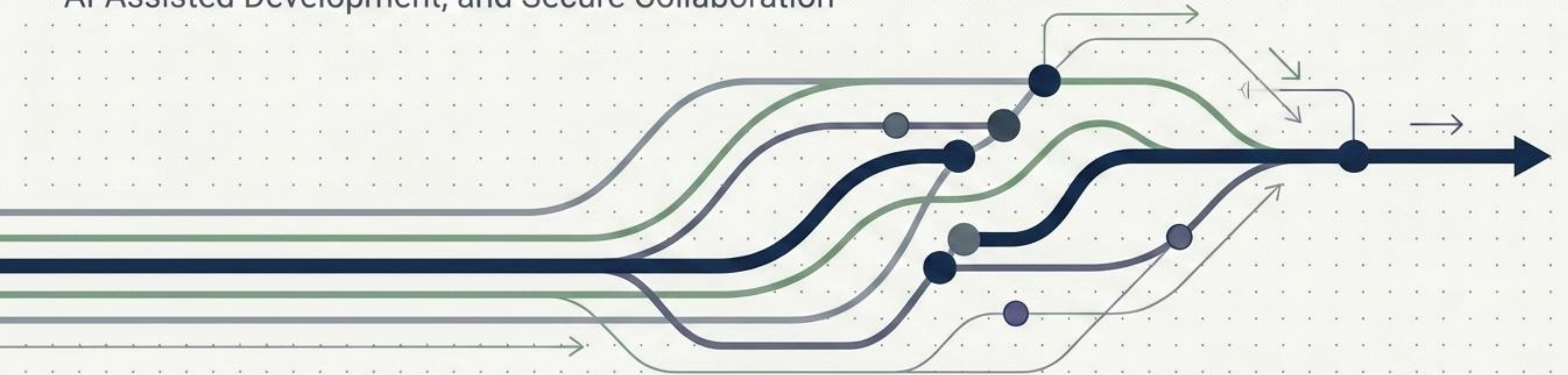


Mastering GitHub: From Foundation to Enterprise Automation

A Comprehensive Guide to Version Control, AI-Assisted Development, and Secure Collaboration



Course Overview & Target Audience

Course Overview: End-to-end mastery of GitHub's 7 domains, progressing from foundational version control to advanced CI/CD automation, AI integration, and enterprise security.

Software Developers

- Master version control and GitHub Flow
- Accelerate coding with GitHub Copilot

Project Managers & Scrum Masters

- Track progress and orchestrate milestones
- Manage issues natively via GitHub Projects

DevOps & IT Admins

- Secure organizational infrastructure
- Manage access and architect GitHub Actions

Tech Leads

- Drive standardized collaboration templates
- Pioneer internal InnerSource practices

Domain 1: Understand Git and GitHub Basics

Version Control Fundamentals: Maximize the benefits of distributed version control.



Git: The Local Engine

- Track changes and ensure code integrity locally
- Master local repository management
- Foundation of commits and branching

