MARKET INSIGHTS

Why Skill Is Not a Strategy

Lessons from the gambler’s ruin

A better product does not automatically beat a larger rival. Size decisions so losses are survivable, and pick contests where the bigger player’s advantages count for less.



David: 2 units

Goliath: 10 units

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NESTPOINT

The gambler’s ruin problem

The setup

In 1656, Pascal posed a question to Fermat: what if two players keep playing until one goes broke? Huygens published the first answer in *De ratiociniis in ludo aleae*, the first printed book on mathematical probability.

The mechanics

Two players start with finite piles and play the same bet over and over. One pile shrinks, the other grows, and the match ends when one hits zero. William Feller framed it as a random walk between two walls. The walk always hits a wall.

Starting piles and per-round odds decide who hits the wall first.

David vs. Goliath: the math is brutal

David starts with $2,000 and wins each round 55% of the time. Goliath starts with $10,000. Each round moves $1,000, so David holds 2 units and Goliath holds 10.

$$P_{\text{David wins}} = \frac{1 - (q/p)^{i}}{1 - (q/p)^{N}}$$

With a 55% edge, 2 units, and 12 on the table:

P ≈ 0.363

36%

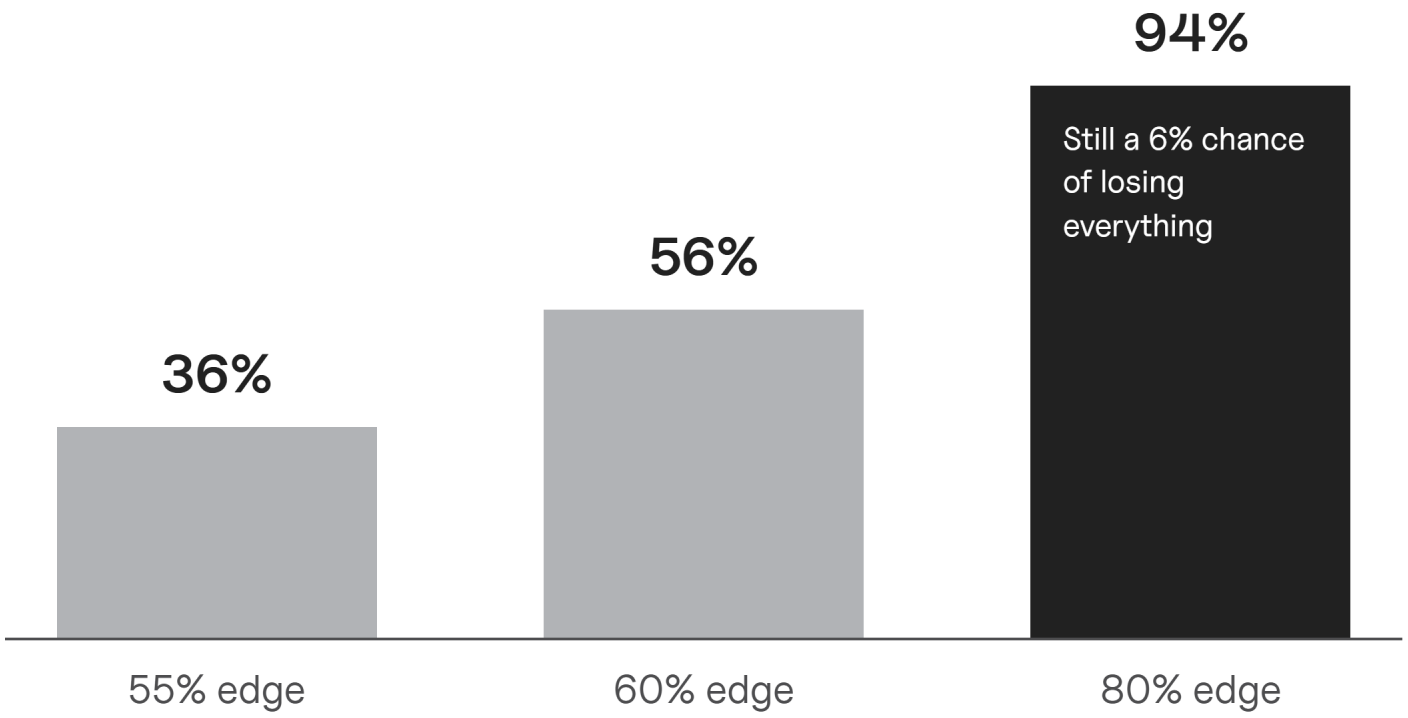
David wins only about 36% of the time, despite being the better player. Ten extra percentage points per round are not enough when the smaller bankroll is two unlucky steps from zero.

