Managing Value with Customer Centricity and Advanced Analytics

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Northwestern | Kellogg


Harrah's

TODAY'S AGENDA

- Quantifying customer value enables customer-centric managerial decisions
- How customer centricity enables advanced analytics (and vice versa)

CUSTOMER LIFETIME VALUE (CLV)

CUSTOMER LIFETIME VALUE = Projected value of a given customer to the firm over a well-defined period of time. → Key metric for firm health, and enables managerial decision-making around customer strategy

EXAMPLE: B2B SOFTWARE

You sell software to restaurants, which enables them to integrate mobile and kiosk orders into existing POS system.

TYPICAL WAYS CUSTOMERS ARE VALUED

Is customer a good fit?

Does this solve a customer need?

How much have they spent in the past?

Are they happy?

EXAMPLE: B2B SOFTWARE

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“DATA-DRIVEN” VALUATIONS ARE OFTEN MYOPIC

- 1 year contract, revenue = $100 / mo, cost-to-serve = $30 / mo
- 1 year x 12 months x ($100-$30) = **$840**

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You sell software to restaurants, which enables them to integrate mobile and kiosk orders into existing POS system.

SLIGHTLY-LESS MYOPIC VALUATION

- What will happen over time?
- E.g., 3% annual increase

	In 1st year	In 2nd year	In 3rd year
Revenue	$100 / mo **= $1200**	$103 / mo **= $1236**	$106.09 / mo **= $1273**
Cost	$30 / mo **= $360**	$30.9 / mo **= $370.8**	$31.83 / mo **= $381.92**
Annual Profit	**$840**	**$865.20**	**$891.16**

3 YEAR TOTAL

$2596.36

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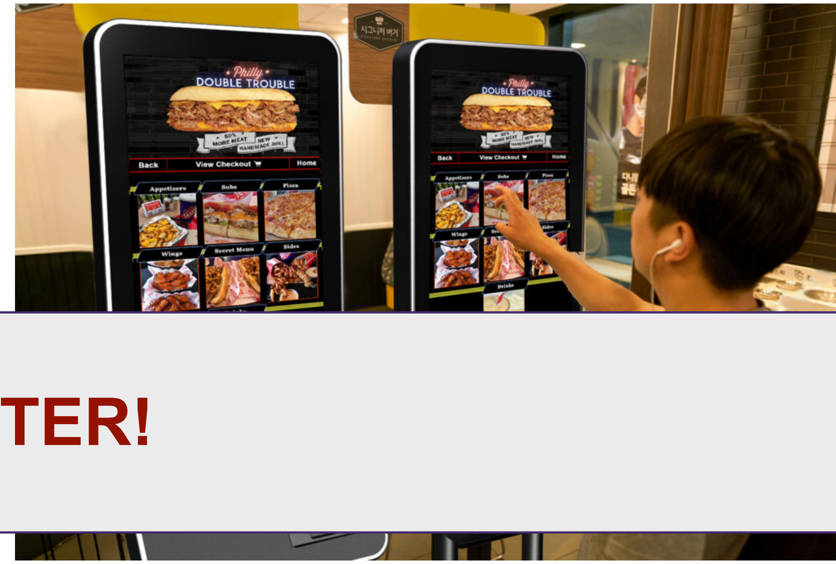

WE CAN DO BETTER!

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FOUR METRICS IN CUSTOMER LIFETIME VALUE

YIELD - revenue generated or whatever gives value…

COST TO SERVE - COGS, time spent, customer success, maintenance…

LONGEVITY - amount of time as customer

IMMEDIACY - how quickly yield accrues

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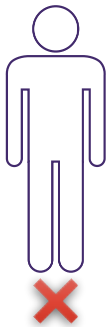
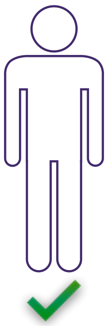
Low spender
High cost
Short time
Revenue over long time





Big spender
Low cost
Long time
Revenue over short time

CLV STEP 1: CHOOSE TIME HORIZON

Year	0	1	2	3	4	5

Starting point =
beginning of "tenure"
as customer

CLV STEP 2: MAP OUT REVENUES AND COSTS

Year	0	1	2	3	4	5
Revenue	$ -	$1,200.00	$1,236.00	$1,273.08	$1,311.27	$1,350.61
Cost to service and market	$ -	$360.00	$370.80	$381.92	$393.38	$405.18
Installation	$250.00	$ -	$ -	$ -	$ -	$ -
Net	-$250.00	$840.00	$865.20	$891.16	$917.89	$945.43

