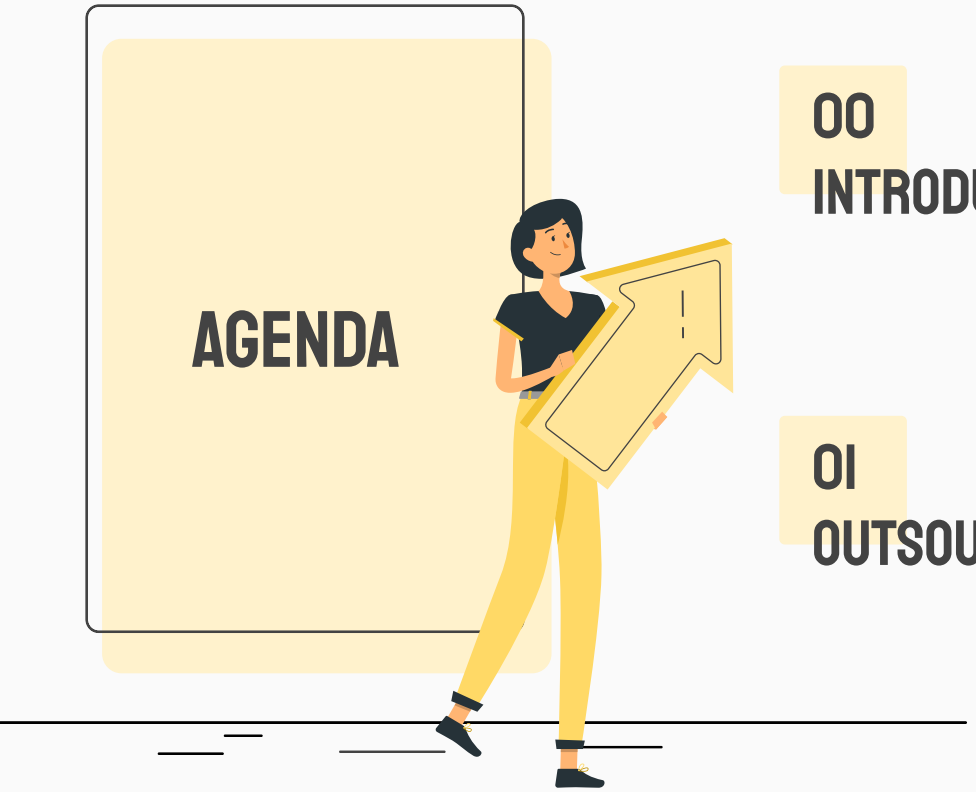
VEIZENBURG APPAREL FLEXIBILITY

Presented by Jiaxin Du, Xinzhi He, Jianxin Liu, Sam Ronasi, Shihan Wang

AGENDA



00 INTRODUCTION

01 OUTSOURCING

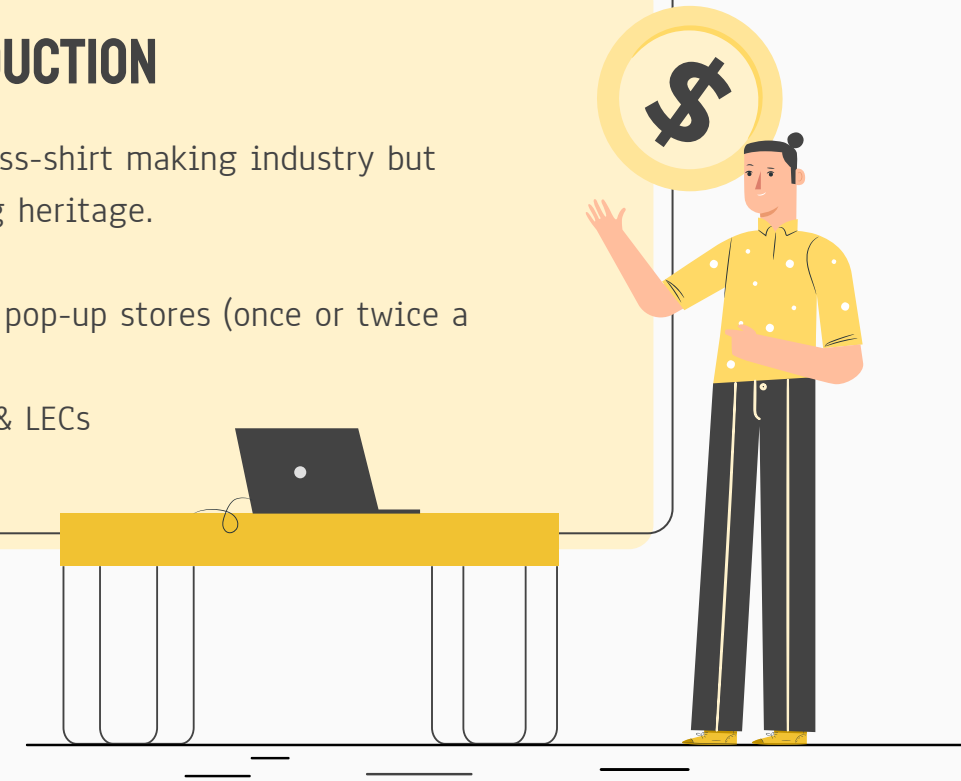
02 NEAR SOURCING

03 FLEXIBILITY

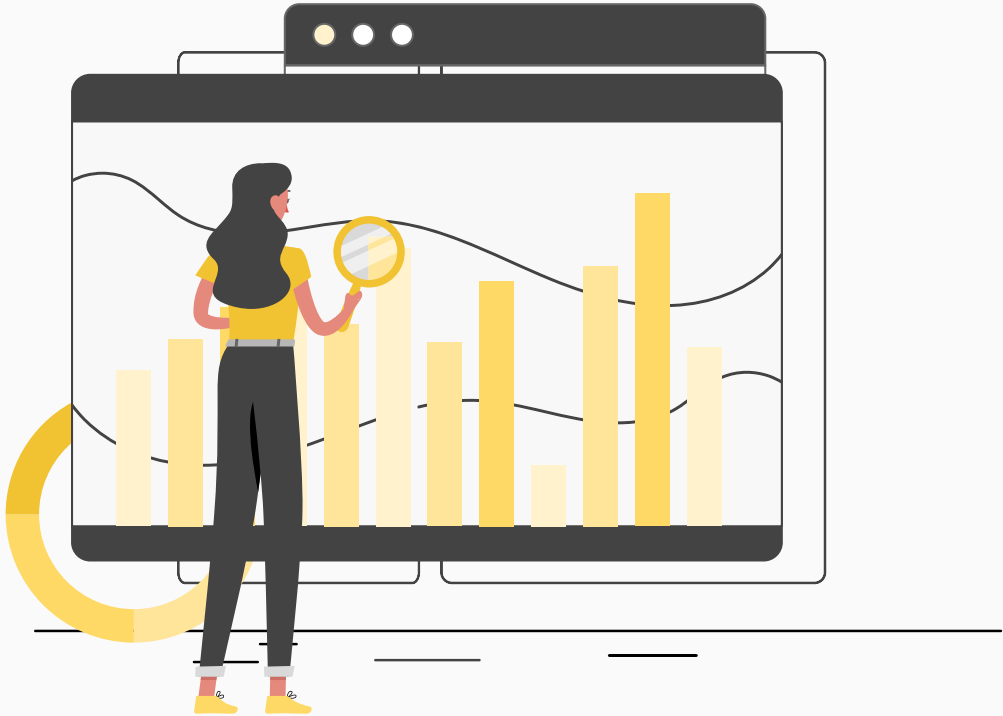
04 RECOMMENDATIONS

INTRODUCTION

- Veizenburg is new to the dress-shirt making industry but has a distinguished tailoring heritage.
- Quality & Craftsmanship
- Online store opened at 2011; pop-up stores (once or twice a year)
- 2 product lines: must-haves & LECs



