

Triangle: Empowering Incident Triage with Multi-Agent

A Multi-Agent System Reducing Incident Engagement Time by up to 91%

Multi-Agent System Incident Management Cloud Operations

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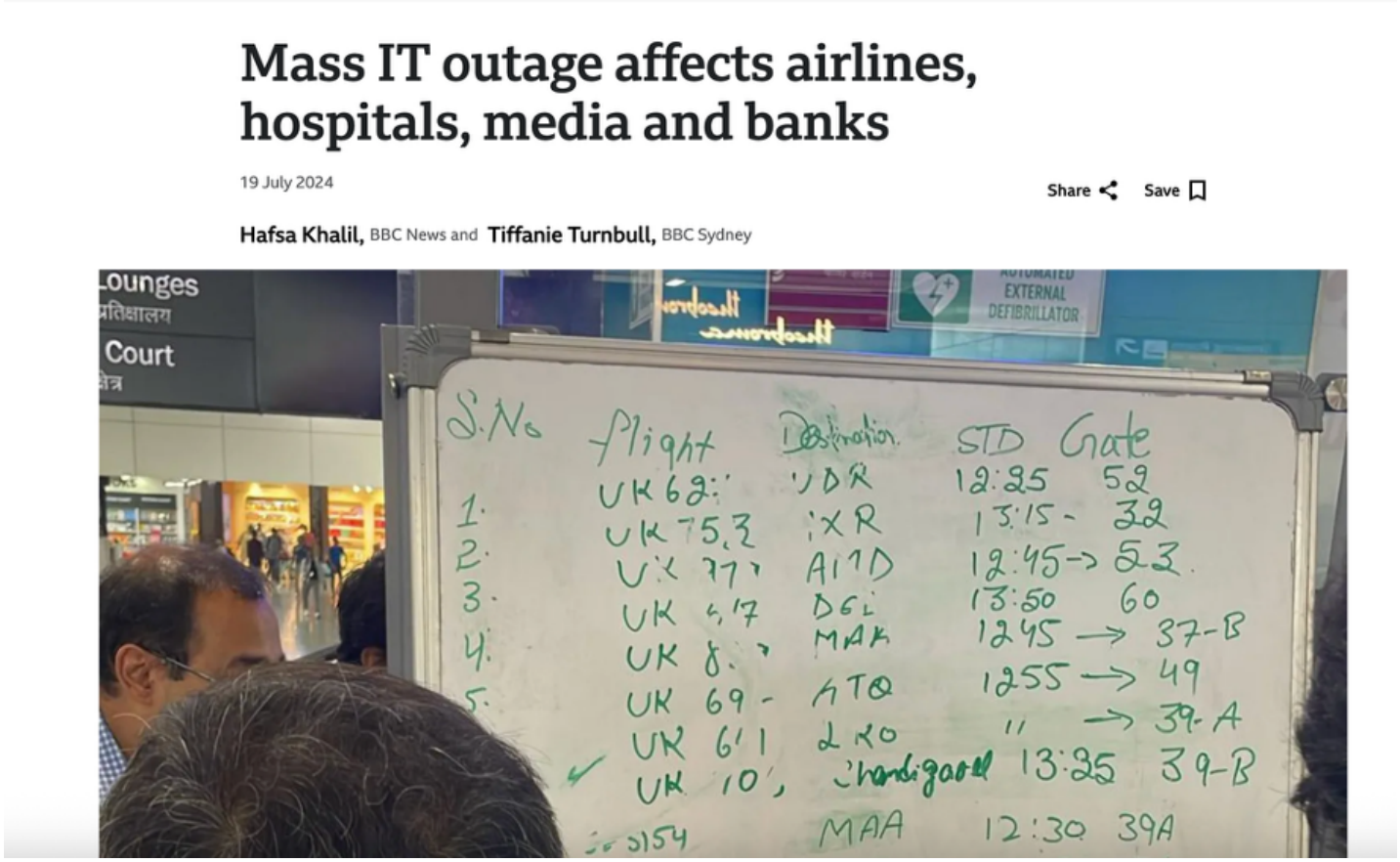
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1. Why Incident Triage Matters

High-profile outages demonstrate the critical importance of rapid incident response. Even minutes of downtime translate to millions in revenue loss and severe customer impact.



