes are at best a short-term phenomenon. The effect on jobs on the other hand has not been considered significant internationally. However, the key difference in India is that 85% of the enterprises are in the unorganised sector, which is much more than any of the industrialised countries which have implemented some form of the GST.

First, the informal sector is almost 40% of the Indian economy and employs almost 75% of the labour force. However, a significant part of SMEs (in the informal economy) do not have economies of scale or a technological edge. They survive on the cash economy to evade taxes, provident fund liabilities and minimum wages to employees. This directly impacts competitiveness of other SMEs who do business by the rules. Too often, informal enterprises have taken advantage of an archaic tax system, impractical labour regulations and an ineffective oversight at the local administration level. The GST, therefore, shall result in a shift in business from the informal to formal sector. Quality of jobs in formal enterprises will improve, giving a fillip to the government's Skill India initiative. Going ahead there will be an increase in demand for better skills as firms try to build sustainable enterprises.

Second, with formalisation and digitisation, financial institutions would be able to cater to the credit needs of SMEs who were hitherto outside the purview of the financial system, by providing greater access to working capital. A lot of the traditionally strong sectors of the economy such as footwear, leather, textiles, plastics, chemicals and food processing shall be the early

beneficiaries of this trend.

Third, the measures of the government to ease the compliance burden on SMEs (single-return filing in a quarter, higher limits under the compensation scheme, significantly reduced penalties on delayed tax filing, etc) are likely to give a fillip to better-run enterprises by reducing compliance cost. Reduction in the rate of corporate tax and a one-time waiver for bringing past records of labour and production can be an additional boost. A small intervention earlier this year, allowing firms to come clean on their actual staff strength without getting penalised led to a 26% rise in the EPFO subscriber base from 38 million in December 2016 to 48.1 million by June this year. We might be underestimating formal jobs by a huge margin anyway.

Fourth, relocation of productive resources, including capital, within the SMEs shall lead to immense improvement in productivity. Jobs in such enterprises would be unlike 'subsistence' jobs in the informal sector, with no social security benefits. In addition to direct job opportunities for the entire fraternity of tax consultants, accountants and compliance officers, the GST could lead to 11-18% growth in formal jobs in sectors including cement, logistics and e-commerce. The evolution of e-commerce has already expanded the scope of the market for these SMEs who now have a global market to cater to.

By all counts, the GST and the demonetisation-led formalisation of the economy is as big a transformation as the 1991 economic reforms. The opening up of the economy after the abolishment of the 'licence raj' was seen by sceptics as a death knell for indigenous enterprises and manufacturing, resulting in mass unemployment. Contrary to this, most domestic firms became more productive and efficient in the wake of foreign competition. India now has a reasonably large formal sector, which is globally competitive. Overall, the reforms proved to be a watershed moment in the evolution of the Indian economy. Juxtaposing 2017 to 1991, this phase of economic reforms is integrating India's internal market and making it easier for firms — both domestic and foreign — to compete on the basis of efficiencies in production and service. Demonetisation brought an incremental 9.1 million people under the tax net. The GST is expected to do the same for enterprises, bringing at least a million new enterprises under its ambit.

Over the medium term, export competitiveness shall also improve as a result of seamless taxation, reduced compliance cost and savings in logistics for formal businesses. The long-term tax burden itself is expected to reduce by 25-30% as per the Reserve Bank of India's working paper on the impact of GST. The shift of productive resources, credit and government facilitation, from inefficient to efficient producers will go a long way in making the industry globally competitive. The fear of job losses in the informal economy would be more than compensated by a wider spread of employment opportunities coupled with better quality jobs in the formal sector.

We are in the middle of a sea change in the economic landscape of India. Digitisation and GST-led formalisation of the economy is leading us towards a more efficient and sustainable economy.

Source : Hindustan Times



MATERIAL PROCUREMENT & CONTROL SYSTEM FOR A MEGA PROJECT IN CHEMICAL AND PETROCHEMICAL INDUSTRY SECTOR

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INTRODUCTION : Material Procurement for a mega project is a challenging professional job in comparison to the repetitive purchases made and safe inventory level maintained for a production oriented industry.

Materials Manager really faces a professional challenge when he has to procure the hitech materials, specialised designed and engineered equipments, plants, machinery items and especially the packaged units for a mega project where limited manufacturers and suppliers are available world over. Amongst the several constraints, the Material Manager faces that he has to procure such specialised items from the limited available sources of supply and that too at a competitive price and meeting the delivery requirements based on the tight project completion schedule which he can not afford to ignore at any cost

BROAD STEPS INVOLVED IN PROJECT PROCUREMENT

Broadly following steps are necessary to complete project procurement function for a mega project:

- Identification of major and critical long lead items (LLIs);
- Bill of Material preparation based on material take-offs (MTOs) as per the detailed engineering of the project is in progress,
- Monitoring of ordering the critical and LLIs appearing on master project completion schedule.
- Post ordering follow up of manufacturing drawings required to be approved for manufacturing the equipments.
- Identification of critical raw materials, components and sub-assembly.
- Checking the quality assurance programme of the manufacturers and its sub-vendors.
- Witnessing of inspection and testing requirements during material procurement, manufacturing stage and testing requirements to be carried out while manufacturing the equipments and final performance testing of the equipments and machinery items.
- Arranging ship, truck, trailer and special wagon for shipment of over dimensional consignment (QDG).
- Chasing of the consignment and its transportation to construction site.
- Safe and secure storage of goods received at Site as per the laid down procedure and instruction furnished by the suppliers.

CUTTING DOWN THE PROCUREMENT TIME CYCLE : By adopting the above steps, procurement of goods can be made in systematic manner. But in the interest of the early project completion or to cut short the allocated procurement time cycle, purchase activity has to be crashed down and items can be procured on the basis of ongoing/ rate contract basis as explained in the Exhibits I, II and III.

ADVANTAGES OF PURCHASING UNDER ON-GOING CONTRACT VENDOR APPROACH : This particular approach adopted for purchasing of items, equipments and plant machinery items required for a mega project can lead to following major advantages:

- Reduction in procurement time cycle.
- Availing continuous supply of items with shorter delivery
- Quantity discount benefit
- Minimising number of category of vendors;
- Reduction in spare parts inventory of items leading to economisation of spare parts and its storage.
- Standardisation of various category of items.

Normally the following materials, equipments, plant machinery, piping and instrumentation items are procured for a mega project in chemicals and petrochemicals industry sector:

- Static equipment covering reactors, columns, heat exchangers, storage tanks, vessels.
- Rotating Equipments covers compressors, process pumps, water circulation pumps, boiler feed water pumps, metering pumps, agitators, mixers, grinders, autoclaves.
- Major Electrical equipments includes HT/LT motors, HT/LT switchboards, distribution boards, auxiliary boards, power and distribution transformers, HT/LT cables, flameproof electrical lighting fittings.
- Instrumentation items covers pressure/temperature transmitters, liquid level controllers, analysers, density meters, plant communication system, digital control system, signal control cables, instrument tubing and fittings.
- Piping items covers Pipes, Valves, Fittings, Fasteners, Gaskets, Strainers, Pipe Hangers, Cable Trays, Slings, Spring Supports, etc.

Likewise, following categories of contractors are appointed for carrying out the site construction, equipment erection, testing for trial run and commercial commissioning of the unit plant:

- Civil Contractors
- Mechanical Erection Contractors
- Electrical Equipment Installation Contractors
- Instrumentation Assembly-cum-Hooking up Contractor
- Piping Contractors
- Insulation Contractors
- Coating and Painting Contractors

Even the contractors for some of the turn-key contracts for establishment of package plants of the unit under the

battery limit are selected for the purpose of opening various site fronts for simultaneous construction activities to cut-short the site construction and erection time. Within the chemical and petrochemical plants such units/battery limit, there are boiler plant, chemical dosing plant, captive power plant, steam generation plant, waste water treatment plant, cooling towers and other utility services plants.

The real professionalism lies in judiciously selecting the manufacturers, suppliers, contractors, packages and turn-key plant contractor. Here the emphasis will be made to select suppliers and contractors, located within the region of the project location which will certainly save on cost and time having the advantage of logistic of the plant and industrial market available in the particular region.

In order to reduce number of supplies, the concept of umbrella contract is to be adopted wherein same category of items are procured from one or minimum number of vendors. This will have better control for timely execution of order/contract and also will lead to Standardisation Or plant equipment and instrumentation which will ultimately lead to saving on spares inventory needed for plant operation and maintenance.

We can also make use of the concept of Engineering, Procurement and Construction (EPC) contracting. Now a days, such contractors are available in the country. Instead of doing procurement for individual items, the project complex is divided into number of units and sub-plants which can be taken up for the purpose of awarding the contract on lumpsum turnkey contractor (LSTK) basis are selected who will have in their scope of work covering detailed engineering, procurement including inspection and transportation and site construction responsibility. This type of contracting is also termed as vertical contracting and adopting the same, a lot of time is saved on purchasing the long list of items ranging from nut bolts to over dimensional equipment and heavy machinery items.

MATERIAL CONTROL SYSTEM

Material control normally extends over the project life. It involves well coordinated and integrated efforts of such departments like engineering, purchasing, inspection and expediting, traffic and customs clearance together with site management of the project execution organisation which is generally an engineering and consultancy company. Material control activities consist of updating the planned (due for), forecast (last estimate) and actual dates on which materials status reports (MSRs) are regularly issued after due updation of the various milestone highlighted in the reports. Deviations, if taken are duly notified to the concerned parties especially for long lead items having longer delivery period and when the material due date of arrival at site is critical based on the master project completion schedule,

Main activities in material control involves :

- Identification of material already allocated to the related unit or sub-plant comprising of:
- Material Coding.
- Physical Inventory
- Inspection
- Material list

Material Requisition for complementary quantity are prepared after identification of the needs and taking in to

account of existing acceptable material available either at Site or the same is under transit which has already been ordered.

The requisitional quantities are reduced by way of transferring the contractor's materials stored on Site and presently not allocated to any plant especially the bulk material including the piping items. Accordingly the sequential chart of material control activity is developed by the contractor keeping in view the aforesaid principles.

Receipt and Transmission of information from and to the following personnel is very much necessary from material control point of view :

- Scheduling engineers (Planning Engineers)
- Engineers/Specialists of various engineering disciplines
- Purchasers/Buyers
- Expeditors/Inspectors
- Transportation and Customs Clearance/Consignment Chaser/Freight
- Forwarding Agents.
- Site Material Controller
- Construction Site Supervisor
- Site Procurement Coordinator

The use of standard or adopted computerised procedures are to be made in order to ascertain the followings:

- Ensure timely capture of data and timely input in the material tracking system.
- Ensure timely updating of material control data.
- Issue of periodical material status report on a fortnightly basis which may be reduced to weekly once the project construction progress has reached at a peak level

Material Control responsibility also includes the followings:

- Identify equipment and materials critical to project schedule and expedite early commitments of the same.
- Monitor early issue of the material requisition programmes for the balance materials to be procured in line with the project construction progress.
- Monitor timing for material take-off in each discipline.
- Monitor issue of material complementary request and quick execution of corresponding purchases.
- Define contingencies levels for material quantities (overages for engineering and construction).
- Supervise requisition issue and revision policies in order to minimise the number of revision.
- Monitoring timely issue of material summaries, equipment list, material requisition and check timely issue of engineering drawings and bill of materials.

Based on the aforesaid explanation, the purpose of material control is thus to ensure that all materials are supplied where and when required in a satisfactory conditions so that construction may be completed by the date of project schedule.

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DYNAMIC COLD CHAIN MANAGEMENT: A CASE STUDY OF BIO-PHARMA SECTOR WITH REFERENCE TO ROLE OF HR IN SCM.

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Abstract : With the world becoming a global village, the relative distance between regions of the world has reduced to a large extent but the physical separation of these same regions is still a very important reality. The transportation of freight between these regions becomes increasingly complex with physical distance. Coordination and timely action from the management and logistics personnel are what is required to deliver a shipment efficiently the consequences of a delayed delivery can be hard-hitting in terms of goodwill of customer as well as financial losses especially so if the consignment is perishable in nature. To keep up with tight schedules and increasing demand, today, businesses in the pharmaceutical, medical and food industries are relying on the cold chain technology. Not to forget, Human Resource Department has an important role to play in management of overall functioning of SCM.

Evolution of the cold chain : Between 1999 and 2003, the pharmaceutical market experienced an aggressive compound annual growth rate of 11%. During that same time frame, the bio-pharmaceutical market grew at nearly twice that rate or 21%^[1]. This market segment, which was responsible for \$41 billion (10%) of pharmaceutical product sales in 2003, has expanded rapidly for many reasons such as the greater potential for these products to cure diseases, not just treat symptoms, their highly effective nature and their tendency to cause fewer side effects^[1]. These products pose new challenges with respect to their storage and handling owing to the fact that biological molecules are not only larger and more fragile but are also more sensitive to temperature fluctuations. This in turn has led to increased costs for the manufacturers. The challenge of preserving quality and efficacy under these conditions has also led to new governmental requirements and regulations for storage and handling and has caused the industry to reevaluate the existing pharmaceutical supply chain model.

The new demands that biopharma products place on the supply chain are driving changes to the traditional shipping, storage, packaging, tracking and business processes that the average supply chain can't handle. The industry has realized that shipping temperature-sensitive products is a unique problem because temperature could be affected by many factors (such as the carrier, the route and delivery times). This has created

the need to control thermal variability throughout the supply chain.^[2]

Temperature-sensitive biomaterials (clinical trial samples, cell banks, tissue samples, active pharmaceutical ingredients and microbiological and viral samples) play a vital role in bringing new drugs to market. At various phases in development these materials must be transported between collection sites, analytical laboratories and bio banking facilities. During transit and storage they must be managed carefully at all times to maintain their cold or frozen state and meet regulatory guidelines. Weakness or failure at any point in the chain can compromise product integrity, breach security, delay shipments and ultimately result in financial loss or liability. From a regulatory perspective, lack of compliance can delay biologic shipments at inspection points^[3].

