**Disciplined Entrepreneurship Workbook**

# Step 17: Estimate the Lifetime Value (LTV) of an Acquired Customer

## Worksheet

### Inputs to the Worksheet

**One-Time Charge(s)**

What will your one-time charges be for each customer? (e.g. initial purchase price of product)

There are no separate one-time charges; the business model is subscription-based.

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What is your estimated profit margin on your one-time charges? ( (One-Time Charge – Marginal Production Cost) / One-Time Charge = Profit Margin -- e.g. if your one-time charge is $100 and the cost to make that one unit of product is $20, your profit margin is (100-20)/100 = 80%) (General estimate is fine and don’t add more precision that is appropriate at this point – it can be misleading)

Not applicable as there are no one-time charges.

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**What is the life of the product before a customer has to repurchase the product?** The product is a subscription service, so repurchase is continuous via renewal rather than a fixed product life.

**What % of customers will repurchase?** This is represented by annual retention rates for the subscription service.

What will your recurring revenue streams be? Annual subscription fee per user for accessing the AI Co-Scientist platform.

What is your profit margin on your recurring revenue streams? Estimated gross profit margin is 75%, based on high SaaS margins (low marginal cost).

**What is your retention rate for your recurring revenue streams?**

**After 1st year: 80%**

**After 2nd year: 70%**

**After 3rd year: 60%**

**After 4th year: 50%**

**After 5th year: 50%**

**What other revenue sources will you have? What will your profit margin be, and is there a yearly retention rate applicable to them?**

Potential future sources include add-on modules or premium tiers, but none are assumed for this initial LTV calculation.

**What will your cost of capital be? (If you don’t know, assume 50%. If you do know, explain below why you think your cost of capital will be different.)**

We will use the default assumption of 50%.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Calculations to Estimate the LTV | | | | | | |
| Input | t = 0  (Today) | t = 1  (1 year) | t = 2  (2 years) | t = 3  (3 years) | t = 4  (4 years) | t =5  (5 years) |
| A. One-time Revenue Amount | €0 | €0 | €0 | €0 | €0 | €0 |
| B. - One-time Revenue Profit Margin (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| C. - One-time Revenue Profit (row A \* B) | €0 | €0 | €0 | €0 | €0 | €0 |
| D. Recurring Revenue Amount | €0 | €500 | €500 | €500 | €500 | €500 |
| E. - Recurring Revenue Profit Margin (%) | 0% | 75% | 75% | 75% | 75% | 75% |
| F. - Recurring Revenue Profit (row D \* E) | €0 | €375 | €375 | €375 | €375 | €375 |
| G. Other Revenue Amount | €0 | €0 | €0 | €0 | €0 | €0 |
| H. - Other Revenue Profit Margin (%) | 0% | 0% | 0% | 0% | 0% | 0% |
| I. - Other Revenue Profit (row G \* H) | €0 | €0 | €0 | €0 | €0 | €0 |
| J. Sum of Profit for time period | **€0** | **€300** | **€210** | **€126** | **€63** | **€31.50** |
| K. Default cost of capital factor: Discount factor to NPV (@50%/year and assuming units of time = years)[[1]](#footnote-1) | 1.0 | .67 | .44 | .30 | .20 | .13 |
| L. NPV of each item (row J \* K) | **€0** | **€201** | **€92.40** | **€37.80** | **€12.60** | **€4.10** |
| **M. Sum of All NPVs (sum of all cells in row L)** | **€347.90** |  | | | | |

# Explanation of calculations for Row J - Sum of Profit for time period

Row J, "Sum of Profit for time period," represents the **Expected Profit** we anticipate generating *during* each specific year (t=1 to t=5) from an average customer acquired today (at t=0). It accounts for the fact that not all customers will remain subscribed over time due to churn.

The calculation follows the formula:  
**Expected Profit (Row J) = Potential Profit \* Cumulative Retention Rate**

1. **Potential Profit:** This is the gross profit we *would* make from a customer in a given year *if* they were retained. It is calculated from:
   * Row D (Recurring Revenue Amount) = €500 per year
   * Row E (Recurring Revenue Profit Margin) = 75%
   * Potential Profit = €500 \* 75% = €375 per year (for t=1 onwards).
2. **Cumulative Retention Rate:** This is the probability that a customer acquired at t=0 is still an active, paying subscriber *at the start of the next period* (or equivalently, retained *through* the current period). It's calculated using the input retention rates year-over-year:
   * Retention through Year 1 (start of Year 2): 80%
   * Retention through Year 2 (start of Year 3): 80% (Year 1) \* 70% (Year 2) = 56%
   * Retention through Year 3 (start of Year 4): 80% \* 70% \* 60% (Year 3) = 33.6%
   * Retention through Year 4 (start of Year 5): 80% \* 70% \* 60% \* 50% (Year 4) = 16.8%
   * Retention through Year 5 (start of Year 6): 80% \* 70% \* 60% \* 50% \* 50% (Year 5) = 8.4%
3. **Calculation of Row J values:**
   * J @ t=0: €0 (No revenue or profit at acquisition)
   * J @ t=1: Potential Profit (€375) \* Cumulative Retention through Year 1 (80%) = €375 \* 0.80 = €300
   * J @ t=2: Potential Profit (€375) \* Cumulative Retention through Year 2 (56%) = €375 \* 0.56 = €210
   * J @ t=3: Potential Profit (€375) \* Cumulative Retention through Year 3 (33.6%) = €375 \* 0.336 = €126
   * J @ t=4: Potential Profit (€375) \* Cumulative Retention through Year 4 (16.8%) = €375 \* 0.168 = €63
   * J @ t=5: Potential Profit (€375) \* Cumulative Retention through Year 5 (8.4%) = €375 \* 0.084 = €31.50

In essence, Row J provides a realistic estimate of the average profit generated per starting customer within each future year, factoring in expected customer churn over the 5-year period.

### Interpretation of Estimation

1. What would you round your LTV estimation to? What range do you feel comfortable with? We would round the LTV estimation to €350. A comfortable range, given the assumptions, would be €250 to €500.
2. Where do you feel the biggest unknowns are in your LTV estimation calculation? The biggest unknowns are the actual year-over-year customer retention rates and the achievable gross profit margin on recurring revenue streams.
3. Does the number seem reasonable? Yes, an LTV of €350 seems reasonable for a SaaS product priced at €250-€1000 per year, provided customer acquisition costs are managed effectively.
4. What are the key drivers of the LTV if you want to increase it? The key drivers are increasing customer retention rates (especially in early years), increasing the average revenue per user (e.g., upselling, add-ons), and improving the gross profit margin.
5. Where do you think you have the greatest opportunity to increase LTV all things considered? The greatest opportunity likely lies in improving customer retention through demonstrating ongoing value and product enhancements, as this compounds benefits over multiple years. Introducing valuable add-on modules or successfully upselling users to higher tiers based on demonstrated ROI also presents a significant opportunity.

1. To calculate the present value (PV) of a future value of cash (FV) where i = the interest rate and t = units of time past, the formula is PV = FV \* ( 1 / (1+i)t ) [↑](#footnote-ref-1)