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The Vendor's Arithmetic

Working Paper WP-02 · What a signals business can be paid for, and what it cannot



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What a signals business can be paid for, what it cannot, and why its price list is a disclosure of its own expectations

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What a signals business can be paid for, what it cannot, and why its price list is a disclosure of its own expectations

Courage Garikai · WP-02 · Version 1.0

Abstract

WP-01 established the arithmetic on the client's side of a binary option: at the venue's own contract horizon a feed needs far more structure than a battery can happily detect before the client's hit rate clears break-even. This paper turns the same instrument on the party selling the signals, and the result is symmetric, sharper, and commercially more useful.

The broker's book is zero-sum against the client. The client's expectation per unit staked is $p(1+b)−1$; the house's is its negative. At a 92% payout and a coin-flip client, the house margin is exactly 4.00% of turnover — 5.00% at 90%, 7.50% at 85%, 10.00% at 80%, 12.50% at 75%. Every affiliate revenue channel on the published ladder is a share of that margin, and none of it is a function of which clients win (S10). Revenue depends on **turnover**, not on outcomes.

The consequence is an inversion with an exact crossing point:

> **A vendor paid by revenue share earns strictly less as its own signal improves, and exactly nothing from outcomes once its clients' hit rate clears $1/(1+b)$.**

Modelled on a 24-month cohort, an affiliate-only vendor at a client hit rate of 46% earns about \$10.25 per client per month; at break-even, \$6.15; above break-even, the outcome-linked channels fall to zero and what remains is the one-off deposit commission — \$100 per client, ever, whatever the signal does afterwards. A vendor with a genuinely good signal and an affiliate link is therefore running a business whose revenue is a fixed bounty per deposit and nothing else.

Which makes the pricing structure informative. A published subscription price is the dollar value at which the vendor is indifferent between being paid for losses and being paid a fee. A vendor whose only call to action is an affiliate link has disclosed, in its page layout, that it does not expect its clients to beat break-even. A vendor charging a flat fee has disclosed nothing about its quality but has removed the incentive that makes the first case dangerous.

The paper closes with the four revenue structures, what each one implies, and — since the reader's stated aim is his own bot and his own clients — the one structure that is simultaneously honest, auditable and sellable: price the apparatus, not the outcome. Not as ethics. As arithmetic.

1. The question

The public argument about signal vendors is conducted as a question of character: are they lying, are they incompetent, are they paid to lose. All three are unanswerable from outside, and all three are unnecessary. There is a prior question that is answerable with arithmetic:

> **Given the commission structure a vendor actually operates under, what does that structure pay it to produce?**

A revenue model answers that. Once it does, the character question mostly dissolves: most vendors in this ecosystem are behaving correctly inside a structure that pays for client losses, and the structure is the finding.

Three things are needed and all three are public: the payout the venue posts, the commission ladder the venue pays affiliates, and the price the vendor charges its clients. Everything below follows from those three and one identity.

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2. The zero-sum identity

A binary option is a wager between the client and the house, and the house's book is exactly the negative of the client's. With payout b on a win and hit rate p:

$$E[\text{client}] = p(1+b) - 1, \qquad E[\text{house}] = 1 - p(1+b)$$

At p = ½ the house margin per unit staked is $(1-b)/2$:

payout b	break-even hit rate p^*	house margin at a coin flip	client expectation at a coin flip
92%	52.08%	**4.00%**	−4.00%
90%	52.63%	5.00%	−5.00%
85%	54.05%	7.50%	−7.50%
80%	55.56%	10.00%	−10.00%
75%	57.14%	12.50%	−12.50%

Figure 6

Figure 6. The margin that funds every commission, against the turnover tiers published on the affiliate ladder.

Two observations that do most of the work in this paper.

The margin is small and it is the entire pot. At a 92% payout the house keeps four cents on the dollar turned over. Everything — the venue's costs, the affiliate's commission, the sub-affiliate's cut, the platform's profit — comes out of that four cents. Any commission schedule can be checked against it in one line of arithmetic, and the check is the first thing an operator should run against a published ladder.

Sample provided free for review. The complete work is available at https://library.coldcode-si-labs.workers.dev/