

A FOUNDATIONAL PAPER

# The Underwriting of *Human Capital*

The most expensive, most volatile asset a company holds has never been priced.

**Here is what changes when it is.**

## ABSTRACT

For a century, three disciplines learned to price the future. Actuaries priced mortality and built insurance. Statisticians priced default and built modern credit. Analysts priced cash flows and built the securities markets. Each took an uncertain future event, bounded it inside a confidence interval, and made it *underwritable* – assessable, traceable, and priced.

Talent never received this layer. The single most expensive and most volatile asset a company holds – the forward trajectory of its people – is still governed by intuition and backward-looking sentiment. This paper introduces **career trajectory underwriting**: the practice of reading a career sequence and underwriting its future – who is likely to leave, when, and what it would cost to keep them. We argue that the résumé is not a record but a forward curve; we present a model in which departure is governed by three independent clocks; and we describe a fully auditable pipeline that returns a priced, traceable verdict on a person's trajectory in minutes.

## §1 THE UNPRICED ASSET

# Everything walks out the door *except the price of it leaving.*

**A** modern enterprise underwrites almost everything. It prices the risk that a building burns, that a debtor defaults, that a currency moves, that a shipment is lost at sea. It buys cover, sets reserves, and quantifies its exposure to a precision of basis points. And then its best engineer – the one carrying the roadmap in their head – updates a résumé on a Tuesday night, and the firm has no number for it at all.

This is the strange blind spot at the centre of the org chart. The asset that is hardest to replace, slowest to ramp, and most expensive to lose is the one asset the firm has never learned to price. Headcount appears on no balance sheet as a forward curve. It appears as a cost line and a hope.

The reason is historical, not philosophical. Underwriting requires a record that points forward – a signal the future leaves in the present. Insurance had mortality tables. Credit had repayment histories. Talent appeared to have only the résumé, and the résumé was read as a backward artifact: a list of things already done. Read that way, it predicts nothing. Read correctly, it is the most forward-looking document a person produces.

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The firm insures the building and  
prays for the people inside it.

§ 2 THE LATENCY OF KNOWING

The resignation letter is  
the *last* signal – not the  
first.

**T**here is a quiet asymmetry in how a company learns that someone is leaving. The employee knows at  $T - 90$ : the recruiter's call, the quiet weekend of updating a profile, the second interview booked as a "dentist appointment." The company learns at  $T = 0$ : the calendar invite titled "quick chat," the letter, the two weeks' notice that is already too late to matter.

The ninety days in between are not silent. They are loud with signal – tenure pushing past the person's own exit cadence, compensation drifting below market, a title that has stopped moving while scope keeps growing. These are not feelings. They are facts visible in the public career record, legible to anyone reading forward instead of back. The company simply was not reading.

Career trajectory underwriting collapses the latency. It reads the signals that are already present at  $T - 90$  and returns the ninety days – the only window in which retention is still cheaper than replacement.

After the letter lands, every lever costs more and works less. Before it, the same levers are an ordinary line item in a one-on-one.

§ 3 THREE ERAS OF PEOPLE DECISIONS

## From the hunch, to the survey, to the underwriter.

**D**ecisions about people have moved through two eras and are entering a third. The **era of intuition** asked a manager how they felt about their team and trusted the answer. The **era of sentiment** replaced the hunch with the engagement survey – a genuine advance, but a measurement that is both lagging and endogenous. It records how a person feels about the past, inside one organisation, on the day they answered. It cannot see the offer the market will extend in six months, because that offer has nothing to do with how they feel and everything to do with what they have become.

ERA I	ERA II	ERA III
<b>Intuition</b> The manager's read. Unrecorded, unfalsifiable, and almost never wrong about the people it already likes.	<b>Sentiment</b> The engagement survey. Backward-looking, organisation-specific, and blind to the external market that actually does the poaching.	<b>Underwriting</b> The forward curve. Reads the external career record to price who leaves, when, and what it costs – probabilistically, and with the reasoning shown.

The third era inverts the question. It does not ask *how does this person feel about us*. It asks *what will the market offer this person next, and how does that compare to what we are giving them*. The first is sentiment. The second is underwriting. Only one of them predicts a departure that has not happened yet.

# A career is an asset with a *forward curve*.

Treat a career the way a desk treats any other asset and the analysis writes itself. The sequence of roles, companies, tenures and skills is not a biography – it is a price history. From a price history one builds a forward curve: where this trajectory is most likely to go, and how confident one can be at each step. TalentOracle outputs that curve as a three-year earnings band, conservative through aggressive, with a compound growth range rather than a single false-precise number.

The confidence band is the entire point. A point estimate – "this person will earn \$300,000 in three years" – is a guess wearing a suit. A band – "\$255K to \$358K, base case \$300K, growing 11.5% to 17.8% a year" – is an underwriting statement. It tells a leader not just where the trajectory is heading but how much a compensation adjustment actually buys, and how much uncertainty they are pricing against. You cannot manage what you can only guess. You can manage what you can bound.

