

# Logistics Project Management Online Session

## Topic: Logistics Customer Response - Key Performance Indicators Solution

### Solution of the Exercise

Suppose the working day in Carrefour is equal to 8 hours,

- The Productivity KPI: Customer Response Productivity (CRP),

Vendor	Order ID	Date	Customer loyalty Card ID	Total Orders per customer	Total price per customer (€)	Total duration per customer (h)	Total resources per customer	Person-hour per customer	CRP (€/h)	Product line	Unit price	Quantity	Total Price per Payment	Order processing total duration (days)	Total affected employees	Total affected activities	Total resources per order
Carrefour	226-31-3081	3/2/2021								0.2176	Electronic accessories	€ 15.28	€ 15.28	05	14	2	16
Carrefour	351-41-3108	3/2/2021							Home and lifestyle		€ 46.93	2	€ 93.86	09	25	2	28
Carrefour	373-23-2920	3/2/2021							Sports and travel		€ 86.31	1	€ 86.31	09	21	2	23
Carrefour	315-23-3665	3/2/2021							Home and lifestyle		€ 73.56	11	€ 735.66	09	25	3	28
Carrefour	361-02-3182	3/2/2021	123-542-11	54	€ 2,735.84	4216	161	678.776	Food and beverages		€ 34.84	8	€ 278.72	09	2	1	8
Carrefour	351-02-4932	3/2/2021							Fashion accessories		€ 14.68	2	€ 29.36	09	7	1	8
Carrefour	066-05-8349	3/21/2021							Health and beauty		€ 68.93	1	€ 68.93	09	10	1	11
Carrefour	273-16-6019	3/21/2021							Home and lifestyle		€ 33.20	2	€ 66.40	09	25	3	28
Carrefour	361-02-7249	3/21/2021							Health and beauty		€ 24.89	4	€ 99.56	09	10	1	11
Carrefour	268-02-8428	3/21/2021							Health and beauty		€ 74.69	2	€ 149.38	09	10	1	11
Carrefour	121-19-1176	3/22/2021							Health and beauty	€ 58.22	1	€ 58.22	09	10	1	11	
Carrefour	355-53-5943	3/25/2021							Electronic accessories	€ 68.84	1	€ 68.84	09	14	2	16	
Carrefour	326-56-3974	3/25/2021							Electronic accessories	€ 25.51	4	€ 102.04	09	14	1	15	
Carrefour	326-34-3910	3/29/2021	234-421-54	59	€ 3,855.00	3688	140	516,530	Health and beauty	€ 71.38	10	€ 713.80	09	10	1	11	
Carrefour	362-26-8951	3/29/2021							Sports and travel	€ 72.61	1	€ 72.61	09	21	2	23	
Carrefour	328-82-1586	3/29/2021							Food and beverages	€ 54.67	3	€ 164.01	09	7	1	8	
Carrefour	321-05-3059	3/29/2021							Home and lifestyle	€ 52.59	2	€ 105.18	09	25	3	28	
Carrefour	189-12-4041	3/29/2021							Fashion accessories	€ 87.67	2	€ 175.34	09	5	1	6	
Carrefour	145-34-9061	3/29/2021							Food and beverages	€ 88.36	1	€ 88.36	09	7	1	8	
Carrefour	899-14-3026	3/29/2021							Electronic accessories	€ 85.39	2	€ 170.78	09	14	2	16	
Carrefour	465-31-6167	3/29/2021							Health and beauty	€ 36.36	1	€ 36.36	09	10	1	11	
Carrefour	361-04-0515	3/29/2021							Electronic accessories	€ 46.95	1	€ 46.95	09	14	2	16	
Carrefour	351-36-2699	3/29/2021							Food and beverages	€ 43.19	11	€ 475.09	09	7	1	8	
Carrefour	299-46-1805	3/29/2021							Sports and travel	€ 93.72	1	€ 93.72	09	14	2	16	
Carrefour	319-02-3148	3/29/2021							Home and lifestyle	€ 49.30	2	€ 98.60	09	25	3	28	
Carrefour	300-71-4605	3/29/2021	434-444-43	49	€ 3,146.17	4256	176	749,056	Electronic accessories	€ 86.04	1	€ 86.04	09	14	2	16	
Carrefour	371-16-5789	3/5/2021							Health and beauty	€ 87.88	1	€ 87.88	09	10	1	11	
Carrefour	334-48-8204	3/22/2021							Electronic accessories	€ 34.56	1	€ 34.56	09	14	2	16	
Carrefour	349-29-3258	3/22/2021							Sports and travel	€ 88.63	1	€ 88.63	09	21	2	23	
Carrefour	349-29-8775	3/28/2021							Fashion accessories	€ 33.52	1	€ 33.52	09	5	1	6	

