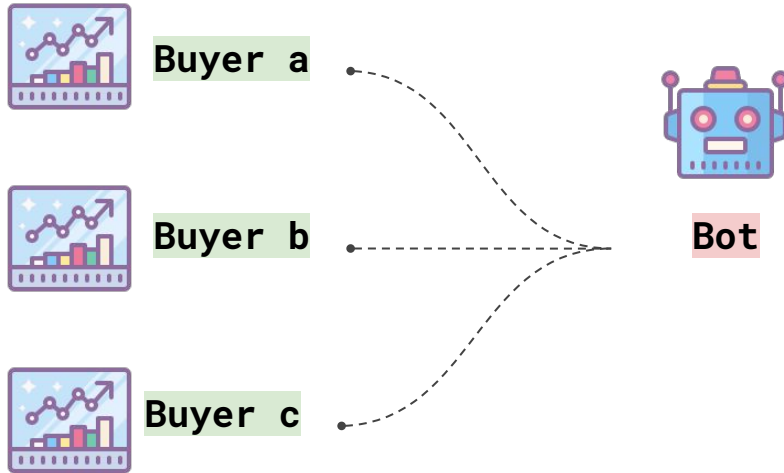


Optimize Yield GAM



Objective

- Prototyped bot with Machine Learning for learn buyer's behavior (Brands or Advertisers) and optimize yield (To find maximize revenue of publisher) with set **dynamic floor prices** based on brand's behavior
- Prototyped bot for applied suitable policy to brands
- Prototyped bot learn calendar day effect

Agenda 1.0 optimize yield GAM

1. Exploring Data Analysis of Ad
Exchange Report for optimize yield

2. Using Bid-Range data to determine
the right floor prices

Config

```
# Ad Exchange historical
Transaction types: Open auction
Pricing rules: Topcomment2_local
Countries: Thailand
```

1. Exploring Data Analysis of Ad Exchange Report for optimize yield

Pricing Rule: Topcomment2_local

last 30 days (Mar 6, 2019 - Apr 4, 2019)

(a.) Dimensions

Time

Days

Targeting

Ad locations

- Branding types

Buyers

Advertiser verticals

Ad requests

- # Bid landscapes
(* Floor price)

Active view?

(b.) Metrics

numerical

- Estimated revenue (THB)

CPC (THB)

Clicks

Ad requests

Ad request eCPM (THB)

Ad impressions

- Ad eCPM (THB)

Matched requests

Matched eCPM (THB)

percent

Coverage

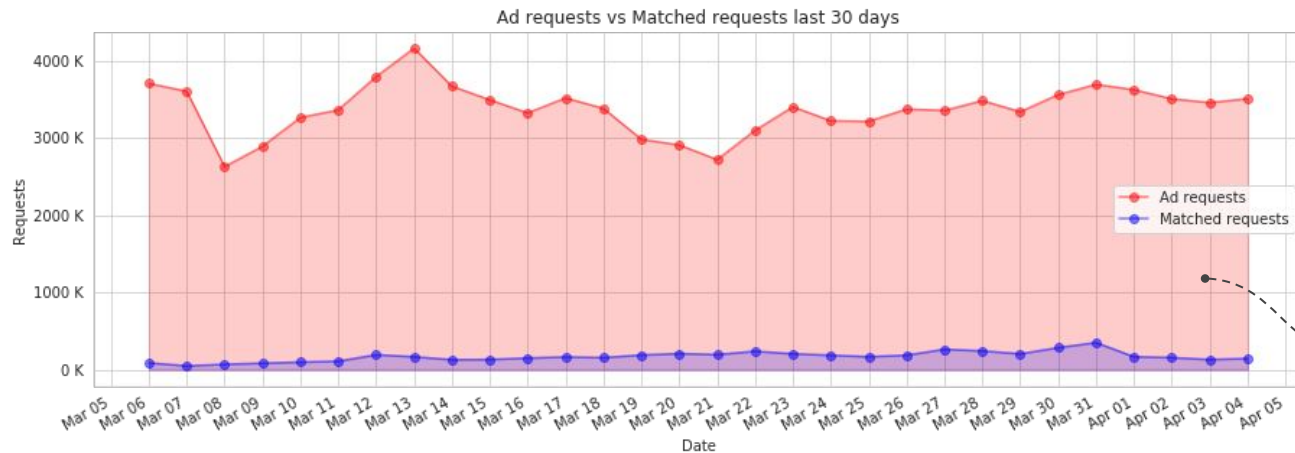
Ad request CTR

Ad CTR

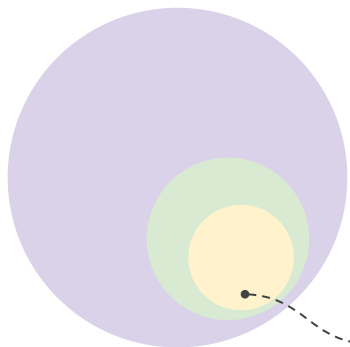
CTR

Lift

Dimensions: #Time



Big Gap!
(% less Coverage)



last 30 days

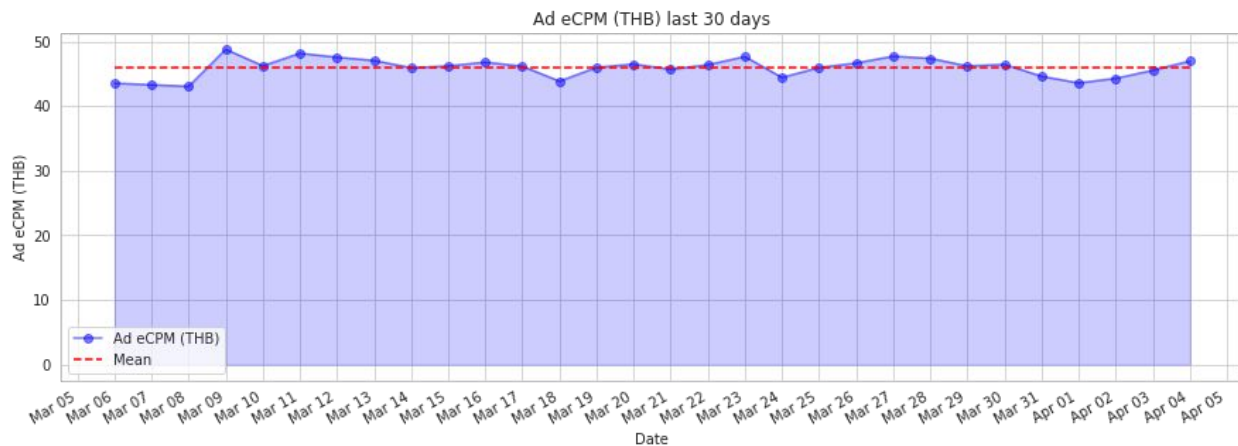
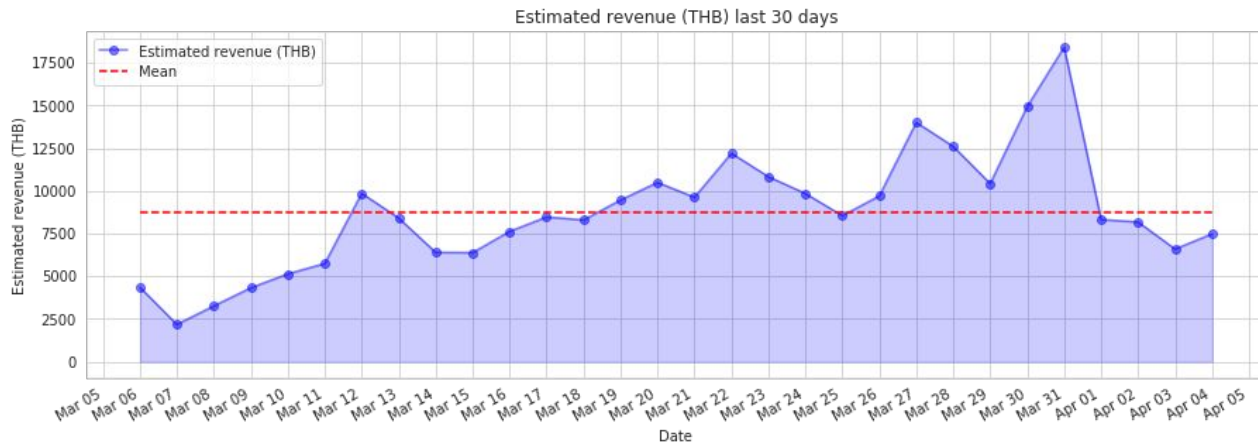
Ad Requests 100%