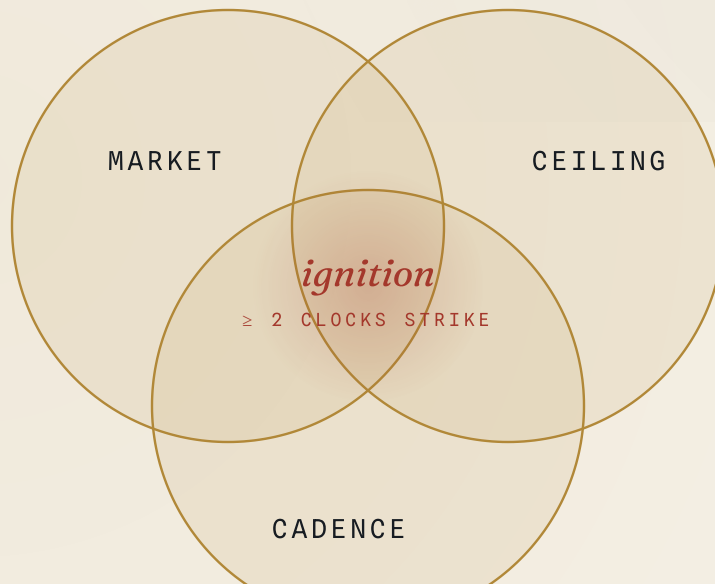
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A point estimate is a guess wearing a suit. *A band is a verdict.*

§ 5 THE FRAMEWORK

## The Three Clocks of Departure.

No single signal predicts a departure. A person can be highly desirable to the market and still stay for years; a person can be underpaid and still have nowhere better to go. Departure is not a level – it is an *alignment*. We model it as three independent clocks, each running on its own signals. A clock striking alone is noise. Departure becomes probable when two or more strike together.



## The Market Clock

EXTERNAL PULL

What the outside world will pay to take them – and how far below it they currently sit.

- Market desirability
- Comp lag vs. market
- Industry signal

## The Ceiling Clock

INTERNAL STALL

How much runway remains where they are before the trajectory flattens against the org's ceiling.

- Trajectory momentum
- Career-ceiling proximity
- Velocity vs. cohort

## The Cadence Clock

PERSONAL RHYTHM

Where they sit in their own historical pattern of movement – overdue, or only just settled.

- Tenure stability
- Tenure-vs-title mismatch
- Tenure past exit cadence

**The ignition rule.** A senior engineer who is highly desirable to the market (Market high) but still has clear runway and is early in their own cadence will, as a rule, stay. Make the title overdue (Cadence strikes) while the market keeps calling (Market strikes) and the same person becomes a probable departure within two quarters – even with engagement scores unchanged. Backward-looking tools read none of these clocks, because every one of them only tells time forward.

# Six specialist agents. *One traceable verdict.*

Underwriting that cannot be audited is not underwriting – it is a guess with better production values. TalentOracle's pipeline is built so that every conclusion traces back through a chain of discrete reasoning agents, each with a strict output contract: no unstructured prose, no claim without a signal beneath it. The chain that produced the score is preserved on the report itself.

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1

## Career Sequence Extractor

STRUCTURAL PARSER

Normalises raw résumé text into a canonical career record – positions, tenures, seniority, skills, estimated comp band.

**WHY** downstream reasoning needs structured data, not prose. One consistent input regardless of how the résumé was written.

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2

## Signal Analyzer

PATTERN RECOGNIZER

Scores eight to twelve signals across velocity, stability, market desirability and trajectory momentum – the empirical predictors that feed the three clocks.

**WHY** velocity below cohort combined with high market desirability is the single strongest departure indicator observed.

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3

## Trajectory Predictor

FORWARD MODEL

Produces the three-year earnings bands and the 0–100 retention-risk score, plus the most likely next move and its timing.

**WHY** point estimates are false precision. The output is a calibrated interval, tuned against confirmed outcomes – not a naïve heuristic.

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4

## Retention Intelligence Engine

INTERVENTION DESIGNER

Generates a ranked playbook of three to five interventions specific to the person's signals – action, rationale, estimated risk reduction, cost, timeline.

**WHY** a risk score without an action plan is a dashboard metric. The playbook is what makes the report operational.

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5

## Narrative Explainer

PLAIN-LANGUAGE TRANSLATOR

Writes the report in plain English, grounded in the specific data points from this résumé. Vague language is prohibited by the schema.

**WHY** every sentence in the narrative is the audit trail in human form. Each claim traces to a signal.

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6

## Report Architect

ASSEMBLY & AUDIT

Compiles the final report and records model version, pipeline version, input hash and timestamp. Pure assembly – no new inference.

**WHY** the audit trail is a first-class output. Same résumé, same model, same pipeline → same verdict, verifiably.

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# A specimen *underwriting* *report.*

What the underwriter returns – illustrative, on a single anonymous career sequence. Six questions, one document: will they leave, when and why, what it costs to keep them, where they go next, what the trajectory is worth, and how you can check the work.

