

Ship With Confidence: The AI-Assisted Software Delivery Playbook

A WORKPLACEAI STRATEGY PLAYBOOK

From Commit to Production, Faster and Under Control

AI writes code faster than teams can review it. Here is how to keep the pipeline honest: AI drafts, automated checks prove, and engineers decide, from the first spec to the last postmortem.

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Key Takeaways

- AI has moved the bottleneck. Writing code is faster, so review, testing, security, and release now limit how quickly good software ships. Speeding up only the first stage makes the later ones worse.
- Use one rule across the pipeline: AI drafts, automated checks prove, engineers decide. The model suggests code, tests, and summaries. Deterministic checks decide whether a change meets the bar. People hold the approval.
- Put the proof in the pipeline, not in people's memory. Required tests, security scans, and review rules should block a merge automatically, for human and AI-written code alike.
- Review needs triage. When code volume rises, send reviewers the risky changes and let automation handle the routine ones, instead of asking people to read everything.
- Coding agents hold credentials and run commands, so treat them like any privileged system. Give them narrow permissions, treat outside content as untrusted, and log what they do.
- Measure outcomes, not output. Lead time, change failure rate, and time to restore show whether AI is helping. Lines of code and pull request counts do not.

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Engineering teams adopted AI faster than almost any other function. Assistants write functions, generate tests, draft documentation, and increasingly work as agents that open pull requests autonomously. The early gains are substantial: more code, written faster. The later results are less welcome. More code means more to review, more to test, more to secure, and more to run when something breaks.

This playbook treats software delivery as one pipeline, from the first idea to the last postmortem, and shows where AI helps at each stage and where it needs a check. It builds on the single-topic guides for [pull request review](#), [security scanning](#), [test coverage](#), and [incident triage](#), and connects them.

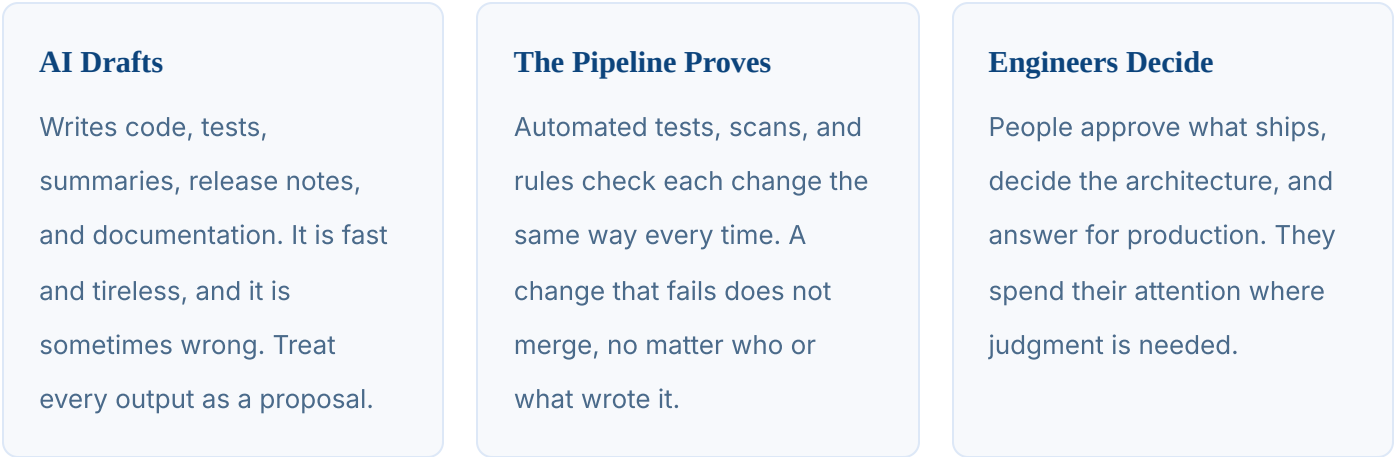
The Delivery Tax

Three costs recur in nearly every engineering organization that adopts AI without redesigning its pipeline.

- **The review pile-up.** Pull requests arrive faster than reviewers can read them. Reviews get shallower, or changes wait, and either outcome hurts.
- **Confident but unproven code.** AI-written code compiles, reads well, and passes a quick glance. It may also contain a subtle logic error, an unsafe dependency, or a vulnerability. Fluent code is not correct code.
- **Slower recovery than creation.** Teams can now produce changes faster than they can understand them. When production breaks, nobody remembers why a given line exists, and the fix takes longer.

