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# Clarity in Complexity:

## Mastering Decision Analysis

# Value

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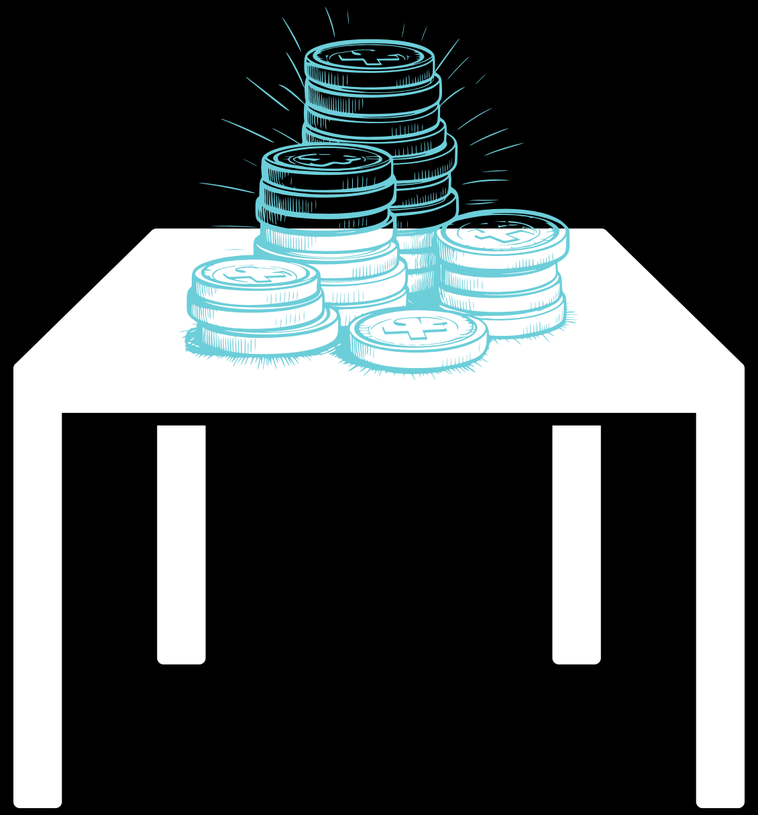

Mental traps
and Biases

Best
Intentions

True
Decision
Quality

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# Mental traps and Biases

Confirmation bias

Pattern Matching

Anchoring

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# Outcome Driven

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# Good Decision

# Logical Decision

# Logical Decisions

- Uncertainties
- Values
- Preferences

# Good Outcome

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# Uncertainty

AND

# Decision Making

Old

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# Transformation

# 1950s

Psychology

Economics

Statistics

Computational science

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# Decision Quality

## Decision Analysis

- Discipline
- Data-driven process

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Navigating
Uncertainty
with
Precision
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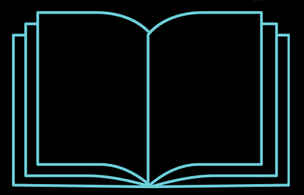
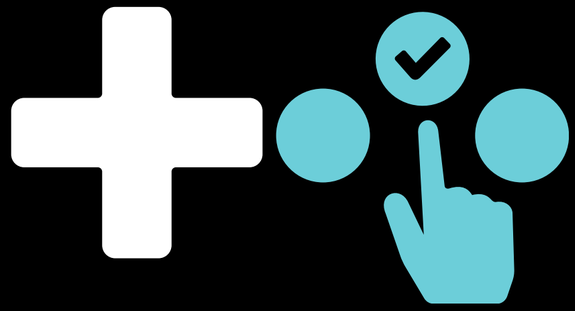
# Tools

