Lean Kaizen Business Consulting

Plant Capacity Assessment

Become a least cost producer with world class Quality & Delivery

Key to the future Survival

The essential question is not, "How busy are you?' but 'What are you busy at?'

— - Oprah Winfrey

A Journey to World class organization……

Lean Kaizen Business Consulting

'Implementation is the Key'

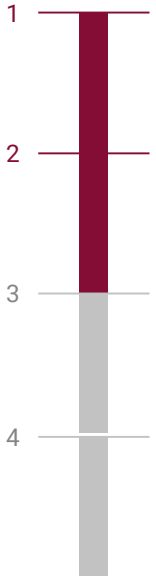
What is Capacity?

Capacity may be defined as an internal benchmark for maximum production possible of a particular product in a plant. The capacity of a plant is the production allowed by a company's functional capabilities.

Traditional Company

1. A company measures utilization of manpower, machines and overheads absorption to assess the capacity available and utilized.
2. However, this methodology prompts the company to produce more for better utilization of manpower and machine and absorption of overheads,
3. This results in unsold inventories, stockouts and dissatisfied customers.

Lean Company



1. Lean looks at the capacity from the customer's perspective, that is, whether the capacity is used for value adding or non-value adding activities
2. If the company's use of capacity for non-value adding activities decreases, then the capacity increases. Lean focuses not only on cost cutting exercise but also on releasing the capacity from non-value adding activities.
3. With this surplus capacity, the company can produce more products to generate additional revenue and profits. In doing so, revenue increases faster than the costs without investment in additional resources.
4. **This** is a major advantage that value stream cost accounting brings to the table.

If a customer wants to buy a 'true' US-made car in the United States, Which car he/ she should buy Toyota /Honda or Ford/ GM

How Lean Company looks at the Capacity?

However, the missing link between lean operational improvements and visible financial improvements is data about capacity of a value stream.

Lean Company

1. There are two types of capacities in a company – manpower capacity and machine capacity
2. In a lean company, machine and manpower utilization measures are not encouraged since they are calculated and allocated based on assumptions.
3. Lean promotes factual data based on value stream mapping and actual cycle time.
4. Hence, to derive the true capacity, the current value stream map of the plant with accurate information in data boxes and an established system for observation of shop floor by operation and finance teams should be in place.
5. The maximum reiterative cycle time is taken as the production rate of the machine.
6. The machine with longest cycle time (in minutes or hours per unit) is the bottleneck machine that is the key factor that determines the output of a value stream.
7. This is called the ‘Pacemaker’ process.
8. The faster machine piles up material behind this bottleneck machine, but the faster machine will not have material piled behind it.

Plant Capacity Assessment-

To assess capacity of a plant, start recording the activities of the two resources in a plant machines and manpower – in all the functions during a day and analyze and bifurcate the activities into value adding and non-value adding activities.




a | b | c | d

Value Adding Capacity Usage

Non-Value Adding Capacity Usage

Total Capacity

Available or Free Capacity

What Is a Target Benchmark?

