Case 3 – Reporting and Analytics

1. Performance of Marketing Campaign (by Digital Source)

1.1. The customer onboarding journey:

1.1.1. Conversion Rate report:

Meaning of the fields:

Field	Description
CRM_Source	Source
CRM_Channel	Channel
INSTALL	Number of customers who downloaded the app / number of customers who clicked on the advertisement.
EKYC	Number of customers who completed eKYC / number of customers who downloaded the app.
CUSTOMERS	Number of customers who became official bank customers / number of customers who completed eKYC.
FIRST_TRANS	Percentage of official customers who completed their first transaction.
TRANS_IN_2_MONTH	Number of customers who made transactions in the last 2 months / number of official customers who completed their first transaction.

Table 1-1. Information on conversion rate reporting by channel.

CRM_Source	CRM_Channel	INSTALL	EKYC	CUSTOMERS	FIRST_TRANS	TRANS_IN_2_MONTHS
AccessTrade	Digital Direct Sale	85,67%	73,40%	70,55%	25,41%	92,96%
Facebook	Digital Direct Sale	85,29%	72,50%	69,75%	26,48%	94,26%
Google	Digital Direct Sale	85,44%	71,71%	70,34%	25,87%	95,48%
ZaloAdtima	Digital Direct Sale	84,65%	73,89%	70,30%	25,68%	94,49%
BAMBOO	Ecosystem	85,33%	72,77%	70,77%	26,07%	93,60%
GOTADI	Ecosystem	84,92%	72,96%	70,64%	26,08%	95,09%
VNDIRECT	Ecosystem	84,44%	73,30%	70,44%	24,46%	95,61%
CASHBAG	Partnership	85,17%	72,75%	68,85%	25,21%	95,34%
FPT_PLAY	Partnership	85,07%	73,58%	70,91%	25,84%	94,68%
MOMO	Partnership	84,44%	73,40%	70,72%	26,94%	94,79%
Universities	Partnership	84,40%	71,42%	71,74%	28,25%	96,56%
RB	RB	84,97%	73,21%	70,16%	25,54%	95,46%
Telesale	Telesale	85,08%	72,89%	70,22%	26,38%	95,76%

Figure 1-1: Conversion Rate report

To further understand customers across different Channels and Sources, I propose adding a Service Level Agreements (SLAs) report to demonstrate service levels by transaction:

CRM_Source	CRM_Channel	NUM_OF_CUS	1	2	3	4	5	6	7	8	9	10	11	12
AccessTrade	Digital Direct Sale	2460						0,08%	0,12%	0,16%	0,73%	1,10%	1,50%	11,59%
Facebook	Digital Direct Sale	2368				0,04%	0,08%		0,25%	0,17%	0,30%	0,93%	1,65%	12,67%
Google	Digital Direct Sale	2312					0,09%	0,04%	0,04%	0,04%	0,56%	0,65%	1,64%	12,07%
ZaloAdtima	Digital Direct Sale	2403						0,12%	0,12%	0,25%	0,42%	0,79%	1,50%	12,15%
BAMBOO	Ecosystem	3176				0,03%	0,03%	0,16%	0,13%	0,16%	0,54%	0,91%	0,88%	13,07%
GOTADI	Ecosystem	3125				0,03%	0,03%	0,06%	0,10%	0,19%	0,32%	0,77%	2,02%	12,83%
VNDIRECT	Ecosystem	3074				0,03%	0,07%		0,07%	0,16%	0,36%	0,65%	1,20%	12,39%
CASHBAG	Partnership	2301					0,04%	0,09%		0,17%	0,30%	0,78%	1,52%	12,39%
FPT_PLAY	Partnership	2399				0,08%	0,08%	0,04%	0,13%	0,33%	0,29%	0,71%	1,50%	13,38%
MOMO	Partnership	2353						0,08%	0,04%	0,30%	0,59%	0,55%	1,61%	12,66%
Universities	Partnership	2368					0,08%	0,13%	0,04%	0,21%	0,13%	0,93%	2,45%	14,32%
RB	RB	9480	0,01%			0,01%	0,03%	0,06%	0,06%	0,18%	0,36%	0,71%	1,42%	11,98%
Telesale	Telesale	9297			0,01%	0,02%	0,01%	0,04%	0,14%	0,31%	0,24%	0,63%	1,44%	13,68%

Figure 1-2. Service Level Agreements report.

