

ISSN 2320-0758

PRICE ₹ 50/-

# MATERIALS MANAGEMENT REVIEW



Volume 14 - Issue 1

Date of Publication : 1.11.2017

No. of Pages 1-60

November 2017



# WORLD SUMMIT 2017 AT TAIPEI, TAIWAN

## 22nd & 23rd September, 2017



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## *From the Desk of The National President*



Dear Fellow Professionals !

Greetings from your National President.

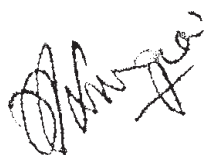
Professional Friends ! we all know one thing that never stops in this Universe is “Time”. Also we all too know that the “Change” is the law of nature and change is constant and permanent on this earth, irrespective of the fact as to what the Change brings for any one. In line with this rule of nature, it looks that the time has arrived of our departure as far as this communication is concerned. This is my last communication to you all through this journal of the institute, as you all know that the new Team will take over in the second half of this month. Hence, I shall have to opt for an alternate means of interaction, if need be there.

Fellow Professionals, in any democratic set up, all the achievements are the yield of group efforts and not of any one individual. While working towards any set target, the core team - called with whatever name, has to put its genuine & dedicated efforts for accomplishing the goal. It is also true that in democratic set ups any individual, even if crowned as supreme, cannot be given the rope long enough to accomplish his highly ambitious plans.

We – the present out-going NEC – endeavoured to do our best, during our tenure, to take the Institute farther and towards betterment. We did work, to the best of our abilities, in all those areas wherever the Institute is supposed to work, bearing in mind the whims and fancies of those associated with this Institute. During this time when the global economies are passing through a trajectory, world side, this ‘Team’ has a few accomplishments to its credit – of course the expectations are always high.

I take this opportunity to convey my sincere gratitude to all my “Team Members” and you all for your overt & covert co-operation and support; and bearing with me during my stint as National President of IIMM. I wish the New Team all the very best in its attempt to take the Institute to newer height.

Bye-bye, warm regards and best wishes,



**O.P. LONGIA**

National President - IIMM

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## *From the Desk of Chief Editor*



Dear Members,

The emerging new technologies in the field of Logistics and supply chain are creating strategic opportunities for Business Entities to build that extra advantage over its competitors to stay ahead. Logistics and Supply Chain Sector in India will continue to grow on the back of Strong Domestic Demand, Foreign Direct Investments, booming E-Commerce, Infrastructural Development and Policy Reforms etc.

Few Decades Back, Supply Chain Management was considered as back end operation without any dedicated staff and resources. Since, Manufacturing is a Complex activity of taking several Components and Processes together to produce a finished product and further to be delivered to Consumer through various Distribution Channels, it requires a steady flow of Information about ingredients, components and finished goods from resource to buyer i.e. all along the chain.

Real-time information sharing across the supply chain is a fundamental part of achieving efficiency. Integration of various factors along the chain, is key to an efficient supply chain because it simplifies internal communication, processes and services required surrounding inventory management, transportation, warehousing and other supply chain components.

Both the B2B and B2C markets, require visibility at every stage in the supply chain. This requires a technological solution, which is more efficient and sophisticated than just sending a mass email. This has led to many new mobile and cloud based options for increasing efficiency within distribution centres and warehouses.

Technological Innovation plays an important role in enhancing business competitiveness and performance by improving the overall effectiveness and efficiency of the logistics system. In logistics, information, communication and automation technologies has substantially increased speed of identification, data gathering, processing, analysis and transmission, with high level of accuracy and reliability.

Cloud Technology along with Internet of Things have made it exponentially faster to gather data from various sources and analyse it on daily basis to give important information to Business Owners to take better decisions. Another advantage of Cloud Computing is reduced costs on IT personnel and Infrastructure.

The “Uberization” is another new technology, which is emerging on the similar concept of Uber Cabs. Uberization of the freight market involves the same Uber taxi concept along with idea of the sharing economy using mobile phone app, GPS, and a non-asset based model.

New advancements in the Logistics Industry like Drone Delivery and Driverless cars will make it even more economical and cost competitive, would they be operationalised in an appropriate manner under proper rules and regulations by the Government.

A handwritten signature in black ink, consisting of a stylized 'M' and 'B' followed by a horizontal line.

**(DR. M.K. BHARDWAJ)**





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**MATERIALS MANAGEMENT REVIEW**

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**Printed at :**

Power Printers,  
4249/82, 2 Ansari Road, Daryaganj,  
New Delhi - 110002



# MATERIALS MANAGEMENT REVIEW

**Volume 14 - Issue 1**

**(November 2017)**

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**NO. OF PAGES 1-60**

**Edited, Printed & Published by :**

**INDIAN INSTITUTE OF MATERIALS MANAGEMENT**

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## MY DAIRY ON WORLD SUMMIT 2017 AT TAIPEI, TAIWAN ON 22<sup>ND</sup> AND 23<sup>RD</sup> SEPTEMBER 2017.

**C. SUBBAKRISHNA**  
**FORMER NATIONAL PRESIDENT IIMM**  
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**W**orld Congress of Supply Chain Professionals is organized by International Federation of Purchasing and Supply Management (IFPSM) at different member countries. The World Summit is the main brand conference sponsored by the IFPSM which is held every two years around the world and it has been held 19 times successfully since the first conference held in Venice, Italy in the year 1977. **THE NEXT WORLD SUMMIT WILL BE HELD FROM 26<sup>TH</sup> TO 30<sup>TH</sup> SEPTEMBER 2018 AT HELSINKI, FINLAND.**

Summit is meant for convergence of supply chain practitioners and academicians across the globe and reap the benefit of fellowship and networking professionally. I have personally attended World Summit at Mumbai, Beijing, Las Vegas, Sweden, Barcelona and now at Taipei, Taiwan. Mumbai Summit was one of the best in terms of technical and professional input. This was organized under the leadership of Mr. Ashok Sharma who was the President of IFPSM and ably supported by Mr. C. L. Kapoor, Former National President of IIMM.

All conventions of this nature should be to expose the participants to the latest and contemporary technology and global practice which are adding value to the profession. Days have gone when we could get books on the current practices and technology being applied to improve the skill and knowledge. Today by the time books are written and published, the new and superior technology would be developed by practitioners and books will be redundant.

The best way now is to bring the experts and successful practitioners and make them share their expert knowledge and skill to the participants who can enrich their knowledge and adopt and practice to add value to their respective organizations.

The present Summit also intended to capture and illustrate the truly unique nature of our global federation and profession.

IIMM represented 13 people to the Summit 2017 at Taipei, Taiwan. I alone reached Taipei from Bangalore on the evening of 21<sup>st</sup> Sept 2017.

Taipei is 2 hours and 30 minutes ahead of India. The ambient temperature is 30 degrees centigrade. They speak Taiwanese language and there are no English speaking people other than visitors. The food is almost like China with predominance of Non-Vegetarian. But

was told that their food habit is healthier compared to many other places. There was a message from IIMM that we should be served with Indian Vegetarian food in the Summit lunch and dinner. We were served with Vegetarian food and boiled vegetables but it was without any spice.

The Taipei city is quite clean and has good infrastructures. The people appear to be sophisticated with pleasing manners. Taiwan is electronic bowl of the world along with Japan. The electronic market is quite an interesting place for a visit where there are plenty choice of electronic items with all leading brands of the world. Taipei is the political, economic, educational and cultural center of Taiwan and one of the major hubs of the Mandarin Chinese speaking world.

On 21<sup>st</sup> Sept the Thursday, the delegates were taken to visit National Palace Museum before the dinner at a restaurant.

The theme of the world summit is "Sustainability Ensures Success". During the inauguration on 22<sup>nd</sup> Mr. He Liming, President, IFPSM expressed great pleasure in welcoming the participants to the world summit. He assured two days of exciting and informative presentations by senior international key note speakers with marvelous opportunities to take back to their organizations. He expressed his personal thanks to Mr. Steve Lai, Honorary Chairman, SMIT and Board Director, IFPSM and his SMIT team who together with the BOARD and Secretariat of IFPSM have ensured that we will enjoy a great event. He said that he is deeply honored to be elected to be our President and wished to publicly commit himself to serve IFPSM over his three- year term of Office. The President said that his vision and for whole profession, is to maximize our individual, organizational and national potential to benefit to all. The President mentioned that their social program culminates on Friday 22<sup>nd</sup> September with the very special International Fellowship Dinner. He suggested that it would be brilliant if we can wear ethnic dress tribute to our own Nation to represent each own countrys culture or custom. He wished all a busy, enjoyable and productive World Summit and said that to fully embrace the wonderful culture and vibrancy of Taipei and Taiwan.

Mr. Steve Lai, Hon. Chairman, SMIT, said that he is delighted to welcome to the Capital City Taipei and host our visit. He said that Taiwan is the 22<sup>nd</sup> largest economy in the world and their history can be traced back to

prehistoric times when the island was actually joined to the mainland of China some 1,00,000 years ago. The culture of Taiwan is blend of Chinese, Japanese, traditional Confucianism beliefs and western values. The world summit is an amazing opportunity for the profession to meet, engage and learn from each other. He urged us to maximize for our own development and our organizations by meeting new professionals from across the world and engaging with them through the various conference sessions and during the social occasions. He said that this will ensure we leave Taiwan with a new international network which will support our continuous learning objective.

After the inauguration of the Summit by Mr. He Liming, President of IFPSM, and welcome speech by him and also by Mr. Steve Lai, the key note speech was delivered by Dr. H.E. Eugene Chien, Board Chairman, Taiwan Institute for Sustainable Energy, Taiwan. He mainly spoke on The global sustainable development confronts opportunity, challenge and prospect. In the overall background water resource reduces increasingly, the constraints of energy resource is aggravated continuously and the global ecology problems is more and more obvious. The 17 goals of UN sustainable development are mostly related to purchasing, logistics and supply chain management. They are 1.No poverty 2. Zero Hunger. 3. Good Health and Well being 4.Quality Education. 5. Gender Equality. 6. Clean Water and Sanitation. 7. Affordable and Clean Energy. 8. Decent work and Economic Growth. 9. Industry innovation and Infrastructure. 10. Reduced inequalities. 11. Sustainable cities and communities. 12. Responsible Consumption and Production. 13. Climate Action. 14. Life Below Water. 15. Life on Land. 16. Peace, Justice and Strong Institutions. 17. Partnerships for the Goals.

The global purchasing integrates the resource and realizes the optimum resource distribution, cost saving, and value creation. The supply chain is an inter-enterprise cooperated organization form that realizes the whole process of designing, purchasing, producing, selling and service etc., by customer oriented, quality and effectiveness improvement as its objects and resources integration as its approach. The global supply chain is constantly breaking through the traditional geographical boundaries and has formed a new functional map with global connectivity.

He elaborated on Climate Risks to Business such as :

1. Physical and operational risk to facilitate manufacturing, supplies and workforce from climate impacts such as extreme weather events.
2. Input Risk like reduced availability of natural resources and raw materials, including water, materials, minerals and commodities.
3. Market Risk of changed market demand, which could include stranded assets.
4. Financial Risk of financial loss due to climate

impacts.

5. Reputational Risk of failing to deliver on the expectations of key stakeholders including investors.
6. Regulatory risk of increasingly stringent climate policies that result from a rising price on high carbon sources of energy and carbon- intensive activities. There are plans to ban petrol diesel vehicles in countries like Holland, Norway, Germany, India, France and UK. They have given deadline to implement and India has planned to ban from the year 2030. Research from Harvard shows that highly sustainable companies outcompete and outperform. 90% of the companies see sustainability a Industries important. High regulated industries such as energy and utilities are most likely to have a sustainability strategy. Various statistics are shown on organizations with sustainability strategies by region and also global brands like Apple, Gigaton project and google etc.,

The presentation was continued on sustainability and supply chain security. Three principles for successful supply chain sustainability include Governance, transparency and Engagement. The department that sustainability directly impact most is supply chain and procurement. The sustainability drive also contributed savings for business substantially as per the survey made. Taiwan Govt. has instituted Corporate Sustainability Award based on the Corporate Comprehensive Performance. With a total of 43 members, their overall revenue exceeded USD 260 billion representing over half of the Taiwan GDP in 2016. Among several key recommendations for business leaders, to be a driver of innovation and technological development and a key engine of economic growth and employment and taking urgent action to combat climate change are more important.

Global Economic trends in the coming decades was the next session by Mr. Kamhon Kan, Academia Sinica.

The speaker showed us various statistics on new top ten and new economic powers. China overtakes USA in 2026. India moves to the third place with real annual at 5%. Indonesia and Mexico will be 5<sup>th</sup> and 7<sup>th</sup> respectively. France moves out of top 10. Asia will have a share of 50% of global GDP. Purchasing power the China and India is still at the bottom.

Recent economic growth has been driven by population growth which is attributed to demographic decline. Regional growth rates are expected to begin to decline but Global economic growth remain steady as per the chart shown. There is an increase in labor force in many African countries. Women have been benefitted due to increased participation.

Some implications of Demographic decline are:

1. Run out of workers and customers. Economic growth suffers.
2. Demands: Services (health care). Up . Durables (cars, housing) down.



3. Unemployment less a problem: More people leave the labor market, less enter.
4. Excess savings: Less young (low saving rate), More middle aged (save for retirement) – hold down interest rate.
5. Bad fiscal health – pension.
6. Economies less sensitive to monetary policies – lower interest rate will not lure older people to spend.
7. What to do and what to expect. – Immigrants (political issues, International competition for talents). – Older/female workers (past retirement age) – Robots/automation of all kinds.

**Session 3 – How does an Association need to develop to become Sustainable . Mr. Erich Heneke, Director of Supply Chain, Mayo Clinic.**

In the last year or two, everything has changed. People are starting to suspect that sustainability is really a strategic issue that will shape the future of our business. The specifics are different depending upon industry and context, but we are in the beginning of a historic wake-up. Three main reasons organizations struggle with sustainability are lack of information, Case for Value creation and Flawed implementation.

The best way to get people to take sustainability seriously is to frame it as it really is : not only a challenge that will affect every aspect of management (the leadership team), but also a source of enormous competitive advantage.

The sustainability mean to the organization are a stronger brand and greater pricing power. Greater operational efficiencies. More efficient use of resources. Supply Chain Optimization. Enhanced ability to enter new market. Enhanced ability to attract, retain, and motivate employees. Improved customer Loyalty.

Include employees as a part of the solution and they will be thrilled to be a part. Leadership is the key that holds this star model together.

Leadership drives the model and the Leadership designs the future and creates innovation and sustainability. Few live project cases were also shown on screen. KouvolaRailgate Finland and Rail Road terminal are classic cases which were developd into internationally significant logistics hub. The location allows a concentration of domestic freight traffic as well as easy connections towards Russia and Far East. This was very well presented by Mr. MarttiHusu, Managing Director .

Session 5 on ISO 20400 BY Mr. Karin van IJsselmuiden ISO 20400 sustainable procurement. NEVI, Netherlands.

The first International Standard on Sustainable Procurement. Procurement can make the difference. Procurement has a pivotal governance role in managing the organization's supply chain. Procurement is a key

mechanism to achieve the sustainability objective of an organization. Organisations typically spend more than half of their revenues with their supply chains. 60% typical spend with supply chains and 40% Typical internal spend. Sustainability objectives cannot be fully achieved without the contribution of supply chain. Sustainable procurement is good for business.

**Sustainable procurement leaders:**

90% improve their brand reputation. 70% develop stronger, more reliable and longer lasting supplier relationships. 50% have more innovative, sustainable products and services that result in increased sales. 45% improved ranking in "green" financial indices. 30% delivered cost savings.

ISO 20400 was developed by Sustainable Procurement Project Committee where 38 countries participated and 14 countries are observing. Procurement that has the most positive environmental, social and economic impacts possible over the entire life cycle. Key considerations are 1. Managing risk and opportunity. 2. Due diligence. 3. Exercising influence. 4. Setting priority. 5. Avoiding complicity.

The principles of sustainable procurement are 1. Accountability. 2. Transparency. 3. Ethical Behavior. 4. Full and fair opportunity. 5. Respect for stake holders interest. 6. Respect for the rule of Law and International norms of behavior. 7. Respect for Human rights. 8. Innovative solutions. 9. Focus on needs. 10. Integration in procurement practices. 11. Life cycle costing. 12. Continual improvement.

Procurement process include 1. Planning. 2. Integrating sustainability requirements in to the specifications. 3. Selecting suppliers. 4. Managing the contract. 5. Reviewing and learning from the contract.

There was a Workshop seperately on ' FUTURE HIGHER EDUCATION WITHIN PROFESSION'. By Mr. Kune-muh Tsai, Professor and Dean, National Kaohsiung First University of Science & Technology Kaohsiung, Taiwan. I attended the same.

He covered mainly three points 1. Sustainability in Higher Education. 2. Digital Education. 3. Teach less & learn more. Poverty was not far away from us. Environment damage is still serious. Continued increasing carbon emissions. Rising population.

According to a survey an estimated 200 children, some 11 years old or even younger are sewing clothing for Hanes, Wal-Mart, J.C. Penney and

Puma at the Harvest Rich Factory in Bangladesh. They are forced to work 12 to 14 hours a day for wages of 6.5 cents/hour.

Sustainability in Higher Education to expand mission from knowledge delivery to involving themselves in community service and cultivating the commitment toward sustainability and University Social

Responsibility. Embedded sustainability into school development strategies having curriculum redesign with four concepts, addition, integration, engagement & transformation. Create new concept of teaching and learning with project based and problem based learning, micro curriculum etc.,

The Carbon management should start with avoiding carbon intensive activities and do whatever we do more efficiently. Then replace high carbon energy sources with low carbon energy sources. Finally offset those emissions that cannot be eliminated by the above.

Digital trend as per the speaker are Machine learning, Artificial intelligence and Internet of Things as also self-driving vehicles. It also include cloud computing, Block chain, Smart retailing and smart logistics. The speaker suggested that the teaching should be tailored with content driven. Create real-world connections to support and lead the impact in reality. Construct learning to develop learner autonomy and independence. Embed IT and sustainability theory and practice into teaching and learning. Working with the seven step approach include clarifying the concepts, defining the problem, analyzing the problem/brainstorming, problem analysis/systematic classification, formulating the learning objective, self study and discussion. He gave an example of Stanford University 2025.

The speaker has indicated the following Micro curriculums and interdisciplinary training. By offering many micro curriculum, the students can get involved with a wide variety of interdisciplinary area of knowledge and expertise. Many Universities in Taiwan offers 0.5 credit of courses after completing 9 hours of course.

A specific program can be designed around micro curriculums egs. Cellular phone design program, App design program, EC operations and management program, Smart information technology, Smart Logistics program and Smart Retailing program. Etc.,

In the evening at 6 pm, there was a Drinks receptions followed by a product promotion presentation by Dr. Tien Wu, Chief Operating Officer, ASE Group. The day was concluded by the International Fellowship Dinner.

Day 2 . Saturday the 23<sup>rd</sup> Sept. 2017.

Second day of IFPSM World Summit started by 9 am with a formal welcome and review of the first day by Mr. Steve Lai. The plenary was on THE UPDATES AND TRENDS OF 2017 PMI/NMI FROM CHINA AND TAIWAN. jointly presented by Dr. Chung-Su Wu, President Chung-Hua Institutions for Economics Research, Taipei and Mr. Cai Jin, Vice Chairman, CFLP, Beijing, China.

Economic Growth rates of Major Economies 2016-2017 was shown at the macro level of the whole world. The high growth economies are India with 7.1% and China with 6.8%, Philippines with 6.9%, Indonesia with 5% etc., Lower are Russia with 1.6%, South Africa with 1.1% and Mexico with 2% etc., More of statics were the main

issues covered in this session. Outlooks for the coming year on Manufacturing and Non-manufacturing, Fluctuation of Exchange Rate, Labour cost, International Oil and Raw material, were displayed. According to the forecasts the annual GDP growth rate of Taiwan is 2.14 and 2.15 in 2018 as per survey results of PMI. Mainland China has shown increase in manufacturing and non-manufacturing activities. The balance of economic operations is enhanced. The global economy is gradually picking up. Domestic demand growth is stable. Production and logistics organization model innovation and promotion is the growing. Overall, GDP growth is expected to remain at about 6.8% for year. The steady economic growth creates a favourable environment for the transformation and upgrading of the mainland economy.

The next plenary was on Sustainable Procurement in the Public Procurement context. By Mr. Scot Dicken, Sr. Manager, Charles Kendall and Partners UK.

The speaker defined what is sustainable public procurement, how to implement, the international legal framework. National legal framework, Mechanisms and approaches, effectiveness etc., One case was also presented on Jamaica's green Procurement Policy. The definition include CSR procurement, Collateral consideration, Green Public procurement, Sustainable public procurement, Ethical procurement, Sustainable consumption and production, environmentally preferable procurement, Socially responsible procurement, social procurement policy and responsible procurement.

Sustainable Public Procurement has been defined "A process whereby organizations meet their needs for goods, services, works and utilities in a way that benefits not only to the organization, but also to society and the economy, whilst minimizing damage to the environment. It ensures setting an example to the private sector, raising awareness. Improving equality and quality of life, establishing sustainable standard socially and finally economically add value for money and cost efficiency, Technology innovation, increased competition and reduced prices. These have aligned with UNICITRAL and WTO legal framework model.

I was not present for the session on The great debate on the future of the profession. I was informed that the discussions were mainly on the integration of technology in the profession of Supply Chain Management and the role of IFPSM. The World Summit was closed by the IFPSM president and the next World Summit is at Helsinki, Finland from 26<sup>th</sup> to 29<sup>th</sup> September 2018.

There was a light meal dinner with karaoke music but of course with drinks to buy if one desires. A good experience attending such world summit with expanding our network and getting exposed new places on the globe and their culture.

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# HOW TO MEET THE SUPPLY CHAIN CHALLENGE

VINEET AGARWAL

JOINT MANAGING DIRECTOR, TRANSPORT CORPORATION OF INDIA

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*Today, 57 per cent of freight in India still moves on the road network*

**Currently the various components of logistics (surface transport, railways, shipping, air, commerce, finance) are all separate entities.**

**T**he logistics and supply chain management industry in India has been receiving greater attention in the last few years. Yet, in spite of its huge potential, the sector's growth has not kept pace with India's wider economy and this is a threat to our future competitiveness. The acceleration in industrial production and changes in consumption patterns have resulted in a high demand for basic and specialised logistics management, both at the local, and cross-border levels. Indeed one recent study suggests the Indian logistics industry will grow at 15-20 per cent per annum between now and 2015, by which point it will be worth \$385 billion.

**GROWTH DRIVERS :** There are two major reasons for this growth. First, demand has been fuelled by the growth in industries that tend to outsource — automobiles, consumer packaged goods, hi-tech, telecom and retail, amongst others. The movement of basic commodities, domestically and globally, has led to an increase in so-called 'multi-modal' and bulk transportation and to the emergence of many new ports and port-related service providers.

This growth should be driven further by the impending change in the Indian tax system from state-level value added tax (VAT) to a national and uniform Goods and Services tax (GST), which will help create a national market for many goods and services. The logistics sector is likely to respond by making more use of hub-and-spoke systems, large-scale warehousing and specialised services. A gradual opening up of key sectors such as retail, aviation, defence, etc, will also help drive expansion. The entry of multinational companies (MNCs) in sourcing, manufacturing and distributing could be the other growth driver.

**HURDLES IN THE WAY :** But challenges persist that threaten this growth trajectory. For one thing, India currently spends around 12 per cent of its GDP on logistics, yet despite the huge scale that has been built up, the industry as a whole is very fragmented and disorganised.

