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FAKULTÄT FÜR MASCHINENBAU  
INSTITUT FÜR  
LOGISTIK UND MATERIALFLUSSTECHNIK

## Collaborative management in Supply Networks

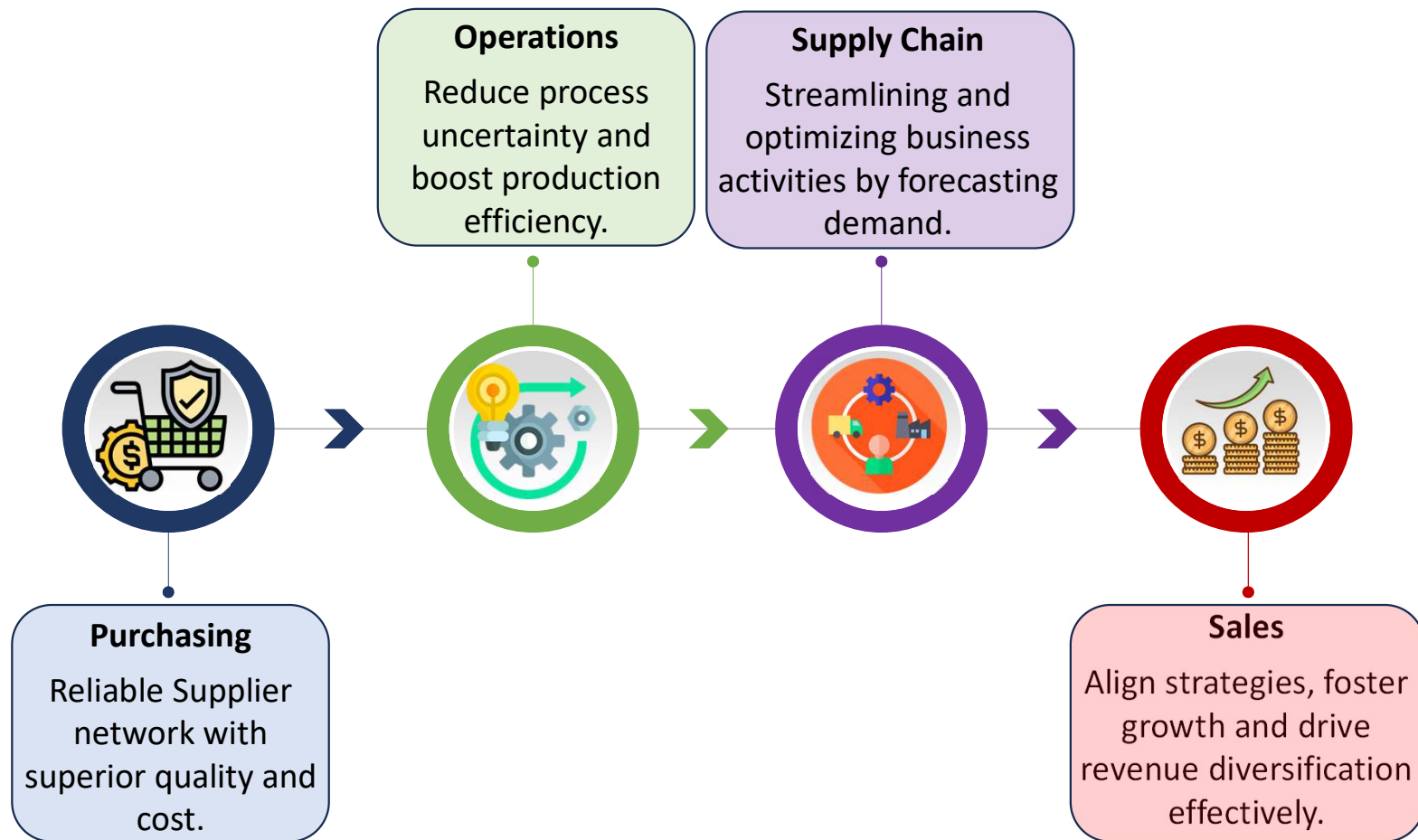
# TFC Analysis Round 3 and Round 4

Team - Holland Elixir



VP Purchasing - Nithin Kanikyaswamy (244669)  
VP Operations - Tejas Ganesh Koushik (244612)  
VP Supply chain - Shrujan Bangalore Nagesh (244054)  
VP Sales - Gautam Reddy Jayaprakash (244661)

