

PoV Paradigm Shift 'Vocal for Local' & 'Digital Transformation'- EPC Industries

Abstract

In this paper, we would discuss the trends and challenges of the engineering, procurement & construction industry. We would also focus on how enterprises can make the paradigm shift to 'vocal for local' and undergo a thorough digital transformation to overcome the challenges and stay resilient in the post-COVID-19 era.

Introduction

Businesses today are faced with overwhelming challenges as they continue to navigate the impacts of the COVID-19 pandemic. The outbreak of the novel coronavirus has impacted all industries - some more than others. Among the ones severely affected is the complete spectrum of the real estate industry, including residential, commercial, retail and construction segments.

The engineering procurement construction industry is facing several setbacks, such as business continuity, workforce employment and others, due to a limited supply of raw materials, labor migration and so on. At the same time, a halt in construction activities has got the investors worried due to a delay in delivery of projects. Already facing several challenges, from multiple frauds to insolvencies and regulatory burden, the pandemic has worsened the situation for the EPC industry.

According to an analysis by SpendEdge¹, the EPC and EPCM services market will register an incremental spend of about \$364 billion, growing at a CAGR of 4.19% during the five-year forecast period

¹ <https://procurement.spendedge.com/epc-and-epcm-services-sourcing-and-procurement-intelligence-report>

(2020-2024). The report also states that there will be a price hike by 3%-7% during the forecast period, and suppliers will have moderate bargaining power in this market.

In addition, an assessment by KPMG India² states that the COVID-19 pandemic is likely to reduce investment in construction-related projects in the range of 13% to 30%, which would reduce construction-related gross value added (GVA) and workforce employment between 15%-34% and 11%-25% respectively. The survey also states that labor costs for skilled workers are expected to rise by 20%-25%, while the rise for the semi-skilled and unskilled workers will be 10%-15%. Elias George, Partner, and National Head, Infrastructure Government and Healthcare (IGH), KPMG India, said, "The construction sector has been critically affected by the onset of the COVID-19 pandemic. Once the projects resume post lockdown, it is important not just to navigate the recovery phase well, but also ingrain resilience into all systems and processes, to confront similar disruptions better in future."

Challenges: Pre and Post Covid-19

The construction industry in India is the second-largest employer after agriculture and extremely critical to the country's economic stability. Even before the COVID-19 pandemic, the engineering procurement construction industry was already reeling with several issues related to regulation and policy changes (RERA), changes in GST and others. And not to forget, the regular challenges such as cost pressures, labor shortages, shrinking profit margins, 'Fixed Cost Bid Projects' trends, standardization of quality of design of projects and so on. With the total lockdown around the country for over a month, not only were millions of skilled and unskilled workers left unemployed, several challenges such as reverse migration, lack of raw materials, disruption of supply chains and others, have also been added to the list.

However, with the lockdown being gradually lifted across the nation, the EPC industry is slowly trying to cope up with the losses they suffered and recover from them. Based on the 'organization core values,' the enterprises are now trying to outmaneuver uncertainty by re-evaluating scenarios, reassessing assumptions and strengthening their ability to respond and gear up for the 'new beginnings'.

² <https://assets.kpmg/content/dam/kpmg/in/pdf/2020/05/covid-19-assessment-economic-impact-construction-sector.pdf>

Paradigm Shift: 'Vocal for Local' in EPC

On May 12, 2020, Indian Prime Minister Narendra Modi addressed the nation and explained the importance of promoting local businesses amid the COVID-19 crisis and "vocal for local." Simply put, in times of uncertainty and distress, it is important to step up and do everything we can to help revive the economy and work towards equipping our businesses with the right tools to tide through difficult times. The EPC industry is no different, and to ensure business continuity and get back in the game once again, it can adopt the following measures:

Expanding Workforce:

To complete projects on time and within budget, contractors are looking to expand their workforce.

Challenges:

- **Workforce:** While expanding the workforce, the biggest challenge is to get the right skilled workforce at the right time. Most of the local governments have provided guidelines to first check if the local workforces are available and can be utilized with minimum training and guidance to complete the task.
- **Long-term strategy:** Utilize the locally available employable residence for training programs for them.
- The contribution of labor cost is around 10%-15% in big EPC projects.

Benefits:

- The local workforce can help complete the project on time and within budget.
- They can work in shifts.
- Their health can be easily monitored and support provided as required.

Expanding Workspace and Safety Measures:

In the EPC industry, very few tasks can be done 'from home.' The workforce needs to be present on the project site. Due to new local government guidelines, several safety measures have to be adhered to and monitored, e.g., using personal protective equipment (PPE) and face masks, monitoring the health of each individual, and maintaining social distancing, cleanliness of restrooms, sanitization, etc.

