

Automotive industry

Introduction

- Overall, the automotive industry refers to the production and sales of motor vehicles, including cars, trucks, buses and motorcycles. It is a vital component of the global economy, with millions of people employed in the manufacturing, distribution, and maintenance of vehicles.
- The industry has seen significant growth over the past century, with advancements in technology and manufacturing processes leading to increased efficiency and affordability. However, the industry faces numbers of challenges, including concerns about environmental impact and the transition to electric vehicles.
- As such, the automotive industry is constantly evolving, adapting to changing consumer preferences and technological advancements in order to remain competitive and sustainable in the long term.

In short, a manufacturing engineer is important in the automotive industry because they play a critical role in ensuring that the manufacturing process is efficient, cost-effective, and produces high-quality products that meet all relevant regulations and standards.

Manufacturing engineer

Four key principles

04

Overall, a manufacturing engineer plays a critical role in ensuring that a company's manufacturing processes are efficient, effective, and sustainable, leading to increased profitability and customer satisfaction.

Manufacturing engineer

Role composition

Mostly in automotive industry, production can be split in two stages – industrialization projects and serial production, therefore manufacturing engineer work packages and responsibilities require different set of skills and knowledges.

in Serial Production

as Manufacturing Engineer

Maintaining existing production lines and processes with daily tasks, improvements and problem solving, example: line stoppages, process downtimes, underproduction, etc.

Functions and responsibilities:

- Ensuring production efficiency
- Implementing production improvements
- Implementing and managing changes/new products
- Identifying and addressing production problems

Skills and requirements:

- Knowledge of production efficiency assurance methods (LEAN, 5s)
- Technical skills/ knowledge
- Analytical skills & quality analysis methods
- Problem-solving skills
- Communication and proje management skills
- Continuous improvement mindset

Industrialization Projects

Serial Production

It is important

Why ?

- The automotive industry is a crucial sector that plays a significant role in the global economy. In the European Union, the automotive industry is one of the most important and largest employers, providing jobs for more than 14 million people.
- According to the European Automobile Manufacturers Association, the industry accounts for 6.7% of the EU's GDP and generates €1.1 trillion in turnover.
- The industry also contributes significantly to research and development, innovation, and technological advancement, leading to new and improved vehicle models that meet changing consumer needs and environmental regulations. In addition, the automotive industry has a significant impact on related sectors, such as manufacturing, logistics, and services, making it a critical driver of economic growth and development.

Manufacturing engineer

Four key principles

01

A manufacturing engineer is responsible for designing, implementing, and maintaining efficient manufacturing processes and systems. Their primary goal is to optimize the production process to ensure that products are manufactured at the highest quality and lowest cost possible.

So let's

Automotive is highly challenging industry

The automotive industry is distinct from other industries in several ways. Some of the main differences include:

01

High capital investment

The automotive industry is capital-intensive, requiring large investments in machinery, tooling, and research and development. This makes it more difficult for new entrants to compete with established players.

02

Long development cycles

The development cycle for new vehicles in the automotive industry is typically several years, due to the complexity of designing and testing new products. This is longer than in many other industries.

03

Global supply chain

The automotive industry relies heavily on a global supply chain, with many parts and components sourced from different countries. This makes it more susceptible to disruptions in supply chains due to geopolitical events, natural disasters, or other factors.

04

High safety and regulatory standards

The automotive industry is subject to high safety and regulatory standards, with stringent requirements for vehicle safety, emissions, and fuel economy. This requires significant investment in research and development, as well as ongoing compliance efforts.

05

Strong brand loyalty

Consumers in the automotive industry tend to be highly brand-loyal, making it difficult for new entrants to gain market share. Established brands often have decades of history and a strong reputation for quality and reliability, which can be difficult for new competitors to match.

Manufacturing engineer

Four key principles

02

Manufacturing engineers work closely with other engineers, production managers, and operators to identify areas for improvement and to develop and implement solutions that increase efficiency, reduce waste, and improve overall quality. They analyze production data and work to improve processes, troubleshoot problems that arise during production, and develop new manufacturing methods and techniques.

in Industrialization projects

as Manufacturing Engineer

Co-working with project team for implementing infrastructure and production for new products, including designing production lines and processes for serial production and all related activities, example: production layout, line design, production steps, supply chain, packaging, etc.

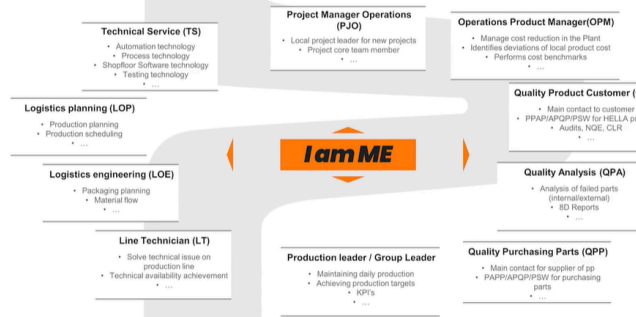
Functions and responsibilities:

- Implementation of new product manufacturing processes;
- Preparation and control of production equipment purchase - schedule and budget;
- Supplier control - manufacturing equipment design & production supervision;
- Organization of line installation & commissioning;
- Initial acceptance and final acceptance of lines;

Skills and requirements:

- Project management skills;
- Communication skills;
- Knowledge of production processes and technology trends;
- Problem-solving skills;
- Teamwork;

Why communication is the key ?



Try Automotive

Benefits of working in automotive industry

- Whole automotive industry runs under same regulations;
- Similar structures in different companies/organizations;
- Similar or same systems/quality methods/ requirements;
- Knowledges from automotive could be applied in other industries.

Future picture

How ?

- The automotive industry is currently experiencing a shift towards electric and autonomous vehicles. Electric vehicles (EVs) are becoming increasingly popular due to concerns over environmental impact and the price of fossil fuels. With the advancement of technology, EVs are becoming more affordable and have longer ranges, making them more attractive to consumers.
- Autonomous vehicles (AVs) are also gaining popularity, although widespread adoption is still a few years away. AVs have the potential to reduce accidents caused by human error and improve traffic flow, making them a promising technology for the future.
- Overall, the future of the automotive industry is likely to be shaped by these trends towards electrification, autonomy, and shared mobility. However, many challenges remain, such as the development of infrastructure to support EVs and AVs and the need for regulatory frameworks to ensure their safe operation.

Manufacturing engineer

Four key principles

03

Other tasks of a manufacturing engineer may include designing and implementing quality control processes, developing and maintaining production schedules, managing inventory levels, and ensuring compliance with safety and environmental regulations.

What are key challenges being ME ?

