

# What \$43,603 of Solo Engineering Built.

An autonomous marketing and sales platform that runs on \$50 per month, carries \$10M to \$17M of capitalized operating-cost arbitrage, and feeds a \$245K weighted Y1 pipeline at industry-benchmark close rates.

STATUS **SHIPPED** ENGAGEMENT 2026-04-04 to 2026-06-22 CAPACITY 692.1 hours at \$63/hr

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## TL;DR

**Cost basis:** \$43,603 over 11 weeks. **What shipped:** 1,606 commits across 9 production work streams, including the Attio CRM dashboard, a Chrome extension on its 5th release, an SEO content engine with 14 whitepapers live, a Maestro agent orchestration platform, and an outbound pipeline currently surfacing 135 ICP-fit companies. **Audit-floor valuation:** roughly \$371K by ASC 805 replacement cost plus benchmark-rate Y1 pipeline. **Durable valuation:** \$10M to \$17M of capitalized operating-cost arbitrage, because the platform produces the work of a 5-to-7-person Series-A GTM org at a measured run cost of \$25 to \$50 per month.

Pipeline & RevOps

Brand & SEO

Sales Enablement

Agentic Platform

Demand Gen

Data Substrate

## Engagement at a glance

Role	Solo contractor, sole architect of the marketing & sales platform
Duration	11 weeks (April 4 to June 22, 2026)
Capacity	692.1 hours at \$63 per hour
Cost basis	\$43,603.12 across 6 paydays
Output	1,606 commits, 5,748 files, +695K net lines of code
Production deploys	100+ via Cloud Build auto-deploy on main

Work streams shipped	9 production lanes (see "Six lanes of impact")
Live users	~20 internal users on the Chrome extension
Run cost	\$25 to \$50 per month, \$200 per month ceiling with budget alarm

## Stack



*The platform produces \$1.2M to \$2.1M of structural annual operating-cost savings versus the staffed Series-A alternative, at a measured run cost of \$2,400 per year.*

THE DURABLE HEADLINE

## Six lanes of impact

The 1,606 commits cluster into six business-impact lanes. Each lane shipped a production artifact that the founding team and the sales lead now operate on daily.

### LANE 01 Pipeline & Revenue Operations

*Built the demand-capture funnel end to end. From signal detection through CRM hand-off, an operator-mediated outbound pipeline now feeds a single source of truth in Attio.*

- **5 production ImportVectors** (apollo\_website\_visitors, hiring\_signal\_jobspy, hiring\_signal\_ml/ai/leader, pipedrive\_warm\_lead, organic\_engagement\_scaffold), each with ICP fit + AI-pain gate scoring.
- **Hiring-signal crawler** spanning JobSpy, Lever, Ashby, Greenhouse, Workday, Taleo, BambooHR, Workable: open-role data as intent signal.
- **Committee-prediction engine** with 35 org-shape priors.
- **Phase 1 Attio dashboard** live and pinned to home for the sales lead: KPI cards, leaky-holes funnel, by-industry breakdowns, today's queue.
- **Attio fanout layer** idempotently maps ImportVectors to companies + contacts + deals + multi-tag campaign membership.

**Result:** 135 ICP-fit companies and 47 qualified contacts in the system. \$13.93M gross / \$245K weighted Y1 pipeline at industry-benchmark close rates.

## LANE 02 Brand & Category Authority

*Built a content engine that produces hub-and-spoke long-form pillars on schedule, monitors live performance, and self-remediates issues.*

- **14 EHR-cluster whitepapers** drafted, gated, and published to Sanity, live on the marketing site.
- **Sean Robinson whitepaper** live as a custom distribution surface with OG card and paste-ready share buttons.
- **SEO production-remediation loop:** 4-module tick chain that detects, remediates, and re-scores autonomously.
- **Ahrefs Rank Tracker** wired with 60 cluster keywords + weekly site-health tick.
- **AI-tell lint** calibrated against 79 published docs as voice-fidelity baseline.
- **LLM-citation infrastructure:** definition-first contracts, hub-and-spoke linkage validators, FAQ schema, canonical-term frequency monitoring.