01.
OUTSOURCING MODEL



OUTSOURCING: ADVANTAGES VS DISADVANTAGES

MONEY-SAVING

$65/shirt

TIME-CONSUMING

3-week period

MADE IN EUROPE

Prefered by markets

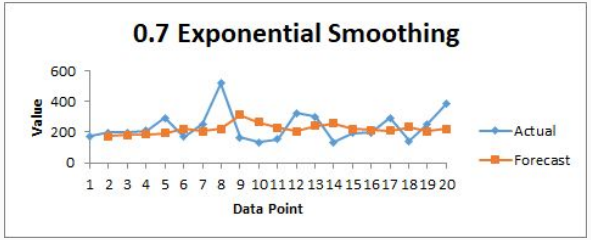
UNSTABLE POLITICAL SITUATION

Erratic local regulation

FORECAST THE DEMAND OF UPCOMING LEC

LEC ID	Units Sold		0.7 smooth	MAE
1	173		#N/A	
2	196		173	23
3	195		179.9	15.1
4	210		184.43	25.57
5	291		192.101	98.899
6	170		221.7707	51.7707
7	252		206.23949	45.76051
8	520		219.967643	300.032357
9	164		309.9773501	145.9773501
10	135		266.1841451	131.1841451
11	153		226.8289015	73.82890155
12	322		204.6802311	117.3197689
13	298		239.8761618	58.12383824
14	133		257.3133132	124.3133132
15	192		220.0193193	28.01931926
16	198		211.6135235	13.61352348
20	291		207.5294664	83.47053356
21	143		232.5706265	89.57062651
22	253		205.6994386	47.30056145
23	385		219.889607	165.110393
			269.42272	
Average per LEC	233.7			
MAE for 21 days				86.208676

15	192
16	198
17	991
18	1244
19	855
20	291
21	143

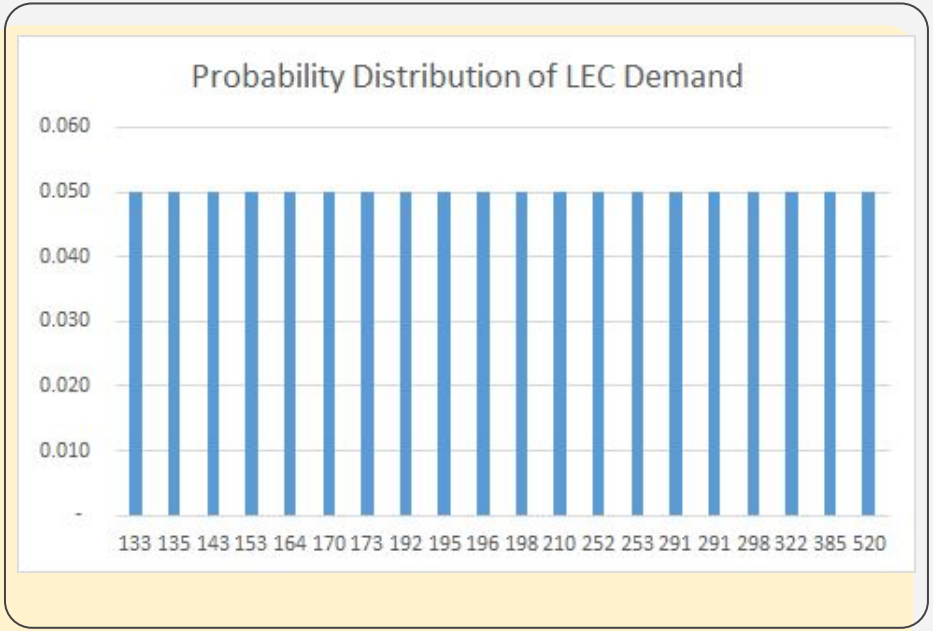


DEMAND = 270

ALL DATA VS
REMOVE OUTLIERS

MOVING AVERAGE VS
EXPONENTIAL SMOOTHING

NEWSVENDOR MODEL



- Single Period
- One chance to order
- End-of-season inventory must be disposed or salvaged
- Demand is characterized by a probability distribution

Demand	P(D = Q)	P (D <=Q)
133	0.050	0.050
135	0.050	0.100
143	0.050	0.150
153	0.050	0.200
164	0.050	0.250
170	0.050	0.300
173	0.050	0.350
192	0.050	0.400
195	0.050	0.450
196	0.050	0.500
198	0.050	0.550
210	0.050	0.600
252	0.050	0.650
253	0.050	0.700
291	0.050	0.750