$$\sigma^2 = \frac{\sum(x_i - \mu)^2}{n}$$

$\mathrm{p}(x)$ $\mathrm{P}(A \mid B)$

$\mathrm{N}(\mu, \sigma^2)$ $\mathrm{B}(n, p)$





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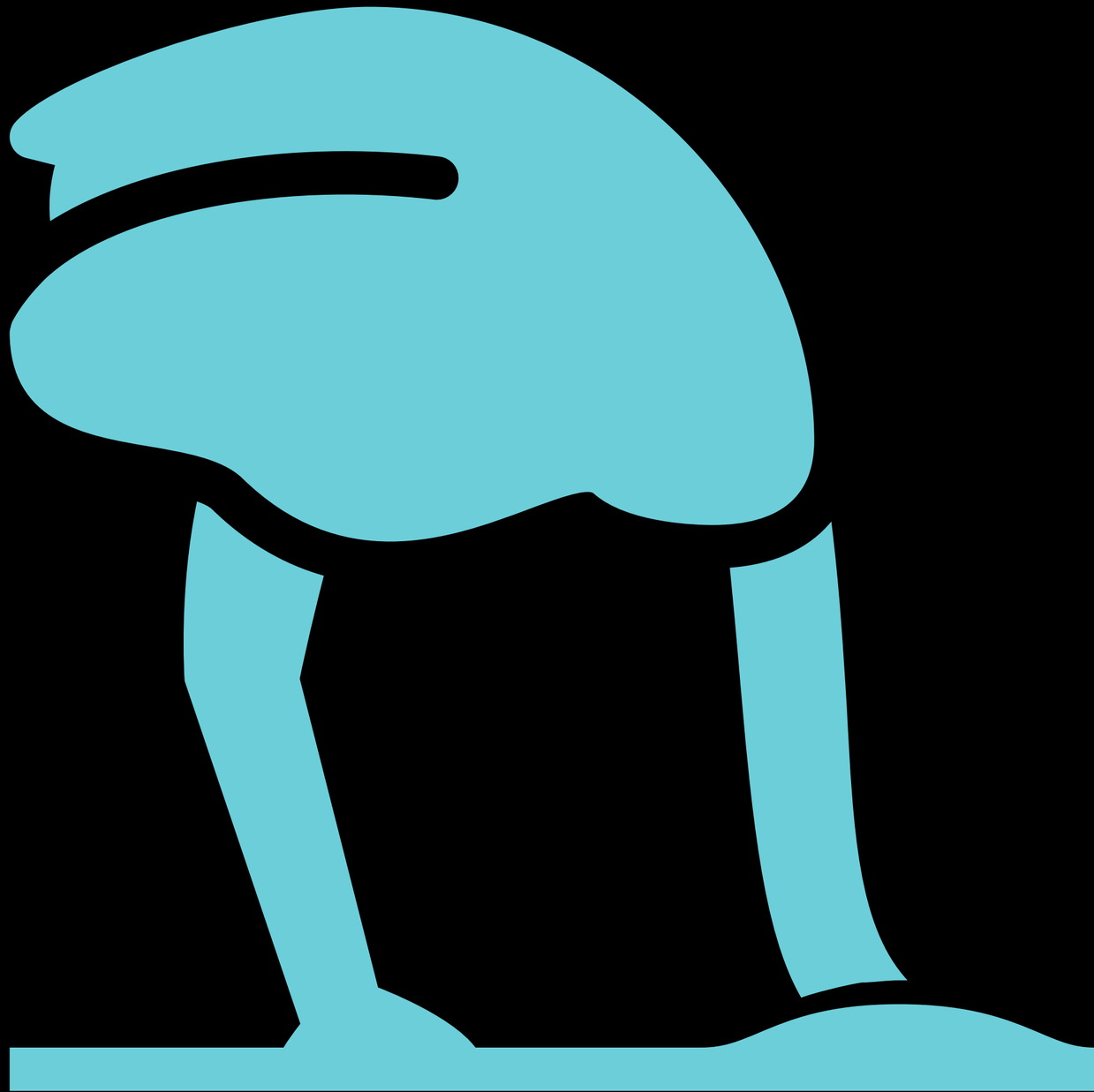
# A shortcoming of Decision Analysis? No.