Matched Requests 5.03%

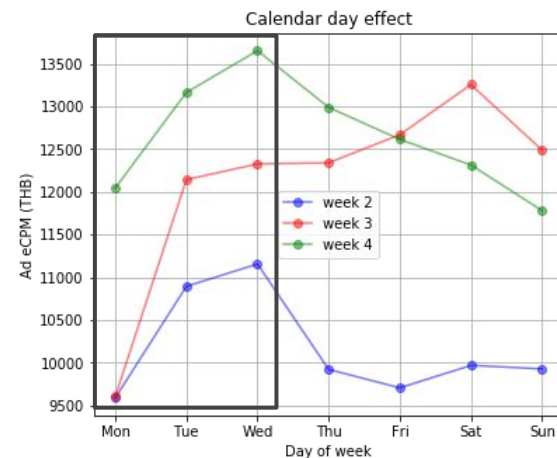
Ad Impressions 4.78%

Dimensions: #Time

CPM = Revenue per one thousand impressions



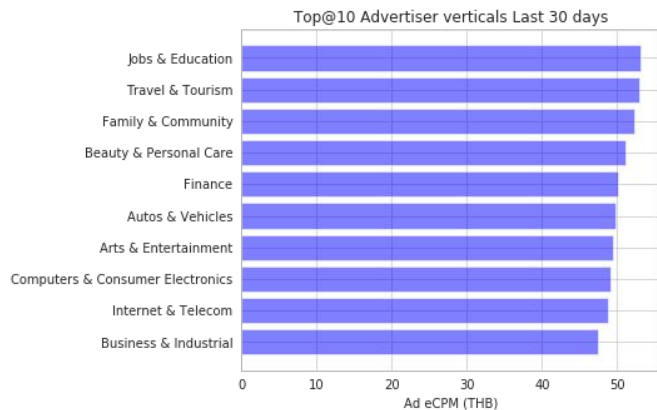
Wednesday Trending ?



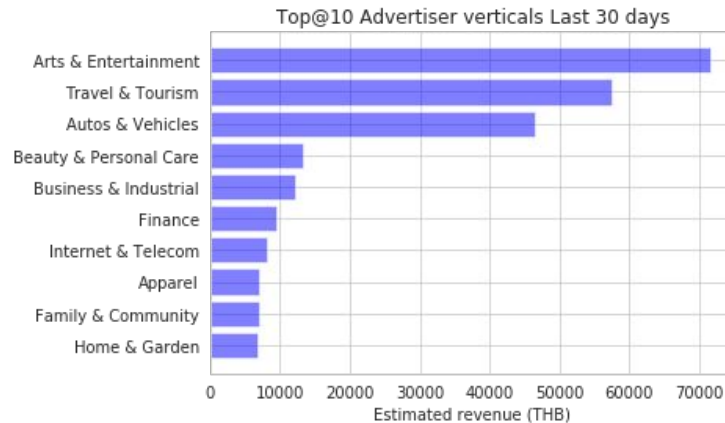
Dimensions: #Targeting, #Buyers

CPM = Revenue per one thousand impressions

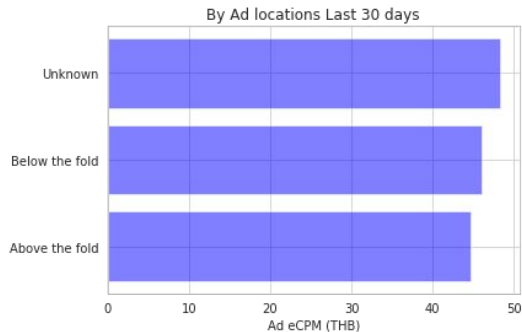
A. Advertiser verticals (Ad eCPM)



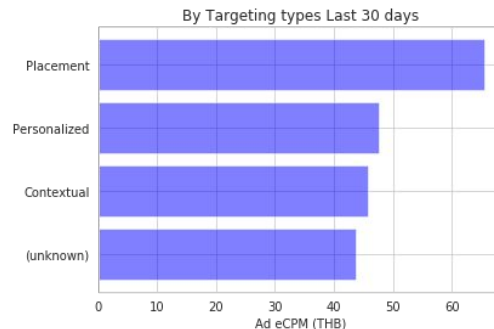
B. Advertiser verticals (Estimated revenue)