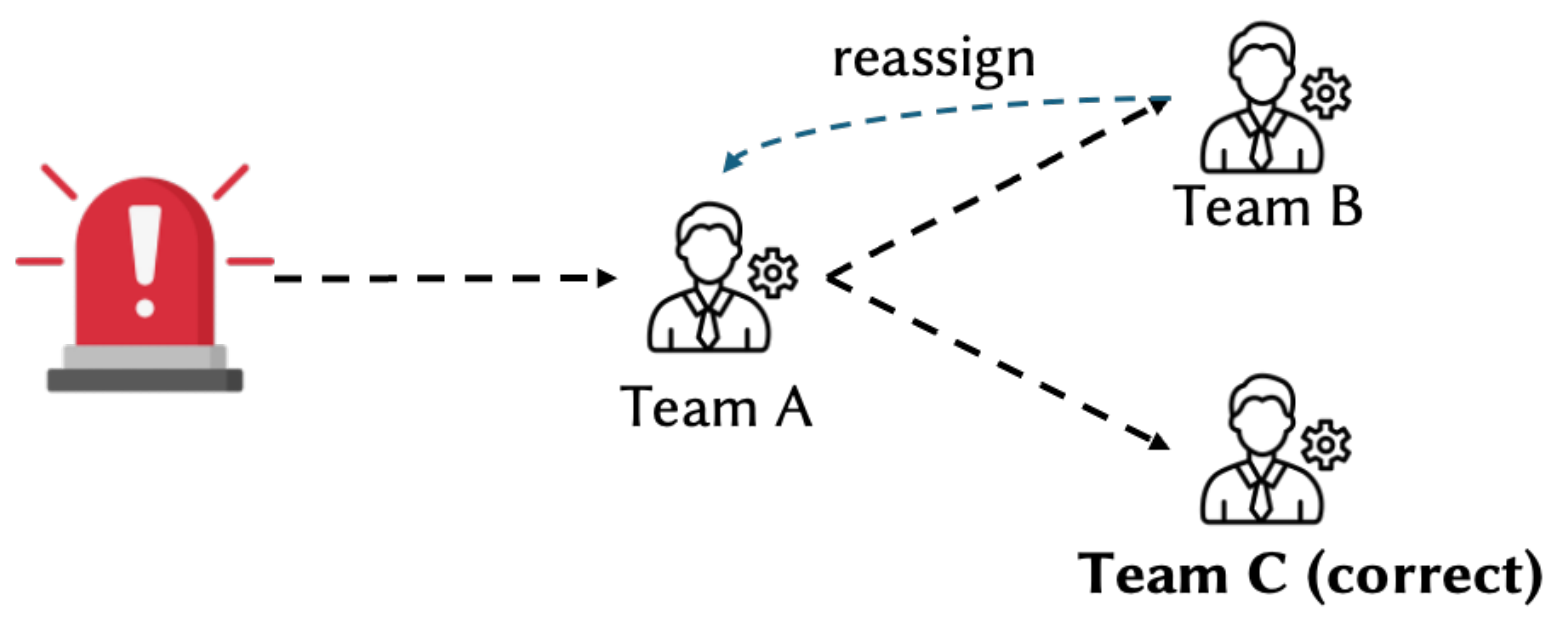
CrowdStrike and Windows Outage (July 19, 2024): Caused massive global service disruptions and economic losses.