Dynamic
New insights and learnings.
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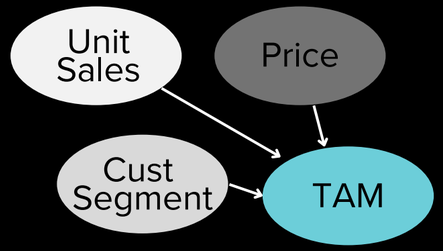
1

## Qualitative Filter

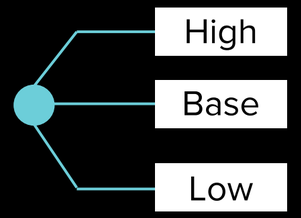
2

## Market Map




3

## Uncertainty Ranges



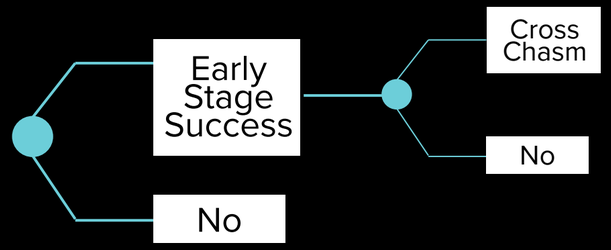

4

## Risk Assessment

- Market
- Product
- Team
- Financial

5

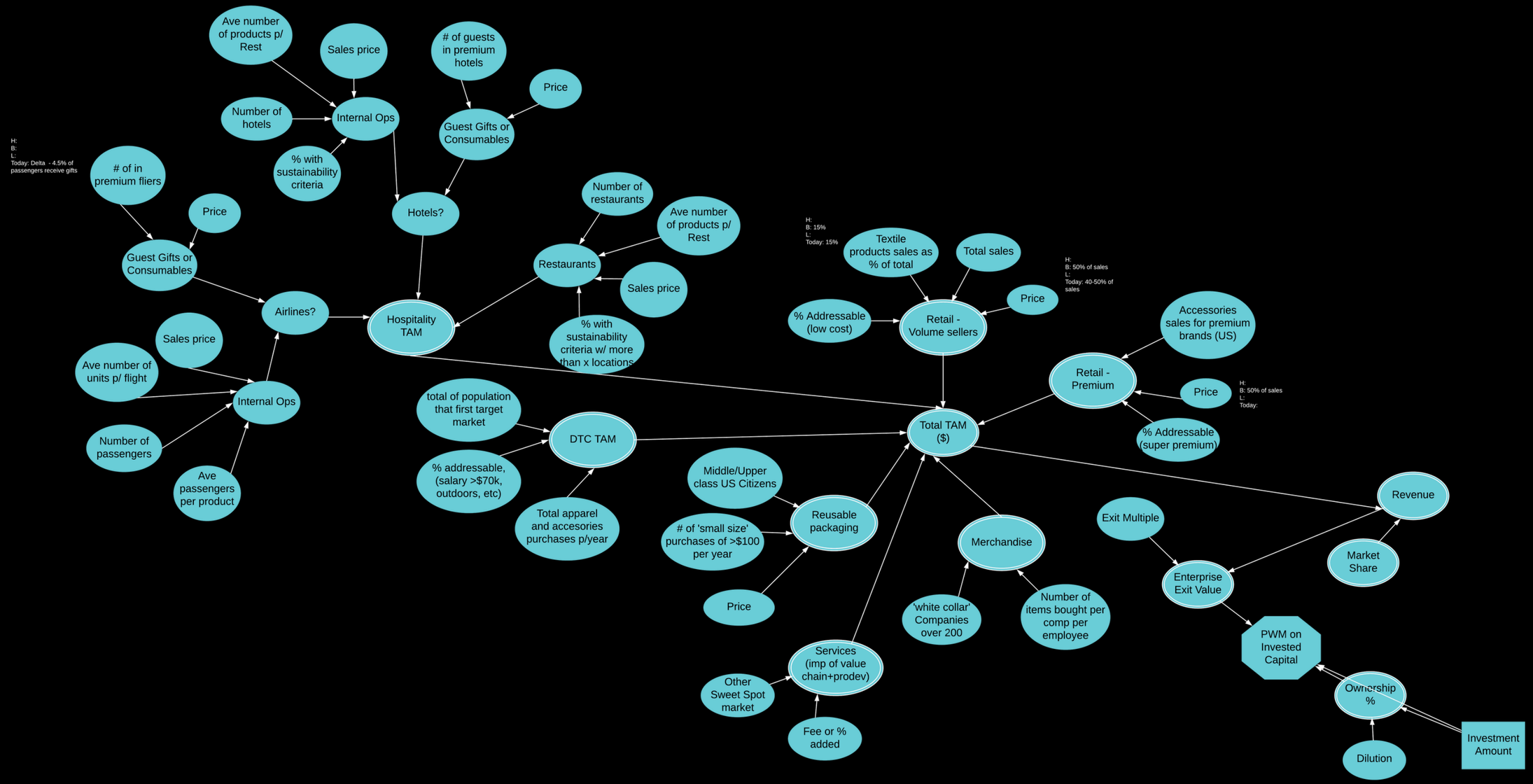
## Risk/Return Calculation

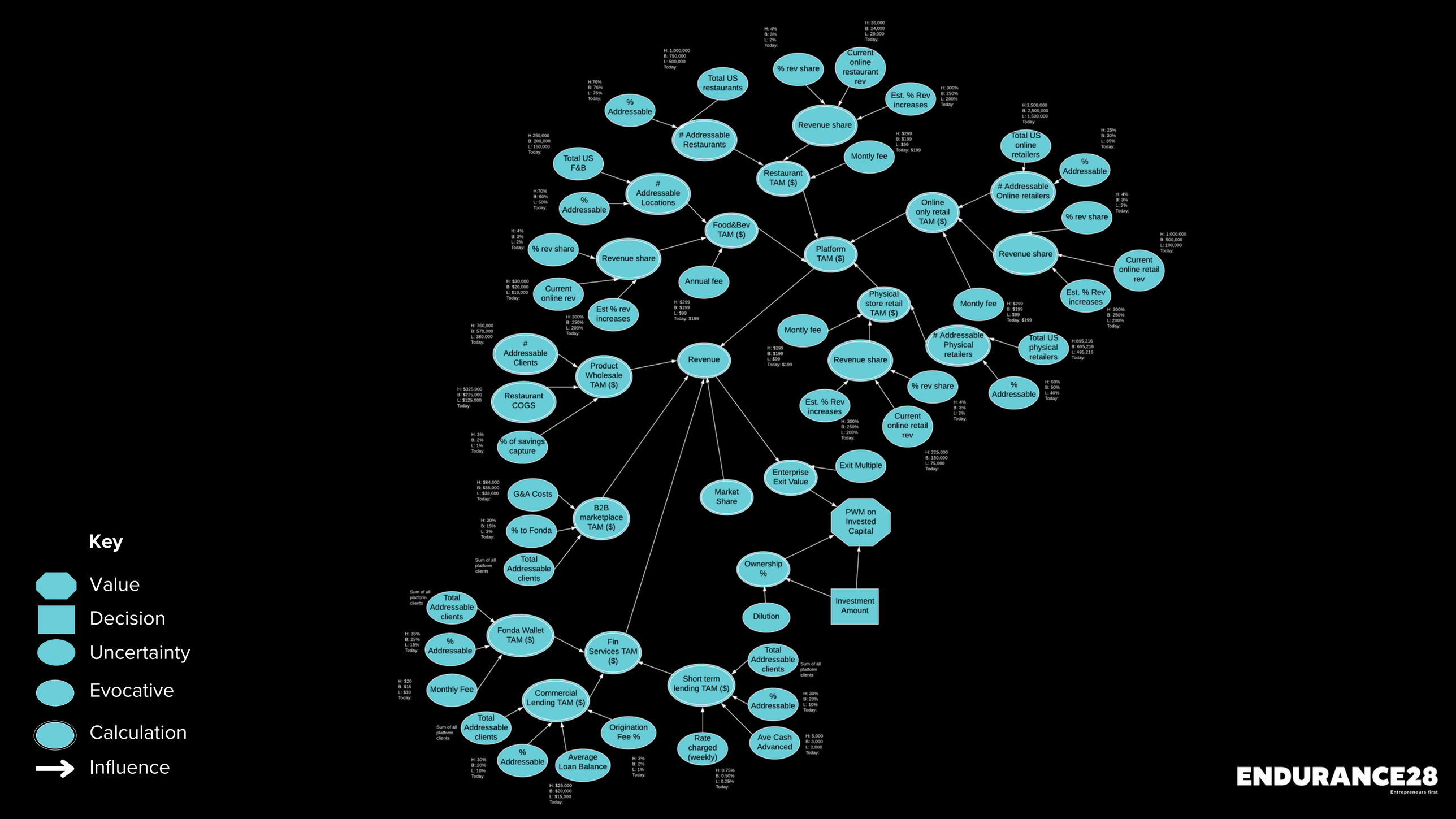



6

## Sensitivity Analysis

# Market Map


Ave number of products p/ Rest
Sales price
# of guests in premium hotels
Price
Number of hotels
Internal Ops
Guest Gifts or Consumables
% with sustainability criteria
H:
B:
L:
Today: Delta - 4.5% of passengers receive gifts