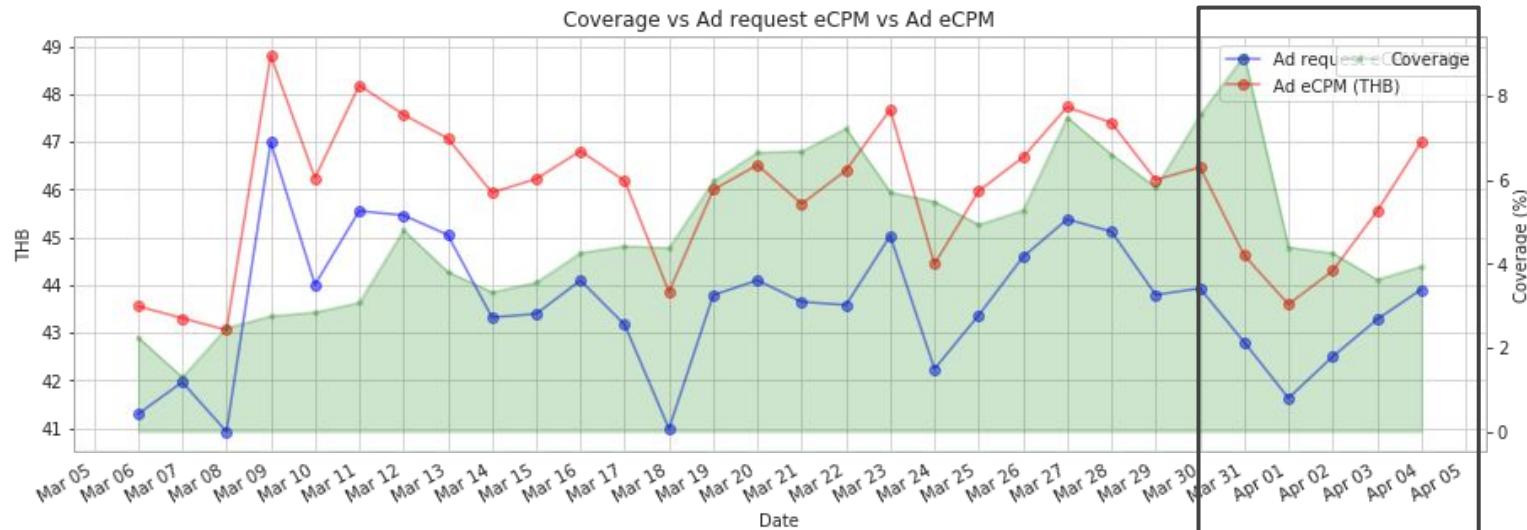
C. Ad locations



D. Targeting types

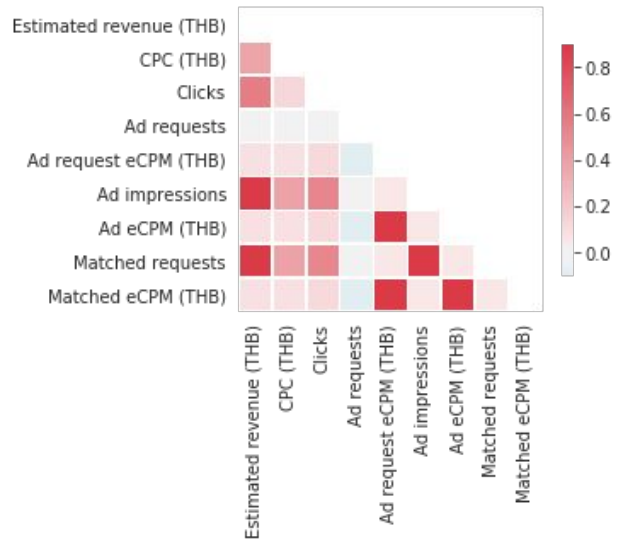


Metrics

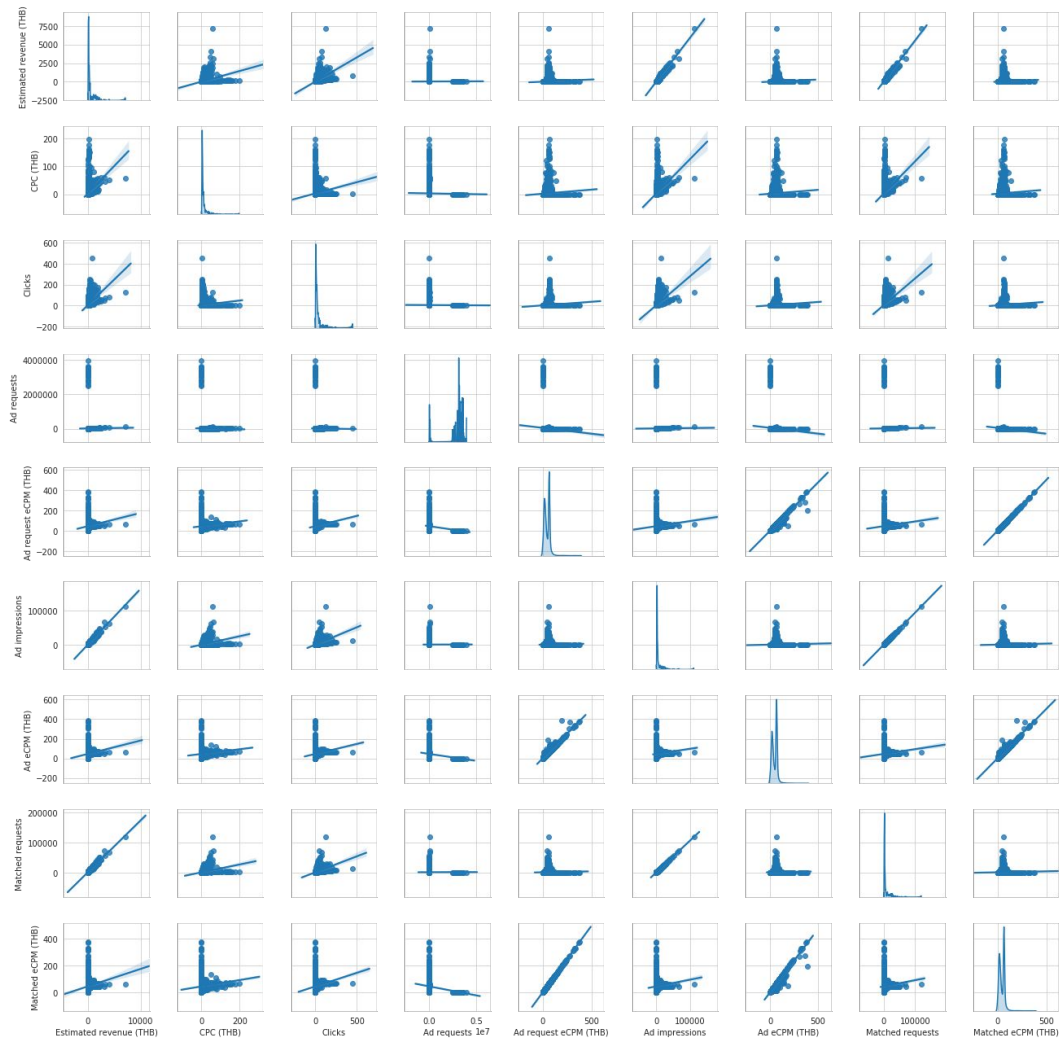


We can see clearly that a high coverage may not always yield you high revenue if the CPM is lower than optimum level and similarly a high CPM may not always yield a high revenue if coverage is lower than the optimum level. Continuously optimizing while balancing these two would give you better yields.

Correlation matrix



- Find relationship between two variables



2. Using Bid-Range data to determine the right floor prices

- a. Advertisers
- b. Pricing Rules

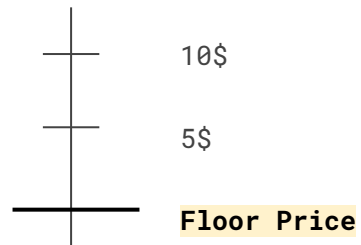
Based on second price auction

Bid ranges (gross)	Advertisers	Bids	Average bid CPM	Estimated earnin	Impressions won	Winning bid CPM	Close CPM (THE	Win %
THB 111.78 - THB 114.97	TRUE	47	112.69	2.73	44	112.66	62.16	93.62%
THB 114.45 - THB 117.63	TRUE	15	116.13	0.7	12	116.14	58.38	80.00%
THB 114.97 - THB 118.17	TRUE	41	116.11	2.35	37	116.11	63.6	90.24%
THB 117.63 - THB 120.81	TRUE	11	119.32	0.72	11	119.32	65.23	100.00%
THB 118.17 - THB 121.36	TRUE	52	119.06	2.87	48	119.07	59.79	92.31%
THB 120.81 - THB 123.99	TRUE	14	122.85	0.76	13	122.87	58.8	92.86%
THB 121.36 - THB 124.55	TRUE	30	122.14	1.72	28	122.13	61.33	93.33%
THB 123.99 - THB 127.17	TRUE	11	125.95	0.64	11	125.95	58.34	100.00%
THB 124.55 - THB 127.75	TRUE	51	125.48	2.87	48	125.4	59.8	94.12%
THB 127.17 - THB 130.35	TRUE	12	129.07	0.57	9	128.91	63.76	75.00%
THB 127.75 - THB 130.94	TRUE	35	128.71	1.93	32	128.69	60.24	91.43%
THB 130.35 - THB 133.53	TRUE	11	132.37	0.64	11	132.37	57.93	100.00%
THB 130.94 - THB 134.13	TRUE	34	131.61	2.01	33	131.61	60.9	97.06%
THB 133.53 - THB 136.71	TRUE	17	135.36	0.89	16	135.39	55.78	94.12%
THB 134.13 - THB 137.33	TRUE	29	135.24	1.67	27	135.29	61.72	93.10%
THB 136.71 - THB 139.89	TRUE	10	138.9	0.38	8	139.11	47.8	80.00%
THB 137.33 - THB 140.52	TRUE	25	138.24	1.22	23	138.23	52.96	92.00%
THB 139.89 - THB 143.07	TRUE	9	141.48	0.57	9	141.48	63.68	100.00%
THB 140.52 - THB 143.72	TRUE	22	141.57	1.17	18	141.47	64.72	81.82%
THB 143.07 - THB 146.25	TRUE	14	144.8	0.93	14	144.8	66.4	100.00%

Concept

based on second price auction

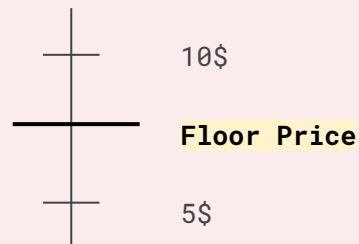
Case A



Outcome 5\$



* Case B

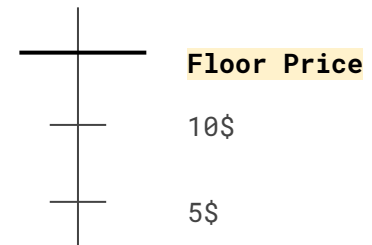


Outcome Floor Price



Focus this case
for optimization

Case C



Outcome 0\$



Agenda 2.0 optimize yield GAM

1. Using Bid-Range data to determine the right floor prices

Ad Exchange historical

Transaction types ▾	is any of ▾	Open auction ×		−	+
Pricing rules ▾	is any of ▾	Topcomment2_local ×		−	+
Countries ▾	is any of ▾	Thailand ×		−	+

Focus this case for optimization

(a.) Dimensions


- # Bid landscapes
(* Floor price)

Note

Bid data is updated after
approximately 36 to 48 hrs.

