

Managing Value with Customer Centricity and Advanced Analytics

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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

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



“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**

EXAMPLE: B2B SOFTWARE

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

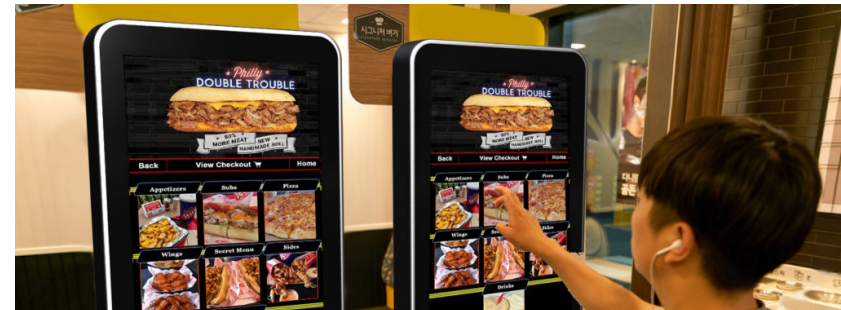
3 YEAR TOTAL

\$2596.36



EXAMPLE: B2B SOFTWARE

You sell software to restaurants, which enables them to integrate mobile and kiosk orders into



WE CAN DO BETTER!

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
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Annual Profit	\$840	\$865.20	\$891.16

3 YEAR TOTAL

\$2596.36

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

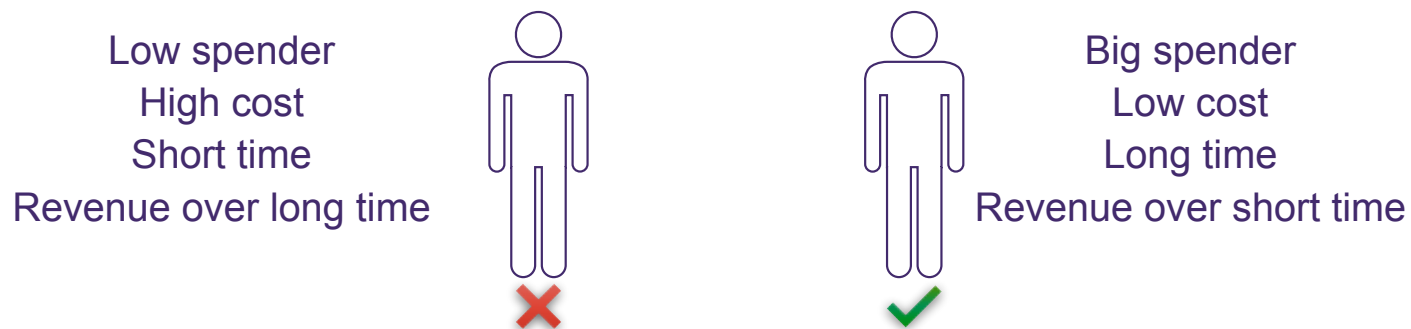
FOUR METRICS IN CUSTOMER LIFETIME VALUE

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

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IMMEDIACY - how quickly yield accrues



CLV STEP 1: CHOOSE TIME HORIZON

Year	0	1	2	3	4	5
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↑
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

Year	0	1	2	3	4	5
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Installation	\$250.00	\$ -	\$ -	\$ -	\$ -	\$ -
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Attrition	0%	10%	10%	10%	10%	10%
% Remaining year end	100.0%	90.0%	81.0%	72.9%	65.6%	59.0%

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Avg % remaining in yr	100.0%	95.0%	85.5%	77.0%	69.3%	62.3%

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

Expected net revenue =
 % likelihood remaining * net revenue
 0.855 * \$865.20

CLV STEP 4: TIME VALUE OF MONEY

discount rate		8%				
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	\$ -	\$ -	\$ -	\$ -	\$ -
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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

$$\frac{\$798}{(1.08)^{0.5}}$$

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$$\begin{array}{r} \uparrow \\ \$798 \\ \hline (1.08)^{0.5} \end{array} \quad \begin{array}{r} \uparrow \\ \$739.75 \\ \hline (1.08)^{1.5} \end{array}$$

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$$\begin{array}{ccc}
 \uparrow & \uparrow & \uparrow \\
 \frac{\$798}{(1.08)^{0.5}} & \frac{\$739.75}{(1.08)^{1.5}} & \frac{\$685.74}{(1.08)^{2.5}}
 \end{array}$$

CLV STEP 5: ADD IT UP!

discount rate	8%					
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	\$ -	\$ -	\$ -	\$ -	\$ -
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Avg % remaining in yr	100.0%	95.0%	85.5%	77.0%	69.3%	62.3%
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