# of in premium fliers
Price
Hotels?
Number of restaurants
Ave number of products p/ Rest
Guest Gifts or Consumables
Restaurants
Sales price
Airlines?
Hospitality TAM
% with sustainability criteria w/ more than x locations
H:
B: 15%
L:
Today: 15%
Textile products sales as % of total
Total sales
H:
B: 50% of sales
L:
Today: 40-50% of sales
% Addressable (low cost)
Retail - Volume sellers
Price
Accessories sales for premium brands (US)
Sales price
Retail - Premium
Price
H:
B: 50% of sales
L:
Today:
Ave number of units p/ flight
Internal Ops
% Addressable (super premium)
Number of passengers
Ave passengers per product
total of population that first target market
DTC TAM
Total TAM ($)
% addressable, (salary >$70k, outdoors, etc)
Total apparel and accesories purchases p/year
Middle/Upper class US Citizens
Revenue
# of 'small size' purchases of >$100 per year
Reusable packaging
Merchandise
Exit Multiple
Market Share
Price
'white collar' Companies over 200
Number of items bought per comp per employee
Enterprise Exit Value
Services (imp of value chain+prodev)
PWM on Invested Capital
Other Sweet Spot market
Ownership %
Fee or % added
Investment Amount
Dilution

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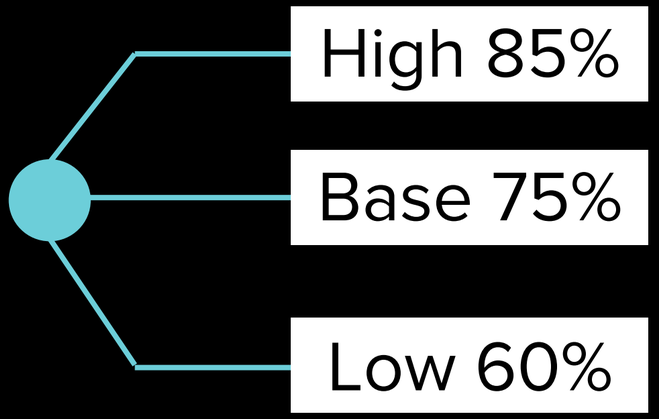
# Uncertainty

## Precisely Wrong

60%

## Approximately Right

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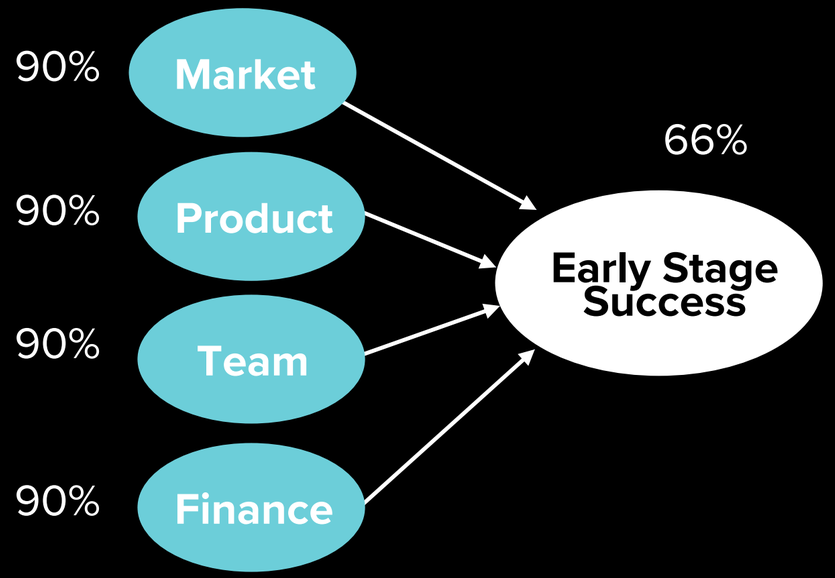
# Life Stage Assessment

