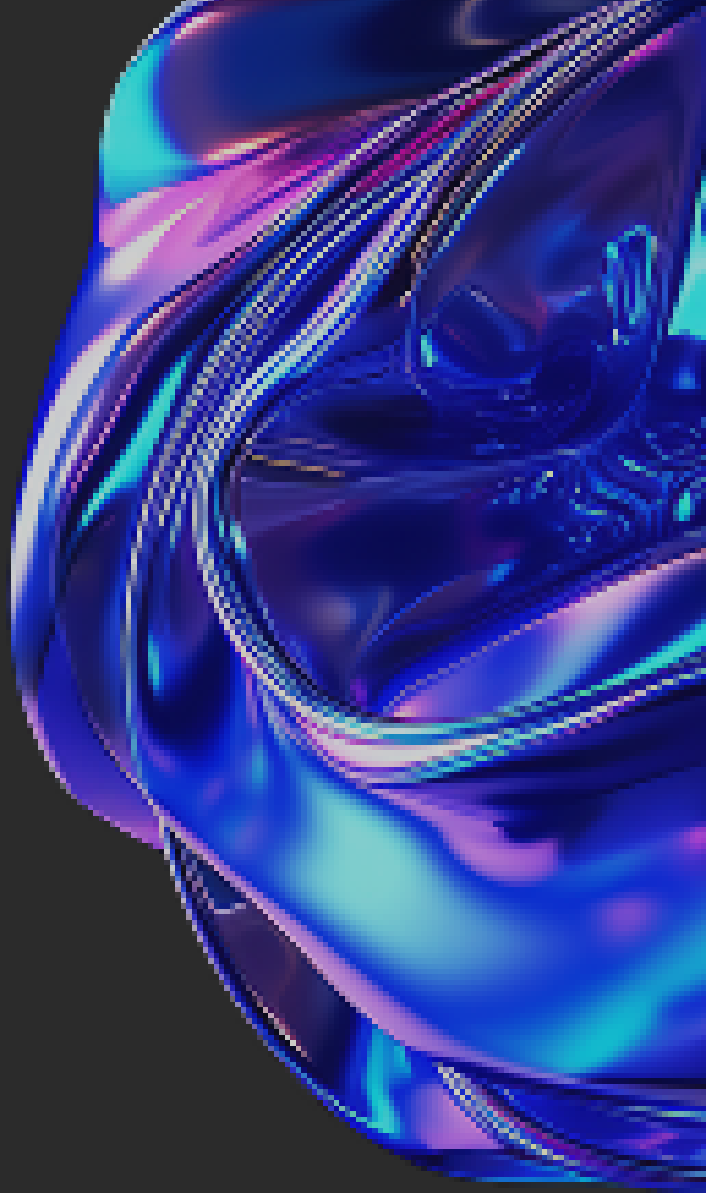




Case Study: AWS technologies

Snapshot AI

Full Platform Development
& Delivery

Prepared by



Executive Summary

Snapshot AI is a platform designed to help engineering leaders make sense of fragmented developer data. It gathers metrics from across the tech stack and uses artificial intelligence to provide clear, actionable insights for executives.

From initial concept to enterprise adoption, Snapshot AI evolved into a strategic decision-support tool that replaces guesswork with AI-guided clarity.

This case outlines the end-to-end development of Snapshot AI—covering goals, architecture, implementation, integrations, challenges, and outcomes. What began as an internal 360° review tool became a comprehensive performance intelligence platform now used by external clients across industries.

Overview

The initial idea for Snapshot AI was conceived and launched within 6 months. Internal adoption followed in under a year. Snapshot AI welcomed its first paying customers within 2 years.

Team & Timeline

The team behind the platform included **13 developers, 3 QA engineers, 2 designers, and leadership and strategy support from Flatiron Software**. Snapshot AI is actively maintained and continues to expand its functionality based on user feedback and roadmap priorities.