This has marked the evolution of "Cold Chain" and "Cold Chain Management" It is in the best interests of the drug developer to build a reliable, efficient cold chain that protects the company's biological assets and helps bring products to market faster.

What is the cold chain?

The **cold chain** refers to the transportation of temperature sensitive products along a supply chain through thermal and refrigerated packaging methods and the logistical planning to protect the integrity of these shipments^[4].

The role of the cold chain in the development of biopharmaceutical and biotherapeutic products has become increasingly critical. It defines how temperature-sensitive biological assets are packaged, transported and stored throughout the R&D cycle. When building or evaluating their cold chain processes, drug developers must remain aware of one basic, yet often-overlooked principle: the cold chain is the same as any other chain in one key area—it is only as strong as its weakest link^[2].

Training & Compliance : International Organisations like The International Air Transport Association (IATA) and the U.S. Department of Transportation (DOT) require organizations and individuals that ship or receive biological materials to be trained properly in handling procedures^{[5][6]}. Personnel involved in preparing,

transporting, receiving or otherwise handling dangerous goods must receive training in packaging, labeling, documentation, declaration, hazard assessment and emergency response. They must also receive function-specific safety training and undergo training, testing and certification every one to three years, depending on the company's mode of shipping transportation. Personnel should be trained in areas such as ^[2]:

- Assessing temperature ranges for biological materials
- Validated packaging options
- Methodologies for pre-conditioning packaging (for +2 to +8 degree Celsius shipments)
- Documentation and audit trails
- Supplier qualification for in-bound shipments
- Regulations and industry guidelines

Regulatory Requirements : Medicines requiring controlled-temperature storage conditions must be distributed in a manner that ensures their quality will not be adversely affected.

The World Health Organization's (WHO) working document QAS/04.068 on Good Distribution Practices (GDP) is applicable to all persons and companies involved in the distribution of pharmaceutical products including the: "manufacturers of intermediate and/or finished products, brokers, suppliers, distributors, wholesalers, traders, transport companies, forwarding agents, processors, etc."^[7] The distribution segment of the pharmaceutical supply chain involves multiple parties making the risks involved complex. As stated in the (WHO) working document QAS/04.068: "In order to maintain the original quality, every activity in the distribution of pharmaceutical products should be carried out according to the principals of GMP, Good Storage Practice (GSP) and Good Distribution Practice (GDP)." The (WHO) working document QAS/04.068 states: "where special storage conditions (e.g. temperature and relative humidity) are required during transit, these should be provided, checked, monitored and recorded." It goes on to state: "Temperature mapping of vehicles (where applicable) should support uniformity of the temperature across the vehicle. Recorded temperature monitoring data should be available for review." The overall objective of these guidelines is to: "ensure the quality and integrity of pharmaceutical products during all aspects of the distribution process."

As stated in the International Conference on Harmonization document (ICH Q1A (R2)): "a drug product should be evaluated under storage conditions (with appropriate tolerances) that test the thermal stability and, if applicable, its sensitivity to moisture or potential for solvent loss. The storage conditions and the lengths of studies chosen should be sufficient to cover storage, shipment, and subsequent use." Furthermore, "data from the accelerated storage condition and, if appropriate, from the intermediate

storage condition may be used to evaluate the effect of short term temperature excursions outside the label storage conditions (such as might occur during shipping)"^[10].

The Food and Drug Administration (FDA) Guidance on Stability for the industry notes that adverse shipping and/or environmental conditions may affect the product quality ^[10]. Deficiencies in good distribution practices with specific focus on temperature control and monitoring during shipment have been cited by the FDA ^[8].

Temperature Controlled Environments : The shipping circumstances vary from day to day, place to place and time to time. Adapting one's shipping process to these variable circumstances is the key to success for industries that rely on the cold chain. Different products require different temperature level maintenance to ensure their integrity throughout the travel process.

As mentioned earlier, it is the duty of the logistics personnel to ensure that materials are maintained properly for which they must be aware of the temperature requirements of the products being transported. The unique packaging challenges presented by products with different temperature requirements (controlled ambient, refrigerated or frozen) must be understood. This can be done by obtaining a clear picture of factors such as duration of transit, the size of the shipment, the degree of perishability of the shipment outside temperatures that will be faced during the transit. They can range from small insulated boxes that require dry ice or gel packs, rolling containers, to a 53 footer reefer that their own powered refrigeration units. The major cold chain technologies involve:

1. Dry ice : Solid carbon dioxide at a temperature of about -80°C and is capable of keeping a shipment frozen for an extended period of time. It is particularly used for the shipping of pharmaceuticals, dangerous goods and foodstuffs. Dry ice is a sublimating solid and vapourizes when it comes in contact with air.

2. Gel packs. : Gel packs, or packages that contain phase changing substances that can go from solid to liquid and vice versa. It is one of the common methods used to control an environment in which pharmaceutical and medicinal products are being shipped (these are generally classified as chilled products, which have to be stored between temperatures of 2°C and 8°C). Along the transit process they melt to liquids, while at the same time capturing escaping energy and maintaining an internal temperature.

3. Eutectic plates. : The principle is similar to gel packs. Instead, plates are filled with a liquid and can be reused many times.

4. Liquid nitrogen. : An especially cold substance, of about -196°C, used to keep packages frozen over a long period of time. Mainly used to transport biological cargo such as tissues and organs. Considered as a hazardous

substance for the purpose of transportation.

5. Quilts. : Insulated pieces that are placed over or around freight to act as buffer in temperature variations and to maintain the temperature relatively constant. Thus, frozen freight will remain frozen for a longer time period, often long enough not to justify the usage of more expensive refrigeration devices. Quilts can also be used to keep temperature sensitive freight at room temperature while outside conditions can substantially vary (e.g. during the summer or the winter).

6. Reefers. : Generic name for a temperature controlled container, which can be a van, small truck, a semi or a standard ISO container. These containers, which are insulated, are specially designed to allow temperature controlled air circulation maintained by an attached and independent refrigeration plant.

Bringing the Cold Chain in action -

Role of HR in SCM : The purpose of logistics is the supply of service/product to the demander/demanding unit at the right time, with the right quantity, in the right quality, with the right cost and at the right place^[11]. It deals with strategy and coordination between marketing and production as well as factors relating to demand management and forecasting. At its essence, logistics deals with satisfying the customer needs^[12]. Although effective Human Resources Management policies have been emphasized internationally as a key element for the success of an organization's goals, its importance has been frequently undermined even in thriving logistics and supply chain service markets.

SCM has been acknowledged as one of the most effective tools for companies to improve their competitive advantage and firm performance and an effective management tool for maintaining business stability, growth and prosperity^[13]

SCM is a huge gamut of various actions and activities. All activities must be viewed together as one system and the performance of every member (suppliers, warehouse, customers etc) accounts for the overall performance of the supply chain.

The success of SCM of any organisation relies on effective implementation of HR activities such as the ability to:

- develop a flexible organization,
- implement built-to-order manufacturing,
- be customer focus,
- reduce inventory and cost,
- seek total supply chain coordination,
- develop a trusting relationship with the suppliers,
- seek total supply chain coordination,
- gather quality data and reporting,
- establish a management leadership strategy,
- develop an overall human resources management policy,
- enhance communication to reduce uncertainty and inventory levels.

Poor management can be solely claimed as the major reason for supply chain dysfunction. To be able to achieve the above competency in their work, companies require efficient human resources possessing a diversified skills in areas of problem solving, team-building, adaptability, leadership, innovation and are flexible, who will ultimately contribute to proper execution of SCM activities.

Steps followed by Personnel for effective cold storage process:-

Moving a shipment across the supply chain without suffering any setbacks or temperature anomalies requires the establishment of a comprehensive logistical process. This process concerns several phases ranging from the preparation of the shipments to final verification of the integrity of the shipment at the delivery point. ^[4]

• **Labeling & Documentation** : Pharmaceutical and biotechnology companies that ship biological or hazardous materials must follow strict standards for labeling and documentation. The DOT's Hazardous Materials Regulations (HMR) specifies requirements for the safe transportation of hazardous materials. Pharmaceutical logistics personnel must understand their products' hazardous characteristics, applicable regulations and appropriate hazard class and shipment description to establish the required packaging, markings, labels and documentation.

• **Shipment preparation.**: When a temperature sensitive product is being moved, it is vital to first assess its characteristics. A key issue concerns the temperature conditioning of the shipment, which should be already at the desired temperature. Cold chain devices are commonly designed to keep a temperature constant, but not to bring a shipment to this temperature, so they would be unable to perform adequately if a shipment is not prepared. Other concerns include the destination of the shipment and the weather conditions for those regions, such as if the shipment will be exposed to extreme cold or heat along the transport route.

• **Modal choice.** : Several key factors play into how the shipment will be moved. Distance between the origin and the final destination (which often includes a set of intermediary locations), the size and weight of the shipment, the required exterior temperature environment and any time restrictions of the product all effect the available transportation options. Short distances can be handled with a van or truck, while a longer trip may require an airplane or a container ship.

• **Custom procedures.** : If the freight crosses boundaries, custom procedures can become very important, since cold chain products tend to be time sensitive and more subject to inspection than regular freight (e.g. pharmaceuticals and biological samples). The difficulty of this task differs depending on the nation (or economic bloc) and the gateways since there are variations in

procedures and delays.

• **The Delivery of the shipment.** : The last stage is the actual delivery of the shipment to its destination, which in logistics is often known as the “last mile”. Key considerations when arranging a final delivery concern not only the destination, but the timing. Trucks and vans, the primary modes of transportation for this stage, must meet the specifications necessary to transfer the cold chain shipment. Also important is the final transfer of the shipment into the storage facilities as there is potential for a breach of integrity.

• **Integrity and quality assurance.** : After the shipment has been delivered, any temperature recording devices or known temperature anomalies must be recorded and made known. Temperature monitoring devices are of various types including disposable temperature monitors and reusable data loggers. This creates trust and accountability, especially if liability for a damaged shipment is incurred. If problems or anomalies that compromise a shipment do occur, an effort must be made to identify the source find and implement corrective actions.

Conclusion : With the global meltdown, providing products at competitive prices and cutting costs has become the buzzword. The perishable nature of temperature-sensitive biological shipments and the competitive market forces of the biotechnology and pharmaceutical industries have placed new burdens on the biopharma cold chain and the logistics personnel responsible for it.

As interdisciplinary subjects are very much effectively implemented for the growth of industries, it is high time to take up all related issues by the HR of respective industries. While logistics may have once been a back-office function, it has now come to the forefront of the life science sector. Failure to reinforce all of the links in the cold chain can have serious ramifications for the biotech and pharma firms competing for market share. Global regulatory requirements for the handling, storage, and distribution of thermally labile pharmaceutical products have emphasized the importance of assuring that product quality and integrity are not compromised in the distribution channel.

Ultimately, HR is to play a vital role for the profitability of the organisation by effective implementation of cold chain management in bio-pharma sector. HRM practices such as: training, work motivation, employee commitment, adaptability, empowerment, leadership and shared values can positively contribute to supply chain success. Entire HR policies are to be critically analyzed in the field of SCM to be able to reach the desired goal of the organisation.

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WHY SAY YES TO PLASTICS?

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ABSTRACT : The word 'Plastic' is derived from the Greek word 'Plastikos' meaning fit for molding & 'Plastos' meaning molded. Plastic waste is considered as creator of a lot of nuisances and degrade environment in a big way. Government is planning to ban the plastic & its usages in India. However the Plastic is very important in day to day activity Human life. In this paper we will highlight the pros & cons for the same & how we can say yes to plastic. This Review also focuses on the role of Plastic in supply chain management

Keywords: Plastic, Plastic waste, Application, Recycling, Plasma Pyrolysis Technology, Bio plastic,

1. INTRODUCTION : Plastics are polymers, large molecules made of repeating units of smaller molecules (monomers) that are chemically bound together. A polymer is like a chain in which each link is a monomer. Plastics are chemically produced substance that can be molded into a permanent or a temporary object. The word 'Plastic' is derived from the Greek word 'Plastikos' meaning fit for moulding & 'Plastos' meaning moulded. Various type of Plastics are as follows:

- Thermo Plastics-Those which can be re-molded into any other desired shape.
- Thermosetting Plastics-Those which cannot be re-molded into any other desired shape

Plastics are polymers, large molecules made of repeating units of smaller molecules (monomers) that are chemically bound together. A polymer is like a chain in which each link is a monomer

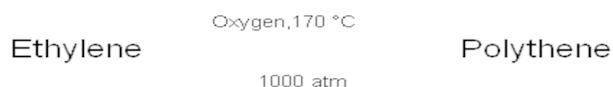


Figure 1: Reaction condition for conversion of ethylene to polyethylene

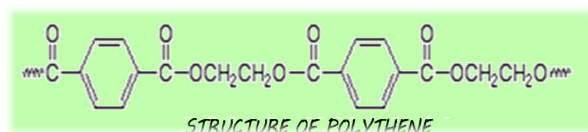


Figure 2: Structure of Polyethylene

There are about 50 different groups of plastics, with hundreds of different varieties. American Society of Plastics Industry developed a marking code to help

consumers to identify and sort the main types of plastics [1]. As per Reliance Industries in India per Capita consumption of plastic is 7.6 vis-a-vis 35 kg worldwide [2]. Indian cricket team blue jersey is made out of recycled plastic. PET bottle crushed & proceed to make numerous product like denim, pillows & other than T-shirts. As per NCL report the recycling of PET has the potential to generate approximately 3500crore annually with employment of 16000people. A dedicated website about same is <http://www.petrecycling.in> was launched by NCL director Mr. Ashwin Kumar [3]. As per Stephanie Stuckey, chief resilience officer Digitalization means gathering more data leading to better qualitative & quantitative analysis which will result effective execution of policy [4]. As per a study by CSIR India recycled 90% of PET waste and rest 10% end up at landfills. However recycling rate for PET in Japan is 72.1%, 48.3% in Europe & 31% in US [5].

