



Ex. A company must deliver 10000 Products per day. When the company starts production, they can produce 25000 Units/day. The cost to hold one Product unit on inventory per Year is 50€. The setup cost are 1800€ per Setup. How often should the company organize the setup? Please use EOQ II.

Ex. A company produces a product for several clients. They experience flat demand of 2500 units/Year. The production rate is 10000 units/year. The setup cost is 50€/run. The production cost is 2€/unit. The holding cost is 50€/unit per year and has 30% annual interest rate. Determine the optimum order quantity and optimal size of production run. EOQ III.

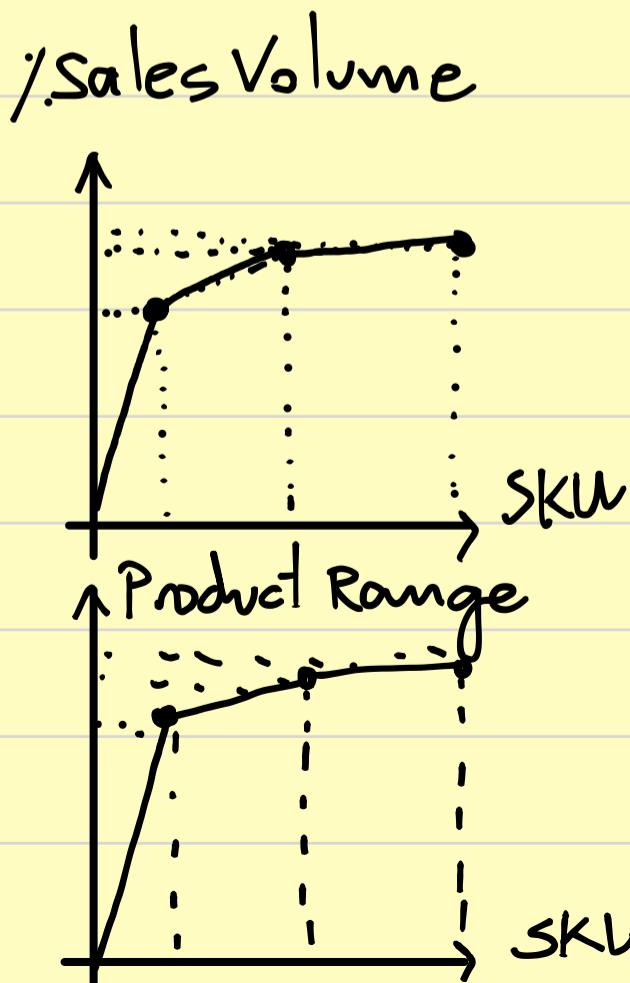
Ex. The demand for Water @ office is 600 litres/Week. The setup cost for placing an order to replenish inventory is 25€. The order is delivered by a supplier who charges 0.1€/liter as transport cost. This cost increases the cost of water to 1.25€/liter. The holding cost of water (lost of freshness) is 2.6€/liter. Determine how often the office should order water, and what should be the economic order quantity.

Ex. The yearly demand of a product is 1200 Units. The holding cost h of inventory is 1500€/Unit Year. The backlog cost p are 2000€/Unit Year. find the optimum Order Quantity (Q^*) and optimal cost $C(Q^*)$ following EOQ III. What is the optimum Backlog? ($Q^* - S^*$) Find the best Ordering Frequency ($\frac{Q^*}{D}$) Setupcost = 1000€ ; crd.

GLENDAY SIEVE

Categorization of value streams.

↓
Strategic decision making
(SUPPLIER MANAGEMENT)



S.K.u. Stock Keeping Unit

% cumulative sales	% product range	CAT
50%	6%	GREEN
50-95%	7-50%	YELLOW
95-99%	51-70%	BLUE
~100%	71-100%	RED

