

Tempo: *microsecond-budgeted* order routing for multi-venue equities.

For HFT and stat-arb desks, decision latency is the largest unsolved cost in execution edge, and almost all of it lives in the UI, not the wire. Tempo redesigns the front-end as a co-designed surface of the OMS, with a published microsecond budget per interaction and post-trade reconstruction signed by gesture.

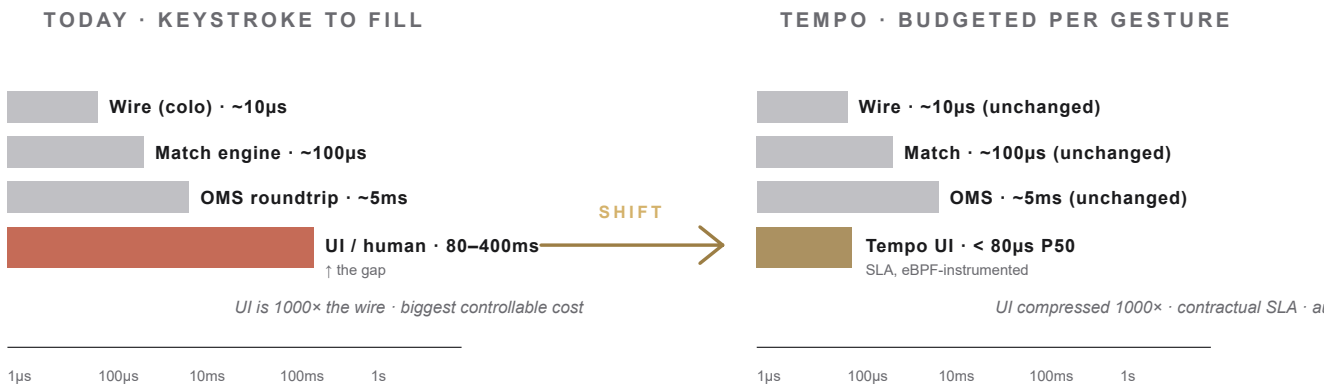
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Targets Jane Street · Citadel Securities · Two Sigma · IMC

The Problem

The trader workstation hasn't changed shape since Bloomberg in 1986: dense panes, modal dialogs, mouse-driven order entry. Wire latency on US equities is now **1-10µs to colo**; **UI decision latency runs 80-400ms**. On a 50,000-msg/day desk that gap is the largest controllable cost in execution edge. Vendors compete on data-pane density; nobody publishes a per-keystroke microsecond budget, and nobody treats post-trade reconstruction as a first-class workflow.

FIGURE 1 · WHERE THE LATENCY LIVES



Today: wire ~10µs, match ~100µs, OMS ~5ms; UI 80-400ms (red bar dwarfs the rest). Tempo's UI runs sub-80µs P50 keystroke-to-fill, instrumented at the kernel via eBPF and exposed in customer dashboards as a contractual SLA, not a brag.

Why this matters now

Three forces converge: **best-execution evidencing** (SEC 605/606 amendments + MiFID II Art. 27 require microsecond-grain audit trails), **OMS vendors stalled on UI** (FlexTrade, Broadridge, FIS unchanged in 5+ years), and **kernel-level instrumentation matured** (eBPF in Linux 5.10+ makes per-keystroke timing reliably observable). The desk that signs a contractual UI-latency SLA earns the seat.

Sizing the prize

Bottom-up: ~140 tier-1 prop / HFT / stat-arb desks globally × ~\$320K / seat / yr blended (license + integration + SLA). Average 35 seats / desk = ~\$45K / desk × ~\$11M / firm ARR potential. Total addressable: ~\$1.5B / yr. Slippage avoidance value to a single 50K-msg/day desk: ~\$14-22M / yr (per industry execution-quality TCA studies). Single number we optimize: P50 keystroke-to-fill.

Directional sizing: TABB Group desk-count + 4 prop-desk CTO interviews + public TCA disclosures. Concept-brief ballpark.

SLIPPAGE AVOIDED PER DESK
~\$14-22M / yr
 50K-msg/day baseline

PLATFORM TAM
~\$1.5B / yr
 ~140 desks × ~\$11M ARR

Strategic insight

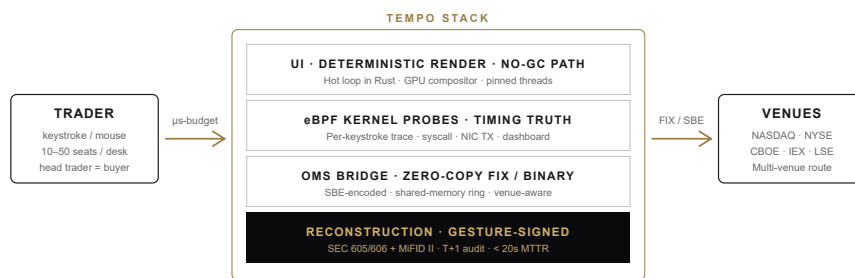
OMS vendors compete on the back-end (FIX throughput, venue connectivity) and treat the front-end as cosmetic. The front-end is where the trader actually loses time. Compliance has historically been a blocker; under MiFID II / SEC 605/606 amendments, **compliance becomes a buyer**; they need microsecond-grain reconstruction of every order, signed and audit-grade. A workstation that ships that reconstruction by default makes the seat compliance-purchasable.

