

How to think like an investor

See, understand and mitigate risk

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Topics for this session

- (1) Risk through the eyes of the beholder
- (2) Gambling and math
- (3) Buckets of risk & mitigation
- (4) A holistic risk visualization

About me

Previous fund raising: venture capital, venture debt, DARPA, intelligence community, and “FF&F”

2x VC with one successful investment: OBI (Smith & Nephew M&A exit)

3x CEO (Valid Evaluation, SunTrac Solar, betterVote)

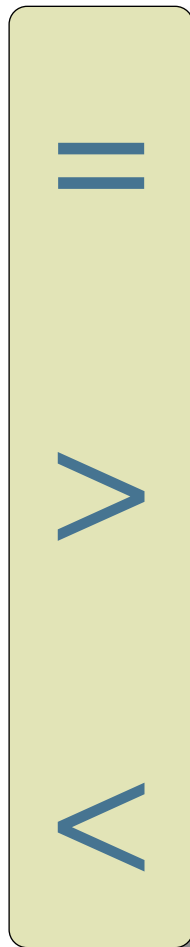
CleanTech Open Judging Chair

B.S. in Materials Science and Engineering, MBA

Payout x Odds $\stackrel{?}{=}$ Amount of bet

Investing is a bet

Payout x Odds $\stackrel{?}{=}$ Amount of bet



A “fair” bet: neither party favored

The bettor is favored



Payout x Odds $\stackrel{?}{=}$ Amount of bet

A wager for the audience



A \$1 bet

One role, you hit a “3”

What is a fair payout?

Payout x Odds

unknowns

$\stackrel{?}{=}$

Amount of bet

(sort of) known

But, you are not throwing dice

You know how much capital your company needs: fixed variable

Many unknowns, one equation

Entrepreneurs, investors are different “animals,” focus on different variables.

Quiz: which is the investor, entrepreneur?



Evolutionary biology: key to the metaphor



Your opportunity



Payout x Odds $\stackrel{?}{=}$ Amount of bet



**Life-changing
wealth creation**

Payout x Odds $\stackrel{?}{=}$ Amount of bet

Risk


Risk

Risk

Risk

Risk

Risk



**Venture
return?**

Payout x Odds $\stackrel{?}{=}$ Amount of bet

$$\left(\begin{array}{c} \text{Investors' ownership \%} \\ \times \\ \text{Exit valuation} \end{array} \right) \times \left(\begin{array}{c} \text{Risk}_1 \\ \times \\ \text{Risk}_2 \\ \times \\ \vdots \\ \times \\ \text{Risk}_n \end{array} \right) \stackrel{?}{=} \text{Amount of investment} \times \left(\begin{array}{c} \text{IRR for LPs + 1} \end{array} \right)^{\text{Yrs. to exit}}$$

Risk-adjusted value of the investment at exit



Required future value of today's cash outlay

Horses see only risk. Focus there.

Payout variables (dilution) are negotiated later (term sheet)

Example

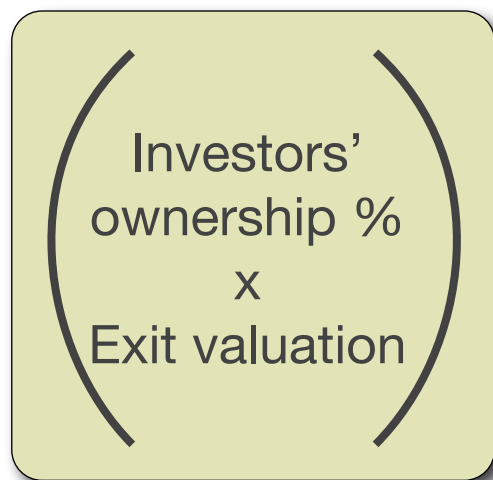
Payout x Odds $\stackrel{?}{=}$ Amount of bet