NGT wants curbs imposed on plastic packaging. As per industry barring such packaging would saddle comparison with cropping cost. According to Varun Berry Managing Director of Britannia Industry it is important to come together to look for grass root solution to manage plastic packaging waste [6]. Bombay Municipal corporation plans to come up with the system to sell dry waste including paper, plastic, metal, glass etc for recycling. The money earned will be shared by BMC & rag pickers [7]. A study by seven US based research initiative found that globally 275 Metric Ton of plastic waste was generated by 192 coastal countries in 2010. They found that waste generated was 0.6 Million Metric Ton 2010 will go up to 2.88 Million Metric Ton a year as population will go up by 18.7% in 2025 [8].

As per Indian Drug Manufacturer Association the ban on plastic as primary packaging means an estimated increase of 25-30 % per bottle as the alternative for PET is glass. The transportation cost will also go up to 50% [9]. The Indian Road congress has published IRC SP:98-2013 "Guidelines for the use of waste plastic in hot bitumen mix/dry process in wearing coats". Ministry of Road Transportation & Highways issued a notification on dated 9/11/2015 by which use of plastic waste in bitumen mixer in construction of National highways with hot mix with in 50 km periphery of urban area having population more than 5 lakh. As per Union science & Technology Minister we are capable enough to convert the plastic waste in to high quality diesel. The available technology can turn 1000 kg of plastic waste in to 800

liter of high quality diesel. The Scientists of Indian Institute of Petroleum (IIP) Dehradun a lab of CSIR who have develop the technology for the same. As per IIP Dehradun Technology can process PE & PP waste which account for 60% of plastic waste convert in to fuel. Railway is examining the feasibility of setting up three units of 1000kg plastic per day primarily to manage the internal plastic waste generated by the passengers [10].

1.1 BENEFITS OF PLASTICS

- Resistance to chemicals, water and impact.
- Good safety and hygiene properties for food packaging.
- Excellent thermal and electrical insulation properties.
- Relatively inexpensive to produce.
- Lighter weight than competing materials, reducing fuel consumption during transportation.
- Saves trees mainly for substitution of wood application like paper, cardboard, furniture, pellets etc [1]

1.2 APPLICATIONS OF PLASTICS

Plastic application uses are of either long term or short term. The major applications are

- Packaging, House Hold, Furniture & Toys
- Parts for Automobile, Aviation, Railway
- Thermal insulation, Cable, Electrical & Electronic equipment
- Pipe for Water, Gas & Sewerage transportation
- Building & Construction, water storage tank
- Health care/Medical, Education & Agriculture

1.3 Consumption of Plastics in India

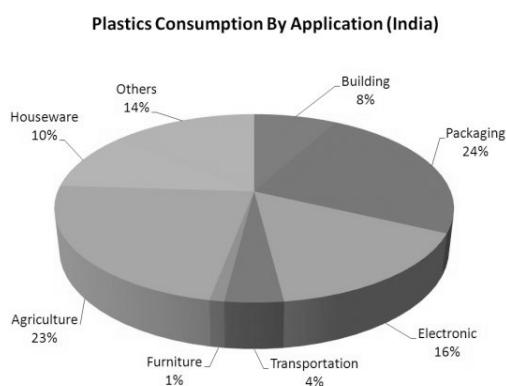


Figure 3: Consumption of Plastic by application

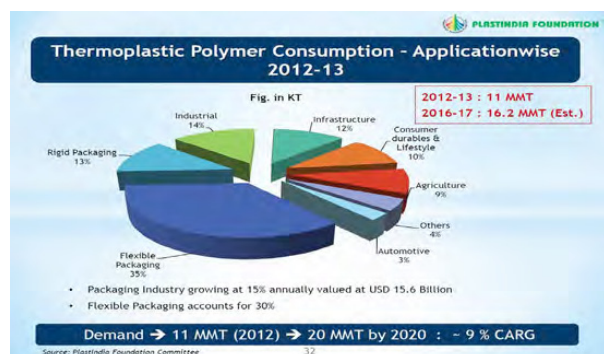


Figure 4: Thermoplastic consumption in the year 2012-13 [11]

1.4 Disadvantages of Plastics

1.4.1 Decomposition : The main disadvantage of plastic is the sheer amount of time they take to decompose—the average plastics take 500 years. Plastic's decomposition can be affected by various factors, such as the type of plastic, the climate and acids in the landfill; plastic still lasts a long time, filling landfills for an indefinite period.

1.4.2 Difficult To Recycle: Glass bottles can be melted and easily reused, as can tin cans. Recycling plastic is not so simple. Much of the plastic placed in recycling boxes is not recycled at all, as most plastic cannot be recycled. Those bottles that are recycled are not used to make new bottles. Instead, recycled plastic bottles are used to make non-recyclable products, such as T-shirts, plastic lumber or parking lot bumpers. This means more raw materials need to be used to create new plastic bottles than is the case with easily recycled material, such as glass or tin.

1.4.3 Non-Renewable : Plastic is manufactured using oil by-products and natural gas, materials that could be used in numerous other applications or conserved were plastic usage lower. Natural gas, for example, can be used to heat houses and cook food. Using plastic in the volume we currently do reduces the availability of these resources, which are gone forever when used up.

1.4.4 Hard To Re-Use : The standard disposable plastic bottle is meant for one use, not many. Recycled plastic bottles are not refilled in-mass the way glass beer bottles are, and flimsy plastic bottles do not lend themselves well to at-home re-usage. Water bottles, for example, are often reused in the home but become less and less sturdy over time and are ultimately thrown away.

1.4.5 Threat to Animals : Discarded Plastic usually ends up within marine sources. The Pacific Ocean has one of the largest dumping grounds for plastics, unknown numbers of sea birds marine mammals and fish ingest plastics which causes a variety of negative health effects [1].

1.4.6 Pollutants from Plastic : Plastics Release Pollutants such as: Poly brominated di-phenyl ethers (PBDE), Nonyl phenols, Bis-phenol A, Phthalates. Plastics Absorb Hydrophobic Pollutants such as: Polychlorinated biphenyls (PCBs), Di-chloro Di-phenyl Trichloro ethane (DDT), Di-chloro Di-phenyl Di-chloro ethylene (DDE) Pollutants from plastic incineration: Many plastics, particularly PVC, when burned result in emissions of the deadly poisons named dioxin.

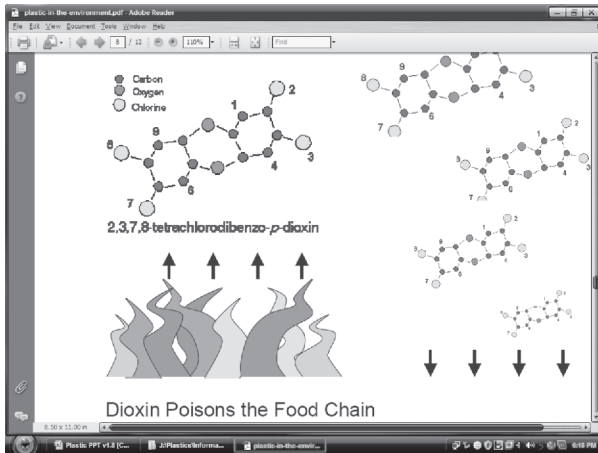


Figure 5: Structure of Dioxin

Dioxins are highly persistent compounds, with the potential to become increasingly concentrated in living tissues as they move up the food chain. It is often considered to be the man-made compound most toxic to animals.

DESIGN TO CHANGE : The two best changes we can do is minimize the use of plastic and to reuse plastics when possible.

Lead by example: It is important to share what you have learnt.

- Ask your friends and family to join you
- Speak to city council
- Write letters to government officials
- Get your school involved [12]

4-R for Plastics!

1. Refuse
2. Reduce
3. Reuse
4. Recycle

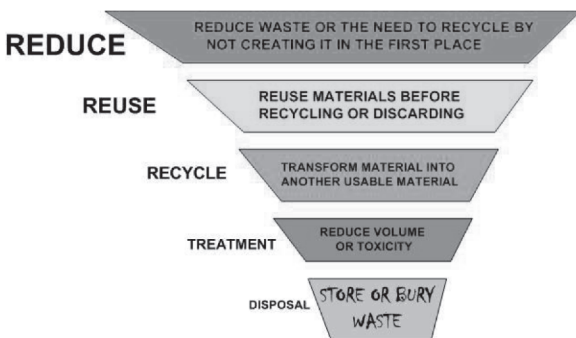


Figure 6: Elaboration of the 4-Rs [13]

Recycling Plastic recycling is the process of recovering scrap or waste plastic and reprocessing the material into useful products, sometimes completely different in form from their original state. For instance, this could mean melting down soft drink bottles and

then casting them as plastic chairs and tables. Typically a plastic is not recycled into the same type of plastic, and products made from recycled plastics are often not



Figure 7: Recycling codes for different types of plastics

ISO in its standard ISO 15270:2008 have developed various options for plastic recycling/recovery as per the fig

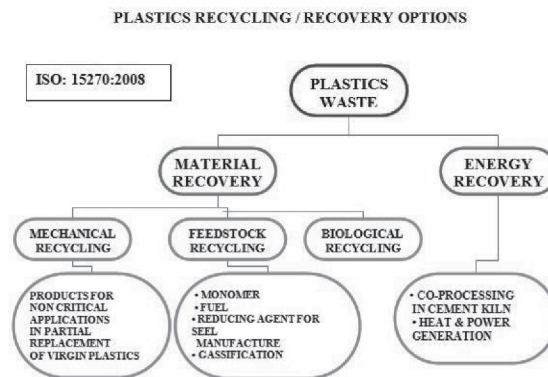


Figure 8: Flowchart depicting plastic recycling and recovery options

Mechanical Recycling has following sequence : "Collection '! Identification '! Sorting '! Grinding / Shredding with or without dust removing '! Washing '! Drying '! Separating '! Agglomerating '! Extruding Compounding'! Palletizing. In some cases where the sorting process is able to group same type of plastic waste together, the "separating process" after washing and drying may not be necessary." ISO 15270.

Feedstock Recycling : This option is opted for converting plastics waste to different products:

- Conversion to Monomer
- Fuel
- Reducing Agent in Blast furnace for production of iron
- Gasification to constituent chemicals in reasonably purer form [13]

Some more technology :

1. **Plasma Pyrolysis Technology (PPT)** Plasma pyrolysis or plasma gasification is a waste treatment technology that gasifies matter in an oxygen-starved environment to decompose waste material into its basic molecular structure. It uses high electrical energy and high temperature created by an electrical arc gasifier and does not combust the waste as incinerators do. This arc breaks down waste primarily into elemental gas and solid waste (slag), in a device called a plasma converter.
2. **Conversion of Plastic Waste into Liquid Fuel :** Methods to convert waste plastics into hydrocarbon fuel have been in development for decades. But the associated costs to commercialize the technologies were prohibitive in previous years when crude oil was relatively inexpensive.

As costs for crude oil have risen, concerns about energy security and the environment are renewing efforts in plastics-to fuel recycling processes. Scientists hope the technologies will soon provide the nation with cheaper, alternative fuels that can help reduce foreign oil dependency.

3. Bio Plastics : Bio-plastics are a form of plastics derived from renewable biomass sources, such as vegetable fats and oils, corn starch or micro biota. Common plastics, such as fossil-fuel plastics, are derived from petroleum. These plastics rely more on scarce fossil fuels and produce more greenhouse gas. Some, but not all, bio-plastics are designed to biodegrade. Bio-plastics which are designed to biodegrade can break down in either anaerobic or aerobic environments, depending on how they are manufactured. There is a variety of bio-plastics being made; they can be composed of starches, cellulose, or other biopolymers. Some common applications of bio-plastics are packaging materials, dining utensils, food packaging, and insulation [1].

Waste Generation Data : "Total plastic waste which is collected and recycled in the country is estimated to be 9,205 tonnes per day (approximately 60% of total plastic waste) and 6,137 tonnes remain uncollected and littered," the CPCB said [14]. **In the Year 2013 – 14 15:** Plastics consumption: 9.182 Mn Tons. Estimated plastics waste generation (flexible packaging): 3.2 Mn Tons (@35% consumption in flexible packaging sector) Plastics waste recycled @ 60%* (flexible packaging): 1.92 Mn Tons **Plastics waste remained uncollected: (3.2 – 1.92) = 1.28 Mn Tons**

Total Recycling (from all sectors): > 4.0 Mn Tons* [15].

Govt. notifies strict rules to discourage use of plastic

i. User Fee To Be Charged, Violators Will Have To Pay Penalty

The Centre notified stringent plastic waste management rules to regulate use of the hazardous material and handle the waste generated by it in Dec 2014. Besides,

it also banned use of plastic carry bags of less than 50 microns in thickness as against the existing norms of less than 40 microns. Be it manufacturers, shopkeepers, street vendors or waste generators including individuals, institutions and organisers of big events like political rallies, religious gatherings and marriage or similar other functions, the government under the new rules enlisted certain [16].

ii. 'Dos' and 'Don'ts'

For everyone and introduced a concept of "user fee" and "waste management fee" at different levels.

Under the new rules, which are to be implemented within six months, the violators will have to pay penalty for not disposing of plastic waste in the prescribed manner. The amount of fine for the violators will be decided by the local civic bodies.

"The Centre, on its part, will not renew registration of producers manufacturers unless they come out with an action plan for setting up plastic waste management system," said environment minister Prakash Javadekar.