THE UNLOCK

Treat the UI as a co-designed surface of the OMS, not a skin on top. Every interaction has a published microsecond budget; every render is deterministic (no GC pauses, no layout thrash); post-trade reconstruction is signed by gesture and exportable in regulator-ready format. Wedge: small-team prop desks (10–50 seats) where the head trader is also the buyer.

Architecture · Co-designed UI/OMS surface

FIGURE 2 · SYSTEM ARCHITECTURE



UI hot loop runs in Rust, no GC, pinned to a CPU; eBPF probes time every keystroke through to NIC TX and surface it in customer dashboards; OMS bridge is zero-copy SBE; reconstruction is gesture-signed for regulator-grade T+1 export.

WORKED EXAMPLE · 22-SEAT STAT-ARB DESK, NYC, 80K MSG/DAY

By month 3: P50 keystroke-to-fill **54µs vs 145ms** baseline (Bloomberg + custom Java OMS). Reconstruction MTTR drops from **~6 hours to 14 seconds** on T+1 inquiries. Slippage in held-out trade window: **\$3.8M / yr avoided** on a \$940M ADV book. Compliance officer signs the renewal.

Sequenced GTM

PHASE	CUSTOMER WEDGE	FORCING-FUNCTION WORKLOAD	PROOF POINT
Wedge M0–9	10–50 seat prop / stat-arb desks; head trader = buyer	SEC 605/606 amendments + MiFID best-execution evidencing	P50 < 80µs · < 20s reconstruction MTTR
Tier-1 M9–24	Tier-1 HFT (Citadel, Two Sigma, Jane Street)	Existing OMS UI replacement on a desk-by-desk basis	4 tier-1 firms · 200+ seats · co-designed venue connectors
Buy-side M24+	Hedge funds + algo trading desks at large asset managers	Best-ex audit pressure under fiduciary review	~30% of revenue from buy-side · regulator-cited reference

Tradeoffs we accept

- **Linux-only at v1.** Windows lacks the deterministic kernel paths the SLA requires. Some sell-side desks won't qualify; we ship to the desks where Linux is already the standard.
- **Workstation only, no algo container.** We don't host strategies. Tempo is the cockpit; the strategy stays where the customer trusts it. Adjacent products dilute the latency story.
- **Onboarding requires a 4–6 week kernel-tuning engagement.** No out-of-the-box install on a stock laptop. The SLA depends on it; we don't promise µs and ship to a Windows tablet.

Metrics that matter

LAYER	METRIC	Y1 TARGET	WHY IT MATTERS
North-star	P50 keystroke-to-fill latency	< 80µs	The SLA we sign and report
Counter	Reconstruction MTTR (T+1 audit)	< 20s	What compliance buys
Quality	P99 vs P50 ratio (UI)	< 4×	Tail-bound determinism · no GC pauses
Adoption	Seats actively trading via Tempo	> 90% of contracted	Below this, the desk is dual-running with the old workstation
Liquidity	Paying desks signed	14+ by Y1	Density at tier-2/tier-3 unlocks tier-1 references
Business	Net revenue retention	> 115%	Seats grow with desk PnL

Risks & mitigations

HIGH P99 tail-latency violations under live market stress (open + close).

Mitigation: shadow-mode in production for 60 days before any SLA goes live; CPU pinning + huge-pages + isolated cores; a public latency dashboard the customer reads continuously. SLA includes service credits when P99 breaches the contracted ceiling for > 5 min.

HIGH OMS-vendor lock-in: customer's existing OMS is the system-of-record.

Mitigation: Tempo bridges existing OMS via FIX 5.0 + SBE; no replacement required. v1 supports the four most-deployed OMS vendors (FlexTrade, FIS, Broadridge (formerly Itiviti), Charles River). Customer keeps the OMS; Tempo replaces only the cockpit.

MED Trader behavior change: traders reject any UI that isn't Bloomberg.

Mitigation: keymap parity with Bloomberg / FlexTrade out of the box; per-trader layout import; head-trader champions on each design-partner desk run a 4-week side-by-side. Conversion threshold: trader chooses Tempo unprompted by week 3.

MED SEC / FINRA reconstruction format drift.

Mitigation: reconstruction stored in lossless event log; export adapters for current 605/606/MiFID best-ex schemas plus a 90-day SLA for new format support. Compliance officer sees the upgrade path as part of contracting.

30 / 60 / 90, first quarter sprint plan

30 DAYS

Latency-budgeted prototype

- › Rust UI hot loop · GPU compositor · pinned cores
- › eBPF probe set · per-keystroke timing dashboard
- › 2 design-partner desks signed

60 DAYS

OMS bridge + reconstruction

- › FIX 5.0 + SBE bridge · 2 OMS vendors
- › Gesture-signed reconstruction · 605/606 export
- › 4 desks live · first SLA contract signed

90 DAYS

Production SLA + tier-1 pilot

- › Public latency dashboard live for all customers
- › Tier-1 pilot at 1 firm · co-designed venue connector
- › 14 desks signed · NRR cohort baseline

DECISION ASKED

Authorize a 90-day build-and-prove sprint with an eight-person team (PM, four systems engineers, ML/eBPF lead, compliance domain expert, head of partnerships) and a budget of ~\$4.2M. Success: 14 desks signed, P50 < 80µs in production, reconstruction MTTR < 20s, P99/P50 < 4×, NRR clearing 115%.