

Optimizing Facebook Ad Expenditure

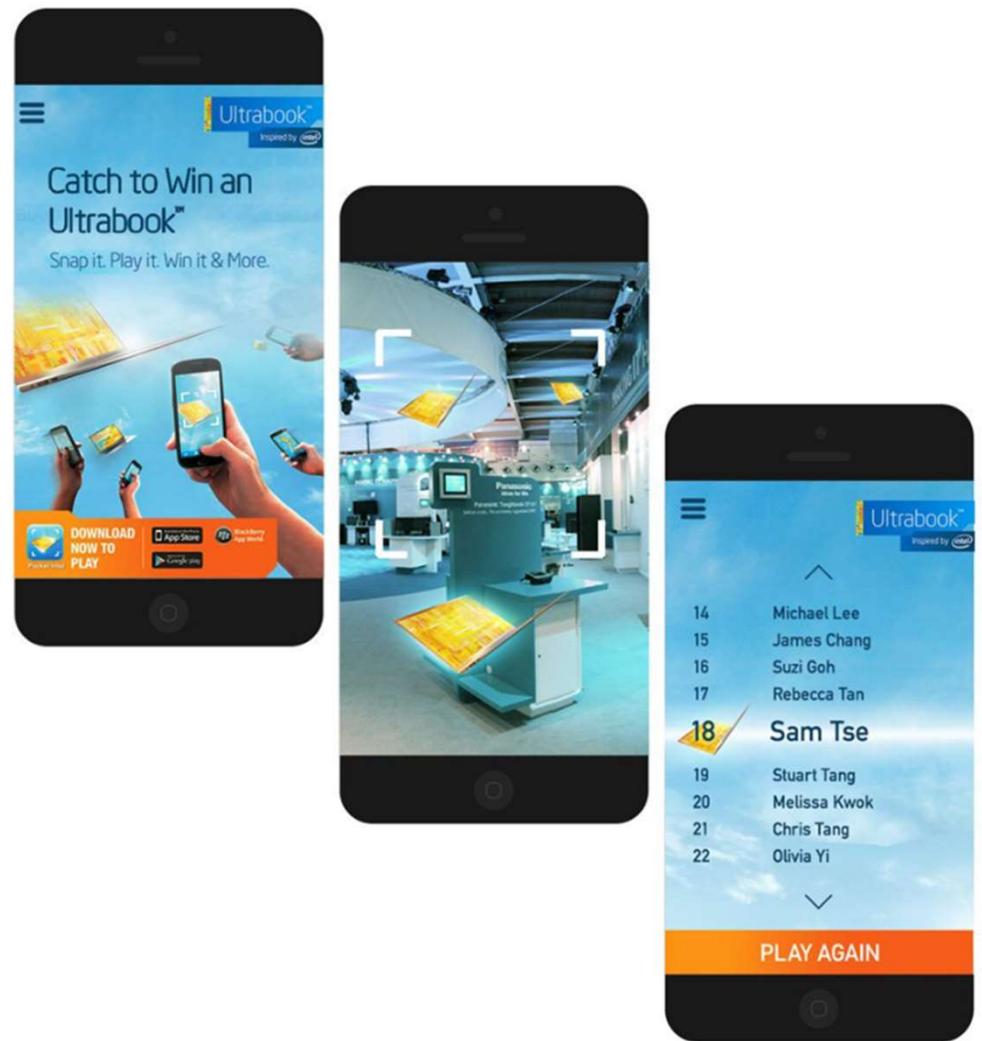
For Intel Asia Pacific



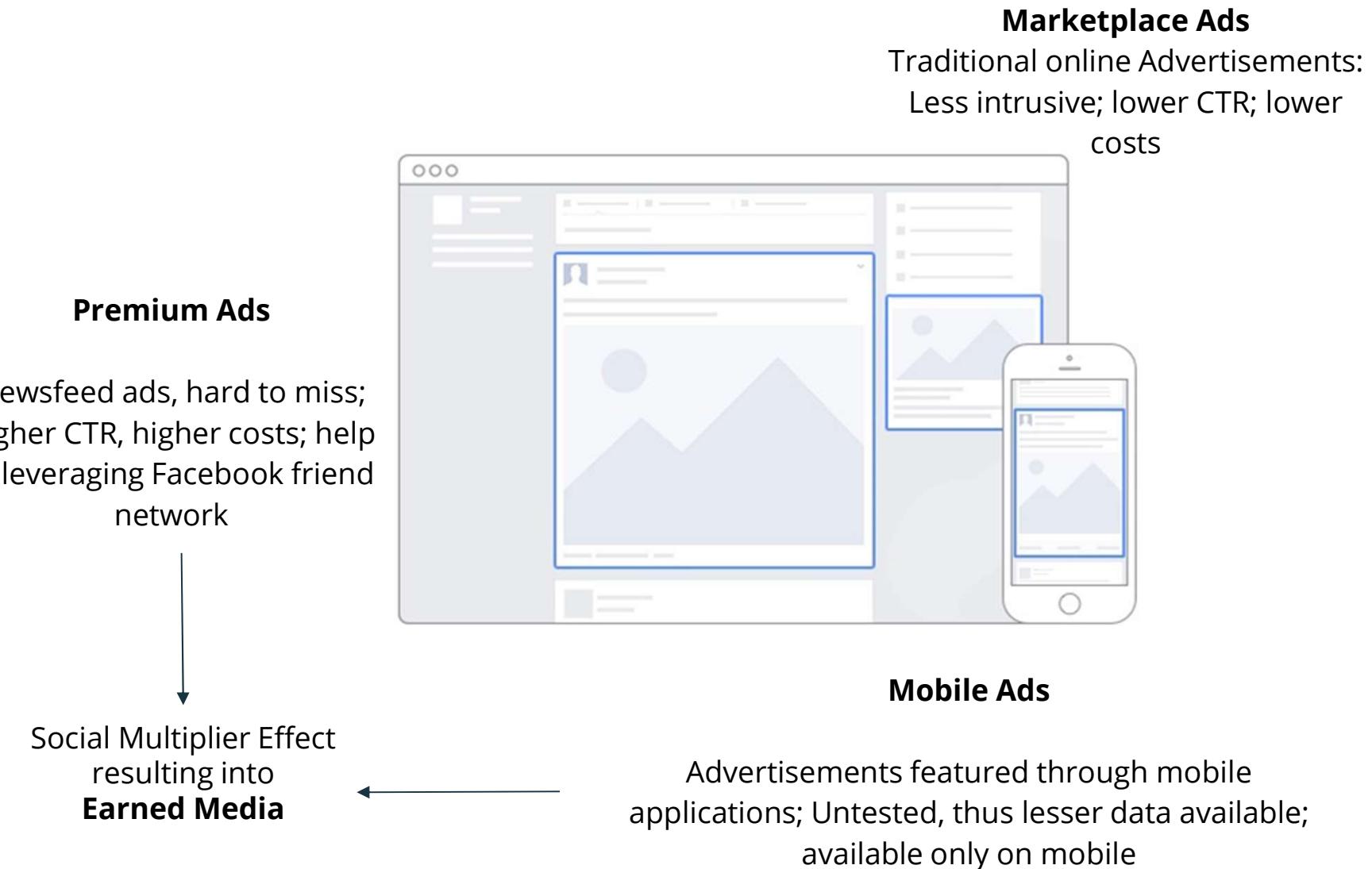
Team 11
Andrea Piatti
Jacqueline Wagner
Lorenzo Aguilar
Marlene Blandino
Prajakta Parkar
Thiago Marcondes

The Catch & Win Campaign - A B2B Company Marketing to the End Consumer

- B2B seller of microchips, processors
- Marketing to the end consumer, to ignite interest in computer technology, in turn increasing demand for Intel solutions
- Catch & Win campaign created to promote 'Ultrabook' - the Ferrari of computers in Asia Pacific markets
- Target Group : Smartphone using youth