Another challenge is the inefficiency of Indian logistics versus its international peers. Today, 57 per cent of

freight in India still moves on the road network. The main reason for this heavy dependence on a mode that is in many ways inefficient and has high carbon intensity is the lack of a railway system capable of responding to the needs of industry.

This is putting a real strain on infrastructure: national highways account for 2 per cent of the road network but transport around 40 per cent of freight tonnage. Lack of coordinated planning, intra-State border issues, cumbersome documentation, bureaucracy and corruption leave the average speed of trucks at only 21 km/hour. Hence a truck can cover only 300-500 km per day versus almost double that figure in the larger developed countries. In ports, capacity and turnaround times are still well below global benchmarks, and logistics parks, warehousing and other support infrastructure are also at an early development stage.

**POLICY PRIORITIES :** Bringing India's logistics up to modern, world-class standards will be a tough but by no means impossible task. At the World Economic Forum's Global Agenda Council on Logistics & Supply Chain, we help identify policy priorities that will lead to meaningful improvements on an international scale. For India, we have spelt out three policy priorities: The first thing that the government needs to do is draw up a comprehensive national logistics policy. Currently the various components of logistics (surface transport, railways, shipping, air, commerce, finance) are all separate entities. There is a need to drive policy in a synchronised manner.

The second national priority should be focused investment in logistics infrastructure. This means direct investment into alternative traffic modes to road, particularly rail and coastal shipping, in order to ease traffic congestion, bring down costs and minimise carbon emission. Lastly, we need to invest more in our people. With the growing complexity of supply chains, we need more skilled people to manage them.

Here, there is a clear need for both the government and private entities to create focused and sustained skills and training programmes. There are several other areas, such as technology adoption and policy simplification for trade facilitation that are also worthy of attention and focus. Getting these right, too, will put our country firmly on the right track. It's time for all stakeholders to pull in the same direction.

Source : Business Line

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# LEVERAGING IT: BUILDING A CUSTOMER-FOCUSED SUPPLY CHAIN STRATEGY

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**Introduction :** A supply chain is an interconnected set of relationships from customer to supplier, through a number of intermediate stages such as sourcing, manufacturing, and warehousing and distribution and it is a network of companies which influence each other. The 'supply chain' is a process that describes the flow of goods from the production of a product right through to the final sale to the end consumer (Bruce et al., 2004). Supply chain management (SCM) can be used to describe various concepts – the processes inside a manufacturing firm; purchasing and supply management relationships; the total chain; as well as a total firm network.

Supply chain strategy of the firm refers to the strategic goals and objectives of its supply chain and requires an end-to-end focus on integration of business processes throughout the value chain for the purpose of providing optimum value to the end-customer (Green et al., 2008). As supply chain strategy is part of the overall business strategy, organizations should understand customers' needs, and to choose and implement the appropriate supply chain strategy to satisfy customer demands (Dubey et al., 2017).

Implementing an effective supply chain strategy is an important issue in enhancing customer satisfaction. Various actors in supply chains need to be able to recognize changes in the environment and utilize opportunities that evolve to meet changing customer demands. Proper implementation of supply chain strategy improves the performance of the supply chain. Information Technology (IT) in SCM provides a reduction in cycle time, a reduction of inventories, a minimization of the bullwhip effect, improvement in the effectiveness of distribution channels and ultimately helps in building responsiveness, resilience, reliability and realignment required for building customer-focused supply chain strategy.

**Customer-focused Supply Chain Strategy :** In today's competitive business environment, customer satisfaction is an increasingly important component of an effective organization and hence every organization aims to become more sensitive and responsive to the changing needs of customers, i.e. "customer focused". Customer-focused supply chain strategy strives to match supply and demand, thereby driving down costs simultaneously with improving customer satisfaction. In short, customer-focused supply chain strategy maximizes value to the ultimate customers of the supply chain in terms of both satisfaction with the product and/or services and a relatively low total cost of the product and/or service. Table 1, below shows major differences between traditional supply chains and customer-focused supply chains according to competitive priorities.

**Table 1: Traditional Supply Chains versus Customer-focused Supply Chains**

Sr. No.	Competitive Priorities	Traditional Supply Chains	Customer-focused Supply Chains
1	<i>Responsive</i>	Modest ability to respond to changes	Strong ability to be proactive as well as responsive to changes
2	<i>Resilient</i>	Often limited to single chains or a large number of chains	Maintain a limited set of multiple chains to ensure distribution
3	<i>Reliable</i>	Focus on cost-efficiency	Focus on reliable and cost efficient supply chains
4	<i>Realigned</i>	Participants forced to choose between own and chain's interests	Interests of participants coincide (or is developed to be synergistic)

(Source: Madhani, 2017)

**Competitive Priorities: Responsiveness, Reliability, Resiliency and Realignment :** The competitive priorities of responsiveness, reliability, resiliency and realignment for a typical supply chain are explained below:

**Responsiveness :** Responsiveness in supply chain is the equivalent of agile and agile means capable of coping with wide changes in demand. Agility is the ability to respond to short-term changes in demand or supply quickly and handle unexpected external disruptions smoothly and cost-efficiently. Agility in a supply chain is the ability of the supply chain as a whole, and its members, to rapidly align the network and its operations to dynamic and turbulent requirements of the customers. Supply chain agility is the capability of the supply chain to respond quickly and effectively to market changes and accordingly adjust tactics and operations within its supply chain to respond to environmental changes, opportunities, and threats. Supply chain agility can also positively affect operational performance as it enables firms to meet delivery deadlines and to ensure dependability and accuracy of a service.

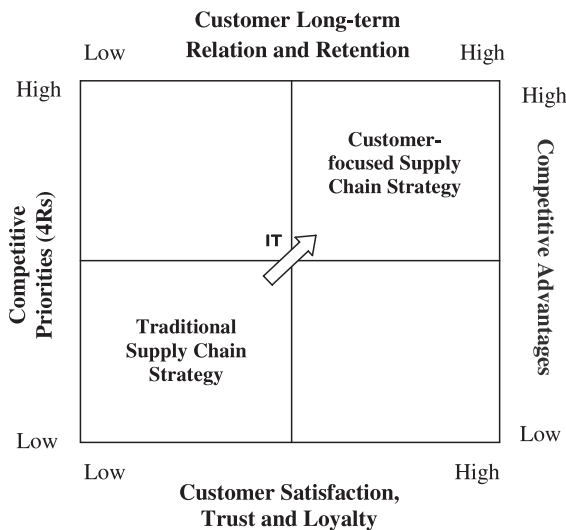
**Resilience :** Resilient supply chains are more capable of coping with the uncertain external environment i.e. they are more adaptable. Resilience means the capacity to anticipate unsafe and unexpected events for organizational survival in the face of threats, including the prevention or mitigation of failures in the systems. Adaptive supply chains or supply networks are those that are flexible enough to meet the uncertainty of changing customer demands and accordingly restructure the supply chain in response to changing markets and economic environments.

**Reliability :** Today's business scenario is characterized by higher levels of turbulence, volatility, unexpected shocks and discontinuities and reflects many uncertainties causing risks. Consequently, supply chains are vulnerable to disruption and, in consequence, the risk to business is increased. Hence, increasing reliability

by preparing for customer demand is top priorities for SCM in any organizations.

**Realignment** : Supply chain partners, in particular buyers and sellers, derive competitive advantage from strong, long-term relationships. The supply chain performance is enhanced when an ‘inter-organizational, inter-functional’ approach is adopted by all supply chain partners. Firms rarely own the resources and activities to make a product or provide a service from the beginning to the end. Since purchased goods and services account for 50 to 70% of manufacturing company’s potential value, a firm’s competitive advantage depends largely on the links it forges with external organizations rather than its internal capabilities (Ramdas and Spekman, 2000). Such realignment of supply chain enhances customer satisfaction as well as overall performance.

**Customer-focused Supply Chain Strategy and Competitive Priorities** : Customer-focused supply chain strategy is a strategic approach for enhancing customers’ overall satisfaction with firms’ product or service, and in the long run, improves the profitability and efficiency of entire enterprise which includes all supply chain partners. As shown in Figure 1, customer-focused supply chain strategy, is high in (1) competitive priorities (i.e. responsiveness, reliability, resiliency and realignment); and (2) customer satisfaction, trust and loyalty which ultimately leads to higher customer retention rate as well as higher overall competitive advantages. Firms with customer-focused supply chain strategy have higher customer satisfaction, trust, loyalty and retention rate compared to organizations with traditional supply chain strategy (Figure 1).



**Figure 1: Customer-focused Supply Chain Strategy: Enhancing Competitive Advantages**

(Source: Matrix Developed by Author)

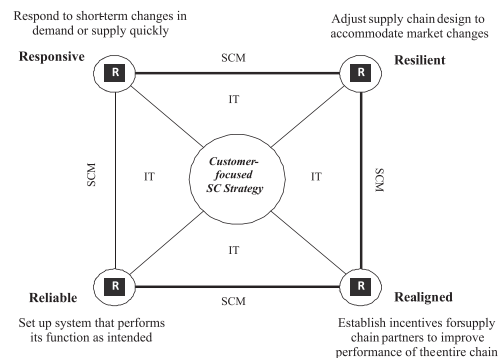
Today, firms view SCM as a strategic tool to increase their competitive advantage by building various capabilities. Supply chain capabilities of responsiveness, resilience, reliability and realignment are dynamic capabilities that result in competitive advantage as these capabilities are developed and renewed in response to changes in customer demand and changes in the market structure

and economies. As these organizational capabilities are integrated and coordinated within supply chain networks, it ultimately develops competitive advantage related to the ability to satisfy the ultimate customers of the supply chain.

It is necessary to decipher the needs of ultimate consumers - not just immediate customers. Otherwise, organization may fall victim to the “bullwhip effect” which amplifies and distorts demand fluctuations. Success depends on the ability of all supply chain partners to focus on ultimate customers and respond to changes in the demands of those customers. Only supply chains that are agile (i.e. responsive), adaptable (i.e. resilient), reliable and realigned provide firms with sustainable competitive advantage. Since dynamic capabilities reflect difficult to replicate sources of competitive advantage, supply chain responsiveness, resilience, reliability and realignment can result in superior firm performance and generates competitive advantages. This research works in this direction and build 4Rs model for customer focused supply chain strategy based on dynamic capabilities of responsiveness, resilience, reliability and realignment.

#### Customer-focused Supply Chain Strategy: 4Rs Model:

Customer-focused supply chains possess four very different qualities: (1) responsiveness - as they react speedily to sudden changes in demand or supply, (2) resiliency - as they adapt over time as market structures and strategies evolve (3) reliability - as they have set up system that performs its function as intended, and (4) realigned - as they maximize the interests of all the partners in the supply network to optimize the chain’s overall performance. Key attributes of customer-focused supply chains are given in Figure 2, in terms of 4Rs model. The four ‘R’s’ stand for Responsive, Resilient, Reliable and Realigned.



**Figure 2: Customer-focused Supply Chain Strategy: 4Rs Model**

(Source: Model developed by author)

In customer-focused supply chains, supply chain partners work together to:

1. Quickly respond to short-term changes in customer demands (i.e. Responsive);
2. Streamline the supply chain to reflect long-term changes in markets, technologies, and products (i.e. Resilient);

3. Set up supply chain system that performs its specified function as intended within a given time horizon and environment (i.e. Reliable); and
4. Realign relationship as well as strategies throughout the supply chain with fresh look to meet the needs of the ultimate customers and to share costs and benefits equitably across the supply chain participants (i.e. Realigned).

Customer-focused supply chain strategy with attributes of responsiveness, resiliency, reliability and realignment can boost competitiveness of firm, provides best-in-class products and services at lowest price, enhances customer satisfaction and strengthen the likelihood that customers will remain loyal to a supplier.

**Role of IT in Building Customer-focused Supply Chain Strategy :** IT is a crucial segment of any business or organization, and undergoes constant change. IT helps firms to achieve greater transparency of information and better confidence in data. IT has a major role in developing effective and efficient SCM. As SCM spans the entire enterprise and beyond, it connects suppliers on one end and customers on the other. Therefore, IT for supply chains will include both systems that are internal to an individual firm as well as external systems, which facilitate transfer between various firms and individuals. IT is an important enabler of effective SCM. Much of the interest of deploying IT in SCM is motivated by the availability of large pool of data and the saving inherent in sophisticated exploration and analysis of these data.

The very essence of SCM is effective information and material flow throughout a network of customers and suppliers. With IT deployment, the potential for improved productivity, cost reduction and customer service are enormous. In fact, the overall SCM benefits are based on employing the right processes and right IT tools and techniques. From IT point of view, effective SCM is built by providing the right amount of relevant information to those who need to know it, and when they need to know. The most typical role of IT in SCM is reducing the friction in transactions between supply chain partners through cost-effective information flow and hence supports the collaboration and coordination of supply chains through information sharing. IT is a key enabler to support firms in supply chain network, and creates strategic advantage by enabling centralized strategic planning.

**Benefits of IT in Building Customer-focused Supply Chain Strategy**

- 1) Better coordination between various supply chain partners both within and outside the organization to achieve efficiency in the process.
- 2) Easier tracking and timely monitoring of the supplier performance. IT provides supply chain capability to firms to manage inventory most efficiently, analyze supplier performance, and proactively make outsourcing decisions.
- 3) Improved SC efficiency through enhanced visibility as IT is one of the key cures for the bullwhip effect in supply chains.
- 4) Better pricing decisions through visibility to more

comprehensive data.

**Major Challenges :** Regardless of potential increases in profitability and competitiveness, IT initiatives in supply chains require careful planning and clear direction to avoid failure. Without careful understanding and preparation, IT implementation can become a costly and time-consuming venture that does not yield expected payoffs. An understanding of IT and challenges in its implementation in SCM and logistics can help firms serve their customers better wherever they are in the supply chain network. Major IT challenges in SCM are lack of interest from management; lack of skilled employees; cost involved in selecting, approving and implementing IT solution and also time consumed for the same.

**Conclusion :** In the current era of highly competitive market, developing a strong relationship with customers is vital in achieving the goals of both the customers and the organization. To be successfully focused on customers, organizations must ensure a high level of consensus and cohesiveness around the belief that its existence relies on being responsive to the needs of its customers. Customer-focused supply chain strategy helps organizations in achieving these customer-focus objectives. By developing dynamic capabilities of responsiveness, resilience, reliability and realignment, organizations enhance customer value propositions. This research develops 4Rs (i.e. responsiveness, resilience, reliability and realignment) model for building customer-focused supply chain strategy and emphasizes role of IT deployment in building such customer-focused supply chain strategy.

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## WTO UPDATE : AZEVEDO UNDERLINES GROWING IMPORTANCE OF SERVICES IN GLOBAL TRADE

– DG Azevêdo



Speaking at the Global Services Summit in Washington D.C. on 17 October 2017, Director-General Roberto Azevêdo highlighted that trade in services accounts for almost 50 per cent of world trade today. He said that updating rules for trade in services is one of a wide range of issues currently being discussed by WTO members and he looked forward to working with a variety of stakeholders, including the private sector, “to build a stronger trading system — which supports the services industry and continues to promote growth, development, and job creation everywhere”. This is what he said:

Azevêdo underlines growing importance of services in global trade

Ladies and gentlemen,

Good morning. At the outset, let me thank the Coalition of Services Industries for the kind invitation. It’s a great pleasure to be with you today. The CSI is an important and constant partner of the World Trade Organization.

You played an essential role in putting services on the multilateral trade agenda back in the 1980s – so you helped to ensure that they became part of the WTO architecture. And I am glad to strengthen that partnership today.

In these ways, and more, services are the heart of our lives and livelihoods. They generate more than two-thirds of global GDP. And attract almost two-thirds of global FDI. For the great majority of countries, the services sector accounts for the greatest share of domestic production and employment. In the US, for example, the sector generates more than 75 percent of employment. And I think that the importance of services will only increase. Automation, digitization and new business models are revolutionising the global economy.

Productivity gains from new technologies are driving shifts in employment patterns. They are reducing the demand for labour in sectors such as agriculture or manufacturing. At the same time, the proportion of jobs in services keeps on increasing.

World Bank data comparing 40 countries – both developed and developing – shows that between 1970 and 2012, agriculture employment fell by half. In the same period, the percentage of services employment almost doubled. In fact, according to ILO estimates, the global number of services jobs increased by an average of 3 percent each year between 2000 and 2016.

And we see this dynamism in trade as well. World commercial services exports were \$4.8 trillion in 2016. That’s just over 23 percent of total world trade.

However, that is not the whole picture. A more sophisticated analysis which looks only at value added shows that trade in services accounts for almost 50 percent of world trade today. This is a greater share than either manufacturing or agriculture – sectors which are more traditionally associated with trade.

This closer analysis also highlights how services are enablers of the global value chains that define global trade today. Without services crossing borders, it would be impossible to coordinate production stages in different countries. Think of logistics, communications or financial services such as trade finance and e-payments. Today, efficient services are a key determinant of export performance.

Yet, despite all of this, trade in services is sometimes regarded as a side issue, or something that is only of interest to certain countries. In fact, to listen to the trade debate today, services is rarely mentioned. This simply doesn’t reflect the economic reality. Services are gaining more and more traction. And everyone has an interest here.

In 2016, the US exported over 732 billion dollars of services, with a services trade surplus of over 250 billion dollars. Services are a key part of trade policies everywhere – with developing countries playing an important part. In 2016, the share of developing countries in trade in commercial services reached 30.5 percent. This represents a growth of some 25 percent since 2006. This is positive news. Boosting services in developing countries helps to improve their overall competitiveness and integration into the global system. But this requires a number of factors to be in place.

Work to improve physical infrastructure, for example, is crucial for moving goods, services and people. Digital infrastructure is also vital. Growth in this area provides opportunities for developing countries to take advantage of digital trade and diversify their exports, from professional services, education, e-payments, or even some health services.

Getting the right regulatory framework in place is vital as well. And I think that the multilateral trading system and the WTO have an important role to play here. The WTO is the only organization dealing with trade rules at the global level.

The multilateral trading system helps to ensure that trade can flow as freely as possible – providing transparency, predictability and certainty. These rules provide a stable architecture for trade in services, underpinned by principles such as transparency, predictability and non-discrimination.

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At the same time, it allows governments a great deal of flexibility in determining their commitments. And, if there are disagreements, our Dispute Settlement System helps to solve them in an impartial and transparent way. Clearly these rules must reflect the reality of today's economy. So we need to keep updating and reforming the system where we can. Of course, this is not an easy task. Conversations in a number of fronts across the world have struggled to advance.

This also includes the WTO. For a long time, the organization was not seen as a place where you could do business. However, we are changing all that. At our Ministerial Conferences in Bali and Nairobi WTO members delivered some of the greatest trade reforms in a generation – including:

- the Trade Facilitation Agreement,
- the decision to abolish agricultural export subsidies, and
- a deal to eliminate tariffs on a range of IT products, trade in which is worth 1.3 trillion dollars annually.

These breakthroughs have given our debates a new momentum. Members are now considering how we can advance in a wide range of areas. Our next Ministerial Conference is in Buenos Aires this coming December, and it can be another opportunity for progress. A range of issues are on the table – including services.

Some discussions here have focused on what we call “Domestic Regulation”. This includes disciplines on licensing procedures, qualification requirements and technical standards. Members are discussing how licensing and qualification processes can be simplified, and made more transparent and predictable.

A coalition of almost 50 WTO members is working hard to expand the level of support to this agenda. Also in the area of services, a proposal for an Agreement on Trade Facilitation in Services was put forward, seeking to mirror the approach of the Trade Facilitation Agreement.

And members have been talking about a number of other issues which are of great importance to the services industry. On e-commerce, for example, discussions are very dynamic and we have several ideas on the table. I don't have to tell you how services figures prominently in those discussions. Of course members are also interested in advancing some traditional issues in Buenos Aires. This includes agriculture in areas like domestic support and food security. They are also seeking outcomes that limit subsidies that lead to overfishing. Trade in services, data and information is surging across digital platforms – and steps here could help boost the industry. The issue of investment facilitation has also received increased attention by many WTO members.

Here, talks have focused on the links between trade, investment and development. The aim would be to further strengthen the WTO's contribution to facilitating investment flows by providing a more transparent, efficient and predictable environment. Another issue that members have been discussing are ways to help small and medium sized enterprises to trade. We all know the importance of these companies in the economic landscape, especially in services – including here in the

US. Conversations are ongoing – with good engagement in all areas. However, engagement does not necessarily mean convergence. At present there is no easy or obvious solution on any of these fronts, so we must keep on working.

The WTO architecture is flexible enough to allow for different types of agreements and for arrangements in different configurations. There is plenty of scope for creativity. I think it's important to keep this in mind. And this is particularly true in services, where the structure of the GATS allows for very flexible approaches - both in terms of the commitments and of the number of participants.

Buenos Aires is a very important milestone for the organization and for global trade. We should seek to deliver everything we can by December. But that will not be the end of the road. I hope that we will leave Buenos Aires with members committed to strengthening the trading system, and with a clear path forward for our future work. It is important that you are part of this debate as well. The role of business in communicating your priorities to governments is more important than ever.

At the WTO, we have strengthened our institutional dialogue with the private sector, bringing together a range of stakeholders to discuss trade-related issues. There has been an overwhelming response. We are seeing huge appetite to engage on those issues. A major opportunity for engagement will be at the business summit in Buenos Aires, which will take place alongside our Ministerial Conference.

This is the first time this has ever been done – reflecting the step-change in business engagement that we are seeing. I congratulate the Argentine government on the initiative. This event will provide an opportunity for organizations like yours to articulate your specific interests. Further details will be announced soon. I encourage you to be in touch with the organizers. A key part of this conversation is making trade more inclusive – and therefore helping small and medium-sized companies to trade.

We have been hearing great ideas from the private sector, so together with the ICC we have launched an initiative called “Small Business Champions” to capture and deliver the best ideas. Companies and private sector organizations have already started putting forward their proposals on how they can encourage and support SMEs to do business across borders. The first proposal accepted was from Google – and more are coming in. I encourage you to participate. There is more information on our website – and CSI have kindly distributed brochures to participants today.

In closing, I think we have some interesting opportunities ahead of us. I hope we will keep up this dialogue, and that the WTO can continue to rely on your support. I look forward to working with all of you to build a stronger trading system - which supports the services industry and continues to promote growth, development, and job creation everywhere.

Source: WTO Website

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# STRONG MACRO-ECONOMIC FUNDAMENTALS AND REFORMS FOR SUSTAINED GROWTH

Highlights of the presentation made by ministry of finance secretaries at the press conference held on 24th October 2017

## I. India a haven of Macroeconomic Stability

### Strong economic growth

- India grew at a very strong pace of 7.5% p.a. in the three years of 2014-17 with growth exceeding 8% in 2015-16. There was a temporary slippage in growth in the last two quarters thanks to transitional effect of Demonetisation and GST. That effect is now over, with all indicators – IIP, Core Sector, Index, automobile, consumer spending etc. pointing out a strong growth pick up, there is expectation of very good growth from second quarter of current year itself.
- The current global economic outlook is marked by relatively stronger activity in both advanced economies and emerging market & developing economies. Global economic activity is on the course of gradual improvement and the world GDP is projected to grow at the rate of 3.6 per cent and 3.7 per cent in 2017 and 2018 respectively, after remaining subdued in 2016, when it was 3.2 per cent. Significant improvement in investment, trade, and industrial production, coupled with strengthening business and consumer confidence, are supporting the recovery. This would also help in growth of exports which is reflected in strong export growth of 25.6% in September 2017 with April-September growth averaging nearly 12%.