WS 23/24



Observations	Proposed Action	Impact
The delivery reliability of Seitan Vitamin C was low <b>(81.50%)</b>	The Supplier was changed to YoBoMa .	The delivery Reliability was increased <b>(94.0%)</b> , but <b>caused an rejection of (6.3%)</b> .
The Rejection percentage for components supplied by supplier for Trio PET PLC is high <b>(5.0%)</b>	The Supplier was changed to Philyp Jones Plastics.	The Rejection percentage for components supplied by supplier for Trio PET decreased to <b>(3.8%)</b> and <b>contract index increased (0.9560) to (0.9870)</b> and the <b>agreed delivery reliability was not delivered(79%)</b>

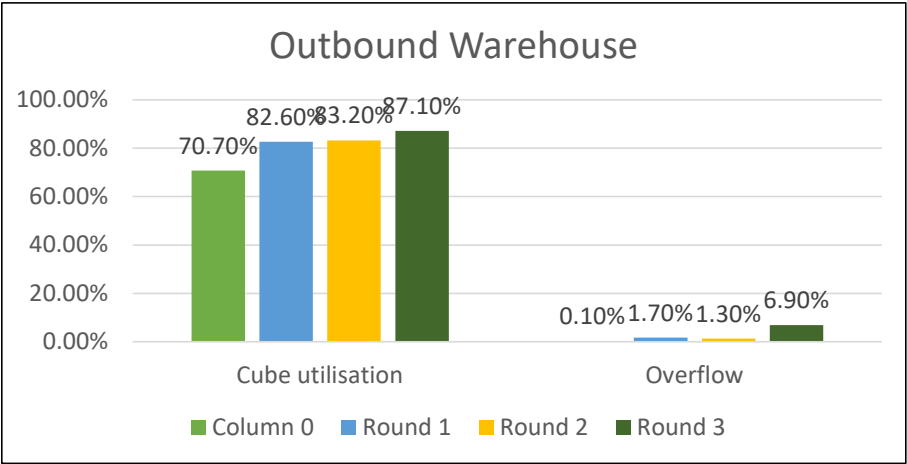
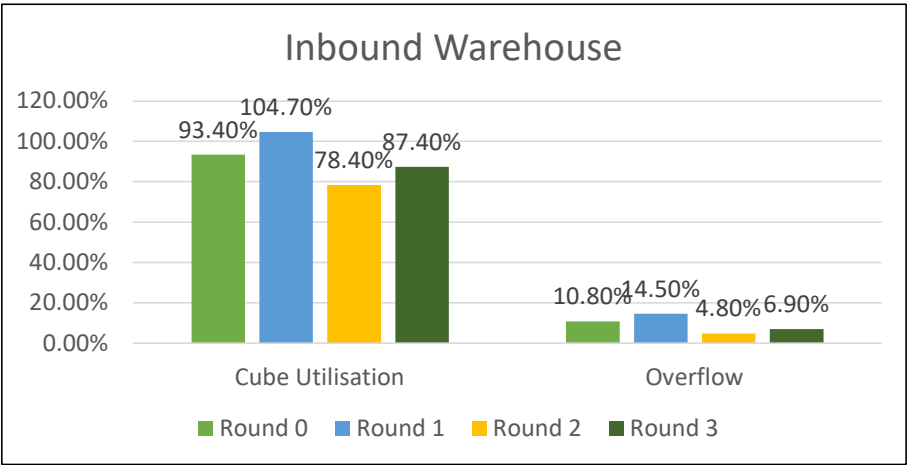
## Rejection Rate

Component	Round 2	Round 3
Pack 1 liter	3.7%	3.5%
Trio PET PLC	5.0%	3.8%
Miami Orange	0.9%	1.0%
NOD80 Mango	0.5%	0.5%
Seitan Vitamin C	0%	6.3%

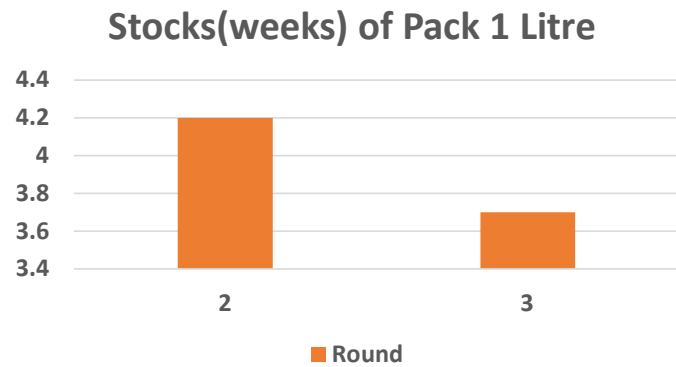
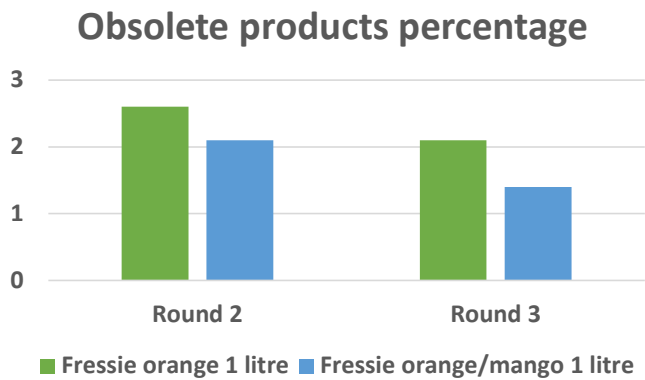
## Delivery Reliability