Figure 1 (see the Excel file – Solution 1)

- The Quality KPI: Order Entry Accuracy (OEA)

Vendor	Order ID	Date	Customer Loyalty Card ID	Total Orders per customer	OEA	Product line	Unit price	Quantity	Total Price per	Payment	Order processing total duration (days)	Total affected warehousemen	Total affected cashiers			
Carrefour	226-31-3081	3/8/2019	123-542-11	54	33.33%	Electronic accessories	€ 15.28	5	€ 76.40	Cash	35	14	2			
Carrefour	631-41-3108	3/3/2019				Home and lifestyle	€ 46.33	7	€ 324.31	Credit card	89	25	3			
Carrefour	373-73-7910	2/8/2019				Sports and travel	€ 86.31	7	€ 604.17	Ewallet	78	21	2			
Carrefour	315-22-5665	2/24/2019				Home and lifestyle	€ 73.56	10	€ 735.60	Ewallet	89	25	3			
Carrefour	692-92-5582	2/20/2019				Food and beverages	€ 54.84	3	€ 164.52	Credit card	22	7	1			
Carrefour	351-62-0822	2/6/2019				Fashion accessories	€ 14.48	4	€ 57.92	Ewallet	15	5	3			
Carrefour	656-95-9349	3/11/2019				Health and beauty	€ 68.93	7	€ 482.51	Credit card	55	10	1			
Carrefour	273-16-6619	3/15/2019				Home and lifestyle	€ 33.20	2	€ 66.40	Credit card	89	25	3			
Carrefour	848-62-7243	3/15/2019				Health and beauty	€ 24.89	9	€ 224.01	Cash	55	10	1			
Carrefour	750-67-8428	1/5/2019				Health and beauty	€ 74.69	7	€ 522.83	Ewallet	55	10	1			
Carrefour	123-19-1176	1/27/2019	Health and beauty	€ 58.22	8	€ 465.76	Ewallet	55	10	1						
Carrefour	355-53-5943	2/25/2019	234-421-54	59	36.42%	Electronic accessories	€ 68.84	6	€ 413.04	Ewallet	35	14	2			
Carrefour	529-56-3974	3/9/2019				Electronic accessories	€ 25.51	4	€ 102.04	Cash	35	14	2			
Carrefour	829-34-3910	3/29/2019				Health and beauty	€ 71.38	10	€ 713.80	Cash	55	10	1			
Carrefour	765-26-6951	1/1/2019				Sports and travel	€ 72.61	6	€ 435.66	Credit card	78	21	2			
Carrefour	329-62-1586	1/21/2019				Food and beverages	€ 54.67	3	€ 164.01	Credit card	22	7	1			
Carrefour	227-03-5010	3/22/2019				Home and lifestyle	€ 52.59	8	€ 420.72	Credit card	89	25	3			
Carrefour	189-17-4241	3/10/2019				Fashion accessories	€ 87.67	2	€ 175.34	Credit card	15	5	3			
Carrefour	145-94-9061	1/25/2019				Food and beverages	€ 88.36	5	€ 441.80	Cash	22	7	1			
Carrefour	699-14-3026	3/25/2019				Electronic accessories	€ 85.39	7	€ 597.73	Ewallet	35	14	2			
Carrefour	665-32-9167	1/10/2019				Health and beauty	€ 36.26	2	€ 72.52	Credit card	55	10	1			
Carrefour	365-64-0515	2/12/2019	Electronic accessories	€ 46.95	5	€ 234.75	Ewallet	35	14	2						
Carrefour	252-56-2699	2/7/2019	Food and beverages	€ 43.19	10	€ 431.90	Ewallet	22	7	1						
Carrefour	299-46-1805	1/15/2019	434-444-43	49	30.25%	Sports and travel	€ 93.72	6	€ 562.32	Cash	78	21	2			
Carrefour	319-50-3348	3/11/2019				Home and lifestyle	€ 40.30	2	€ 80.60	Ewallet	89	25	3			
Carrefour	300-71-4605	2/25/2019				Electronic accessories	€ 86.04	5	€ 430.20	Ewallet	35	14	2			
Carrefour	371-85-5789	3/5/2019				Health and beauty	€ 87.98	3	€ 263.94	Ewallet	55	10	1			
Carrefour	636-48-8204	2/17/2019				Electronic accessories	€ 34.56	5	€ 172.80	Ewallet	35	14	2			
Carrefour	549-59-1358	3/2/2019				Sports and travel	€ 88.63	3	€ 265.89	Ewallet	78	21	2			
Carrefour	649-29-6775	2/8/2019				Fashion accessories	€ 33.52	1	€ 33.52	Cash	15	5	3			
<b>Total Orders</b>						<b>162</b>										

Figure 1 (see the Excel file – Solution 2)