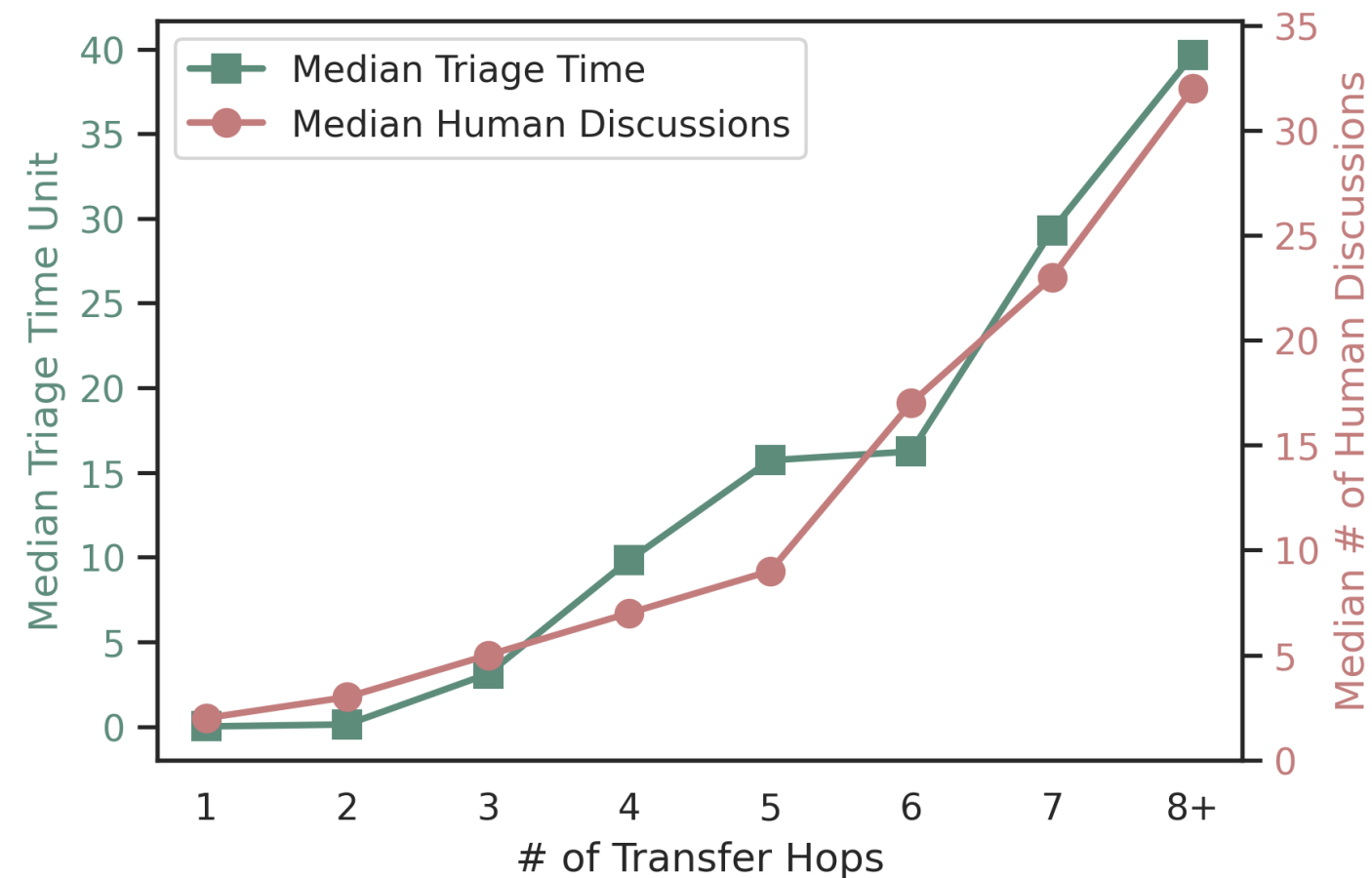
Amazon Web Services Outage (Oct 19, 2025): Impacted millions of users and businesses worldwide.