- bid ranges + advertisers
- bid ranges + pricing rules

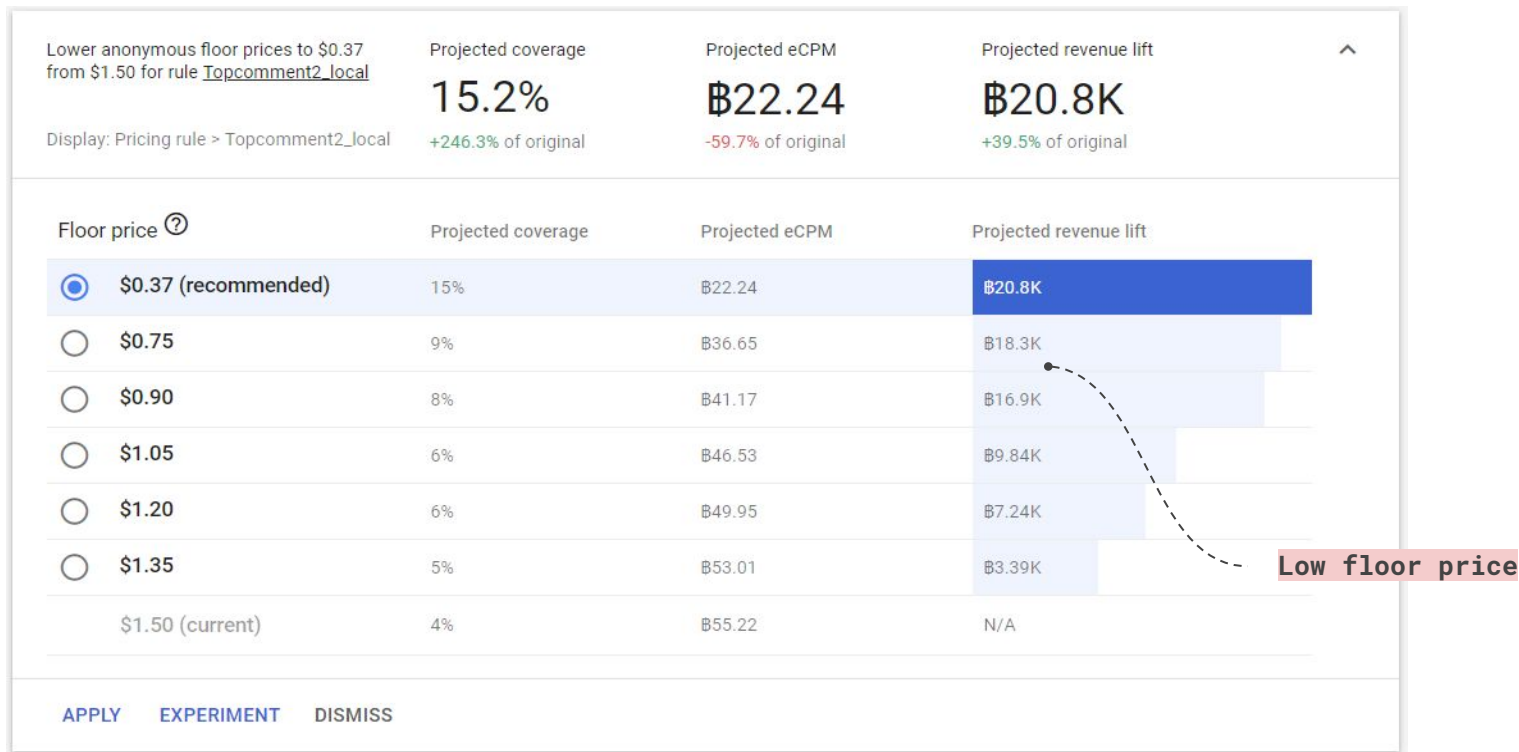
(b.) Metrics

- ☒ Bid metrics 
- ☒ Bids DEPRECATED
- ☒ Average bid CPM (gross) DEPRECATED
- ☒ Estimated earnings from bids DEPRECATED
- ☒ Impressions won DEPRECATED
- ☒ Winning bid CPM (gross) DEPRECATED
- ☒ Close CPM DEPRECATED
- ☒ Win % DEPRECATED

- ☒ Active view metrics 
- ☒ Active view measurable
- ☒ Active view viewable
- ☒ Active view enabled impressions
- ☒ Active view measured impressions
- ☒ Active view viewed impressions
- ☒ Average viewable time (secs) BETA