Year 4 revenue: \$20 M

Exit multiple on TTM revenue: 2.0x

Exit valuation = \$40 M

Investors' stake in your co. = 45%



\$40 M x 45%

= \$18.0 M

Example

$$\text{Payout} \times \text{Odds} \stackrel{?}{=} \text{Amount of bet}$$

Capital required to achieve cash-flow break-even: **\$2.5 M**

Best guess at time to exit: **5 years**

VC's target returns to LPs: **20%**

$$\text{Amount of investment} \times \left(\text{IRR for LPs} + 1 \right)^{\text{Yrs. to exit}}$$

$$\$2.5 \text{ M} \times (1 + 20\%)^5 \text{ yrs.}$$

$$\$2.5 \text{ M} \times \mathbf{2.49}$$

$$= \mathbf{\$6.23 \text{ M}}$$

Example

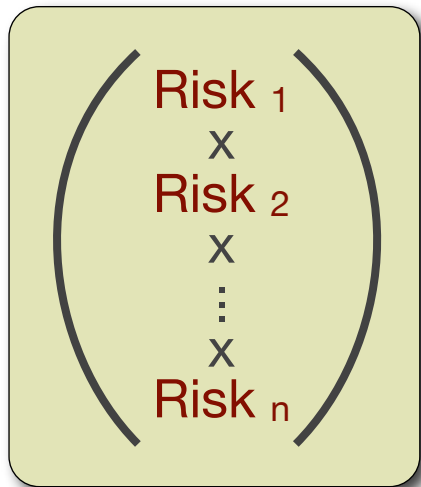
Solve for

$$\text{Payout} \times \text{Odds} \stackrel{?}{=} \text{Amount of bet}$$

Odds = bet / payout.

$$\$6.23 \text{ M} / \$18 \text{ M} = 34.5\%$$

Turning “ $\stackrel{?}{=}$ ” into “ $>$ ” requires
odds $> 34.5\%$



Your odds are the **product of all probabilities** of success for every potential fail point

Horse-friendly scenarios 1 of 2

(1) Absolute confidence in your projections & cash needs. Belief that your business has 35% chance of hitting its marks & exiting promptly.*

(2) Investor sees three 50 / 50 success gates.

- Perceived odds = $0.5 \times 0.5 \times 0.5 = 12.5\%$
- **dilution increases 75%** (from 45%), and
- must realize **\$33 M in revenue in year 4** (up from \$20 M)

* That's the equivalent of having only 3 risk "gates" at 70% chance of success for each, or 6 risk factors averaging 84% success.

Horse-friendly scenarios 2 of 2

- (3) Seven (not 5) years to exit, need \$2M extra due to two more risk gates at 70% probability each
- up **dilution to 65%** (from 45%), and
 - must realize **\$74 M in revenue in yr. 6** (vs. \$20 M in yr. 4)
- (4) Bootstrap to lower required investment amount to \$1 M (vs. \$2.5 M)
- later stage deal, so total odds @ 50% (from 35%)
 - reduce dilution to 40% (from 45%)
 - must now realize just **\$6.2 M in revenue in year 4** (down from \$20 M)

Implications for you...

Priorities (in order)



*Stories of the
800 lb. bunnies
often found to
lack credibility*

- (1) Get real about your bunny's size
- (2) Identify and understand your risks
- (3) Relentlessly mitigate risk (add value)
- (4) Tell a horse story, not a wolf story

Risk “buckets” for today

- Market understanding & validation
- Business model
- Financing risk
- Competitive advantage
- Presentation quality
- Missing pieces
- Holistic views of risk

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Market validation

In the continuum from Concept to Exit,
what **social proof** can you offer investors?

Demonstrate you have ongoing, meaningful
dialog open with customers and that you
are learning from them

Each of you have evidence from the market
that your product is worthwhile: make your
best case

Market segmentation & sizing

Segment your market thoughtfully

Primary market research trumps
secondary: use it to ID your market
segment(s)