**Early Stage** | **Crossing Chasm** | **Mass Market**

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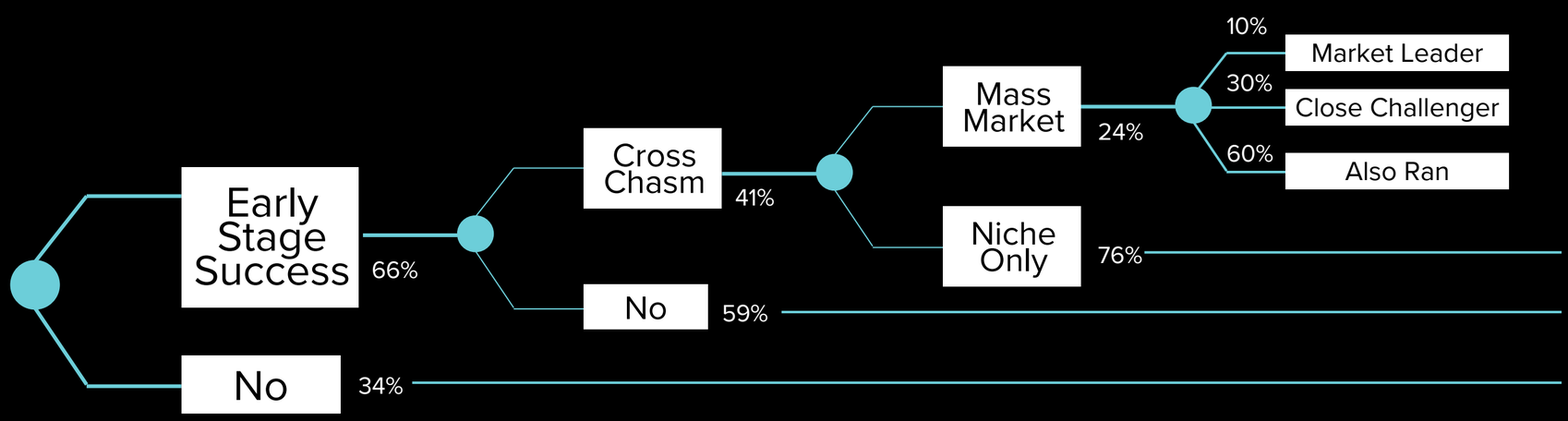
# Decision Tree




| Market Share | Revenue ($M) | Enterprise Market Value ($M) | MOIC | PWMOIC |
|---|---|---|---|---|
| 0.6% | 3,500 | 17,500 | 625 | 4.0 |
| 1.9% | 1,000 | 5,000 | 179 | 3.5 |
| 3.9% | 300 | 1,500 | 54 | 2.1 |
| 20% | 34 | 85 | 3 | 0.6 |
| 39% | 0 | 0 | 0 | 0 |
| 34% | 0 | 0 | 0 | 0 |
| 100% | | | | PWMOIC*: 10.2 |