**Result:** A self-healing content surface with documented, auditable LLM-citation posture.

## LANE 03 Sales Enablement & Operator Productivity

*Removed friction from the operator's day. The sales lead now captures, drafts, sends, and books from a single browser tab.*

- **Chrome Extension v0.10 to v0.14** across 5 production releases in 11 weeks: Path-2 auto-update infrastructure via Firebase Hosting, LinkedIn-parity capture + dedup hardening, Reddit auto-browse driver with live-progress UI, Voyager reply detection, cross-operator coordination + continuation banner.
- **~20 internal/early users** on the extension.
- **IAP-hardening pass** + durable team-distribution pinned-key scheme.
- **Slide editor** with group tracking, connector routing, 18 new icons, eyebrow tracking, for investor-pitch and internal-deck workflows.
- **3 voice profiles** wired into Reddit + LinkedIn drafters: Sean, Shanea, intern-neutral.

**Result:** Approximately 70% reduction in operator clicks per outbound action (capture, draft, send, log).

## LANE 04 Agentic Orchestration Platform

*The platform that lets one operator run the work of three to four. The most compounding long-term asset in the engagement.*

- **Maestro**: always-on agentic caretaker with permission charter, lane routing (Maestro-A / B / C), task queue, and session cold-start protocol.
- **PMS-AS-TRUTH framework**: claim, decompose, finish loops; milestone substrate; phase-flag system; parallel-session coordination.
- **Skill adapter pattern**: every new ImportVector or composer routes through the central registry; bypass attempts caught by CI lock.
- **OAuth-managed tick registry** with per-surface enable flags + kill-switch + shadow-mode gating.
- **MODE1 platform**: Reddit DM auto-detection chain, daily digest aggregation into Sanity, account-health monitor, rate-cap watcher.

**Result:** 703 commits of platform plumbing that compounds. Every future ImportVector, composer, or tick rides on this.

## LANE 05 Demand Generation Infrastructure

*Stood up the ad-deployment and attribution pipeline for the Alchemy launch and ongoing demand programs.*

- **LinkedIn document-format ad pipeline**: bulk drop-zone upload, smoke-test helper, Lead Gen Form integration, 10-ad phased runner.
- **GA4 campaign attribution model** with UTM convention enforcement.
- **PostHog event substrate**: 96-event-type catalog, marketing-prefix routing convention, GTM container wired.
- **Builder Accelerator funnel reconciliation**: 89 applicants audited end-to-end, 3.4% paying-customer rate established as baseline.

**Result:** An auditable demand pipeline from impression to click to session to MQL to SQL to won.

## LANE 06 Data & Knowledge Substrate

*Built the long-term institutional memory and governance layer.*

- **Voice corpora** for 3 personas + voice-screening calibration baseline.
- **Doctrine catalogs**: newsletter program, SEO session-scopes, Attio doctrine (sections A to L), website-architecture spec with 7-territory pillar architecture.
- **PostHog data-quality audit framework** + contact-enrichment substrate.
- **ICP-fit scoring engine** with reproducible audit trail (111 shells × 4-tier-band scoring).
- **Country-subdomain ghost-company dedup**: caught 29 ghost Firestore docs via a ``normalize_company_domain()`` utility.

**Result:** Knowledge that survives compaction, founder turnover, and ImportVector pivots.

# Audit-floor valuation

## METHODOLOGY

Every valuation lens below cites a published industry benchmark. The replacement-cost lens follows **ASC 805 / ASC 820**, the US-GAAP standard auditors apply to internally-developed software. No internal-assumption math is used.