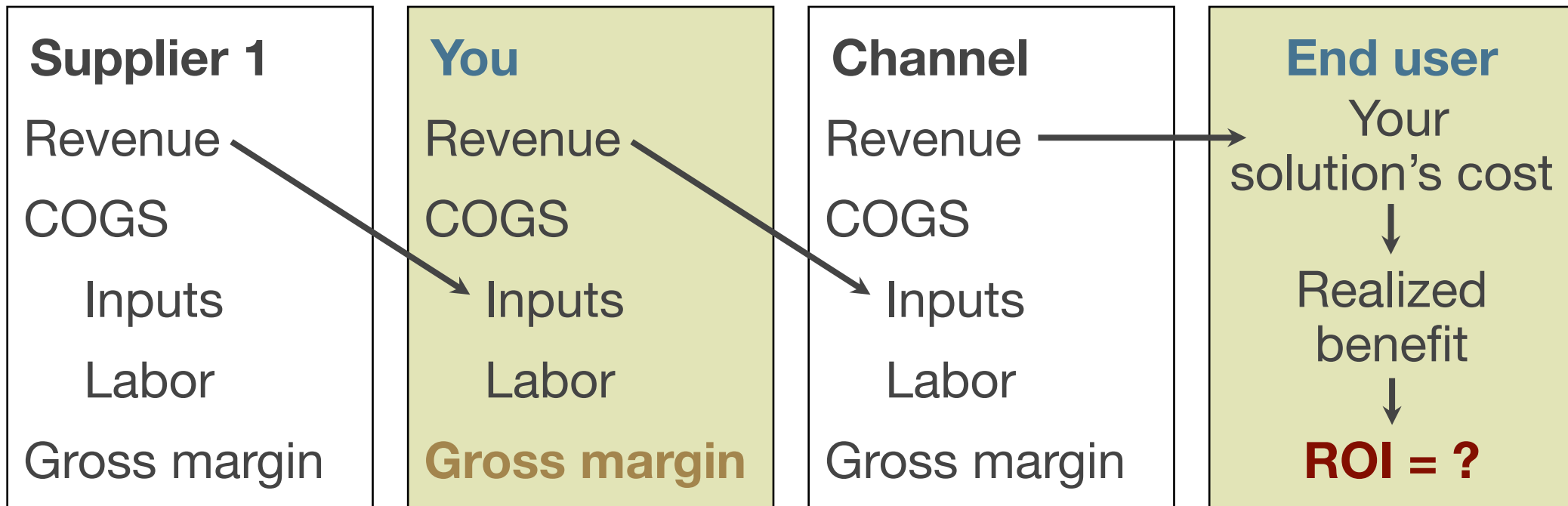
Be ready to defend your true
market size.

- Market understanding & validation
- **Business model**
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Unit economics

Identify all links in your value chain, not just you and your customers

Is the chain **sustainable**?

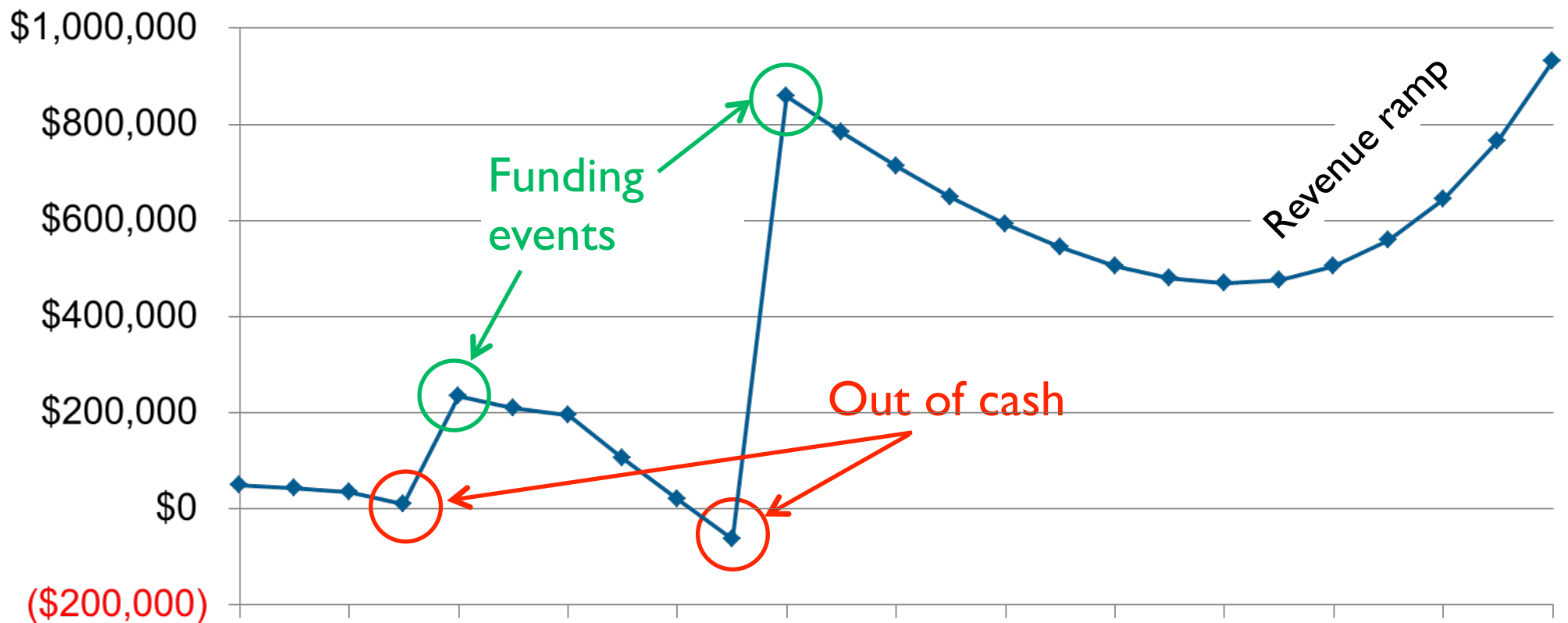


- Market understanding & validation
- Business model
- **Financing risk**
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cash management