PRODUCT RANGE CUM SALES



Item No.	Item description	Vol	% of Vol	Cumulative %	Item No.	Item description	Vol	% of Vol	Cumulative %
1	P083-22/K	113897	7.08%	7.08%	66	P565-7611/G/5L	6045	0.38%	66.52%
2	P516-14/5L	78850	4.90%	11.98%	67	P338-13212/5L	5955	0.37%	66.89%
3	P338-PJ-1225/L	54550	3.39%	15.37%	68	P396-44/1L	5615	0.35%	67.24%
4	P396-101/5L	39095	2.43%	17.80%	69	P190-625/1L	5614	0.35%	67.59%
5	P551-10131/3K	31496	1.96%	19.76%	70	P396-15200/5L	5610	0.35%	67.94%
6	P338-PJ-1225/L	29763	1.85%	21.61%	71	P396-16496/5L	5530	0.34%	68.28%
7	P516-PJ-0251/L	29160	1.81%	23.42%	72	P396-14051/1L	5460	0.34%	68.62%
8	P396-122/L	28455	1.77%	25.19%	73	P971-399/1K	5460	0.34%	68.96%
9	P396-101/1L	28393	1.76%	26.96%	74	P078-10178/1L	5337	0.33%	69.29%
10	P396-122/L	27997	1.74%	28.70%	75	P396-104/5L	5310	0.33%	69.62%
11	P396-16203/5L	27945	1.74%	30.43%	76	P396-16195/1L	5290	0.33%	69.95%
12	MP338-1512/2L	25710	1.60%	32.03%	77	P850-1493/5L	5265	0.33%	70.28%
13	P083-A20/2.5K	24038	1.49%	33.53%	78	P396-437/1L	5066	0.31%	70.60%
14	P562-32/2K	22493	1.40%	34.93%	79	P190-18198/1L	5019	0.31%	70.91%
15	P850-1493/2.5L	21165	1.32%	36.24%	80	P396-13393/5L	5015	0.31%	71.22%
16	P565-7611/3.5L	20136	1.25%	37.49%	81	P396-113/1L	5007	0.31%	71.53%
17	P083-4/1K	19650	1.22%	38.17%	82	P338-10640/200L	5000	0.31%	71.84%
18	MP338-1505/1L	17702	1.07%	39.78%	83	P396-861/1L	4889	0.30%	71.84%
19	MP338-1524/7/1L	15693	0.98%	40.76%	84	P338-14038/1L	4886	0.30%	72.45%
20	P190-18260/1L	14961	0.93%	41.69%	85	P850-18236/200L	4800	0.30%	72.75%
21	P396-16195/5	14610	0.91%	42.60%	86	P338-14172/1L	4778	0.30%	73.04%
22	P562-32/0.5K	14479	0.90%	43.50%	87	P190-18260/20L	4720	0.29%	73.34%
23	P084-10143/1L	14381	0.89%	44.39%	88	P396-16317/1L	4708	0.29%	73.63%
24	P396-456/5L	13290	0.83%	45.22%	89	P396-13080/1L	4693	0.29%	73.29%
25	P396-38/5L	12925	0.80%	46.02%	90	P500-12117/1L	4561	0.28%	74.21%
26	MP338-14161/1L	12853	0.80%	46.82%	91	P338-15108/1L	4404	0.27%	74.48%
27	P850-195/200L	12000	0.75%	47.56%	92	P565-14383	4342	0.27%	74.75%
28	P030-101/1GAL	11370	0.71%	48.27%	93	P396-15152/1L	3878	0.24%	75.97%
29	P192-18500/5L	11205	0.70%	48.97%	94	P396-10317/1L	3845	0.24%	75.97%
30	P396-16148/1L	10433	0.65%	49.62%	95	P396-13393/1L	3801	0.24%	76.45%
31	P565-13513-200L	10000	0.62%	50.24%	96	P338-14154/1L	3788	0.24%	76.69%
32	P210-026/0.5L	9854	0.61%	50.85%	97	P101-18056/1L	3717	0.23%	76.92%
33	MP338-14037/1L	9119	0.57%	51.42%	98	P338-10051/1L	3668	0.23%	77.14%
34	P083-22/5/3K	9048	0.56%	51.98%	99	P572-3000/1L	3664	0.23%	77.37%
35	P396-861/5L	8720	0.54%	52.52%	100	P396-15050/1L	3660	0.23%	77.60%
36	P190-18310/1L	8622	0.54%	53.06%	101	P565-10232/1L	3655	0.23%	77.83%
37	P396-11336/5L	8515	0.53%	53.59%	102	P396-11288/5L	3610	0.22%	78.05%
38	MP338-15028/1L	8341	0.52%	54.11%	103	P396-38/1L	3558	0.22%	78.27%
39	P396-11334/5L	8310	0.52%	54.62%	104	P516-PJ-025/1L	3469	0.22%	78.49%
40	P500-14336/5L	8090	0.50%	55.13%	105	P156-14/2.5L	3443	0.21%	78.70%
41	P396-437/5L	8000	0.50%	55.62%	106	P30-101/1L	3383	0.21%	78.91%
42	P190-18300/200L	8000	0.50%	56.12%	107	P396-454/5L	3325	0.21%	79.21%
43	P338-15876/5L	7810	0.49%	56.61%	108	P196-10468/5L	3030	0.19%	80.50%
44	MP338-15352/1L	7789	0.48%	57.09%	109	P338-15248/1L	3292	0.20%	79.32%
45	P396-13080/5L	7755	0.48%	57.57%	110	P396-42/1L	3233	0.20%	79.52%
46	P210-18261/0.5L	7739	0.48%	58.05%	111	P338-14122/1L	3231	0.20%	79.13%
47	MP338-15200/1L	7644	0.48%	58.53%	112	P396-15199/1L	3151	0.20%	79.92%
48	P084-10143/3L	7620	0.47%	59.47%	113	P565-18268/1L	3105	0.19%	80.31%
49	P396-16148/5L	7605	0.47%	59.47%	114	P196-10468/5L	3030	0.19%	80.50%
50	P190-10012/5L	7500	0.47%	59.94%	115	P396-14051/5L	3005	0.19%	80.68%
51	P084-30201/1GAL	7489	0.47%	60.41%	116	P-306-455/1L	2986	0.18%	80.87%
52	P540-10309/5L	7325	0.46%	60.86%	117	P338-11010/1L	2965	0.18%	81.05%
53	P500-13355/5L	7220	0.45%	61.31%	118	P396-11363/1L	2949	0.18%	81.24%
54	P083-10410/5K	7169	0.45%	61.76%	119	P396-427/5L	2915	0.18%	81.42%
55	P338-12456/20L	6960	0.43%	62.19%	120	P396-17021/5L	2895	0.18%	81.60%
56	P396-1134/1L	6635	0.41%	62.60%	121	P562-19261/3K	2842	0.18%	81.77%
57	P030-101/0.25GAL	6600	0.41%	63.01%	122	P851-19091/5L	2840	0.18%	81.95%
58	P551-14160/9K	6530	0.41%	63.42%	123	P396-11069/1L	2835	0.18%	82.13%
59	P396-456/1L	6495	0.40%	63.82%	124	P396-11296/5L	2790	0.17%	82.30%
60	P500-12117/5L	6440	0.40%	64.22%	125	P338-15231/0.25GAL	2788	0.2%	82.50%
61	P306-16163/5L	6380	0.40%	64.62%	126	P417-11903/20 L	360	0.2%	82.63%
62	P396-10934/5L	6225	0.39%	65.00%	127	P396-13011/5L	360	0.2%	82.80%
63	P396-14121/1L	6179	0.38%	65.39%	128	P551-14555/2.5L	2635	0.16%	82.97%
64	P585-15280/1L	6141	0.38%	64.77%	129	P338-PJ-1221/1L	2633	0.16%	83.13%
65	P396-15152/5L	6060	0.38%	66.15%	130	P396-8831/1L	2624	0.16%	83.30%