Component	Round 2	Round 3
Pack 1 litre	92.4%	92.6%
Trio PET PLC	73.6%	79%
Miami Orange	98.0%	98.2%
NOD80 Mango	93.40%	93.6%
Seitan Vitamin C	81.50%	94.0%

Observations(Round 2)	Proposed Actions(Round 3)	Impact(Round 3)
The raw material warehouse is relatively empty, with pallet locations open.	Increase pallet locations in raw material warehouse from <b>1050</b> to <b>1000</b> .	Cube utilisation increased from <b>78.4%</b> to <b>87.1%</b> , Overflow increased from <b>4.8%</b> to <b>6.9%</b> .
YoBoMa selected as new supplier for Vitamin C.	Raw material inspection for YoBoMa introduced.	Rejection rate for YoBoMa is <b>6.3%</b> .
Production interval of Fressie Orange 1L reduced from <b>10</b> to <b>7 days</b> and Fressie Orange/Mango 1L reduced from <b>10</b> to <b>8 days</b> .	Increase pallet locations in raw material warehouse from <b>1150</b> to <b>1100</b> .	Cube utilisation increased from <b>83.2%</b> to <b>87.1%</b> , Overflow increased from <b>1.3%</b> to <b>6.9%</b> .

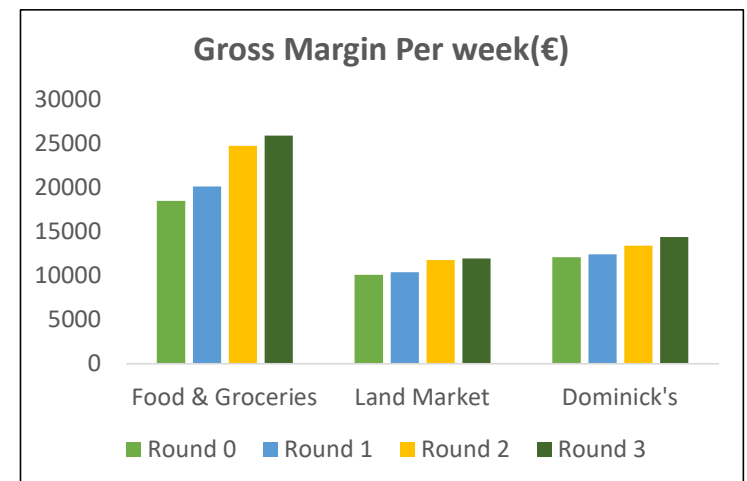
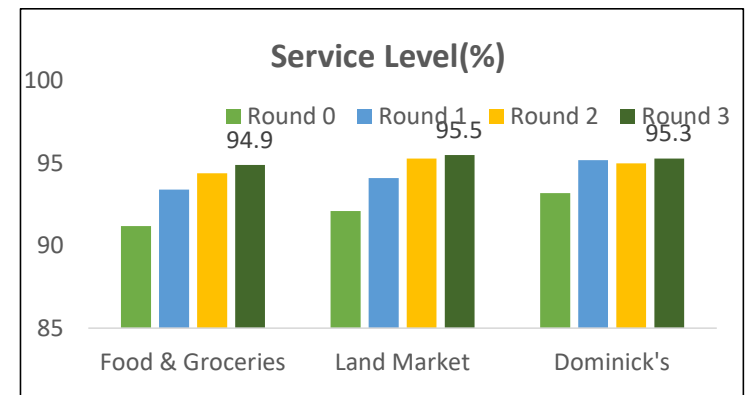
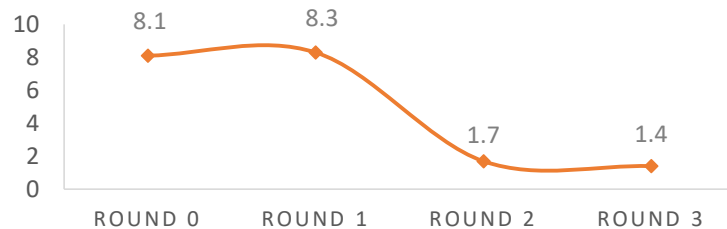