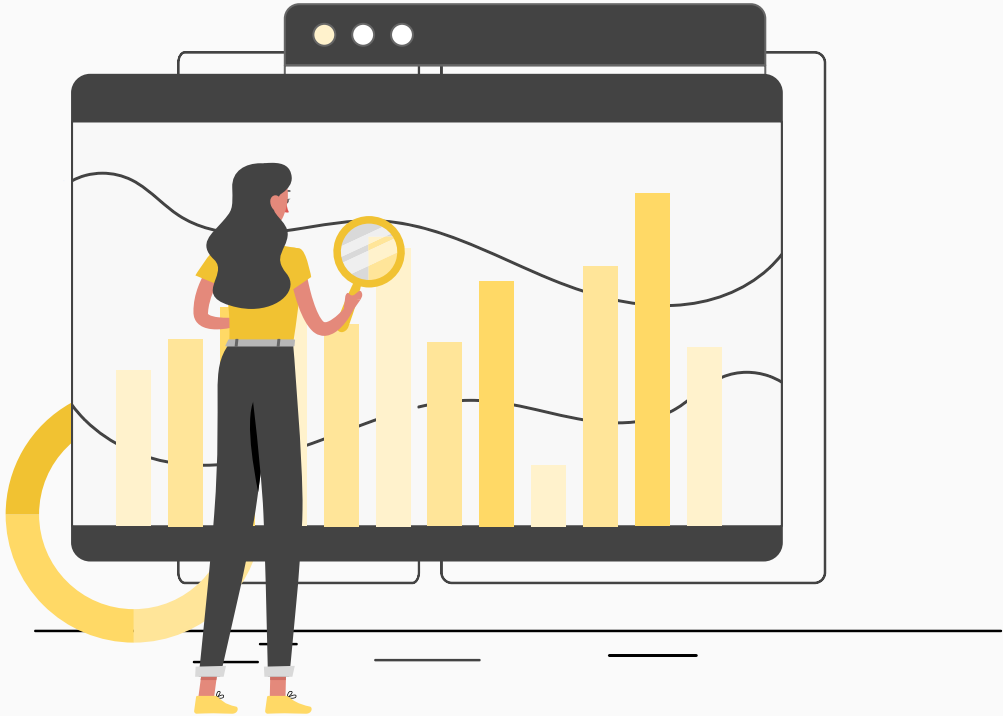
OPTIMAL ORDER QUANTITY

- Overage Cost: 65 *
- Underage Cost: 202.5 - 65 = 137.5
- Choose the smallest Q such that $C_U/(C_U + C_o) \leq P(D \leq Q)$
- $C_U/(C_U + C_o) = 0.679$