Burn rate and cash accounting

Model cash vs. time for a variety of scenarios



Dilution: the risk you over-think



Pie you never get to eat is only theoretically tasty. Do what you need to get yours in the oven and baking.

Price of playing with other people's money

Emotional

Grow the pie: less dilution, bigger exit

Secure a term sheet, then worry about dilution.

Valuation: just one “knob”

- Market understanding & validation
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- **Competitive advantage**
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Substitutes \neq competitors



iPod



XM car stereo



Opera House



Red laser diode

Example: a dedicated Pandora[®]
Internet radio device with built-in WiFi.

Above: the ~~wireless Internet radio~~
music business

What problem is solved? How are
decisions made?

- Market understanding & validation
- Business model
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How to give a lousy presentation

“Fifteen ways to make a bad impression”

By [Carmine Gallo](#) (excerpts from *Business Week*, emphasis mine)

1. Misspell words
2. Create distracting color combinations
3. Use *inconsistent* **fonts**
4. Use a really small font size
5. Insert improperly sized photos
6. Look completely, totally disinterested
7. Look disheveled
8. Read...every...word...of...each...slide
9. Don't bother with a backup plan (for technical glitches)
10. Don't practice
11. Call attention to your mistakes
12. Open with ~~an~~ offensive a joke
13. Use ~~wild~~ animations
14. Use ~~cartoon~~ clip art
15. Use ancient presentation software

Adam's bad advice

1. Assume all investors are experts in your field and clairvoyant: they'll just “get it”
2. Use fancy, colorful backgrounds
3. Use **MULTIPLE LAYERS of EMPHASIS**
4. Maximize production value. (Fireworks?)
5. Say “um” as much as possible
6. Look at anything in the room except the audience
7. Don't attribute facts, figures to their sources.
8. Steal copyrighted content.
9. Shout or whisper. Appropriately projecting your voice is overrated
10. Don't bother creating a coherent narrative: that's way too hard

“You need informational depth. When people are presenting to you, you need to figure out what their story is, but you also need to decide whether you can believe them... That comes in part from looking at how they think about a rich body of information. Detail helps credibility.”

- Edward Tufte

But, don't try to teach everything

Goal: a credible, well supported argument

Judiciously use attributed facts

- Market understanding & validation
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Missing pieces

A work in progress, your company could be missing:

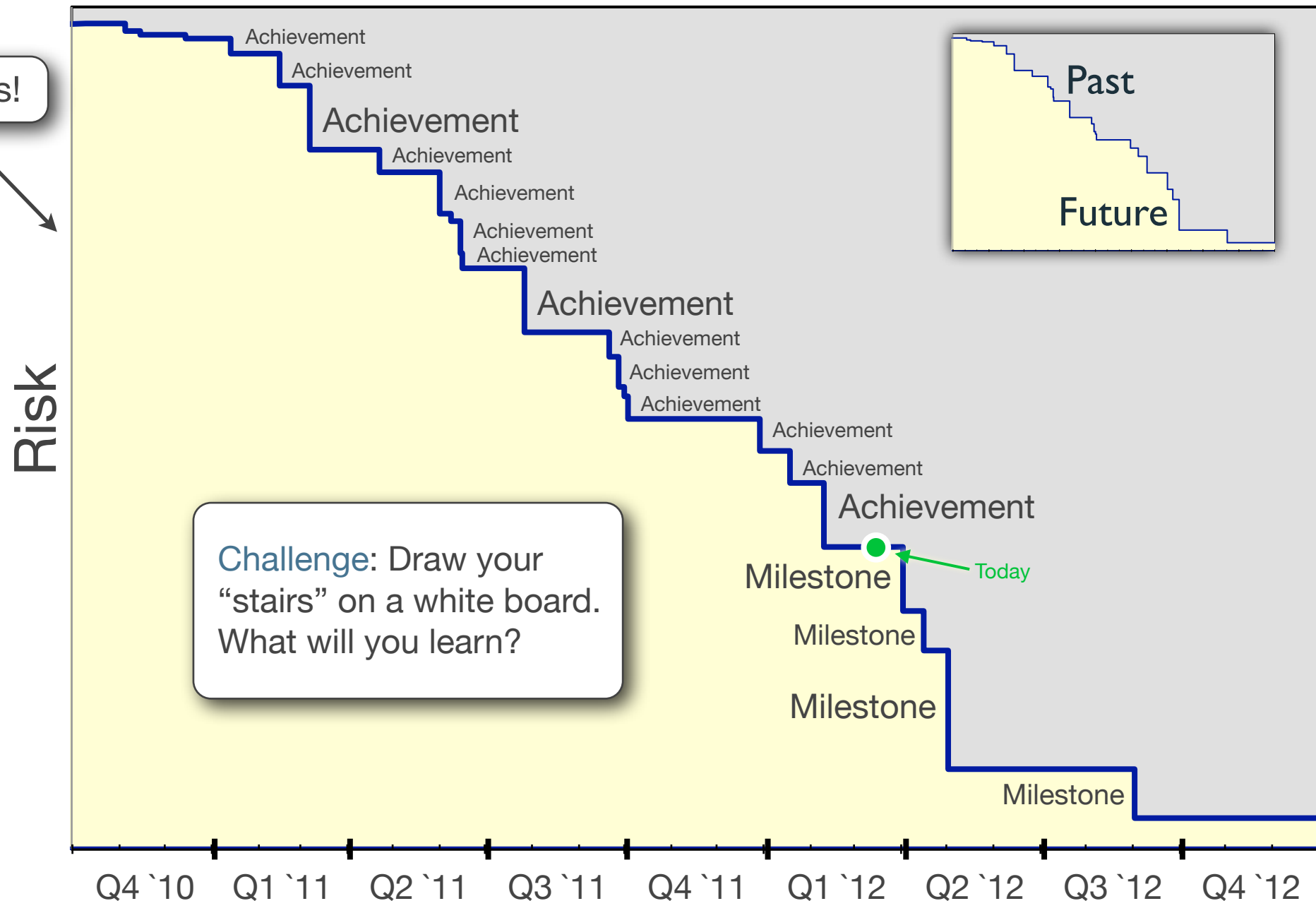
- Validation for key assumptions (e.g. revenue model)
- Answers from the market
- Key team members

To win investment, you needn't have all the pieces in place

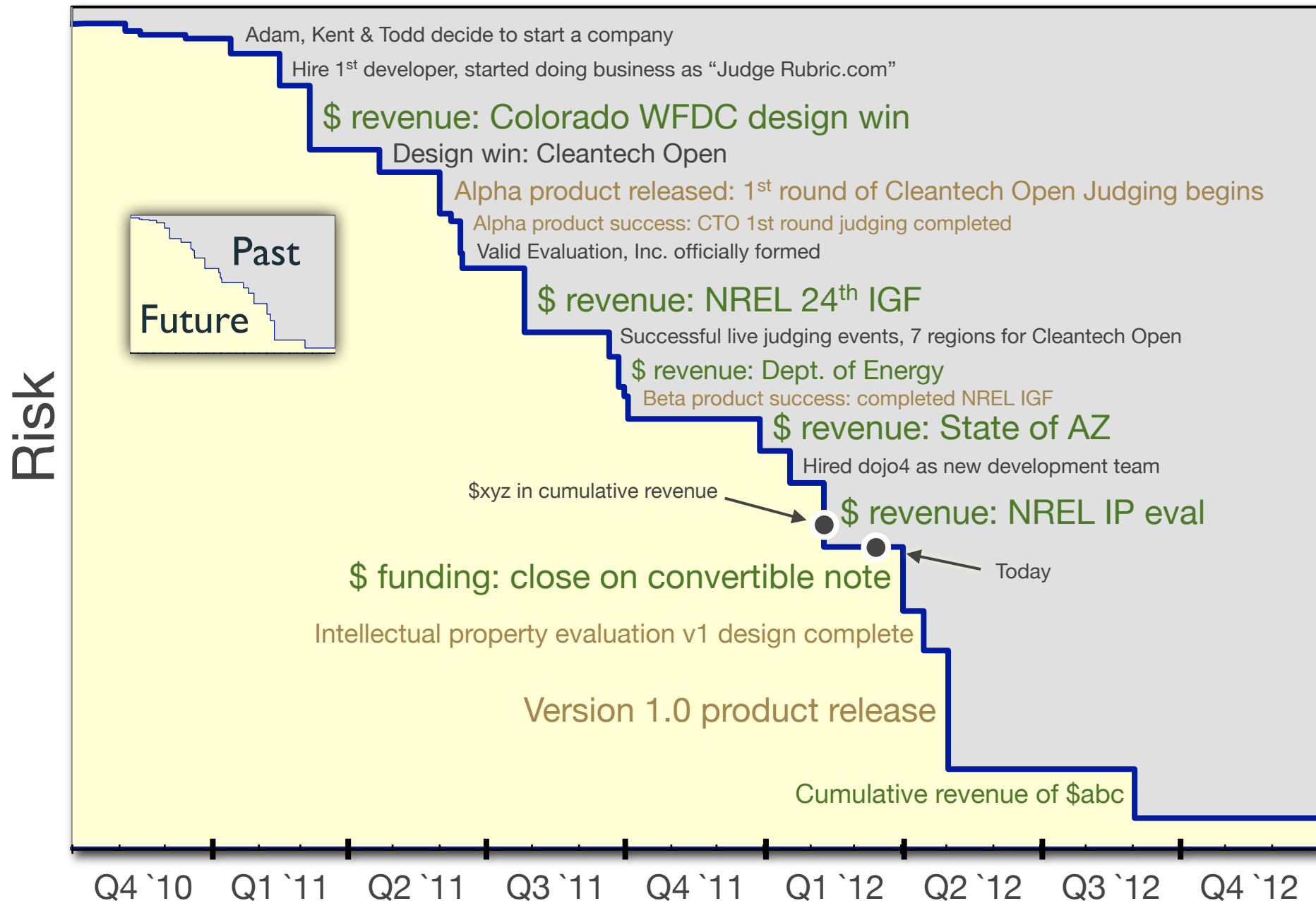
- You recognize what's missing
- You have a plan to fill today's gaps