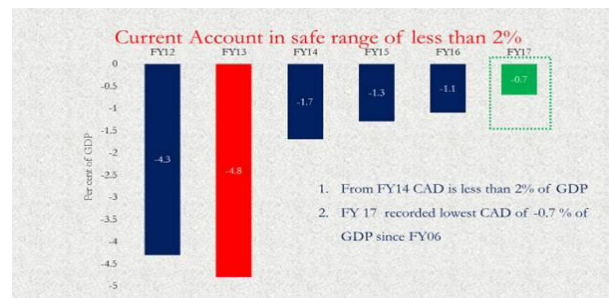
### Inflation has been brought under control

- The decisive steps taken by the Government along with decline in crude prices from its high levels in 2013-14 and benign global prices of tradables helped the economy to get out from inflationary spiral to relatively stable prices. Inflation declined from nearly double digits in 2012-13 and 2013-14 to an average of less than 5 per cent since then. Between July 2016 and July 2017, the inflation rate was close to 2 per cent. Inflation based on CPI is currently within the target of 4 per cent and is expected to be close to 3.5 per cent for the financial year 2017-18. Inflation is currently well within the target of 4 per cent. However, the RBI has projecting it to increase to 4.2-4.6 per cent in the second half of the current financial year, a little higher than 4 per cent target, but within the range of 4+/-2 per cent.
- Headline inflation based on Consumer Price Index (Combined) averaged 4.9 per cent in 2015-16 as compared to 5.9 per cent in 2014-15. CPI inflation for 2016-17 averaged 4.5 per cent. The year-on-year inflation in April-September 2017 was 2.6 per cent as compared to 5.4 per cent in the corresponding period of the previous year.



### External sector indicators have improved significantly despite global sluggishness

- Along with lower inflation, lower level of current account deficit has brought about much of macro-economic stability in the last 3-4 years. Current account deficit was at dangerously high level of over 4 per cent in 2011-12 and 2012-13, leading to a significant instability in the exchange rate of the rupee. With significant improvement in the current account balance as reflected by lower levels of current account deficit, the volatility in the exchange rate also declined considerably.



- World trade volume (goods and services) growth continued to decelerate in 2016 to 2.2 per cent from 2.8 per cent in 2015 (IMF's WEO, October 2017). It is projected to pick up with growth of 4.2 per cent in 2017 and 4.0 per cent in 2018.

### India's Merchandise trade

- Exports declined in 2015-16 primarily on account of the sluggish global demand and imports declined due to steep decline in international crude oil prices as well as the decline in the prices of other commodities. During 2016-17, exports grew by 5.2 per cent while imports increased by 0.9 per cent, helping in narrowing the trade deficit. Merchandise exports and imports grew by 11.5 per cent and 25.1 per cent respectively in dollar terms during April-September 2017, resulting in widening of trade deficit from US\$ 43.4 billion in April-September 2016 to US\$ 73.1 billion in April-September 2017.



- The current account deficit (CAD) for 2015-16 was 1.1 per cent of GDP as compared to 1.3 per cent of GDP in 2014-15. The CAD further narrowed to 0.7 per cent of GDP in 2016-17 on the back of the contraction in the trade deficit that narrowed to US\$ 112.4 billion in 2016-17 from US\$ 130.1 billion in 2015-16. However, current account deficit widened to US\$ 14.3 billion (2.4 per cent of GDP) during Q1 2017-18 from US\$ 0.4 billion (0.1 per cent of GDP) during Q1 2016-17, mainly on account of higher trade deficit in this period.

#### Robust foreign direct investment

- The gross FDI flows to India in 2016-17 amounted to US\$ 60.2 billion, as compared to US\$ 55.6 billion in 2015-16 and US\$ 45.1 billion in 2014-15, indicating the improved global confidence on the Indian economy. During April-August 2017, the gross FDI inflow in the economy was US\$ 30.4 billion, higher as compared to the inflow of US\$ 23.3 billion in the corresponding period of the previous year.

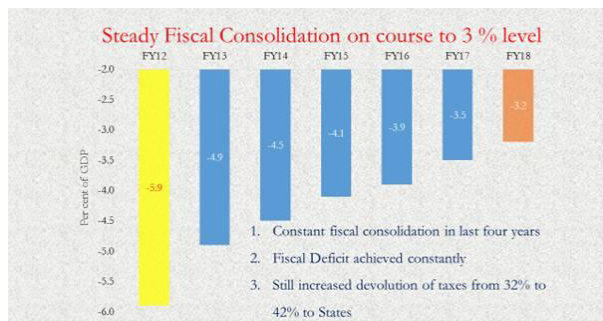
#### Foreign exchange reserves

- Foreign exchange reserves stood at US\$ 370 billion at the end of March 2017 as compared to 360.2 billion as at end March, 2016. As on 13th October 2017 the foreign exchange reserves exceeded US\$ 400 billion. With increase in reserves in the last couple of years, most reserve-based external sector vulnerability indicators have improved.



#### Steady improvement in fiscal situation and fiscal consolidation is on track

There has been a steady consolidation of fiscal deficit in the last few years. Fiscal deficit of the central government had reached alarmingly high level of close to 6 per cent 2011-12 and averaged over 5 per cent between 2011-12 and 2013-14. The government is committed to fiscal consolidation path and has shown a steely resolve to reduce the fiscal deficit to 3.5 per cent of GDP in 2016-17 and further to 3.2 per cent as per the Budget estimates in 2017-18.



Fiscal deficit of the Government of India as a ratio of GDP was 3.9 per cent in 2015-16 and 3.5 per cent for 2016-17 [Revised Estimate] and is budgeted to be 3.2 per cent in 2017-18. Focus on expenditure rationalization with plugging loopholes in public expenditure and innovative revenue raising efforts have helped to achieve this.

From the angle of internal and external public debt stock, India does not face serious fiscal solvency related issues. Government of India's total outstanding liabilities-to-GDP ratio is budgeted to decline from 46.7 per cent by year-end 2016-17(RE) to 44.7 per cent by year-end 2017-18.

Tax revenue (net to Centre) is increased by 16.8 per cent in 2016-17 (Provisional Actual) and it is budgeted to grow by 11.3 per cent in 2017-18.

Fiscal deficit during April-August is 96 per cent of the full-year budgeted fiscal deficit on account of front loading of expenditure, but we are reasonably confident that full year budgeted ratio of fiscal deficit of 3.2 per cent of GDP will not be breached.

## II. Transformational Reforms

### Landmark Reform in the form of GST

Subsuming a large number of Central and state indirect taxes, the GST has been a landmark reform that has been implemented with effect from 1st July 2017. The launch of the GST represents an historic economic and political achievement, unprecedented in Indian tax and economic reforms, which has rekindled optimism on structural reforms. This has resulted in unified tax across the country and has helped in removing transport restrictions on the movement of goods resulting in their faster movement and help in creating common market, reduction in corruption and leakage and further help in Make in India programme. It is expected to provide boost to revenues, investment, and medium-term economic growth. Despite the teething troubles that the government and the GST Council are addressing, initial results in the form of revenue raised seem encouraging.

### GST: One Nation One Tax

Reducing corruption and leakage

Formalisation of production and sales

Cooperative fiscal federalism





- All check posts abolished. Consumption based taxation.
- Eliminating Cascading of taxes. Encouraging Make in India.
- Steps taken to reduce compliance burden on small businesses and exporters

### Insolvency and Bankruptcy Code

Another game changing reform has been The Insolvency and Bankruptcy Code, 2016 (Code) that was enacted on May 28, 2016, with an aim to consolidate the laws relating to insolvency of companies and limited liability entities (including limited liability partnerships and other entities with limited liability), unlimited liability partnerships and individuals, presently contained in a number of legislations, into a single legislation. The Code provides a comprehensive, modern and robust insolvency and bankruptcy regime, at par with global standards and even better in some aspects.

### Insolvency and Bankruptcy Regime

- An effective and Internationally best practice based insolvency regime institutionalised in India
- Strong time bound process ensuring quicker resolution
- By June, 2050 Applications filed before NCTL
- 347 applications for corporate insolvency resolution process admitted as on 30<sup>th</sup> September, 2017
- 22 voluntary liquidation
- 1054 insolvency personnel registered
- Resolution have also commenced
- Liquidation process triggers on if resolution process does not succeed in given time frame
- Financial Resolution and Deposit Insurance Bill 2017 introduced to complete the circle

The Government moved at a quick pace to implement the Code. About 2050 applications have been filed before NCLT so far, of which, 112 applications have been admitted and another 146 have been rejected or withdrawn. The default underlying admitted applications range from a few lakh of rupees to a few thousands of crores. The announcement of 12 large defaulters by the RBI will expand this sharply.

### Crusade against Black Money including demonetization

The initiatives like: (a) Special Investigation Team on Black Money, constituted in May, 2014 for monitoring investigations and reviewing the framework for curbing black money; (b) Black Money (Undisclosed Foreign Income and Assets) and Imposition of Tax Act, 2015, enacted w.e.f. 1st July 2015; (c) the Income Declaration Scheme, 2016; and (d) enactment of the comprehensive Benami Transactions (Prohibition) Amendment Act, 2016, w.e.f. 1st November, 2016 had made varying degrees of success in the fight against black money generation and holding. The follow-up to these measures in terms of demonetization of the high denomination notes w.e.f. the expiry of 8th November, 2016 effected a body blow on black money.

### Housing Development

Government has announced various measures in the Budget 2017-18 to promote growth of the economy which, inter alia, include push to infrastructure development by giving infrastructure status to affordable housing, higher allocation to highway construction, focus on coastal connectivity. The other growth promotion measures include: lower income tax for companies with annual turnover up to Rs 50 crore; allowing carry-forward of MAT credit up to a period of 15 years instead of 10 years at present; further measures to improve the ease of doing business; and, major push to digital economy. The Budget also targeted to provide higher agricultural credit and to increase employment significantly.

### Institutional reforms

Institutional reforms including expenditure rationalization and progressive elimination of leakages in public delivery through stress on targeting and direct benefit transfer; instituting a profoundly impactful financial inclusion programme; measures to improve policy transparency in governance and decision-making; Ujwal DISCOM Assurance Yojana (UDAY) programme for DISCOMs; liberalization of FDI norms in various sectors; and approval of National Intellectual Property Rights Policy for laying down the future roadmap for intellectual property in India.

### Improved ease of doing business

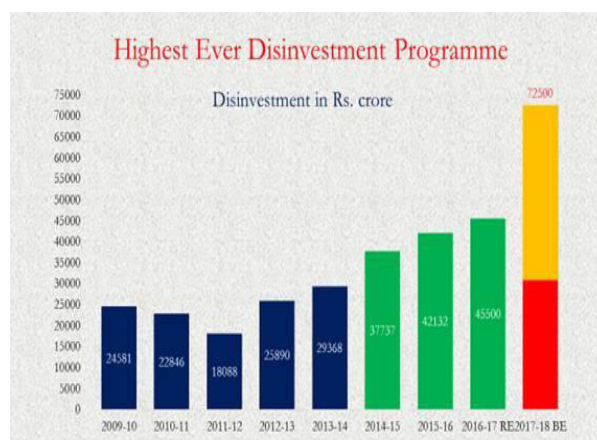
The complementarities built around the flagship Make-in-India programme, including comprehensive measures for improving the ease of doing business, encouragement to budding entrepreneurial talent under the Start-up India and Stand-up India Initiatives and advertisement and global campaign, have evidently improved India's global ranking as a business destination. India has launched eBiz platform for creating a business and investor friendly ecosystem by making all business and investment related clearances and compliances available on a 24x7 single portal, with an integrated payment gateway.

### Radical changes in FDI policy regime; most sectors on automatic route for FDI

The Government radically liberalized the FDI regime on 20th June 2016, with the objective of providing major impetus to employment and job creation. This is the second major reform after the major changes announced in November 2015. Now most of the sectors would be under automatic approval route, except a small negative list. Changes introduced in the policy include increase in sectoral caps, bringing more activities under automatic route and easing of conditionalities for foreign investment. With these changes, India is now one of the most open economies in the world for FDI.

### Ambitious Disinvestment Programme

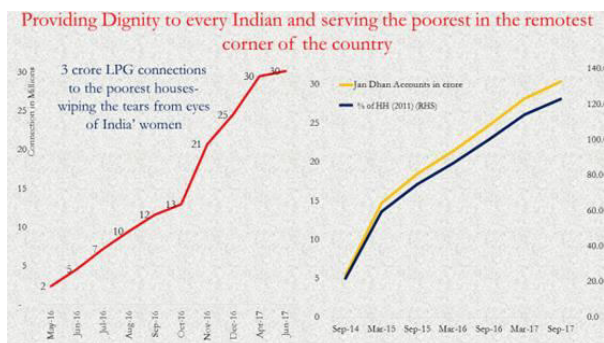
Progressively higher revenues have been raised from disinvestment in public sector undertakings in the last three years and the government has a very ambitious target of raising much higher revenues in the current financial year.



### Reaching Welfare Programme for poorest families in North-East Corners

In order to help the poorest of the poor, and to improve their living conditions, particularly that of women, the government has provided over 3 crore LPG connections between May 2016 and June 2017 which will replace the dirtier traditional fuels that are health hazard. Similarly in order to secure poor people from shocks of man-made and natural disasters, total enrolment under Pradhan Mantri Jeewan Jyoti Bima Yojana and Pradhan Mantri Swasthya Bima Yojana was 14 crore persons by September 2017.





### III. Infrastructure Push

Government has consistently increased Public Expenditure on Infrastructure in order to boost employment and provide renewed impetus to economic growth. Government of India's total expenditure this year has crossed Rs 11.47 lakhs crores (upto Sept '17), out of the budgeted expenditure Rs 21.46 lakhs cr. (an increase of Rs. 1.2 lakhs cr. over last year).

Special thrust of this drive is on key development sectors including Rural Roads, Housing, Railways, Power, Highways and Digital Infrastructure. The Capex target of Government of India for 2017-18 is Rs. 3.09 lakhs crores, which is 31.28% higher than last year, out of which Rs. 1.46 lakhs crores has been spent on capital works till September 2017. In addition, Government of India had fixed a Capital expenditure target for CPSEs for 2017-18 at Rs 3.85 lakhs crores, out of which capex spending of Rs 1.37 lakhs crores has been achieved by CPSEs till Sept '17.

#### Railways

- A target of Rs.1,31,000 crore has been made for Capital Expenditure for the Railways. Against the target, an expenditure of Rs.50,762 crore has been achieved. The main thrust is on upgrading the infrastructure to improve safety, laying of new lines and providing passenger amenities.
- The following are the key among the capital works completed : New Lines (Construction) (Rs.4531.93 cr), Gauge Conversion (Rs.1842.24 cr), EBR-Partnerships (Rs.11504.29 cr), Track Doubling (Rs.4069.60 cr), Traffic Facilities (Rs.517.05 cr), Rolling Stock (Rs.8214.11 cr), Leased Assets-Principal Component (Rs.7781.97 cr), Road Over/Under Bridges (Rs.1068.09 cr), Track Renewals (Rs.2837.72 cr), Electrification Projects (Rs.1119.17 cr), Passenger Amenities (Rs.539.73 cr), Investment in JV/SPVs (Rs.1263.52 cr), Metropolitan Transport Projects (Rs.446.16 cr), etc.

#### Saubhagya (Pradhan Mantri Sahaj Bijli Har Ghar Yojana)

- Under this program, Universal Electrification is being taken up to provide last mile connectivity and electricity connections to all remaining un-electrified households in the country by Mar '19. This is an addition to the ongoing Scheme of Rural Electrification (Deen Dayal Upadhyay Gram Jyoti Yojana).
- Outlay proposed is Rs.16,320 crores, involving Gol support of Rs.12319.50 crores

#### Rural roads – PM Gram Sadak Yojana (PMGSY)

- In order to complete Phase-I and II of PMGSY, Government of India, along with States, proposes to spend Rs. 88,185 crores over 3 years starting 2017-18. This will result in construction of 1,09,302 km of rural roads covering 36,434 habitations.

- In addition, roads worth Rs 11,725 crores, involving 5411 km of upgradation of existing roads and construction of new roads in 44 LWE districts, will be completed by 2019-20.

#### PM Awas Yojana (PMAY) – Urban & Gramin

- Universal Affordable Housing for All is being implemented and accelerated to give a big boost to the construction sector. Under PMAY (Urban), 1.2 crore units will be built with an outlay of 1,85,069 crores over next 3 years. Under PMAY (Gramin), 1.02 crore units will be built (51 lakhs units this year) with an outlay of Rs. 126,795 crores by Centre and States by March '19.

#### Bharatmala Pariyojana

- Taking forward it's commitment to providing more efficient transportation, Government has debottlenecked the Roads sector and significantly stepped up the Highway development and road building program. In order to further optimise the efficiency of movement of goods and people across the country, Government is launching a new Umbrella program. This Road Building Program, for 83,677 km of roads involving capex of Rs.6.92 lakhs crores over next 5 years.
- Out of this, Bharatmala Pariyojana to be implemented with an outlay of Rs.5,35,000 crores will generate 14.2 crores mandays of jobs.
- The following categories of roads (34,800 km) have been proposed under BMP
- Economic Corridors (9000 km)
- Inter Corridor and Feeder Route (6000 km)
- National Corridors Efficiency Improvement (5000 km)
- Border Roads and International Connectivity (2000 km)
- Coastal Roads and Port Connectivity (2000 km)
- Green field Expressways (800 km)
- Balance NHDP works (10,000 km)
- Bharatmala works have been proposed for completion in 5 years by 2021-22 through NHAI, NHIDCL, MoRTH and State PWDs.
- Substantial delegation of powers has been provided to NHAI, NHIDCL and Ministry of Road Transport & Highways to enable speedy implementation.
- Funding for BMP: Rs.2.09 lakhs crores will be raised as debt from the market, Rs.1.06 lakhs crores of private investments would be mobilized through PPP and Rs. 2.19 Lakhs crores is to be provided out of accruals to the Central Road Fund (CRF), ToT Monetisation proceeds and Toll collections of NHAI.
- In addition to 34,800 km under Bharatmala, balance works of 48,877 km of works under other current

schemes will be implemented in parallel by NHA/ MoRTH with an outlay of Rs.1.57 lakhs crores. This will be financed by providing Rs. 0.97 lakhs crores from CRF and Rs. 0.59 lakhs crores as Gross Budgetary support.

- **ToT Monetisation:** For the first time ever, monetisation of 82 operating highways under a low risk Toll – Operate- Maintain-Transfer (ToT) Model has been initiated with a private investment potential of Rs 34,000 cr. The 1st bundle of 9 NH stretches of 680.64 Km has been put out to tender by NHA with potential monetization value of Rs. 6258 cr.

Given the strong macroeconomic fundamentals of the economy and the continued public spending at substantially enhanced levels in comparison to previous years, Government has taken several steps to improve the investment climate in the country. The comprehensive economic reforms undertaken by the government have resulted in unprecedented levels of foreign direct investment in the last 3 years. However, the domestic investment of the private sector continued to be affected by the growing contamination of loans advanced in the past, which have now become unsustainable. Besides affecting the general investment climate these non-performing loans have also necessitated an unprecedented levels of provisioning, particularly in the public sector Banks. This in turn has affected their lending capabilities that has particularly affected the Medium and the Small scale sector. It may be seen that while many corporates have accessed the bond market in the recent past, it is the MSMEs that have been deprived of capital due to the inability of the Banks that are weighed down by the excessive burden of very demanding provisioning norms. This called for effective steps for creating a conducive environment in which PSBs could provide loans to the private sector, especially the Medium & Small Scale industries.

#### IV. Recapitalization of public sector banks

- Government Commits to Unprecedented Strengthening of Public Sector Banks
- Rs. 2,11,000 Crore Front-loaded Bank Recapitalisation to Clean Up Legacy of NPAs
- Credit Growth to Take-off through Recapitalised Banks
- Banks to Give Big Push to MSMEs for Jobs and Growth

Government has decided to take a massive step to capitalise PSBs in a front-loaded manner, with a view to support credit growth and job creation. This entails mobilization of capital, with maximum allocation in the current year, to the tune of about Rs. 2,11,000 crore over the next two years, through budgetary provisions of Rs. 18,139 crore, recapitalisation 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 (estimated potential Rs. 58,000 crore).

Government actions are not limited to addressing capitalisation of PSBs. Definite steps will be taken

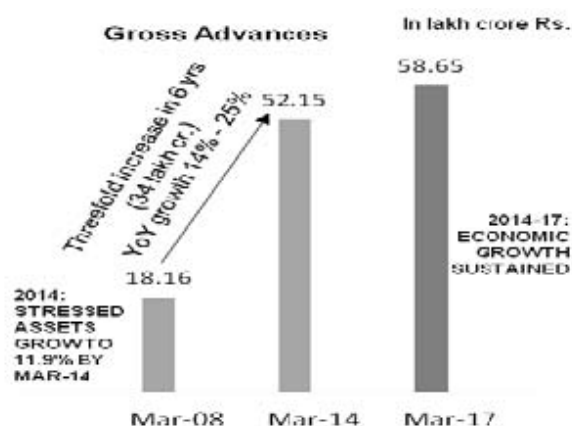
alongside capitalisation to enable them to play a major role in the financial system. PSBs having 70% market share in the banking space will be geared for greater growth and to contribute through enhanced credit off-take. The stage has been set with a 'MUDRA Protsahan' campaign across the country.

There will be a strong push on enabling growth of MSMEs through enhanced access to financing and markets, and a drive to finance MSMEs in 50 clusters. While Ministries concerned will spearhead and provide momentum, banks will undertake speedy processing of loan applications in a hassle-free manner. Fintech companies will be roped in to cut down the appraisal process and generate quality loan applications. MSMEs will be handheld by extending support through:

- Compulsory TReDS (Trade Receivables electronic Discount System) registration by major PSUs within next 90 days, for shortening the cash cycle
- Sector-specific Mudra financial products, such as Mudra Leather, Mudra Textiles, etc.
- 100 bank-approved MSME project templates for speedier credit
- Revamped udyamimitra.in portal, so that banks compete for financing MSME projects
- Drive for registering MSMEs on the GeM (Government electronic Marketplace) portal and e-commerce platforms

It may be recalled that aggressive loaning to sectors with excess capacity and poor due diligence created large stressed assets, which grew to 11.9% by March 2014.

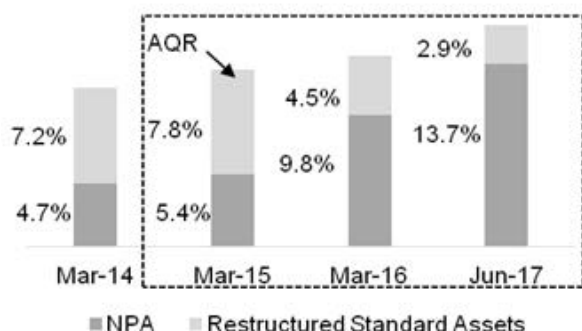
Asset Quality Review (AQR) carried out in 2015 for clean and fully provisioned bank balance-sheets revealed high incidence of NPAs. Expected losses on stressed loans, not provided for earlier under flexibility given to restructured loans, were reclassified as NPAs and provided for. PSBs initiated cleaning up by recognising NPAs and provided for expected losses.



Gross NPAs in PSBs rose rapidly from 2015, from 5.43% (Rs. 2,78,466 crore) in March 2015 to 13.69% (Rs. 7,33,137 crore) as of June 2017. Provisioning for expected losses grew substantially. From 2014-15 to



2017-18 Q1, Rs. 3,79,080 crore provisioning was made, whereas during the preceding ten years total provisioning was Rs. 1,96,937 crore only. This was the right approach to dealing with expected losses on account of stressed loans.



Text Box: Realistic recognition of NPA STRESSED ASSETS Stressed Assets

Amounts in crore Rs.