From the *Conversion Rate report,* we can observe the following:

- The conversion rate of customers completing their first transaction from VNDIRECT is the lowest at 24.46%

- The conversion rate of customers who made transactions in the last 2 months from Access Trade is the lowest at 92.96%.

From the *Conversion Rate report,* we see that customers from the two sources VNDIRECT and Access Trade have relatively low conversion rates. Continuing to examine these two customer sources in the *Service Level Agreements (SLAs) report* we find:

- Customers from Access Trade in December have the lowest transaction completion rate compared to all sources. This explains why the value of this customer group in the *Conversion Rate Report* by channel, specifically the TRANS_IN_2_MONTHS metric, is low.
  - ⇨ Need to investigate in December what reasons caused the customer volume from this source to be so low (possibly due to the advertising campaign not reaching enough people or becoming less effective after a period of operation, the promotion program not being attractive, system glitches, ...)

- Customers from VNDIRECT in the last 4 months of 2022 had transaction completion rates not higher than the average rates of all sources. It seems this customer group wasn't well cared for, so there's a need to improve their care (promote promotional programs, incentives).

1.1.2. Latency report:

To monitor conversion latency between stages to detect potential issues in these processes.

CRM_Source	CRM_Channel	AVG of Latency				SLAs			
		AVG LAT of Click to Install	AVG LAT of Install to eKYC	AVG LAT of eKYC to create Acc	AVG LAT of Create Acc to Trans	AVG LAT of Install	AVG LAT of eKYC	AVG LAT of create Acc	AVG LAT of Trans
AccessTrade	Digital Direct Sale	90	44	21	16	275	319	340	357
Facebook	Digital Direct Sale	92	45	22	14	273	318	341	357
Google	Digital Direct Sale	93	46	22	19	272	318	340	359
ZaloAdtima	Digital Direct Sale	91	47	21	15	272	319	342	358
BAMBOO	Ecosystem	89	45	23	16	272	318	341	357
GOTADI	Ecosystem	91	44	22	18	274	319	340	357
VNDIRECT	Ecosystem	91	46	23	17	272	317	340	359
CASHBAG	Partnership	89	47	23	19	272	319	340	359
FPT_PLAY	Partnership	88	45	22	17	272	318	341	357
MOMO	Partnership	90	46	22	18	271	318	341	359
Universities	Partnership	91	46	21	16	272	319	341	358
RB	RB	91	45	22	17	273	319	342	359
Telesale	Telesale	91	45	22	16	273	319	342	358

Figure 1-3.Latency report

1.2. Profit and Loss report:

For each transaction corresponding to each transaction group, we have the profit margin as follows:

Transaction Group	NIM (%)
TRANSFER	1
PAYMENT	5
DEPOSIT	10

Figure 1-4. The net profit margin for each transaction group

The costs that the bank must pay for various sources include infrastructure costs and advertising costs corresponding to the current stage of the customer.

CRM Source	Base Payment per month (thousands VND)	Cost per acquisition (thousands VND)					
		Click	Install	eKYC	Customer	Acc	Trans
Partnership	80,000	0.5	1	2	4	4	8
Ecosystem	100,000	0.625	1.25	2.5	5	5	10
Telesale	50,000	3.125	6.25	12.5	25	25	50
Digital Direct Sale	20,000	1.25	2.5	5	10	10	20
RB	-	-	-	25	50	50	100

Figure 1-5. The base payment for each month / day running the program and the cost per acquisition of each phases.

Meaning of the fields

Field	Description
CRM_Source	Source
CRM_Channel	Channel
TOTAL_PROFIT	Total profit
TOTAL_COST	Total cost
NET_PROFIT	Total net profit
ROI	Return on Investment (ROI) = total net profit / total costs
ACTIVE_CUS	The number of customers conducting transactions in the last 2 months.
COST_PER_ACTIVE_CUS	The cost incurred by the bank per active customer.
NET_PROFIT_PER_ACTIVE_CUS	The net profit earned per active customer.
GROSS_PROFIT_MAGIN	Gross profit margin.