- Campaign Objective : To get more users to download app & play the game



Different Ad Types and Their Attributes



Maximizing the Clicks for the Campaign



Objective function: Maximization of clicks (impact)



Parameters/constraints:

- Total of impressions/country \leq 125% proposal
- Total ad type/country \geq 75% proposal
- Budget \leq 95k



Impressions: Exposure of the ads i.e. # of times an ad is seen by an individual

Clicks: A subset of impressions is the # of times someone who saw the ad, clicked on it

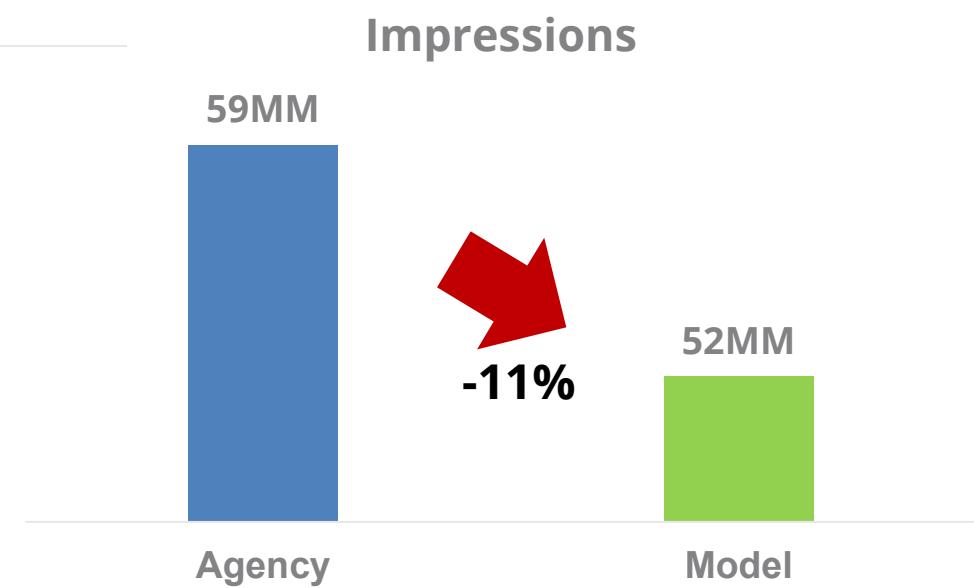
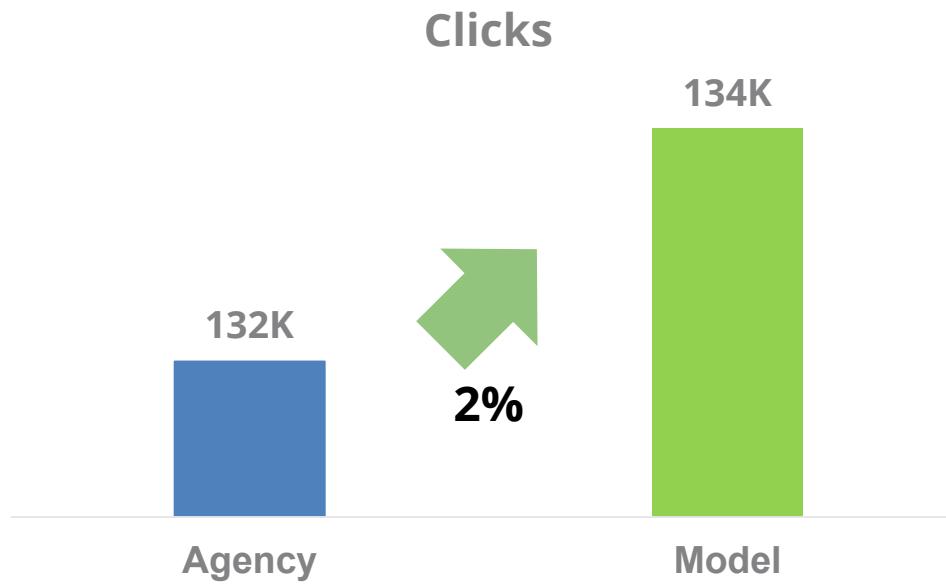
CTR: Click Through Rate is Clicks as a percentage of the Impressions



