

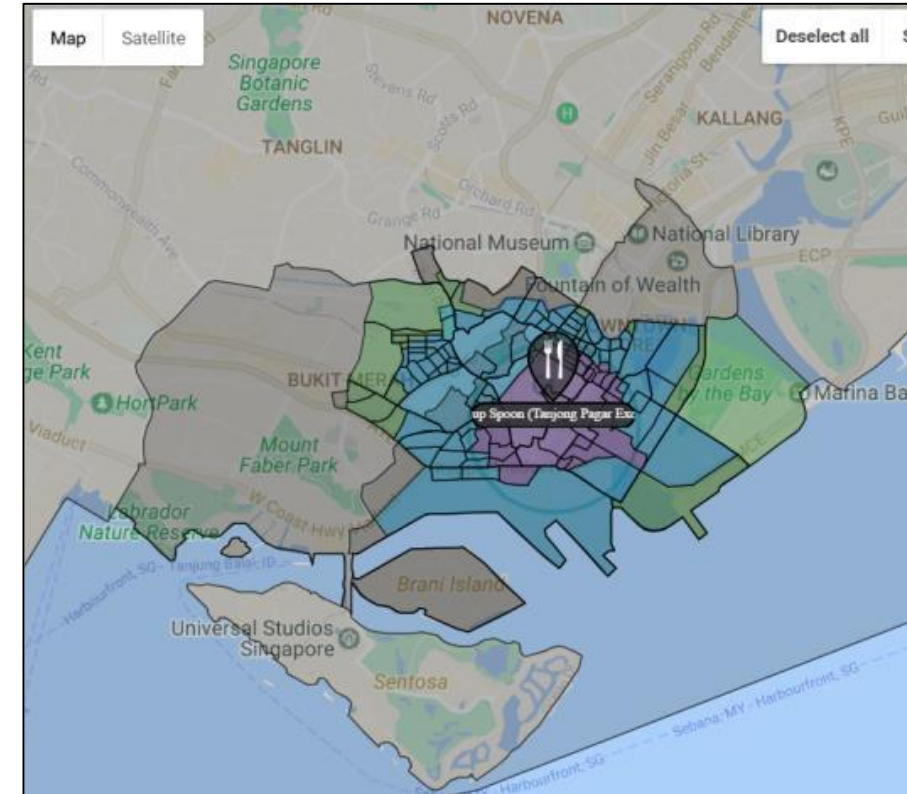
Delivery Polygon

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Reducing Delivery Polygon, but why?

- Not enough orders from the green zone to economically justify making deliveries into those areas.
- Further distance could result in shortage of riders to deliver to green zone on time, thus resulting in a domino effect of late deliveries.



Impact

Order Volume

- Smaller customer pool could lead to decrease
- Quicker delivery time could increase frequency of orders and more items per customer
- Can higher frequency and more items overcome the limitations of the smaller pool of potential customers?

Customer Experience

- Quicker Delivery = Fresher & Hotter Food?
- Results in higher ratings for restaurants
- Leads to increase in order frequency and no. of items



Assumptions

- As delivery time increases, order chance decreases
- Bigger delivery polygon means higher chance of later deliveries
- Reducing delivery polygon will reduce potential customer pool
- Traffic conditions do not affect delivery time
- Size of delivery area does not affect delivery time
- If Restaurant A is no longer in delivery polygon, Restaurant B and others can still cater to the affected customers.
- **1 in 3** customers will **refuse to order** from other restaurants
- Most customers will be alright to order from another restaurant

Approach

Tabulate from Scenario 1 to Scenario 2

- Scenario 1: All customers are alright to order from other restaurants
- 10% decreases
- Scenario 2: All customers refuse to order from other restaurants

Separate tables for Situation A & B

- Situation A: Some riders start leaving their jobs
- Situation B: None of the riders leave their jobs