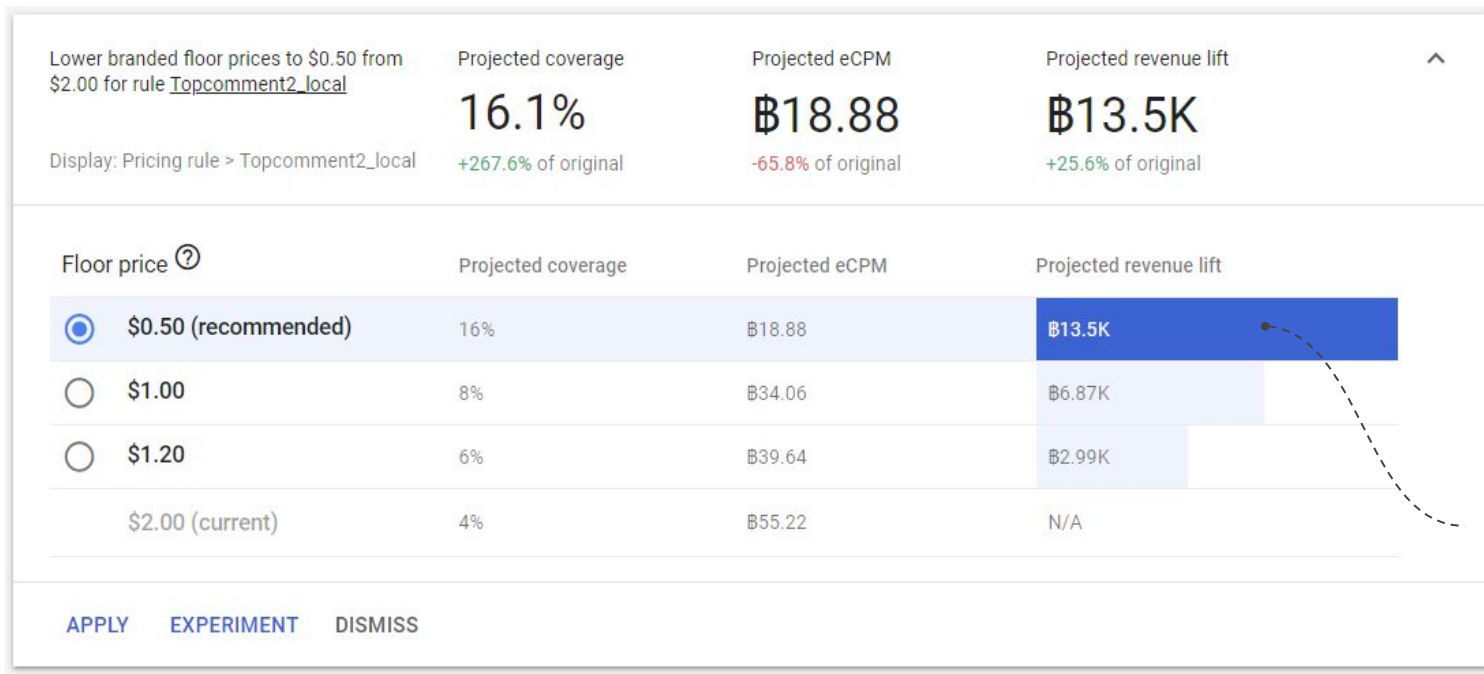
Optimize yield

by GAM

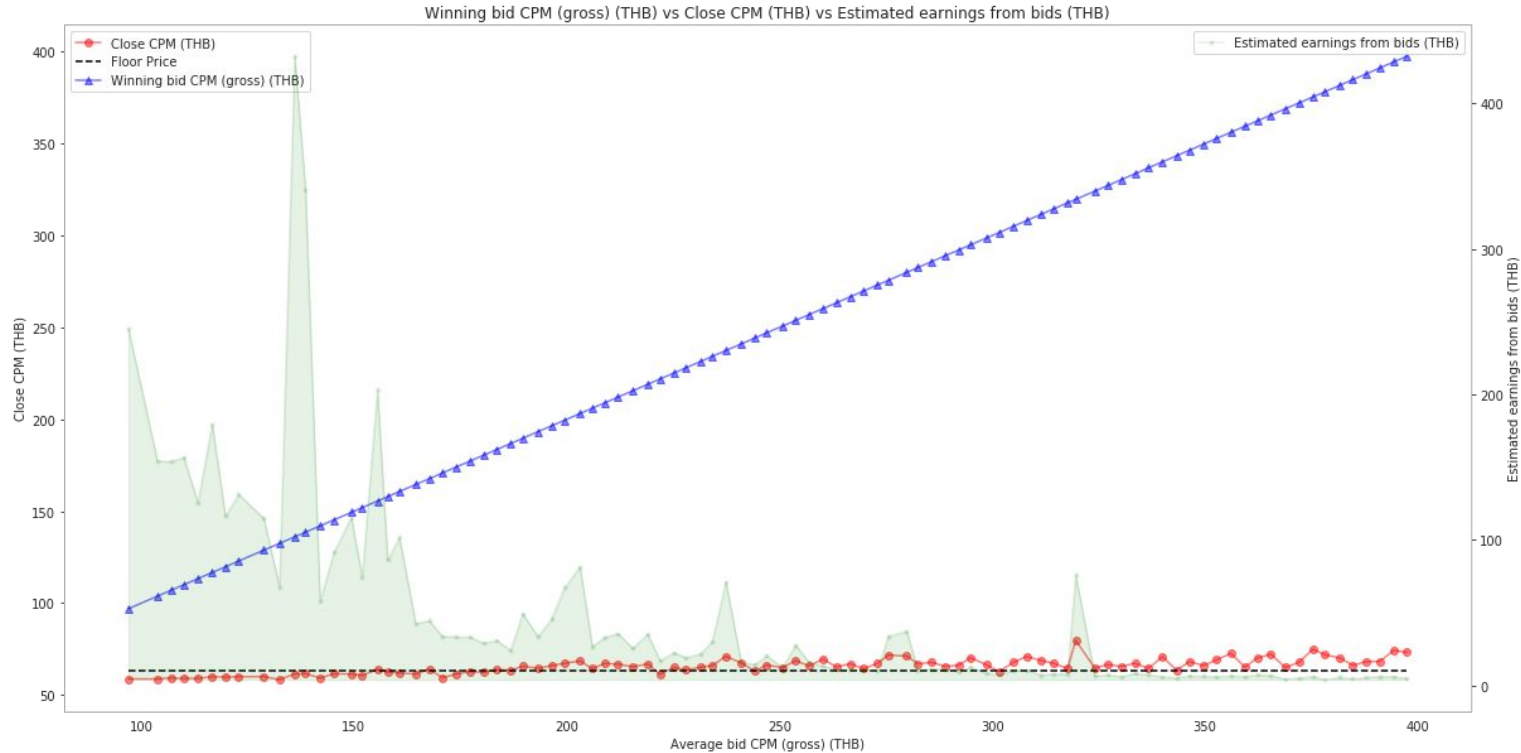
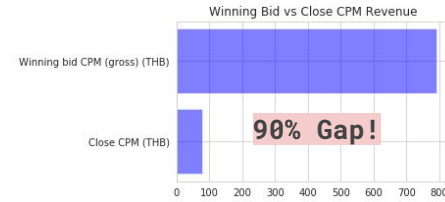


