

Toyota Process Flow Analysis

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Abstract

Toyota is a world class company that is known for its quality practices and the production and supply chain is diligently managed so that it can meet its customer demand well on time. The company strategies are well supported through comprehensive production process so that it can manage cost efficiency, drive better quality output vehicles and to manage the high class operational environment. Toyota can further enable Just-in-Time and Total Quality Management practices so that it can help improve productivity, manage high quality standards and able to meet customer demand well on time. Company can further develop predictive metrics, drive transformation and put high quality standards to further manage its production and supply chain to meet competitive standards.

Index terms— manufacturing, process flow, activities, inputs, output, TQM (total quality management), TPS (toyota production system).

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2 I.

3 About Company

Toyota is one of Japan's top automobile manufacturing company and known for its quality products across the globe. Toyota motors was founded in the year 1937 by Kiichiro Toyoda and has its headquarter in Aichi, Japan. Toyota has around 338 thousand employees across the globe and has wide range of vehicles offering to the customers. Toyota mission statement is to provide "high valued products and services to its customers" while vision statement is to "be the most powerful and respected car company across the globe". The report is going to cover detailed process flow adopted by Toyota to manage vehicle manufacturing and able to further link it with business strategies and define metrics to manage operational strategies. The capacity analysis is to be linked with business strategies and able to come up with improving the process on given metrics.

4 a) Company's Strategies

Toyota has following key company strategies that are enabled at production so as to drive effective operations. Those are as follows:

- ? Enabling cost effective approach so that production can be done to drive value for money products to customers.
- ? Able to manage high quality of product through putting up comprehensive quality process in place.
- ? Ensuring optimum production is done to meet customer demand so as to manage optimum inventory level and to meet customer requirements.

The process flow of Toyota includes following key segments while each process steps enable company to well support its business strategies.

5 a) Inputs

The inputs for the Toyota manufacturing is managed through inbound logistics. The raw material is obtained through set of defined third party vendors. The primary machineries and technology is obtained from Japan central office while other daily raw material is obtained from sourcing countries.

Toyota has put assembly system in place so that its raw material can be further arranged as per need and supplied to the plant from the warehouse. The assembly system is done so that inventory piling can be avoided and raw material can be made available as per need. There are 12 full time workers deployed to manage a plant inbound process while processing time is 6 hours to manage the single consignment.

6 b) Activities -Key operational production activities

The key operational activities for Toyota production include transforming input raw material into final product. The material to flow through production assembly line and to be managed through TPS (Toyota production system) by which each assembly line help create final product in form of vehicle.

The part sequencing and setting up schedule is done so that right parts can arrive during the production of vehicle and complete process is done through enabling pull system. The processing time is around 3 days to manage production of 50 vehicles in one batch and takes deployment of 35 full time employees.

7 c) Output

The final output from the Toyota plant is the vehicle that is ready to get dispatched to dealers so that customer can purchase them directly from retail outlets. The output process goes through quality parameters while ensuring logistic of vehicle is done through providing proper safety measures to manage the similar quality of vehicle till it reaches dealer location. The final output i.e. vehicles are delivered through sealed containers to the dealer location.

There is around seven full time employee deployed to manage one consignment of 50 vehicles so that quality control, dispatch of vehicle and logistic arrangements are done from the plant. Rest of the activities once vehicle reaches dealer location are out of scope for company.

8 Process Measurement Metrics

The various suggestive process measurement metrics that can be deployed to track process performance are: ? JIT (Just in Time): The first key metrics is that production should be able to meet the demand and products are available through concept of JIT. The JIT enable company to manage minimum inventory level, able to manage customer demand without wait time and help manage operations optimally. ? Driving TQM (Total Quality Management): The process can be measured through deploying TQM.

Each process steps need to have defined quality standards and those standards should classify the best quality output delivered to customers. The TQM help reduces the defects and able to manage the right output to customer without any variance. ? Meeting product specification and deliverables:

Another key process measurement metrics is to ensure that product (vehicles) are able to meet their product specifications and all deliverable are met well on time. The right QC (Quality check) is put in place to manage the process.

IV.

9 Strategies to Address Expected Customer Demand

The customer demand is uneven throughout years while it is especially high during the peak seasons like festivals, year-end inventory clearance sale and during corporate bonus times. The Toyota need to specially come up with following strategies so that it can manage customer demand: ? Demand forecast: Company can do a demand forecast for the year on basis of historical data and also evaluating other external sources so that it can adjust product accordingly. ? Managing optimum inventory: company need to also ensure that it manage inventory level in range of 7-10% depend on production fluctuation. The inventory level will help company to manage meeting customer demand even if the production is impacted due to internal factors. ? Getting coordination between plants: Company can also ensure that each plant production capacity is ascertained so that effective coordination can be establishing to manage the customer demand at any given point of time.

10 Possible Process Improvements

Toyota has best in class practices to manage its production and supply chain however the following set of improvements can be adopted to further driven performance. The key process improvements are as follows:
? Using transformation to further driven process capacity: Toyota can further upscale its process capacity through using advanced transformation to improve assembly line, production and supply chain process. The transformation includes minimizing manual productivity, improving quality standards and ensuring the product gets commenced within less turnaround time. ? Driving predictive metrics to manage production and output: Company can further develop predictive metrics so that it can well manage customer

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A demand throughout the year and also able to manage inventory level. The predictive metrics can be developed through using "bid data" technology and using comprehensive analysis of market. ? Putting up quality standards: Company can further drive improvements through raising quality standards so that there is minimum production waste, product gets ready well on time and company able to manage its brand image. The quality standards include putting up effective QC parameters in place, ensuring all manual check points are removed and able to drive high quality output.

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Figure 1: Figure 1 :

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