- The Cycle Time KPI: Order Processing Time (OPT)

Vendor	Order ID	Date	Product line	Unit price	Quantity	Total Price per	Payment	Order processing total duration (days)	OPT (Sorted)	Total affected warehousemen	Total affected cashiers	Total resources per order
Carrefour	351-62-0822	2/6/2019	Fashion accessories	€ 14.48	4	€ 57.92	Ewallet	15	15	5	3	8
Carrefour	189-17-4241	3/10/2019	Fashion accessories	€ 87.67	2	€ 175.34	Credit card	15	15	5	3	8
Carrefour	649-29-6775	2/8/2019	Fashion accessories	€ 33.52	1	€ 33.52	Cash	15	15	5	3	8
Carrefour	692-92-5582	2/20/2019	Food and beverages	€ 54.84	3	€ 164.52	Credit card	22	22	7	1	8
Carrefour	329-62-1586	1/21/2019	Food and beverages	€ 54.67	3	€ 164.01	Credit card	22	22	7	1	8
Carrefour	145-94-9061	1/25/2019	Food and beverages	€ 88.36	5	€ 441.80	Cash	22	22	7	1	8
Carrefour	252-56-2699	2/7/2019	Food and beverages	€ 43.19	10	€ 431.90	Ewallet	22	22	7	1	8
Carrefour	226-31-3081	3/8/2019	Electronic accessories	€ 15.28	5	€ 76.40	Cash	35	35	14	2	16
Carrefour	355-53-5943	2/25/2019	Electronic accessories	€ 68.84	6	€ 413.04	Ewallet	35	35	14	2	16
Carrefour	529-56-3974	3/9/2019	Electronic accessories	€ 25.51	4	€ 102.04	Cash	35	35	14	2	16
Carrefour	699-14-3026	3/25/2019	Electronic accessories	€ 85.39	7	€ 597.73	Ewallet	35	35	14	2	16
Carrefour	365-64-0515	2/12/2019	Electronic accessories	€ 46.95	5	€ 234.75	Ewallet	35	35	14	2	16
Carrefour	300-71-4605	2/25/2019	Electronic accessories	€ 86.04	5	€ 430.20	Ewallet	35	35	14	2	16
Carrefour	636-48-8204	2/17/2019	Electronic accessories	€ 34.56	5	€ 172.80	Ewallet	35	35	14	2	16
Carrefour	656-95-9349	3/11/2019	Health and beauty	€ 68.93	7	€ 482.51	Credit card	55	55	10	1	11
Carrefour	848-62-7243	3/15/2019	Health and beauty	€ 24.89	9	€ 224.01	Cash	55	55	10	1	11
Carrefour	750-67-8428	1/5/2019	Health and beauty	€ 74.69	7	€ 522.83	Ewallet	55	55	10	1	11
Carrefour	123-19-1176	1/27/2019	Health and beauty	€ 58.22	8	€ 465.76	Ewallet	55	55	10	1	11
Carrefour	829-34-3910	3/29/2019	Health and beauty	€ 71.38	10	€ 713.80	Cash	55	55	10	1	11
Carrefour	665-32-9167	1/10/2019	Health and beauty	€ 36.26	2	€ 72.52	Credit card	55	55	10	1	11
Carrefour	371-85-5789	3/5/2019	Health and beauty	€ 87.98	3	€ 263.94	Ewallet	55	55	10	1	11
Carrefour	373-73-7910	2/8/2019	Sports and travel	€ 86.31	7	€ 604.17	Ewallet	78	78	21	2	23
Carrefour	765-26-6951	1/1/2019	Sports and travel	€ 72.61	6	€ 435.66	Credit card	78	78	21	2	23
Carrefour	299-46-1805	1/15/2019	Sports and travel	€ 93.72	6	€ 562.32	Cash	78	78	21	2	23
Carrefour	549-59-1358	3/2/2019	Sports and travel	€ 88.63	3	€ 265.89	Ewallet	78	78	21	2	23
Carrefour	631-41-3108	3/3/2019	Home and lifestyle	€ 46.33	7	€ 324.31	Credit card	89	89	25	3	28
Carrefour	315-22-5665	2/24/2019	Home and lifestyle	€ 73.56	10	€ 735.60	Ewallet	89	89	25	3	28
Carrefour	273-16-6619	3/15/2019	Home and lifestyle	€ 33.20	2	€ 66.40	Credit card	89	89	25	3	28
Carrefour	227-03-5010	3/22/2019	Home and lifestyle	€ 52.59	8	€ 420.72	Credit card	89	89	25	3	28
Carrefour	319-50-3348	3/11/2019	Home and lifestyle	€ 40.30	2	€ 80.60	Ewallet	89	89	25	3	28

Figure 3 (see the Excel file – Solution 3)