Optimize yield

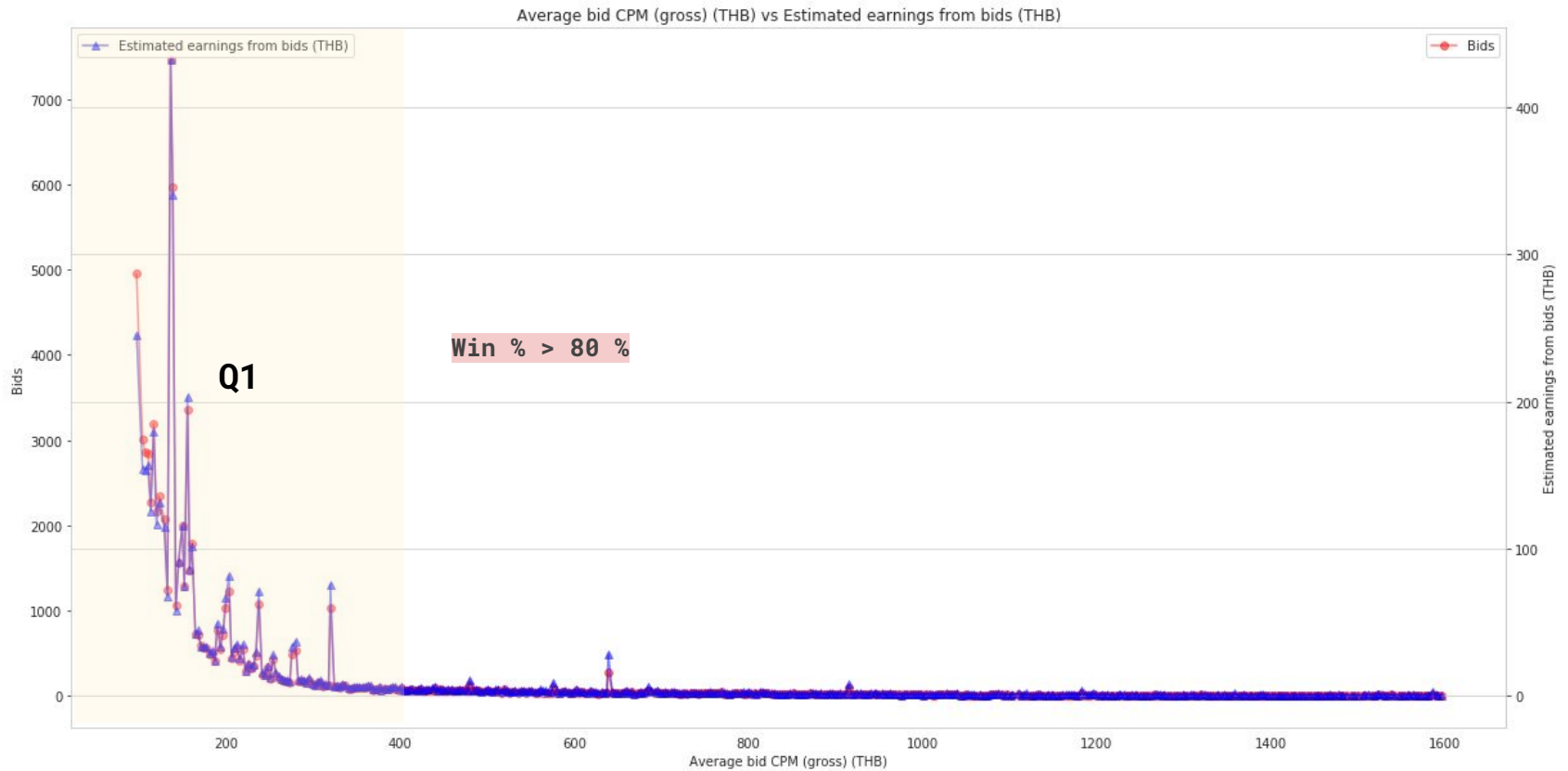
by GAM



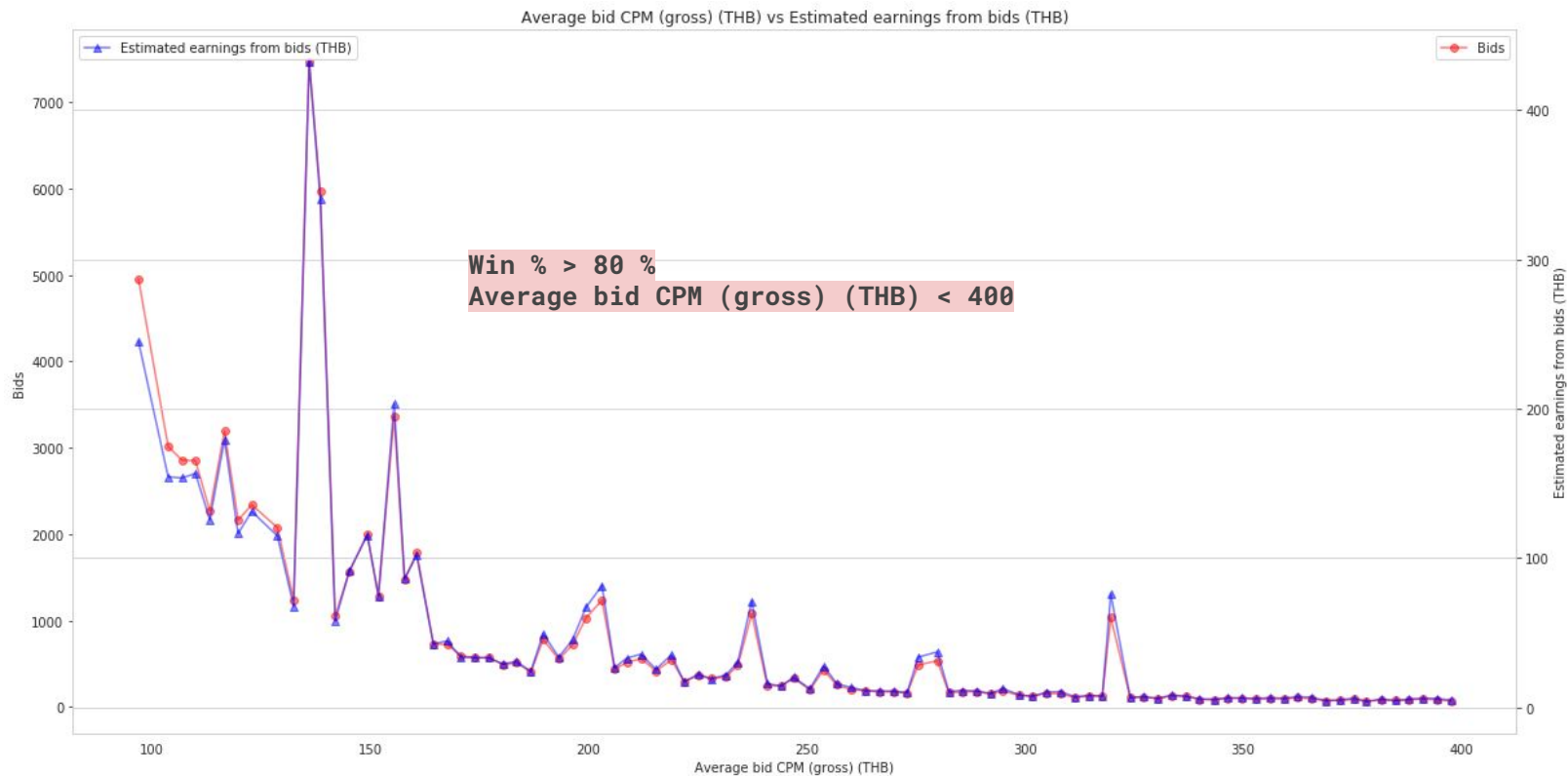
based on second price auction
(Branded prices) last 30 days
Floor \$2.00



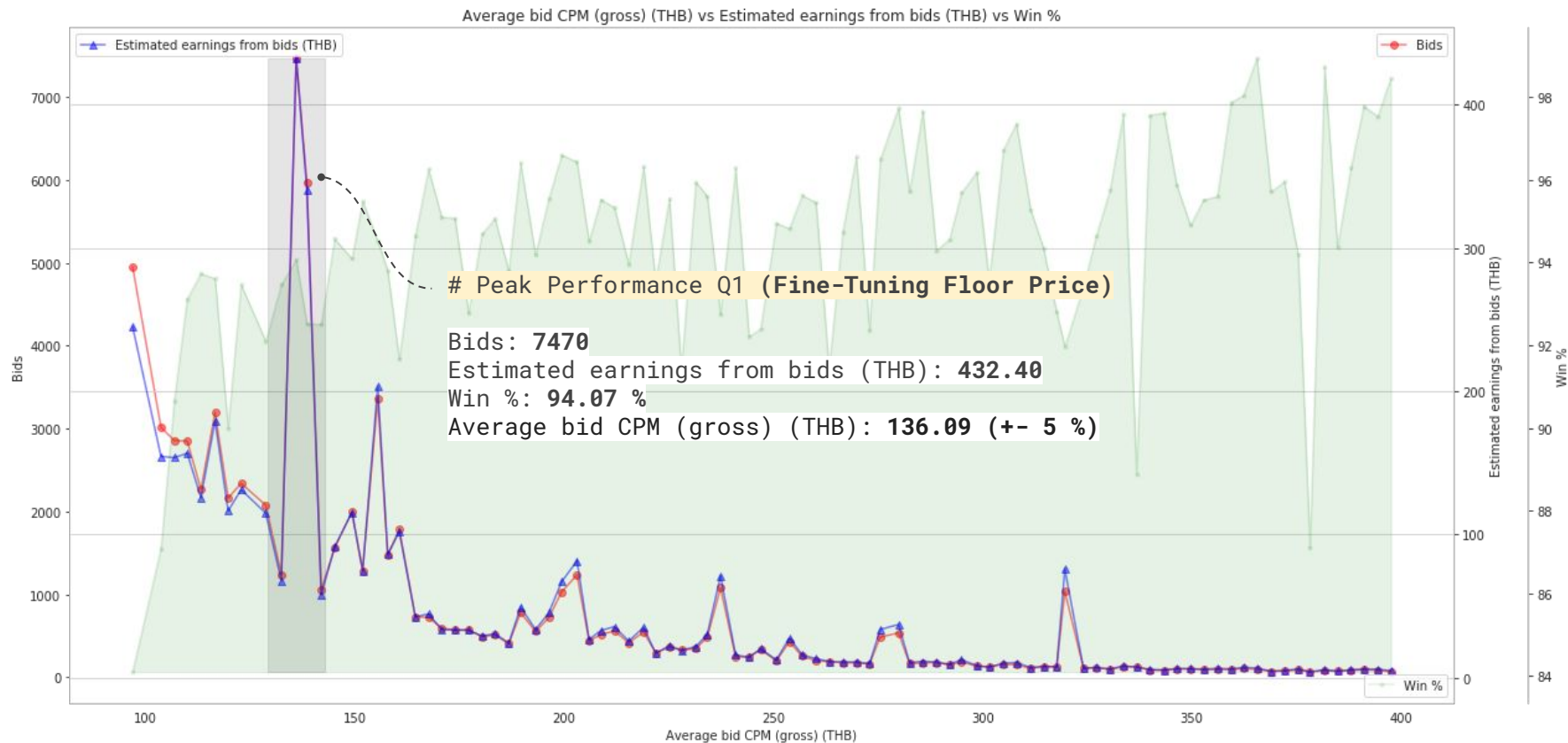
based on second price auction



based on second price auction



based on second price auction 30 days ago (all branded advertiser)



based on second price auction 7 days ago

(all branded top 5 advertisers) # Floor Price \$2.00

THB 127.63 - THB 130.82

Advertisers	Winning bid CPM (gross) (THB)	Close CPM (THB)
Accor Group	130.73	63.82
Catcha Group	128.65	63.82
Huawei Technologies	128.40	63.82
Rocket Internet	130.73	63.82
Skyscanner	128.85	63.82

THB 130.82 - THB 134.02

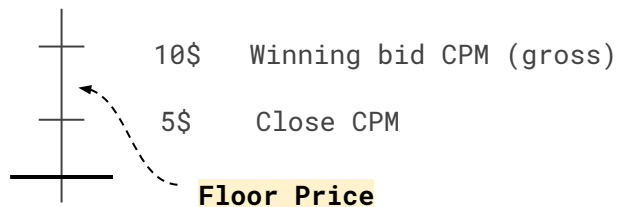
Advertisers	Winning bid CPM (gross) (THB)	Close CPM (THB)
Accor Group	133.54	63.82
Aekyung Group	132.13	63.82
Air France-KLM Group	133.66	63.82
BCD Holdings	131.78	63.82
IAC	132.61	63.82

THB 134.02 - THB 137.21

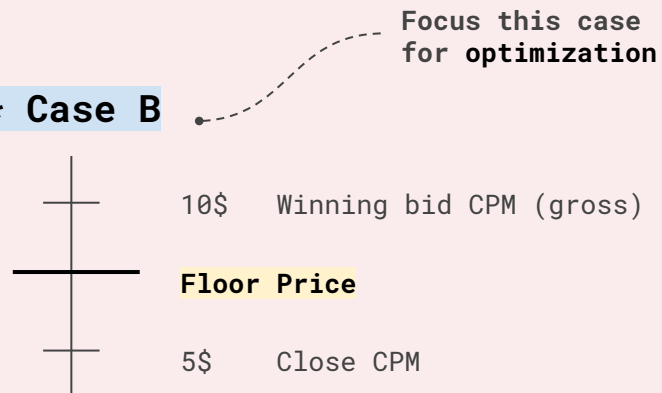
Advertisers \	Winning bid CPM (gross) (THB)	Close CPM (THB)
JTB	136.15	63.82
Krungsri Bank	134.21	63.82
ONYX Hospitality Group	134.30	64.84
Informations Systems Audit & Control Assoc, Inc	135.77	108.62
BCD Holdings	136.27	63.82