Countries:

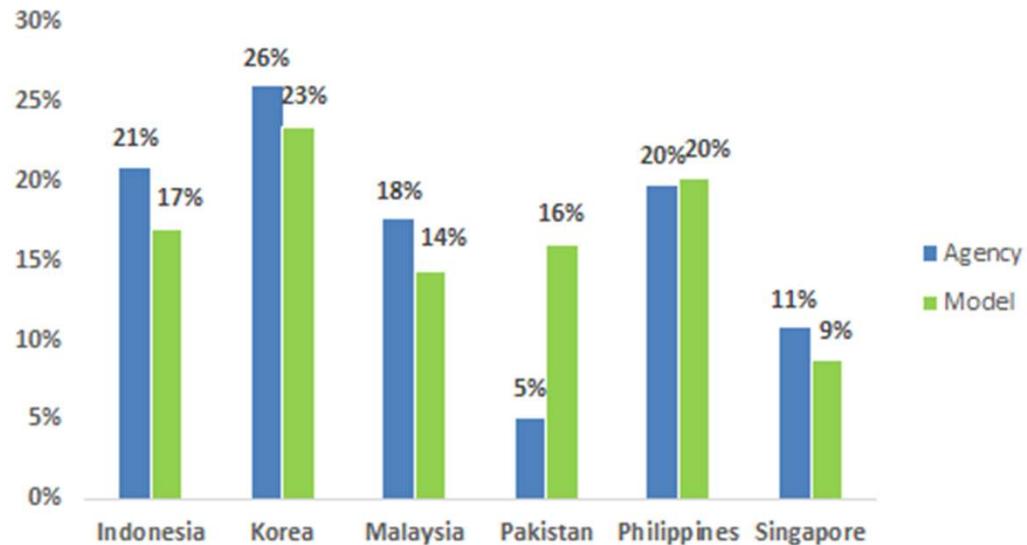
- Indonesia
- Korea
- Malaysia
- Pakistan
- Philippines
- Singapore

Optimization Model Shows Clear Improvements for the KPI Clicks



The New Budget Allocation

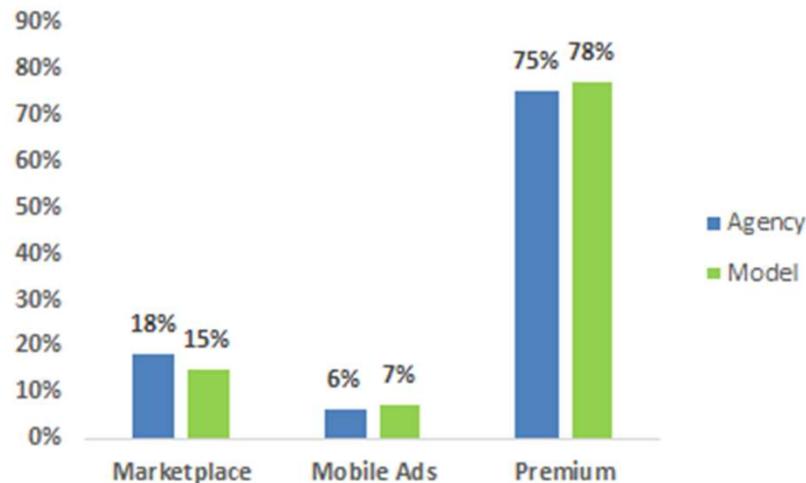
A1. Share of cost per country



for graph A.1

The optimal model recommends to focus more on Pakistan, increasing the share of premium ads there.

