

A STUDY ON ‘THE DIGITAL APPROACH’ IN MANUFACTURING INDUSTRY HAS THE STRATEGY FOR COMPETITIVE IN GLOBAL ECONOMY”

¹Prof. (Dr.) O.P. Haldar, ²Sangram Kadam, ³Ritwika Haldar

¹Professor & HOD, DY Patil School of Management, Lohegaon, Pune

²AVP& Head-Sales, KPIT Technologies Ltd;

³Student

ABSTRACT:

The growing complexity of the recent manufacturing environment needs adoption of Digital approach as a strategy. Adoption of IoT, MES, and Mobility etc. will help manufacturer not only to produce but also provide service as well. It is the time, manufacturing industry needs to understand the way to digital manufacturing and be competitive.

This paper deals with the competitive strategy for manufacturing industry and digital manufacturing journey, adopting it and being ready for change.

KEY WORDS: Transformation, Competitive Advantage, Digital approach, Manufacturing, Adopted Strategy

1. Introduction:-

The digital transition for a manufacturing company is a complex one. But, by identifying how to approach the problem and where to begin, manufacturers can achieve the right intensity of transformation.

Manufacturers and CXOs have been quick to realise how digital transformation could well be the means to this end. Digital or smart manufacturing technologies such as data analytics, big data, advanced computing capabilities, automation, robotics, artificial intelligence, virtual and augmented reality, human-machine interaction, machine-to-machine communication, additive manufacturing technology and 3D printing are transforming the very fundamentals of manufacturing.

Customers are on the lookout for new technologies to maximise efficiency and have started using predictive analytics, asset management, and remote diagnostics as entry solutions. Yet, the adoption of emerging technology has been incredibly low with the manufacturing sector in India being historically labour-intensive. This presents a unique challenge for manufacturers to formulate their digital strategy and execute projects.

2. Objectives of the study:-

- i. To know about the digital approach in Manufacturing Industry.
- ii. To adopt this digital approach be the strategies in Manufacturing Industry in the global context

3. Significance of the study:-

Manufacturers have started deploying digital technologies in different ways to achieve the status of ‘smart factory’ that is flexible, responsive, effective, and competitive and optimises margins. Smart factories include – usage of data analytics to optimise factory operations and reduce energy consumption while also ensuring product quality; utilisation of the new supply-network management tools to schedule factory operations and product deliveries which helps cut costs and improve efficiency; implementation of self-driving logistics vehicles to navigate autonomously within warehouses; usage of 3D printing and laser sintering to remotely manufacture complex parts; usage of smarter sensors to enable the Internet of Things (IoT); collection of customer experience data from smart, connected products, which helps anticipate demand, maintenance needs and also leads to designing better products

4. Scope of the Study:-

Digital manufacturing aims to bring operational efficiencies to all aspects and types of the huge manufacturing industry. This wider adoption of robotics will boost productivity by up to 30 percent, generate a performance improvement of 5 percent year-on-year and in general bring down the average manufacturing labour costs as well.

These smart technological advances will shift the life cycle of the industry from just manufacturing equipment to providing customised services as well. It will also ensure a digital connect between designers, physical industrial assets, managers, employees and consumers which will unleash immense value and bring about change to the manufacturing landscape.

5. Research Methodology of the study:-

i. **Area of the study-** MIDC area of Pimpri.

ii. **Research Design-**

Types of research- It is descriptive research type.

iii. **Data collection-** This study based on the collected secondary data. Analysis of the data also conceptual and descriptive in nature.

iv. **Limitations-** It is based on the secondary data only. No sponsor has received.

6. Analysis & Interpretation and Findings:-

The Analysis and Interpretation has done based on the secondary data. Out of the motive and analysis the findings also clarified.

During the transition is that the old automation style, where an asset performs the same task over years together, will not work anymore. This transformation process is more about adapting to the market changes which demands being flexible. So, any systems and processes that are put in place today might not be exactly relevant in the next five years. The business strategy and the technological approach should be assessed and updated on a continuous basis.

While focusing on the business strategy and the processes, an undeniable aspect to consider is that all of this will impact the most significant piece of any organization – its people. The move to digitize the company will change the way the employees operate and therefore it is necessary to give them the required time for adopting the new ways.

Smart or digital manufacturing is never about replacing people. Employees become more important since automating production implies more automatic and complex decisions at different levels, which elevates their roles and requires them to provide the intelligence that software or machines cannot guarantee. This empowers them to a great extent. Giving them a preview to the benefits of the change, will convince them better and get them on-board the transformational journey.

State of Manufacturing Technology study revealed that shortage of skilled workers was considered a major obstacle to the growth of manufacturing companies in the coming year. With the emphasis to skill education reducing, the option of taking manufacturing as a career has come down. The profile of a manufacturing worker has received a makeover to become a unique amalgam of a technologist, designer and problem-solver.

Core manufacturing skills and data analysis, are some of the new skills that manufacturing companies are on the lookout for. The increased adoption of digital services will soon make India's labour cost advantage immaterial. Going forward, the availability of skills and capabilities will be the key deciding factors in terms of location set up for manufacturers.

To meet the high skill gap, the Government of India has invested \$3.3 billion with the aim to provide 15 million people with the necessary skills. This will bring more high-grade manufacturing to the country by 2020. Organizations can partner with the government's initiative such as Skill India along with their own programs to get the employees trained on the new technologies.

7. Suggestions:-

- a) The final goal should be setting up of a fully integrated technology enterprise, right from the shop floor till the strategic enterprise resource planning (ERP) level, along with a full supply chain as well.
- b) The opportunities and threats of digitization, shall take the first step and quickly and is imperative to start the process.
- c) Organizations should choose to adopt the digital manufacturing wave and evolve or be completely overtaken by the agile players.
- d) Channelling the potential of designers, managers, workers, suppliers along with decreasing the production and maintenance costs, increasing the focus and pace of innovation and marketing should lead the players of digital manufacturing gain substantial competitive advantage in the market.

8. Conclusions:-

With the Indian government aiming to raise the share of manufacturing from 15 per cent to 25 per cent of GDP (Gross Domestic Product), companies should leverage the growth prospects by building tech-enabled ecosystems; investing in worthwhile partnerships, infrastructure, security and cybersecurity aspects and finally skilling and training the existing employees along with recruiting the right talent as per the need of the organization.

The manufacturing sector is yet to harness all the digital advantages now available, but many organizations, be it big or small, have begun to make real time progress. It is time for businesses and enterprises to give prominence to digital strategy and transform to gain competitive edge from faster innovation, reduced costs, growth in revenues and creation of new business models.

References:

1. www.KPIT.com
2. Boston Consulting Group (BCG) research 2015, www.bcg.com
3. PwC's seventh Digital IQ Survey 2016 –
4. 2016 Plex State of Manufacturing Technology study , www.plex.com
5. Chen Dejun, Shane Shengquan Xie, and Zude Zhou, Fundamentals of Digital Manufacturing ,Springer Media, Oct 2011
6. Brent Stucker, David H. Rosen, and Ian Gibson, Additive Manufacturing Technologies, Springer Media, Second Edition, Dec 2009