Concept

based on second price auction

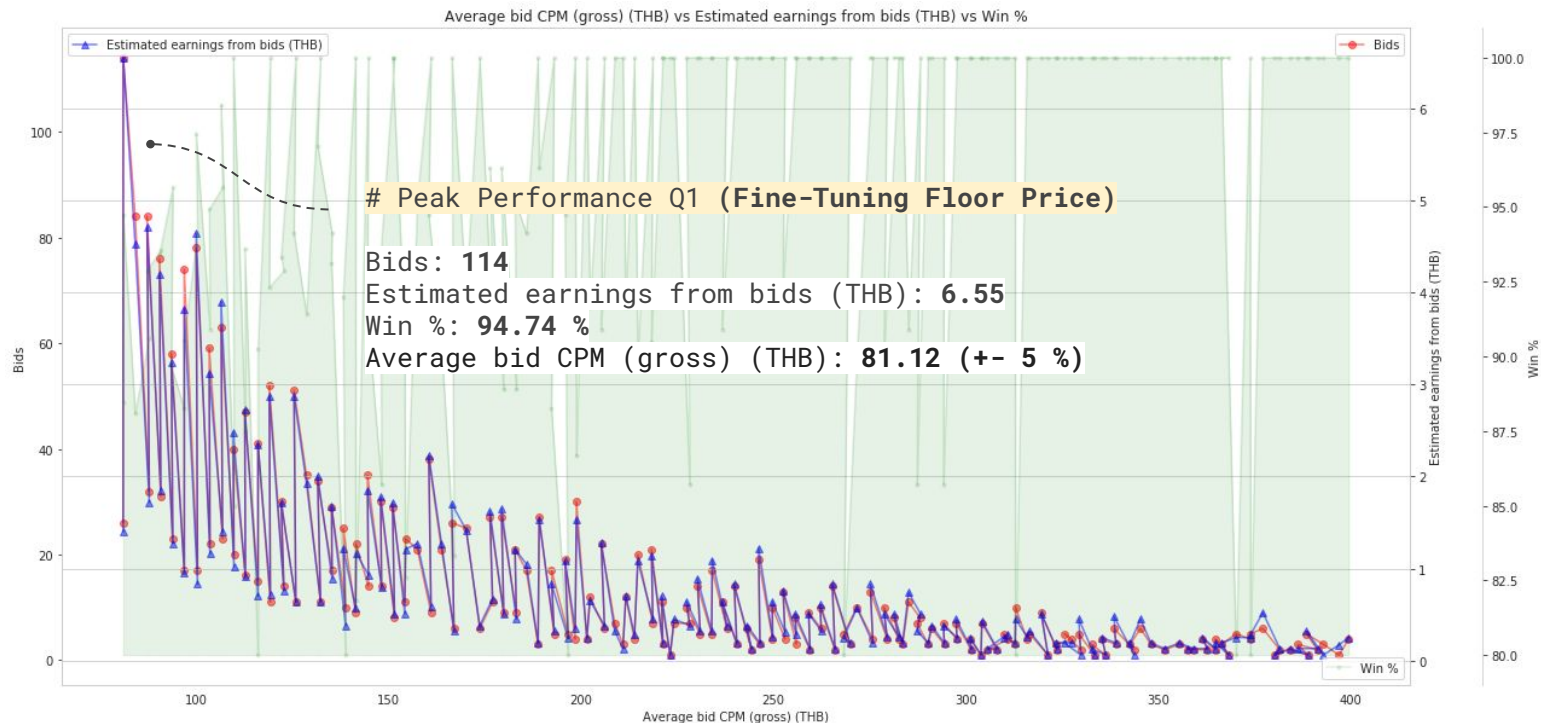
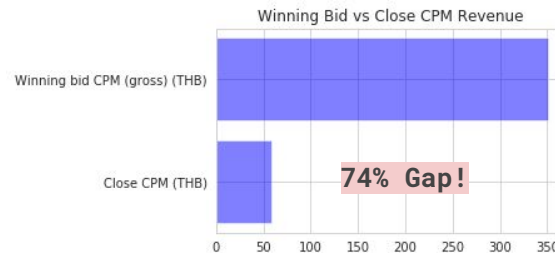


* Case B



Opportunities

based on second price auction 30 days ago (**True**)



Opportunities

✕ Open auction pricing rule: Topcomment2_local



Custom targeting

✓ All custom key-values



Rules for targeted inventory

☒ Set pricing and blocking for everyone

☐ Set pricing and blocking for specific buyers, advertisers, or brands ?

Any buyer, advertiser, or brand

Pricing and blocking ?

☒ Set floor prices
The lowest winning bid must be at least as high as the floor price

☐ Set target CPMs ?
Floor prices are dynamic but average CPM over time targets the chosen CPM

Branded

☐ Blocked

☒ Allowed \$ 2.00

Semi-transparent

☒ Blocked

☐ Allowed

Anonymous

☐ Blocked

☒ Allowed \$ 1.50

Set floor price for specific advertisers

Data

RTB Advertising (OpenRTB 3.0)
Ad Exchanges

Real-time
Historical

<http://macroart.net/2013/06/doubleclick-for-publishers-dfp/>

<https://www.monetizemore.com/blog/ad-exchange-price-floors-optimization-tips/>

Agenda 3.0 optimize yield GAM

1. Find similarity of Advertiser verticals*

Based on metrics last 7 days ago

- (a) Standard metrics
- (b) Active view metrics
- ~~(c) Bid metrics (Buyers: Advertisers)~~









*** Standardization, Cosine Similarity ***

State Data

export to CSV as repository

Queries

NEW QUERY

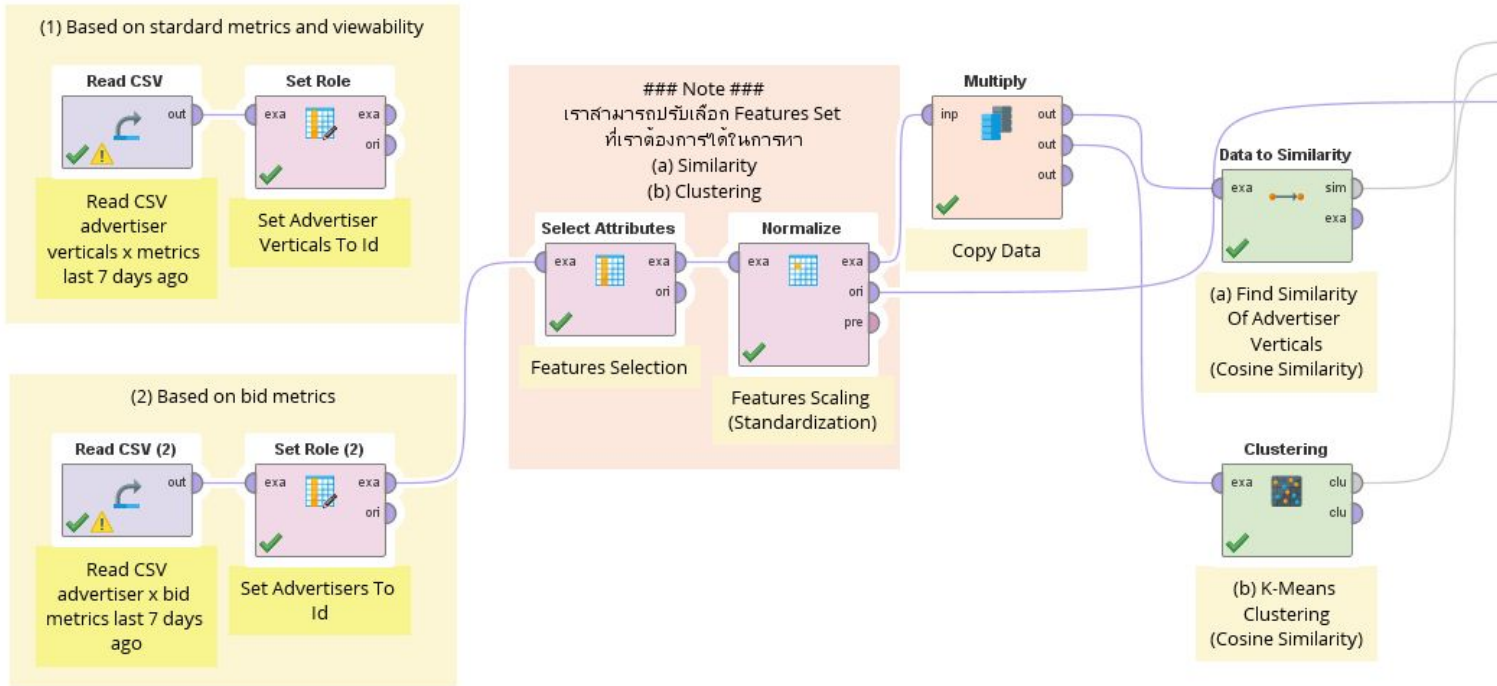
	DELETE	COPY	REFRESH	MODIFY COLUMNS	Search	GO
<input type="checkbox"/>	Name	Most recent report run	Owner	Schedule	Date created 	
<input type="checkbox"/> 	generate_equation_floor_x_revenue_last_6_months		Me	--	May 30, 2019 2:10 PM	RUN NOW
<input type="checkbox"/> 	advertiser_verticals_similarity_last_7_days		Me	--	May 23, 2019 5:23 PM	RUN NOW
<input type="checkbox"/> 	explore_dayofweek_last_6_months		Me	--	May 22, 2019 2:18 PM	RUN NOW
<input type="checkbox"/> 	explore_viewability_last_7_days		Me	--	May 22, 2019 2:10 PM	RUN NOW
<input type="checkbox"/> 	explore_bid_range_days_branded_last_30_days		Me	--	May 17, 2019 11:20 AM	RUN NOW
<input type="checkbox"/> 	explore_bid_range_all_branded_last_7_days		Me	--	May 9, 2019 4:23 PM	RUN NOW