If the new rules are properly implemented by municipal bodies in urban areas and gram panchayats in rural areas, shopkeepers, street vendors and users of plastic carry bags will have to move to bags of non-plastic material [17]

iii. Government Notifies Plastic Waste Management Rules, 2016

The Government has notified the Plastic Waste Management Rules, 2016, in suppression of the earlier Plastic Waste (Management and Handling) Rules, 2011. Highlights are as follows:

- Increasing the thickness of plastic carry bags from 40 to 50 micron & Collect back system.
- Phasing out of manufacture and use of non-recyclable multilayered plastic
- Responsibility of waste generator, local bodies and Gram Panchayat, retailers and street vendors
- Preregistration fee of Rs 4000/-PM than registered shopkeepers, or street vendors shall be eligible to provide plastic carry bags for dispensing the commodities.
- Reuse of plastic waste
- Land for waste management facility [18]

Plastic in Supply chain management (SCM)- Americans use 100 billion plastics bags a year, made from about million barrels of oil; instead, the use of 10 billion paper bags each year means cutting down 14 million trees [19]. The use of crude oil for producing plastics consumes a scarce resource (energy) but the use of paper means the reduction of the capability of the planet earth to absorb CO₂.

Plastics can be recycled at the end of use, typically for a maximum of six times. Most plastic waste can be

reprocessed to form plastic products. If it does not make economic or environmental sense to recycle, used plastics should go to energy from waste to provide much needed energy. Used plastics should not be sent to landfill. It is a waste of a valuable resource [20]. Material changes can contribute to simplifying the number of materials used (allowing for economies of scale), cheaper materials, or the use of more easily recyclable or recoverable materials. The changes in the quantity of product per packaging can help reduce the consumption of materials and the generation of packaging waste. The introduction of new materials can also mean changes in the production process with associated costs and rejections. The use of returnable packaging instead of single-use packaging can facilitate the reduction of overall logistics costs, including the reduction of purchase costs, resources consumption and waste generation [21].



Figure 9: Success Stories of Plastics in supply chain management [22]

CONCLUSION

As India is still a developing country and plastic per capita consumption has to go high. Plastic Waste is a big cause of concern for India. We have to see that we should not pollute environment while going for recycling and use of recycled products. Lots of innovations in recycling of waste plastics have been introduced in many countries. Returnable packaging can reduce the logistic, purchase & resource consumption cost with the help of Plastic in supply chain management. Government has also implemented Plastic Waste Management rule 2016. Only major issue is that these rules need proper and effect implementation for Plastic Waste Management for achieving better Human Health & Environment.

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STRONG MACRO-ECONOMIC FUNDAMENTALS AND REFORMS FOR SUSTAINED GROWTH DEFINED 2017 FOR MINISTRY OF FINANCE

Historic year for the Ministry of Finance with significant recognition by Moody's Investors Service upgrading India's local and foreign currency issuer ratings after 13 years; India moving up 30 ranks in the World Bank's Doing Business Report and visible signs of financial system cleansing by the Demonetization exercise.

Transformational Reforms - Overhauling of Indirect Tax System by the introduction of the Goods and Services Tax (GST) to replace multiple Central and State taxes and a New Direct Tax Code also initiated to re-write the Income Tax Act.

Recapitalization of Public Sector Banks (PSBs) and an Alternative Mechanism for their consolidation. The Financial Inclusion and Social Security Schemes – PMJDY and APY achieved significant milestones

Redefining fund raising by Disinvestment, the Government launched a new Exchange Traded Fund (ETF), BHARAT 22 as a unique blend of 22 stocks of CPSEs, PSBs & strategic holding of SUUTI.

Enhancing the quality of life remained primary goal for Government when it put into implementation the recommendations of the 7th Central Pay Commission to benefit more than 48 Lakh Central Government Employees.

Year End Review – 2017 Ministry of Finance : Major achievements of the Ministry of Finance pertaining to the concerted efforts made by all the five constituent Departments of the Ministry viz. Department of Economic Affairs (DEA); Department of Revenue; Department of Financial Services (DFS); Department of Investment Promotion and Asset Management (DIPAM) and Department of Expenditure (DOE) are as follows:

I . Department of Economic Affairs

Overall fundamentals of the economy remained strong for the Year 2017-18

Macroeconomic Indicator	For Year 2017-18
GDP Growth Rate (%)	6.0 (Up to Q2)
CPI	3.6% (Q2)
WPI	3.6% (Q2)
Current Account Deficit	US\$ 14.3 billion (Q1)
Trade Deficit	US\$ 41.2 billion (Q1)
External Debt to GDP Ratio (%)	20.2
FDI Inflows	US\$ 1,350.93 million

(As on October, 2017)

Foreign Exchange Reserves US\$ 401,942.0 million
(As on December 1, 2017)

(Source ; RBI Bulletin)

Manufacturing, electricity, gas, water supply & other utility services and trade, hotels, transport & communication and services related to broadcasting sectors registered growth of over 6.0 percent in Q2 of 2017-18 over Q2 of 2016-17.

- **Moody's Investors Service upgraded Government of India's local and foreign currency issuer ratings to Baa2 from Baa3** and changed the outlook on the rating to stable from positive after a period of 13 years in recognition of the Government's commitment to macro stability which led to low inflation, declining deficit and prudent external balance along with Government's fiscal consolidation programme
- **India's ranking in World Bank's doing Business Report rose to 100** - 30 places up over its rank of 130 in the Doing Business Report 2017 - highest jump in rank of any country in the Ease of Doing Business (EoDB) Report, 2018. This made India the only country in South Asia and BRICS economies to feature among most improved economies of the EoDB Report this year.
- **Reversal of the deceleration trend in overall growth**, the real GDP growth data for the Second Quarter of Fiscal Year 2017-18 showed growth at 6.3 percent, a substantial increase from 5.7 percent in the first quarter. Real GVA growth showed similar increase from 5.6 percent in the first quarter to 6.1 percent in the second quarter. Acceleration in growth this quarter was helped by a rapid growth in manufacturing which increased from 1.2 percent in the first quarter to 7 percent in the Second Quarter. Robust growth of 7.6 percent in electricity and other utilities, and 9.9 percent in trade, transportation and communications also powered this acceleration. Overall, the services sector recorded a growth of 7.1 percent in the second quarter. The rate of growth of gross fixed capital formation also increased from 1.6 percent in the first quarter to 4.7 percent in the second quarter. Real private consumption growth broadly held steady at 6.5 percent.
- One year after the landmark move to cleanse the

economy of Black money, 8th November 2017 was a day to recount the successes of the continued operations after **Demonetization** with High Denomination Notes been brought down by 50% of value in circulation, 50 lakh new bank accounts opened to enable cashless transaction of wages, 26.6% increase in number of taxpayers added from FY 2015-16 to FY 2016-17 and 27.95% increase in number of e>Returns filed, the value of IMPS transactions increasing almost 59% from August 2016 to August 2017, 2.24 Lakh shell companies were struck off, undisclosed income worth Rs. 29,213 crore was detected and admitted and revenues of the ULBs across the country increased.

- Constitution of the **Fifteenth Finance Commission was notified on 27th November 2017** to look into issues of distribution between Union and the States of the net proceeds of taxes which are to be, or may be divided between them; the principles which should govern the grants-in-aid of the revenues of the States out of the Consolidated Fund of India and to review the current status of the finance, deficit, debt levels, cash balances and fiscal discipline efforts of the Union and the States, and to recommend a fiscal consolidation roadmap for sound fiscal management, taking into account the responsibility of the Central Government and State Governments to adhere to appropriate levels of general and consolidated government debt and deficit levels, while fostering higher inclusive growth in the country, guided by the principles of equity, efficiency and transparency.
- The **Logistics Sector was granted Infrastructure status** in the 14th Institutional Mechanism (IM) Meeting held on 10th November, 2017 to meet the need for integrated Logistics sector development in view of the fact that the logistics cost in India is very high compared to developed countries. It will thus enable the Logistics Sector to avail infrastructure lending at easier terms with enhanced limits, access to larger amounts of funds as External Commercial Borrowings (ECB), access to longer tenor funds from insurance companies and pension funds and be eligible to borrow from India Infrastructure Financing Company Limited (IIFCL).
- As a significant milestone in the operationalization of the **National Investment and Infrastructure Fund (NIIF)**, **NIIF signed its first investment agreement** with a wholly owned subsidiary of Abu Dhabi Investment Authority (ADIA) to mobilize 1 billion USD over the long term into the fund.
- Further to this, an Investors' Roundtable was organised by the Department of Economic Affairs in Singapore to showcase to foreign investors slew of investor friendly reforms undertaken by the Government. Finance Minister, Shri Arun Jaitley visited **Singapore, USA and Bangladesh** inviting foreign investment for India primarily in the Infrastructure Sector.
- India also hosted the **9th UK-India Economic and**

Financial Dialogue, 52nd Annual Meeting of African Development Bank (AfDB), 2017 and the 2nd Annual Meeting of the New Development Bank (NDB) in New Delhi. India will also host the **3rd Annual Meeting of the Board of Governors of Asian Infrastructure Investment Bank (AIIB)** at Mumbai on 25th and 26th June 2018.

- Other significant initiatives of the Department of Economic Affairs also included revision of the base year of All-India Wholesale Price Index (WPI) from 2004-05 to 2011-12, release of the National Trade Facilitation Action Plan (NTFAP), institutionalization of the Monetary Policy Committee (MPC), approval for the phasing out of Foreign Investment Promotion Board (FIPB), revision of the guidelines of Sovereign Gold Bonds (SGB) Scheme and the country's first International Financial Services Centre (IFSC) becoming operational at the Gujarat International Finance Tec-City (GIFT), Gandhi Nagar (Gujarat) in April 2017.

II . Department of Revenue

GST

Key features

- Goods and Services Tax (GST) was rolled out on the midnight of 30 June 2017 and came into effect from 1 July 2017.
- GST is administered by both Centre and States and has subsumed several state and central indirect taxes such as State VAT, Central Excise Duty, Purchase Tax and Entry Tax.
- GST is bringing transparency and accountability in business transactions along with ensuring ease of doing business and rationalization in tax rates.
- GST has removed the hurdles in inter-State transactions resulting in the setting up of a common market.
- GST allows taxpayers to take credit of taxes paid on inputs (input tax credit) and utilize the same for the payment of output tax.

GST evolving and responding to needs of the hour

- Subsequent to the rollout of GST, 22 States in India abolished their check posts for smooth movement of goods across the country on 3rd July 2017.
- Goods and Services Network (GSTN) released a simple excel based template to facilitate taxpayers in preparing and filing their monthly returns with maximum ease and minimal cost. The template is available on GST Common portal and can be used by taxpayers to collate all invoice related data on a regular basis. The offline tool was unveiled on 17th July 2017.
- The Government of India set up a Central Monitoring Committee on 21st July 2017, headed by the Cabinet Secretary, to monitor the impact of GST.

- On 16th November 2017, the Union Cabinet approved the establishment of National Anti-profiteering Authority, an apex body, to ensure that the full benefits of input tax credits and reduced GST rates on supply of goods or services flow to the consumer. The authority, led by Shri B.N. Sharma, is playing a key role in bolstering the confidence of consumers with regards to GST.

Highlights from GST Council meetings (April – December)

- GST council was constituted on 15 September 2016 and has conducted 24th meetings since its formation
- This financial year commenced with 14th GST Council meeting held on 18th and 19th May 2017 at Srinagar, Jammu and Kashmir. The fitment of rates of goods were discussed, and the Council approved the GST rates for goods at nil rate, 5%, 12%, 18% and 28%. Also, rates of GST Compensation Cess for certain goods was also approved. Eighteen sectoral groups were constituted to seek feedback from the trade and industry and ensure smooth launch of GST.
- In its 15th meeting, the GST Council finalised the rates of tax and cess to be levied on the commodities remaining after the fitment exercise in the 14th GST Council Meeting. Also, approval of amendments to the draft GST Rules and related Forms was on the agenda.
- In its 16th meeting, held on 11th June 2017, the GST Council approved service tax exemptions and GST rated for services.
- In the 17th meeting held on 18 June 2017, the GST Council announced relaxation in return filing and relaxation in GST rates for certain services such as accommodation in hotels.
- In the 18th Meeting held on 30th June 2017, the GST Council reduced tax rate on fertilizers to 5% from 12% and cut the tax rate on exclusive tractor parts to 18% from 28%.
- In the 19th Meeting held on 17th July 2017, took stock of the implementation of GST and increased the cess on cigarettes.
- In the 20th meeting held on 5 August 2017, the Council recommended that Central Government move legislative amendments required for increasing the maximum ceiling of cessleviable on certain motor vehicles.
- In the 21st meeting held on 9th September 2017, the Council revised the schedule for return filing and set up a Group of Ministers for monitoring the IT challenges.
- Subsequent to the 21st GST Council meeting, a Group of Ministers (GoM) was constituted to monitor and resolve the IT challenges faced in the implementation of GST. Also, a Committee on Exports was constituted under the convenorship of the Revenue Secretary to look at the issues of export sector and recommend to the GST Council suitable strategy for helping the export sector in the post-GST scenario.
- GST Council, in its 22nd Meeting, announced a slew of relief and incentives for exporters to enhance the export competitiveness of India.
- GST Council, in its 23rd meeting, slashed GST rate from 28% to 18% on 178 items to bring relief to consumers by way of reduction in price of these goods.
- The Council also proposed changes in the Composition Scheme such as increasing the eligibility for composition to Rs. 1.5 crore, and uniform tax rate of 1% for manufacturers and traders. The changes will be implemented after the necessary amendment of the CGST Act and SGST Acts.
- GST Council, in its 24th Meeting held through video conferencing on Saturday, 16th December, 2017 decided that Inter-State e-way Bill will be made compulsory from 1st of February, 2018; the System will be ready to roll-out on a trial basis latest by 16th January, 2018; Trade and transporters can start using this system on a voluntary basis from 16th January, 2018; The Uniform System of e-way Bill for Inter-State as well as Intra-State movement will be implemented across the country by 1st June, 2018.