Table 1-2.Profit and Loss report description.

| CRM_Source	CRM_Channel	TOTAL_PROFIT	TOTAL_COST	NET_PROFIT	ROI	ACTIVE_CUSTOMER	COST_PER_ACTIVE_CU!	NET_PROFIT_PER_ACTIVE_CU	GROSS_PROFIT_MAGIN
AccessTrade	Digital Direct Sale	12.353.950.838	280.138.750	12.073.812.088	43,10	625	448.222,00	19.318.099	0,977323955
ZaloAdtima	Digital Direct Sale	11.898.684.100	279.343.750	11.619.340.350	41,60	617	452.745,14	18.831.994	0,976523139
Facebook	Digital Direct Sale	12.492.377.858	279.315.000	12.213.062.858	43,73	627	445.478,47	19.478.569	0,977641166
Google	Digital Direct Sale	9.939.681.021	278.193.750	9.661.487.271	34,73	598	465.206,94	16.156.333	0,972011803
BAMBOO	Ecosystem	15.624.744.196	1.226.061.250	14.398.682.946	11,74	828	1.480.750,30	17.389.714	0,921530795
VNDIRECT	Ecosystem	14.236.735.002	1.225.028.125	13.011.706.877	10,62	752	1.629.026,76	17.302.802	0,913953015
GOTADI	Ecosystem	14.931.571.726	1.225.670.625	13.705.901.101	11,18	815	1.503.890,34	16.817.057	0,917914159
CASHBAG	Partnership	11.713.804.150	975.258.000	10.738.546.150	11,01	580	1.681.479,31	18.514.735	0,916742846
MOMO	Partnership	12.854.472.282	975.519.500	11.878.952.782	12,18	634	1.538.674,29	18.736.519	0,924110498
Universities	Partnership	12.971.577.542	975.762.000	11.995.815.542	12,29	669	1.458.538,12	17.930.965	0,924776921
FPT_PLAY	Partnership	12.757.557.448	975.662.500	11.781.894.948	12,08	620	1.573.649,19	19.003.056	0,923522782
RB	RB	48.637.736.887	695.850.000	47.941.886.887	68,90	2.421	287.422,55	19.802.514	0,985693208
Telesale	Telesale	46.310.637.786	983.756.250	45.326.881.536	46,08	2.453	401.042,09	18.478.142	0,978757445

Figure 1-6. Profit and Loss report.
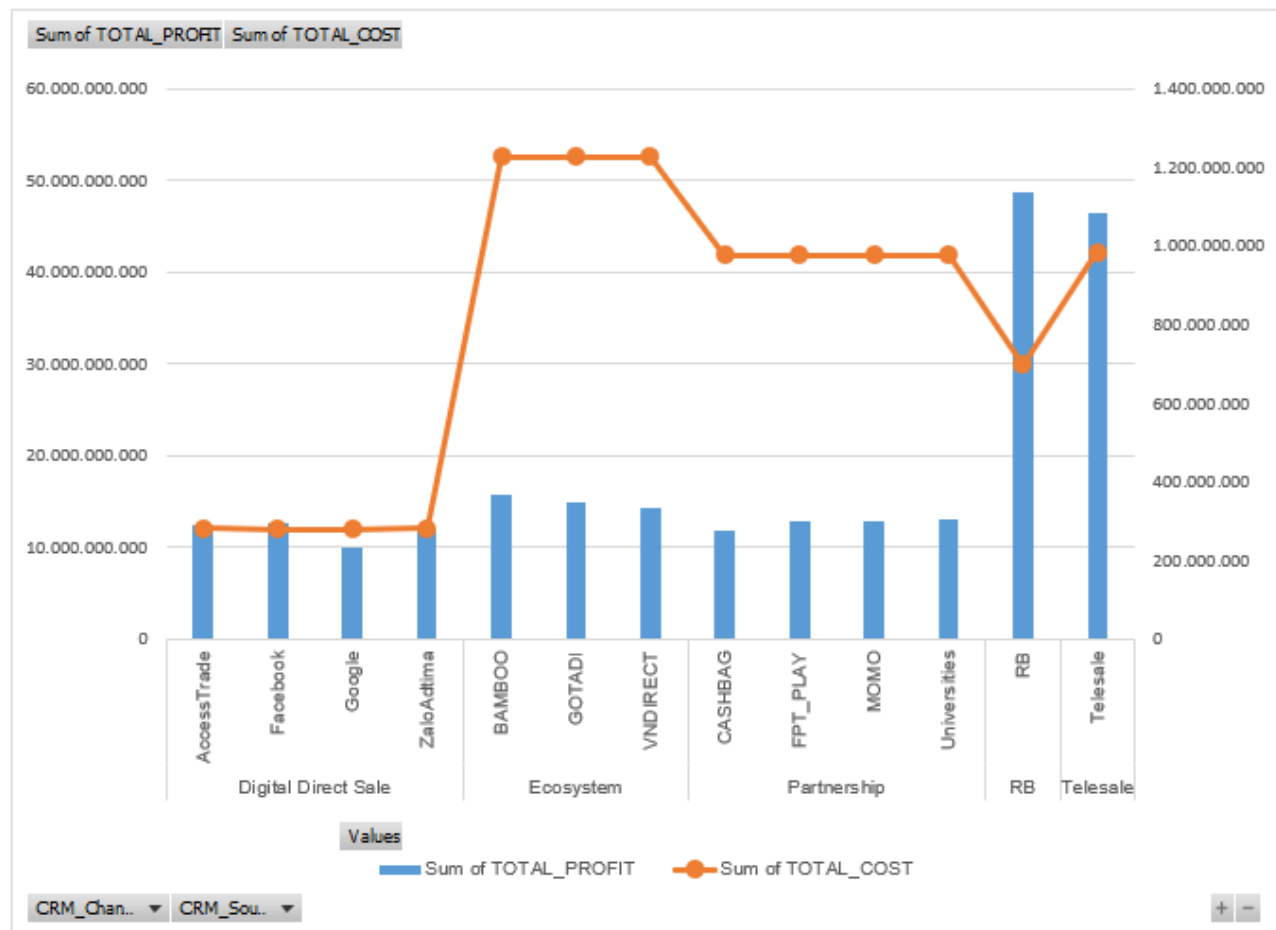
Figure 1-7. The chart of total profit and cost by source.