Text Box: 4,54,671 increase 2,78,466

~Rs. 1,75,000 cr. in just 12 cases referred to NCLT (25% of NPA) Mar-17

Text Box: 82%Text Box: 36%Text Box: NPA

Government recapitalised and initiated other reforms alongside the cleaning-up exercise, to make PSBs transparent and more efficient. Bank Board Bureau was set up, and steps were taken to appoint non-Executive Chairmen in PSBs.

Amounts in crore Rs.

Indradhanush Plan for recapitalising and revamping PSBs was announced by the Government on 14.8.2015. Government envisaged capital need of Rs. 1,80,000 crore till 2018-19. Accordingly, Government made provision of Rs. 70,000 crore and projected market-raising of capital by banks to the tune of Rs. 1,10,000 crore. So far, Government has infused capital of Rs. 51,858 crore in PSBs. PSBs, under stress due to AQR and NPA recognition, have so far been able to raise Rs. 21,261 crore from the market. The launch of Indradhanush before the sharing of AQR findings by RBI with PSBs in December 2015 enabled PSBs to successfully remain Basel III compliant despite high NPA and consequential provisioning requirement identified through AQR. The present decision further builds upon Indradhanush.

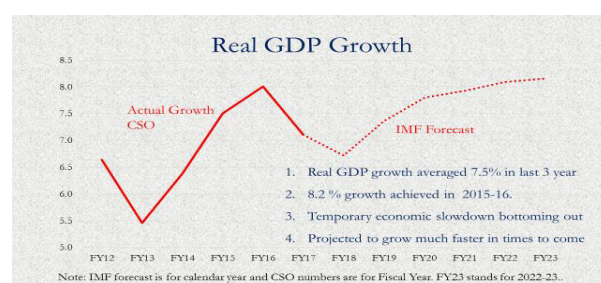
Government also undertook several legislative changes to facilitate recovery and resolution of stressed assets. The Insolvency and Bankruptcy Code, 2016 was enacted as a unified framework for resolving insolvency and bankruptcy matters. The Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 (SARFAESI Act) and the Recovery of Debts Due to Banks and Financial Institutions Act, 1993 (which governs Debt Recovery Tribunals) were amended in 2016 to facilitate faster recovery. Further, the Banking Regulation Act, 1949 was amended this year to enable Government to authorize RBI to direct banks to initiate the insolvency resolution process under the Insolvency and Bankruptcy Code.

These bold steps taken over the last three years not only addressed legacy issues but gave a strong impetus to reforms aimed at rebuilding the strength of PSBs. The process of building stronger, bigger banks has begun with

the consolidation of State Bank of India and the announced recapitalisation will give it greater impetus. A differentiated approach will be followed for this, based on the strengths of each PSB. The unprecedented recapitalisation and the initiatives announced today are expected to have a noticeable impact in the near-term, contributing to accelerated economic activity, employment and growth of the economy.

## V. Stronger economic growth AHEAD

The real growth of the economy as measured by the GDP growth showed a steady improvement when it averaged 7.5 per cent between 2014-15 and 2016-17 vis-à-vis 5.9 per cent in the previous two years. Although there has been some reduction in the growth in the last few quarters, one expects it to be a temporary blip and going by the available indicators the downside seems to have bottomed out and can expect the GDP growth to start rising again.



As per the 4th Advance Estimates of production of food-grains released by Department of Agriculture, Cooperation and Farmers Welfare for 2016-17, the production of total food-grains is expected to be 275.7 million tonnes, 9.6 per cent higher as compared to last year's total food-grains production of 251.6 million tonnes. As per the 1st Advance Estimates for 2017-18, the foodgrains output for Kharif season is likely to be 134.67 million tonnes as against 138.52 million tonnes as per the 4th Advance Estimates of 2016-17.

Despite subdued global economic condition and resulting lower levels of demand for India's exports demand, the Index of Industrial Production (IIP) grew by 4.6 per cent during 2016-17 as compared to a growth of 3.3 per cent in 2015-16 (as per the revised IIP series). During April-August 2017 the general IIP growth was 2.2 per cent as compared to a growth of 5.9 per cent in the same period of previous year. During August 2017, the IIP registered a growth of 4.3 per cent, significantly higher than the growth of (-) 0.2 per cent in June and 0.9 per cent in July 2017. The sales of passenger vehicles registered a growth of 11.3 per cent for September 2017 and 9.2 per cent for April-September. Similarly, the sales of commercial vehicles increased by 25.3 per cent in September 2017 and 6 per cent for April-September 2017.

As per IMF's assessment in October 2017, India's growth is expected to be at 6.7 per cent in 2017 and 7.4 per cent in 2018. IMF has also projected that India's growth would increase to 8.2 per cent by 2022. China's growth in 2016 was 6.7 per cent and is expected to be at 6.8 per cent and 6.5 per cent in 2017 and 2018 respectively. We expect strong growth rebound in the quarters and years ahead – may be better than even IMF's projections.

Source : PIB, 24th October 2017

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## “TECHNOLOGY CHALLENGES FOR NEXT GENERATION DIGITAL SUPPLY CHAIN AND LOGISTICS.”!

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**A**bstract :The Next Generation Digital Supply Chain in –Re-Energise Future of India, digital technologies like social media, mobile, and analytics are advancing rapidly on the economic landscape. These innovations are used widely by consumers and employees alike. Facebook has more than 1 billion users. There are more than 6 billion mobile phones. Employees often have better digital solutions at home than they do at work, and many customers are more technology savvy than the people trying to sell to them.

India is at the cusp of a digital chain supply revolution. Declining broadband subscription prices, aided by the launch of 4G services, have been driving this trend. This has led to an ever-increasing number of “netizens.” Furthermore, the likely launch of 5G services is expected to significantly augment the country’s internet user base.

Internet has become an integral part of this growing Indian population segment for remaining connected with friends, accessing emails, buying movie tickets and ordering food. The changing lifestyles of the country’s urban population have also led many people relying on the internet for their shopping needs. The convenience of shopping from the comfort of one’s home and having a wide product assortment to choose from has brought about increased reliance on the online medium.

Disruptive innovations are currently changing the landscape of many industries and their business models. Because of increasingly digitalized processes and an exponential growth of sensible data, supply chains are also impacted by the fourth industrial revolution.

The trend of online shopping is set to see greater heights in coming years, not just because of India’s rising internet population, but also due to changes in the supporting ecosystem. Players have made intensive efforts to upgrade areas such as logistics and the payment infrastructure. Furthermore, the Indian consumer’s perception of online shopping has undergone a drastic change, and only for the good. Given these developments, venture capital investors, who were restricting themselves to the sidelines, are now taking a keen interest in the country’s e-Commerce market.

In today’s ferociously competitive global business environment, corporate are under compulsions to find

new and unique ways to create and deliver value to customers through innovations and the demand to innovate and – Efficient, First and Tailored deliver better value addition is growing ever stronger and stronger.

**Innovate to be strongly differentiated and transform supply chain to make it a driver for sustainable growth.**

The present paper provides a brief overview of opportunities and challenges encountered by the emerging Innovative Technology Enabled Supply Chain Practice in India’s economy. It is heartening to note that India is called the ‘services hub’ of the world.

**Key Words:**(Innovation, Sustainable, Economy, Technologies, Value Chain, Processes)

**I.Introduction: Technology in Supply Chain :** Around the world, traditional manufacturing industry is in the throes of a digital transformation that is accelerated by exponentially growing technologies (e.g. Artificial intelligent (AI), Augmented Reality(AR), autonomous drones, Block chain, sensors, 3D printing, Internet of Things ( IoT ) Internet of Everything (IoE ) Vertical Reality (VR), Robots, Behind the scenes of the world’s leading industrial companies, a profound digital transformation is now underway. Industrial leaders are digitising essential functions and processes.

They are enhancing their product portfolio with digital functionalities and are investing in data analytics as a foundational capability to drive innovation and significant improvements in efficiency. In India as well, we see industrial companies planning to dramatically increase their overall level of digitisation.

The term ‘Industry 4.0’ stands for the fourth industrial revolution. Other related terms include ‘industrial Internet’ or ‘digital factory’, although neither takes as complete a view. While Industry 3.0 focussed on the automation of single machines and processes, Industry 4.0 concentrates on the end-to-end digitisation of all physical assets and their integration into digital ecosystems with value chain partners.

Generating, analysing and communicating data seamlessly underpins the gains promised by Industry 4.0, which networks a wide range of new technologies to create value.

Industry 4.0 framework and contributing digital technologies

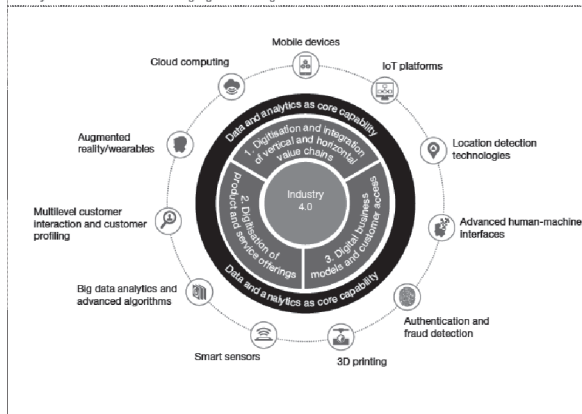
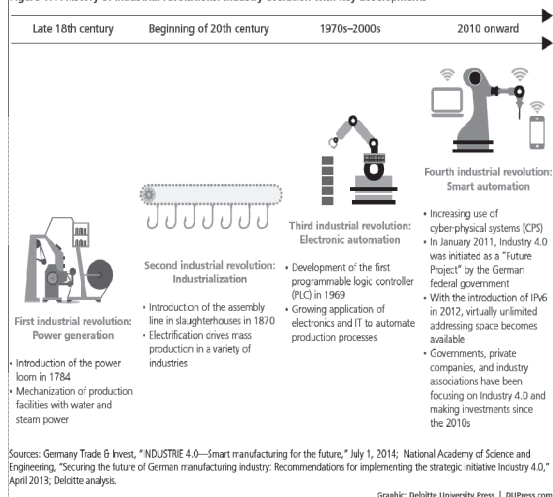
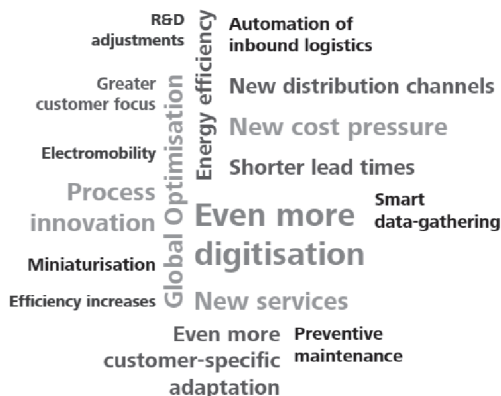


Figure 1. A history of industrial revolutions: Industry evolution with key developments



## I. What is Industry 4.0?

"The question arises with industry 4.0 of whether it is an evolution or a revolution." The concept of industry 4.0 is widely used across Europe, particularly in Germany's manufacturing sector. In the United States and the English-speaking world more generally, some commentators also use the terms the 'internet of things', the 'internet of everything' or the 'industrial internet'.



The concept of industry 4.0 is widely used across Europe, particularly in Germany's manufacturing sector. In the United States and the English-speaking world more generally, some commentators also use the terms the 'internet of things', the 'internet of everything' or the 'industrial internet'.

What all these terms and concepts have in common is the recognition that traditional manufacturing and production methods are in the throes of a digital transformation. For some time now, industrial processes have increasingly embraced modern information technology (IT), but the most recent trends go beyond simply the automation of production that has, since the early 1970s, been driven by developments in electronics and IT (see Chart 1).

**II. Industry 4.0** is the current trend of **automation** and **data exchange** in manufacturing technologies. It includes **cyber-physical systems**, the **Internet of things** and **cloud computing**. Industry 4.0 creates what has been called a "smart factory". Within the modular structured smart factories, cyber-physical systems monitor physical processes, create a virtual copy of the physical world and make decentralized decisions. Over the Internet of Things, cyber-physical systems communicate and cooperate with each other and with humans in real time, and via the Internet of Services, both internal and cross-organizational services are offered and used by participants of the **value chain**.

While terms like industrial **Internet** and **digital factory** are also used to describe these changes, Here, we use **Industry 4.0** to describe the journey industrial companies are taking towards a complete value chain transformation. At the end of this transformation process, successful industrial companies will become true digital enterprises, with physical products at the core, augmented by digital interfaces and data-based, innovative services. These digital enterprises will work together with customers and suppliers in industrial digital ecosystems. These developments will fundamentally change individual companies as well as transform market dynamics across a whole range of industries. And that is true in countries all around the world—in both developed and emerging markets.



Connected manufacturing as Industry 4.0, several other commonly known terms may point to the same phenomenon. These include:

- Industrial Internet
- Connected Enterprise
- SMART Manufacturing
- Smart Factory
- Manufacturing 4.0
- Internet of Everything
- Internet of Things for Manufacturing

The term "Industrie 4.0" originates from a project in the high-tech strategy of the **German government**, which promotes the **computerization** of manufacturing.



**Table 2. Industry 4.0 key business objectives, organized**

 <b>BUSINESS OPERATIONS</b>	Productivity improvements	<ul style="list-style-type: none"> <li>• Maximizing asset utilization and minimizing downtime</li> <li>• Driving direct and indirect labor efficiency</li> <li>• Managing supply network costs and synchronization</li> <li>• Ensuring schedule and plan stability and accuracy</li> </ul>
	Risk reduction	<ul style="list-style-type: none"> <li>• Ensuring raw material price and availability</li> <li>• Managing warranty and recalls effectively</li> <li>• Mitigating geographic risks</li> </ul>
 <b>BUSINESS GROWTH</b>	Incremental revenue	<ul style="list-style-type: none"> <li>• Finding sources of growth for the core business</li> <li>• Growing aftermarket revenue streams</li> <li>• Deepening customer understanding and insights</li> <li>• Strengthening customer integration and channels</li> </ul>
	New revenue	<ul style="list-style-type: none"> <li>• Creating new products and service offerings</li> <li>• Expanding internationally and in emerging markets</li> <li>• Identifying attractive M&amp;A opportunities</li> </ul>



### Design principles

There are 4 design principles in Industry 4.0. These principles support companies in identifying and implementing Industry 4.0 scenarios.<sup>[1]</sup>

1. **Interoperability:** The ability of machines, devices, sensors, and people to connect and communicate with each other via the Internet of Things (IoT) or the Internet of People (IoP).
2. **Information transparency:** The ability of information systems to create a virtual copy of the physical world by enriching digital plant models with sensor data. This requires the aggregation of raw sensor data to higher-value context information.
3. **Technical assistance:** First, the ability of assistance systems to support humans by aggregating and visualizing information comprehensibly for making informed decisions and solving urgent problems on short notice. Second, the ability of cyber physical systems to physically support humans by conducting a range of tasks that are unpleasant, too exhausting, or unsafe for their human co-workers.
4. **Decentralized decisions:** The ability of cyber physical systems to make decisions on their own and

to perform their tasks as autonomously as possible. Only in the case of exceptions, interferences, or conflicting goals, are tasks delegated to a higher level.

### III. Challenges

Challenges which have been identified include

1. IT security issues, which are greatly aggravated by the inherent need to open up those previously closed production shops
2. Reliability and stability needed for critical machine-to-machine communication (M2M), including very short and stable latency times
3. Need to maintain the integrity of production processes
4. Need to avoid any IT snags, as those would cause expensive production outages
5. Need to protect industrial knowhow (contained also in the control files for the industrial automation gear)
6. Lack of adequate skill-sets to expedite the march towards fourth industrial revolution
7. Threat of redundancy of the corporate IT department
8. General reluctance to change by stakeholders
9. loss of many jobs to automatic processes and IT-controlled processes, especially for lower educated parts of society

### IV. Impact of Industry 4.0

Proponents of the term claim Industrie 4.0 will affect many areas, most notably:

1. **Services and business models**
2. **Reliability and continuous productivity**
3. **IT security**
4. **Machine safety**
5. **Product lifecycles**
6. **Industry value chain**
7. **Workers' education and skills**
8. **Socio-economic factors**
9. Industry Demonstration: To help industry understand the impact of Industry 4.0, Cincinnati Mayor John Cranley, signed a proclamation to state "Cincinnati to be Industry 4.0 Demonstration City".
10. A article published in February 2016 suggests that Industry 4.0 may have a beneficial effects for emerging economies such as India.

### V. Addressing today's challenges

1. **Go beyond just data, generate insights** – Use data analytics to understand customers, market trends, track usage patterns, predict failures etc.
2. **Improve, standardize, and automate:** processes to reduce internal cost to serve
3. **Contract effectively** to get best value and manage risk in the changing digital landscape
4. **Embrace technology to support business** e.g. application of sensors, drones, machine learning, 3D printing etc.
5. **Develop right skills internally and explore partnerships** to meet new digital needs



## VI. What can you do to prepare for the future?

Behind the great potential of the **digital supply chain (DSC) lies Industry 4.0**, the fourth industrial revolution. A transformation in production and automation was brought on first by steam and water power (Industry 1.0), then by electrification (2.0), and more recently by the digital computer (3.0). Industry 4.0, digitization, is about companies orienting themselves to the customer through e-commerce, digital marketing, social media, and the customer experience. Digital ubiquity is also causing companies to completely rethink how they go about operations. Operations is often mistakenly viewed as “manufacturing,” but operations is what gives a company its ability to act. As with every other aspect of a company, digital technology is enabling completely new operating models.

**VII. Conclusion :** In this work on Industry 4.0 two methodological approaches have been used to explore the impact on the procurement function. A scoping study was used to better understand Industry 4.0 while in-depth explorative interviews with seven procurement managers should reveal insights from practice. Of course this study is limited with regards to the number of participants in the explorative survey.



However, the conceptual findings and empirical insights support the conceptual differentiation of “Procurement 4.0” from previous maturity levels of technology use in procurement. The observations have been collected in form of six fundamental observations. Obviously, Procurement 4.0 must support superior Industry 4.0 strategies of the company. In this role it shall assure the dynamic cooperation across organizations borders and the achievement of a collaboration productivity rent, while safeguarding the companies risk exposure within the Industry 4.0 supply chain. However, research on the topic is still in its infancy, while practice signaled a high demand for explanative knowledge. More conceptual and empirical work is needed to better understand the effects of Industry 4.0 on procurement in detail. With these considerations in mind, this work is an initial exploration of the phenomenon and further observations need to be taken.

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## CUSTOM EXCHANGE RATES

(All rates per unit) w.e.f. 19th October 2017

CURRENCY	IMPORT	EXPORT
Australian Dollar	52.00	50.20
Bahraini Dinar	178.20	166.55
Canadian Dollar	52.90	51.10
Chinese Yuan	10.00	9.65
Danish Kroner	10.45	10.05
Euro	77.85	75.20
Hong Kong Dollar	8.45	8.20
Kuwait Dinar	222.55	207.90
Newzealand Dollar	47.40	45.70
Norwegian Kroner	8.35	8.05
Pound Sterling	87.20	84.35
Qatari Riyal	17.65	16.55
South Arabian Riyal	17.90	16.75
Singapore Dollar	48.75	47.25
South African Rand	5.00	4.70
Swedish Kroner	8.10	7.80
Swiss Franc	67.50	65.30
UAE Dirham	18.30	17.10
US Dollar	65.85	64.15
Japanese Yen	58.90	56.95
Kenya Shilling	65.10	60.80

Source : [www.dailyshippingtimes.com/custom-exchange-rates.php](http://www.dailyshippingtimes.com/custom-exchange-rates.php)

# GLOBAL SUMMIT 2017 ON RESEARCH IN SCM FOR INNOVATIVE TECHNOLOGIES – DRIVING FUTURE BUSINESS” HELD AT NOIDA INTERNATIONAL UNIVERSITY.

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Indian Institute of Materials Management, Greater Noida Branch, led by Mr. K. Suresh Kumar, Former National president, IIMM, has organized a Global Summit 2017 on “Research in Supply Chain Management for Innovative technologies \_ Driving Future Business”. The Summit was held in association with Noida International University at the University Campus on 10<sup>th</sup> and 11<sup>th</sup> October 2017. Two days deliberations were consisting of several research scholars and also IIMM expert speakers. The Summit was ably and professionally assisted by Dr. C. Subbakrishna, Former National President, IIMM. He was also the Master of Ceremony.



Summit was attended by scholars, Ph D students, Management students, Supply Chain Professionals and leading academicians.

Formal welcome was done by Dr. D. K. Chauhan, Director Technical, NIU. He gave brief introduction of NIU. Noida International University is a UGC recognized University and been given the status of a University by the Government of Uttar Pradesh. The University is sponsored by Maruti Educational Trust with a motto “transforming Learning Experience” and the vision is to shape pre-eminent leaders for the 21<sup>st</sup> century through a research driven education system and to achieve that, NIU would inculcate values which will motivate students while guiding them in the right direction. University is spread over to 75 acres of land, offering 150 courses having over 4000 students both domestic and also from 25 different countries. NIU is Delhi NCRs largest private university and awarded Best Upcoming Institute by ASSOCHAM.



Dr. Arvind Kumar Singh is the Hon”ble Chancellor. Dr. Vikram Singh is Hon”ble Pro-Chancellor. Dr. Kum Kum Dewan is Hon”ble Vice-Chancellor.

Pro Chancellor Dr. Vikram Singh, an IPS officer 1974 batch , a former DGP of UP , is one of the most highly decorated police officers in the country. He spoke the importance of supply chain management in todays context and even in the Police and Army campus. Dr. KumKumDevan, Vice Chancellor of NIU spoke and said that the University has been rated well after the initial struggle. She was proud of achievement and hoped that the University will be one of the best in India.

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The National President Mr. O. P. Longia addressed the gathering and explained the IIMMs effort in the area of education and also gave crisp definition of SCM.

The Key Note speaker Dr. D. K. Banwet, during his speech defined supply chain management and said that there is no single plan to carry out supply chain activities. He explained the dynamics of material flow and explained that strategic, tactical and operational decisions form the supply chain planning. He opined that supply chain management was a discipline that was dominated by logistic experts but with the advent of IT, SCM has been brought to limelight. Supply Chain is primarily concerned with efficient integration of suppliers, factories, warehouses and stores so that merchandise is produced and distributed in the right quantities, right quality at the least cost to the right locations and at the right time.

He defined Logistics is that part of supply chain process that plans, implements, and controls the efficient and effective flow and storage of goods, services, and related information from the point of origin to the point of consumption in order to meet customer's requirements. SCM required parallel control of physical goods, logistics information, payment, ownership rights. SCM is concerned with forecasting, purchasing, Inventory management, information management, quality assurance, scheduling, production and delivery and customer service.

He gave various examples in India in the area of Automobile, Aerospace, Chemicals, Apparels, Food, Consumer durables, Forest products, construction, Pharmaceuticals, Electromechanical, Tooling and Computers. Impact of digital on SCM is particularly great. He explained various trends of supply chain such as Artificial Intelligence Lean, procurement's new role, collaboration, etc., He also explained 6 primary categories of emerging technologies that supply chain executives cite as most likely to prove widely disruptive in the coming years. They are Internet of things, 3-D printing, Self driving vehicles, Collaborative Robotics, The Urbanization of delivery and Drones.

This was followed by an Award Ceremony and also remarks on the inaugural function by Dr. Chowhan.

The next technical session was by Mr. Partha Bhattacharya, GM, Materials, CSE. His talk was mainly on risk management in supply chain such as Dependency, Monopolistic, Long Lead time, quality issues and disruption with reference to suppliers. In regard to customers, Demand Volatility, Loss of key customers, Cheaper competitors, technology and obsolescence. Internal risks are poor planning, inaccurate forecast, financials, logistics and human resource. In regard to Govt. Taxes and duties, Regulatory changes, Import Export policies, complicated compliance and penalties. Other risks include energy management, waste management, pollution norms, safety and welfare.