Direct tax

- Central Board of Direct Taxes (CBDT) notified new Safe Harbour Regime on 8th June, 2017 to minimise transfer pricing disputes, provide certainty to taxpayers, align safe harbour margins with industry standards, and to enlarge the scope of safe harbour transactions.
- Aaykar Setu, a new taxpayer service module, was launched on 10th July 2017 to provide better taxpayer services and minimise the direct physical interface between assesses and tax assessing authorities. The module provides live chat facility, compiles various tax tools, generates dynamic updates and includes important links to several processes of the ITD.
- Income Tax Department undertook a slew of measures to widen the tax base and bring about efficiency, transparency and fairness in tax administration. Some of the initiatives include – introduction of Single Page ITR-1 (SAHAJ) Form for taxpayers with income up to Rs. 50 lakhs and slashing of corporate tax to 25% for companies with turnover of up to Rs. 50 crore. With these initiatives, the numbers of taxpayers increased significantly from 4.72 crore in F.Y. 2012-13 to 6.26 crore during F.Y. 2016-17 as of 18th September 2017.
- As part of the Government's efforts to widen the tax base, Direct Tax collections for F.Y. 2017-2018 reached Rs. 4.39 lakh crore up to October 2017, accounting for 15.2% growth from the

corresponding period last year.

- Government constituted a Task Force on 22nd November 2017 to review the Income-tax Act, 1961 and draft a new Direct Tax Law in consonance with economic needs of the country.

Demonetisation and Operation Clean Money : Income Tax Department (ITD) has been undertaking extensive enforcement action including search and seizure, and surveys largely based on the information received during the demonetisation period.

- ITD launched Operation Clean Money (OCM) on 31st January 2017 to leverage technology for e-verification of cash deposits made during the demonetization period i.e. 9th November to 30th December 2016. The operation involves the use of advanced data analytics, allowing for optimization of government resources and causing minimum inconvenience to the taxpayers.
- Extensive enforcement action by the Income Tax Department (ITD) during 9th November 2016 to 28th February 2017 has led to seizures worth over Rs 818 crore and detection of undisclosed income of over Rs 9,334 crore. The impact of Government action translated to an increase of 21.7 % in the returns of Income received in FY 2016-17, 16% growth in Gross Collection (the highest in the last five years), 14% Growth in Net Collection (the highest in last three years) and above 18%, 25% and 22% growth in Personal Income Tax, Regular Assessment Tax and Self-assessment Tax respectively.
- The Income tax Department conducted more than 1100 searches and surveys and issued over 5100 verification notices in the cases of suspicious high value cash deposits or related activities during 9 Nov 2016-10 Jan 2017. With these actions, the undisclosed income of over Rs. 5,400 crore was detected.
- As part of the second phase of Operation Clean Money, ITD leveraged the information received under the Statement of Financial Transactions to identify 5.56 lakh new persons whose tax profiles were inconsistent with the cash deposits done by them during demonetization as of July 2017.
- Subsequent to demonetisation, 91 lakh taxpayers were added to the tax net as of May 2017 as a result of action taken by the Income Tax Department.
- A Multi-Agency Group (MAG) was constituted during November 2017 to facilitate co-ordinated and speedy investigation of cases pertaining to Paradise Papers and Panama Papers.

Combatting corruption and pilferage

- A task force was constituted in July 2017 to effectively tackle the malpractices by shell companies.
- The Government of India undertook various

measures to curb benami transactions across the country. Some of the measures include setting up of 24 Benami Prohibition Units (BPUs) for taking effective action under the Benami Act and empowering relevant authorities to attach and eventually confiscate benami properties.

- Department of Financial Services advised banks in September 2017 to put restrictions on bank accounts of over two lakh struck-off companies and use enhanced diligence while dealing with companies.
- The Income Tax Department intensified actions under the new Benami Transactions (Prohibition) Amendment Act, 2016 (the Act) w.e.f. 1st November, 2016 and framed the Prohibition of Benami Property Transactions Rules, 2016.

III Department of Financial Services (DFS)

In order to strengthen the banks, which are the key pillars of the economy, the Government decided to take a **massive step to recapitalise PSBs** in a front-loaded manner, with a view to support credit growth and job creation entailing mobilization of capital of about Rs. 2,11,000 crore over the next two years, through budgetary provisions of Rs. 18,139 crore, Re-capitalisation Bonds to the tune of Rs. 1,35,000 crore, and the balance through raising of capital by banks from the market while diluting government equity.

On 23rd August 2017, Cabinet gave in-principle approval for Public Sector Banks to amalgamate through an Alternative Mechanism (AM). The decision would facilitate consolidation among the Nationalised Banks to create strong and competitive banks. Subsequently on 1st Nov 2017, the composition of the **Alternative Mechanism committee for consolidation of the Public Sector Banks (PSBs)** was finalized. Under the Chairmanship of the Union Minister of Finance and Corporate Affairs, Shri Arun Jaitley and two other Members - Shri Piyush Goyal, Minister of Railways and Coal and Smt. Nirmala Sitharaman, Minister of Defence, proposals from banks for in-principle approval to formulate schemes of amalgamation will be received and a Report on the proposals cleared by it will be sent to the Cabinet every three months.

The Government also undertook some major legislative changes to facilitate recovery and resolution of stressed assets. The **Insolvency and Bankruptcy Code, 2016** was enacted as a unified framework for resolving insolvency and bankruptcy matters to put in place safeguards to prevent unscrupulous, undesirable persons from misusing or vitiating the provisions of the Code.

- The Due Diligence Framework of the code was strengthened - Prior to approval of a Resolution Plan, the Resolution Applicants, including promoters, will be put to a stringent test with respect to their credit worthiness and credibility
- It registered National E-Governance Services Limited (NeSL) as an Information Utility (IU) under the IBBI (Information Utilities) Regulations, 2017

- It also notified the IBBI (Grievance and Complaint Handling Procedure) Regulations, 2017 in the Gazette of India on 7th December, 2017.
- Loans extended under the **Pradhan Mantri Mudra Yojana (PMMY)** during 2017-18 crossed the target of Rs. 121450.31 crore till 8th December 2017. Under the scheme a loan of upto Rs. 50000 is given under sub-scheme 'Shishu' between Rs. 50,000 to 5.0 Lakhs under sub-scheme 'Kishore' and between 5.0 Lakhs to 10.0 Lakhs under sub-scheme 'Tarun'. About 6.28 crore loans were extended to women entrepreneurs till 21st July 2017. 76% of the borrowers under PMMY were women entrepreneurs.
- The number of total bank accounts opened under **Pradhan Mantri Jan Dhan Yojana (PMJDY)** became 30.69 crore as on 29th November 2017. The number of zero balance accounts declined from 76.81% in September 2014 to less than 20% in Sept 2017. Also, more than 23.08 crore RuPay cards were issued to the account holders along with an overdraft facility of Rs. 5000/- till 29th November 2017. Also, all RuPay ATM-cum-Debit Cardholders were made eligible for accidental death and permanent disability insurance cover.
- Over 69 lacs subscribers joined **Atal Pension Yojana**, flagship program of the Government of India under financial inclusion and financial security, with contribution of Rs. 2690 crore till October, 2017.
- Government launched the **Pradhan Mantri Vaya Vandana Yojana (PMVVY)** to provide social security during old age and to protect elderly persons aged 60 and above against a future fall in their interest income due to uncertain market conditions.

- Till August 2017, about 52.4 crore unique **Aadhaar numbers** are linked to 73.62 crore accounts in India. As a result, the poor are able to make payments electronically. Every month now, about 7 crore successful payments are made by the poor using their Aadhaar identification.

- Maximum age of joining **National Pension Scheme (NPS)** was increased from the existing 60 years to 65 years under NPS- Private Sector

IV Department of Disinvestment and Public Asset Management (DIPAM)

- The Central Government raised a total of **Rs. 52,389.56 crore** through disinvestment till 15th December, 2017 in the current Financial Year 2017-18.
- With the aim of using Exchange Traded Funds as a vehicle for divestment of shares to meet the target for CPSE's disinvestment in 2017-18 set at Rs 72,500 crore, the Government launched a **new Exchange Traded Fund (ETF)** by the name **BHARAT 22** on 14th November 2017, managed by ICICI Prudential, targeting an initial amount of about Rs.8,000 crore. Bharat-22 is a unique blend of 22 stocks of CPSE's, PSB's & strategic holding of SUUTI. Compared to energy heavy CPSE ETF, Bharat 22 is a well-diversified portfolio with 6 sectors (Basic Materials, Energy, Finance, FMCG, Industrials and Utilities). The strength of this ETF lies in the specially created Index S&P BSE BHARAT-22 INDEX and has been demonstrated in its performance from the time of its announcement in August 2017 wherein it has outperformed the NIFTY-50 and Sensex and **raised about Rs.14,500 crore**.
- Some of the other major disinvestments successfully done by the Department in the FY 2017-18 are,

NAME OF CPSES	% OF GOIS SHARES DISINVESTED	RECEIPTS (In Crores)	GOIS SHAREHOLDING POST DISINVESTMENT
OIL	5.6	1135.26	66.13%
NALCO	9.2125	1191.73	65.38%
HUDCO	10.193	1207.35	89.81%
SUUTI	Strategic Disinvestment	41.53.65	-
NIA	11.65	7653.32	85.44%
NTPC	6.63	9117.92	63.11%
GIC	12.5	9704.16	85.78%

(Source – DIPAM site)

- On 16th August 2017, the Cabinet Committee on Economic Affairs, chaired by the Prime Minister Shri Narendra Modi, had approved the proposal of Department of Investment and public Asset Management (DIPAM) for the strategic disinvestment (i) For setting-up an Alternative Mechanism (AM) consisting of the Finance Minister, Minister for Road Transport & Highways and Minister of Administrative Department, to decide

on the matters relating to terms and conditions of the sale from the stage of inviting of Express of Interests (Eols) till inviting of financial bid; and (ii) For empowering the Core Group of Secretaries (CGD) to take policy decisions with regard to procedural issues and to consider deviations as necessary from time to time for effective implementation of decisions of CCEA. The approval will help in speedy completion of strategic disinvestment transactions.

V. Department of Expenditure (DOE)

- **General Financial Rules (GFRs)**, 2017 were released on 7th March, 2017 to enable an improved, efficient and effective framework of fiscal management while providing the necessary flexibility to facilitate timely delivery of services.
- **7th CPC** - On 28th June 2017, the Union Cabinet chaired by the Prime Minister Shri Narendra Modi approved the recommendations of the 7th CPC on allowances with some modifications. The revised rates of the allowances came into effect from 1st July, 2017 benefitting more than 48 lakh Central Government Employees.
- While approving the recommendations of the 7th CPC, the Cabinet had decided to set-up the Committee on Allowances (CoA) in view of substantial changes in the existing provisions and a number of representations received. The 7th CPC adopted a three-pronged approach in examining a total of 197 allowances which involved an assessment of the need for continuation of each allowance, appropriateness of the set of people covered by the allowance and rationalisation which involved clubbing of allowances with similar objectives. Based on the examination on these lines, the 7th CPC recommended that 53 allowances be abolished and 37 be subsumed in an existing or a newly proposed allowance. For most of the allowances that were retained, the 7th CPC recommended a raise commensurate with inflation as reflected in the rates of Dearness Allowance (DA). A new paradigm was evolved to administer the allowances linked to risk and hardship. The myriad allowances, their categories and sub-categories pertaining to civilians employees, CAPF and defence personnel were fitted into a table called the Risk and Hardship Matrix (R&H Matrix).

Promoting Digital Platforms

- **Monitoring of funds through PFMS** – On 27th October 2017, the Union Finance Minister, Shri Arun Jaitley made the use of Public Finance Management System (PFMS) mandatory for all the Central Sector Schemes of the Government of India to help in tracking and monitoring the flow of funds to the implementing agencies. These Central Sector Schemes (CSS) with a Budgetary Outlay of Rs.6,66,644 crore covered over 31% of the total Central Government expenditure during the Financial Year 2017-18. PFMS, with the capability of providing real time information on resource availability, flows and actual utilization has tremendous potential to improve programme/financial management, reduce the float in the financial systems by enabling 'just in time' releases and also the Government borrowings with direct impact on interest costs to the Government.
- **Mobile friendly format website:** The Finance Minister Shri Jaitley also launched the new website of the Department of Expenditure. As part of the

Digital India Programme, the up-graded common landing webpage of the new website of the Department of Expenditure is a major step towards standardization and improvement in presentation and content delivery using the Content Management Framework (CMF).

- The Controller General of Accounts (CGA), launched the **upgraded version of Central Pension Accounting Office (CPAO)** website (www.cpao.nic.in) on 30th Nov, 2017 primarily to cater to the needs of central civil pensioners and other stakeholders in the Ministries/Departments and Banks. It provides a single window for both accessing pension related information and facilitating grievance Redressal of pensioners.