Challenges:

- Educating the workforce for adhering to the new safety measures.
- Make all facilities available at workplaces and monitor them.
- Women workforce contribution in the EPC industry is very high, and EPC contractors will now need to redesign the equipment, workspace, especially for women, to make them comfortable while working.

Benefits:

- If a workspace has all the facilities required for the 'new beginnings', people will enjoy work and be more productive.
- Projects will get completed on time and within budget.

Expanding Vendors:

The EPC firms should develop an alternate source of vendors locally.

Challenges:

- The development of the vendor's time would be high.
- The financial investment to be made based on the local government's guidelines.

Benefits:

- As the vendor is local, an organization can save the cost of transportation of materials, etc.
- Guide vendor for right quality material delivery on time
- Collaboratively plan for the supply of material and reduce the 'procurement to delivery' cycle with the vendor.
- Reduce stock inventory, and supply chain management costs

Paradigm shift for 'Digital Transformation' in EPC

An end-to-end digital transformation is a topmost agenda item for many EPC organizations. According to several media reports, a digital revolution is largely underway. However, many EPC top executives have said that while their organizations have experimented with several digital initiatives, they are still behind compared to other industry trends of 'Usage of Digital Technologies'.

For businesses, one consequence of the COVID-19 pandemic has been a dramatic upsurge in the use of digital technologies that safeguard customer and employee health by reducing face-to-face interactions. Hence, with this wake-up call, it is time to adopt new technologies³ such as Lidar, BIM, machine learning, artificial intelligence, robotics, 3D printing, cloud-based ERP applications, big data, business analytics, cybersecurity and others that would help them make the right decision at the right time with the right real-time data, and ensure business continuity with agility and sustainability.

3D Printing

The EPC industry experimented with the usage of 3D printing, and people working in it are likely to continue researching and developing innovative 3D printed parts for usage in 2020 and beyond.

Challenge:

- 3D printed construction modules usage in the project is a realistic way to address the crisis of labor

Benefit:

- Labor cost and time reductions

Mentioned below is an example that showcases how 3D printing helps in labor and time reduction:

A five-person team associated with a construction project used 3D printing to make a concrete wall building in 40 hours. Traditional methods usually require ten people working for five days to build the concrete wall.

Robotics

The EPC industry has started using various self-programmed machines to work at project sites that replace mechanical work. These traditional machines are now slowly getting replaced with robots, the most popular of which is collaborative robots – also known as cobots. Cobots are popular due to their 'plug-and-play' setup and flexible operative mode.

³ <https://brandongaille.com/37-epc-industry-statistics-trends-analysis/>

Challenge:

- Robots are machines, and organizations have to take a call based on the cost involved with time-consumption or labor-intensive tasks.

Benefit:

- Meet deadlines with the reduction of labor costs in low-budget projects.

Internet of Things (IoT)

Usage of the Internet and connected things (sensors, humans, physical gadgets, vehicles, etc.) to perform tasks is getting popular in the EPC industry too.

Challenge:

- The right usage of IoT applications for long term

Benefit:

- Reduce human errors in project management, improve the accuracy of data monitoring and control, gain access to real-time data usage for quick management decisions.

A few critical areas where IoT can play a defining role are preventive maintenance, labor and engineering work progress tracking, and inventory and construction site monitoring. There is a lot of scope to explore the use cases and develop new applications based on IoT and new digital technologies.

Workforce availability and meeting their salary expectations is the biggest challenge of the EPC industry. To overcome this challenge of workforce retention, 3D printing, robotics, modular construction parts, 'Ready to Use' standard material procurement, machine learning, visual monitoring and controlling techniques are becoming more popular. One more interesting aspect is vernacular communication. Vernacular bots can be used for semi-skilled and unskilled workers to help them communicate in the language of their preference.

Business Benefits of 'Vocal for Local' and Digital Technology

By going 'Vocal for Local,' the EPC organizations can reap the following benefits:

- Increase productivity by 30%-35% and facilitate seamless adoption of new digital tools
- Improve productivity during project execution, ranging from pre-bid engineering and cost estimation to project execution and supply chain interaction
- Enhance employee output by enabling standardization and creating greater understanding of workforce communication
- Augment workforce retention by 65%-70% by offering better work-life balance to the local resources
- Increase focus on core business activities within the organization for sustainable growth in coming years.
- Achieve faster decision making with real-time visibility of business performance and quick turn over of various business requirements.
- Ensure greater access to business models that can be reused and repeated for new projects.

Conclusion

For an economically independent India, we need to rise to the occasion and support our local people and businesses. We need to create products and services that are made in India but made for the whole world. It is also time to change our strategies from being profit-driven to becoming more people-centric. So, it is time for EPC organizations to take the leap of faith and adopt new strategies and technologies to meet their labor requirements, improve processes, save time and cost, and take their businesses to greater heights.

About The Author

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