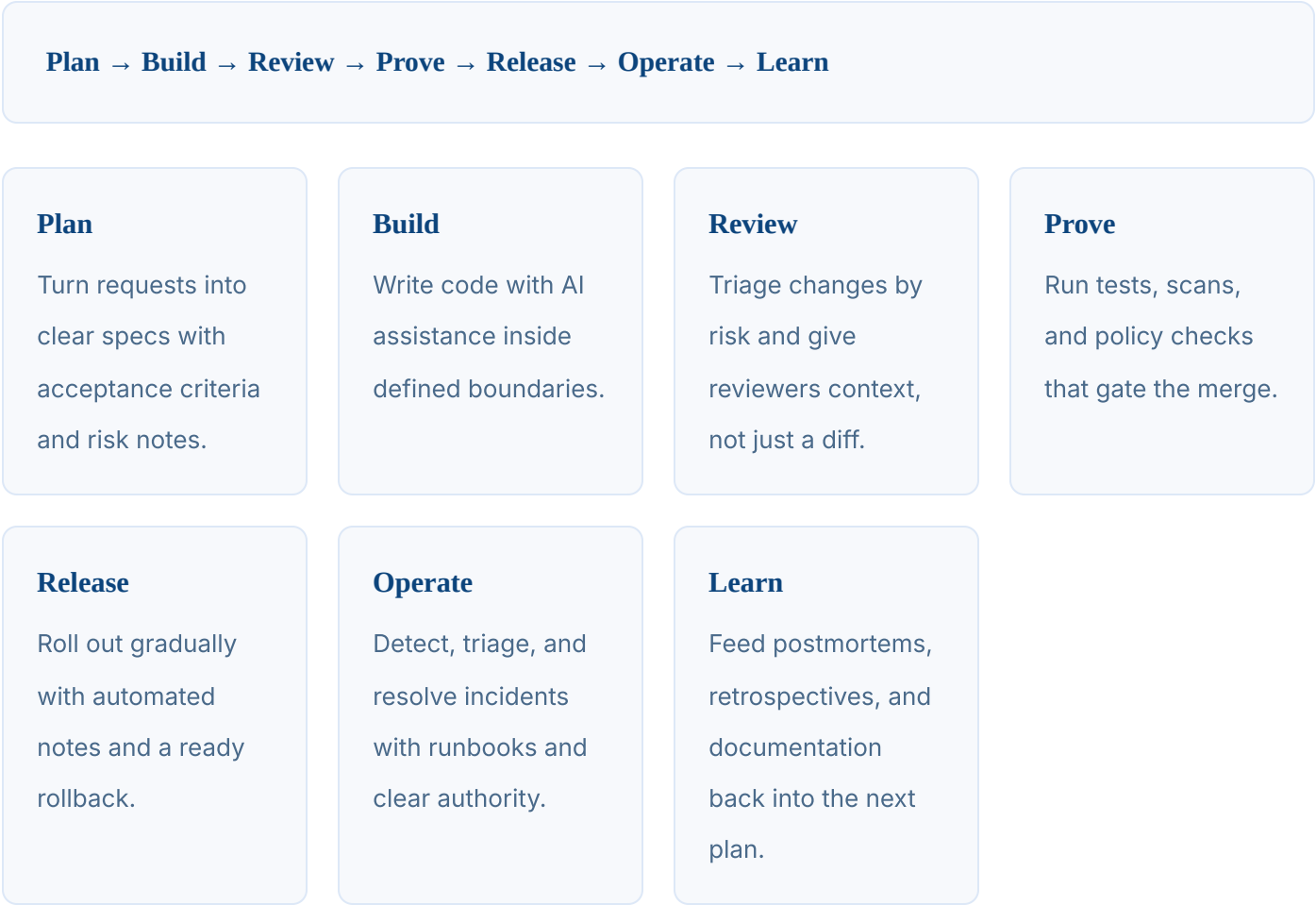
The answer is not to slow down. It is to move quality checks out of the reviewer's head and into the pipeline, so speed and safety scale together.

The Principle: AI Drafts, the Pipeline Proves, Engineers Decide



The pattern mirrors the one used in finance and in agent governance: the model prepares, deterministic rules verify, and a person approves the decisions that carry risk. See [the finance back office playbook](#) and [the agent governance playbook](#) for the same idea in other domains.