Public Expenditure Management in the North Eastern States

- The Department of Expenditure, also took several initiatives in the area of Public Expenditure Management in the North Eastern States with special focus on capacity building of the State Government officials and integration of the State Treasuries with the Union Public Financial Management System (PFMS) in order to improve the efficiency and transparency of public expenditure. The Government also released advance grant-in-aid of Rs.51.30 crore to Arunachal Pradesh for rescue and relief operations on account of flash floods

Public Expenditure on Infrastructure

- The Government has consistently increased Public Expenditure on Infrastructure in order to boost employment and provide renewed impetus to economic growth. The Government of India received Rs.7,67,327 crore (47.9% of corresponding BE 17-18 of Total Receipts) upto October 2017 comprising Rs. 6,33,617 crore Tax Revenues (Net to Centre), Rs. 95,151 crore of Non-Tax Revenues and Rs.38,559 crore of Non-Debt Capital Receipts. Non-Debt Capital Receipts consists of Recovery of Loans (Rs. 8,394 crore) and Disinvestment of PSUs (Rs. 30,165 crore). Rs.3,37,280 crore has been transferred to the State Governments as Devolution of Share of Taxes by Government of India in this period.
- There has been a Special thrust on key development sectors including Rural Roads, Housing, Railways, Power, Highways and Digital Infrastructure. The CAPEX target of the Government of India for 2017-18 was Rs. 3.09 lakhs crore, which is 31.28% higher than last year, out of which Rs.1.46 lakhs crore was spent on capital works till September 2017. The Government launched a new Umbrella program for Road Building of 83,677 km of roads involving CAPEX of Rs.6.92 lakhs crore over next 5 years with an outlay of Rs.5,35,000 crore that would generate 14.2 crore man-days of jobs.

Source: PIB, 18th December 2017

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WTO UPDATE :

DG AZEVÊDO: “WTO PROVIDES THE STABILITY AND CERTAINTY THAT BUSINESSES NEED”



In opening the Business Forum on 12 December, Director-General Roberto Azevêdo congratulated Argentina on its initiative in organising the event, highlighting this is the first time such an event has been held alongside a WTO Ministerial Conference. He said: “It’s long overdue. And I think it marks a step change in business engagement with the organization.” He added: “You are the job creators. Your sense of entrepreneurship and innovation is what provides opportunities for growth, prosperity and inclusion. So I want you to see the WTO as a partner here.” This is what he said:

DG Azevêdo: “WTO provides the stability and certainty that businesses need”

I want to start by congratulating the President, Minister Cabrera and the Government of Argentina for their visionary initiative in organising today’s business forum.

This is the first time that such an event is held alongside a WTO Ministerial Conference. It’s long overdue. And I think it marks a step change in business engagement with the organization.

While governments may be the ones who meet at the WTO to discuss and negotiate trade issues, businesses and other stakeholders are the users of the trading system. And it is through business that many of the positive effects of trade are transmitted to our economies and communities.

You are the job creators. Your sense of entrepreneurship and innovation is what provides opportunities for growth, prosperity and inclusion.

So I want you to see the WTO as a partner here.

The WTO is the only organization dealing with trade rules at a global level.

With 164 members, we bring developed together with developing. We bring Mercosur together with APEC. We bring the BRICS, the LDCs, the US, the EU and the African Union together, under one roof.

No other forum unites the world’s trading nations in this way, under a system of shared rules and principles.

Ninety-eight per cent of world trade takes place under WTO rules today.

With a global membership, we speak a lot of languages in this organization. But I think there’s one language which sometimes we have failed to speak. And that’s the language of business. I want to try to do that now. So here’s the pitch ...

The WTO delivers an essential service to businesses around the world. We do that in two ways.

First, the WTO provides the stability and certainty that businesses need.

We saw that in 2008, when the financial crisis did not lead to a catastrophic wave of protectionism, as we saw in the past.

This was because countries knew that they all had shared commitments under the WTO. Businesses around the world benefitted from this stability. And they continue to benefit from it today.

So that’s the first service we provide.

The second is to keep delivering new reforms. And in recent years this is what we’ve done. We have given businesspeople around the world a series of reasons to sit up and take notice.

In the space of four years ...

- We have delivered the Trade Facilitation Agreement, which could boost global trade by around 1 trillion dollars per year.
- We have eliminated agricultural export subsidies.
- And we have expanded the Information Technology Agreement, eliminating tariffs on trade of around 1.3 trillion dollars.

These measures constitute the biggest trade reforms for a generation.

So now businesses want to get more involved – and you want to know what’s next. You want to be a part of our next steps.

Members are currently discussing a number of issues. Many topics are being discussed here in Buenos Aires. This includes agriculture, services, fisheries subsidies, e-commerce, investment facilitation, and work to help more small businesses to trade.

There's no doubt that the high level of business engagement has played a role in informing and shaping some of these conversations – particularly through the Trade Dialogues initiative that we support with the ICC and B20.

This initiative has enriched our debates at the WTO. It has provided an opportunity for businesses, labour, academia and others to discuss the full range of trade issues, and present their recommendations to the WTO. We will be having a follow up session early in 2018.

And we're building on all of this in a variety of new ideas and initiatives. Let me take a moment to tell you about some of this work.

Yesterday afternoon, together with the World Economic Forum and Jack Ma, representing the Electronic World Trade Platform, we launched a new collaboration on 'Enabling E-commerce'.

Jack and I share a vision of an internet for all; of e-commerce as a real opportunity for smaller players, entrepreneurs and regular citizens.

That is precisely what this new initiative is all about. It will create a high-level dialogue to deepen the debate on e-commerce, with the aim of ensuring that the benefits of e-commerce are available as widely as possible. This will be a very results-driven conversation. And, again, I think this can really help to enrich our work.

And there's more.

We want to be much more active – taking practical steps wherever possible to help people trade.

Information is often a big barrier to trading – especially for small businesses. So we are developing a new portal with UNCTAD and ITC. This consolidates into a single platform all the information needed to export.

So if you want, for example, to export beef from Buenos Aires to Beijing, all it takes is a few clicks to get the information you need – covering rules, regulations, tariffs, sanitary requirements and so on. This is a tremendous initiative – but it's also a work in progress. We need members to keep providing information to help in this effort.

We are also trying to spread the word about the power of trade for smaller players.

With the ICC, we launched the Small Business Champions initiative calling on businesses to present concrete proposals to boost awareness and help SMEs to trade.

In that context, together with Google, we have been running a video competition for small businesses, asking them to share their experiences in leveraging the internet to become global exporters. We have a great response, with submissions from all around the world.

And I am very pleased to announce the winners today.

The winning video is from a lady called Juliet Ajaab in Ghana. She tells the story of how she has used the internet to gain the skills she needed – often from her sick bed – to grow her garment business from an idea to become a successful exporter.

The videos telling her story, and others, will be screened around the venue today – and on our website. They are pretty inspiring – so I urge you to take a look. And to acknowledge Google's role in supporting this competition, we've made them our first ICC-WTO Small Business Champion.

We're encouraging others to come forward with their positive, practical ideas, so that they can become small business champions as well.

I am delighted to say that we're announcing another successful proposal today – this time from Mercado Libre and the Argentine Chamber of Commerce. This proposal could make a real difference to SMEs here in Argentina. So it's great timing. And I'm pleased that Marcos Galperin, the CEO of Mercado Libre, is here this morning as well.

In closing, I think the WTO has strong momentum today.

We've seen a huge level of political support for our work here in Buenos Aires – particularly at Sunday's Presidential opening ceremony. It sent a very strong message about trade as a force for good, and the importance of the trading system itself.

I would urge you to reinforce this message here today. We want to hear your voices in this debate.

Let's keep working together to build a stronger trading system, for the benefit of all.

Thank you.

Source: WTO Website

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BRANCH NEWS

- ALWAR BRANCH
- AHMEDABAD BRANCH
- BANGALORE BRANCH
- JAMSHEDPUR BRANCH

- MUMBAI BRANCH
- MUNDRA BRANCH
- NEW DELHI BRANCH
- VADODARA BRANCH

ALWAR BRANCH

IIMM Alwar Branch Organised "Two days executive development program on Public procurement" during December 16-17, 2017 at Hotel Motidoongri Palace, Alwar. Total seventeen participants attended the programme from, IIT Indore, NBRI Lucknow, CRRI New Delhi, MES, Mereth, PCDA, Jaipur, HPL Delhi, NiPER CHANDIGARH. On 16/12/2017 Mr. H K Sharma Vice president North and additional Director General Ministry of Commerce was the speaker.



Mr. Sharma took the sessions on Emerging trends in Materials Management, Government Procurement Policies and procedures on procurement of goods and services. The recent changes in GFR and procurement policy was discussed in detail.

Mr. Sharma also discussed the recent government initiative about Government e Market place portal and compulsory procurement of goods and services available on government e Market place e portal.

On 17/12 /2017 the 1st speaker was Mr. B L Meena Dy. Chief Materials Manager, North West Railway, Jaipur. Mr. Meena discussed about e procurement in Railways. The talk on e procurement system was very much informative and useful to all the participants. At present the Railway e procurement system is the best and fastest procurement system and the procurement is very much transparent, economic and efficient. The process of e auction and reverse auction and order flow, process flow was liked by all the participants.

In the last and concluding session Mr. L R Meena founder Chairman and National Secretary and Treasurer took the sessions on " Preventing Vigilance in Public procurement. The programme ended with distribution of certificates to the participants.

AHMEDABAD BRANCH

Ahmedabad Branch organized a talk on "Innovative Leadership" by Mr. Vikas Jain, who is Director- Global Leadership Team of Lions Club International, in lecture hall of Ahmedabad Management Association on 9th Dec 2017 under its Knowledge Augmenting Series. Audience consisted of 43 hard-core professionals who enjoyed the talk thoroughly.





Mr. D K Goswamy Programme Coordinator Introducing Speaker & Subject



Mr. Manoj Pandey Presenting Medal to Mr. Aninda Dutta for Achieving of 2nd Rank in GDMM at National Level



Speaker Mr. Vikas Jain giving his Talk.



Mr. Purvish Patel Presenting Memento to Speaker Mr. Vikas Jain & Mrs. Jain



Enlightened Members Enjoying The Talk



Mr. Anil Patil Presenting Memento to Mr. Hitendra Goswami for his Meritorious Performance in the field of Materials Management & Completion of PGDMM



Audience in Rapt Attention During Presentation



Mr. Anil Patil Presenting Memento to Mr. Aninda Dutta for his Meritorious Performance in the field of Materials Management & Completion of GDMM



Mr. Anil Patil Presenting Memento to Mr. Hardik Shah for his Meritorious Performance in the field of Materials Management & Completion of GDMM

Branch Chairman Mr. Pankaj Panchbhai mentioned in his inaugural talk: "This helps us in organizing quality programs for our members and take our institution forward."

We in IIMM Ahmedabad are 380 and should cross 400 mark by the end of the year. I am happy practicing MM professionals on their own are seeking membership of your institution. We are in the process of inducting more members and achieve the task of crossing 500 + membership mark in following months.



Honorary Secretary Mr. Rakesh Gupta Wrapping up the Session.



EC Committee Members arranging a Successful Evening Lecture

I sincerely appreciate Shri Goswamy, who has kept flag of IIMM afloat by organizing programs relentlessly, which has brought us, closer to industry and fraternity of Material Management Professionals.

Admission process and exams are on. We should spread message around in industry so that more and more MM Professionals can improve their employability post going through these courses.

We do currently invite guests to attend these programs to have the feel of the Institution. I suggest those of you have not become members may do so. Membership forms are available at registration desk.

He then read out **Mission Statement** of institution and exhorted members to follow it in letter and spirit. **"To promote professional excellence in Materials Management towards national Prosperity through sustainable development."**

Inside the lecture hall, a standee displayed the details of various professional courses institution is doing for benefit of Materials Management Fraternity and how these courses are helping industry in improving their profitability post induction of these trained professionals.

Mr. D K Goswamy Program Coordinator introduced Speaker and Subject:

"Mr. Vikas Jain

When he speaks, everyone listens!

Mr. Jain is a gifted orator and a distinguished speaker having conducted more than 50 seminars on many aspects of Leadership. He is a very popular speaker in the Lions circles and all his talks are instant hit with lot of interesting and live examples. He is owner of a manufacturing facility specializing in the manufacture of garments for the Corporate, Hospitals, Educational institutes and Industries. Mr. Vikas Jain is also holding the position as the President of Udaipur Friends Association. He delivers his talk extempore, and would love to do so today also.

He would deliver a talk on...

"Innovative Leadership"

Synopsis of Mr. Vikas Jain's talk is as follows.

Given an opportunity, everybody can be a leader: Mr. Jain described it with his own flair of explaining with example. He went on to give the traits of a leader and a leader with Innovative ideas.

Some of the traits are listed below:

- Innovation is a state of mind. The same is very much required in bad times.
- Appreciate yourself
- Attitude – Fearless loyalty to doing what's right for the organization and the customer
- Practical
- Trust Culture. Create a climate of reciprocal trust

- Customer focus
- Persuasive
- Communication – make relations/friends
- Try harder routes – stretch yourself and excel.
- Emphasize speed
- Respond quickly
- Motivation /appreciation – For innovation to exist you have to feel inspired
- Passionate
- Modesty
- Analytical
- Strategic vision and planning for end results

All these good words are well-known but the same were discussed and brought out convincingly to the audience with many live examples. Session followed by good question answer session. Many participants asked practical solution to day-to-day difficulties faced by them with co-workers.

Purvish Patel Presented Memento to Mr. Vikas Jain with his better half.

Ahmedabad Branch received following 3 awards on national level.

- (1) Mr. H. K. Gupta for Best Chairman Award on National Level
- (2) Mr. H. K. Gupta for Best article in MMR
- (3) Mr. Pankaj Panchbhai for Individual Membership Growth on National Level.

Mr. Aninda Dutta was handed over the Silver Medal, Certificate and Branch award for securing 2nd position in GDMM on all India basis at the hands of Mr. Manoj Pandey. Following students have awarded at the hands of Mr. Anil Patil our course coordinator for their meritorious performance,

- 1) Mr. Suvendu Acherjee
- 2) Mr. Kaushik Patel
- 3) Mr. Hitendra Goswami
- 4) Mr. Shreyansh Shah
- 5) Mr. Pranav Kulkarni
- 6) Mr. Aninda Dutta
- 7) Mr. Hardik Shah
- 8) Mr. Jayshil Thaker

New members were recognized on their joining as Life Member of IIMM. **Mr. Rakesh Gupta, Hon. Secretary** in his wrapping up remarks said:

“ We thank Shri D.K. Goswamy for introducing Shri Vikas Jain, today’s enlightened speaker, who is Director – Global Leadership Team of Lions Clubs **International**.