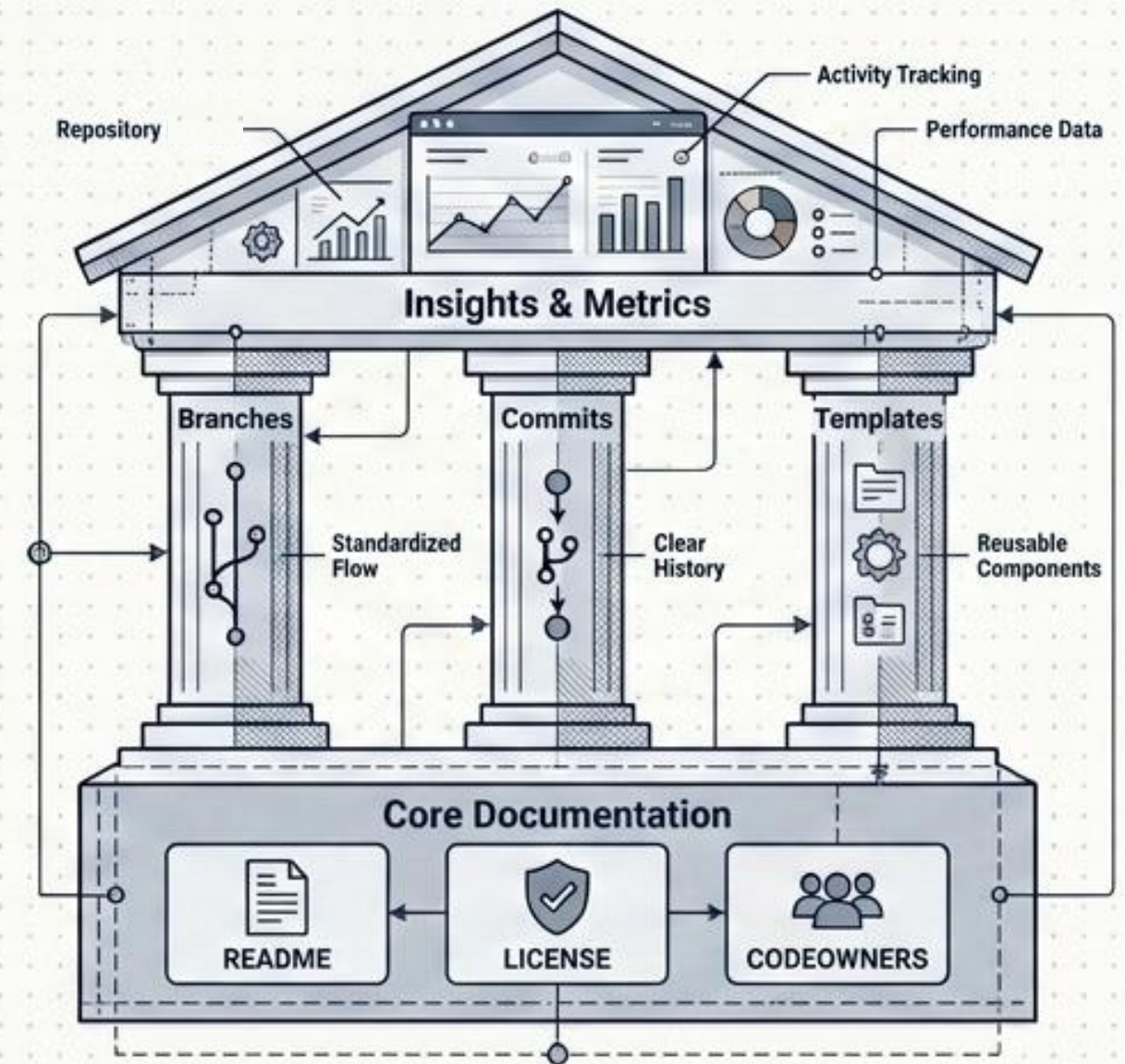


GitHub: The Cloud Platform

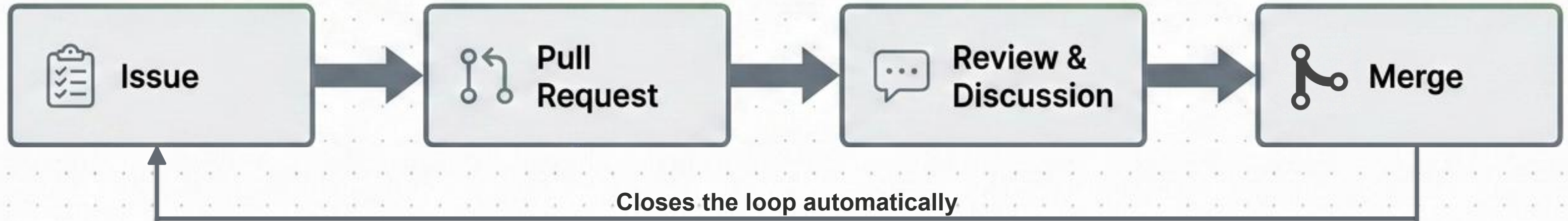
- The cloud-based collaboration ecosystem
- Adopt standardized collaborative workflows
- Utilize GitHub Desktop and Mobile

Domain 2: Working with GitHub Repositories

- **Repository Architecture:** Standardize key files (README, LICENSE, CODEOWNERS).
- **Structure & Maintenance:** Organize and manage using standardized templates and branching strategies.
- **Data-Driven Insights:** Leverage insights, stars, and dependency graphs for repository health.
- **Performance Metrics:** Track velocity and identify bottlenecks using built-in metrics dashboards.