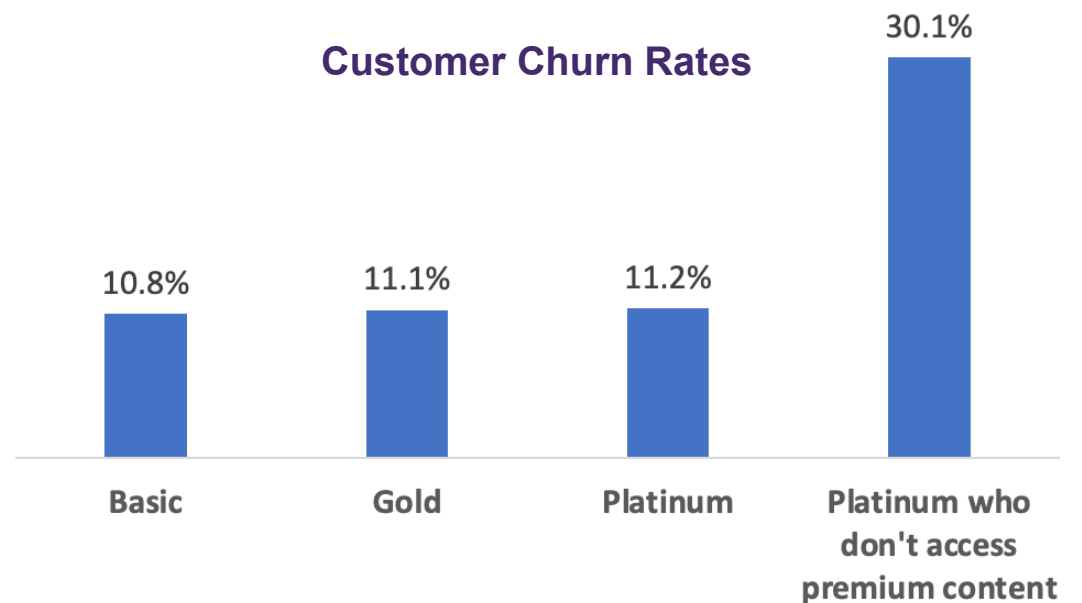
ACCOUNT FEATURES			
	Basic	Gold	Platinum
Monthly fee	\$10	\$20	\$30
Minimum balance	\$1,000	\$10,000	\$10,000
24/7 support	✓	✓	✓
# transactions / month	5	10	unlimited
Access to premium content			✓

CUSTOMER SUCCESS TEAM LEARNS...

ACCOUNT FEATURES

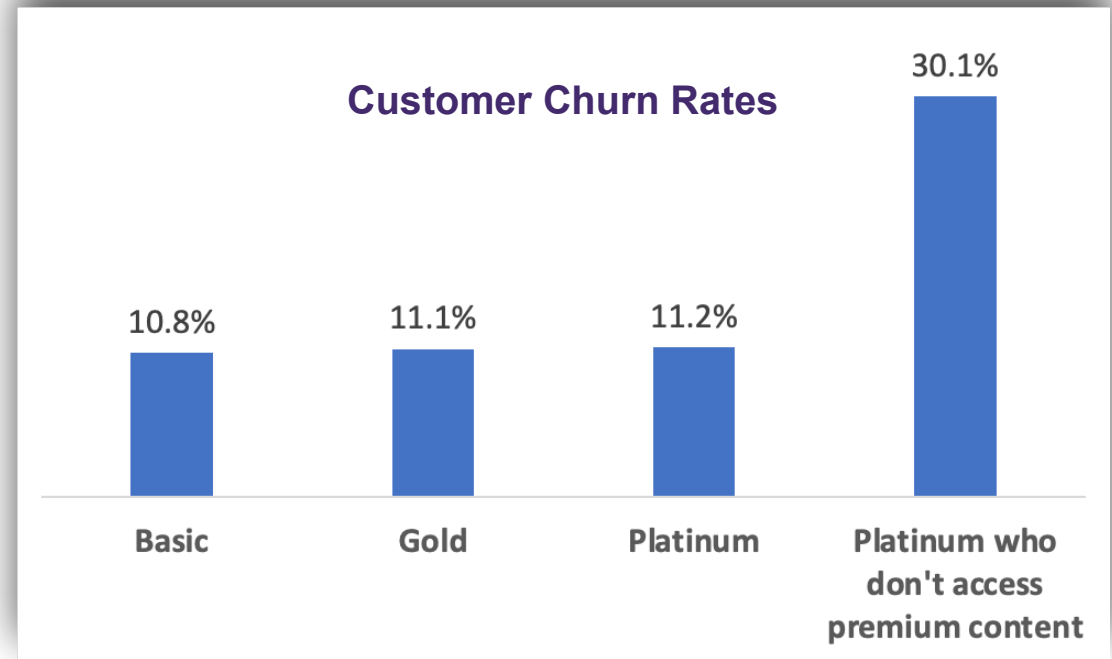
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24/7 support	✓	✓	✓
# transactions / month	5	10	unlimited
Access to premium content			✓

Customer Churn Rates



CUSTOMER SUCCESS TEAM LEARNS...