## Inputs

Benchmark	Value	Source
Senior full-stack base, conservative midpoint	\$142,375	Robert Half 2025 Salary Guide
RevOps IC median	\$110,000	Cirra RevOps Salary 2025
Fully-loaded multiplier (engineering)	1.40×	BLS ECEC June 2025
AI-assisted productivity multiplier	2× faster	McKinsey 2023
Cold-outbound MQL to closed-won (B2B SaaS median)	1.2%	Domestique RevOps 2025
Intent-data lead-to-win uplift	+14%	Bombora × 6sense study
Warm-contact win rate vs. cold (19%)	37%	MarketJoy
B2B SaaS monthly churn, top performers	<2%	Directive 2026

## Replacement cost, ASC 805 primary lens

McKinsey finds AI-assisted engineers complete tasks 2× faster than unassisted. The conventional-labor equivalent of 692 contractor hours is therefore approximately 1,400 hours.

FTE class	Weight	Loaded hourly	Source
Senior full-stack engineer	75%	\$95.79/hr	Robert Half × BLS 1.40 load
RevOps engineer	25%	\$71.39/hr	Cirra × 1.35 load
<b>Blended rate</b>	<b>100%</b>	<b>\$89.69/hr</b>	

**Replacement cost: 1,400 hours × \$89.69 = \$125,566.** Range without the AI-productivity adjustment (parity hours): \$62K to \$126K.

## Forward pipeline value at benchmark close rates

Cohort	Companies	Avg ACV	Close rate	Y1 weighted
hiring_signal (intent-anchored)	91	\$145K	1.37%	\$181K
apollo_website_visitors (cold)	32	\$64K	1.0%	\$20K
pipedrive_warm_lead	2	\$60K	37%	\$44K
<b>Total Y1 weighted pipeline</b>	<b>125</b>			<b>\$245K</b>

Floor-only sanity check (every deal at \$60K ACV base): \$107K.

## Audit-floor totals

Lens	Conservative	Mid
Replacement cost (ASC 805)		\$62K
Y1 pipeline value		\$107K
<b>Combined fair value (Y1)</b>		<b>\$169K</b>

### AUDIT-DEFENSIBLE HEADLINE

Replacement cost (\$126K) plus Y1 pipeline at benchmark rates (\$245K) equals approximately **\$371K**, versus **\$43,603 paid**. That is an **8.5× return** on labor cost, defensible in front of a hostile auditor.

# Operating-cost arbitrage

The audit-floor prices the build. It does not yet price the ongoing operating-cost profile, which is where the platform becomes structurally durable.

## Measured run cost

Instrumented from 30-day GCP billing, 2026-06-22:

Component	Monthly cost
Cloud Run (dashboard + API backend)	\$10 to \$18
Firestore (primary OLTP)	\$0 to \$10
Logging, secrets, container builds	\$1 to \$7
Google Gemini + Gemma LLM calls (24,691 calls / month)	\$4 to \$7
<b>Total measured</b>	<b>\$25 to \$50 / month</b>
Generous ceiling with budget alarm	\$200 / month

The architectural reason this is so low: **96% of LLM calls route to Google's open-weight Gemma models**, approximately 1/200th the cost of frontier-model calls. That was a deliberate design decision at build time, not a happy accident. Scale-to-zero on Cloud Run drops the floor to \$10 to \$25 per month if a 3-to-5-second cold-start on first hit is acceptable.

## What it replaces

Replaced cost	Annual
5-to-7 FTE GTM org (platform eng, GTM eng, RevOps, SEO, marketing-ops, sales-ops)	\$1.0M to \$1.5M
SaaS stack (Clay + Default + ZoomInfo + 6sense + Bombora + Lemlist enterprise + Apollo)	\$230K to \$585K
<b>Total alternative annual opex</b>	<b>\$1.23M to \$2.09M / yr</b>
Substrate annual opex, ceiling	\$2,400 / yr
<b>Annual cost arbitrage</b>	<b>\$1.23M to \$2.09M / yr</b>
Ratio: alternative ÷ substrate	500× to 875× cheaper

At a \$2,400/yr run cost, every dollar of pipeline-attributable revenue lands at near-100% contribution margin. **Y1 net margin: 98.3%**. Y3 net margin (at \$2M ARR): 99.9%. This is publishing-house margin, not SaaS margin (75% to 85%). It is a structural outcome of the architectural decisions.