*** Probability Weighted Multiple on Invested Capital**

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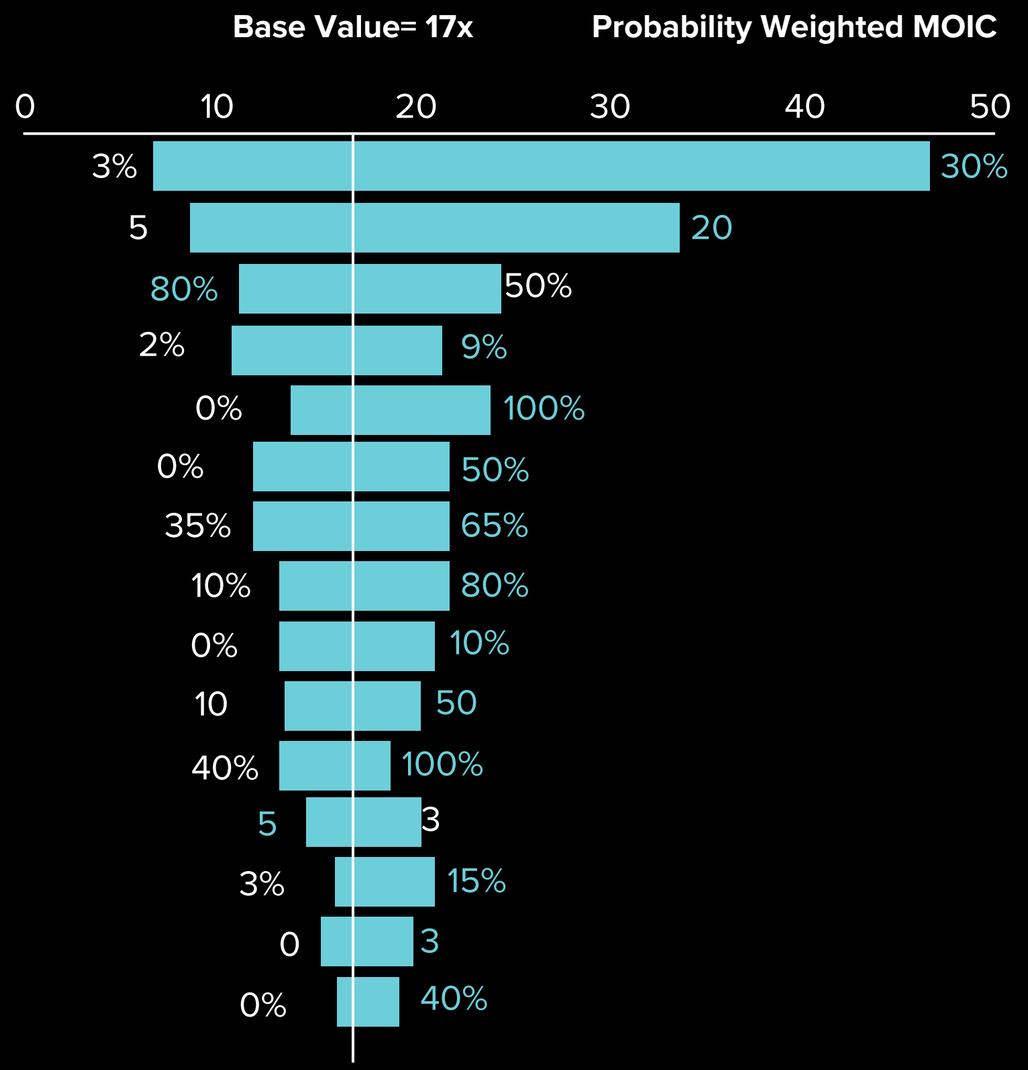
# Sensitivity Analysis




| | Base Value |
|---|---|
| Mass Market Share | 10% |
| Exit Multiple (Earnings) | 10 |
| Dilution | 67% |
| Gain on Sales | 6% |
| Conversion of B to A | 30% |
| Int'l Addressable | 25% |
| Net Margin | 50% |
| Adjacent Markets | 40% |
| Tuition Growth | 5% |
| Int'l Loan Footprint $B | 30 |
| A Addressable | 80% |
| Pre-money Valuation ($M) | 4 |
| Niche Market Share | 5% |
| Velocity of Capital turns/yr | 1 |
| B Addressable as B | 10% |

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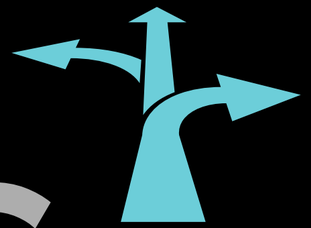
Why
PWMOIC?