Mr. Jain has a long experience in handling his own unit of garments for the Corporates, Hospitals, Educational institutes and Industries. He gave us a very good insight on the topic of the day “**Innovative Leadership**”. He has made today’s topic very easy to understand by giving live examples. Sir, we are lucky to have you as our speaker today as we are going back with some useful take-aways.

We would like all these lectures to be sponsored, so that we have not to draw from our savings for these programs.

We look forward to hear from some of you on the sponsorship front soon. I request the guests today to kindly collect the membership form and submit the same at the earliest to avail of IIMM facilities regularly.

Please return the feedback forms duly filled to any of our volunteers. The same will help us in improving our activities in future” Members dispersed with fond hope of meeting soon for another interesting presentation.

BANGALORE BRANCH

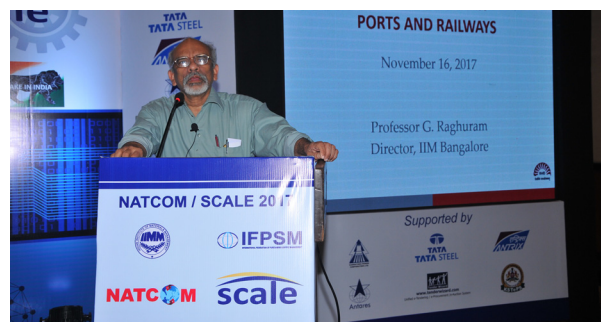
27.10.2017 – CEO Meet : CEO – MEET organized on 27th October 2017 at Capitol Hotel on the theme “Opportunities and Business Growth in Current Scenario – Role of Supply Chain” This was curtain raiser of NATCOM –SCALE 2017 on 16th and 17th NOVEMBER 2017 at Vivanta by TAJ.



Dr. Rangan V. CEO Microgram -addressing on Block Chain Technology



Mr. C.D. Shridhara, Director, Ananth Technologies handing over a memento to Mr. Suresh Kumar Kannappan, Sr. Director Region South, DB Schenker one of Panelist



Prof. G. Raghuram, Director, IIMB -addressing on Future Trends in Railway & Port Logistics



Mr. C.D. Shridhara, Director Handing over a memento to Mr. N. Muralidharan, Moderator of the CEPCPO Meet



Mr. N. Muralidharan, Distinguished Member & Moderator for Panel Discussion addressing the Gathering



Mr. P.M. Biddappa, N.C. Member and Convenor NATCOM-SCALE 2017 proposing vote thanks on 27.10.2017 CEO-CPO Meet

Panel Speakers were: Mr. B.V. Suresh Kumar, President, Antares Systems Limited Mr. Suresh Kumar K., Sr. Regional Director, Schenker India Pvt. Ltd., Dr. Anil Chinna Bhandar, Sr. Vice President, Supply Chain, Landmark Group- Mr. H. Nandi, Managing Director, AETHON Energy LLP Mrs. N.S. Rama CEO – ELCIA

Mr. N. Muralidharan distinguished member moderated the program. Mr. K.C. Harsha, N.C. Member co-ordinated

the CEO meet. About 50 CEOs/CPOs were attended from reputed organisation. Mr. P.M. Biddappa, Convenor NATCOM-SCALE 2017 proposed vote of thanks.

15.11.2017 –YMM Competition: Young Materials Managers 2017 was organized on 15th November 2017 – at KSBA, Bangalore, Theme: “GST in India & Globally Evolving Technology Driving forces for SCM”



Group of NEC Meeting Members Present



NEC Meeting Held on 15.11.2017 a view of NEC members present



YMM Competition held on 15.11.2017 a view of Participants with National President and Panel Jury

There were 7 teams participated in the YMM Competition from :

Tata Steel, Jamshedpur, ONGC Petro Additions Ltd. Vadodara, Larsen & Toubro Hydracarbon, Vadodara, Bosh Ltd. Bangalore, and CESC Ltd, Kolkata

Prize Winners:

I Prize : Larsen and Toubro Hydracarbon, Vadodara

II Prize: CESC Ltd. Kolkata
III Prize: Bosch Ltd. Bangalore.

16-17th November 2017 – NATCOM –SCALE 2017 : IIMM, Bangalore Conducted the Twin Event – National Convention of IIMM (NATCOM) along with 16th successive signature event SCALE of Bangalore Branch. In line with IIMM tradition of choosing contemporary topic of national Interest, the theme for NATCOM –SCALE 2017 chosen was “**Technology Challenges for Next Generation Supply Chain and Logistics**”

The mega twin event was held on 16th and 17th November 2017 at Vivanta by Taj, Bangalore.

NATCOM –SCALE 2017 was inaugurated on 16th November 2017 by Chief Guest Dr. Annadurai, Director ISAC along with the Key note Speaker Ms. T.S. Ushasri, Sr. Vice President and Managing Director of Manhattan Associates and Mr. D.P. Nagendra Kumar Principal Additional Directorate General – Intelligence for GST – Bangalore.

NATCOM –SCALE 2017 – (Day -1 - 16.11.2017 – Evening Session) marked with the beginning of Annual General Body Meeting of IIMM and National Council Meeting. This was followed by an interesting cultural dance program and also coupled with Award Ceremony giving away awards to various professionals like National Award, IIMM Best performance branches, both for Metro and Non-Metro, bagged by Bangalore and Aurangabad for the professional development of IIMM Activities in their respective regions.



NATCOM -SCALE 2017 INAUGURAL SESSION -LIGHTING THE LAMP -Chief Guest -Dr. Annadurai, Director, ISAC



Power Panel Session



Two day's mega event on 16th and 17th November 2017 - The technical conference brought together eminent industry leaders, opinion makers, leading Consultant and academicians and delegates derived maximum inputs through various high powered technical sessions, which are extremely useful for today's SCM professionals in gearing up to meet the challenges ahead to meet the objective of the value chain.

The **NATCOM – SCALE 2017** was ably organized under the leadership of Dr. C. Subbakrishna, along with Branch Chairman Mr. Srinivas V. Rao, Convenors and with support of each and every person in Organising Committee, the event was a grand success.

The NATCOM –SCALE 2017 committee consisting of EC / NC and Office Staff of IIMM Bangalore Branch along with past senior members created history of sorts by setting various benchmarks.

17.12.2017 -Family Get-together Meeting : A Family Get-together Meeting of Bangalore Branch was organized on Sunday, the 17th December, 2017 at Shilhaandara Resort, Ramnagara. All NATCOM – SCALE 2017 Committee members with their family were invited for the Get-together.



Get together Meeting



Resort was including indoor games like Table Tennis, Carom, Chess, Dart, fuse ball and usage of swimming pool, Mist dance for 30 minutes with DJ. Outdoor games like Beach volleyball, cricket, tug of war, shuttle badminton, cycling, cater pillar & basket ball.

Committee members with their spouse and children enjoyed the arrangement. Post lunch the committee had brief meeting. Mr. Srinivas V. Rao, Branch Chairman expressed his thanks to all the members for supporting during recently held NATCOM -SCALE on 16th and 17th November 2017 at Hotel Vivanta by Taj which was a grand success and mentioned that the feed back that was received was 'Very Good' from the delegate participants.

Mr. Srinivas V.Rao, Branch Chairman also felicitated all members who have attended get together meeting on 10th December 2017 by giving appraisal memento including their spouse for supporting grand success of the NATCOM-SCALE 2017.

JAMSHEDPUR BRANCH

Lecture Meeting on GST on 11th November, 2017 at RMCE Library : A lecture meeting on "GST" was arranged for the knowledge and benefit of the members of IIMM Jamshedpur Branch on 11.11.2017 at the RMCE Library. The lecture was delivered by CA S. M. Prasad of Tata Motors. Large number of members and students were present on this occasion. Chairman Mr. Shambhu Shekhar welcomed the learned speaker and requested Miss Snigdha Giri to formally welcome the speaker by presenting a flower bouquet.

Mr. Prasad presented "GST" through a power point presentation taking each aspect of GST. It was a very lively session where lot of interaction took place between the speaker and audience. At the end Mr. N K Singh, EC Member presented the vote of thanks.



Chairman Mr. Shambhu Shekhar introducing the speaker Mr. S M Prasad



Audience at the Lecture Meeting

Press Conference on 25.11.2017 : A press conference was organized to give wide publicity about the NATCOM 2017 held on 16-17 November 2017 at Bangalore and the National Awards won by IIMM Jamshedpur.

Chairman Mr. Shambhu Shekhar gave a brief of IIMM and NATCOM 2017 which is held every year at different branches. He said that it is an annual event where learned speakers from various specialized areas in Supply Chain Management and Life Management deliver talks for enhancing the knowledge base of delegates and life style. Every year competitions are held among the branches for various areas of excellence.

This year Jamshedpur Branch had been adjudged for four awards:-

1. Best Branch Award (Non- Metro)
2. Best Branch Educational Activity Award
3. Distinguished Membership Award – Awarded to Mr. K. N. Mishra
4. Best Membership Growth Award (Non-Metro)

Members from Press and Media were present in good number and the news was well covered in many Newspapers and the Local TV Channels.



MUMBAI BRANCH

IIMM Mumbai held a National Submit on Public Procurement on the 8th December 2017 at Novotel Hotel. Mr Satish Palekar – Chairman of IIMM did the introductory speech and the inauguration of the submit was done by the Chief guest Mr.S.K. Sharma – Chairman and Managing Director - NPCIL who was the chief guest and spoke briefly to the delegates and the lighting of the lamp was done by him along with other dignitaries with the soothing bhajan of Ganesh Vandana in the background.

The master of ceremonies Mr. Animesh Shah - Vice Chairman IIMM Mumbai set the ball rolling for a very interactive and highly informative session. The submit was attended by 125 delegates (including member and invitee members). The session which was highly interactive was that of Ms. Radha Chauhan whose subject “procurement through Government E-Market place: GeM portal was a great success with the delegates and many wanted a repeat session of the same. The other speakers like MR. Hemant Kumar Chief Technical Examiner (CTE), CVO’S office answered all questions raised by delegates during the question and answer session his answers were crisp and he had a humour to some of his answers which the delegates appreciated, Mr.Girish Bhatnagar Ex General Manager East Central Railways & consultant (Public Procurement) and Mr. Ashwini Nagia – Executive Director & Chief (MM) ONGC, New Delhi, Mr. MVR Krishnaswamy- Executive Director, Central Procurement, HPCL Mumbai and Mr. R.B.Gupte – Director MSME Mumbai spoke in detail about in great detail and the delegates gained useful knowledge of the subject matter which was a huge success and each speaker overshot their allocated time slot provided to them.

The feedbacks from the delegates about the overall submit was that it was very informative and very useful

for their day to day work function. The program was coordinated by Mr. A.R.Sarkar with support of Dr.Shete and IIMM office and Executive Committee members. The National Summit on Public Procurement was ended by a vote of thanks given by Mr. Satish Palekar- IIMM Chairman.

One Day In House Training Program on Import Policy Procedure, Payment Methods was conducted at UPL Ltd., Mumbai on 7th November 2017. The Program was conducted by Mr. Sashi Chaturvedi, the famous tax consultant and Trainer and Mr. G R Apte, The program was well appreciated by the participants.



A two day workshop on Inventory, Warehousing and Logistic Management was conducted on 24th and 25th November 2017 at Tata Communications Ltd., Mumbai. There were 20 participants. The Workshop was tailored made for the specific requirements of the company. It was conducted by Mr. Balakrishnan Iyer, Mr. Surendra Deodhar, Mr. Ganesh Apte, and Mr. Ankit Chande. The program was well appreciated by the participants.



MUNDRA BRANCH

On behalf of IIMM, Mundra branch I thank all Members of Mundra branch for their active participation in making the branch agile and lively.

Two Programmes were Conducted by IIMM, Mundra branch in the Month of December 2017. Attachment showing photographs of both the Programme is also being sent for Publishing in the Monthly magazine.

1. A knowledge sharing session was conducted at CGPL (Tata Power, Mundra) on 05-12-2017. All participants of Mundra IIMM Branch along with Supply chain Professionals of M/s Adani Power Ltd. CGPL and MSPVL attended the Programme. Participants from Adani Power Ltd. & CGPL presented Unique practices in Supply chain practiced by them.

APL deliberated on MRP and its benefit in Large Organization like APL with numerous OEMs, CGPL Presented their Outline agreement and benefits with such practices. Apart from these Exchanges were made on Core Issues faced Commonly by Supply Chain Professional in the Locality. The Programme was Concluded with a Vote of Thanks by Shanker Kumar Jha, Chairman, IIMM-Mundra branch.





devices During his PhD The presentation included the existing Technology,Raw Material Sourcing,New Technology and Future Technology in the Solar Manufacturing. It also covered the Problems faced in actual Manufacturing.Mr. Hannes also deliberated on future of Storage technology and its development.