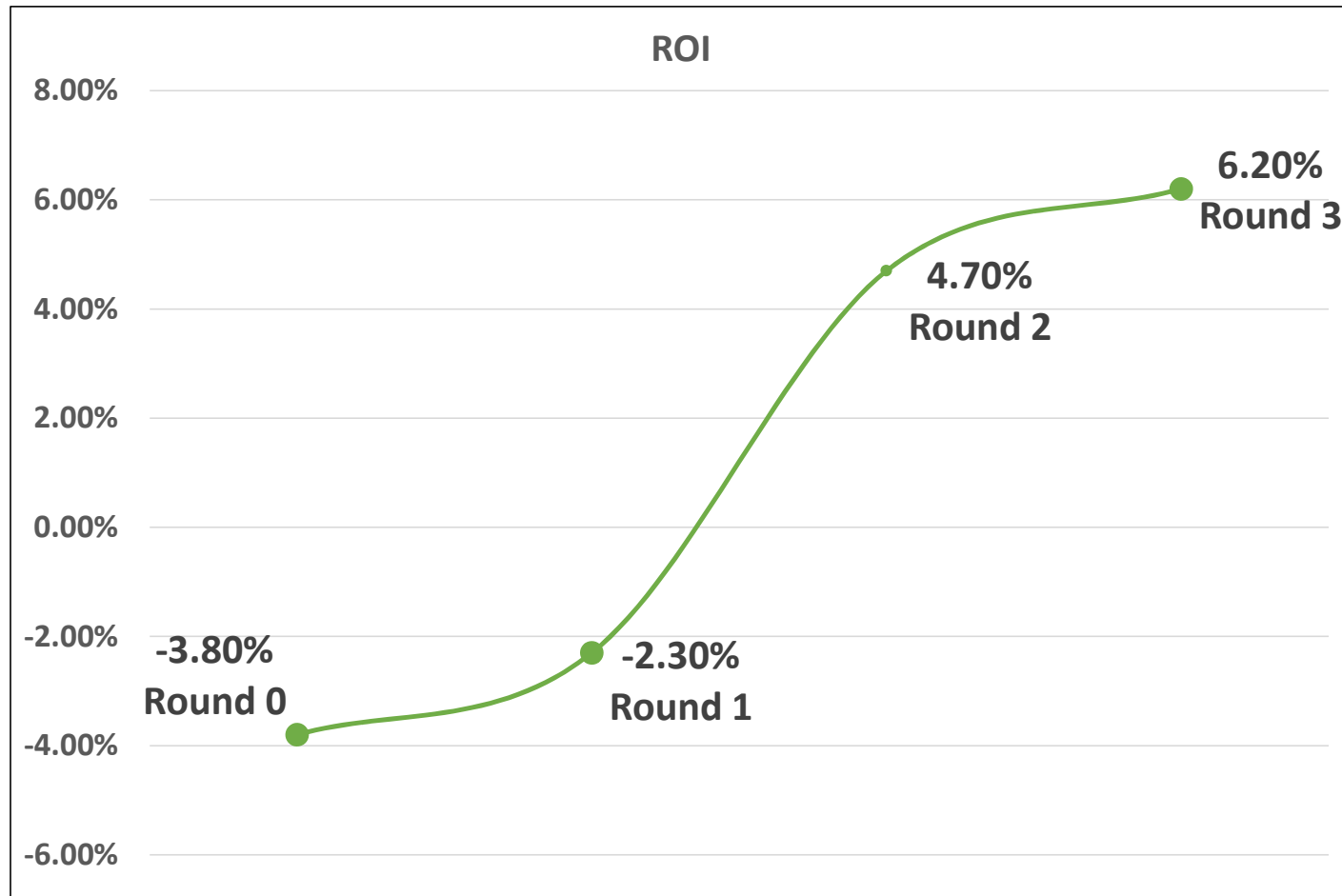
Observations	Proposed Actions	Impact
<ul style="list-style-type: none"><li>Pack 1 litre had higher level of stock. (components)</li></ul>	<ul style="list-style-type: none"><li>Reduced the safety stock of Pack 1 litre from <b>2</b> to <b>1.5</b> weeks.</li></ul>	<ul style="list-style-type: none"><li>Reduction in stock components from <b>4.2</b> to <b>3.7</b></li><li>Reduction in stock cost</li></ul>
<ul style="list-style-type: none"><li>High percentage of obsolete products (outbound)</li></ul>	<ul style="list-style-type: none"><li>Reduced the production interval of fressie orange 1 litre = 7 days</li><li>Reduced the production interval of fressie orange/mango 1 litre = 8 days</li></ul>	<ul style="list-style-type: none"><li>Reduction of obsolete products of fressie orange 1 litre from <b>2.6%</b> to <b>2.1%</b></li><li>Reduction of obsolete products of fressie orange/mango 1 litre from <b>2.1%</b> to <b>1.4%</b></li></ul>