CLV STEP 3: CUSTOMER ATTRITION

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Avg % remaining is average of
% that start and end year

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Expected net revenue	-$250.00	$798.00	$739.75	$685.74	$635.69	$589.28

Expected net revenue =
% likelihood remaining * net revenue
0.95 * $840

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CLV STEP 4: TIME VALUE OF MONEY

discount rate	8%					
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$$\frac{\$798}{(1.08)^{0.5}} \qquad \frac{\$739.75}{(1.08)^{1.5}} \qquad \frac{\$685.74}{(1.08)^{2.5}}$$

CLV STEP 5: ADD IT UP!

discount rate	8%					
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Expected net revenue	-$250.00	$798.00	$739.75	$685.74	$635.69	$589.28
Net present value	-$250.00	$767.88	$659.09	$565.72	$485.58	$416.79
Cumulative NPV	-$250.00	$517.88	$1,176.97	$1,742.69	$2,228.27	**$2,645.06**

$2645.06

CLV IS A **MANAGERIAL TOOL**

Many managers think they manage prospects, customers, employees, etc.
CLV allows them to **MANAGE VALUE**

CLV IS A **COMPREHENSIVE, FORWARD-LOOKING** MEASURE OF VALUE

With significant managerial implications

Customer Acquisition

- What is a reasonable price discount?
- What is the right incentive for the sales team?
- Should we lower upfront fees to join? Can we raise them?

Customer Development

- What features will appeal to existing customers?
- What incentives can be used to upsell?

Customer Retention

- Is it worthwhile to increase service levels?
- Should we proactively reduce fees for at-risk customers?

LTV IS ROBUST TO OTHER CONTEXTS, TOO

Store Management

- What is the value of each retail outlet?
- What kinds of resources should we dedicate to which brick-and-mortar stores?

Employee Development

- What is the value of each employee?
- How much should we invest in which employees?

Operations

- What is the value of our each plant?
- Which facilities / production capabilities merit which kinds of investments?

LTV can be a helpful framework anytime you want to empirically estimate the value of some unit over time

EXAMPLE AT A **FINANCIAL SERVICES** FIRM

ACCOUNT FEATURES

	Basic	Gold	Platinum
Monthly fee	$10	$20	$30
Minimum balance	$1,000	$10,000	$10,000
24/7 support	✔	✔	✔
# transactions / month	5	10	unlimited
Access to premium content			✔

CUSTOMER SUCCESS TEAM LEARNS…

ACCOUNT FEATURES

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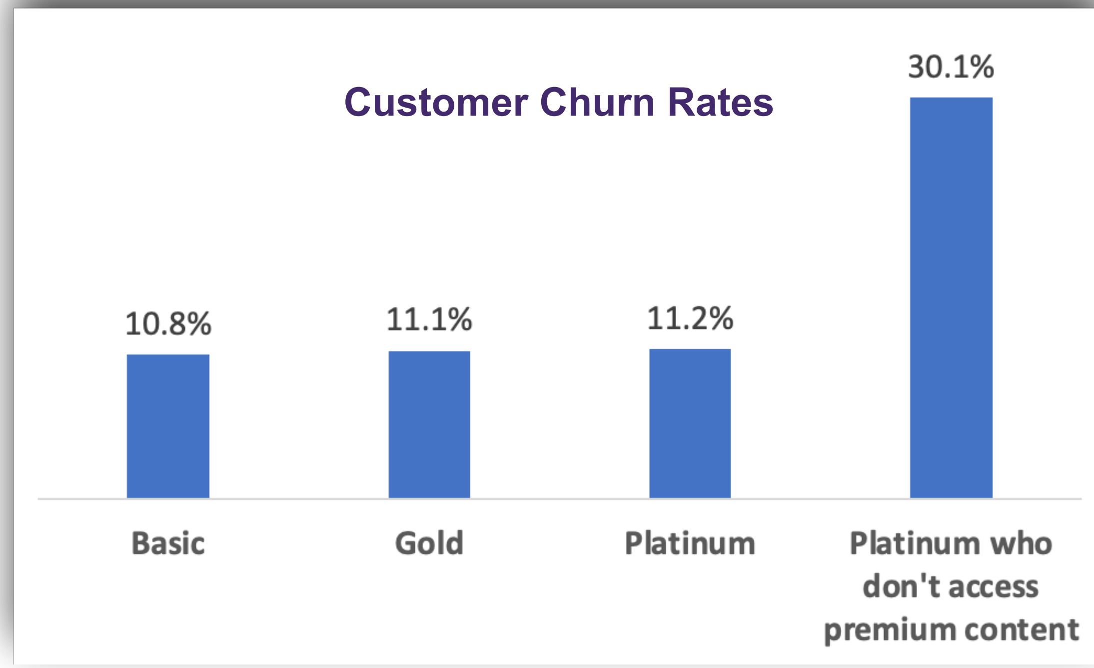