Q= 253

*Assuming no discount promotion to keep brand image

02. NEAR SOURCING MODEL

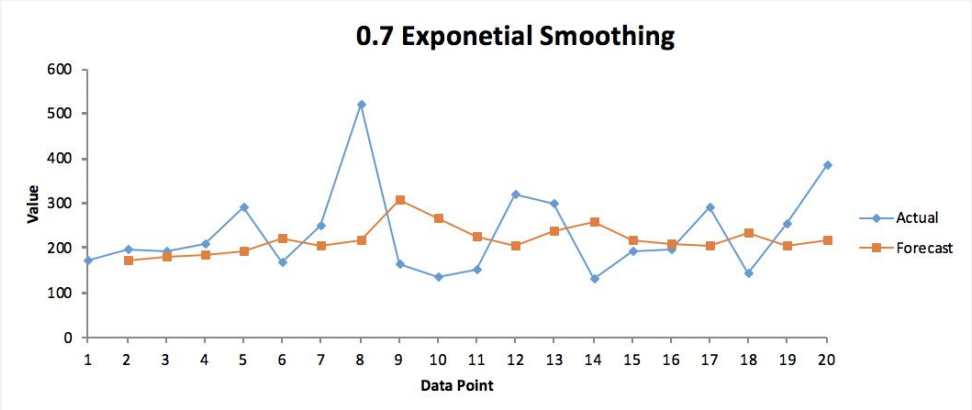


LEC ID	Units Sold		0.7 smooth	MAE
1	173		#N/A	
2	196		173	23
3	195		179.9	15.1
4	210		184.43	25.57
5	291		192.101	98.899
6	170		221.7707	51.7707
7	252		206.23949	45.76051
8	520		219.967643	300.032357
9	164		309.9773501	145.9773501
10	135		266.1841451	131.1841451
11	153		226.8289015	73.82890155
12	322		204.6802311	117.3197689
13	298		239.8761618	58.12383824
14	133		257.3133132	124.3133132
15	192		220.0193193	28.01931926
16	198		211.6135235	13.61352348
20	291		207.5294664	83.47053356
21	143		232.5706265	89.57062651
22	253		205.6994386	47.30056145
23	385		219.889607	165.110393
			269.42272	
Average per LEC	233.7			
MAE for 21 days				86.208676

PREDICTION PROCESS

- Exponential Smoothing
- Alpha = 0.7
- MAE = 86.21

Q= 270



IDEAL CASE

	LEC Demend	270	23	Number of days sold
Initial Inventory	84		12	Daily average demand

Day	Inventory	New produced	Sold	Remaining inventory
1	84	12	12	72
2	84	12	12	72
3	84	12	12	72
4	84	12	12	72
5	84	12	12	72
6	84	12	12	72
7	84	12	12	72
8	84	12	12	72
9	84	12	12	72
10	84	12	12	72
11	84	12	12	72
12	84	12	12	72
13	84	12	12	72
14	84	12	12	72
15	84	12	12	72
16	84		12	72
17	72		12	60
18	60		12	48
19	48		12	36
20	36		12	24
21	24		12	12
22	12		12	0

State Dependence

- Today's demand is very correlated with tomorrow's demand

REALISTIC CASE

Option 1:

- Order the highest capacity of local sourcing for 2 weeks
- Continuous review of demand and inventory
- Using moving average forecasting (2 or 3 days) to predict the following day demand

Option 2:

- Order the highest capacity of local sourcing for 1 weeks
- Continuous review of demand and inventory
- Place maximum order number (12) whenever Demand is higher than 12
- Place order equal to demand whenever Demand is less than 12

