IdeaNinja

Product Inventory Analysis | Project X

November 2016

Product Inventory Analysis | Project X - Product 1

This Inventory analysis was developed based on the following data taken from the company:			
Unit Acquisition Cost	1.881	€/per unit	The price you pay on average per unit to your suppliers. Does not include manufacturing costs
Unit Order Price	60	€	The cost you have in order to start manufacturing(setup cost). Only applies to multiproducts manufacturing companies
Service Level	99.99%	%	% of times you will not have a Inventory rupture
Standard Deviation of Daily Demand	12	units	The standard deviation of your daily demand
Storage Unit cost	2.00	€/per unit	Cost of storing a unit (average cost)
Lead Time	2	days	The time it takes for you supplier to handle your orders
Daily Demand	100	units	Average demand of your product per day
Yearly Demand	31200	units	Average demand of your product per year
Standard Deviation Lead Time	17	units	The standard deviation of your lead time

Reorder point	263	units
Safety Stock	63	units
Economic Order Quantity	1,368	units
Time Beetween Orders	13.68	days

	Component/Product 1 Ratio Table
Component 1	1
Component 2	2
Component 3	10

Notes:

Taking into consideration the analysis above, everytime you hit the reorder point quantity of 263 units, you should produce 1369 units, which is your economic order quantity.

Your time between productions is 13,7 days.

Your safety stock should be 63 units , in order to deliver a service level of 99,99%

Product Inventory Analysis | Project X - Component 1

This Inventory analysis was developed based on the following data taken from the company:			
Unit Acquisition Cost	4.85	€/per unit	The price you pay on average per unit to your suppliers
Unit Order Price	20	€	The price you pay your supplier per order (usually related with handling costs)
Service Level	99.99%	%	% of times you will not have a Inventory rupture
Standard Deviation of Daily Demand	12	units	The deviation of your daily demand
Storage Unit cost	2.00	€/per unit	Cost of storing a unit (average cost)
Lead Time	2	days	The time it takes for you supplier to hand your orders
Daily Demand	100	units	The amount of demand your product has on average per day
Yearly Demand	31200	units	The amount of demand your product has on average per year
Standard Deviation Lead Time	17	units	The deviation of your lead time

Component Price	Order Size		Average Size	Total Cost
5	1	1000	500.5	**157873**
4.85	1001	2000	1500.5	**153363**
4.8	2001	5000	3500.5	**153565**
4.79	5001		5001	**154700**

Reorder point	263	units
Safety Stock	63	units
Economic Order Quantity without Rappel	790	units
Time Between Orders without Rappel	7.9	days
Economic Order Quantity with Rappel	1,001	units
Time Between Orders with Rappel	10.01	days

Notes:

Taking into consideration the analysis above, everytime you hit the reorder point quantity of 263 units you should order 790 units, which is your economic order quantity without rappel. Since your supplier works with a rappel price model, your order size should be 1001. Since this is the amount that optimizes your overall costs..

Your time between orders is on average 10,01 days

Your safety stock should be 63 units, for a service level of 99,99%

Product Inventory Analysis | Project X - Component 2

This Inventory analysis was developed based on the following data taken from the company:			
Unit Acquisition Cost	4.8	€/per unit	The price you pay on average per unit to your suppliers
Unit Order Price	20	€	The price you pay your supplier per order (usually related with handling costs)
Service Level	99.99%	%	% of times you will not have a Inventory rupture
Standard Deviation of Daily Demand	24	units	The deviation of your daily demand
Storage Unit cost	2.00	€/per unit	Cost of storing a unit (average cost)
Lead Time	2	days	The time it takes for you supplier to hand your orders
Daily Demand	200	units	The amount of demand your product has on average per day
Yearly Demand	62400	units	The amount of demand your product has on average per year
Standard Deviation Lead Time	34	units	The deviation of your lead time

Component Price	Order Size		Average Size	Total Cost
5	1	1000	500.5	**315246**
4.85	1001	2000	1500.5	**305225**
4.8	2001	5000	3500.5	**303629**
4.79	5001		5001	**304399**

Reorder point	526	units
Safety Stock	126	units
Economic Order Quantity without Rappel	1,117	units
Time Between Orders without Rappel	5.6	days
Economic Order Quantity with Rappel	2,001	units
Time Between Orders with Rappel	10.01	days

Notes:

Taking into consideration the analysis above, everytime you hit the reorder point quantity of 526 units you should order 1118 units, which is your economic order quantity without rappel. Since your supplier works with a rappel price model, your order size should be 2001. Since this is the amount that optimizes your overall costs.

Your time between orders is on average 10,01 days

Your safety stock should be 126 units, for a service level of 99,99%

Product Inventory Analysis | Project X - Component 3

This Inventory analysis was developed based on the following data taken from the company:			
Unit Acquisition Cost	1	€/per gram	The price you pay on average per gram to your suppliers
Unit Order Price	20	€	The price you pay your supplier per order (usually related with handling costs)
Service Level	99.99%	%	% of times you will not have a Inventory rupture
Standard Deviation of Daily Demand	120	grams	The deviation of your daily demand
Storage Unit cost	0.20	€/per gram	Cost of storing a gram(average cost)
Lead Time	2	days	The time it takes for you supplier to hand your orders
Daily Demand	1000	grams	The amount of demand your product has on average per day
Yearly Demand	312000	grams	The amount of demand your product has on average per year
Standard Deviation Lead Time	170	grams	The deviation of your lead time

Reorder point	2,631	grams
Safety Stock	631	grams
Economic Order Quantity	7,899	grams
Time Beetween Orders	7.90	days

Notes:

Taking into consideration the analysis above, everytime you hit the reorder point quantity of 2631 grams , you should order 7900 grams, which is your economic order quantity.

Your time between orders is 7,9 days

Your safety stock should be 631 grams for a service level of 99,99%