He listed the risks which may frequently affect supply

chain sustainability are Price fluctuations, Vendor Execution failures, Long lead time, Vendor dependency, Single source items, Quality rejections, Logistical disruptions, Blocked inventory, Obsolescence, Waste disposal, IT failures. Business drivers for supply chain sustainability are managing business risks, improving efficiency and creating sustainable products. He also gave segmentation of vendor base like Micro, SME and Strategic. He has also explained the role of all the three.

He said cross docking would revolutionize and briefed on IT application in supply chain. Contribution towards environment protection are saving wood, reducing consumption of metals, reducing consumption of energy, reusing the metal again, reusing oil after purification, proper waste management and E business. Contribution to society was elaborated with the vendor developing gets business and utilizes knowledge and credentials which results in higher economic growth and in turn provides earnings to many families and to the country.

The next session was by Mr. S.K. Sharma, Former National President, IIMM on cost reduction in SCM. He started with the genesis of the idea of cost reduction. He differentiated among Cost, Value and Price. To reduce cost monitoring the actual expenses and taking effective steps will result in cost reduction. He explained MRP, MRP II of Toyoto Production System and ERP in Inventory Management. Various efforts like Standardization and variety reduction, BPR, cost reduction in packing, sourcing, material handling and wastage control or elimination were explained. Fixation of reorder level, vendor rationalization, value analysis and value Engineering were explained. He showed the interesting fable of Akbar and Birbal where the latter showed his intelligence in reducing the cost of war ammunitions.

The next session is from Mr. PremNathPanday on Risk Management in Supply Chain Management \_ ISO 31000. Risk is something potential to cause harm. Tangible benefits are Credit ratings, Reduce total cost of risk including insurance, Less interruptions/resilience, Inspection regimes satisfied (compliance), Industry groups, Achieve objectives. Intangible benefits are consensus at the board level, Improved communication (up and down), Increased confidence in mitigation, external confidence, focus and prioritization. We should be prepared by understanding and managing supply chain. If scm fail, we fail. Secondly Robust method for managing a crisis (how decision making, recording and communicating).

Thirdly, understand key priorities within the organization (what must be kept going versus areas which can be stopped).

Using ISO 31000 can help organisations increase the likelihood of achieving objectives of supply chain management, improve the identification of opportunities and threats and effectively allocate and



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use resources for risk treatment. However, International Organisation for Standardization \_ ISO 31000 cannot be used for certification purposes, but does provide guidance for internal or external audit program.

ERM. Enterprise Risk Management is defined by the Committee of Sponsoring Organisations (COSO) as a process effected by an entity's board of Directors management and other personnel applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.

To help assist with the implementation of the ERM process, COSO developed the ERM integrated framework (2004), also known as the COSO Cube. The cube is an update to the initial COSO framework developed in 1992. He also explained the Bullwhip Effect. This was first noticed by P&G executives examining the order patterns for Pampers disposable diapers. Although then customer demand was pretty steady, they noticed that order variation increased dramatically as one moved from retailers to distributors to the factory.

The supply chain performance measures are 1. Financial, the return on assets, cost, cash flow and profits. Suppliers, Operations, Inventory, Order fulfillment and Customers. 2. Suppliers, quality, on line delivery, cooperation, flexibility. 3. Operations, productivity and quality. 4. Inventory, Average value, Turnover, weeks of supply. 5. Order fulfillment, order accuracy, time to fill orders, percentage of orders delivered on time. 6. Customers, customer satisfaction, percentage of customer compliant.

Trends in SCM are measuring supply chain performance, greening the supply chain by reducing the pollution from transportation, choosing the green suppliers. Lastly, reevaluating the outsourcing. He also elaborated on risk assessment techniques. Risks are everywhere and no compliance program can address every risk. One has to keep his eye on the ball and focusing on the significant risk. A supplier of a supplier of a supplier can create real risks for anyone in the chain. In addressing this complex situation, a clear strategy has to be developed predicting and defining the specific risks applicable to his supply chain.

Supply chain management can benefit greatly from using cloud computing since it promises to enable a wide and powerful range of capabilities in supply chain management including reducing the start up costs, increasing the supply chain visibility, reducing lead time, enhancing the inter firm collaboration and supply chain integration and reducing response time to customers. He concluded that If we manage our risk then we manage our success. We can find out how protecting our supply chain on a daily basis brings big benefits.

The last session was by Dr. M. K. Bhardwaj on Latest Developments in Public Procurement. He said that Government has made remarkable changes such as removal of distinction in non-plan and plan expenditure. Merger of Railway Budget with General Budget and focusing on outcomes through an Improved Outcome Budget document. Central Government may notify for mandatory procurement of goods and services for any category of bidders or provide for preference to bidders.

Department of expenditure states that start-ups will now be exempted from prior experience and turnover criteria in public procurement. Till now only MSME were eligible to avail this benefit. This step will offer equal opportunity to start-ups especially the ones from the manufacturing sector. This step has surely unveiled more scope for start-ups operating in this sector.

Entities will be considered as start-up if it is registered under Companies Act, Partnership Act or Limited Liability Partnership Act. Up to seven years from the date of Registration. Its turnover for any of the financial years has not exceeded Rs.25 crores. If it is working towards innovation, development or improvement of products or processes or services. DIPP shall recognize the start ups. Entities will have to submit on-line application along with the certificate of Registration and other relevant details. Revocation will be done in case of such recognition is found to have been obtained without uploading the relevant documents or on the basis of false information. Department of Industrial Policy and Promotion (DIPP) reserve the right to revoke the certificate.

The Govt. also mandated that the Central Government Departments and Ministries along with its central PSUs procure at least 20% of their purchases from MSME starting from April 2015.

Government e Market place (GeM). DGS&D should ensure Publicity of Goods. Credentials of suppliers be certified by DGS&D. Authority will also certify the reasonability of Rates. It is mandatory for Ministries/ Departments to procure goods or services available on GeM. Upto Rs.50,000 through any supplier on the GeM meeting quality and delivery specs. Above Rs.50,000/- to Rs.30 lakhs, seller with lowest price (among three different manufacturers). Tools for online bidding and reverse auctions are also available on GeM. Monetary ceiling is applicable only for purchases made through GeM. For other purchases, if any, outside GeM, relevant GFR Rules shall apply.

Dr. Bhardwaj also explained the salient features of GeM. They are greater transparency, Efficiency, Ease and savings to Govt. On line registrations of suppliers and government buyers. More than 7000 products categories. Hiring of transport service. The bid/Reverse Auction can be finalized within 7 days. Payment to be made within 10 days of receipt of goods. If the firm



quotes NIL charges/consideration, the bid shall be treated as unresponsive and will not be considered. Example is the Medical Equipment and their maintenance.

To give preference to Make in India and to promote Manufacturing, Production of Goods and Services and to enhance income and employment, there are Pre requisites for purchase preference. They are a. where nodal Ministry certifies that sufficient local capacity and local competition exist. B. Estimated value of procurement is Rs. 50 lakhs or less. Only local suppliers will be eligible. Where value of procurement is Rs.50 lakhs and above, among all qualified bids, the lowest bid will be termed as L1.

The conditions are a. If L1 is from local supplier, then 50% of the order placed on L1 and thereafter lowest bidder from local supplier will be invited to match L1 price for remaining 50% quantity. If he fails, next L1 called within margin of purchase preference (20%). Local supplier is defined as whose product/services offered meets minimum local contents (i.e. 50% of value addition). This is as prescribed by Ministry. Nodal Ministry has the right to prescribe higher or lower. Dr. Bhardwaj also covered very many vitl issues of public procurement.

Day 2 was started with a brief Welcome and also quick recap of Day1 topics. The first session was by Mr. Nanda Kumar, GM, Tata Energy Research. The subject was E procurement ensure transparency and efficiency. He explained the evolution of importance of procurement such as from 1950 to 73 prices is the king and short term focus in supplier relationship. From 1973 to 80s, focus was on cost of goods sold by redefining product specifications and greater outsourcing. Buyer and seller relationship was still short term. From 1980 to 1995, there was increased emphasis on total performance of suppliers. Total cost replaced price or COGS. Closer buyer – seller relationship with closer integration and mutual planning.

From mid 1990 till present, extended value chain. Supplier, In-company and customers are integrated. The International competition and various procurement technologies also evolved. Traditional procurement tools like telephone, Fax and Paper catalogues are mostly replaced by Electronic Data Interchange. He also showed various examples of dedicated EDI network in Industries. Value chain within a company were Sourcing of supplies, Inbound Logistics, Manufacturing, warehousing and delivery, Marketing and sales and even after sales services.

What separates winners from losers in E procurement is the extent to which the E procurement system or strategy used enables trading partners to effectively collaborate and share information. Two key elements for success of E procurements are Technology and People. He also

showed conventional procurement process and its limitations. He explained following problematic issues. 1. Process inefficiencies. 2. Potential for errors. 3. Non-compliance with purchasing policy. 4. Lack of leverage and 5. Sub-optimal sourcing.

Advantages of E procurement are A. improved process efficiencies. B. Reduction in errors. C. Better compliance. D. Enhanced leverage. E. Improved sourcing. Buyer managed catalogues are a form of Buy-side, one to many e procurement. Catalogues are normally used where items are sold at fixed prices with little price volatility. He brought out many advantages of E catalogues. He also gave various examples of Reverse Auction which are dominant form of auction in E procurement and its advantages and limitations of Auctions. The finer aspects of RFQ, RFP and RFI were also explained with examples. He narrated a case of E procurement by Engineers India in conclusion of his session.

The next session was on Upcoming trends in SCM by Mr. V. K. Jain, Former National President. He started with Lord Ganesha Symbolism with interpretation of its structure. Like ears are bigger than mouth, symbolizing we have to hear more than we talk. Each organ symbolizes some very important message. Then how words in English in different places convey different meaning was talked as a **Ice Breaker. The actual sentences are as follows.**

1. ONLY I hit him in the eye yesterday.
2. I ONLY hit him in the eye yesterday
3. I hit ONLY him in the eye yesterday
4. I hit him ONLY in the eye yesterday
5. I hit him in the ONLY eye yesterday
6. I hit him in the eye ONLY yesterday

He also showed many storage techniques like cold chain etc., He defined Supply Chain as an integrated approach to manage flow of MATERIAL, FINANCE & INFORMATION both ways between supplier to supplier and Customer to Customer so as to achieve the desired goal. Supply chain managers are already under huge pressure to adapt to turbulent economies, turbulent issues and expansion into global markets. The bad news is that the rate of change is not going to slow down.

The good news is that emerging trends hold opportunities to reduce both costs and carbon footprints and enable exceptional customer service at the same time. He quoted the Bill Gates statement that “The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency. Earlier DATA which is limited and now extensive. Data, Information, knowledge and power. Important is to analyze data for the company and apply the analysis fast. Upcoming trends are DRONES – speed, Use of Robotics – unemployment. NANO manufacturing – customized

product. Manufacture on demand – MOQ1. ROBOTS – quality. Building manufacturing Technology – Economical and fast. High speed train, Bullet Trains- speed. Virtual Market Competition – Tier 3 cities. He said history and data of the past is only one of the information. We have to think new and Brainstorming is must..

He also brought out the operation management components. One of the new technology which is dominating is the Bar Code for visibility and its higher version is RFID technology. This is the superior technology and give real time visibility across value chain. The combined quality cum cost based system movement looks at the relationships between cost (cost of services, products, supplies) and quality (quality of material and services provided). Cost is not only cost of material only but also includes the cost from Cradle to Grave including cost of acquisition, transportation, installation, operation and maintenance, residual value and even disposal cost.

He discussed the location of inventory in the supply chain. Customer managed inventory . It means the customer pays as these are used. Re-ordering is automatic and the customer pays for the storage space. In the vendor managed inventory, the supplier will have specialized expertise than buyer and supplier monitors the buyers stock and replenishes automatically. Mr. V. K. Jain brought out the Drivers for efficient supply chain. They are 1. Technology as core strategic driver. 2. Flexible, transparent, responsible supply chains. 3. Small improvements will lead to big success. 4. Think and do faster and finally Cross Docking .

His explanations are 1. Aging systems that were implemented years ago to enable smoother operations are quickly being replaced by smarter technologies that easily incorporate trends like big data, the internet of things, and the coordination of multiple sources of data. The demand is growing for technology that can successfully translate any electronic message into any format required by existing systems, allowing for full electronic data communication between client and supplier bases. The technology will only deliver the intended positive results if it is implemented with strategy and operations that adhere to best practice in supply chain management. Get basics right first. Not even the smartest technology can compensate for less than best practices.

Small improvements will lead to big success. Optimization of every component of the supply chain is already an imperative to growth and success. A new microscopic level of optimization will further differentiate between competitors. Predictive analysis, route planning and management solutions, intelligent storage and distribution space allocation software, as well as real-time integrated delivery tracking will become mainstream for both the biggest and the smallest of supply chains.

Good negotiation is the path to achieve YES from other party to what you want. Being able to blend systems and implement tools on a scalable basis is what sets the technology of the future apart from the unwieldy enterprise-wide software packages that were popular in the previous era. 2D – Conventional negotiations are carried out in a tactical and deal design manner. 3D – Most important is the factor of setting up negotiations.(discussing with Right party and right issues).

Supply chain managers are already under huge pressure to adapt to turbulent economies, labour issues, and expansion into global markets. The rate of change is not going to slow down. The emerging trend hold opportunities to reduce both costs and carbon footprints and enable exceptional customer service at the same time. The session was concluded with the innovative Supply Position Model where every item purchased in an organization is classified into 4 quadrants of Routine, Leverage, Bottleneck and Critical items depending on the expenditure in one axis and Impact of supply and opportunity and risk rating in the other axis. There was a very important suggestion that the specification to be precise, clear, specific, neither over nor under specified. Correct specification will lead to right material in time at right price.

The concluding technical session was by Dr. AmanAggarwal , Dean , Indian Institute of Finance. He explained the growth story and the Global Challenges. The points were Global dis-equilibrium & Inter-dependence. Growth, Unemployment and labour. Establishing balance between need and survival, socio-economic growth and environment discipline. Strengthening the Energy Financial Market Infrastructure. Focusing on issues to build sustainable future in interlocked global economic environment. Central banks, Banking &Market .

His main session were on GST and the Indian Economy, GST and Supply Chain , Challenges before GST and Banking and Indian Economy. The highlights are :

GST and the Indian Economy.

1. Equitable growth in Economy
2. Implementation of Government Financial Schemes for MSMEs
3. Creation of Strong Brand and ease to capture customers.
4. Standardization of products and services.
5. Better bargaining power
6. Ease in Raising from equity and Debt Markets
7. Immunity to defaults/ failures by improving resistance of players for shielding against different Economic Environments
8. Transfer of Risks.

GST and Supply Chain:

1. Logistics costs to go by 8%
2. Profit conscious Approach.
3. Reduce wasteful expenditure – cutting down something not essential based on ZBB.
4. Time reduction
5. Cost reduction
6. Job Market enhancement
7. Living standard improvement for all.
8. Better services at lower costs
9. Expected Annual Growth to increase by 20% (20% in school Stationery Mart driven by 33% in Exports – lead players.)
10. Better Management of Investment Assets for Growth
11. Reduce Fragmentation of Multiple Products in short run.
12. Brand development
13. Formalization of Markets and Distribution Networks
14. Enhance Market share
15. Ensure Long- Term Sustainable and survival.
16. Enhance supply chain solutions
17. Provide in-bound and out-bound solutions from lowered cost of Networks and Movements.

Challenges before GST are

1. Implementation is a big challenge
2. Cash transaction to be done away: Not to evade GST.
3. India has been a cash economy
4. Social Fabric, Established systems, and access to Information
5. Digitization Risks due to Cyber Security
6. Bank Risks, (charges levied. Dominance position Behaviour)
7. Concerns over Governmental Control
8. Money Laundering.

He also discussed Banking and the Indian Economy on the following headings.

Banking and financial Institution: India are

1. India s currency Regime – dates back to 1000 BCE
2. Rupee comes from Sanskrith word “RUPAYA” MEANS SILVER.
3. First “Rupee” introduced by Sher Shah Suri(1545)

4. 1<sup>st</sup> three banks in India are 1. The Bank of Hindusthan (1770-1832). 2. The General Bank of Bengal (1773-1775). 3. The Bengal Bank (1774-1791)
5. Madras Presidency Introduce Currency “12 fanams= 1 Rupee.
6. Indian Government introduced Gulf Rupee- also known as Persian Gulf Rupee (XPGR) as a replacement doe the Indian rupee for circulation outside the country RBI (Amendment) Act of 1 May 1959.
7. Floating Currency (Managed Float) since 1978.
8. Changes before the RBI and the Financial Industry.

Banking and Financial Institutions: Banking Tomorrow\_ in Progress.

1. On line Banking (partially)
2. Mobile Banking
3. Virtual Banking/Financing.
4. Developmental Banking
5. Retail Banking - Key cities only.
6. Corporate Banking
7. Co-operative Banking

Banking and Financial Institutions : Banking Tomarrow for Financial Inclusion.

1. Post office Banking (AmanAgarwal 2012-2016)
2. Banking on Wheels (J.D. Agarwal 2015-2016)
3. Agro Banking .Kissan Credit Card- (J.D. Agarwal 1997-1999). Corporate Farming (J.D.Agarwal 1997-1999).
4. Education Banking
5. Micro Banking
6. Islamic Banking (AmanAgarwal2012-2016)
7. Healthcare Banking
8. Skill Banking
9. Online Banking (pure Online Babnks)

With this technical sessions are closed.

There was a Award function where few awards were given away as announced by Mr. Suresh Kumar. Mementoes were also given to those who have supported the event by Dr. KumKum , Vice Chancellor of Noida International University. She also delivered the Valedictory address and it was interesting to note that NIU will start an MBA program in Supply Chain Management.

The First Global Summit came to an end with Mr. K. Suresh Kumar, the Chairman of the Summit summarized briefly and also acknowledged the various kind of support given to the Summit by IIMM professionals and specially the Vice Chancellor, Faculties and other staff officers of Noida International University.

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## GST EXPECTED TO TRANSFORM LOGISTICS INDUSTRY

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**G**ST is expected to Transform and prove to be a boost for over \$130 billion Logistic Industry.

"The logistics space in India is expected to grow at a rate of 9-10 percent over the medium-term" according to rating agency ICRA.

While the key driving factor on the demand side would be the economic recovery, the trend towards outsourcing of non-core activities like logistics, warehousing and associated activities to integrated players is likely to drive the share of the organized segment, it said.

The domestic sector is currently in a transformation phase with game-changing trends like **implementation of GST**, increasing focus by foreign investors across the logistics value chain, growing demand for end-to-end solution providers and emergence of new avenues such as e-commerce, logistics parks, cold chains and new startups. Further it said "The government's thrust towards building multi-modal transportation infrastructure is also likely to have a significant influence,"



**"Logistics is the part of the supply chain process that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customers' requirements."**

Source: Council of Supply Chain Management Professionals

Logistics is regarded as the backbone of the economy as it ensures efficient and cost-effective flow of goods and other commercial sectors depend on it. With over seven million goods vehicles moving around the country, the

freight volume has reached 1,325 billion ton per km, a figure that is supposed to double by 2025. **An efficient logistics infrastructure can reduce the cost of transportation which in turn can contribute directly to economic development.**

Transport is a crucial function of the logistics industry, accounting for 50-60% of the market size, followed by warehousing and storage, comprising another 25-30% of the total market. The rest of the market constitutes value-added and freight forwarding services. **According to ASSOCHAM Freight transport market in India is expected to be worth US\$ 307.70 billion by 2020. In India Road Freight constitutes around 63% of the total freight movement consisting of 2.2 million heavy duty trucks and 0.6 million light duty trucks annually. The road freight movement is expected to increase at a CAGR of 15% driven by the growth in the manufacturing, retail, FMCG and e-commerce sectors. The Sea Freight consists of around 9% of the total freight market and is mainly used as a major mode for imports and exports. The air freight consists of around 1% of the total freight market in India which will grow around 12.5% CAGR over the next 5 years.**

**Logistic Challenges:** To support India's fast paced economy, growth of logistics industry is very essential. However, the logistics sector still remain one among the primary bottlenecks in driving economic growth, it has potential also to act as a catalyst to realizing India's manufacturing and e-commerce dream for the coming decade.

The most essential challenge faced by the industry today is lack of proper infrastructure support, warehousing & distribution facilities, insufficient integration of transport networks, poor fleet management, low level of adoption of information technology etc. Regulations exist at a number of different tiers, is imposed by national, regional and local authorities. However, the regulations differ from city to city and state to state, hindering the creation of national networks.

The disorganized nature of the logistics sector in India, coupled with many other practical level deficiencies like lack of integrated multi-modal nodal facility centers & poor facility management, lack of IT standard, equipment and poor systems integration, insufficient availability of trained manpower, training institutes etc. belittling the progress of industry.



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Poor facilities and fleet management, capacity crunches especially for specialized equipment or carriers with modern handling facilities are the reason for high levels of loss, damage and deterioration of stock, mainly in the perishables sector. Part of the problem is insufficient specialist equipment, i.e. proper refrigerated storage and containers, but it is also partly down to lack of training. There exist several such challenges and also opportunities for logistics sector in the Indian growing economy.

**Impact on the Logistics Sector :** The World Bank reports trucks in India cover 250-300 km per day against the average 800 km and 450 km in the USA and Brazil respectively. Approximately 60% of travel time is lost due to unorganized paperwork and tax compliance procedures at interstate checkpoints, forcing logistics costs to hover at two to three times more than the international benchmark. Currently the annual logistics cost of the world is estimated at about USD 3.5 Trillion. India spends around 14.4% of its GDP on logistics and transportation as compared to less than 8% by the other developing countries. According to Assocham, India can save up to US\$45 billion if logistics costs are brought down to 9% of the country's GDP, thereby making domestic goods more competitive in global markets. The US spends 9.5% and Germany 8% of their GDP on logistics costs.

**GST Could be a Game Changer in Logistics Industry :** The rollout of GST is expected to integrate India's multi-layered indirect tax system into a single unified one, unshackling India's fragmented geographic state boundaries. **These changes could reduce transportation cycle times mostly by eliminating the time spent at check posts for administering local taxes; enhance supply chain decisions; lead to consolidation of warehouses, encourage organized sector to dominate by reducing the competitive edge enjoyed by the unorganized logistics players due to tax avoidance / evasions etc.** which could help the logistics industry reach its potential in terms of matching high-quality service levels and growth.

Particularly for the logistics sector, GST is expected to usher in some positive changes through simplification and standardization of procedures, warehouse re-engineering due to seamless availability of input tax credits, reduction in costs due to transition to an IT-focused system of compliances, and possibly easier and more efficient transportation of goods between borders. GST also enables to have greater flexibility and efficiency in logistics operations as GST removing distortions created by differential taxes and duty structures imposed across India's 29 states and 7 union territories. In GST there's no tax beneficial tax arbitrage to be gained. So decisions on manufacturing, warehousing and selling will be purely driven by the real costs of manufacturing and going to market – purely an operational & logistic strategic decisions. So the **focus now shifted from tax**

**efficient strategy to logistic efficient approach.** Since GST is totally digitalized, it encourages all the businesses also to align through technology.

In a nutshell **GST is not only a tax reform, it is also a business reform** as a whole, and a lot of businesses are now restructuring their supply chains

**Move from Local to Regional Distribution :** The new tax regime will bring down distribution costs for organized players in the industry. It has eliminated the need for dedicated warehouses for each individual administrative region. Logistics companies, which were earlier forced to set up many small warehouses across multiple cities, can now put up just a few, big warehouses region-wise and can follow the hub-and spoke model for freight movement from the warehouses to the different manufacturing plants, wholesale outlets, retail outlets and the various point of sales.