Observations	Proposed Actions	Impact
<ul style="list-style-type: none"> <li>A lower service level than agreed to is being provided to Food &amp; Groceries.</li> </ul>	<ul style="list-style-type: none"> <li>The service level was kept constant at <b>95%</b> in accordance with other parameters.</li> </ul>	<ul style="list-style-type: none"> <li>Service Level increased by small margin of <b>0.5%</b>.</li> </ul>
<ul style="list-style-type: none"> <li>Production Interval for Fressie Orange and Fressie Mango was decreased.</li> </ul>	<ul style="list-style-type: none"> <li>Shelf life was increased only for Food and Groceries by <b>1%</b></li> </ul>	<ul style="list-style-type: none"> <li>Higher attained Shelf life of <b>87%</b> and Contract Index of <b>0.999</b> was achieved.</li> </ul>
<ul style="list-style-type: none"> <li>Customer Priority in case of shortage of products could be set.</li> </ul>	<ul style="list-style-type: none"> <li>Customer priority was set based on the level of highest demands.</li> </ul>	-

OBSOLETEs(%)





Observations	Proposed Action	Impact
The Rejection percentage for components supplied by supplier for Seitan Vitamin C is <b>(6.3%)</b>	The quality of products supplied by supplier was changed from poor to high	Rejection of Trio PET PLC has decreased to <b>3.1%</b> .
The delivery reliability of Trio PET PLC was less than the agreed reliability.	The supplier was changed to Plantin PET	Delivery reliability for PET increased from <b>79%</b> to <b>94.2%</b> .

## Rejection Rate

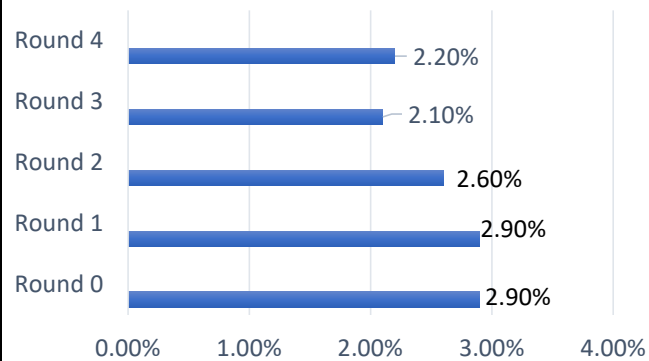
Component	Round 2	Round 3	Round 4
Pack 1 liter	3.7%	3.5%	3.6%
PET	5.0%	3.8%	3.8%
Miami Orange	0.9%	1.0%	1.0%
NOD80 Mango	0.5%	0.5%	0.4%
Seitan Vitamin C	0%	6.3%	3.1%

## Delivery Reliability

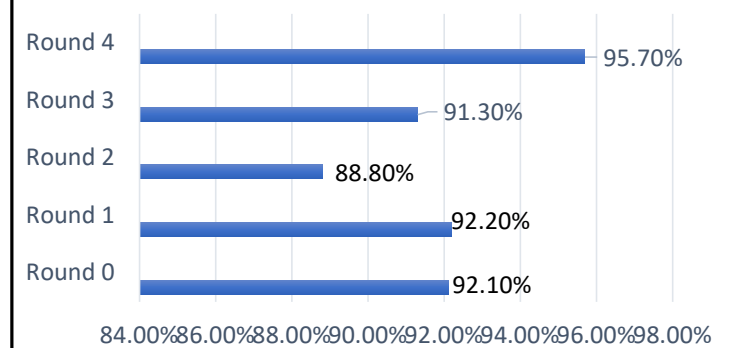
Component	Round 2	Round 3	Round 4
Pack 1 litre	92.4%	92.6%	92.7%
PET	73.6%	79%	94.2%
Miami Orange	98.0%	98.2%	98%
NOD80 Mango	93.40%	93.6%	93.6%
Seitan Vitamin C	81.50%	94.0%	93.8%