More skill helps, then stalls

Same bankrolls, same $1,000 rounds. Only David's per-round edge changes.

At 60%, David becomes a slight favorite. At 80%, he reaches about 94%.

Even then, there is a 6% chance of ending the firm.



David's chance of winning the whole pot. Source: Nestpoint calculations from the gambler's ruin formula

Smaller chips, different sport

Leave everything else alone: same $2,000 vs. $10,000, same 55/45 odds. Cut the stake from $1,000 to $100. David now holds 20 units and Goliath holds 100.

BEFORE: $1,000 CHIPS

36%

David wins about 36% of the time. Two losses are fatal.

AFTER: $100 CHIPS

98%

David wins about 98% of the time. Nobody got smarter. The cliff moved.

Shrink the decision and the same edge starts to look like destiny.

Source: Nestpoint calculations from the gambler's ruin formula

Kelly, Thorp, and sizing the bet

The Kelly criterion (1956)

John Kelly asked what share of a bankroll to wager when you have an advantage. Bet too small and the edge goes to waste. Bet too large and a normal losing streak wipes you out. Edward Thorp carried the rule from blackjack to Princeton-Newport Partners, one of the early quantitative hedge funds.

Practitioners bet half or a quarter of Kelly's number, because the formula assumes you know your edge. You don't.

Big companies live here too

Amazon's Fire Phone flopped: a $170M write-down, $83M in unsold inventory, a $437M quarterly loss. Amazon was already doing tens of billions a year, and a dead phone sat next to AWS and retail.

That's a bruise, not a funeral.

GOOGLE, SINCE 2006

About 300 products retired

A company with a deep cash engine can treat most attempts as disposable. A company whose entire existence is the attempt cannot.

The useful question is not “do we believe in experimentation?” It is: how much of the current pile does this one decision put on the table? If the down case is that there is no next decision, the bet is too big.

Source: Killed by Google

Fixed pots vs. growing markets

In the original puzzle, David's dollar is Goliath's dollar. The table doesn't mint new money. That describes some businesses well and others poorly.

Zero-sum games

Price wars in flat markets behave like the table. Share taken is share denied. The thinner balance sheet hits zero first.

Expanding markets

In software, media and platforms, a new customer is often new demand, not a stolen unit. More players can make the market more valuable.

The blunt test

When you win an account, did a rival have to lose one? If so, capital and time-to-broke matter more than how clever the product feels.

Make their extra money hard to use

Goliath's spare $8,000 only counts if the current round can absorb it. If you're small, pick a fight where the other side's best assets don't score.

ARM vs. Intel

ARM started as a low-power design that Intel's high-margin x86 business wasn't built to fight. Intel passed on the first iPhone chip. Mobile became the volume computer.

Netflix vs. Blockbuster

In 2000, Netflix offered to sell for about $50M. Blockbuster passed; it earned about $800M a year in late fees. Blockbuster filed for bankruptcy in 2010.

Airbnb vs. hotels

Airbnb pointed demand at spare space hotels didn't own. Research finds it chips away at hotel revenue, especially for midscale properties. The chains didn't control supply.

94% is not a plan if 6% is death

The stress test

Put David's per-round chance at 80%, keep $1,000 chips, 2 units against 10:

$$P \approx 0.9375$$

Six percent sounds small, until six percent is the case where you don't get another try.

The model vs. reality

In the puzzle, every round is an independent coin flip. A company almost never is: wins make the next win easier, losses make the next loss likelier. And you don't know p. Founders talk themselves into 55% when the honest number might be 50%.

Skill is also tangled up with size. Some of David's edge disappears the week Goliath puts 40 engineers on copying it.

Four questions that do most of the work

01 Survivability

How many bad outcomes in a row can we absorb before the game is over?

02 Market structure

Are we splitting a fixed pot, or is the pot allowed to grow?

03 Terrain

Are we making the larger player fight where most of their money and assets don’t help?

04 Tail risk

If this bet is a favorite, is the remaining chance still fatal?

Pascal and Huygens were arguing about dice and counters. The modern version is runway, the cost of a test, and whether an advantage is allowed to survive a bad quarter.

The better player is not always the one who gets to play tomorrow.

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