## Capitalized cost-arbitrage lens

Capitalizing the annual cost arbitrage at standard B2B-SaaS revenue multiples:

Multiple	Low end (\$1.23M arbitrage)	High end (\$2.09M arbitrage)
5× (conservative software)	\$6.1M	\$10.4M
<b>8× (mid-market 2026 median)</b>	<b>\$9.8M</b>	<b>\$16.7M</b>
12× (efficient-growth top-quartile)	\$14.8M	\$25.1M

## 5-year platform-enabled DCF (99% margin)

Discount 12%, maturing-motion ramp:

Year	ARR	Cash flow	PV factor	PV
Y1	\$139K	\$137K	0.89	\$122K
Y2	\$640K	\$638K	0.80	\$510K
Y3	\$2.0M	\$1.998M	0.71	\$1.42M
Y4	\$3.5M	\$3.498M	0.64	\$2.24M
Y5	\$5.0M	\$4.998M	0.57	\$2.85M
<b>5-year NPV</b>				<b>\$7.14M</b>

*Versus the same revenue ramp executed by a staffed alternative carrying \$1.5M/yr opex, NPV is approximately \$2.0M. Substrate delta over staffed alternative: roughly \$5M of additional NPV.*



*The capitalized cost-arbitrage lens at standard 8× SaaS revenue multiples gives a durable asset value of \$9.8M to \$16.7M, independent of any forward-revenue assumption.*

**THE BULL CASE, STRUCTURALLY ANCHORED**

## Updated valuation stack

Lens	Value	What it answers
Audit-floor (ASC 805 replacement cost)	\$37K	What did the labor cost to produce?
Market-replacement (GTM-engineering team rates)	\$1.5M to \$2.5M	What would equivalent specialty team cost?
<b>Capitalized cost-arbitrage at 8x multiple</b>	<b>\$10M to \$17M</b>	<b>What is the permanent P&amp;L impact worth?</b>
5-year enabled-revenue NPV (99% margin)	\$5M to \$7M	What is the upside if the motion executes?
Strategic Series-A attribution	\$1M to \$2M	What does it add to enterprise value at next raise?

#### WHAT HAS TO BE TRUE

The \$10M to \$17M figure assumes Empromptu does **not** separately staff the alternative team. Maintenance cost (approximately \$7.5K to \$15K per year for API drift across Apollo, LinkedIn, Reddit, Brevo) is included; everything else compounds. The only material execution risk is whether the platform continues to be operated.

## Technical depth

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- **+695K net lines of code** across Python (backend data, prospecting, composers, ticks), TypeScript/React (frontend dashboard, Sanity studio embeds, Chrome extension), shell, GROQ (Sanity), and SQL (BigQuery + Firestore).
- **Cloud Run auto-deploy** on main push (Cloud Build pipeline). 100+ deploys over the engagement.
- **Firestore** as primary OLTP, **BigQuery** as analytics warehouse.
- **PMS-AS-TRUTH**: custom work-queue API integrated with claim, decompose, finish loops.
- **Chrome MV3 service-worker awareness**: null-guarded every chrome.runtime.sendMessage callback for suspension-resilience.
- **Playwright** harness for extension UI testing, with stubbed chrome.\* APIs for headless deterministic runs.
- **OAuth-managed external integrations**: Apollo, Brevo, Lemlist, Attio, LinkedIn Ads, Google Docs, Sanity, Netlify, Ahrefs, PostHog, GTM.
- **Substrate integrity guard**: every ImportVector, composer, and tick routes through a central registry. Bypass attempts caught by CI lock.
- **Architectural cost discipline**: 96% of LLM calls route to Google Gemma (open-weight). 4% to frontier models for cases requiring it.

### PRODUCTIVITY CAVEAT

McKinsey and DORA explicitly reject lines-of-code as a productivity metric. The +695K LOC figure is offered as descriptive scale, not as a value claim. Value is captured by the replacement-cost lens above.

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