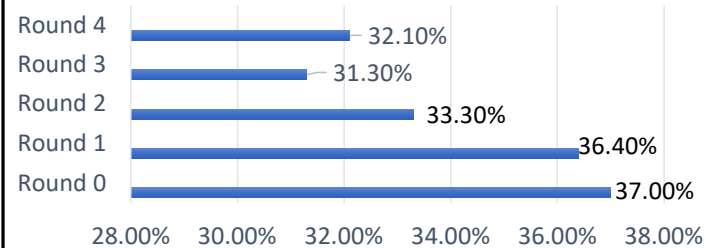
### Rejection Components(%)



### Delivery Reliability(%)

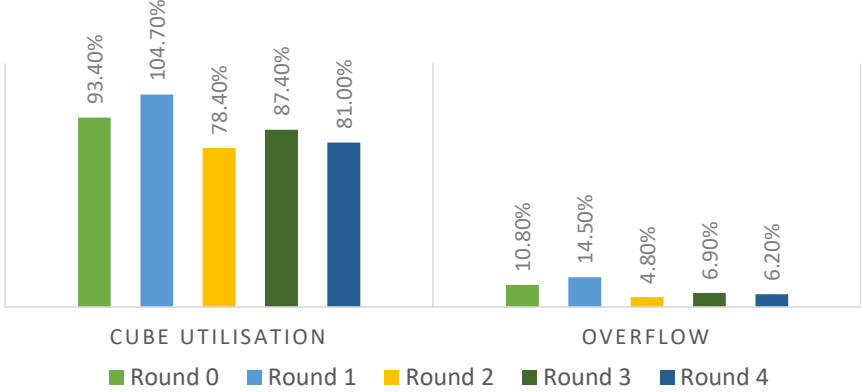


### Raw Material Costs(%)

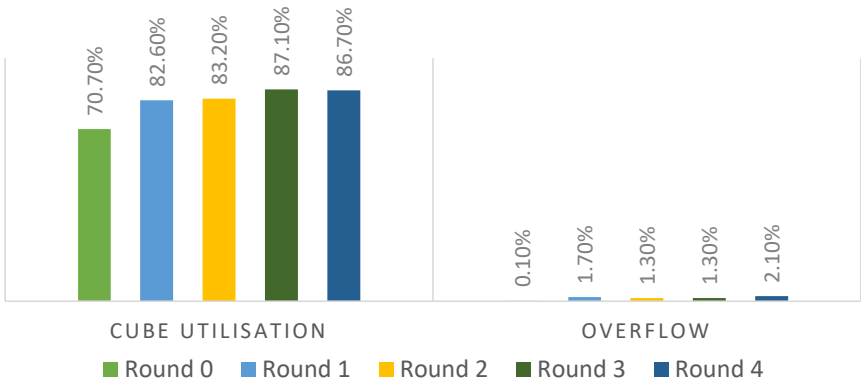


Observations(Round 3)	Proposed Actions(Round 4)	Impact(Round 4)
Reduced lot size of Mango from <b>4 to 3 weeks</b> and PET from <b>4 to 3.5 weeks</b> .	Increase pallet locations in raw material warehouse from <b>1000 to 950</b> .	Cube utilisation decreased from <b>87.1% to 81%</b> , Overflow decreased from <b>6.9% to 6.2%</b> .
Production interval of Fressie Orange/C-power 1 liter, Fressie Orange PET, Fressie Orange/Mango PET and Fressie Orange/C-power PET reduced from <b>10 to 7 days</b> .	Increase pallet locations in raw material warehouse from <b>1100 to 1030</b> .	Cube utilisation increased from <b>87.1%, to 86.7%</b> . Overflow increased from <b>1.3% to 2.1%</b> .