# Senior Software Engineer

Acme Robotics · Series B · IC, no reports

REPORT · TO-2601-9F4A

HORIZON · 3 YEARS

BASIS · CAREER RECORD ONLY

ILLUSTRATIVE

## RETENTION RISK

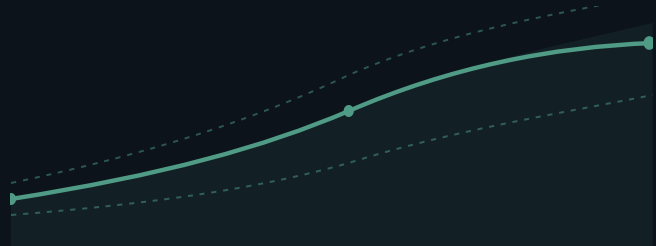


72/100

● HIGH RISK

Est. departure window  
6–14 months

## 3-YEAR EARNINGS TRAJECTORY



NOW · \$205K YR 1 · \$230K YR 2 · \$265K YR 3 · \$300K

CAGR · BASE CAGR · RANGE

+14.3%

+11.5 – 17.8%

## TOP DRIVING SIGNALS

Tenure past exit cadence CADENCE

Title compression vs. scope CADENCE

Top-quartile market desirability MARKET

Comp lag vs. market (~18%) MARKET

Velocity above cohort (retains) CEILING

## WHERE THEY GO NEXT

Most likely next move – **Staff Engineer** at a late-stage growth-equity-backed infrastructure company, on a **9–14 month** horizon, at a 20–30% total-comp step-up.

Alternate path – lateral IC move to FAANG-tier comp band, lower probability, faster timeline. You are not competing with a counter-offer. You are competing with a title.

## INTERVENTION PLAYBOOK · RANKED BY ESTIMATED IMPACT

ACTION	RATIONALE	Δ RISK	COST
<b>Promote to Staff (scope + title)</b>	Resolves the title-compression signal – the loudest clock striking.	-26 pts	\$0-title
<b>Close 18% comp lag</b>	Removes the market pull before the recruiter prices it for them.	-14 pts	~\$36K/yr
<b>Charter-level project ownership</b>	Extends visible runway against the ceiling clock.	-9 pts	Low

MODEL `to-trajectory-2.4` · PIPELINE `v6 / six-agent` · INPUT SHA-256 `9f4a...c7e1`

CONFIDENCE **MODERATE** · 2026-01-14T09:22Z · PROBABILISTIC – NOT A BASIS FOR ADVERSE ACTION

§ 8

THE ECONOMICS

# You do not need to prevent every departure.

## *You need to prevent one.*

**U**nderwriting is, finally, a pricing exercise – and the price here is almost embarrassing. A report costs the price of a working lunch. The event it helps prevent costs more than a million dollars in recruiting fees, lost ramp, slipped milestones and the quiet contagion of churn that investors learn to read in a board deck. The arithmetic does not require optimism.



This is what underwriting has always done: it lets you spend a known, trivial amount now to bound an unknown, ruinous amount later. The report is the cheapest cover a company can buy on the one asset it has never insured – and the only cover that also hands back a playbook for keeping the claim from ever being filed.

§9 DOCTRINE & LIMITS

## The discipline *is* the moat.

Underwriting earns its authority by stating its limits in the same breath as its conclusions. A model that will not name what it cannot see is not institutional-grade – it is marketing. These constraints are not caveats appended to the work; they are the doctrine that makes the work trustworthy enough to act on.

## 01 **Résumé-bound.**

The pipeline sees only the external career record. It cannot observe internal performance reviews, manager relationships, or real-time compensation — significant predictors it deliberately does not claim to hold. It underwrites what is legible, and says so.

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## 02 **Probabilistic, not deterministic.**

A score of 80 does not mean this person will leave. It means that, across the population with this signal profile, departure rates are materially elevated. The unit of truth is the cohort; any individual outcome may differ.

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## 03 **Calibrated by the feedback loop.**

It is a cold-start model: weights sharpen as confirmed outcomes accumulate. Early reports are less calibrated than those of a customer who has closed the loop for twelve months. Honest underwriting improves with evidence and admits its youth.

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## 04 **Not a basis for adverse action.**

Reports are decision support for humans, never automated verdicts. They must not be the sole or primary basis for a termination, demotion, or any adverse decision. The underwriter informs the judgment. The person makes it.

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RIGHT NOW

# Someone on your team is *updating their résumé.*

START FREE TRIAL

SEE A LIVE REPORT

No IT required · No HRIS access · No credit card · Audit trail on every output

## TalentOracle

Career Trajectory Underwriting. Predictions are probabilistic and intended to support – not replace – human judgment. Not a basis for adverse employment action.

DISCUSSION PAPER · VOL. 01

THE UNDERWRITING OF HUMAN CAPITAL

SET IN FRANQUES · NEWSREADER · SPLINE SANS MONO

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