LOCAL SOURCING: ADVANTAGES VS DISADVANTAGES

HIGHER COST

$95/shirt

QUICK LEAD TIME

1 day

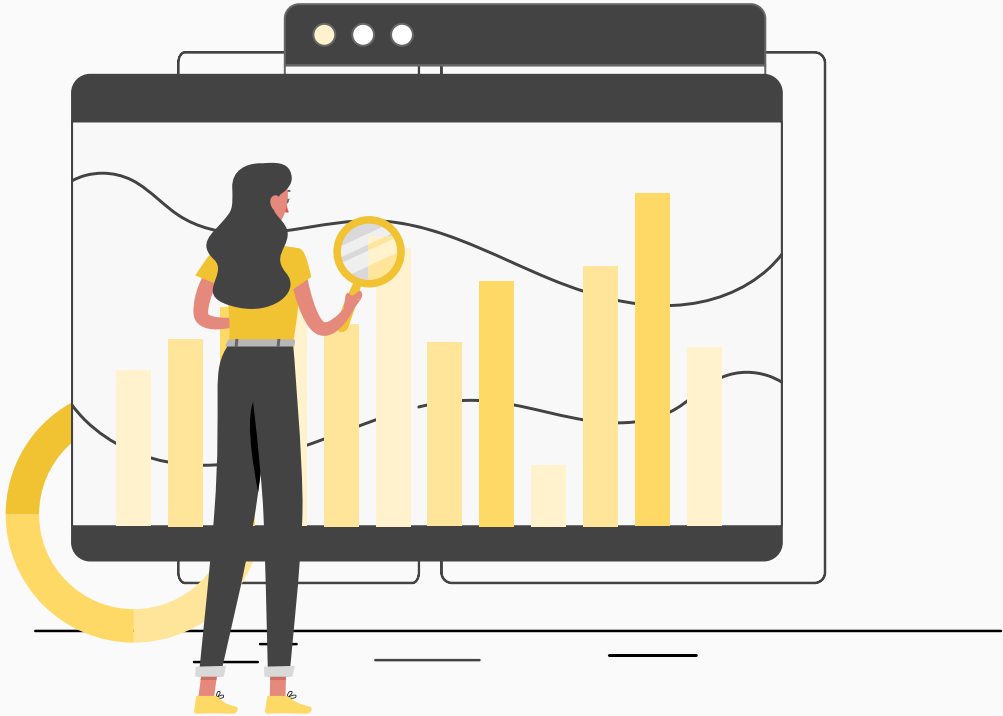
CAPACITY

12 / Day

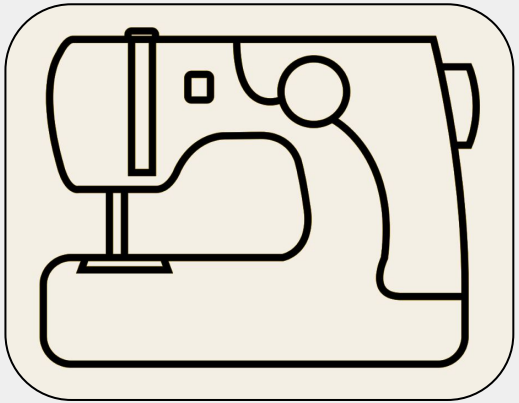
CONTROL ON QUALITY

Easier to fix

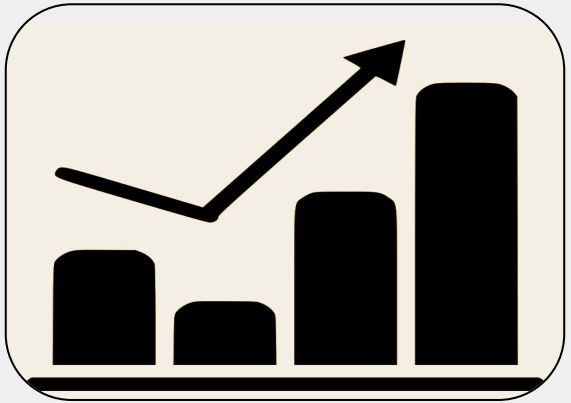
03.
FLEXIBILITY MODEL



FLEXIBILITY: ADVANTAGES VS DISADVANTAGES



- Take advantage of local manufacturing to meet the spark demand



- Require complicated sourcing calculation

PREDICTION PROCESS

Demand	P(D = Q)	P (D <=Q)
133	0.050	0.050
135	0.050	0.100
143	0.050	0.150
153	0.050	0.200
164	0.050	0.250
170	0.050	0.300
173	0.050	0.350
192	0.050	0.400
195	0.050	0.450
196	0.050	0.500
198	0.050	0.550
210	0.050	0.600
252	0.050	0.650
253	0.050	0.700
291	0.050	0.750

- Overage Cost: 65
- Underage Cost: 202.5 - 95 = 107.5
- Choose the smallest Q such that