2. The Core Challenge: Triage Cycles

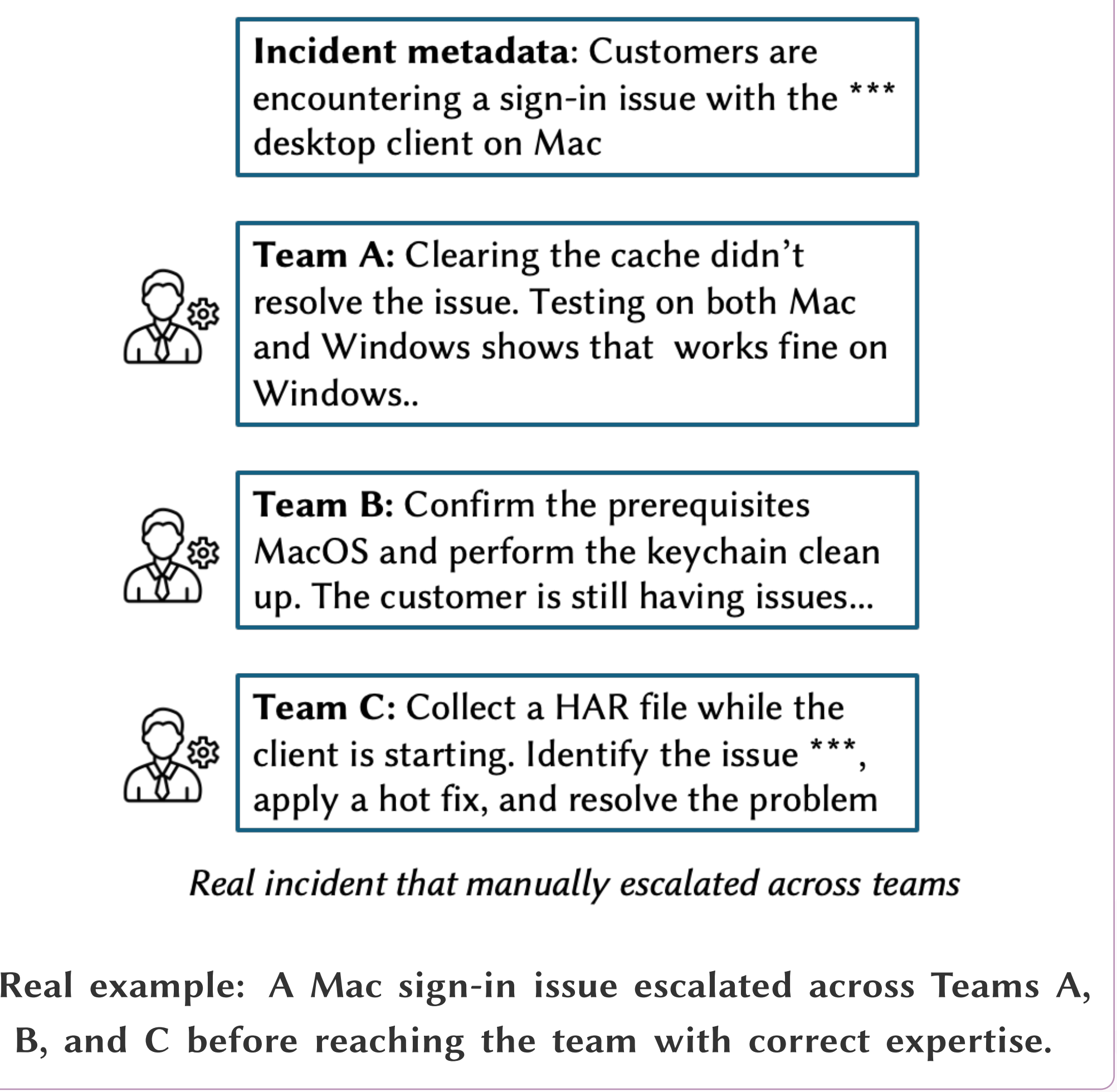
At the heart of incident management lies **Incident Triage**: assigning incidents to the correct team. A wrong assignment triggers costly "triage cycles" where incidents bounce between teams.