# Investment Decision Process

Inmense transparency

No time wasted

Collaborative process



Uncovering business pathways

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# Portfolio Service

## Quality Decision Making

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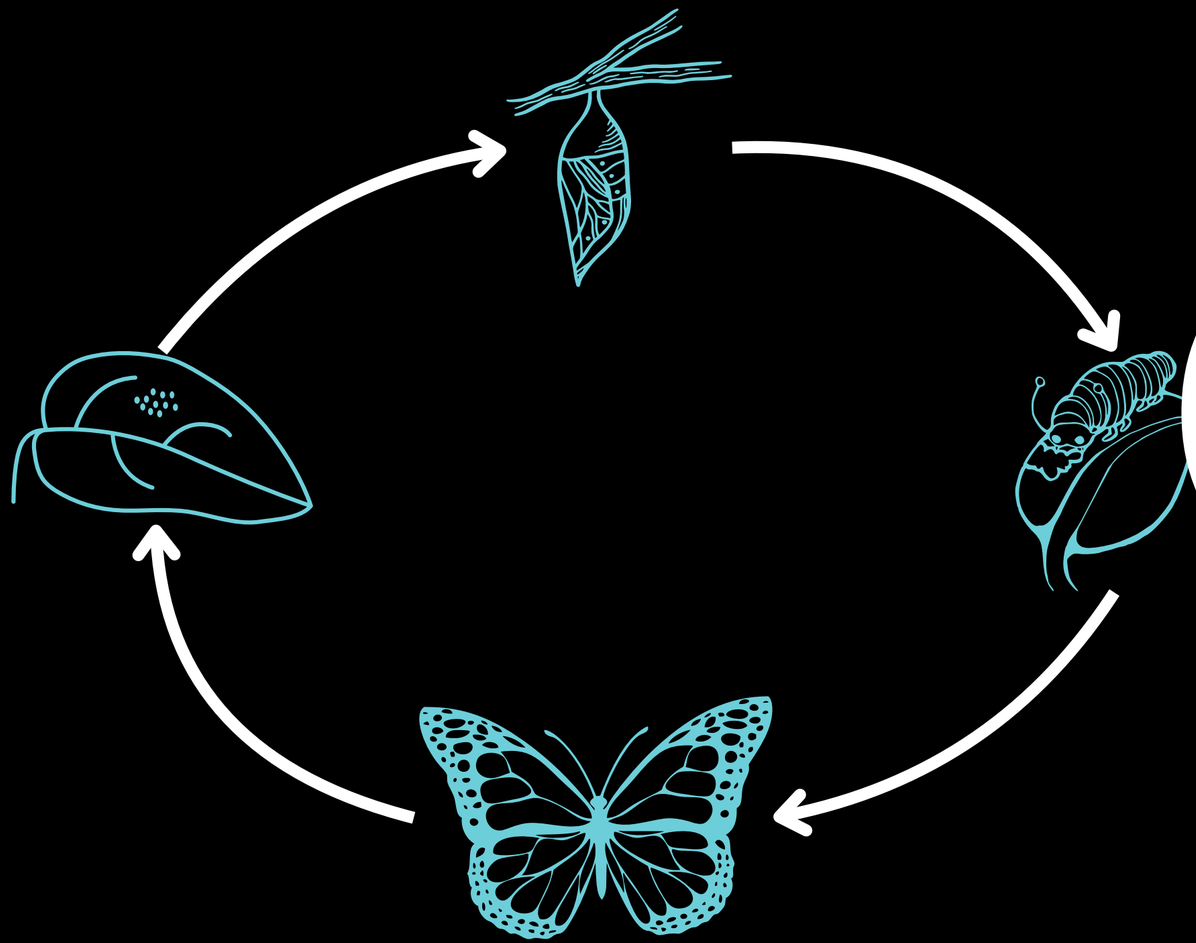
# Skeletons

# Good Outcomes



# Good Processes

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# Mental traps. Biases.

REMEMBER

- Confirmation bias
- Anchoring
- Pattern Matching