The Delivery Pipeline



Each stage has an AI role and a human role. The sections below describe both. Adopt the stages in order of risk: start with the ones that do not change production, and add the ones that do only when the checks exist.

Stage 1: Plan and Specify

Bad specs produce bad code at AI speed. The cheapest improvement is to make requests precise before anyone writes a line.

WHERE AI HELPS

- **Clarifying requests:** turn a vague ticket into questions, assumptions, and draft acceptance criteria for the owner to confirm.
- **Finding related work:** surface similar past changes, existing components, and known constraints.
- **Risk notes:** flag changes that touch authentication, payments, personal data, or shared infrastructure, so they get the right scrutiny later.

The engineer or product owner approves the spec. The risk flag set here follows the change through review and release, so a high-risk change is treated as high-risk everywhere.

Stage 2: Build

Coding assistants are the most visible use of AI, and the least in need of encouragement. The task for leadership is to set boundaries, not to push adoption.

GUIDELINES FOR AI-ASSISTED CODING

- **Write for review.** Prefer small, focused changes. A large AI-generated diff is hard to verify and easy to approve by mistake.
- **Tests come with the code.** A change without tests, or with tests that the AI wrote only to match the code's current behavior, is not done.
- **Never paste secrets or sensitive data** into prompts. Use approved tools with the right data terms, and block the rest.
- **Know the license and provenance.** Set a policy on code suggestions that resemble public code, and scan for it.
- **The author is accountable for the change.** Whoever opens the pull request is accountable for it, whether they typed it or an assistant did.

Agents that open pull requests autonomously need the controls in the [governance section](#).

Stage 3: Review

Review is where AI-driven volume hurts most. The fix is triage and context. Reviewers should spend their attention on the changes that deserve it.

Change type	Review path
Documentation, formatting, and routine dependency updates	Automated checks pass, light review or auto-merge under a set policy.
Ordinary feature and bug changes	AI first-pass review summarizes the change and flags issues, then one engineer reviews.
High-risk areas flagged at the spec stage	Two reviewers, including one who knows the area, with tests and scans required.
Changes by autonomous agents	Treated as high-risk until the agent has a track record, and always attributed in the record.

WHAT A FIRST-PASS AI REVIEW SHOULD DO

- Summarize what changed and why, in plain language.
- Flag likely bugs, missing tests, unclear naming, and deviations from team conventions.
- Check the change against the original spec and acceptance criteria.
- Highlight the parts a human should read closely.

The AI review is a helper, not an approver. Branch protection requires a human approval, and the reviewer reads what the summary points to. The [pull request review guide](#) covers the build.

Stage 4: Prove With Tests and Scans

This stage is the center of the playbook. Automated checks are the only part of the pipeline that treats AI-written and human-written code identically and never gets tired. Make them required, make them fast, and make them meaningful.

Check	What it catches
Unit and integration tests	Logic errors and broken behavior, with coverage focused on risky paths.
Regression and end-to-end tests	Changes that break working features.
Static analysis and linting	Bugs, bad patterns, and style drift.
Security scanning	Known vulnerability patterns in code, hardcoded secrets, and unsafe configuration.
Dependency and license checks	Vulnerable, abandoned, or improperly licensed packages.
Policy checks	Required reviewers, protected branches, and rules for sensitive areas.

Make coverage mean something

A larger test suite is not a better one. AI can generate tests in volume, many of which assert only what the code already does. Aim tests at risk: the paths that handle money, data, and permissions, and the places that failed before. Track whether tests catch defects, and

prune the ones that flake. The [test coverage guide](#) covers risk-based generation with a coverage gate, and the [security scanning guide](#) covers pull-request-level scanning.

Failed checks block the merge. Exceptions require a named approver and a note, and a rising number of exceptions is a signal worth reviewing.

Stage 5: Release

Releases are where unproven risk meets customers, so the aim is to shrink the blast radius and keep the exit open.

A SAFER RELEASE PRACTICE

- **Gradual rollout:** release to a small share first, watch the signals, then widen.
- **Automated health checks:** error rates and key business measures that pause or reverse the rollout when they move the wrong way.
- **A ready rollback:** a tested way to undo the change quickly, with a named person responsible.
- **Generated release notes:** drafted from merged changes for an engineer or product owner to edit. See [the release notes guide](#).
- **Change records:** what shipped, when, and who approved it, kept for audits and incident review.