A2. Share of cost per Ad type



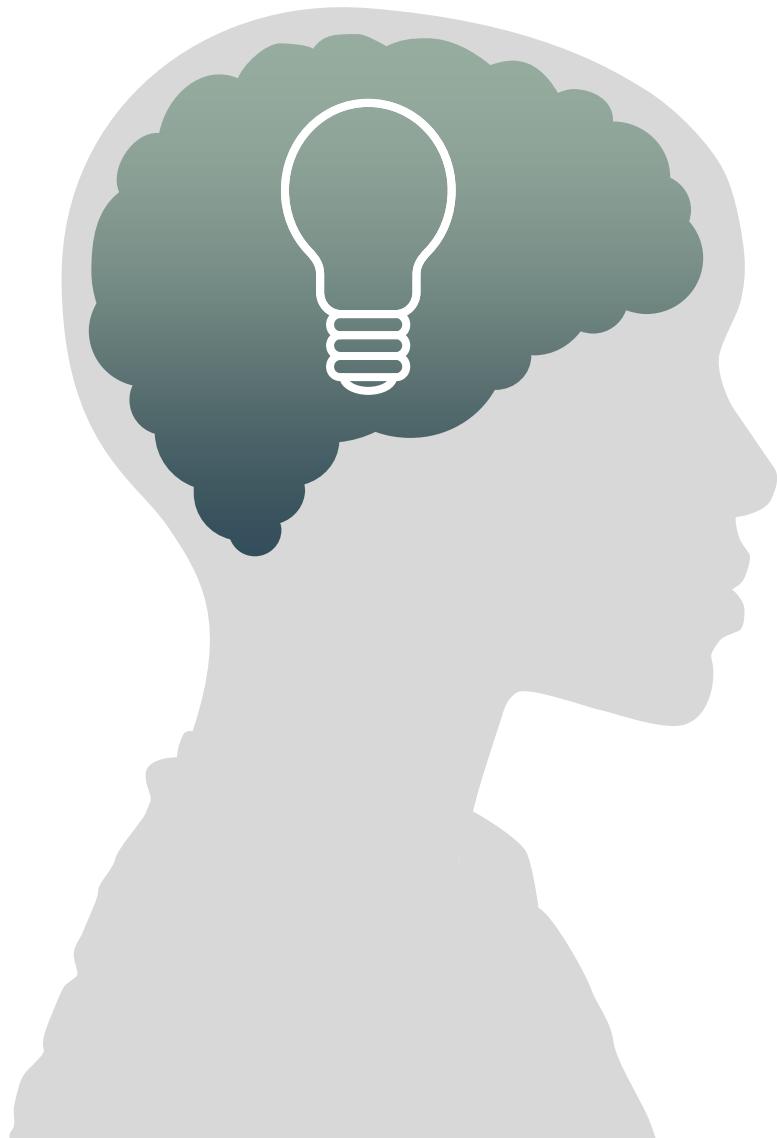
for graph A.2

Both the agency and our model focus most efforts in premium ads.

Model Stretched to its Limits

Country	Facebook Add	CLICKS			
		Agency	Model	Var	Var %
Indonesia		26,135	19,601	(6,534)	-25%
Indonesia	Marketplace	5,400	4,050	(1,350)	-25%
Indonesia	Premium	18,855	14,141	(4,714)	-25%
Indonesia	Mobile Ads	1,879	1,409	(470)	-25%
Korea		21,669	21,059	(610)	-3%
Korea	Marketplace	4,800	3,600	(1,200)	-25%
Korea	Premium	16,869	12,652	(4,217)	-25%
Korea	Mobile Ads	-	4,807	4,807	
Malaysia		25,136	18,852	(6,284)	-25%
Malaysia	Marketplace	6,600	4,950	(1,650)	-25%
Malaysia	Premium	16,451	12,339	(4,113)	-25%
Malaysia	Mobile Ads	2,084	1,563	(521)	-25%
Pakistan		10,769	31,642	20,873	194%
Pakistan	Marketplace	1,200	900	(300)	-25%
Pakistan	Premium	7,019	28,829	21,810	311%
Pakistan	Mobile Ads	2,549	1,912	(637)	-25%
Philippines		37,155	34,879	(2,276)	-6%
Philippines	Marketplace	6,600	4,950	(1,650)	-25%
Philippines	Premium	28,175	28,144	(31)	0%
Philippines	Mobile Ads	2,380	1,785	(595)	-25%
Singapore		10,786	8,089	(2,696)	-25%
Singapore	Marketplace	2,400	1,800	(600)	-25%
Singapore	Premium	6,320	4,740	(1,580)	-25%
Singapore	Mobile Ads	2,065	1,549	(516)	-25%
TOTAL		131,649	134,121	2,472	2%