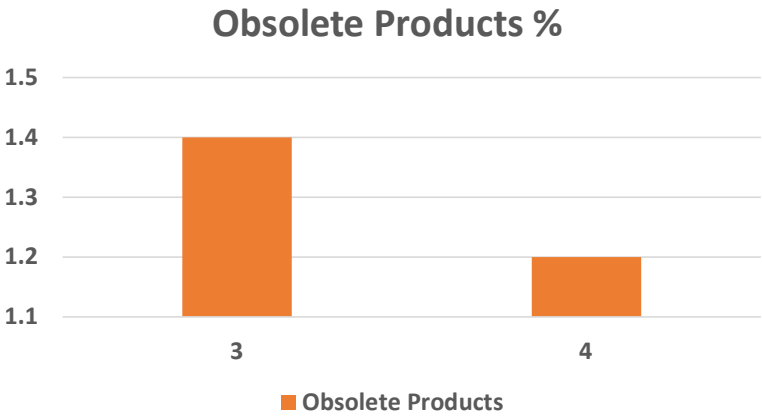
### INBOUND WAREHOUSE



### OUTBOUND WAREHOUSE



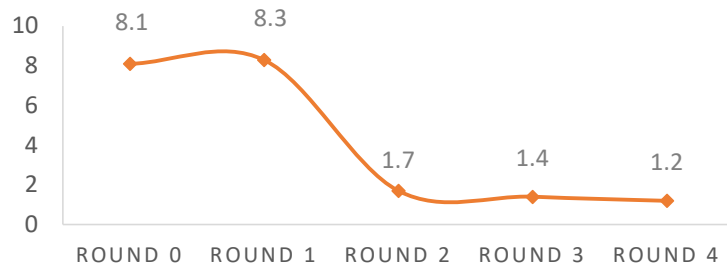
Observations	Proposed Actions	Impact
<ul style="list-style-type: none"><li>High level of availability of components for production</li></ul>	<ul style="list-style-type: none"><li>Reduced the lot size of mango from 4 to 3 weeks.</li><li>Reduced the lot size of PET from 4 to 3.5 weeks.</li></ul>	<ul style="list-style-type: none"><li>Slight reduction in availability of components of 0.5% (not a big impact)</li></ul>
<ul style="list-style-type: none"><li>High percentage of obsolete products (outbound)</li></ul>	<ul style="list-style-type: none"><li>Reduced the production interval of Fressie orange/ C-power 1 litre Fressie Orange PET Fressie Orange/Mango PET Fressie Orange/ C-power PET } 7 days</li><li>Reduced the frozen period to 2 weeks</li></ul>	<ul style="list-style-type: none"><li>Reduction in Obsoletes percentage of respective products.</li></ul>



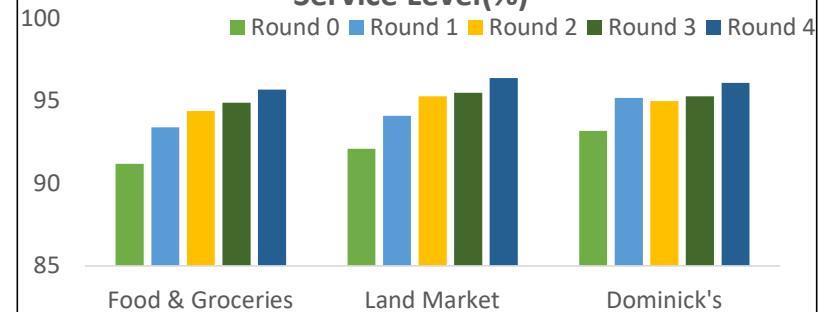
Observations	Proposed Actions	Impact
<ul style="list-style-type: none"> <li>Production Interval for all the products were decreased and frozen period was decreased.</li> </ul>	<ul style="list-style-type: none"> <li>The shelf life was increased for Dominick's by <b>2%</b>.</li> </ul>	<ul style="list-style-type: none"> <li>Better Contract Index and service level of <b>96.1 %</b> was achieved for Dominicks.</li> </ul>
<ul style="list-style-type: none"> <li>Fressie Orange/C-power PET had a bias of <b>-0.2%</b>.</li> </ul>	<ul style="list-style-type: none"> <li>The forecast for the weekly demand for the respective product was increased by <b>5%</b></li> </ul>	<ul style="list-style-type: none"> <li>The Obsoletes increased from <b>0.8% to 1.5%</b>.</li> </ul>

Customer	Criteria	Round 3	Round 4
Food & Groceries	Service Level(%)	<b>94.9</b>	<b>95.7</b>
	Shell Life(%)	<b>87</b>	<b>87</b>
	Contract Index	<b>0.999</b>	<b>1.003</b>
LAND Market	Service Level(%)	<b>95.5</b>	<b>96.4</b>
	Shell Life(%)	<b>86.6</b>	<b>86.6</b>
	Contract Index	<b>0.949</b>	<b>0.951</b>
Dominicks's	Service Level(%)	<b>95.3</b>	<b>96.1</b>
	Shell Life(%)	<b>87.1</b>	<b>87.2</b>
	Contract Index	<b>1.006</b>	<b>1.013</b>

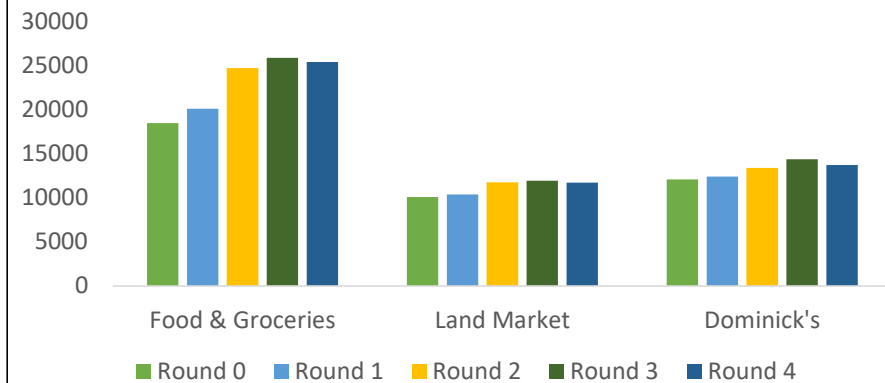
## OBSOLETES(%)