From the *Profit and Loss report* and chart, we can see that for customers from the Ecosystem and Partnership channels, whether they transact or operate on their own platform, we incur significant costs. Specifically, for every dollar spent, we only gain about 10-12 dollars in profit. Therefore, it's crucial to regularly monitor these customers, possibly checking their churn rates.

Meanwhile, the RB and Telesale channels are very cost-effective, especially RB, which performs exceptionally well in every aspect: highest ROI, lowest costs, and highest profit per customer. This reflects the reality that the RB channel leverages the bank's branch staff, which is a readily available resource with moderate costs.

1.3. Customer Lifetime Value - CLV:

1.3.1. Preparation:

To calculate the customer lifetime value, I use the following formula:
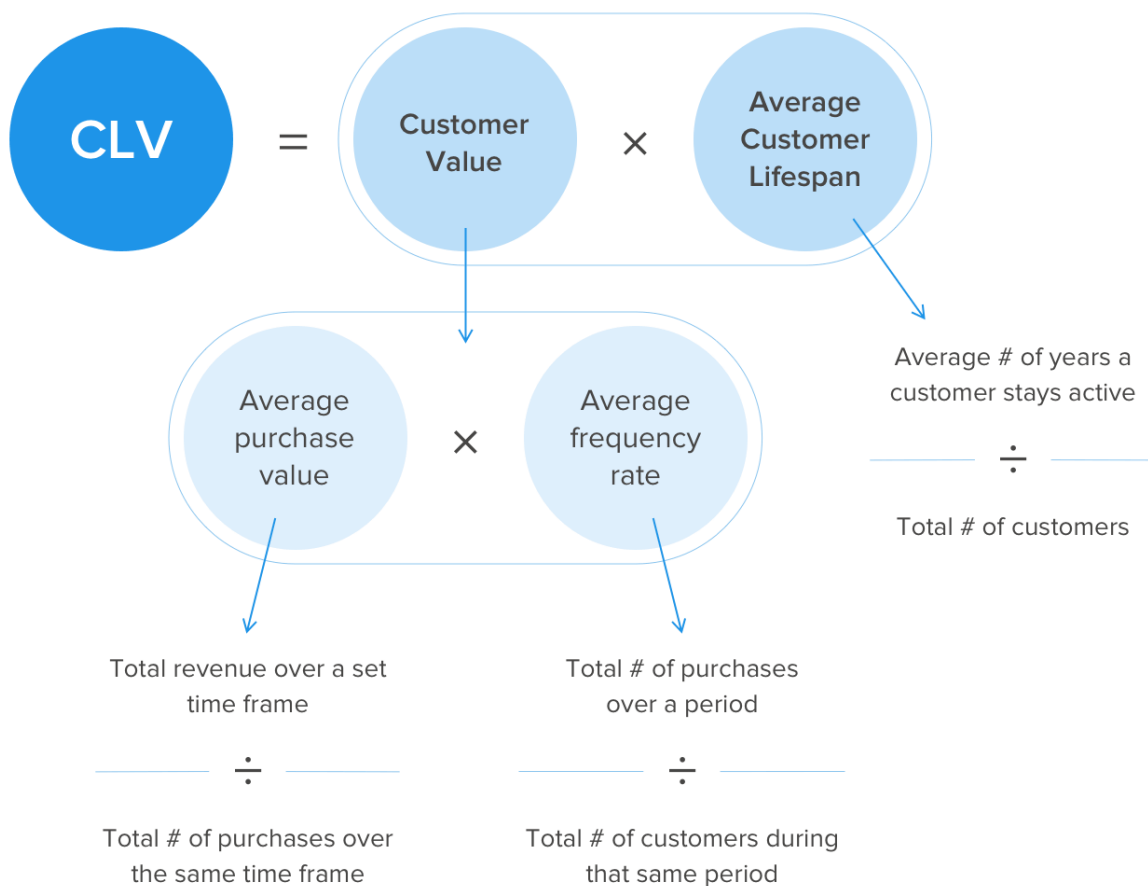