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135	P030-15152/1L	2600	0.16%	83.46%	205	P210-181213/0.5L	1374	0.09%	91.76%	206	PMP38-1407/0.1L	1371	0.08%	91.84%
136	P030-101/5/L	2535	0.16%	83.62%	207	MP338-12054/1L	1365	0.08%	91.93%	208	P030-9912-0.25GAL	1350	0.08%	92.01%
137	MP338-17021/1L	2509	0.16%	83.77%	209	P030-11912/1L	1349	0.08%	92.09%	210	P396-2031/1L	1322	0.08%	92.18%
138	P338-23400/5L	2500	0.16%	83.93%	211	P396-11463/1L	1321	0.08%	92.26%	212	P			

When you are provided with a list of SKUs and their related volume, the first thing you need to do is run a PARETO on the magnitudes above, in order to determine what products belong to each category : GREEN, YELLOW, BLUE or RED.



GREEN VALUE STREAM

Green products have high volume items that are already produced in frequent manner. These are the products to start a **FIXED SEQUENCE & FIXED VOLUME** strategy.

This means we separate the green products and reserve certain amount of time to manufacture them.



EPEI . Every Part Every Interval that manages the manufacturing .

We accept NO CHANGES and avoid all disturbances in the green stream time .

We create Economics of REPETITION .

YELLOW VALUE STREAM

These are the products where practical barriers of implementing EPEI are mostly found.

Things like Change Over Time, batch sizes, ramp up losses, and machine layouts are going to slow us down.

Yellow products are the ones to concentrate your continuous improvement (CI) activities on.

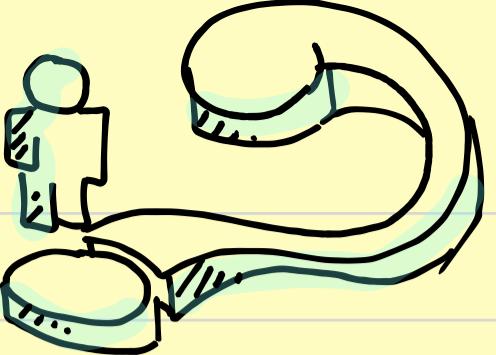
With the yellow value stream we use (CPD)_{nfA}.

The goal is to convert the yellow into green and perform EPEI on them.

BLUE VALUE STREAM

The goal is COMBINE & IMPROVE (C&I).

Blue category products are products containing materials that add complexity yet do not increase customer value. For instance raw materials where there are only marginal changes in type or grade. Or packaging items where there are differences that add no value to the customer.



How different do these products (BLUE) really need to be?
Can I combine packaging for different country regions?

Reducing complexity limits the opportunities for things to go wrong and reduces the fire fighting.
It also reduces the amount of work required in many areas of the business.

The goal is turn blue to yellow or green by C&I

RED VALUE STREAM

Typically just 1% of the sales volume comes from 30% of the SKU's (product range).



What is the value for the customer?
What is the value for the organisation?

EITHER WAY... → Increase profitability of product: red to blue
→ Get rid of the product. (BUT)

GREEN. E&EI Management

YELLOW. Continuous Improvement
YELLOW TO GREEN

BLUE. Combine & Improve
BLUE to YELLOW

RED → RED to BLUE
RED → GET RID OF (BUT)