**State Wise Warehousing – No More Required :** Earlier manufacturers would typically have warehouses in different states across the country to avoid Central Sales Tax (CST) and prolonged on-road transit time. Furthermore, corruption at state borders and the influence of local booking agents would force the logistics sector toward fragmented behavior. The introduction of an integrated GST and the prospect of easier delivery of goods has encouraged companies to **consolidate their warehouses in select strategic locations** with the intention of centralizing their dispatch operations and capitalizing on the renewed commercial road transport opportunities.

**Inventory Centralization :** With the consequent physical network realignment which may built on a hub and spoke model in the post-GST scenario, many companies are moving with this model, ensuring proximity to manufacturing locations or consumption centers resulting larger regional consolidation centers at key strategic locations with larger warehousing facilities resulting in Inventory Centralization and Cost Reductions.

**Increase in usage of High Capacity Fleet :** The current transportation fleet in the nation is dominated by less efficient nine and twelve tons vehicles which needs to replace with high capacity fleet to cater to longer distances and higher cost optimization and capacity utilization. The Transport Ministry is working toward the construction of logistics parks across India with the purpose of aggregating freight to build distribution hubs. The emergence of these hubs will bolster long-haul on-road movement of freight on larger trucks, large express distribution network, large format warehouses, international level shipping infrastructure, cold chain, fulfilment services to e-commerce etc. The transport sector expects this transition to a hub-and-spoke model with high capacity trucks to enable direct movement to end locations with lower checkpoints and faster movement of goods to reduce transit time and logistics costs by 20%.

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**Abolished Check Posts:** As many as 22 states, including Delhi, West Bengal and Maharashtra, have abolished check posts within three days of the implementation of the Goods and Services Tax (GST). This has eliminated the time wasted at state borders by disposing lengthy clearance processes. Seamless transport is expected to cut transport costs, which will help make goods cheaper. In India, goods are largely transported by the most costly mode, roads, and the state boundaries escalated that costs. This move reduced time for movement of goods by 30 per cent. Cutting this delay short can help the economy save around Rs 2,300 crore which used to be lost due to goods trucks waiting at state borders with their cargo.

Simply halving the delays due to roadblocks, tolls and other stoppages could cut freight times by some 20-30% and logistics costs by an even higher 30-40%, according to World Bank estimate. **Unlocking the GST Advantage which will integrate India into one common market alone can go a long way in boosting the competitiveness of India's key manufacturing sectors by 3-4% of net sales.**

**Infrastructure – Key to Logistic Growth :** Indian logistics sector till very recent time comprises of inbound and outbound segments of the manufacturing and service supply chains. **Of late, the logistics infrastructure has gained a lot of attention both from industry as well as policy makers.** The role of managing this infrastructure, to effectively compete has been slightly under-emphasized. Inadequate logistics infrastructure has an effect of creating bottlenecks in the growth of an economy

**Nearly 63% of the cargo is moved by road In India, and rest by rail, seaways, airway, and pipelines. The railways account for 27 percent of total freight movement in India and are a preferred mode of transportation for long haul and bulky commodities such as coal, iron ore, fertilisers, steel and cement.** Additionally, the government's other major emphasis is on improving India's transportation mix by developing inland and coastal waterways. **At present, seaways account for a minuscule 9 percent of total freight movement in India compared to countries like China (30 percent) and USA (14 percent) that heavily use waterways.**

Given the economic and environmental benefits, the government has chalked an ambitious **Sagarmala project** that aims at **doubling the share of seaways** in the transport mix over the next decade by executing multiple projects related to expansion and modernization of various ports. According to a study conducted under the Sagarmala programme, there lies a significant potential for moving raw materials and finished products using coastal shipping and inland waterways which is 60-80 per cent cheaper than road or rail transport. The flagship programme by the Shipping Ministry will help in reducing

the logistics cost for both domestic and EXIM cargo with optimised infrastructure investment. **An overall cost savings of Rs 35,000-40,000 crore per annum by 2025** is estimated from the same according to shipping ministry sources. The programme aims to increase movement of coal through coastal route from 27 million tonnes per annum (MTPA) in 2015-16 to 129 MTPA by 2025 and increase the share of inland waterways and coastal shipping in modal mix to increase from 6 to 12 per cent, it added. The programme envisions reduction in the cost of power generation by Rs 0.50 per unit of power, it said. "It is estimated that for power plants located 800 to 1,000 km away from coal mines, the cost of coal logistics can contribute up to 35 per cent of the cost of power production," it said. "It is estimated that coastal movement of coal to these plants can result in annual savings of over Rs 10,000 Crore to the power sector," the Ministry noted.

A first of its kind in India, **'roll-on, roll-off (ro-ro)' ferry service between Ghogha and Dahej in Gujarat which Prime Minister Narendra Modi inaugurated recently will be able to carry up to 100 vehicles (cars, buses and trucks) and 250 passengers between the two ports.** The ro-ro ferry services are vessels made to carry wheeled cargo that are driven on and off the ferry on their own wheels or using a platform vehicle. The wheeled cargo includes, cars, trucks, semi-trailer trucks, trailers, and railroad cars. The service shall **reduce the travel time between Ghogha in Saurashtra, and Dahej in South Gujarat, from about seven or eight hours, to just over an hour. The distance between the two places would be reduced to 31 km from the current distance of 360 km.** When fully operationalized, it will also enable movement of vehicles. More and more such innovative projects need to come up to boost logistics sector as well as economy.

With an attempt to improve integrated logistics, the government also **plans to develop about 35 strategically located multi-modal logistic parks (MMLPs),** close to major manufacturing and consumption centres. These initiatives have significant potential to bring down the logistics costs in the country over the medium term. Policy-driven promotion of the Public Private Partnership (PPP) model is vital for infrastructure development in the transportation sector, along with plug-and-play projects

The integrated transport and logistics framework aims at increasing the average speed of freight transportation on the highways network from the **current speed of 20-25 km per hour to 40-50 km per hour and to reduce the logistics cost by almost half.** An overall network of about 56,000 km has been identified including existing national corridors (Golden Quadrilateral and north-south-east-west corridor), proposed economic corridors, inter corridor routes and feeder routes. In addition to

this 191 towns and cities have been identified on these routes where steps will be taken to reduce congestion. Inter-state border movement related documentation and procedure will also be simplified. **These interventions will enable a reduction of 5%– 6% in the overall supply chain costs in the economy.** Logistics parks will help reduce transportation cost for the top 15 nodes by about 10%, besides reducing pollution, congestion and warehousing costs.

**With a view to improving infrastructure sector in the country, the government on 24<sup>th</sup> Oct'17 unveiled mega infra booster and announced to build 83,677 km of roads along with an investment of Rs 6.92 lakh crore over the next five years.**

**The government has already cleared Rs 5.35 lakh crore for Bharatmala Road Project. Around 34,800 km of road will be constructed under the road projects**

The government's plan will serve to make the economy competitive by reducing logistics costs, bring down pollution levels by reducing congestion on roads, give a boost to industry and create employment. This is the first time ever that the development of the transport sector is being done in such an integrated manner. The plan will serve to make the economy competitive by reducing logistics costs, bring down pollution levels by reducing congestion on roads, give a boost to industry and create employment.

**GST enables free inter-state movement become catalyst for the Logistic Industry.**

**IT Enabled GST Transformation :** With implementation of GST, organizations face newer challenges such as

alignment of accounting and taxation systems with the new processes, they will need to embrace IT into the entire workflow. GST can provide a major fillip and competitive advantage through creation of transparent and totally digitalized business environment as technology is at the heart of GST. Businesses need to have a reasonable IT infrastructure in place in terms of business process reinforcement, tax configuration, input credit setoff, tax impact assessment & accounting, inventory data storage, document numbering, data amendments, impact analysis on interfaces, reversal of open transactions, many other dynamic changes and so on to align with GST.

The proposed e-way bill for moving goods within the country would rely heavily on high technology interface employing RFID chips and QR codes, to ensure that monitoring of goods movement does not bring back inspector raj and slow down goods traffic on highways. The e-way bill in the GST regime will put an additional layer of documentation by way of **prior online registration** of the consignment for transporting shipments exceeding INR 50,000. The unorganized nature of the logistics sector may make it a challenge and difficulty for small players to adopt to electronic-way bills, however over a period they too become more and more professional and adopt the technology for their own good.

**Significantly the impact of GST is revolutionary transformation of economy, trade & business towards complete digitalization. With GST India will move towards an IT- enabled, better, bigger, and Swatch (cleaner) business and economy.**

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## COMMODITY INDEX

Commodities	Days's Index	Prev. Index	Week Ago	Month Ago
Index	2460.8	2465.8	2483.5	2474.1
Bullion	4722.8	4748.1	4868.7	4674.1
Cement	1871.8	1871.8	1871.8	1835.0
Chemicals	2391.0	2391.0	2391.0	2285.9
Edible Oil	1526.5	1517.7	1517.2	1536.9
Foodgrains	2141.0	2142.5	2139.6	2159.8
Fuel	2339.9	2339.9	2346.2	2438.0
Indl Metals	1651.2	1651.2	1655.5	1706.4
Other Agricom	2343.3	2350.6	2350.6	2325.9
Plastics	1661.6	1661.6	1661.6	1649.7

Source: ETIG Database dated 23rd October 2017.

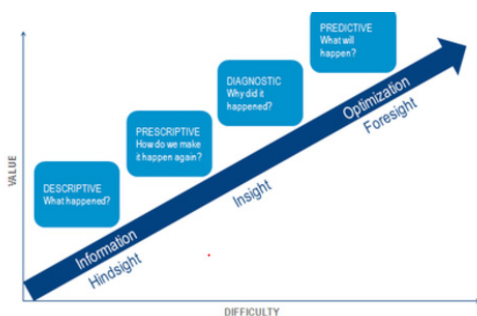
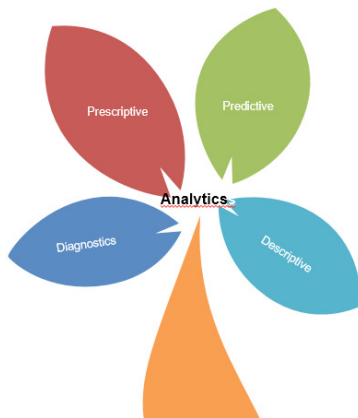


# SUPPLY CHAIN ANALYTICS - APPLICATIONS & ADVANTAGES

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Supply chain management is a business function where Analytics have major applications. Supply chain analytics can help company's track even the minutest of change that is crucial and could have been overlooked in a daily business process. The current business system demands real time visibility in day-to-day operations to make informed and profitable decisions.

Analytics are categorized in to the following:



## Descriptive: What happened?

Descriptive analysis or statistics does exactly what the name implies they "Describe", or summarize raw data and make it something that is interpretable by humans. They are analytics that describe the past. The past refers to any point of time that an event has occurred, whether it is one minute ago, or one year ago. Descriptive analytics are useful because they allow us to learn from past behaviors, and understand how they might influence future outcomes.

## Diagnostic: Why did it happen?

Diagnostic analytics is a form of advance analytics which examines data or content to answer the question "Why did it happen?", and is characterized by techniques such as drill-down, data discovery, data mining and correlations. Diagnostic analytics takes a deeper look at data to attempt to understand the causes of events and behaviors.

## Predictive: What will happen?

Predictive analytics has its roots in the ability to "Predict" what might happen. These analytics are about understanding the future. Predictive analytics provides companies with actionable insights based on data. Predictive analytics provide estimates about the likelihood of a future outcome. It is important to remember that no statistical algorithm can "predict" the future with 100% certainty. Companies use these statistics to forecast what might happen in the future. This is because the foundation of predictive analytics is based on probabilities

## Prescriptive: How can we make it happen?

The relatively new field of prescriptive analytics allows users to "prescribe" a number of different possible actions to and guide them towards a solution. In a nutshell, these analytics are all about providing advice. Prescriptive analytics attempt to quantify the effect of future decisions in order to advise on possible outcomes before the decisions are actually made. At their best, prescriptive analytics predicts not only what will happen, but also why it will happen providing recommendations regarding actions that will take advantage of the predictions.

Let us understand the analytics application in Supply chain in each of these six components.



**Better Insights:** A comprehensive supply chain analytics system gives a real-time picture of all the key metrics. Most of the supply chain dashboards are mobile enabled thus; executives can view the reports anywhere and anytime. They are better connected with organization's goals and get complete access to multi department performance scorecards. In short a smart supply chain analytics tool gives end-to-end visibility of supply chain processes that can help executives take better decision and uncover hidden business opportunities.

**Key Dashboards are listed below:**

- Performance Analysis
- Balanced Scorecards
- Safety & Regulatory Compliance

**Supply chain Strategy:** Present business environment is highly dynamic and volatile. In this situation business users need advanced supply chain analysis to make better strategies. From a supply chain point of view, business users can have better supply chain networks and ensure right number of supplier profiles. This helps in efficient flow of operations. Smart supply chain analytics software also comes with a "what-if" analysis tool. Business users can use this tool to create various scenarios and select the best strategy that provides cost benefits and profitable outcomes.

**Key Dashboards are listed below:**

- Network design
- Predictive/What if analysis
- Stakeholder analysis

**Planning & Forecasting:** Traditional methods of inventory and demand management are no longer results in a profitable yield due to demand volatility. Access to real time data is highly critical to match pricing and quantity in most industries.

A smart supply chain analytics solution helps in managing cash flow and optimum application of working capital. Business users can reduce costs and ensure product availability by integrating demand signals into forecasts, improve the management of short-term demand volatility and enhance process collaboration.

**Key Dashboards are listed below:**

- Demand planning
- Sales & Operations planning
- Forecasting
- Collaborative Planning Forecasting & Replenishment (CPFR)

**Sourcing & Supplier Performance:** Business users are always to look out for a cost saving strategies. Controlling cost and finding better suppliers is one of the key activity for any industry. Availability of various suppliers in the market, both onshore and offshore has given an edge to sourcing companies. A smart supply chain analytics solution helps business users to get complete insight into supplier scorecard. Business users can evaluate suppliers in real-time through the availability of self-service BI and take pragmatic decisions.

**Key Dashboards are listed below:**

- Procurement analysis
- Supplier cost analysis
- Contract compliance & analysis
- P2P cycle time

**Production & Distribution:** Production is an important function in a supply chain. It is based on multiple factors like demand for the product and availability of raw materials, plant capacity, availability of labor and logistics. Having in-depth insight in all these activities is indispensable in current volatile economic environment. Advanced analytics solution help business to understand and identify processes and product quality issues.

**Key Dashboards are listed below:**

- Production Planning
- Detailed Scheduling
- Production efficiency
- Quality control

Distribution is one of the critical factors in supply chain management. It plays a vital role to control cost at every level of supply chain process. The key is to have a cost saving measures starting from space utilization to material movement within the warehouse. A smart analytics solution will provide business to ascertain costs and savings associated with the expansion of warehouse or a new distribution center.

**Key Dashboards are listed below:**

- Order fulfillment
- Inventory turnover
- Put-away
- Order picking/packing

**Logistics & Transportation:** Transportation is the most important component of logistics when it comes to the material movement. It involves both inbound and outbound material movement between suppliers, warehouse, distribution centers and customers. Companies choose the mode of transport based on the infrastructure of transportation in the country or region. Cost is the most important consideration in the selection of a particular mode of transport.

**Key Dashboards are listed below:**

- Shipment cost analysis
- Mode of transport analysis (Air, Sea, Road)
- 3PL and cost analysis
- Cross border & Global logistics

To Summarize, I have listed down the Key advantages of Analytics in SCM:

- Better insights for executives like providing performance dashboards, balanced scorecards etc.
- Improved supply chain strategy like what/if analysis, network design and analysis
- Better Forecasting and inventory planning
- Improved sourcing and supplier relationship management
- Better warehouse and distribution management
- Improved transportation like Mode of transport analysis, lead time analysis and delivery analysis.

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# DEMAND SHAPING IN SUPPLY CHAINS

## MANAGEMENT PLANNING

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**D**emand shaping is the result of taking direct action to influence demand with the intention of increasing or decreasing sales of particular product, terms and so to better management objectives. Inventory available or production plans are put into action. Demand shaping is an operational supply chain management strategy where a company uses tactics such as price incentives, cost modifications, and product, substitutions to entice customer to purchase as per specification.

Demand shaped through marketing and sales actions, including discounts and promotions changes to pricing or sales incentives or changes to distribution that change availability. A plan for demand shaping is typically a result of the supply demand, co-ordination process embodied in sales and operations planning, when and updated forecast becomes available each month the demand team works with the forecast to develop team worker with the economic condition as well as any expected changes in conditions like price changes in competitions actions. The supply then builds a production and inventory plan to meet demand requirement while making the most effective, use of all available resources. The sales operation planning culminates with a joint meeting of the entire team including both supply and demand to work out changes on either side of the equation to come up with a better plan that improve customer service makes better use of resources or maximize profit preferably in supply chain. The supply team can offer to make changes in the product schedule, to better match demand. The demand teams can specify potential changes in demand shaping influence demand in direction that could help production achieve better results. It is this give and take that makes Sales and Operation Planning such a powerful tool for manufacturers by enabling both sides of the business to work together to achieve an overall best strategy for future co-operation. The concept of demand shaping in supply chain, is based on the reality that companies can and often do take actions that will effect demand. It is not unusual for companies to shape demand in advertently by for example making changes to prices without fully understanding what effect that will have on sales.

As part of sales and operations planning process with appropriate measurement and mostly update included demand shaping is elevated from a soot from trip inclusive approach to a real business tool that can be fine tuned and applied strategically with specific targets that ultimately tied to corporate objective.

Once formalized and lined to specific objective the result

of demand shaping in supply chain, can be measured in the same way that production is measured against their objectives as stated in the master production schedule. Putting demand and supply or more or less master fooling with separated but co-ordinated measurement levels the playing field and brings in coordinated supply chain in demand for products.

Demand shaping with supply chain in mind, is to ensure that demand shaping decisions are not made in isolation of supply issues alone, and this involves identifying issues such as inventory, shortage, surplus of material, thus creating a distribution of products. Most supply chain is influenced by the decisions of Sales and Operation and Planning, and their demand volatility, and uncertainty of materials make them unjustified for distribution. This complicates the job of supply chain that procure materials and components to take advantage of volume, discounts for production, and then stock the materials in the warehouse for production, and load them with goods for distribution.

Demand shaping in supply chain planning depends upon Price revisions, price changes against the requirement of materials or components, and if causes of demand variation changes, then support price changes, and this entails to have necessary buffer stock, or excess items for manufacturing capacity and this encourages maintaining safety stock of finished goods. The next is promotion in supply chain shaping demand planning, which involves aimed at selling the finished goods against good pricing activities, and a significant demand variation. Product is an important aspect in supply chain shaping planning; this creates a demand for distribution of new products, materials, components, which phases out obsolete products. Productions which are usually taken up in the beginning is able to satisfy first time buyers, as supply chain should shape the demand of planning for sufficient inventories, and helping to ensure that products are manufactured and delivered. Place is the next in demand shaping in supply chain planning, through which distribution of products which is to be done through proper channels, as it involves variations and uncertainty. This involves proper planning, demand creation, and proper inventory to meet the variation and uncertainty of manufacturing the product.

Demand shaping is a demand driven supply chain constraining customer centric approach, to planning and execution, it aligns process with customer demand at strategic, and at tactical levels, and with organization capabilities, resulting in improved revenue and profitability, and market share. It also helps to optimize use of resources reducing excess inventory and also



inventory requirement, and at a strategic level, and emphasizing on aligning customers for their long term demand in supply chain planning, and long term demands patterns to long term resources and capacity constraints. Demand shaping is the influences of demand to match planned supply demand shaping, and is also understood in getting the customer buy specific product that might allow the company to better management its own inventory.

Demand shaping has also been described as the use of various techniques to stimulate demand in planning, and increase demand elasticity in supply chain. Demand planning in supply chain determines the global demand of an organizations products, services and facilities the decisions which is the part of that demand the organization will attempt to acquire in shaping the demand plan in supply chain. The major part of demand planning 1. Forecast 2. Review. 3. Analyze. 4. Adjust 5. Monitor, and these with good data preparation and presentation which are the basics of demand planning process in supply chain.

In supply chain demand planning is the process of determining the products and services, that will meet demand, and requires strength of inventory levels to be maintained and capacity for additional production or procurement is justified in supply chain demand shaping.

The demand driven supply chain starts with accurate and flexible forecast, which includes sensing demand of operations planning of product development through all components of supply chain, procurement, manufacturing, distribution and customer relationship and inventory control maintenance, achieving such dramatic changes in a global operations of supply chain, demand planning is challenging, and to survive these competitive and economic climate should adopt the best practices. 1. Develop demand planning forecast system or tools. 2. Integrate new demand planning management ideas or tools with existing supply chain and logistic system to allow visibility of supply chain demand planning. 3. Develop a collaborative sales and operation planning process that to a customer satisfaction in sales, marketing, procurement, as supply chain and logistic into a product development to allow customer insight to all aspects of business. 4. Prepare a change management in supply chain planning demand to bring in technological changes and demand shaping. 5. Since all supply chain demand planning are to promote profitability, in products and services this should boost the bottom line of the organization.

Demand shaping is the ability to sense changing demand patterns evaluate, and optimize an enterprise supply plan to best support the market demand, and opportunity, and execute a number of demands shaping actions to steer the demand to align with an optimized plan. Improved demand planning in shaping supply chain has reduced inventory. Data is updated by adding to existing, so the result forecasted becomes inflexible, as the planning becomes easy and the data is easily available, as no time is wasted in entering items, and this saves time, thus saving time in supply chain planning. Speeding up sales and operation planning with involving more data and work, the planning continuously monitor,

and validate opportunities by reducing necessary space in warehouses and thus reduces inventory in supply demand planning thus by connecting data and speeding sale and operations planning and thus validating marketing opportunities in supply chain demand planning.

By implementing demand and supply plans, and planning an updated in real time based on time demand, materials availability and capacity, revenue and profit potential are maximized. Demand shaping planning is an arduous process and requires a high level of dedication and attention. Demand planning shaping process should conclude with an aligned set of forecast number that entire supply chain demand understands.

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*Congratulations*



Shri H K Sharma, Indian Supply Service officer, Life Member of IIMM has been appointed as Additional Director General (Supply) (Additional Secretary level) on 27 October 2017. Shri Sharma has handled various assignments in DGS&D and Defence organisations for over 30 years related to Purchase. He has been actively associated with training activities relating to GeM and Purchase.

He has been active member of IIMM Delhi branch and has supported various activities at national level. He has made immense efforts in spreading awareness about Public Procurement.

IIMM fraternity is delighted about his rise to the highest position in his cadre and takes this opportunity to congratulate him and wish him all the best in his future assignments.



## INTERNATIONAL NEWS

**LALBHAI PATEL**  
**DIRECTOR - IFPSM**  
**IMMEDIATE PAST NATIONAL PRESIDENT-IIMM**  
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“Dear Fellow members and Professionals.

It is my privilege to inform you all about the IFPSM Summit 2017 held at capital city Taipei at Taiwan on 22<sup>nd</sup> and 23<sup>rd</sup> September 2017, with the theme Sustainability Ensures Success. IIMM represented by 13 delegates to the Summit 2017 Taipei Taiwan.

The theme of the World Summit is “Sustainability Ensures Success”. During the inauguration on 22<sup>nd</sup> Mr. He Liming, President, IFPSM expressed great pleasure in welcoming the participants to the world summit. He assured two days of exciting and informative presentations by senior international key note speakers with marvellous opportunities to take back to their organizations.