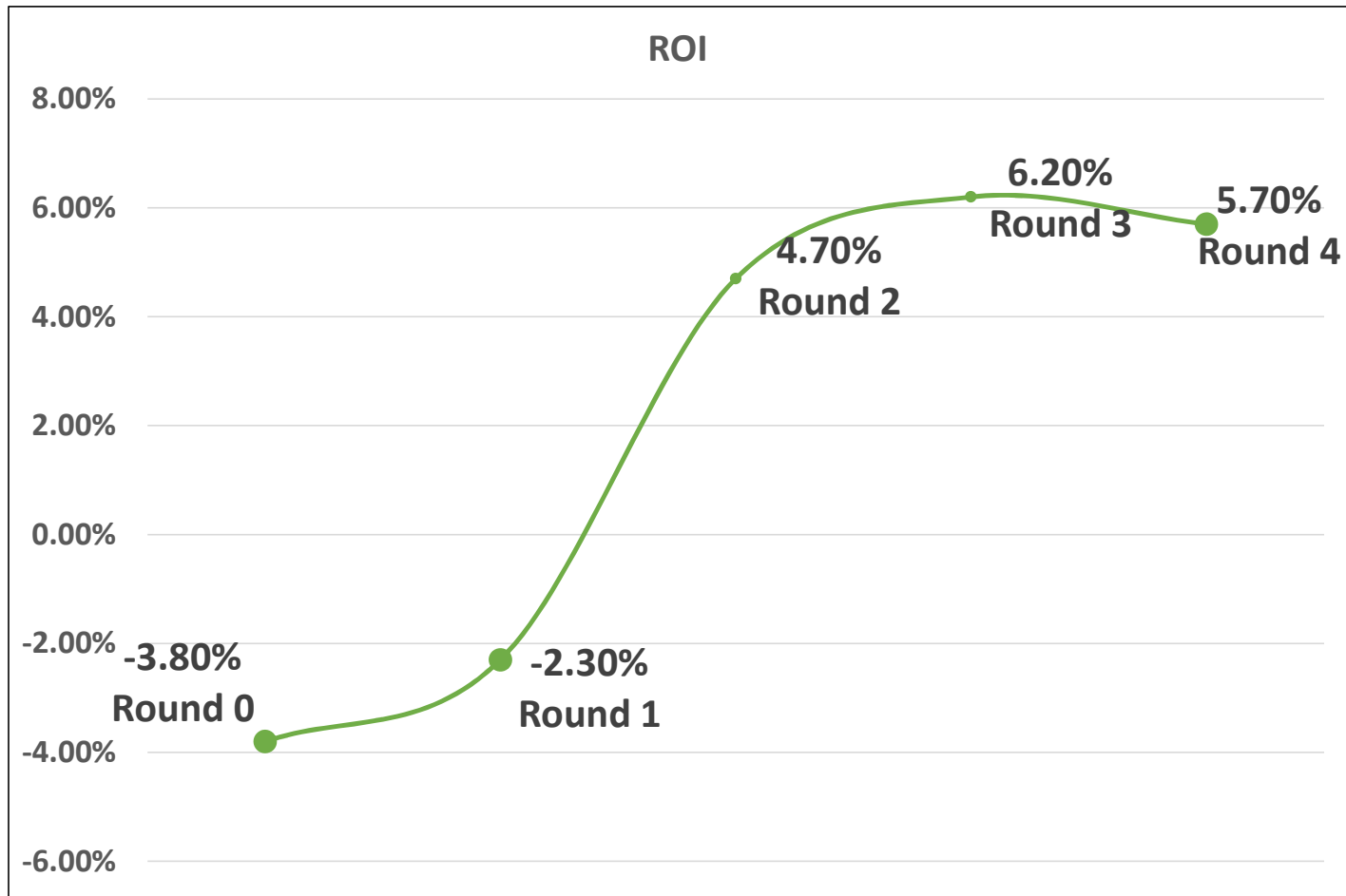
## Service Level(%)



## Gross Margin Per week(€)



The Gross Margin Per Week(€) was decreased from round 3 to round 4



# CONCLUSION

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# THANK YOU

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