

Industrial Engineering in the Garment Industry [PDF]

By Prasanta Sarkar



The application of industrial engineering in the garment industry is not a new thing. The modern manufacturing systems that are widely used in mass garment production can't be run without using industrial engineering tools. There are many challenges in garment manufacturing like increased production cost, shorter lead time, meeting the production target, and estimating accurate daily production goals. All these challenges are managed and controlled through the industrial engineering application. The top tire garment manufacturers across the world employ industrial engineers in good numbers to establish a strong production system. Read the full article to know why the industrial engineering department is essential in the garment manufacturing

Nowadays software solutions and mobile applications are developed based on the concept and tools used by industrial engineers to manage garment production.

Application of industrial engineering in garment industry

The importance of industrial engineering and the need for industrial engineers in garment manufacturing plants can be explained through their activities. If

someone asks you what the applications of IE in the garment industry are, you can show them this list. Or read out the following list of activities.

I would also say that there are some factories that use industrial engineering tools without employing the IE team.

Garment manufacturers working with international brands/buyers understand the need for industrial engineering. Even many buyers hire industrial engineers for their team.

Earlier industrial engineers and work-study teams used to make operation bulletins in Excel sheets (most of the garment factories still use Excel spreadsheets), they used to do capacity study and hourly production for line balancing – all these functions are now available in a software application.

Industrial engineering concepts and application has big impacts in the garment industry primarily in the production areas.

Setting up the standard working hours for each activity, sewing machines and garments stitching content, and the standard time value is essential for understanding the process flow of a garment item (style).

Measuring the potential capacity of a factory and of a production line is possible with accuracy with the help of industrial engineering tools. To work proactively and knowing the importance of a single second in the work cycle (operation cycle of any task) is brought into the business by the industrial engineers.

Non-productive time and non-value-added time calculation and converting this time to productive time are done by the IE team. It is the thought process and having a wider view on finding better ways.

Understanding the constraints in the assembly work and balancing a production line (workload among the workers) in an assembly line environment, is a purely industrial engineers' activity.

Projection of line capacities and scheduling orders are done based on the product SAM. And you know garment factories where the standard time (SAM) is calculated and used to standardize the work content, there is industrial engineering. Labor cost estimation from the garment sample is done using

standard time.

Implementation of Lean manufacturing concepts in a garment factory, like setting up an in-line garment finishing system, converting a traditional sewing line into a modular production system is done by the industrial engineering department.

They prepare line layouts for new models (styles) and for new production orders. They verify the compatibility of making the new apparel items (designs) in the factory.

Industrial engineers work for continuous growth of the business, and they believe in process improvement continuously. They are in Kaizen journeys without any title.

Without the IE team, all these activities cannot be done in the right way. I must say that the IE turned production managers and line supervisors do better production management on the shop floor.

There were limited textbooks and reading materials for learning industrial engineering in garment manufacturing. So, I have written a book on the apparel industrial engineering subject mainly for apparel industry professionals and newcomers. Check the book in the [Amazon store](#). You can also read my earlier blog post on [industrial engineering topics](#). These reading materials will give you enough idea to know how industrial engineers are controlling the production floors in the garment industry.

I have built this blog (OCS) based on industrial engineering subject topics. I love the industrial engineering concepts and like everyone should apply industrial engineering concepts in the garment industry. I have answered more than 1000 questions asked on industrial engineering and garment production subjects.

In the garment business, industrial engineers changing the working culture and improving the work environment in the traditional production system. They used to build trust among the team in a company.

In many companies, the [production reporting \(MIS\)](#) system is completely handled by the industrial engineering team. They are helping the company management to control the production factories through accurate reporting and pointing the key issues through KPI data.

Nowadays, when someone setups a garment manufacturing business, they first hire an engineer to make sure, line layout, factory layout, and workplace engineering are done correctly. They help in factory layout to reduce the material transportation as much as possible. The worker's health and safety must be on top priority. So to ensure this, IE must work on workstation design and select the right tool and equipment for their workers.

Check this post [10 Reasons why we need IE department in a garment factory](#)

If you like to know about the evaluation of industrial engineering read [this article](#)

Though IE concepts are majorly implemented in the garment production area, many factories used to apply industrial engineering in other departments like in the cutting department, finishing department, and printing sections.

Conclusion:

Finally, I would say, through the acceptance of industrial engineering, garment factories learn how they can save time and evaluate the hidden opportunities in the production areas and in other departments.

I would say, in a garment business, the company team is incomplete if there is no presence of industrial engineers.

All the above activities and the benefits of each action done by industrial engineers show how important industrial engineering is in the garment industry.

In case if you are interested to learn work-study methods used in the apparel industry and in other manufacturing sectors, you must read the book "Introduction to Work Study by George Kanawaty"

About Prasanta Sarkar

Prasanta Sarkar is the founder and editor of [Online Clothing Study Blog](#). He is a Textile Engineer and a Postgraduate in Fashion Technology from NIFT, New Delhi. He has authored [6 books](#) in the field of garment manufacturing.