Stage 6: Operate and Respond

When production breaks, speed of understanding matters more than speed of typing. AI helps most with gathering context quickly and least with making the final call.

WHERE AI HELPS DURING AN INCIDENT

- **Triage:** group alerts, find the likely affected service, and suggest who to page. See [the incident triage guide](#).
- **Context gathering:** pull recent deploys, related changes, similar past incidents, and relevant runbook steps into one view.
- **Communication:** draft status updates for customers and stakeholders, to be reviewed by the incident lead.
- **Runbook automation:** run well-understood, reversible steps, such as restarting a service or scaling capacity, within set limits. See [the self-healing infrastructure guide](#).

Keep human authority clear. A named incident lead decides the response, and any automated remediation is limited to actions that are low-risk, reversible, and logged. The more consequential the action, the more it needs a person, an approval step, and a rollback plan.

Stage 7: Learn and Document

Teams that learn from each cycle improve; the rest repeat incidents. The final stage turns what happened into inputs for the first.

- **Postmortems:** AI drafts the timeline from logs and chat, and the team writes the causes and the fixes. Blameless, specific, and with owners and dates.
- **Retrospectives:** summarize themes from tickets, pull requests, and incidents so the discussion starts from data. See [the sprint retrospective guide](#).
- **Documentation:** keep it current by generating drafts from code changes and having owners confirm them. See [the documentation guide](#).
- **Rules and checks:** every incident should end with a new test, alert, or policy that would have caught it.

Send product-facing signals outward as well: recurring bugs and customer pain belong with support and product, and the [customer support playbook](#) describes the return path.

Governing Coding Agents and the Supply Chain

Coding agents differ from assistants in an important way. They read files, run commands, install packages, and use credentials. That makes them a privileged part of your environment, and a target. A recent [zero-click flaw across several AI coding agents](#) showed how an attacker can use the agent's access, which is a reminder that the tools themselves need governing.

CONTROLS FOR CODING AGENTS

- **Least privilege:** give agents scoped credentials for the repository and task, never a developer's full access, and never production secrets.
- **Sandboxing:** run agents in isolated environments with limited network access and no standing access to production.
- **Treat outside content as untrusted:** issues, web pages, documentation, and code comments can carry hidden instructions. See [how an agent can be misled by untrusted input](#).
- **Approval for risky actions:** installing packages, changing pipelines, touching secrets, and merging to protected branches need a person.
- **Patch and pin the tools:** keep agent software, extensions, and plugins updated, and approve the ones allowed.
- **Log and attribute:** record every agent action and mark agent-authored changes in the history.

Apply the same discipline to dependencies. Pin versions, verify sources, scan new packages before use, and be wary of packages an assistant suggests that you have never heard of, since models can invent plausible names that attackers then register. The [agent governance playbook](#) gives leaders the register, tiers, and decision rights for these agents.

An Illustrative Walkthrough

The scenario below is illustrative, not a company case.

A product owner asks for a change to how refunds are calculated. At **plan**, an assistant drafts acceptance criteria and flags the change as high-risk because it touches payments. The owner confirms. At **build**, an engineer uses an assistant to write the change and tests, in a small pull request.

At **review**, the high-risk flag routes the change to two reviewers. An AI first pass summarizes it and notes a missing edge case for partial refunds. At **prove**, tests, security scans, and policy checks run. One test fails on the edge case, so the merge is blocked until the engineer fixes it.

At **release**, the change rolls out to a small share of traffic. Health checks watch refund error rates and pause the rollout when a spike appears in one region. The team rolls back in minutes. At **operate**, triage groups the alerts and gathers the recent deploy for the incident lead. At **learn**, the postmortem finds a regional rounding rule, and the team adds a test and an alert. The same bug cannot ship twice.

Where This Breaks

Failure	What happens	Prevention
Faster writing, same pipeline	Code volume outruns review and testing, and quality drops.	Add triage and automated gates before expanding AI use.
Optional checks	Teams skip scans and tests under deadline pressure.	Make them required and block the merge, with named exceptions.
Tests that mirror the code	AI-written tests only confirm current behavior.	Focus tests on risk and requirements, and measure defects caught.
Rubber-stamp review	Reviewers approve large AI diffs they did not read.	Cap change size, require summaries, and sample approved changes.
Over-privileged agents	An agent with broad credentials is misled and causes damage.	Scope credentials, sandbox, and require approval for risky actions.
Autonomous remediation	An automated fix makes an incident worse.	Limit automation to low-risk, reversible steps with logs and a stop.
Metrics of output	Teams optimize pull request counts or lines of code.	Measure lead time, change failure rate, and time to restore.
Documentation drift	Generated docs go stale as code changes.	Regenerate on change and assign an owner to confirm.