Adjusting the constraints and accounting for the mobile trend



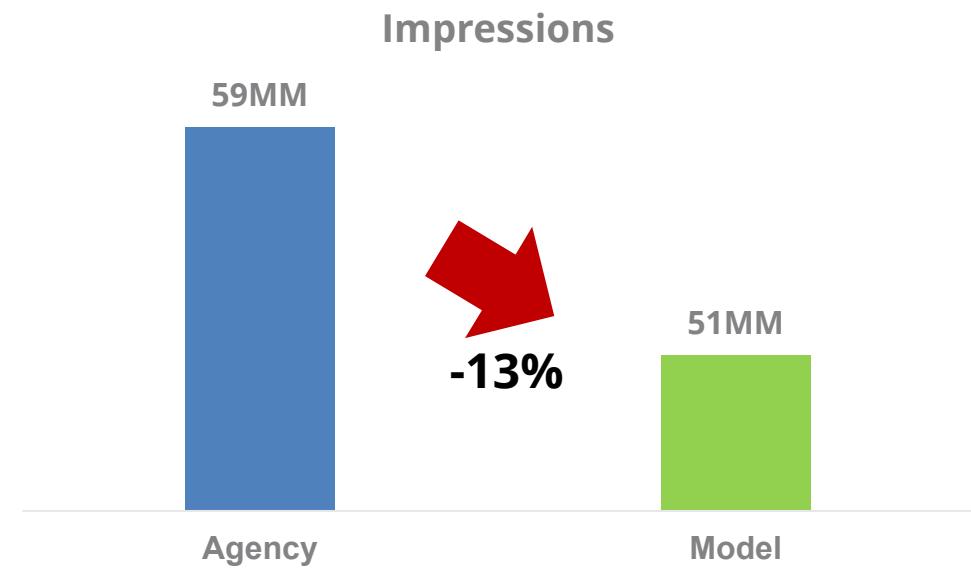
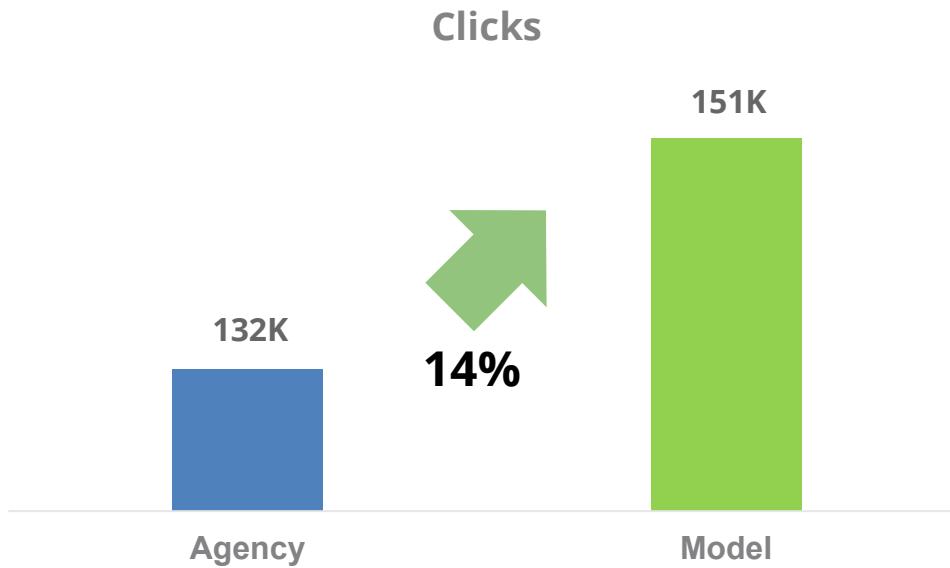
The Mobile Trend

- Mature economies – Singapore & South Korea – Have an increasing number of smartphone users
- 60% users access Facebook from their smartphones

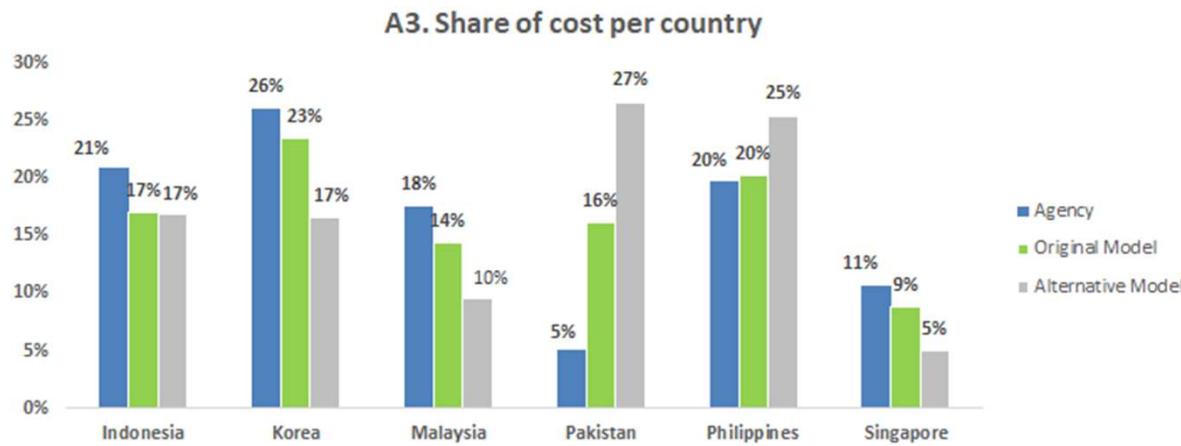
Adjusting the constraints

- Mobile ads focused in South Korea + Singapore ($>=40\%$)
- Total Impressions $\leq 150\%$
- Total Ad Type/Country $\geq 50\%$
- Exc. Singapore $\geq 57\%$
- Impressions/FB Users $\geq 30\% \leq 100\%$