Mr. Steve Lai, Hon. Chairman, SMIT, said that he is delighted to welcome to the Capital City Taipei and host our visit. He said that Taiwan is the 22<sup>nd</sup> largest economy in the world and their history can be traced back to prehistoric times when the island was actually joined to the mainland of China some 1,00,000 years ago. The world summit is an amazing opportunity for the profession to meet, engage and learn from each other. He urged us to maximize for our own development and our organizations by meeting new professionals from across the world and engaging with them through the various conference sessions and during the social occasions. The key note speech was delivered by Dr. H.E. Eugene Chien, Board Chairman, Taiwan Institute for Sustainable Energy, Taiwan. He mainly spoke on The global sustainable development confronts opportunity, challenge and prospect.

The global purchasing integrates the resource and

realizes the optimum resource distribution, cost saving, and value creation. The supply chain is an inter-enterprise cooperated organization form that realizes the whole process of designing, purchasing, producing, selling and service etc., by customer oriented, quality and effectiveness improvement as its objects and resources integration as its approach. The global supply chain is constantly breaking through the traditional geographical boundaries and has formed a new functional map with global connectivity.

The presentation was continued on sustainability and supply chain security. Global Economic trends in the coming decades was the next session by Mr. Kamhon Kan, Academia Sinica.

### **Day 2 . Saturday the 23<sup>rd</sup> Sept. 2017.**

Second day of IFPSM World Summit started by 9 am with a formal welcome and review of the first day by Mr. Steve Lai.

The plenary was on THE UPDATES AND TRENDS OF 2017 PMI/NMI FROM CHINA AND TAIWAN. jointly presented by Dr. Chung-Su Wu, President Chung-Hua Institutions for Economics Research, Taipei and Mr. Cai Jin, Vice Chairman, CFLP, Beijing, China.

The next plenary was on Sustainable Procurement in the Public Procurement context. By Mr. Scot Dicken, Sr. Manager, Charles Kendall and Partners UK.

The World Summit was closed by the IFPSM president and the next World Summit is at Helsinki, Finland from 26<sup>th</sup> to 29<sup>th</sup> September 2018.

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## SAD DEMISE



**MR. PRABHAKAR RAO, SARIPALLI**

Mr. Prabhakar Rao, Saripalli, the Life Member of our institute expired on 28th Sept. I put up in IIMM whatsapp group on the same day for immediate information of all IIMM Members. His life biopic in brief is furnished here with for publication in the IIMM review magazine for this month.

### QUOTE:

- He borned in Visakhapatnam, the city of destination. He was only 66 yrs old.
- He studied in St.Thoumas High School at school level and graduated during 1971 in the AVN College, Visakhapatnam, the most prestigious college in Andhra Pradesh, affiliated with Andhra University, Waltair one of the oldest/ prestigious/10th ranked university in India. Also qualified in GDMM of the institute during 1986 being 1st batch of IIMM as professional Material Manager.
- He joined with Visakhapatnam Port Trust, which is the one of the oldest major Ports in India, placed at Visakhapatnam. He served in the VPT till 2003 and left on VRS. While working in the Port Trust he became a member of the IIMM, Vizag Branch. Later, he became a life Member, Executive Member of the Branch. He participated in all Branch activities very actively. He was instrumental in conducting Seminars, work shops and Lecture Meetings of the Branch. While he was Treasurer of the Branch, he had participated in the Southern Regional Conference, which is organized as 1st time in the Vizag Branch and made the program very grand success.
- During his career as Life Member of the institute, attended several national conventions and programme conducted by NHQ and other Branches. He also got Best Branch Award, Best Member Ship Growth Award and Distinguished Member from IIMM NHQ. He is a course coordinator for Vizag Branch. He is instrumental for the growth of Vizag Branch.
- He is survived by his wife, Ms. Usha, daughter (USA) and Mr. Anil, son working in Australia.
- His sudden demise was a great loss to the Vizag Branch and to all Members of the branch. He is always in smiling mood and very friendly with all.
- All Vizag Branch, Students, Members and executive body members are deeply condole for his sudden demise, and pray almighty to rest his sole in piece.



## Indian Institute of Materials Management

### MISSION

- To promote professional excellence in Materials Management towards National Prosperity through sustainable development.

### OBJECTIVE

- To secure a wider recognition of and promote the importance of efficient materials management in commercial and industrial undertakings.
- To safe guard and elevate the professional status of individuals engaged in materials management faculty.
- To constantly impart advanced professional knowledge and thus improve the skill of the person engaged in the materials management function.
- Propagate and promote among the members strict adherence to IIMM code and ethics.

### CODE OF ETHICS

- To consider first the total interest of one's organisation in all transactions without impairing the dignity and responsibility of one's office :
- To buy without prejudice, seeking to obtain the maximum ultimate value for each rupee of expenditure.
- To subscribe and work for honesty and truth in buying and selling; to denounce all forms and manifestations of commercial bribery and to eschew anti-social practices.
- To accord a prompt and courteous reception so far as conditions will permit, to all who call up on legitimate business mission.
- To respect one's obligations and those of one's organisation consistent with good business practices.



## BRANCH NEWS

- |                     |                    |                      |
|---------------------|--------------------|----------------------|
| ■ AURANGABAD BRANCH | ■ KANPUR BRANCH    | ■ THIRUVANANTHAPURAM |
| ■ ALWAR BRANCH      | ■ MANGLORE BRANCH  | BRANCH               |
| ■ COCHIN BRANCH     | ■ MUMBAI BRANCH    | ■ VAPI BRANCH        |
| ■ CHENAI BRANCH     | ■ NAGPUR BRANCH    | ■ VADODARA BRANCH    |
| ■ HYDERABAD BRANCH  | ■ NEW DELHI BRANCH |                      |

### AURANGABAD BRANCH

IIMM Aurangabad have conducted evening training program on “Emotional Intelligence and Relationship Management” on 10<sup>th</sup> September, 2017; at Hotel Atithi, Jalna Road, Aurangabad . Faculty for this three hour’s program was Mr. Jayprakash Kabra ,Director, Mind Movers Management Consultants Pvt.Ltd,Mumbai.



*ECM of IIMM Aurangabad with faculty Mr.Kabra*



*Faculty Mr. Jayprakash Kabra guiding Audience*

Role of emotional intelligence in developing enriching relations, Tips on Managing and leading team, Importance of work-life balance Anger Control was the key takeaways of the program. Mr.Kabra also acquainted how to face stress, anxiety, frustration in routine, how to keep in tongue in control. He also clarified role of communication and body language while dealing with spouse, customer, boss, and society at large.

Around 120 people from different group e.g. Doctors , Students and Industries like Endurance Group, Bagla group, Morganite ,Endress+Hauser ,NHK Auto , Upturn Engineers and other pharmaceuticals and automobile based at Aurangabad had attended this program.



*IP Chairman Dr. Narendra Joshi briefing the branch activities*



*Lamp lightening by Chairman Mr. K Srihari along with faculty Mr. Kabra and EC Members*

National Council Member and IP Chairman Dr. Narendra Joshi briefed about the branch activities and focus areas of IIMM. He also appealed for becoming IIMM members to delegates, who are not IIMM members.

Proceeding for the program and Introduction of faculty was done by Miss .RadhikaZawar, the young Motivational Speaker, Aurangabad..

Chairman Mr. K. Srihari, Vice Chairman Mr. Sushant Patare, Hon. Secretary Mr. Milind Ghogale, National council members - Dr. Narendra Joshi, Mr. S. J. Sanghai and Mr. Jitesh Gupta, Treasurer Mr. Lalit Lohade along with EC Members - Mr. M. Phani Kumar, Mr. Sunil Ved, Mr. R. D. Jaulkar, Mr. Sudhir Patil , Mr. Shrikant Muley took efforts to make this event successful.

Hon. Secretary Mr. Milind Ghogale offered “Vote of Thanks”. Program was concluded by national Anthem and dinner.

## ALWAR BRANCH

Indian Institute of Materials Management Alwar Branch organized a Seminar on "Emerging Technologies in Supply chain Management" on 24.10.2017 at Hotel Moti Doogri Palace Alwar. Mr. V D Gupta Chairman IIMM Alwar Branch welcomed the participants. Mr. L R Meena founder Chairman of Alwar Branch and National Secretary and Treasurer {Elect} was the Speaker to the program.



Mr. Meena gave brief about IIMM and also about the formation of the Branch, IIMM NHQ educational, training and consultancy activities at PAN India basis. Mr. Meena while starting his talk on the topic spoke about the Supply chain Management in brief, background history of technological development right from the communication mode on manual, to animals and bird mode of communication, post, Telegram, Telex, fax, EDI and the current mode of communication by emails. He then shifted his talk to the Emerging Technologies.

**.IOT The internet on things** : Now a days the OEMs of major equipment are installing a smart chip and sensors in equipment, the sensor directly communicate with the OEM and the service provider about the problem in the equipment working and the requirements of spares and service required for the equipment, so that the OEM and his service team is ready to rectify the defect. By use of the IOT the down time of machine is eliminated and chances of production loss is reduced to minimum.

**3D Printing Technology** : 3D Printing Technology is another state of art technology for Manufacturing of highly critical parts with 0 defect and 100% accuracy. The desired part can be designed and printed / manufactured at plant to avoid lead time and down time of the machine. With the 3D technology even Human in plants can also fabricated as per accurate size of damaged body parts. Now efforts are on that the desired part can be

manufactured during travel time in moving vehicles to reduce the lead time. **Driverless Car** : The use of Driverless car has already started and by 2025 as per estimate about 20 million Driverless car will be moving in European countries. India is following. In India Mahindra and Mahindra has already started production of Driverless Tractors controlled by remote. It will bring a big revaluation in Logistics Industry.

Drones becoming common for personal use. It can also be used for service related Industry for faster and efficient services. Reduction in carbon print is another issue for environment. The cargo and shipping companies are trying to use alternative fuel to reduce the carbon. The battery and solar power use is increasing day by day in shipping and Logistics Industry. After some time solar power will be used in cars to reduce the carbon and save environment. Cloud computing and integration is another technology being used by Industries. It will help tracking a product through each stage of transportation more accurately and on real time basis. Use of RFID technology is increasing day by day. By use of RFID technology lot of time can be reduced. Production, transportation, shipment can be scanned, counted simultaneously, thus saving the time and cost to the industry.

## COCHIN BRANCH

Indian Institute of Materials Management, Cochin conducted a one day in-house training program on "Modern technology in Stores management" to the corporate company M/s Elite Foods at Thrissur on 24<sup>th</sup> Sept 2017. Our Chairman Mr. Roby TA took the sessions and the program was attended by more than 32 participants in the managerial level, from across their business group companies.



*Chairman Mr. Roby addressing the participants*



*Participants from Elite Foods Group companies*

On 11<sup>th</sup> October branch conducted a one day workshop on "Technology Enabled Inventory Management- and



business excellence” for working professionals around Cochin. Dr. Rabi Narayan Padhi was the faculty for the program and the workshop was attended by more than 26 participants from various public and private sector industries. The main participant industries were, Cochin Shipyard, NPOL, Hindalco, Novelty Clothing, ITI Palghat, Apollo Tyres, and Elite Foods etc.



*Chairman Mr. Roby TA inaugurating the one day work shop on Technology enabled Inventory Management on 11<sup>th</sup> Oct 2017*

The program was inaugurated by the Hon. Chairman Mr. Roby TA along with Dr. Rabi Narayan Padhi. Welcome address and introduction of the faculty was made by Branch Secretary Shri . Muralidharan , Retd. General Manager , HNPL.



*Dr. Rabi Narayan Padhi, speaking to the participants*



*The participants from various industries attending the work shop on Technology enabled inventory management on 11<sup>th</sup> Oct 2017*

## CHENNAI BRANCH

**9<sup>th</sup> September 2017 :** We have conducted EC meeting at our IIMM hall. Discussed more about membership follow up, DSCM course, monthly meeting and EDP course etc.

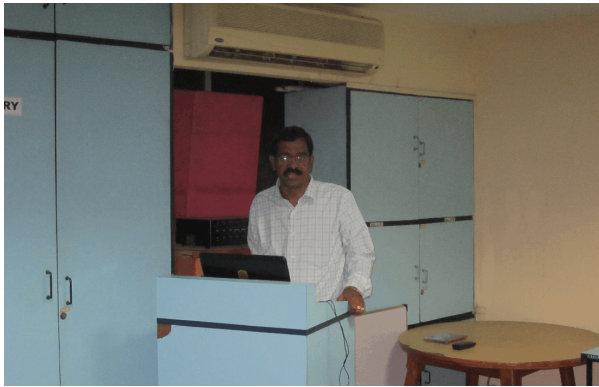
**23<sup>rd</sup> September 2017 :** Executive Development Program has been conducted by IIMM, Chennai at Hotel Regenta Central Deccan. The topic of the EDP is “GST – Supply Chain Management” and received overwhelming response. Some of the photographs are attached



**23<sup>rd</sup> September 2017 :** The same day evening IIMM monthly meeting conducted at our IIMM hall. Many members have been attended and the topic of the meeting is “Disaster Prevention, Risk Management & Risk Transfer”. Speaker of the meeting is Mr. K. Balasubramanian, Chairman, Precision Group Companies, Chennai.







*Group photo of outgoing team 2015-17*



*Out going Chairman Mr. S.Chandrasekhar delivering his address*

## HYDERABAD BRANCH

As per the program the AGM was conducted on 5<sup>th</sup> August 2017 at our institute. Mr. C. Harinath, Life Member and also Past Chairman of Hyderabad Branch, as Returning Officer conducted election process in a befitting manner and announced the details of members elected for 2017-19 tenure as new Executive Committee of IIMM- Hyderabad Branch.

### **IIMM- Hyderabad Branch- Office Bearers, National Council Members, Executive Committee Members for 2017-2019**

#### **POST IN BRANCH**

CHAIRMAN  
VICE CHAIRMAN  
HONY. SECRETARY  
HONY. TREASURER  
N.C. MEMBERS

#### **NAME**

Mr. A. Preetam Kumar  
Mr. Bhs Murthy  
Mr. Md. Ziauddin  
Mr. S Janardhan Rao  
Mr. P. Mahender Kumar  
Mr. D.Dasaradha Reddy  
Dr. M. M. Rao  
Mr. P. Somayajulu  
Mr. Ch. Leela Vara Prasad  
Ms. S. Suvarna  
Mr. Ramakrishna Kalluri  
Mr. Y Harsha Vardhan  
(Co-Opted)  
Mr. S Shravan Kumar  
(Co-Opted)  
Mr. S. ChandraShekar  
(Ex-Officio - Immediate  
Past Chairman)

#### **E.C. MEMBERS**



*Out going Secretary Mr. D.Dasaradha reddy -providing his report*



*Returning officer Mr.C.Harinath associated with Mr. Paul- announcing the Election results of new committee(2017-19)*





*New Chairman Mr. A.Preetam Kumar with NC Member Mr. Mhender Kumar*



*New Secretary Mr. MD.Ziauddin clarifying doubts to few Students of IIMM Hyderabad branch*



*Mr. K.Ramakrishna, Mr.P.Somayajulu, Mr.S.JanardhanRao, Dr. MM Rao, Mr.A.Preetam Kumar, Mr.Bhs. Murthy, Mr.Md.Ziauddin, Mr. Mahendr Kumar, Ms.S.Suvarna, Mr.D.Dasaradha Reddy, )*

The outgoing Chairman Mr. S. Chandrashekar gave a very good brief on the branch performance and thanked Mr. C. Harinath, Returning Officer for completing the elections. Outgoing Secretary Mr. D. Dasaradha Reddy submitted his report covering all activities, Membership Drive details, Educational aspects, Executive Development Program conducted, about MM day celebrations etc.

He had also mentioned about successfully conducted mega Annual Event NATCOM-2016 at Hyderabad by the branch under the leadership of Mr. P. Mahender Kumar. He conveyed thanks to total team of 2015-17 in making all activities a grand success with the support of all members. The newly elected Chairman Mr. A. Preetam Kumar introduced the team members of 2017-19 and assured to go ahead with full co-operation of all members

and to work as a vibrant team for the development of Hyderabad branch.

He also appreciated the excellent contribution made by previous team under the leadership of Mr. S. Chandrashekar. He further put on record the notable services provided by Dr. V. Venkat Reddy to the Branch in all aspects and thanked him on behalf of all members present. The newly elected Secretary Mr. Md. Ziauddin proposed vote of thanks.

## KANPUR BRANCH

The Annual General Meeting for the year 2016-17 was conducted on 26<sup>th</sup> Aug 2017 at 5:00 PM in Mallick complex hall in advance notice of 21 days. The agenda for AGM was communicated to all members of IIMM Kanpur branch as given below:-

- 1) Passing of accounts for the year 2016-17 duly audited by our national auditor.
- 2) Conduction of election of the branch for the block year 2017-19
- 3) Any other point for discussion with permission of chair



*Mr. Gopi Krishna Agnihotri, Chairman of branch briefing the branch activities on dais during AGM 16-17*



*Mr. Kailash Nath, Secretary of branch presenting the Balance Sheet for the year 2016-17 during AGM 16-17*



The proceeding of program was started at 5:00 PM by Mr. Prashant Suri, the comparer of programme . The governing body of Kanpur branch was called to share the dais . Mr. G.K.Agnihotri, Chairman of branch briefed the activities of branch and honoured the committee office bearers by giving the mementos.



*Mr. Abhinava Unmesh Kumar Dy. Director RCMA/DRDO, Ministry of Defence as election office declaring the election result of IIMM Kanpur Branch for the year 2017-19.*



*New Governing Body from left : Mr. Prashant Suri, Mr. Saurabh Chaturvedi, Mr. Laxmi Narain, Mr. Gopi Krishna Agnihotri, Mr. Kailash Nath, Mr. M.P.S. Kaushik, Mr. Surendra Kumar and Mr. Ravi Ranjan.*



*New Chairman Mr. Kailash Nath is presenting the memento to Mr. Abhinava Unmesh Kumar, Election Officer*

Our senior member Mr. S.R.Suri retired from H.A.L. Kanpur as manager (purchase) about 28 years back, put his views for our branch and blessed us . He was actively associated with our branch and attained the age of 86 years by now .He was honoured by Chairman offering memento.



*New Chairman Mr. Kailash Nath presenting the memento to Mr. S.R.Suri*



*Ladies volunteers participating in function during AGM*

The balance sheet for the year 2016-17 was presented by Mr. Kailash Nath, Secretary in the absence of Treasurer Mr. Shive Chand Dubey due to his ill health. Mr. Laxmi Narian Life member supported the balance sheet by first his hand which was seconded by Mr. Pranshant Suri and passed by all present members by clapping. The balance sheet was adopted by all members

Result of the, election of Kanpur branch was declared by shri Abhinav Unmesh Kumar, Dy. Director, RCMA(Kanpur) /DRDO, min, of Defence.The committee for the year 2017-19 is as follows:-

- |                                |                    |
|--------------------------------|--------------------|
| 1) Mr. Kailash Nath,           | Chairman           |
| 2) Mr. M.P.S.Kaushik ,         | Vice Chairman      |
| 3) Mr. surendra Kumar,         | Hony. Secretary    |
| 4) Mr. Prashant Suri,          | Hony. Treasurer    |
| 5) Mr. Gopi Krishna Agnihotri, | National councilor |
| 6) Mr. Dinesh Kumar Pandey,    | National Councilor |
| 7) Mr. Ravi Ranjan,            | Executive Member   |
| 8) Mr. Saurabh Chaturvedi,     | Executive Member   |
| 9) Mr. Laxmi Naraian,          | Executive Member   |

After declaration of result of election, the new committee office bearers were called to share the dais . Newly elected chairman, Mr. kailash Nath, delivered the speech and chalked out the action plan for the progress of the branch.



Mr. Kailash Nath, Chairman presented the momentos to Mr. Abhinav Unmesh Kumar, election officer & Mr. Narendra Singh, Asstt. Election officer. The vote of thanks was given by Mr. Surendra Kumar, Secretary of branch followed by high tea & refreshment.

## MANGALORE BRANCH

IIMM Mangalore branch organized talk on “AN EFFECTIVE CONTRACT DRAFTING” by Sri Srinivas Rao, Director, Global Institute of Materials Management-Bangalore, at lecture hall of A.J Institute of Business Management-Kottara, Mangalore on 10-Oct-2017.



Branch Chairman Sri. Sandeep B Naik, Chief guest Dr. Jayaprakash Rao and the Speaker Shri Srinivas Rao



Invoking the blessings of Almighty with Prayer by Ms. Christeena Joseph



Welcome Speech by Branch Chairman Sri Sandeep B Naik



Performing MC by Branch Secretary Mr. Deepak T.



Speaker Introduction by Branch Treasurer Mr. Nagaraj K.



Branch Member Mr. Priyadarshan Raj presenting a pot of flowers to Sri Srinivas Rao - Director, Global Institute of Materials Management, Bangalore.



Branch Member Mr. Supraraj Mally presenting a pot of flowers to Chief guest Sri Jayaprakash Rao, A.J Institute of Management, Mangalore





Branch Vice chairman Shree Philip CC reporting past Branch activities and future plans of the committee



Sri Srinivas Rao, Speaker for the day, exchanging the Insights on the subject.



## MUMBAI BRANCH

**AGM on 20<sup>th</sup> August 2017**— Mumbai Branch held its AGM on 20<sup>th</sup> Aug 17 at hotel Jaya Leela. Despite heavy Mumbai rains on the day, attendance was appreciable @55nos.



Branch Treasurer Animesh Shah started the meeting after confirming the quorum. Chairman Mr. Ashok Mhatre then did presentation showing highlights of previous year as well as for his tenure as a chairman of branch. Mr. Mhatre also underlined improvement and focus areas namely regular student's admissions, widening of base for MDPs, activation of research & consultancy centre. He ended his presentation with sincere appreciation for support he received from Branch senior members, EC team and office staff, while and urging more members, student members (Gen Z) to get involved with IIMM activities. Mr. Animesh then presented annual accounts and which were unanimously approved by members present.







Following students were then, felicitated at the hands of senior member and faculty Dr. Sukhtankar, Mr. Ashok Mhatre and Mr. Satish Palekar.

- 1 PGDMM Gold medallist: Umesh Kaushik-Year 2016
- 2 GDMM Silver medallist: Sachin N. Moghe – Year 2016
- 3 Appreciation for YMM participation: (NATCOM – 2016)
  - i. Mandar Dhulup
  - ii. Dhaval Chunawala

After appreciation, Mr. Umesh Kulkarni (Retd Sr. GM-Finance of M & M Ltd.) gave very enlightening guest lecture cum presentation on **“Economics Finance in Global Market”** and which was highly appreciated

Election officer, Mr. Johnny Mapgaonkar then took over and concluded the proceedings in smooth but brisk manner announcing the new Executive committee for Mumbai Branch as all of them were elected unanimously (unopposed)

1. Mr. Satish Palekar-Chairman
2. Mr. Animesh Shah- Vice Chairman
3. Mr. Ajoy Sarkar- Hon. Secretary
4. Mr. Virendra Mantri - Hon. Treasurer
5. Mr. KeshavKotwal (EC Member)
6. Mr. SwapnilDubey (EC Member)
7. Mr. Veer Sidhwani (EC Member)
8. Mr. Sunil Dhakate (EC Member)
9. Ms. Hemaprabha Vasa (EC Member)
10. Mr. ShekspersDutta (EC Member)
11. Mr. G. R. Apte (NC Member)
12. Mr. SurendraDeodhar (NC Member)
13. Mr. B V Iyer (NC Member)
14. Mr. Nozer D Sadri (NC Member)
15. Mr. Ashok Mhatre (NC Member)

After the symbolic handover of the ‘office’ from outgoing chairman –Mr. Mhatre, incoming chairman Mr. Satish Palekar gave a crisp and focused presentation on his vision for the branch and the plan for improvement areas. Vote of thanks was proposed by Branch new treasurer Mr. Virendra Mantri. EC ended with sumptuous lunch.