Measuring Delivery

Measure the health of delivery as a whole. The four measures popularized by DevOps research, along with a few AI-specific ones, give a balanced picture.

Metric	What it shows
Lead time for changes	How long a change takes from commit to production.
Deployment frequency	How often you ship.
Change failure rate	The share of releases that cause an incident or rollback.
Time to restore service	How quickly you recover when something breaks.

Review wait time	How long changes sit before a first review.
Escaped defects	Bugs found in production that tests and review missed.
Share of changes by AI, and their failure rate	Whether AI-assisted changes fail more or less than others.
Check exceptions	How often gates are bypassed, and why.

Read the failure measures alongside the speed measures. Faster lead time with a rising change failure rate means the pipeline is shipping risk, not value.

What You Need to Build This

Most engineering teams already have the foundations. Start by writing down the risk flags, the required checks, and the review paths. Then add AI where it speeds a stage without removing a gate.

Source Control and Branch Rules

Protected branches, required reviews, and required checks on every repository.

CI/CD Pipeline

Automated build, test, scan, and deploy steps that gate merges and releases.

Test and Scan Tooling

Test frameworks, static analysis, security scanning, and dependency checks.

AI Assistants and Agents

Approved coding assistants and review aids, with data terms reviewed and permissions scoped.

Observability

Metrics, logs, and alerts that feed release health checks and incident triage.

Incident Tooling

Paging, a runbook library, a status page, and a postmortem template.

Secrets and Access Management

A vault, scoped credentials for agents, and no secrets in prompts or repositories.

Metrics Dashboard

A view of lead time, failure rate, restore time, and check exceptions.

Plan for ongoing costs

Running the pipeline costs more than the purchase of any template. Assistants, review aids, and agents are billed by usage, and heavy agent use can add up quickly. Where you run automation on n8n or Zapier, the platform is billed separately by its vendor, and Zapier counts AI steps as multiple tasks depending on the model tier. Estimate usage by team and by stage before you scale, set spending limits, and verify current pricing on each vendor's page. The [consumption cost guide](#) explains why agent costs surprise teams.

A 90-Day Roadmap

DAYS 1 TO 30: MEASURE AND SET THE GATES

- Measure the baseline: lead time, change failure rate, time to restore, and review wait time.
- Define risk flags and required checks, and make tests and scans block merges on the most critical repositories.
- Write the policy for AI use: approved tools, data rules, and attribution.

DAYS 31 TO 60: TRIAGE REVIEW AND STRENGTHEN PROOF

- Add the AI first-pass review and the review paths by risk.
- Add risk-based test generation and a coverage gate for high-risk areas.
- Scope credentials and sandbox any coding agents before widening their use.

DAYS 61 TO 90: RELEASE SAFELY AND LEARN

- Add gradual rollout, health checks, and tested rollbacks to the highest-traffic services.
- Add incident triage and runbook automation limited to reversible steps.
- Hold the first postmortem and retrospective review, and turn each finding into a new check.

Widen to more repositories only when the first set shows stable failure rates. Each team brings different risks.

Conclusion: Speed You Can Trust

AI changed how fast code gets written. It did not change what customers expect from the software. The teams that benefit most are the ones that make the pipeline stronger as they speed it up, so that more code means more shipped value and not more incidents.

Plan → Build → Review → Prove → Release → Operate → Learn

Put the checks in the pipeline, route reviewers' attention by risk, govern the agents like the privileged systems they are, and measure outcomes. The result is a team that ships faster and recovers faster, and can show exactly why each change was safe to release.

AI drafts. The pipeline proves. Engineers decide.

Where to Go From Here

Working builds are available for the main stages: pull request review, security scanning, test coverage, release notes, documentation, incident triage, and self-healing runbooks. The Agent Governance Playbook covers the controls for coding agents from the leadership side.

PR Review →

Security Scanning →

Test Coverage →

Incident Triage →

Agent Governance Playbook →