The triage process relies on slow manual operations, vague alerts, and has high business impact from delays.



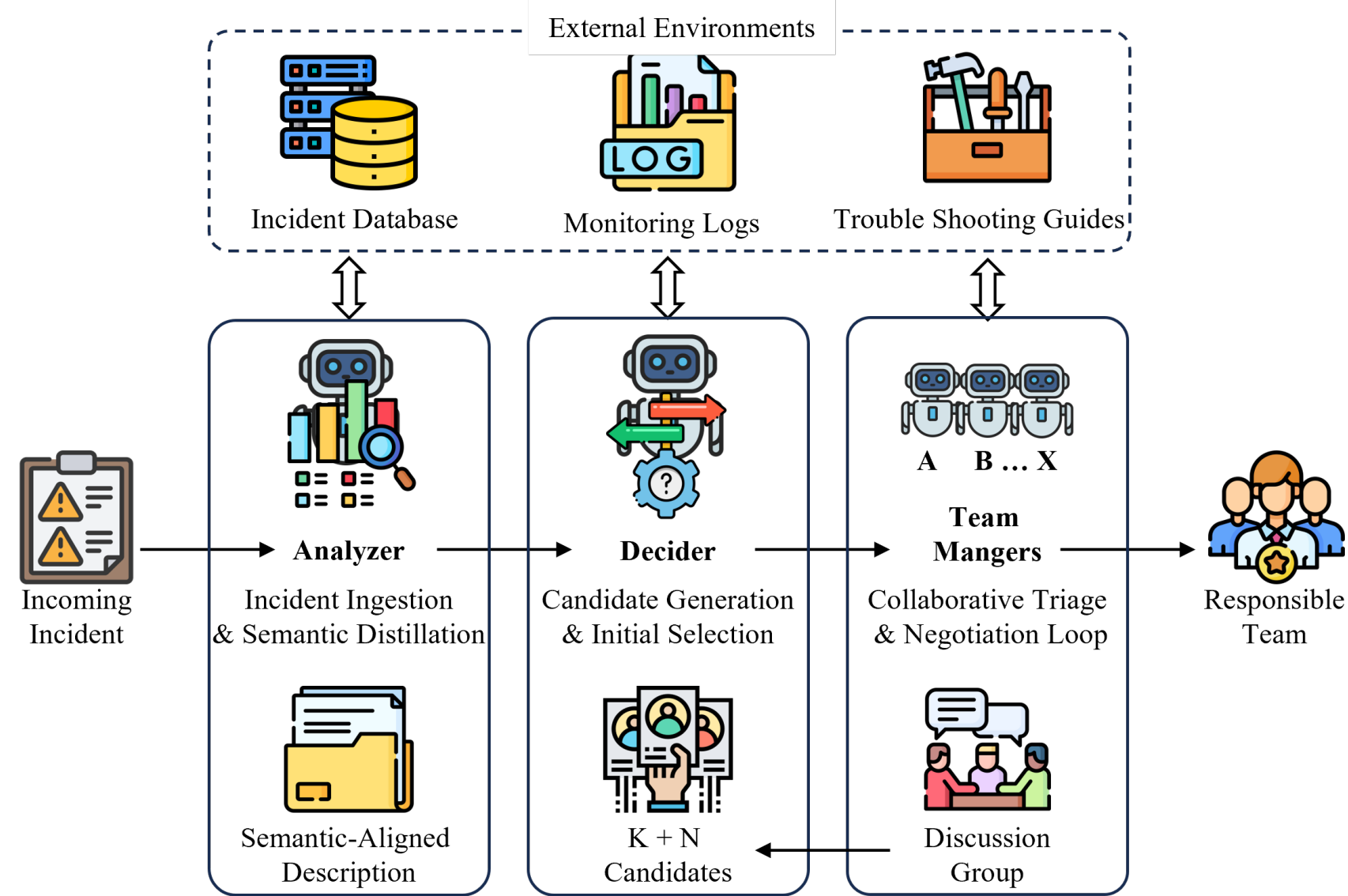
Our study of 3,000+ teams: Each hop exponentially increases triage time and communication overhead.



