

Impact of Covid-19 on the Manufacturing Ecosystem

Mehak Jain

Research Scholar, Punjabi University, Patiala

Abstract

The manufacturing sector accounts for nearly 16% of the global GDP in 2018 and forms a major part of the economy. The COVID-19 global crisis continues to disrupt manufacturing and global supply chains with severe consequence for society, business, consumers and the global economy. The global spread of COVID-19 is impacting all industries in all directions. Hence, there is an urgent requirement to understand the impact of COVID-19 on various industries, supply chain, drivers and challenges on the manufacturing sector. The paper attempts to understand the impact of COVID-19 scenario the economy is facing at present and going to face in future. It discusses the challenges and the problems encountering to the manufacturing sector. The paper describes various strategies the companies need to adapt as the situation changes.

Keywords: Manufacturing ecosystem, COVID-19, supply chain, industries, global economy.

Overview of Covid-19

The Covid-19 virus has disturbed and reorganized the workplace with magnificent speed. Millions of employees across every sector have been sent back home from their respective organizations to work remotely. Without warning and in several cases, without any kind of preparation, managers have been hit into the position of leading virtual teams for the very first time. The data below clearly describes the current situation of COVID-19 prevailing across the world and in India respectively.



Introduction

Many companies are facing problems of getting new orders. Their business is adversely impacted. Companies in India work with high level of raw material and inventory which is not a good practice in India. Productivity has reduced and people are at a high level of unemployment. In the era of social distancing, it's important to have digital infrastructure which helps to be in real-time being in different cities or countries and simulate the performance of the product.

The lockdown has led to sudden job loss for more than 120 million persons. Of these, more than 40 million could be migrant labourers. Nearly 64% of migrant workers have left with below Rs 100. 78% have not been since lockdown

India's Migrant Workers



Global Impact

Apart from the dreadful human consequences of the COVID-19 pandemic, the economic uncertainty will probably cost the global economy \$1trillion in 2020.

- A. **Services:** The US is substantially more reliant on the service sector than China is. Spending on tourism, travel and entertainment activities results in about 7% of US GDP. Social distancing will have a larger impact on the US economy. MSMEs will face working capital and liquidity constraints forcing them to cut salaries or lay off workers.
- B. **Travel:** Various EU and APAC countries hugely depend on tourism, that is, between 7-20% of national GDP. Chinese tourism contributes 16% of the international tourism spend. Global demand possibly to decrease by 40% in 2020.
- C. **Automotive:** EU is the second-largest global automotive producer. It contributes 6.1% of the total EU employment. Even if China recovers we will see an adverse impact on the EU. Disruptions of global supply chains will continue until activity fully restarts.
- D. **Oil & Gas:** Fuel prices are dropping. 50% of the drop is attributed to COVID-19. There is a 20%

reduction in Chinese demand. China is the second-largest importer of LNG.

- E. **Consumer Electronics and Semi-conductors:** Wuhan is a hub for fibre optics and semiconductors. Worldwide shutdowns and critical in the supply chain are impacting sites downstream. 28% of South Korea exports are electronics, directing to further supply chain disruptions if expands in-country transmission, in spite of a China restart.

Impact on Various Sectors in India

- A. **Pharmaceuticals:** India’s pharmaceutical companies are critical to the global supply chain of health care. 70% of the country's pharmaceuticals raw materials are imported from China. Drugs from India go to Russia, EU, UK, Africa, the USA and many of the other countries.
- B. **Tourism:** India could lose an estimated 3 million tourists. Losing foreign exchange of around \$7 billion in revenue is going to be a major impact on tourism sector of the country.
- C. **Textile & Apparel:** Textile and apparel as per India is concerned plays a very important role. Today, 11 countries which buy 41% of India’s cotton yarn exports have reported COVID-19 cases. India’s cotton yarn exports are facing COVID-19 problems. With production down in China, the opportunity for domestic players will fill in the gap. This sector employees more than 100 billion people across the globe who are going to be impacted and will need special support of the government else we will see a huge decline in the exports.
- D. **Logistics & Aviation:** Logistics and aviation is going to face obstructive impact on flight operators owing to the temporary suspension of visa and international flights.
- E. **Automotive:** China reports for 27% of India’s automotive component imports. Automotive companies in countries like India, China, Germany, and Japan will be adversely impacted. Euro6 compliant vehicles were supposed to be kicking on the Indian roads but COVID-19 has created havoc. Many of the Indian companies had made their sensor programme strategy based on import. Now a big impact on the Indian automotive industry is going to be seen. Countries like the Middle East, Bangladesh, Sri Lanka have to keep supporting spare parts for the older model and new model of supply chain will now be a problem.
- F. **Electronics:** India has been growing and the government has been driving the growth of the electronic industry. We know that India’s customer electronics imports from China are at 43.2%. Our dependency on China is very huge.