Figure 1-8. Customer Lifetime Value formula.

Create an additional table `TMP_CUSTOMER_LIFETIME_REPORT` in the Data Warehouse to show the customer lifetime value with the following fields:

Field	Description
CRM_Source	Source
CRM_Channel	Channel
Customer_ID	Customer ID

TRANS_CNT	The number of transactions conducted.
TRANS_AMT	The total value of transactions.
LIFE_SPAN	The age of the customer on the platform (from the first transaction to the last transaction).
GPM	Gross profit magin
APV	The average value per transaction.
CV	Customer value
CLV	Customer lifetime value

Table 1-3: TMP_CUSTOMER_LIFETIME_REPORT information

	CRM_Source	CRM_Channel	Customer_ID	TRANS_CNT	TRANS_AMT	LIFE_SPAN	GPM	APV	CV	CLV
1	MOMO	Partnership	190703	0	0	0	0,92411049799363	0.0000000000000000000	0	0
2	RB	RB	190908	0	0	0	0,985693207691428	0.0000000000000000000	0	0
3	AccessTrade	Digital Direct Sale	191149	1	452924651	1	0,97732395460633	452924651.0000000000000000000	134235500,181764	135809245,655364
4	FPT_PLAY	Partnership	191163	0	0	0	0,92352278216261	0.0000000000000000000	0	0
5	Universities	Partnership	191332	1	61756320	1	0,924776921168751	61756320.0000000000000000000	18303023,4417183	17521981,8761561

Figure 1-9: TMP_CUSTOMER_LIFETIME_REPORT overview.

Create an additional temporary table #JTB_APV to calculate the difference between CLV and average CLV, with the following fields:

Field	Description
CRM_Source	Source
CRM_Channel	Channel
AVG_OF_CLV	Average CLV by channel.
Customer_ID	Customer ID
CLV	Customer lifetime value
DIF_TO_AVG	The difference between CLV and AVG_OF_CLV = CLV - AVG_OF_CLV
RANK_BY_SOURCE	Ranking CLV of each customer by source.

Table 1-4: #JTB_APV information.

	CRM_Source	CRM_Channel	AVG_OF_CLV	Customer_ID	CLV	DIFF_TO_AVG	RANK_BY_SOURCE
1	AccessTrade	Digital Direct Sale	19602641,1531139	668721	298953547,265895	279350906,112781	1
2	AccessTrade	Digital Direct Sale	19602641,1531139	937736	298790503,781794	279187862,62868	2
3	AccessTrade	Digital Direct Sale	19602641,1531139	883449	293444571,892663	273841930,739549	3
4	AccessTrade	Digital Direct Sale	19602641,1531139	744001	285882484,179747	266279843,026633	4
5	AccessTrade	Digital Direct Sale	19602641,1531139	261892	284679555,014608	265076913,861494	5
6	AccessTrade	Digital Direct Sale	19602641,1531139	258103	284665689,072595	265063047,919481	6
7	AccessTrade	Digital Direct Sale	19602641,1531139	695528	283760327,886606	264157686,733492	7

Figure 1-10: #JTB_APV overview.