$C_U/(C_U + C_o) \leq P(D \leq Q)$

Q= 252

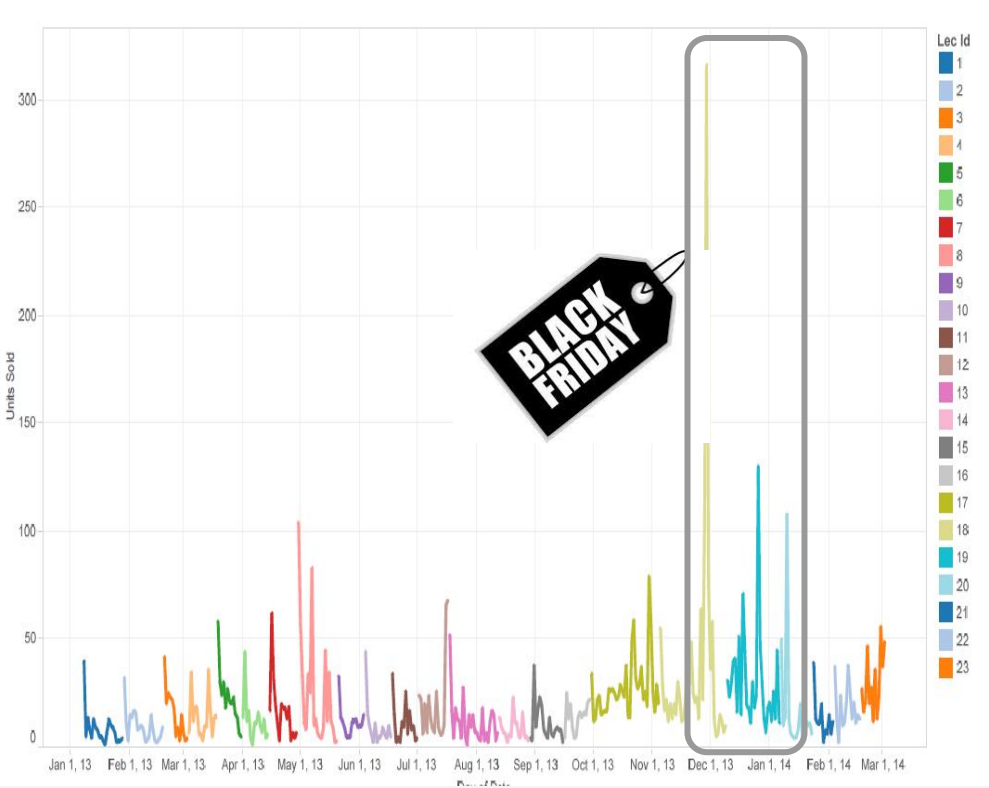
252 Outsourcing

\+ Local Sourcing

SEASONAL CONSIDERATION

- Holiday & Seasonal Shopping Trends
- Regarded as Outlier for normal season forecast
- Special Forecast method applied
  - Previously seasonal sales
  - Smoothing factors

Prev-year Sales * increasing factor



TRADE-OFF

Maintain a brand prestige v.s.