State Workflow

* Find Similarity Of Advertiser Verticals (Branded)

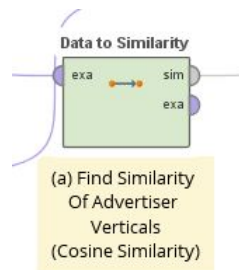
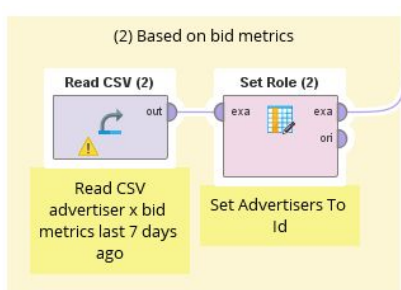
based on metrics of advertiser verticals:

(23 categories) last 7 days ago



State Result

(Cosine Similarity)



Row No.	Advertisers	Bids	Average bid ...	Estimated e...	Impressions...	Winning bid ...	Close CPM (...)	Win %
1	Dnata Travel ...	10	213.540	0.590	10	213.540	58.640	1
2	21st Century ...	299	322.230	13.380	296	322.710	45.210	0.990
3	AARP	51	110.900	3.010	49	111.260	61.440	0.960
4	Accor Group	1957	49.360	12.980	157	173.870	82.660	0.080
5	Ad Council	416	99.320	22.400	362	99.320	61.890	0.870
6	Adobe Syste...	43	14.970	0.060	1	95.690	63.690	0.020
7	Aerolineas Ar...	2	2641.870	2.360	2	2641.870	1181.790	1
8	Air France-KL...	252	263.580	15.420	208	287.270	74.140	0.830
9	Air New Zeal...	5	17.530	0	0	0	0	0
10	Al Habtoor M...	5	87.890	0	0	0	0	0

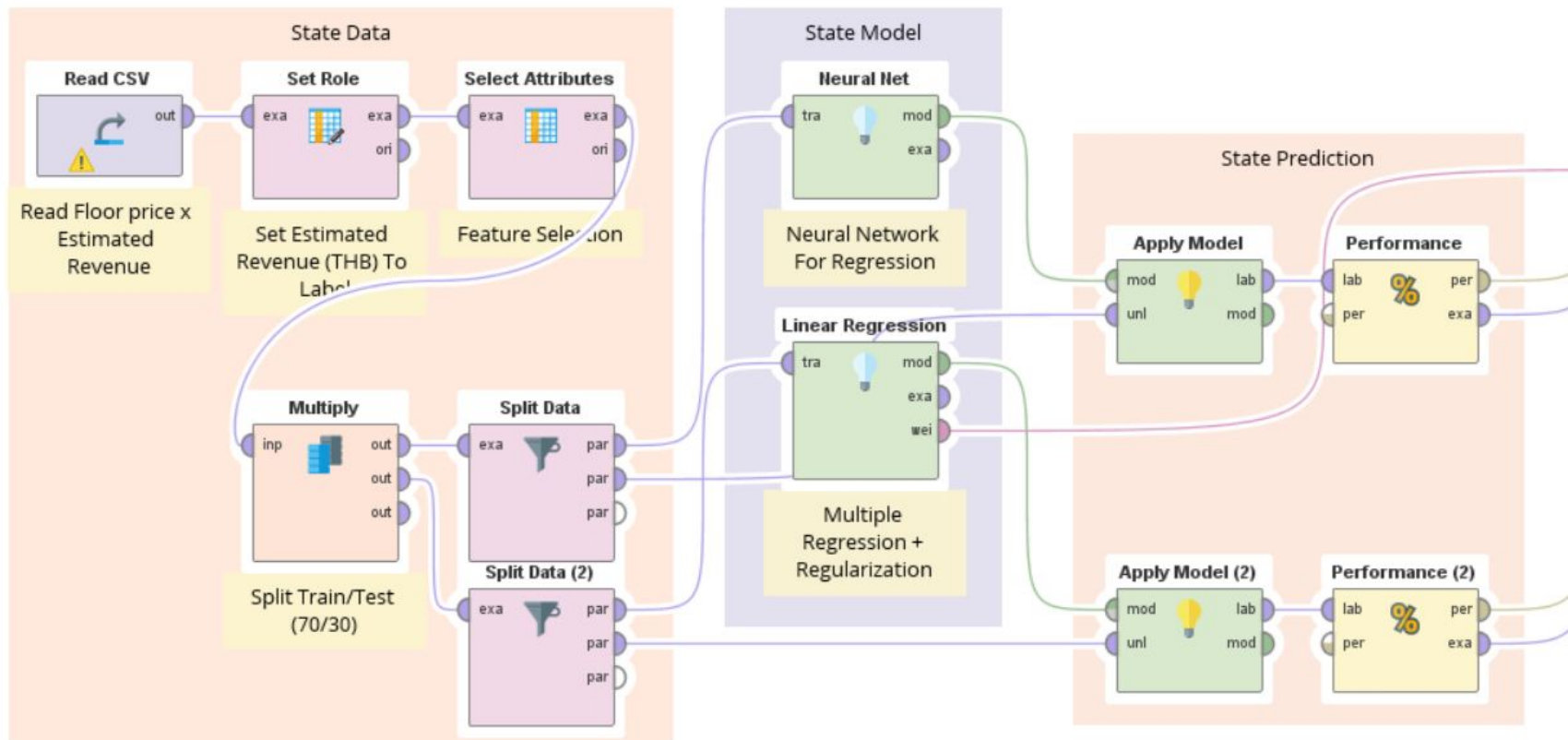
First	Second	Similarity
IKEA	Terranea	-0.611
IKEA	The Economist Group	0.998
IKEA	The Walt Disney Company	-0.654
IKEA	Travelclick	-0.762
IKEA	traveloka.com	-0.799
IKEA	TripAdvisor Group	-0.749
IKEA	TUI Group	-0.589
IKEA	Tune Group	0.072
IKEA	Unclassified advertisers	-0.182
IKEA	Universo Online	0.956
IKEA	Viceroy Hotels	-0.592
IKEA	windsorcourthotel	-0.601
IKEA	www.indexlivingmall.com	0.877

State Workflow

* Find Equation $\text{FloorPrice} \times \text{Revenue}$

based on standard metrics and active view

metrics last 6 months (Branded Pricing)



State Result

(Neural Network For Regression)