Relaxed Constraints to Increase Clicks



Alternative model focuses on Redistribution per Country



for graph A.3

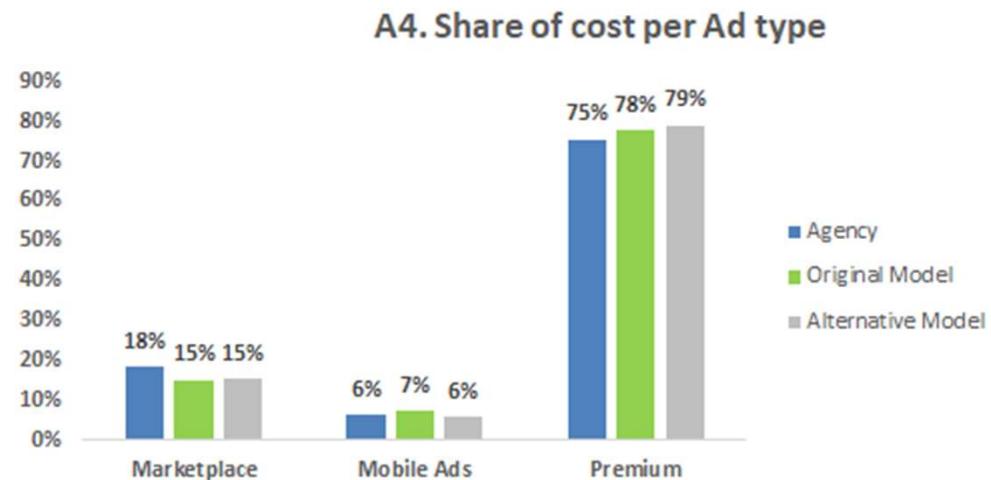
Pakistan and Philippines represent more on the budget due to an increase in the share of premium ads.

Singapore reduces dramatically its share with new constraints.

for graph A.4

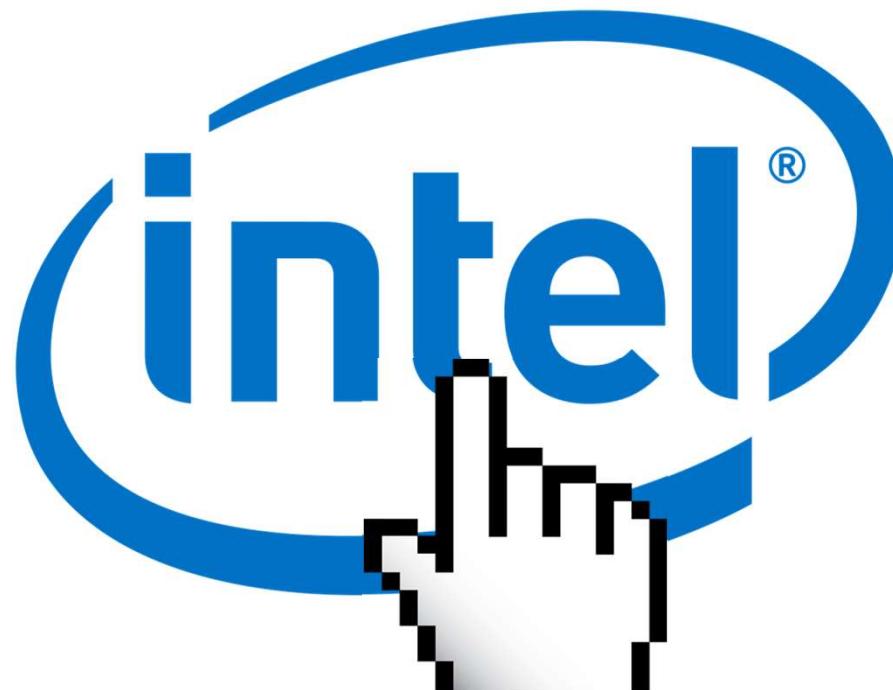
Premium ads are still the recommended option despite of being more expensive.

Social multiplier effect has an essential role to justify the investment on premium ads.



Summary

- New constraints take into consideration significant variables such as Facebook users & mobile usage per country in order to have a more logical approach to the model
- Number of clicks increased by 14% vs the agency's plan while staying in the budget (-8% less of what the agency original proposal)