High cost

Quick Response v.s. Consider

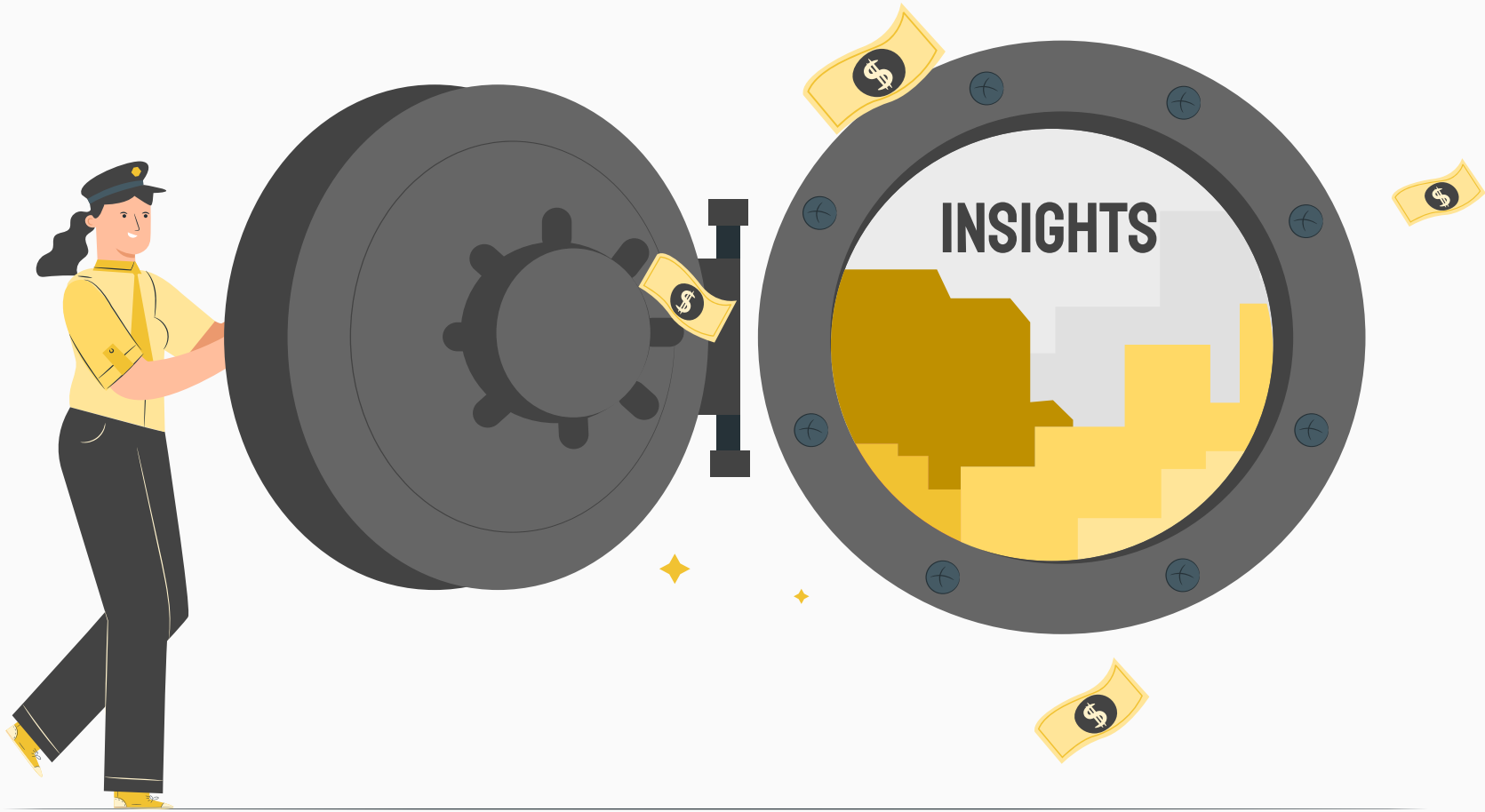
building more factories

Flexible v.s.

Require more dedicated forecasting

Long-term sustainability

Flexibility Sourcing


INSIGHTS

CONCLUSIONS

01 OUTSOURCING

253 * (202.5 - 65) =

34,788

02 NEAR SOURCING

270 * (202.5 - 95) =

29,025

03 FLEXIBILITY

252 * (202.5 - 65) =
34,650

(270 - 252) * (202.5 - 95) =
1,935

34,650 + 1,935 =
36,858

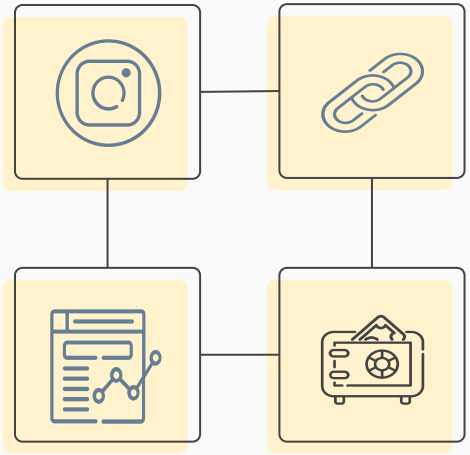
RECOMMENDATIONS

UTILIZE SOCIAL MEDIA

Release a lookbook on social media before LEC launching to understand customer taste in advance

MONITOR ONLINE TRAFFIC

Track some website traffic metrics , for example Average Time on Site and Bounce Rate



INVENTORY MANAGEMENT SYSTEM

Consider using a inventory management system to make the inventory operation more efficiently

BUILD ANOTHER PRODUCTION PLANT

Satisfy the uncertain demand and backup for any emergency occurring to the current local sourcing

COMPETITIVE EDGE

Brand Image and Reputation

- Sustaining brand's status as an icon of wealth and success
- Staying true to brand image will heighten customer loyalty

Flexibility

- Ensure enough flexibility to meet the diversity of the market demand

Profitability

- Optimized cost structure to maximize the profit under all possible circumstance

Local Sourcing shift

- Climbing prices and disappointing quality from offshore suppliers are contributing to the shift
- Strategically positioned – both geographically and operationally in local sourcing increase speed to market and maintain a competitive edge.

THANKS

Q & A

ALTERNATIVE RESOURCES