#### Programs –

1. Five days ‘Purchasing Management’ Certificate Programme at Thane (on weekends) short certificate program on purchasing was conducted during Sept-Oct., by Mr. Ganesh Apte along with Mr. Bala Iyer at Thane centre. The Program attended by 19 Nos across range of industries was well appreciated.
2. One day in house program on ‘Preparing Contract’ (Module 8) & Managing Contract (Module 9) was held for Senior and middle level executives of M/ S. UPL Limited at 21<sup>st</sup> September 2017. Program was coordinated by Mr. Ganesh Apte and faculties were Mr. Apte and Mr. P Srinivas Rao from Bangalore. The program was well received and few more modules are being scheduled over next 2 months.

Upcoming programs National summit on public procurement on 8th Dec 17 at hotel Novotel.







## NAGPUR BRANCH

The 36<sup>TH</sup> Annual general Meeting of the IIMM Nagpur branch was held on the 16<sup>th</sup> of September 2017, at 7.30 pm at Hotel Heritage, Civil Lines Nagpur. It was attended by over 100 members of the branch.



The meeting was chaired by the Vice chairman, Mr. N V Rahgu babu and the honorary branch Secretary, Mr. V. Venkata Ramana. The vice chairman, in his welcome address highlighted the activities which were conducted by the branch during 2016-17. This was followed by the secretary's report and the reading of the last AGM Minutes, which was unanimously accepted by all the members present. The treasurer, Mr. D.Borkute, presented the audited accounts, for the period 1<sup>st</sup> April 2016 - 31<sup>st</sup> March 2017, to the members present. The course Coordinator, Mr. S R Biswas, presented his report for the educational activities conducted by the branch during 2016-17.

The election of the new Executive committee for the period 2017-2019, was held by the election officer Mr. Navin Nischal. The following members were declared elected unanimously by the election officer:-

- |                          |                               |
|--------------------------|-------------------------------|
| 1) CHAIRMAN –            | Mr. Y. Venkata Ramana         |
| 2) VICE CHAIRMAN –       | Mr. B K Ghosh                 |
| 3) HON, SECRETARY –      | Mr. Sukumar Adhikari          |
| 4) HON TREASURER –       | Mr. Arvind Hingway            |
| 5) NATIONAL COUNCILLOR – | Mr. N V Raghu Babu            |
| 6) NATIONAL COUNCILLOR - | Mr. Dharamraj Kumar           |
| 7) EXECUTIVE MEMBERS -   | a) Mr. Jitendra Trivedi       |
|                          | b) Mr. B.Mukherjee            |
|                          | c) Mr. Navin Kumar Meheshwari |

The new Chairman, Mr. Y Venkata Ramana, in his address to the members, briefly described the calendar of events a planned out for the current year, and looked forward to a eventful year and requested for whole hearted cooperation and participation by all the members. The new Hon. Secretary, Mr. Sukumar Adhikari, had suggested that all members should make an effort to induct at least one new member during the year, as a part of our membership drive.

The meeting concluded with a vote of thanks by the secretary.

## NEW DELHI BRANCH

Delhi Branch of IIMM organized an Evening talk on “Goods & Services Tax (GST) – Latest Developments” at Chelmsford Club, New Delhi on October 14, 2017. Prof. (Dr) Saurabh Agarwal, Prof. & Dean, Indian Institute of Finance, Greater Noida Special Invitee of GST was invited to give a talk on the above subject. His varied experience and efforts in the field of tax were highlighted by Dr. M.K. Bhardwaj, Chairman, Board of Studies IIMM. The programme was attended by Past Presidents Mr. V K Jain & Past Chairman & Other members and students of IIMM.



*Dr. M.K.Bhardwaj, Chairman BoS-IIMM & Chief Editor MMR giving memento to the Speaker Prof. (Dr) Saurabh Agarwal, Prof. & Dean, Indian Institute of Finance, Greater Noida*



*Mrs. Deepak Gulati, Vice Chairman-Delhi Branch giving bouquet to the Speaker Prof. (Dr) Saurabh Agarwal, Prof. & Dean, Indian Institute of Finance, Greater Noida*

Dr. M K Bhardwaj welcomed Prof. (Dr) Saurabh Agarwal & Mrs. Deepak Gulati gave introduction of the speaker and welcomed him with flowers. Prof. (Dr) Saurabh Agarwal's talk has given thorough knowledge about the GST and its implications. The lecture was followed by an interactive session which was quite lively. On conclusion, Dr. M K Bhardwaj presented the IIMM Tie to Prof. (Dr) Saurabh Agarwal as token of regard from Delhi Branch of IIMM.



*Group Photo*



*Group Photo*

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

## VAPI BRANCH

**Inauguration of GDMM July/Aug Batch:** On 17th Sept, 2017 Vapi Branch inaugurated the New Batch of GDMM Students. Mr. Parthiv Mehta, Hon. Chairman welcomed the students and informed them about the course and

propose Student Development Program. He informed about the additional topics the Branch has proposed to introduce in addition to the original curricula to make the students Industry ready and involved the students in discussions.

Mr. Parthiv Mehta, Chairman welcomed the Chief guest Mr. LSN Rao (Retd. Factory Manager of Pidilite Industries) & made a formal introduction. Chief Guest Mr. LSN Rao made his session very interactive about Materials Management by giving practical examples on end to end supply chain management. Mr. Manish Dhoshi, the faculty and EC member & Mr. Anant Kapadia, Vice Chairman spoke on the importance of the course GDMM in industry. He informed about the scope of the course and how it would be useful in the career in Supply Chain.

Mr. Rakesh Nandre, Secretary & Mr. Santosh Sahoo, Course coordinator briefed about IIMM & informed them about the courses & content subjects. Vapi Branch has taken an initiative of developing the GDMM Students as Industry Ready. Ex. Students shared their experience how GDMM helped them enhancing their performance at workplace. Mr. Anant Kapadia, Vice-Chairman conveyed Vote of thanks.



## VADODARA BRANCH

**YMM Competition 2017 :** The branch level YMM Competition 2017 with Theme '**GST in India & Globally Evolving Technology Driving Forces for SCM**' was held on **7<sup>th</sup> October 2017** at Vadodara wherein **7 Teams** from Corporates, PSUs, Educational Institutes participated with following Dignitaries as Judges –

1. Mr. Ketan Patel – Director-BITS Education Campus
2. Mr. D. S. Mahajani – General Manager (Taxation) & Company Secretary, Transpek Silox Ind. P. Ltd.

The Teams winning Top Three Positions are given below –

1. **WINNERS : Mr. SAYED SHITHIK & Mr. YASH SACHAN – ONGC Petro additions Ltd.**
2. **1<sup>st</sup> RUNNERS-UP : Mr. SAMEER SINGH & Mr. VAIBHAV PAKHALE – L&T HYDROCARBON**
3. **2<sup>nd</sup> RUNNERS-UP : Ms. CHINKY SAHNI & Ms. RISHITI RAO – NAVRACHANA UNIVERSITY**

The Photos shown below depict highlights of Programme





*Mr. Tushar Trivedi-Chairman delivering Welcome Speech*



*Lamp Lighting by Dignitaries Mr.K.C.Joshi, Mr.Lalbhai Patel, Mr.Malay Mazumdar, Mr.Tushar Trivedi, Mr.M.Sambhudevan Nair & Mr.Rakesh Desai*



*Mr.Lalbhai Patel welcoming Hon. Judge, Mr.Ketan Patel*



*Audience with Judges Panel at YMM Competition*



*Winners Team from OPAI being felicitated with Memento by Mr.K.C.Joshi*



*1<sup>st</sup> Runners Up Team Members from L&T Hydrocarbon being felicitated with Memento by Mr.Lalbhai Patel*



*2<sup>nd</sup> Runners Up Team Member from Navrachana University being felicitated with Memento by Mr.D.S.Mahajani*





*Group Photo of Winners, 1<sup>st</sup> Runners Up & 2<sup>nd</sup> Runners Up Team Members with Hon. Judges Training Programme for GETCO Participants in OCT'17 at GETRI*

The training programme for Two Days on '**INVENTORY & STORES MANAGEMENT**' Topic had been organised on 9<sup>th</sup>, 10<sup>th</sup> Oct.'17 at GETRI in Vadodara for **GETCO** participants from all over Gujarat wherein the Faculty, **Mr. L. L. Notani** conducted Training Prog. on both days. The participants (about **25 Nos.**) appreciated the training programme & informed that it was knowledge enhancing as solutions given by faculty for their problem areas would be helpful in their career 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 participants in CD form for future usage.



*Mr.L.L.Notani handing over Participation Certificate to Participant*



*The Group Photo of Participants at the completion of Trng. Prog.*

## Shri R. J. Sarvaiya Memorial Evening Talk held in OCT'17

IIMM Vadodara branch arranges every year in the month of October, R. J. Sarvaiya memorial lecture in honour of Late Shri. R.J.Sarvaiya to pay tribute and commemorate his memory. The lecture this year, was held on **10<sup>th</sup> Oct.'17** evening. Shri. H.M.Bhatt-distinguished member and member of BOS was invited to talk on "Golden success-24 carats". All members present including Mrs.Sushilaba Sarvaiya paid floral tribute to Shri. R.J. Sarvaiya. Shri. L.P.Patel former president and Shri. K.C.Joshi distinguished member spoke about immense contribution given by Shri. Sarvaiya in development and progress of Vadodara branch and to IIMM in general. Shri. Shambhudevan, vice chairman introduced and welcomed Shri. H.M.Bhatt with flowers. Shri. H.M.Bhatt explained the success as "doing what you like/love to do and to use your full potential in doing that work". He elaborated on 24 carats -or attributes which individuals need to have and practice to achieve golden success of 24 carats. The attributes are as under:-

1. Be yourself, Develop your unique talents-abilities.
2. Accept responsibility.
3. Show consideration-Think Win-Win.
4. Choose your words carefully.
5. Never criticize, complain and condemn.
6. Smile and be kind.
7. Put positive interpretations on other people's behaviour.
8. Be a good listener
9. Be enthusiastic-Spread enthusiasm.
10. Give honest and sincere appreciation. Ask opinions- seek help, be a team-man.
11. Accept your mistakes and amend.
12. Discuss but do not argue.
13. Do not gossip.
14. Turn promise into commitment.
15. Be grateful but do not expect gratitude.
16. Be dependable-Practice loyalty-develop credibility.
17. Avoid bearing grudges-Forgive and forget.
18. Practice honesty, integrity and sincerity.
19. Practice humility-Graceful in both win and loss.
20. Be understanding and caring-Share and care.
21. Be civil, decent and courteous on daily basis.
22. Develop sense of humour.
23. Do not be sarcastic, put down others.
24. Show empathy.

Shri. Manoj Patel presented memento to Shri. H.M.Bhatt. It was an evening of sweet memories of Shri. Sarvaiya and lessons he would have liked to give to his colleagues.



*Mr.Lalbhai Patel paid Floral Tributes at Late Shri R. J. Sarvaiya's Photograph.*



*Mrs. Sarvaiya praying at Late Shri R. J. Sarvaiya's Photograph.*



*Mr. Sambhudevan Nair welcomed Mr.H.M.Bhatt with Flower Bouquet.*



*Mr. K. C. Joshi delivering speech in memory of Late Shri R. J. Sarvaiya*

## THIRUVANANTHAPURAM BRANCH

**Annual General Meeting (AGM) for the year 2016-17:** The Annual General Meeting (AGM) of Thiruvananthapuram Branch for the year 2016-17 was held on 19<sup>th</sup> August, 2017 at IIMM Hall, Sasthamangalam, Thiruvananthapuram.

Dr. Koshy M George, Chairman in his opening remarks, welcomed all the members present and briefed on the activities carried out during the last years(2016-17). The major event in 2016 was the conduct of National Seminar on the topic "Management of Strategic Materials" held on 16.4.2016 at Hotel Mascot. This was followed by a Family get together on 27.08.16. Annual General Body Meeting for 2015-16 was held on 05.11.2016 where annual report and audited

Accounts for the previous year were presented and approved. A talk by Shri Mohan Nair, Past Chairman, IIMM Pune Branch on the subject "Change of Mindset" was held on 09.12.16 in which members along with family attended. He also informed the members that a Members' Directory-cum-diary 2017 was updated and issued as a New Year Gift. Nine Executive Committee Meetings were held during 2015-17 to chalk out and execute programmes of the branch.

Chairman also informed the meeting that out of the net proceeds received from the Seminar, Rs.2.75 lakh have been placed in a separate FD account as decided by the EC to fetch an annual interest of Rs.25,000/- (approx.) to be utilized for instituting a Lifetime Achievement Award to an eminent person contributing to Materials Management activities. AGM approved the same and authorised the forthcoming EC to frame the guidelines.

Annual Report presented by Sri KR Prasad, Secretary and the Annual Accounts presented by Sri M Janardhanan, Treasurer were approved by the AGM.

Chairman further briefed on the activities held from April to August, 2017 with specific reference to the National Seminar on the topic "GST Regime: Opportunities & Challenges in various sectors" held on June 15, 2017. After discussions AGM approved for setting apart the net proceeds approximating to Rs. Two lakh in a separate FD account and utilize the yearly interest to co-sponsor the weekly Wednesday talks organized by Institution of Engineers in association with other Professional bodies in the city.

Thereafter election of New Office Bearers was conducted by Sri TK Joy, Returning Officer. Since no nominations were received from members against the formats provided along with AGM call letter, Shri TK Joy proposed the following panel which was unanimously approved by the AGM.

- |                              |                       |
|------------------------------|-----------------------|
| 1. Dr. Koshy M George        | - Chairman            |
| 2. Sri. K Raveendra Prasad   | - Vice Chairman       |
| 3. Sri. MG Narayanan Nair    | - Hon Secretary       |
| 4. Sri. S Ananda Sivan       | - Hon Treasurer       |
| 5. Sri. KG Nair              | - NC Member           |
| 6. Sri. M Janardhanan        | - NC Member           |
| 7. Sri. R Sivanandan         | - Exe. Com Member     |
| 8. Sri. MR Premkumar         | - "                   |
| 9. Sri N Jayakumar           | - "                   |
| 10. Sri O Varghese           | - Co-opted Member     |
| 11. Sri B Vijayakumaran Nair | - "                   |
| 12. Sri. MP Ramachandran     | - Course Co-ordinator |

The AGM authorised the New Executive Committee to co-opt invitees to the EC for the smooth functioning and carrying out the activities of the Branch. The meeting continued with the new Committee taking charge. The Chairman, Vice Chairman and Treasurer thanked all the members for electing the new team unanimously. The Chairman informed the meeting that the new Committee would meet at the earliest to finalise the future programmes. He requested for the continued support from the members for uplifting the Branch to newer heights.

Sri KR Prasad, proposed vote of thanks. The meeting concluded with dinner.



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# EXECUTIVE HEALTH

## HOW TO MAINTAIN YOUR ENERGY THROUGHOUT THE DAY

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**W**hen days seem short but the grind is endless, it's hard to keep your energy levels high. If you cannot seem to maintain your energy throughout the day, there are many things you can do to stay awake. Start off the day by getting up as soon as your alarm goes off and exposing yourself to sunlight. Eat healthy snacks and drink plenty of water throughout the day to maintain your energy level. When you feel your energy start to dip, do something physical or try a short period of meditation to boost your energy.

### Starting the Day off Right

**1. Maintain a sleep schedule.** Your body has a natural circadian rhythm that adapts to a regular sleep/wake cycle. If you go to bed and wake up at roughly the same time each day, it will be easier to maintain your energy throughout the day as you'll wake in the morning feeling rested and refreshed.

- Even on the weekends, try to maintain your schedule. Even a small deviation from your schedule can affect how rested you feel.

**2. Skip the snooze button.** Try to avoid the temptation of opting for the extra few minutes of rest provided by the snooze button. Hitting snooze actually makes you feel more tired. While the extra few minutes of rest may feel tempting, the sleep you get is less high quality. Waking up from low quality sleep will leave you feeling groggy.<sup>[2]</sup>

- Set your alarm for the time you actually intend to get up. Do not set it earlier so you can turn it off and sleep in.
- Many people find it helpful to keep their alarm across the room. This way, you will have to get up and shut it off. This makes it harder to simply switch the alarm to snooze and crawl back in bed.

**3. Expose yourself to natural light right away.** Sunlight has a stimulating effect on the brain because it reminds your body it's morning. Try to expose yourself to some sunlight as soon as you get up in the morning. This will give you an energy boost at the beginning of your day.

- If possible, keep the blinds open in your bedroom. This will assure that you're exposed to quality sunlight as soon as the sun rises in the morning.
- If you get up before the sun rises, try investing in a quality lamp that simulates sunlight. This can have a similar effect on your brain.

**4. Consume a small amount of caffeine.** High amounts of caffeine may cause you to crash later on. However, consuming a small amount of caffeine early in the morning can give you an energy boost for the coming day.

- Have a single cup of coffee or tea in the morning. This will make you feel more alert going into the day. Entering the day feeling groggy can affect your energy level for the rest of the day.

### Eating and Drinking Right

**1. Eat a healthy breakfast.** An energizing breakfast can help your body maintain energy throughout the day. Always eat breakfast shortly after getting up. Opt for a healthy breakfast that will leave you feeling energetic and refreshed.

- Choose a breakfast that contains healthy carbohydrates and high quality proteins, as these help power your body. For example, have a slice of whole wheat bread with two hard boiled eggs.
- As your body requires many servings of fruit and vegetables to function, try having a piece of fruit or a serving of veggies with your breakfast as well.

**2. Drink water throughout the day.** Dehydration can leave you feeling groggy, so do not neglect your water intake. Try to have

a glass of water with meals and sip water throughout the day. Keep a water bottle near you at all times and periodically take a sip. You should also take advantage of any water fountains you see during your day.

**3. Opt for healthy protein.** You should eat protein at meals and snack on it throughout the day. Protein is great fuel for the body as it keeps you feeling strong and energized. However, the kind of protein you choose matters. When selecting proteins, go for healthy choices.

- For meat, go for sources like lean meats, protein, and fish during meals.
- You can also snack on vegetarian sources of protein, like nuts, low-fat dairy, and yogurt.

**4. Consume a small amount of caffeine.** High amounts of caffeine may cause you to crash later on. However, consuming a small amount of caffeine early in the morning can give you an energy boost for the coming day.

- Have a single cup of coffee or tea in the morning. This will make you feel more alert going into the day. Entering the day feeling groggy can affect your energy level for the rest of the day.

**5. Snack smart throughout the day.** Keep snacks on hand to have when you feel hungry or low energy. Healthy snacking can help give you an energy boost when necessary, which can help you maintain high energy throughout the day.<sup>[9]</sup>

- Yogurts, fruits, vegetables, and mixed nuts are great options for healthy snacks.
- You should avoid snacks high in sugar or consuming highly processed foods. These types of snacks are unlikely to give you an energy boost.

### Managing Dips in Energy

**1. Move throughout the day.** Sitting too long can actually cause fatigue. Small amounts of exercise can stimulate the body and allow you to feel more energetic throughout the day. If you begin to feel groggy, try doing some light exercise.<sup>[10]</sup>

- Try doing a small amount of exercise, like going for a brief walk, when your energy begins to dip.
- Have a regular workout each day. If you always hit the gym after work, you may feel more refreshed when you come home at night.

**2. Spend time in the sun.** Exposing yourself to sunlight during the day can be incredibly stimulating. If you expose yourself to sunlight for at least 30 minutes a day, you'll feel more energetic.

- The best time to get sunlight is between 10 AM and 2 PM.

**3. Meditate on occasion.** Meditation can decrease stress, which tends to deplete energy. Small pockets of meditation throughout the day can help you maintain your energy when it starts to feel depleted.

- You don't have to dedicate a full 20 minutes to meditating each time you feel stressed. The process can be as simple as closing your eyes for 3 minutes and paying attention to your breathing and physical sensations. This can help redirect your thoughts to the present, eliminating stressful thoughts that drain your energy.

### Tips

- Avoid energy boosting drinks. These beverages usually promote energy but the results are often a short-term boost that's followed by a long-term energy slump.

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



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Sr. No.	Course	Duration	Eligibility	Exp.
1.	<b>Graduate Diploma in Materials Management (GDMM)</b>	2 Years	Graduate Degree in any Discipline OR 1 Years Diploma in Engineering / Other Similar Professional Courses OR 2 Years Diploma in Hotel / Hospital / Pharmacy	N.A. 2 Years 3 Years
2.	<b>Post Graduate Diploma in Materials Management (PGDMM)</b>	3 Years	Graduate Degree in any Discipline	N.A.
3.	<b>Post Graduate Diploma in Logistics Management (PGDLM)</b>	1 Year	Engineering Graduate with 2 years Exp. or Other Graduate + 3 years Exp.	
4.	<b>International Purchasing and Supply Chain Management (IPSCM) Powered by ITC GENEVA</b>	18 months	Degree in any discipline Proficiency in English	2 Years
5.	<b>Certified Professional in Supply Management (CPSM), ISM USA</b>	6 Months	4 Years Degree  OR Degree less than 4 Years	3 Years in Supply Chain  5 Years in Supply Chain
6.	<b>Professional Diploma in Public Procurement (PDPP) Powered by THE WORLD BANK</b>	6 Months	Degree in any discipline or Diploma in Engineering / Pharmacy / Hotel & Hospital Management	
7.	<b>Diploma in Stores Management (DSM)</b>	1 Year	12th Pass + 2 years Exp. or Degree in any discipline.	
8.	<b>Diploma in International Trade (DIT)</b>			
9.	<b>E-Learning Foundation Certificate Advanced Certificate Expert Certificate Certified Manager</b>	16-18 Weeks 18-20 Weeks 4-6 Months 4-6 Months	Graduate in any discipline with No Exp. Graduate in any discipline with 1 Year Exp. Graduate in any discipline with 3 Years Exp. Graduate in any discipline with 5 Years Exp.	

Ahmedabad 7359135733/09904038845 Alwar 09731245655 Aurangabad 09423455983 Bangalore 9900862486 Baroda 09426345612  
Bhilai 09407982514 / 09407984353 Bharuch 9998821120 Bilaspur 09425531807 Bhopal 08085856437 Bokaro Steel City 09431162370  
Burnpur 09434776390 Chandigarh 09815566664 Chennai 9841020201 Cochin 9400261874 Dhanbad 09470595241 Dehradun 09410397734  
Durgapur 9434792364 Gandhidham 7046737857 / 9925066322 Greater Noida 09818943894 Goa 9423007106 Hyderabad 8801009111 /  
040-65504252 Hosur 9688253848 Hubli 9591372196 Indore 09993102374 Jabalpur 08225990614 Jaipur 09414073127  
Jamshedpur 09798171971 / 9308321421 Kanpur 9838624848/9415134323 Kolar Gold Fields 09880994684 Kolkata 09830952363  
Lucknow 9335211389 Ludhiana 9878791600 / 9815549987 Mumbai 9820714151 / 9892007009 Mundra 09687660068 Mysore 09538880756  
Nagpur 9423074072 / 9422163152 / 8055915493 Nalconagar 9437081126 Nasik 9850730029 New Delhi 9810830427 Pune 9404734210 /  
9371065583 / 8087071174 Rae Bareilly 09451077744 / 09454146676 Ranchi 9334895987 / 8521151386 / 8987788599 Rourkela 8895503034/  
8260711943 Tiruvananthapuram 09496040085 Udaipur 9829043172 / 8107263099 Vapi 9879569350 Visakhapatnam 9849482991  
V V Nagar 09879506321 / 9825008340

Prospectus Cost : By Cash Rs. 600/-; by Post Rs. 700/-