Appendix: Optimization, Original Constraints

Max Clicks	134,121
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Country	Facebook Ad	IMPRESSIONS			CLICKS			COST		
		Agency	Model	Var %	Agency	Model	Var %	Agency	Model	Var %
Indonesia		12,500,000	9,375,000	-25%	26,135	19,601	-25%	19,815	14,861	-25%
Indonesia	Marketplace	6,000,000	4,500,000	-25%	5,400	4,050	-25%	3,180	2,385	-25%
Indonesia	Premium	3,500,000	2,625,000	-25%	18,855	14,141	-25%	15,435	11,576	-25%
Indonesia	Mobile Ads	3,000,000	2,250,000	-25%	1,879	1,409	-25%	1,200	900	-25%
Korea		9,700,000	12,125,000	25%	21,669	21,059	-3%	24,705	20,469	-17%
Korea	Marketplace	6,000,000	4,500,000	-25%	4,800	3,600	-25%	5,280	3,960	-25%
Korea	Premium	3,700,000	2,775,000	-25%	16,869	12,652	-25%	19,425	14,569	-25%
Korea	Mobile Ads	0	4,850,000	-	-	4,807	-	-	1,940	-
Malaysia		12,700,000	9,525,000	-25%	25,136	18,852	-25%	16,714	12,536	-25%
Malaysia	Marketplace	6,000,000	4,500,000	-25%	6,600	4,950	-25%	3,600	2,700	-25%
Malaysia	Premium	3,700,000	2,775,000	-25%	16,451	12,339	-25%	11,914	8,936	-25%
Malaysia	Mobile Ads	3,000,000	2,250,000	-25%	2,084	1,563	-25%	1,200	900	-25%
Pakistan		4,700,000	5,875,000	25%	10,769	31,642	194%	4,857	14,006	188%
Pakistan	Marketplace	1,000,000	750,000	-25%	1,200	900	-25%	570	428	-25%
Pakistan	Premium	700,000	2,875,000	311%	7,019	28,829	311%	3,087	12,679	311%
Pakistan	Mobile Ads	3,000,000	2,250,000	-25%	2,549	1,912	-25%	1,200	900	-25%
Philippines		12,700,000	10,445,913	-18%	37,155	34,879	-6%	18,805	17,649	-6%
Philippines	Marketplace	6,000,000	4,500,000	-25%	6,600	4,950	-25%	3,360	2,520	-25%
Philippines	Premium	3,700,000	3,695,898	0%	28,175	28,144	0%	14,245	14,229	0%
Philippines	Mobile Ads	3,000,000	2,250,015	-25%	2,380	1,785	-25%	1,200	900	-25%
Singapore		6,350,000	4,762,500	-25%	10,786	8,089	-25%	10,180	7,635	-25%
Singapore	Marketplace	2,000,000	1,500,000	-25%	2,400	1,800	-25%	1,420	1,065	-25%
Singapore	Premium	1,350,000	1,012,500	-25%	6,320	4,740	-25%	7,560	5,670	-25%
Singapore	Mobile Ads	3,000,000	2,250,000	-25%	2,065	1,549	-25%	1,200	900	-25%
Agency fee								8,557	7,844	-8%
TOTAL		58,650,000	52,108,413	-11%	131,649	134,121	2%	103,633	95,000	-8%

Appendix: Optimization, Looser Constraints

Max Clicks		150,657								
Country	Facebook Add	IMPRESSIONS			CLICKS			COST		
		Agency	Model	Var %	Agency	Model	Var %	Agency	Model	Var %
Indonesia		12,500,000	15,330,000	23%	26,135	21,239	-19%	19,815	14,720	-26%
Indonesia	Marketplace	6,000,000	12,080,000	101%	5,400	10,872	101%	3,180	6,402	101%
Indonesia	Premium	3,500,000	1,750,000	-50%	18,855	9,428	-50%	15,435	7,718	-50%
Indonesia	Mobile Ads	3,000,000	1,500,000	-50%	1,879	940	-50%	1,200	600	-50%
Korea		9,700,000	10,000,000	3%	21,669	15,939	-26%	24,705	14,413	-42%
Korea	Marketplace	6,000,000	3,000,000	-50%	4,800	2,400	-50%	5,280	2,640	-50%
Korea	Premium	3,700,000	1,850,000	-50%	16,869	8,435	-50%	19,425	9,713	-50%
Korea	Mobile Ads	0	5,150,000	-	-	5,104	-	-	2,060	-
Malaysia		12,700,000	6,350,000	-50%	25,136	12,568	-50%	16,714	8,357	-50%
Malaysia	Marketplace	6,000,000	3,000,000	-50%	6,600	3,300	-50%	3,600	1,800	-50%
Malaysia	Premium	3,700,000	1,850,000	-50%	16,451	8,226	-50%	11,914	5,957	-50%
Malaysia	Mobile Ads	3,000,000	1,500,000	-50%	2,084	1,042	-50%	1,200	600	-50%
Pakistan		4,700,000	7,050,000	50%	10,769	52,514	388%	4,857	23,156	377%
Pakistan	Marketplace	1,000,000	500,000	-50%	1,200	600	-50%	570	285	-50%
Pakistan	Premium	700,000	5,050,000	621%	7,019	50,640	621%	3,087	22,271	621%
Pakistan	Mobile Ads	3,000,000	1,500,000	-50%	2,549	1,275	-50%	1,200	600	-50%
Philippines		12,700,000	9,656,796	-24%	37,155	43,758	18%	18,805	22,134	18%
Philippines	Marketplace	6,000,000	3,000,000	-50%	6,600	3,300	-50%	3,360	1,680	-50%
Philippines	Premium	3,700,000	5,156,796	39%	28,175	39,269	39%	14,245	19,854	39%
Philippines	Mobile Ads	3,000,000	1,500,000	-50%	2,380	1,190	-50%	1,200	600	-50%
Singapore		6,350,000	2,730,500	-57%	10,786	4,638	-57%	10,180	4,377	-57%
Singapore	Marketplace	2,000,000	860,000	-57%	2,400	1,032	-57%	1,420	611	-57%
Singapore	Premium	1,350,000	580,500	-57%	6,320	2,718	-57%	7,560	3,251	-57%
Singapore	Mobile Ads	3,000,000	1,290,000	-57%	2,065	888	-57%	1,200	516	-57%
Agency fee								8,557	7,844	-8%
TOTAL		58,650,000	51,117,296	-13%	131,649	150,657	14%	103,633	95,000	-8%