3. Our Solution: Triangle

Triangle is a multi-agent system that automates triage by simulating expert team collaboration:

- **Semantic Distillation:** Analyzer Agent extracts key information from noisy data.
- **Collaborative Negotiation:** Team Manager Agents discuss, enrich with tools, and vote.
- **Automated Enrichment:** Agents query logs and monitoring systems automatically.

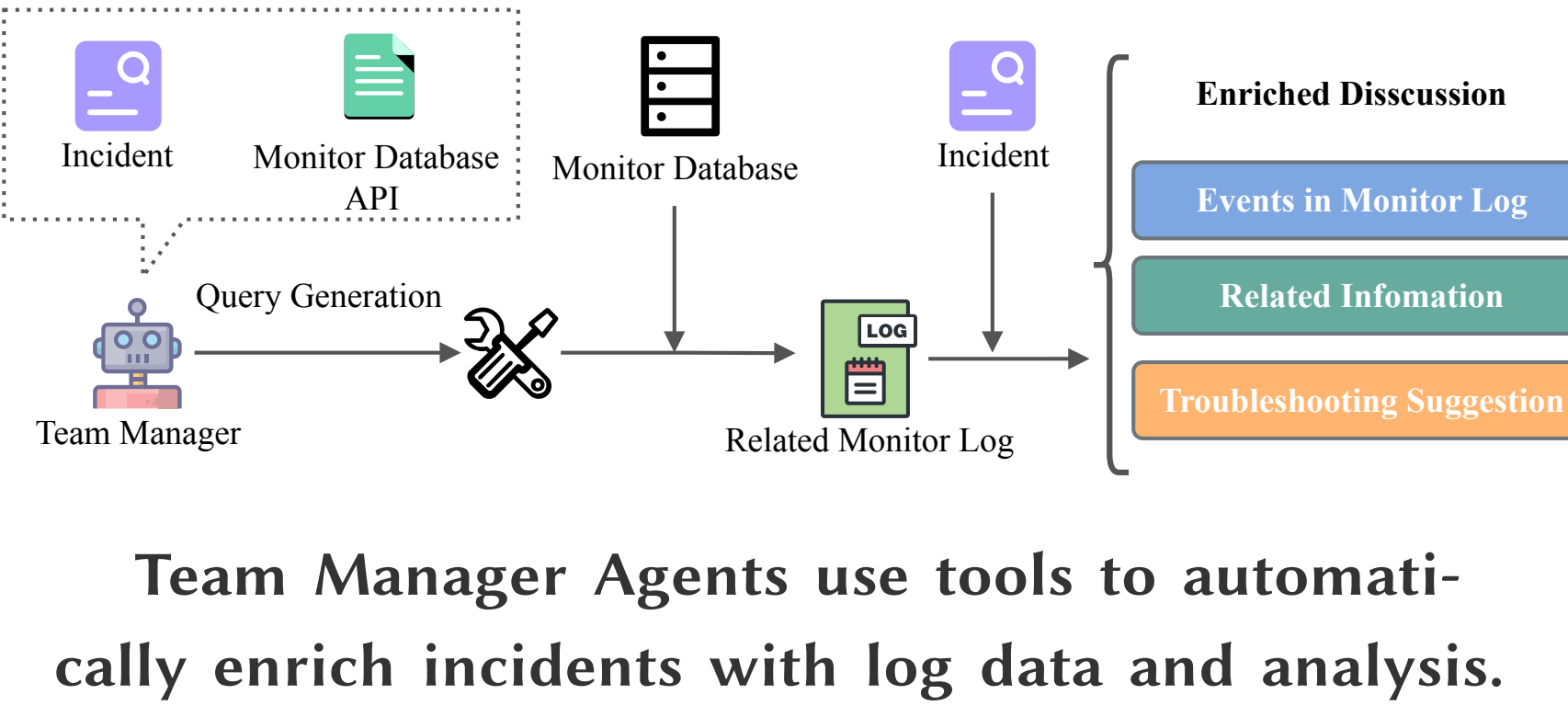


The Triangle Framework: Agents collaborate to analyze, propose, and negotiate the correct team assignment.