	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			✓

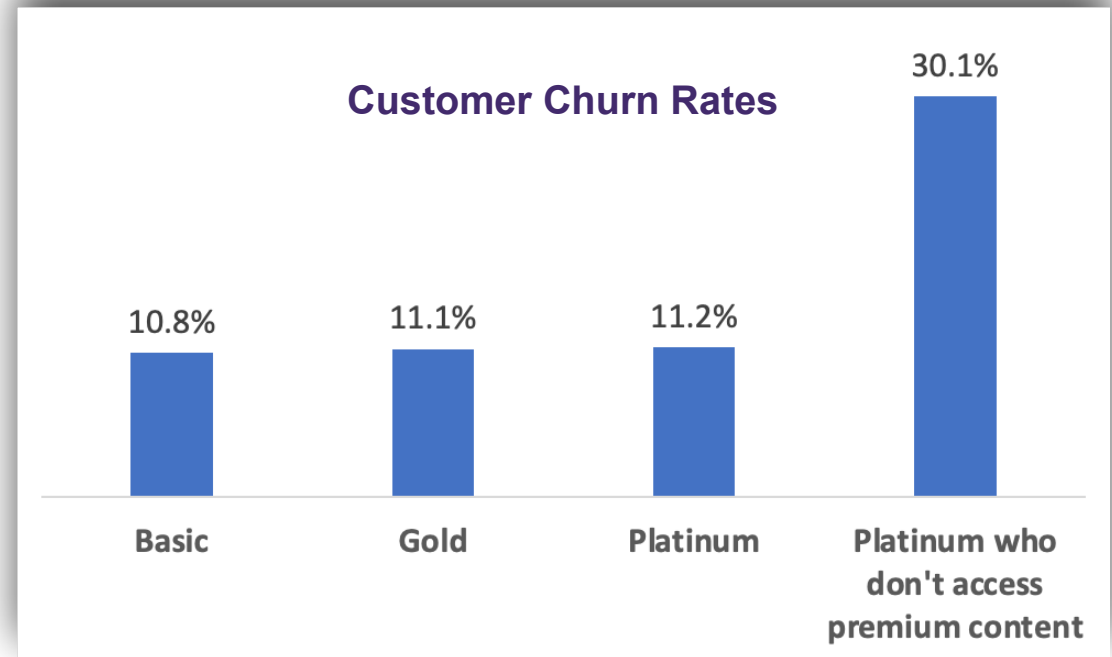


= 10% of all Platinum Customers...New Segment?



CUSTOMER SUCCESS TEAM LEARNS...

	ACCOUNT FEATURES		
	Basic	Gold	Platinum
Monthly fee	\$10	\$20	\$30
Minimum balance	\$1,000	\$10,000	\$10,000
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# transactions / month	5	10	unlimited
Access to premium content			✓

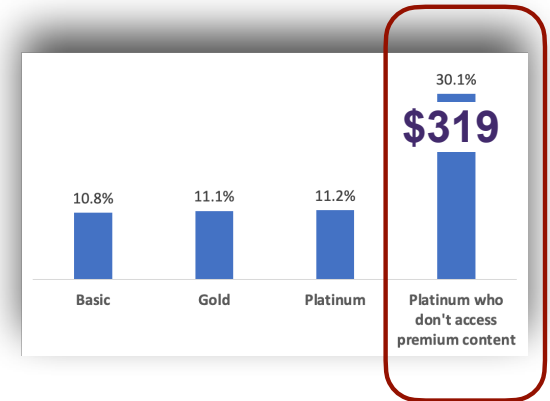


Should we move at-risk Platinum to Gold?
Which group yields most value?

= 10% of all Platinum Customers...New Segment?