Make In India

Prime Minister Narendra Modi in his Independence Day speech on 15th August 2014 said that “Our manufacturing should have zero defects and should not have any negative impact on our environment.”

The current scenario of Electric Vehicles in India: The programme in many cases is not to make in India but it’s more of assembling in India.

Motor Controller, BMS, Battery, Motor and Body all are imported from China; India is just assembling the e Vehicles.

It is extremely important for us to make in India. The vision of Honorable PM is going to be successful when we not only do assembling in India but do designing, manufacturing and innovations in India.

Msmes

MSMEs need the real support. India has an estimated 64 million MSMEs. The MSME’s contributes 4% to the exports, 54% to the manufacturing sector, 30% of total employment generation in India (120 million jobs) and 29% of the country’s economic output.

SME’s Scaling Up & Productivity Problem: Most manufacturing enterprises are subscale and have low productivity. As per study conducted by the Asian Development Bank, 84% of India’s manufacturers employed fewer than 50 workers in 2009, compared with 70% in the Philippine’s, 65% in Indonesia, and 25% in China. But the country’s smallest enterprises are only 25 to 65% as productive as their small- scale peers elsewhere.

Because of COVID-19, MSMEs are facing a huge problem. Government needs to invest in building a common digital innovation platform to support MSMEs by just not only investing in physical infrastructure but investing in digital innovation platform.

Post-Covid-19 Industry 4.0 for Digital Continuity

Moving forward with COVID-19 post, life will be interesting to look at various trends which will be emerging, be it business trends, social trends or technological trends.

Market trends in Manufacturing

1. Commitment to Sustainability
2. Laws of the land and international norms
3. Reduced cycle time
4. Traceability
5. Zero Defect Products
6. Visibility on Manufacturing & Compliance Process
7. Safety and ease of use
8. Smart & Connected Products
9. Digital Infrastructure
10. High Tech Internet, Safety of employees, Environmental issues, Geopolitical change, Economic instability, Demographic change etc.

Industry 4.0 will be more relevant Post-COVID-19

1. Stronger Customer Centricity
2. More efficient Production Process
3. Innovation
4. Digital value chain in a contactless world
5. Digital innovation platform
6. New marketing & Business models

Strategies

In the era of social distancing, to drive revenues and transform margin, it will be extremely important to **leverage the digital platform**. This state of the hour technology needs to bridge with gaps between the virtual and the physical world.

Scientific tools and models will enable us to create output in the virtual world which will be similar to the experience in the physical world. Around 80% of the world will be continuing their businesses via the digital platform.

Real innovation and the use of scientific tools and techniques can be learnt from China. This is the time to commit to science, leverage science to make the world a better place to live in and to combat problems like COVID-19.

Innovations to design products have to be understood to reduce the cycle time. **Understanding of collaboration** among suppliers, customers, partners, distributors, after-sales support team via a digital platform is a must. It is the best time to partner with technology players, customers and partners to conduct proof of concepts on cloud.

Professions of the Future: Global Trends 2020-2022

| Professional Cluster | Number of opportunities (per 10,000) | |
|---|--------------------------------------|------|
| | 2020 | 2022 |
| <i>figures extrapolated from data for 20 economies (LinkedIn)</i> | | |
| Data and AI | 78 | 123 |
| Engineering and Cloud Computing | 60 | 91 |
| People and Culture | 47 | 58 |
| Product Development | 32 | 44 |
| Sales, Marketing and Content | 87 | 125 |
| <i>figures extrapolated from data for the United States (Burning Glass)</i> | | |
| Care Economy | 193 | 260 |
| Green Economy | 9 | 14 |
| ALL CLUSTERS | 506 | 715 |

Source: http://www3.weforum.org/docs/WEF_Jobs_of_Tomorrow_2020.pdf

Some Important Skills

1. Complex problem solving
2. Learning to learn
3. Collaboration with human and robots
4. Ability to innovate
5. Emotional intelligence
6. Cognitive flexibility
7. Digital technologies
8. Ability to simulate in a virtual world
9. Cybersecurity

New Era

1. 3D Printing
2. Human modelling
3. Digital learning platform and teaching robots

Scientific Thinking

One of the supreme valuable skills one can have is the capability to adapt as no one knows what the world will appear in the future. Scientific thinking requires a continuous comparison between what one can forecast or predict, identifying what happens, and adjusting based on what one learns from the variation.

Conclusion

While social distancing will be the key to control COVID-19, we need to accelerate digital adoption to minimize societal and business loss. Digital platform both for collaboration and innovation needs to be built. Post COVID-19 era, digital continuity across the value chain will be a key for survival. This is the best time to reboot knowledge and leadership skills. Government and large corporate should team up to create digital innovation infrastructure for common use for MSMEs.

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