4. Key Results

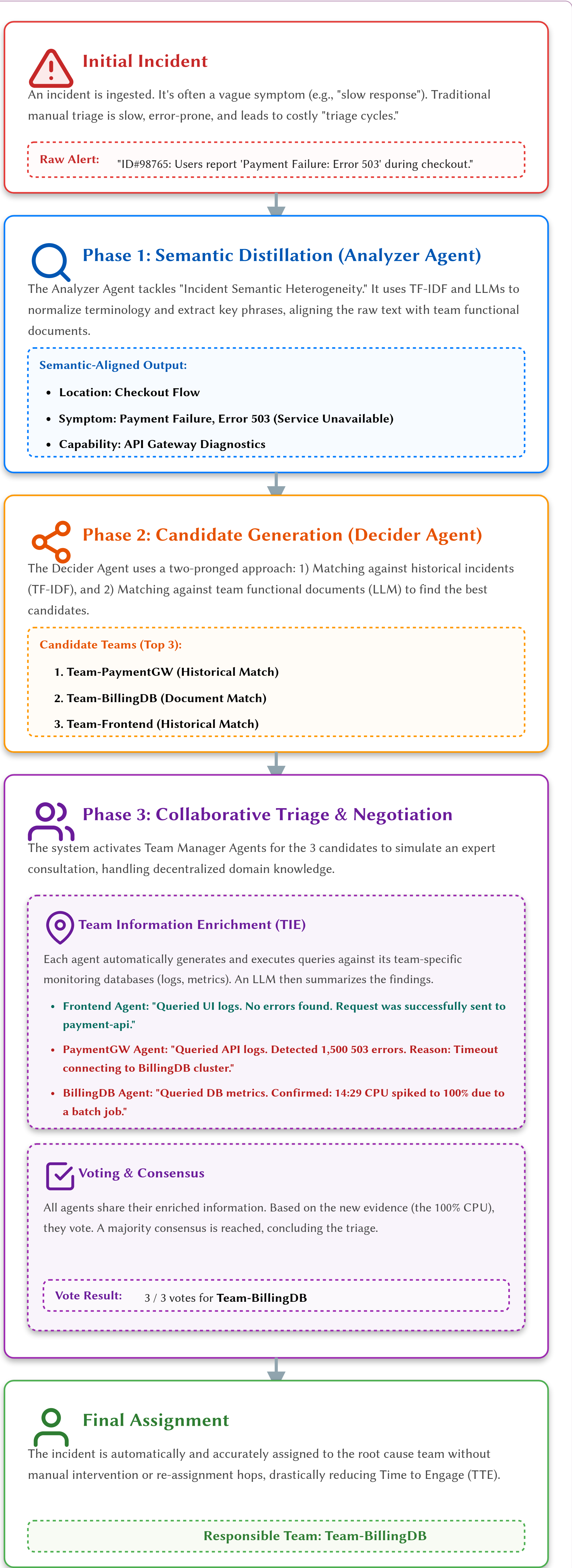
We evaluated Triangle on real-world incident data from a large-scale cloud provider.

- Outperforms the state-of-the-art (DeepCT) by a relative margin of 26-42%.
- Achieves 91.7% accuracy after 5 hops, without relying on manual discussion data.
- Generalizes to other tasks, outperforming baselines on the MSR 2013 Bug Dataset by an average of 51%.



Team Manager Agents use tools to automatically enrich incidents with log data and analysis.

5. How It Works



Triangle's three-phase workflow: from initial incident to final assignment through analyze, propose, and negotiate phases.

6. Real-World Business Impact

Triangle is deployed in production, serving tens of millions of users. Across six major services, it has delivered significant operational improvements.