EXHIBIT 1: DEMOGRAPHIC AND TECHNOLOGY PENETRATION DATA

Intel AP Markets	Indonesia	Korea	Malaysia	Pakistan	Philippines	Singapore
Population (Ms) 1	251.2	49.0	29.6	193.2	105.7	5.5
# Internet Users (Ms) 1	20	39.4	15.4	20.4	8.3	3.2
Mobile Phones (Ms) 1	248.8	52.5	36.7	111	94.2	7.8
# Facebook Users (Ms) 2	51.1	10	13.6	8	29.9	2.9

Sources: 1 CIA World Factbook, accessed July 25, 2013;

2 www.internetworldstats.com/, accessed July 25, 2013.

EXHIBIT 2: INTEL ASIA-PACIFIC FACEBOOK COMMUNITIES (AUGUST 2012)

Intel Market	Indonesia	Korea	Malaysia	Pakistan	Philippines	Singapore
Fans	778,144	137,801	128,410	316,425	203,907	15,595
Growth	8,009	9,361	2,932	18,994	2,204	1,496
Top Demographic	M 18-24	F 18-24	M 18-24	M 18-24	M 18-24	M 18-24
Growth %	1%	7%	2%	6%	1%	10%

Source: Intel Asia-Pacific Marketing

EXHIBIT 4: PRELIMINARY MEDIA PLAN PROPOSED BY IMPACT MARKETING LTD

	Indonesia	Korea	Malaysia	Pakistan	Philippines	Singapore	Total
Marketplace							
Impressions	6,000,000	6,000,000	6,000,000	1,000,000	6,000,000	2,000,000	27,000,000
CPM	\$0.53	\$0.88	\$0.60	\$0.57	\$0.56	\$0.71	\$0.64
Cost	\$3,180	\$5,280	\$3,600	\$570	\$3,360	\$1,420	\$17,410
Premium							
Impressions	3,500,000	3,700,000	3,700,000	700,000	3,700,000	1,350,000	16,650,000
CPM	\$4.41	\$5.25	\$3.22	\$4.41	\$3.85	\$5.60	\$4.30
Cost	\$15,435	\$19,425	\$11,914	\$3,087	\$14,245	\$7,560	\$71,666
Mobile Ads							
Impressions	3,000,000 -		3,000,000	3,000,000	3,000,000	3,000,000	15,000,000
CPM	\$0.40 -		\$0.40	\$0.40	\$0.40	\$0.40	\$0.40
Cost	\$1,200 -		\$1,200	\$1,200	\$1,200	\$1,200	\$6,000
Total Ads							
Impressions	12,500,000	9,700,000	12,700,000	4,700,000	12,700,000	6,350,000	58,650,000
Cost	\$19,815	\$24,705	\$16,714	\$4,857	\$18,805	\$10,180	\$95,076

EXHIBIT 5: INTEL'S ESTIMATED CLICK-THROUGH RATES AND SOCIAL IMPRESSIONS MULTIPLIERS

Market	Indonesia	Korea	Malaysia	Pakistan	Philippines	Singapore
Marketplace CTR	0.09%	0.08%	0.11%	0.12%	0.11%	0.12%
Premium CTR	0.43%	0.23%	0.32%	0.59%	0.48%	0.34%
Social Impression Multiplier	12.9	41.1	21.4	26.5	32.4	20.6
Social CTR	1.96%	2.39%	1.82%	2.64%	1.81%	1.83%
CTR Mobile Ad	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%

	# FB Users (MM)	Impressions			Impressions/FB Users		
		Agency (MM)	Original (MM)	Alt. (MM)	Agency	Original	Alternative
Indonesia	51.1	12.5	9.4	15.3	24%	18%	30%
Korea	10.0	9.7	12.1	10.0	97%	121%	100%
Malaysia	13.6	12.7	9.5	6.4	93%	70%	47%
Pakistan	8.0	4.7	5.9	7.1	59%	73%	88%
Philippines	29.9	12.7	10.4	9.7	42%	35%	32%
Singapore	2.9	6.4	4.8	2.7	219%	164%	94%

Appendix: Additional Resources

- Basic Terms in Advertising - Know Online Advertising. (2020). Retrieved 10 February 2020, from <http://www.knowonlineadvertising.com/facts-about-online-advertising/basic-terms-in-advertising/>
- Phillips, J. (2020). Is there ever a reason to measure impressions?. Retrieved 10 February 2020, from <https://www.mediabullseye.com/2018/06/is-there-ever-a-reason-to-measure-impressions/>
- Intel Company Overview. (2020). Retrieved 10 February 2020, from <https://www.intel.com/content/www/us/en/company-overview/company-overview.html>
- Evans, J. (2020). Intel Catch & Win — Jonathan Evans. Retrieved 11 February 2020, from <https://www.jonscreative.com/intel-catch-win>