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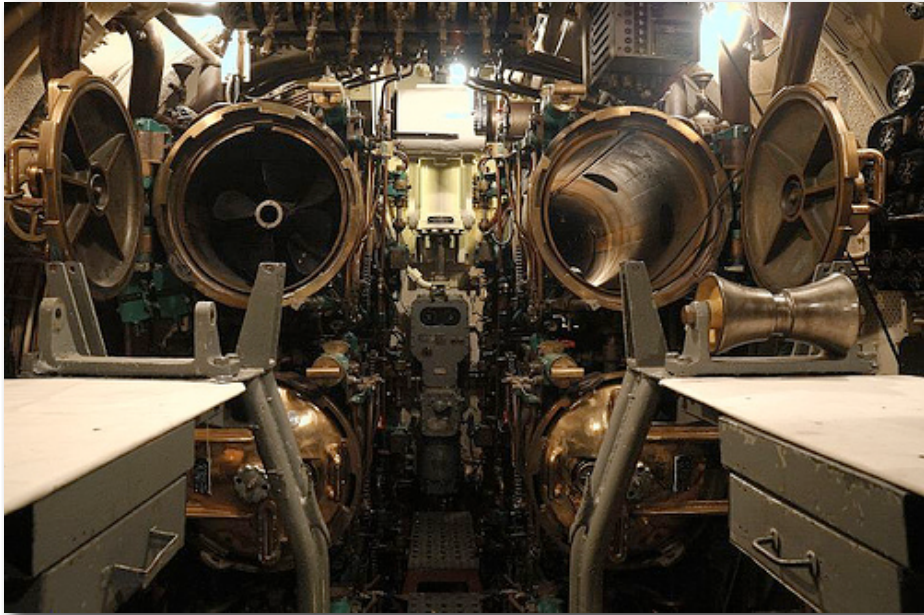
Risk stairs: Value creation for “horses”



Risk stairs example



Investment thesis



The USS Risk's torpedo room. For those who have been (metaphorically) shot at, nothing sinks an entrepreneur's credibility faster than their ignorance of the fundamental dangers facing them.

Name your challenges

Professional investors have seen countless businesses like yours fail

Absent a credible plan to avoid the submarines and torpedoes, no one who can really help you will come aboard your startup.

Be a horse whisperer, hunt like a wolf

Get investors comfortable with the risks surrounding the opportunity

Give investors a clear view of the entire landscape, not just the tasty returns you are after

Point out each danger the horse senses

Your goal: Get investors actively problem solving with you in an honest, open discussion about your risks

Meanwhile, stay hungry, stay focused, get that bunny, go change the world!



Thanks!

Questions

Discussion

Debate

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