2. IIMM Mundra branch arranged a session at Mundra Solar PV Ltd. on 08-12-2017, on present technology of Solar Module Manufacturing .The Presentation was given by Dr. Hannes J, Chief Technical Officer of Mundra Solar PV Ltd. Who is a graduate from the Technical University of Stuttgart. he worked on thin film crystalline Si solar cells and amorphous Si/crystalline Si heterostructure



VADODARA BRANCH

Training Programme for IDMC Participants in NOV'17 at ANAND : The training programme for One Day on 'INCOTERMS & ITS RISK MANAGEMENT IN PROCUREMENT CONTRACT' Topic had been organised on 25th Nov.'17 at IDMC Ltd. in Anand for middle management participants from Procurement & Vendor Development Departments wherein Faculty, **Mr. L. L. Notani** conducted Training Prog. The participants (about 27 Nos.) well appreciated the training programme & informed that it has enhanced their knowledge as solutions given by faculty for their problem areas would be helpful in their job with memorable moments depicted in photos given below. The Feedback Report from participants about Training Programme & Faculty was Excellent and very much Satisfactory as Trng. Prog. Contents, Exercises & Reference Mtrl. had been given to all participants in Hard Copy for their reference purpose & future usage.

NEW DELHI BRANCH

Delhi Branch of IIMM organized an Evening Lecture on "Emerging Trends in Public Procurement" at Chelmsford Club, New Delhi on December 20, 2017. The programme started.



Dr. M K Bhardwaj, Chairman Board of Studies & Former President was invited to give a talk on the above subject. His varied experience and efforts in the field of Public Procurement & General Financial Rules were highlighted by Mr. G Ajay Kumar, Chairman Delhi Branch IIMM.



The lecture was followed by an interactive session which was quite lively.

On conclusion, Mr. G Ajay Kumar, Branch Chairman presented the Flowers to Dr. M K Bhardwaj as token of regard from Delhi Branch of IIMM.

The vote of thanks was proposed by Smt. Deepak S Gulati, Vice Chairman, IIMM Delhi Branch.



Mr. L. L. Notani initiating the Training Programme Session



Participants engrossed in Trng. Prog.



The Test being taken of participants at the end of Trng. Prog.



The Group Photo of Participants with Ms. Shailey Kapoor from IDMC who organised the Trng. Prog.

Evening Talk held in DEC'17 : An Evening Talk was held on 9th December 2017 with Topic **'Supply Chain Management through Best Manufacturing Practices'** by **Mr. Ramesh Vishwakarma-Exec.VP(Business Excellence)** from POLYCAB WIRES P.LTD. of Halol Plant in Vadodara. The Speaker has done **B.E(Mech.)** from Visvesvaraya Regional College of Engg., Nagpur. He has attended Master Class for Directors leading to **Certified Corporate Directorship** conducted by Institute of Directors. He has undertaken 5 weeks AOTS Training at **Toyota Motor Corp., Japan** & done Diploma from ILO (Japan) for 9 months at Toyota, Japan. He visited Korea several times for conceptualizing Concept & transferring Technology from Daewoo, Korea to India & successfully executed its implementation. His language proficiency is in English, Bhasa Indonesia, Hindi & Japanese. His Core Competencies are Transformation Management or Change Management, Lean Mfg., Creating Innovative Environment & Leadership Development. He strongly believes in Training & Education activities by teaching & guiding the employees constantly. He has participated in various Forums like QCFl, AMA, etc. & has achieved Excellence in Project Execution, Plant Operation.

Generally, it is perceived as Purchase Dept. who buys Materials, Services for downstream & upstream processes to add value to customers and stakeholders. They are known as good bargainer who buy goods of best quality at lowest cost. SCM integrates supply & demand within company and across the companies who are engaged in producing & supplying goods to OEM. SCM Dept. is having Tier1, Tier2 suppliers who supply goods, services to them. Their Quality, Delivery & Cost is not competitive. It is very challenging for OEMs to procure world class materials because of inherent

deficiencies. In this session, solution part was discussed that how "most modern practices" are helping the company to be more price & Quality competitive to remain more competitive with respect to their competitors. SCM Dept. is having an opportunity to help organisation to create huge wealth through cost cutting by practising best manufacturing practices which will help in creating smooth flow of materials and stabilising the processes & flow in order to cut down the unwanted expenses and eliminating non-value added activity happening in the complete supply chain loop. Cash flow can be minimised. JIT can be applied. The materials can be supplied as & when needed, the quantity needed at right price & best quality. The confidence among owners of suppliers can be strengthened and we can convert small suppliers to big suppliers of world class to assist Simultaneous engineering. What is our current mindset of SCM Professionals? What is the mindset of customers & stake holders? What is the gap? How can we cope with market demand which is highly fluctuating and with resource management which are also highly fluctuating? There is a price war at market place. The customer's expectation is growing by leaps & bounds. There is cut throat competition. There is huge expectation from supply chain dept. by the organisation in helping the creation of wealth by cost cutting in buying price and making its product more competitive in terms of sales price.

The programme was attended by committee members & students who enriched their knowledge about Best Mfg. Practices for achieving Excellence in Supply Chain Management. The following photos depict highlights of Event –



Mr. Tushar Trivedi-Chairman welcoming the Speaker with Flower Bouquet



The Group Photo of EC Memebers with the Speaker



EXECUTIVE HEALTH

Winter Wellness: How to Stay Healthy During Winter

Dr. Edward Group DC, NP, DACBN, DCBCN, DABFM

Winter is a busy, festive time of year. It's also a time when more people tend to get sick. What exactly is it about this time of year that encourages aches and sniffles? "Catching a chill" has long been suspected as a cause of winter ailments and, for just as long, has been dismissed as folklore.

Can You Get Sick from Cold Weather?

It is true that exposure to cold temperatures constricts blood vessels and reduces blood flow. Conceivably, this could weaken the immune system since it means fewer protective white blood cells make the rounds.^[1] But, cold weather alone will not make you sick. Harmful bacteria and viruses are to blame, although some are easier to catch and spread during cold, dry weather.^[2, 3]

Human behavior is more responsible for the transmission of illness than cold weather. Human behavior facilitates the transmission of the common cold and flu. During the winter, we travel en masse and stay indoors, in close contact, with our friends and families. As a result, common winter concerns such as a cold, sore throat, asthma, stiff joints, cold sores, dry skin, and the flu are simply easier to catch.^[4]

Common Winter Health Concerns : Seasonal ailments are many and diverse. Let's look at a few of the most common and their symptoms and causes.

The Cold : The common cold affects millions of people. In fact, the average adult will catch it at least two or three times per year.^[5] Colds are caused by viral infections, and the most common are human rhinoviruses, or HRVs.^[6] They result in upper respiratory infections with symptoms like a runny nose, sore throat, cough, headache, or mild body aches.^[7]

Sore Throat : A sore throat, par for the course during the winter, is usually an early sign of an upper respiratory infection. To ease the symptoms a sore throat check out my article, 10 Natural Home Remedies for Sore Throat.^[8]

Asthma : Asthma isn't a seasonal ailment but asthma can be exacerbated by the cold, especially a sudden drop in temperature (such as when you step outside during the dead of winter). Additionally, an asthma attack, which can cause coughing, wheezing, and shortness of breath,^[9] can be brought on by other conditions, such as a cold or flu.^[10]

Norovirus : Norovirus is a contagious gastrointestinal illness that can cause nausea, projectile vomiting, and watery stool. It's especially troublesome in densely populated buildings like schools, hospitals, nursing homes, and cruise ships. Touching contaminated surfaces (like counters or doorknobs), eating food that's been handled by an infected person, or even inhaling viral particles can spread the virus.^[11]

Painful Joints : The relationship between stiff, sore joints and cold weather is a strange one. It seems counterintuitive that cold weather would exacerbate inflammation, but a sudden drop in temperature is usually preceded by a drop in barometric pressure. People with inflamed joints are more attuned to changes in atmospheric pressure and may feel more pain in injured areas. Stiff joints might also hurt more in the winter because people are more sedentary when it's cold outside.^[12]

Cold Sores : Cold sores are the result of the highly contagious HSV-1 virus. The virus remains dormant in the body's nerve cells until activated. Many factors, including stress or a compromised immune system, can trigger an outbreak. To prevent transmission to other people or parts of the body, avoid touching cold sores, don't share food or utensils, and wash your hands frequently.^[13]

Dry Skin : In many places, the humidity drops during the winter; less moisture in the air can lead to dry skin. Don't use harsh, drying soaps or bathe in water that's too hot—both can dry your skin. Moisturize your skin by applying a rich lotion after showering. You can also invest in a humidifier for your bedroom.

The Flu : Flu symptoms and cold symptoms are similar but flu symptoms are more severe and include fever, chills, body aches. If it escalates, the flu can lead to more serious health problems like pneumonia; it can even become life-threatening.^[14] It's important to be especially vigilant since you can catch the flu from up to 6 feet away by droplet transmission. Infected people are usually contagious for a day before symptoms appear and up to 7 days after.^[15]

If you get sick, stay home.^[16] Stay hydrated, get a lot of rest, and let yourself recuperate, don't spread it around your workplace. You're not at your best when you're sick, and you can greatly hinder productivity^[17] even further by getting your coworkers sick.

Winter Allergies : For many people, winter time means spending more time indoors... with the mold spores, pet dander, chemical cleaners, and dust mites. When you consider that most homes are sealed up tight and ventilation is lacking, it's no surprise that allergies can flare up during the winter months.^[18]

How to Avoid Getting Sick : Prevention is the best strategy for avoiding winter bugs. The following are tips for protecting yourself and keeping your immune system strong.

Follow a Healthy Diet : Eating poorly can significantly affect your health by changing the composition of your gut microbiome, leaving you open to attack from harmful bacteria. Conversely, consuming lactic acid bacteria naturally found in raw food like fruits and vegetables supports gut health.^[19] Probiotics like lactobacilli support normal respiratory health.^{[20][21]}

Many of the traditional, seasonal comfort foods offer little nutritional value. Studies show that concentrated glucose consumption without antioxidants causes oxidative stress in the blood^[22] and puts you in a pro-oxidative state,^[23] which compromises your immune defenses.^[24] Combat the effect by eating plenty of leafy greens, beans, and citrus.

Exercise and Stay Active : When it's cold and the days are short, working out might be the last thing you feel like doing, but exercise supports the immune system and may actually prevent you from getting sick. Aerobic exercise helps circulate white blood cells throughout your body so they can find and fight harmful microbes. Exercise lowers stress hormones^[25] and combats seasonal affective disorder.^[26]

Manage Your Stress : Stress is inevitable, and occasional stress is actually good for you.^[27] But, prolonged stress weakens the immune system.^[28] One of the many effects of stress is a shrunken, atrophied thymus. The thymus is the small organ in the lymphatic system that makes T-cells,^[29] which are highly specialized immune cells that target specific types and strains of microbes, like viruses.

Control your stress levels this winter and mitigate your stressors to support your immune system. Make time for yourself and avoid overcommitting to social engagements. Sometimes it's difficult to say "no" but rest and recuperation is essential for strong immune defenses.

Sleep Well : A lack of sleep affects the immune system and consistent sleep deprivation causes the body to enter a proinflammatory state—in as few as 8 days.^[30] Because immune cells are most active during the sleep cycle, a good night's rest is essential. If you feel you're coming down with something, get some rest—it strengthens the immune response.^[31]

Wash Your Hands : Regular hand washing is one of the best ways to prevent infection. Shared surfaces

like handrails, doorknobs, and elevator buttons are a conduit for pathogens. We then infect ourselves when we touch our faces.^[32] Most people touch their face an average of 4 times an hour, and they touch shared surfaces about 3 times an hour. Always wash your hands after touching shared surfaces.^[33]

Protect Your Skin : Skin can be especially sensitive to extreme temperatures. Bathing and showering in hot water can make dry skin worse, even prone to cracking.^[34] Cold, dry air wreaks havoc on skin, too.^[35] Moisturize your skin by applying organic skin care lotion immediately after getting out of the shower.

Gargle : Gargling is a great way to prevent yourself from getting sick. Though it's great for soothing a sore throat, it turns out that gargling salt water is an effective way to discourage upper respiratory infections.^[36] You can even try gargling green tea. According to one study, gargling with green tea is more effective than plain water at preventing fevers in children.^[37]

Stay Warm : Exposure to cold weather causes vasoconstriction. Dress appropriately for the weather and keep the immune defenses in your air passages strong and well supplied with white blood cells

Should You Get A Flu Shot?

The decision whether or not to get a flu shot is controversial but personal. Everyone needs to consider all the information and risks and decide for themselves. Find a non-biased, trusted health provider who is willing to have an honest conversation. Read and understand the warnings that accompany whichever flu shot you may be considering. Understand that the flu shot is not a magic shield and it won't protect against anything other than specific flu strains, and even then the action may take up to two weeks to develop.^[38] Everyone and every body is different, know that you can still get sick from the represented flu strains in the vaccine because effectiveness can vary from person to person.^[39]

Nutritional Supplements : Good nutrition is a foundation of good health. If you're not getting the complete spectrum of nutrients your body requires, nutritional supplements can help fill the gaps and support a strong immune system. During the winter months, I personally love Oregatrex™ and Floratrex™. The essential oils in Oregatrex help defend against harmful organisms and act as powerful antioxidants. Floratrex boasts 23 different strains of probiotics that strengthen the gut environment and make it more difficult for invading organisms to take hold.

Keep these tips in mind to keep your immune system strong this winter. Have yourself some happy healthy holidays!

Source: www.globalhealingcenter.com



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BRANCH ACTIVITIES



ALWAR BRANCH : Group Photo



AHMEDABAD BRANCH : Branch Chairman Mr. Pankaj Panchbhai Welcoming Participants.



BANGALORE BRANCH :
A view of CPOs and CEOs



JAMSHEDPUR BRANCH : Speaker Mr S M Prasad being welcomed by presenting a bouquet by Ms. Snigdha Giri



MUMBAI BRANCH :
M & L Skill Development Workshop, IIMM



MUNDRA BRANCH :
Knowledge sharing Session, Mundra



NEW DELHI BRANCH : Presenting a bouquet to Dr. M.K.Bhardwaj by Mr. G. Ajay Kumar, Chairman Delhi Branch



VADODARA BRANCH : Mr. L. L. Notani initiating the Training Programme Session

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