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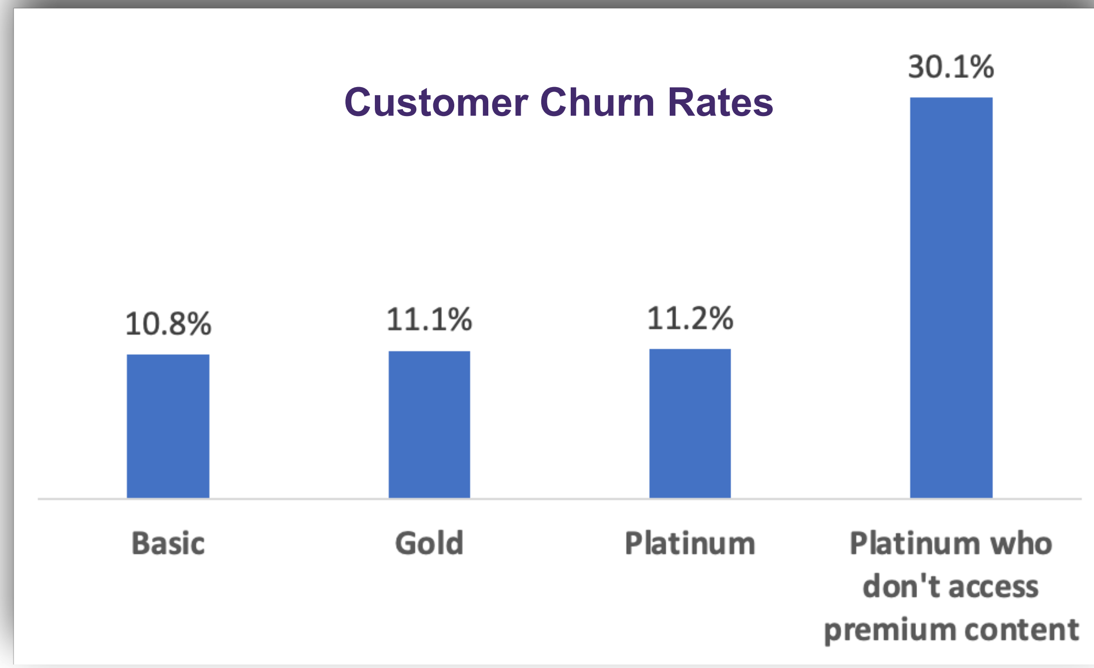

= 10% of all Platinum Customers…New Segment?

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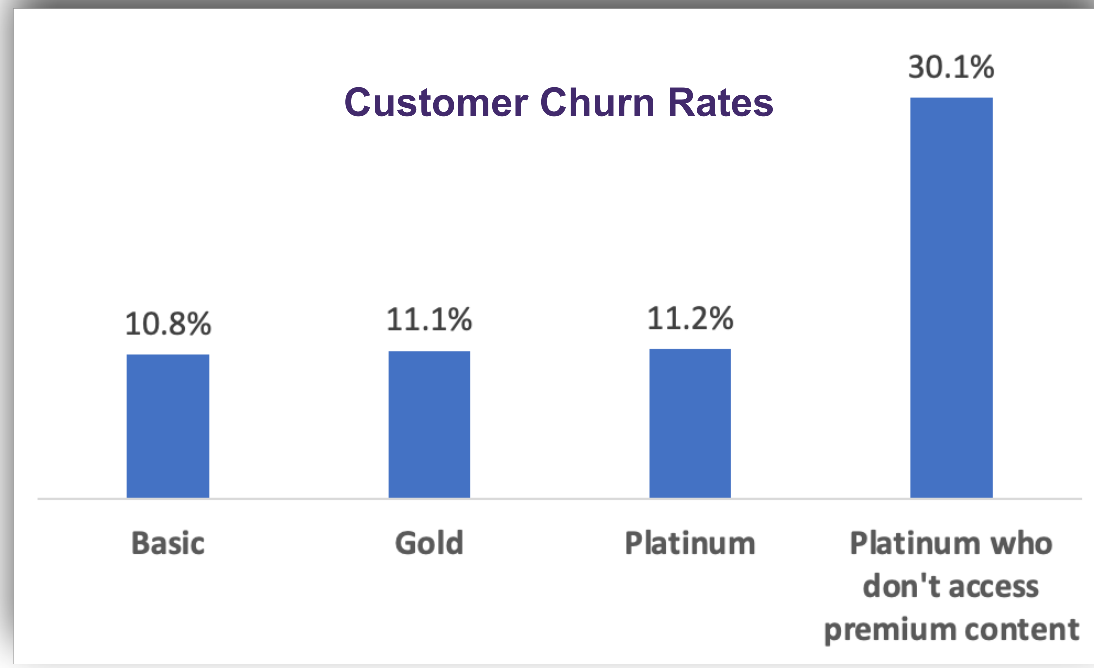
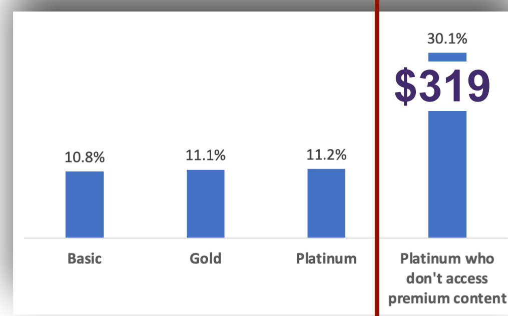