1.3.2. Analysis and evaluation:

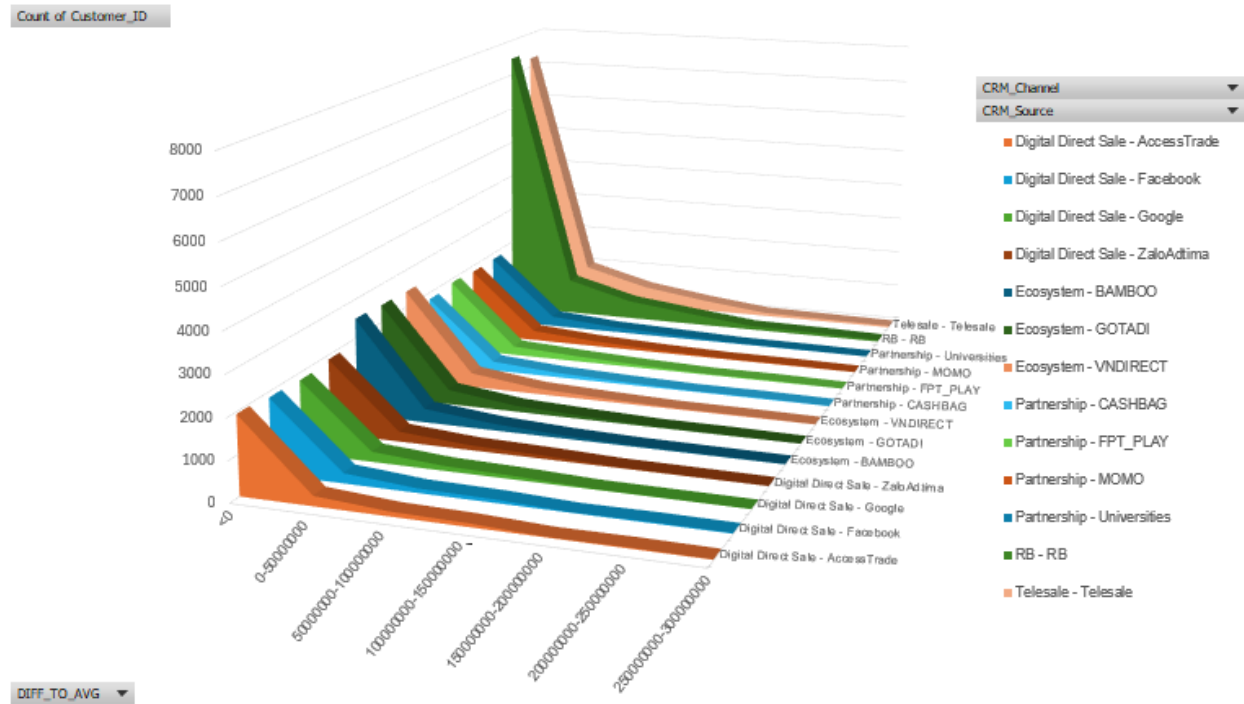*Figure 1-11: Average difference between customer value per source and average customer value.*

Figure 1-12: A chart depicting the distribution of customers by the difference between CLV and average CLV.

From *Figure 2-4*, we observe that most sources from the Digital Direct Sale channel have CLV lower than the average CLV. RB shows an insignificant CLV difference. However, customers from the Telesale channel stand out notably with remarkably high differences. This highlights that the Telesale channel is actively contributing significantly above the average CLV value.

From *Figure 2-5*, we can see that a significant number of customers from all sources have AVG_OF_CLV < 0, especially notable in the RB and Telesale sources, which also have a large number of customers in the high segment. The presence of so many customers with AVG_OF_CLV < 0 has a very negative impact, lowering the average CLV and burdening higher-segment customers more.

1.4. Churn Rate report:

CRM_Source	CRM_Channel	AVG_LIFE_SPAN	CUS_CNT	3 month to first trans	Trans in 1 month after first trans	Trans in 6 months after first trans
AccessTrade	Digital Direct Sale	0	625	86,56%	12,38%	0%
Facebook	Digital Direct Sale	0	627	86,60%	13,44%	0%
Google	Digital Direct Sale	0	598	83,78%	11,58%	0%
ZaloAdtima	Digital Direct Sale	0	617	87,68%	12,20%	0%
BAMBOO	Ecosystem	0	828	82,49%	10,98%	0%
GOTADI	Ecosystem	0	815	83,68%	15,98%	0,92%
VNDIRECT	Ecosystem	0	752	85,11%	12,97%	0%
CASHBAG	Partnership	0	580	82,59%	13,36%	0%
FPT_PLAY	Partnership	0	620	84,68%	12,19%	0%
MOMO	Partnership	0	634	81,70%	14,09%	0%
Universities	Partnership	0	669	82,66%	14,65%	1,23%
RB	RB	0	2421	82,78%	13,27%	0,38%
Telesale	Telesale	0	2453	84,18%	12,30%	0,39%

Contents