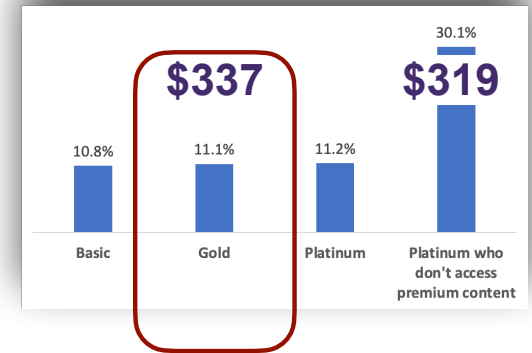


CALCULATE CLV FOR AT-RISK GROUP



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?



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

CLV = \$319

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%
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BREAK-EVEN? SENSITIVITY ANALYSIS

AT-RISK PLATINUM

CLV = \$319

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

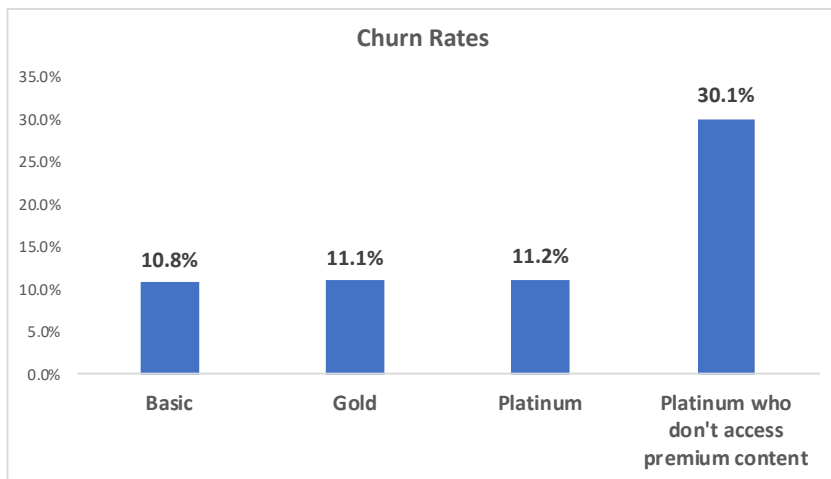
discount rate	10%					
Year	0	1	2	3	4	5
Revenue	\$ -	\$360.00	\$360.00	\$360.00	\$360.00	\$360.00
Cost	\$ -	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Net	\$ -	\$160.00	\$160.00	\$160.00	\$160.00	\$160.00
Attrition	0%	27.5%	27.5%	27.5%	27.5%	27.5%
% Remaining year end	100.00%	72.50%	52.56%	38.11%	27.63%	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 cause 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

	A	B	C	D	E	F	G
1	discount rate						
2							
3							
4			Predicted Attrition in...				
5	New Agency ID	Predicted Return in Year 1	Y1	Y2	Y3	Y4	Y5
6	1001	\$ 147,510.00	0.095	0.055	0.040	0.065	0.060
7	1002	\$ 72,980.00	0.055	0.025	0.060	0.090	0.110
8	1003	\$ 278,000.00	0.120	0.056	0.020	0.055	0.055
9	1004	\$ 202,170.00	0.075	0.050	0.030	0.015	0.030
10	1005	\$ 262,570.00	0.090	0.054	0.032	0.055	0.040
11	1006	\$ 257,220.00	0.105	0.054	0.028	0.045	0.035
12	1007	\$ 266,630.00	0.055	0.041	0.024	0.045	0.040
13	1008	\$ 185,060.00	0.110	0.059	0.026	0.085	0.040
14	1009	\$ 236,730.00	0.085	0.051	0.017	0.070	0.025
15	1010	\$ 183,190.00	0.055	0.025	0.010	0.030	0.015
16	1011	\$ 162,240.00	0.100	0.054	0.032	0.055	0.035
17	1012	\$ 247,300.00	0.080	0.061	0.027	0.065	0.045
18	1013	\$ 198,360.00	0.115	0.069	0.105	0.080	0.040
19	1014	\$ 210,430.00	0.090	0.051	0.020	0.065	0.035
20	1015	\$ 140,630.00	0.065	0.027	0.012	0.060	0.025
21	1016	\$ 133,730.00	0.075	0.057	0.030	0.060	0.055
22	1017	\$ 279,900.00	0.105	0.057	0.023	0.090	0.025
23	1018	\$ 129,550.00	0.115	0.061	0.021	0.100	0.040
24	1019	\$ 236,230.00	0.050	0.040	0.018	0.015	0.010
25	1020	\$ 210,370.00	0.050	0.040	0.024	0.045	0.035
26	1021	\$ 239,940.00	0.080	0.034	0.045	0.040	0.085
27	1022	\$ 82,960.00	0.065	0.032	0.014	0.050	0.025
28	1023	\$ 261,920.00	0.125	0.065	0.033	0.090	0.050