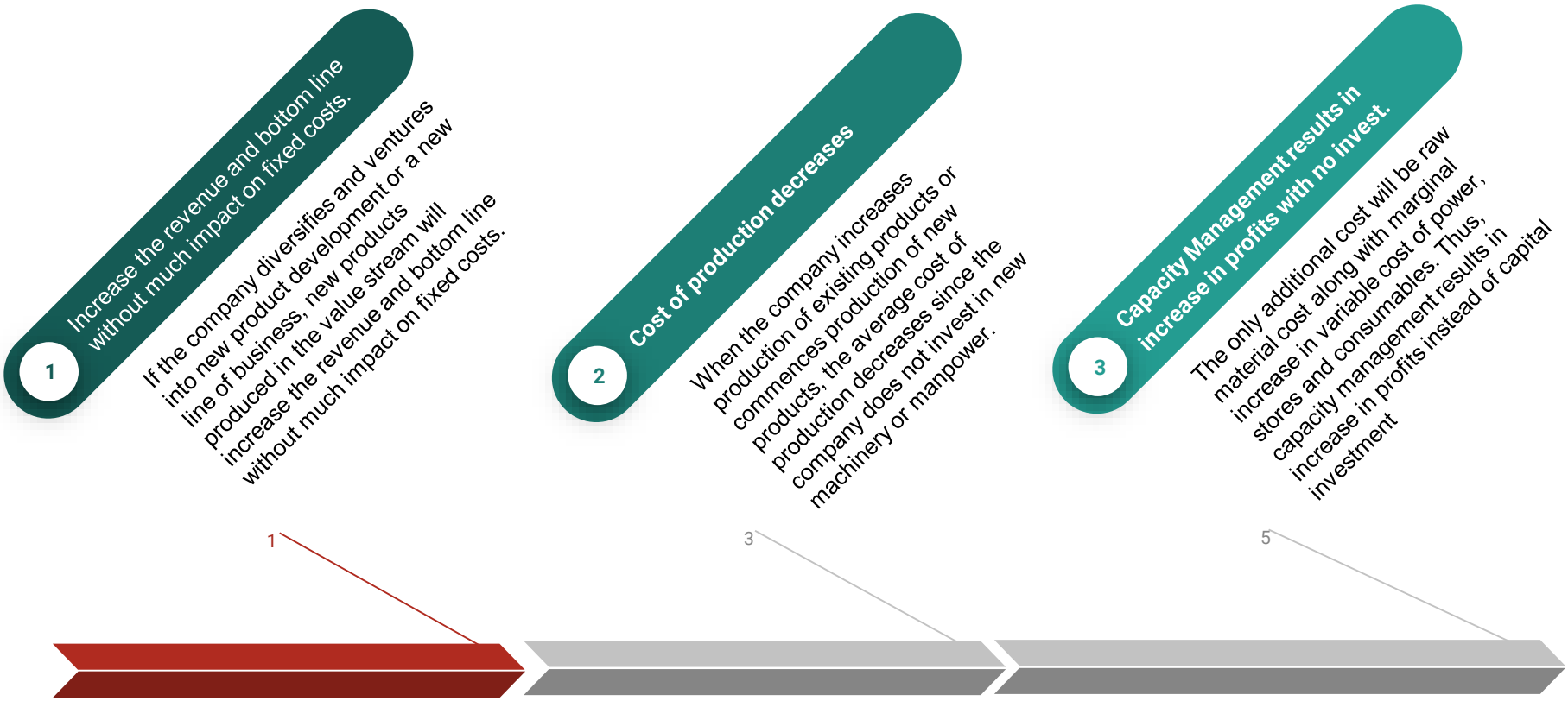
Performance Measures of the Company

The increased awareness and regular monthly reviews contributed to key operational measures improvements as shown

Perfect Gear Company				
(Produces precision hardened gear boxes)				
Performance measures of the company				
Key parameters		UOM	Current state march 2018	Future state march 2019
Average dispatch per day		Tons	40	58
Average monthly dispatch		Tons	1000	1500
Average sales price		USD per kg	3.33	3.67
Monthly dispatch		USD (in Mn)	3.33	5.50
Annual turnover		USD (in Mn)	40	66
Capacity -Machines	Value adding capacity usage	%	44	66
	Non value adding capacity usage	%	50	28
	Free capacity available	%	6	6
Capacity -Manpower	Value adding capacity usage	%	25	41
	Non value adding capacity usage	%	53	49
	Free capacity available	%	22	10

Table- Improvement in key performance measures

Capacity Management results in increase in profits instead of capital investment.



Low average product cost?

Low average product cost empowers the company to reduce prices in the market and seize business from the competition.

Free capacity available, scope of reduction of NVA activities

The company armed with information like free capacity available and scope of reduction in the non-value adding use of capacity makes better business and strategic decisions.

Product pricing,Outsourcing, capital equipment purchase

Taking critical decisions like product pricing, outsourcing, purchase of capital equipment and new product development become easier with focus on lean company requirements.