Opportunities

- **Unify Engineering Data:** Bring together data from disparate systems
- **Make Insights Actionable:** Go beyond dashboards and offer guidance
- **Executive Clarity:** Help tech leaders understand performance at scale
- **Automate Reviews & Reports:** Reduce time spent in manual 1:1 prep
- **Scale Without Complexity:** Automate onboarding and updates across orgs

Platform Overview & Execution

Snapshot AI is a cloud-based platform that integrates with engineering tools such as GitHub, Jira, Slack, Bitbucket, Azure Repos, Google Workspace, and Okta to centralize and analyze development data. It provides engineering leaders with a consolidated view of team performance, code activity, workflow trends, and delivery risks.

The system includes an AI Assistant capable of interpreting organizational data to support decision-making on resource allocation, technical debt, performance feedback, and team dynamics.

To deliver this functionality efficiently, the team established clear development workflows and stakeholder coordination:

- **Slack** for internal and client communications
- **Jira** for task tracking and sprint management
- **Figma** for interface design and review
- Custom onboarding automation for enterprise clients, including **GitHub-based** user mapping and team creation
- **Recurring syncs and async** reporting to ensure visibility across teams

This structure allowed for scalable delivery and continuous iteration based on usage patterns and client feedback.

Solution

To support large-scale engineering data analysis and deliver actionable insights through AI, the project was structured into four key phases. Each phase addressed a specific layer of development—from foundational infrastructure to advanced intelligence features and future scalability.

The breakdown below outlines the approach, technical decisions, and architecture that enable the platform's current performance and continued evolution.

00 Preparation Phase

- UI/UX Design & Architecture Planning
- Market research & early user interviews
- Setup of infrastructure using AWS with isolated environments (staging, preprod, prod)
- Defined strict IAM policies and VPC subnetting for security

01 Initial Development &

Launch

- Developed backend and frontend hosted on **Amazon ECS Fargate**
- Connected key integrations (Jira, GitHub, Slack)
- Designed tiered login system (Admin / Manager / User)
- Delivered visual dashboards for metrics like pull requests, ticket timelines, commits

02 AI Features & Optimization

- Introduced **Snapshot AI Assistant**, connected to organizational context
- Added **AI Widgets** like:
 - Top Contributors
 - Raised Flags (delivery risks, performance trends)
- Migrated ETL pipelines to **Apache Airflow on MWAA** for reliability
- Built database optimizations, caching (Redis), and notification systems (SNS)

03 Roadmap (In Progress)

- 1:1 Performance Review Assistant
- Ghost Engineer Detection
- Report Automation
- LLM orchestration with **AWS Bedrock** to reduce dependency on external APIs

Execution

Insights

Challenge

Onboarding large orgs (200+ users) was time-consuming

Data ingestion failures from multiple tools

Jira API instability and complexity

Solution

Built an AI-powered onboarding tool that matches GitHub handles, teams, and projects automatically.

Migrated pipelines to Apache Airflow, improving reliability and traceability.

Developed a Snapshot AI-Jira extension, audited and published on Atlassian Marketplace, with update monitoring.

Outcome

Snapshot AI has evolved into a platform that connects to engineering systems and processes large volumes of operational data to generate structured, AI-driven insights. Built with a modular architecture and tiered access control, it supports role-specific views and analysis.

The AI assistant operates on contextual data from integrated tools to surface patterns, risks, and performance indicators. After two years, the platform supports nine core integrations and handles production workloads for both internal and external teams.

It is actively used by engineering leaders who are already gaining valuable insights to guide performance, identify risks, and streamline decision-making.

AWS Services

01 Hosting & Containers

Amazon ECS Fargate (frontend, backend, AI services)

02 AI & LLMs

Amazon Bedrock, OpenAI (orchestrated via internal AI Manager service)

03 ETL & Scheduling

AWS Lambda, Amazon EventBridge, MWAA (Apache Airflow)

04 Databases & Caching

Amazon RDS (PostgreSQL), Amazon ElastiCache (Redis)

05 Storage & CDN

Amazon S3 + CloudFront

06 Security & Secrets

AWS KMS, SSM Parameter Store, IAM, VPC

07 Networking

Application Load Balancer (ALB), VPC Firewall Rules

08 Monitoring & Alerts

CloudWatch Dashboards & Alarms, SNS

Thank you!

Thank you for taking the time to read this case study. If you have any questions or would like to discuss our findings further, please don't hesitate to reach out to us.

marketing@flatiron.software
flatiron.software
Miami, US