Should we move at-risk Platinum to Gold?
Which group yields most value?

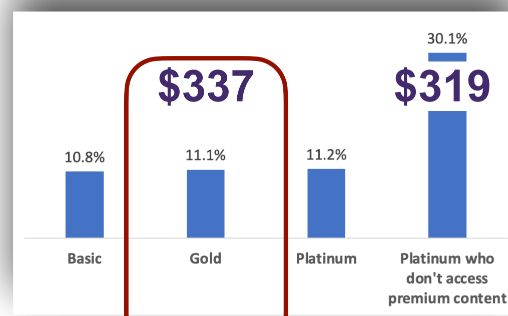
= 10% of all Platinum Customers…New Segment?

CALCULATE CLV FOR AT-RISK GROUP



discount rate	10%					
Year	0	1	2	3	4	5
Revenue	$ -	$360.00	$360.00	$360.00	$360.00	$360.00
Cost	$ -	$200.00	$200.00	$200.00	$200.00	$200.00
Net	$ -	$160.00	$160.00	$160.00	$160.00	$160.00
Attrition	0%	30%	30%	30%	30%	30%
% Remaining year end	100.00%	70.00%	49.00%	34.30%	24.01%	16.81%
Avg % remaining in yr	100.00%	85.00%	59.50%	41.65%	29.16%	20.41%
Expected net revenue	$ -	$136.00	$95.20	$66.64	$46.65	$32.65
Net present value	$ -	$129.67	$82.52	$52.51	$33.42	$21.26
Cumulative NPV	$ -	$129.67	$212.19	$264.70	$298.12	$319.38

CALCULATE CLV FOR GOLD



discount rate	10%					
Year	0	1	2	3	4	5
Revenue	$ -	$240.00	$240.00	$240.00	$240.00	$240.00
Cost	$ -	$130.00	$130.00	$130.00	$130.00	$130.00
Net	$ -	$110.00	$110.00	$110.00	$110.00	$110.00
Attrition	0%	11%	11%	11%	11%	11%
% Remaining year end	100.00%	88.80%	78.85%	70.02%	62.18%	55.22%
Avg % remaining in yr	100.00%	94.40%	83.83%	74.44%	66.10%	58.70%
Expected net revenue	$ -	$103.84	$92.21	$81.88	$72.71	$64.57
Net present value	$ -	$99.01	$79.93	$64.52	$52.09	$42.05
Cumulative NPV	$ -	$99.01	$178.93	$243.46	$295.54	$337.59

HERE'S WHAT WE KNOW…

GOLD

CLV = $337

AT-RISK PLATINUM

CLV = $319

IMPLICATIONS FOR CUSTOMER RETENTION / DEVELOPMENT?

GOLD

CLV = $337

AT-RISK PLATINUM

CLV = $319

Can spend **up to $18*** to move at-risk Platinum to Gold

*assuming that moving them to Gold fully reduces churn from 30% to 11%

If no full reduction, what does churn need to become to break-even?