Situation A

IF RIDERS RESIGN FROM FOODPANDA

Financials*:		Currently	Scenario 1	10%	20%	30%	40%	50%	60%	70%	80%	90%	Scenario 2
Current utilization rate (Total orders / total delivery hours): 3.00		3	4	4	4	4	4	4	4	4	4	4	4
Current average delivery time: 45 minutes	min	45	35	35	35	35	35	35	35	35	35	35	35
Current average monthly orders: 400,000		400,000	400,000	391,111	382,222	373,333	364,444	355,556	346,667	337,778	328,889	320,000	311,111
Amount paid to a rider per order: S\$5	\$	5	5	5	5	5	5	5	5	5	5	5	5
Amount paid to a rider per hour: S\$10	\$	10	10	10	10	10	10	10	10	10	10	10	10
*numbers do not reflect reality and are for case-purposes only													
Total Orders / No. of days in a month / No. of hours in a day = Total orders/hr for all restaurants in sg	\$	555.56	555.56	543.21	530.86	518.52	506.17	493.83	481.48	469.14	456.79	444.44	432.10
how much is a rider paid per day (8 hour shift)	\$	200	240	240	240	240	240	240	240	240	240	240	240
total delivery hours = total monthly orders / utilization rate	hours	133333.33	100000.00	97777.75	95555.50	93333.25	91111.00	88889.00	86666.75	84444.50	82222.25	80000.00	77777.75
total no. of riders = total delivery hours / no. of hours rider works per day	riders	16667	12500	12222	11944	11667	11389	11111	10833	10556	10278	10000	9722
total cost = no. of riders x cost per rider	\$	3,333,400	3,000,000	2,933,280	2,866,560	2,800,080	2,733,360	2,666,640	2,599,920	2,533,440	2,466,720	2,400,000	2,333,280
CHANGE IN RIDER PAY PER DAY	%	100%	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%
CHANGE IN TOTAL DELIVERY HOURS	%	100%	75%	73%	72%	70%	68%	67%	65%	63%	62%	60%	58%
CHANGE IN TOTAL NO. OF RIDERS	%	100%	75%	73%	72%	70%	68%	67%	65%	63%	62%	60%	58%
CHANGE IN TOTAL COST	%	100%	90%	88%	86%	84%	82%	80%	78%	76%	74%	72%	70%

Situation B

IF RIDERS DO NOT RESIGN FROM FOODPANDA

Financials*:		Currently	Scenario 1	10%	20%	30%	40%	50%	60%	70%	80%	90%	Scenario 2
Current utilization rate (Total orders / total delivery hours): 3.00		3	3	3	3	3	3	3	3	3	2	2	2
Current average delivery time: 45 minutes	min	45	35	35	35	35	35	35	35	35	35	35	35
Current average monthly orders: 400,000		400,000	400,000	391,111	382,222	373,333	364,444	355,556	346,667	337,778	328,889	320,000	311,111
Amount paid to a rider per order: S\$5	\$	5	5	5	5	5	5	5	5	5	5	5	5
Amount paid to a rider per hour: S\$10	\$	10	10	10	10	10	10	10	10	10	10	10	10
*numbers do not reflect reality and are for case-purposes only													
Total Orders / No. of days in a month / No. of hours in a day = Total orders/hr for all restaurants in sg	\$	555.56	555.56	543.21	530.86	518.52	506.17	493.83	481.48	469.14	456.79	444.44	432.0986111
how much is a rider paid per day (8 hour shift)	\$	200	200	200	200	200	200	200	200	200	160	160	160
total delivery hours = total monthly orders / utilization rate	hours	133333.33	133333.33	133333.33	133333.33	133333.33	133333.33	133333.33	133333.33	133333.33	133333.33	133333.33	133333.33
total no. of riders = total delivery hours / no. of hours rider works per day	riders	16667	16667	16667	16667	16667	16667	16667	16667	16667	16667	16667	16667
total cost = no. of riders x cost per rider	\$	3,333,400	3,333,400	3,333,400	3,333,400	3,333,400	3,333,400	3,333,400	3,333,400	3,333,400	2,666,720	2,666,720	2,666,720
CHANGE IN RIDER PAY PER DAY	%	100%	100%	100%	100%	100%	100%	100%	100%	100%	80%	80%	80%
CHANGE IN TOTAL DELIVERY HOURS	%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CHANGE IN TOTAL NO. OF RIDERS	%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CHANGE IN TOTAL COST	%	100%	100%	100%	100%	100%	100%	100%	100%	100%	80%	80%	80%



Situation A: @ 30% of Scenario 2

4

Higher Utilization Rate

120%

Riders Earn More

84%

Overall Cost Reduced

Situation B: @ 80% of Scenario 2

2

Lower Utilization Rate

80%

Riders Earn Less

80%

Overall Cost Reduced

THANK YOU

Observations & Conclusion

Situation A is a more likely outcome than Situation B as the higher utilization rate means that each rider can deliver more orders per hour.

As competition for orders increase, some riders may earn lesser thus preferring to leave.

1 in 3 customers may refuse to order from other restaurants hence the 30% column in Situation A seems like the most accurate representation of the outcome of reducing the delivery polygon.