BREAK-EVEN? SENSITIVITY ANALYSIS

AT-RISK PLATINUM

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BREAK-EVEN? SENSITIVITY ANALYSIS

AT-RISK PLATINUM

CLV = $319

At 27.5% churn, at-risk Platinum = $337= Gold

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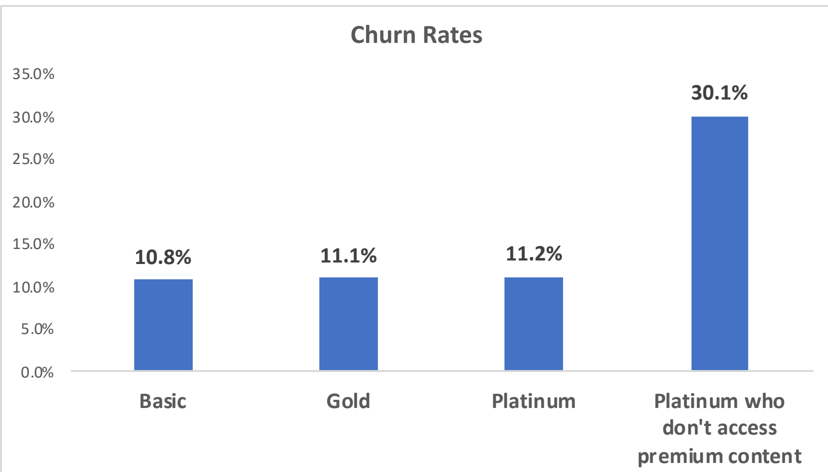
Cost	$ -	$200.00	$200.00	$200.00	$200.00	$200.00
Net	$ -	$160.00	$160.00	$160.00	$160.00	$160.00
Attrition	0%	27.5%	27.5%	27.5%	27.5%	27.5%
% Remaining year end	100.00%	72.50%	52.56%	38.11%	27.63%	20.03%
Avg % remaining in yr	100.00%	86.25%	62.53%	45.34%	32.87%	23.83%
Expected net revenue	$ -	$138.00	$100.05	$72.54	$52.59	$38.13
Net present value	$ -	$131.58	$86.72	$57.16	$37.67	$24.83
Cumulative NPV	$ -	$131.58	$218.30	$275.46	$313.13	$337.96

ASSUMPTIONS UNDERLYING CLV

CLV calculation: the inputs are correct

- Revenues / costs
- Churn rates

CLV decision-making: the action we take will <u>cause</u> the CLV to change



Will shifting customers from platinum to gold actually reduce their churn?

Maybe… if our story is correct.

But maybe "Platinum-who-don't-access-premium-content" won't be happy with "gold." Maybe they churn because they want good premium content and they don't like yours. Moving them to "gold" won't reduce churn.

Knowing whether your actions actually work requires rigorous testing.

CLV IS A **MANAGERIAL TOOL**

Many managers think they manage prospects, customers, employees, etc.
CLV allows them to **MANAGE VALUE**

YOUR HOMEWORK ASSIGNMENT

- FinGain, part 1: practicing what you've already done
- FinGain, part 2: going a little deeper

discount rate	

New Agency ID	Predicted Return in Year 1	Predicted Attrition in...				
		Y1	Y2	Y3	Y4	Y5
1001	$ 147,510.00	0.095	0.055	0.040	0.065	0.060
1002	$ 72,980.00	0.055	0.025	0.060	0.090	0.110
1003	$ 278,000.00	0.120	0.056	0.020	0.055	0.055
1004	$ 202,170.00	0.075	0.050	0.030	0.015	0.030
1005	$ 262,570.00	0.090	0.054	0.032	0.055	0.040
1006	$ 257,220.00	0.105	0.054	0.028	0.045	0.035
1007	$ 266,630.00	0.055	0.041	0.024	0.045	0.040
1008	$ 185,060.00	0.110	0.059	0.026	0.085	0.040
1009	$ 236,730.00	0.085	0.051	0.017	0.070	0.025
1010	$ 183,190.00	0.055	0.025	0.010	0.030	0.015
1011	$ 162,240.00	0.100	0.054	0.032	0.055	0.035
1012	$ 247,300.00	0.080	0.061	0.027	0.065	0.045
1013	$ 198,360.00	0.115	0.069	0.105	0.080	0.040
1014	$ 210,430.00	0.090	0.051	0.020	0.065	0.035
1015	$ 140,630.00	0.065	0.027	0.012	0.060	0.025
1016	$ 133,730.00	0.075	0.057	0.030	0.060	0.055
1017	$ 279,900.00	0.105	0.057	0.023	0.090	0.025
1018	$ 129,550.00	0.115	0.061	0.021	0.100	0.040
1019	$ 236,230.00	0.050	0.040	0.018	0.015	0.010
1020	$ 210,370.00	0.050	0.040	0.024	0.045	0.035
1021	$ 239,940.00	0.080	0.034	0.045	0.040	0.085
1022	$ 82,960.00	0.065	0.032	0.014	0.050	0.025
1023	$ 261,920.00	0.125	0.065	0.033	0.090	0.050