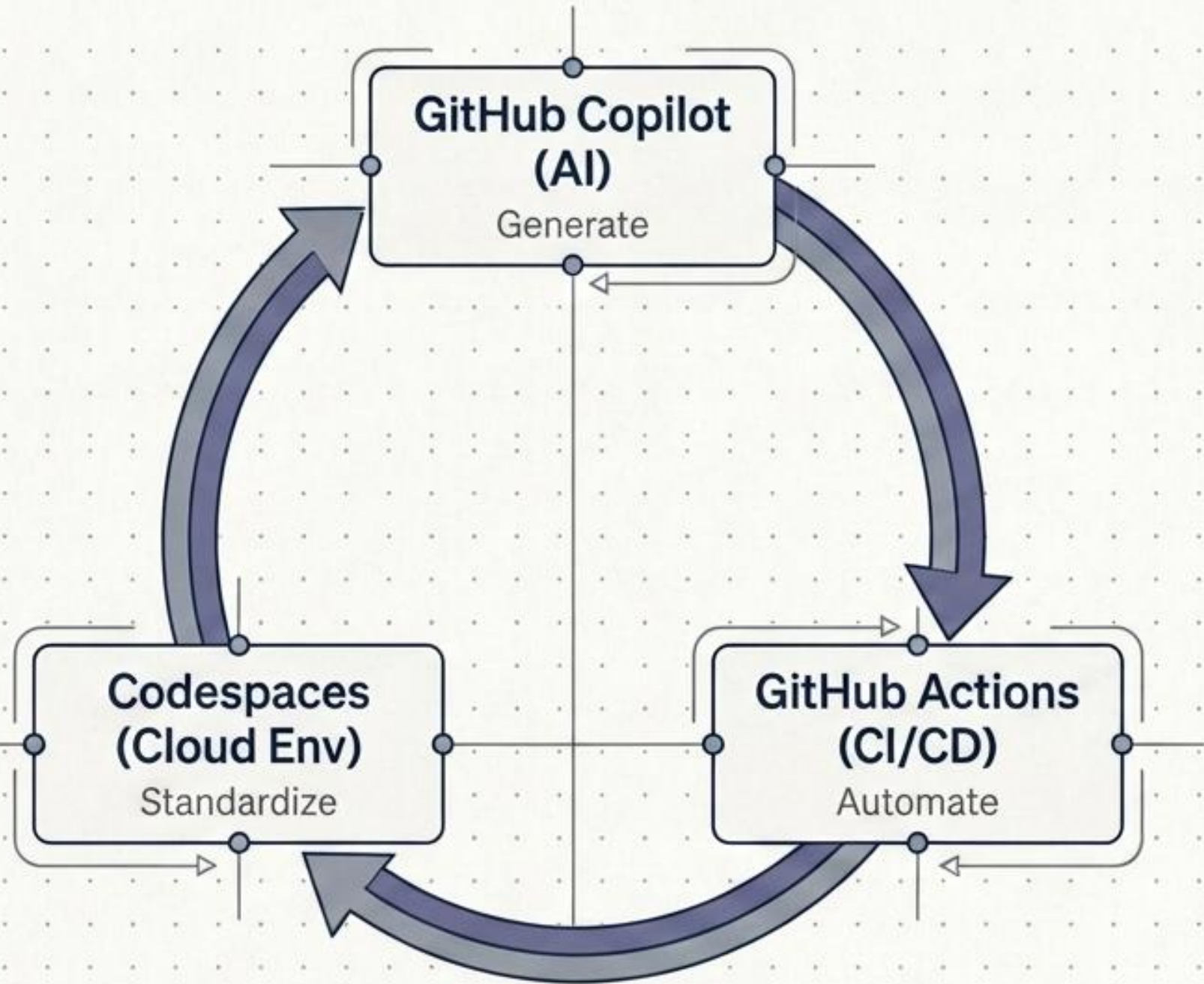


Domain 3: Collaborate Using GitHub



- **Unified Communication:** Drive collaboration using Issues, PRs, and Discussions.
- **Workflow Traceability:** Link PRs directly to Issues to create a traceable history.
- **Knowledge Distribution:** Share institutional knowledge using Gists, Wikis, and Pages.
- **Signal vs. Noise:** Optimize management by configuring granular, high-signal notifications.

Domain 4: Apply Modern Development Practices



- **CI/CD Automation:** Streamline testing and deployment pipelines natively with GitHub Actions.
- **AI-Assisted Development:** Accelerate coding velocity with Copilot's AI suggestions and Agent Mode.
- **Tiered AI Capabilities:** Apply the right Copilot tier (Individual, Business, Enterprise) to organizational needs.
- **Cloud Environments:** Standardize developer setups instantly using Codespaces and dev containers.

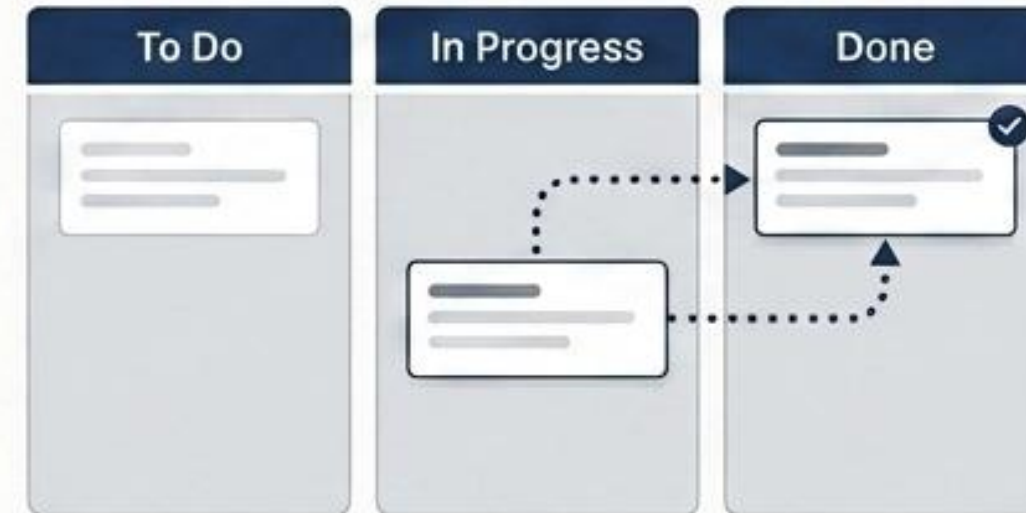
Domain 5: Manage Projects with GitHub

The Trigger



Trigger: PR Approved

The Action

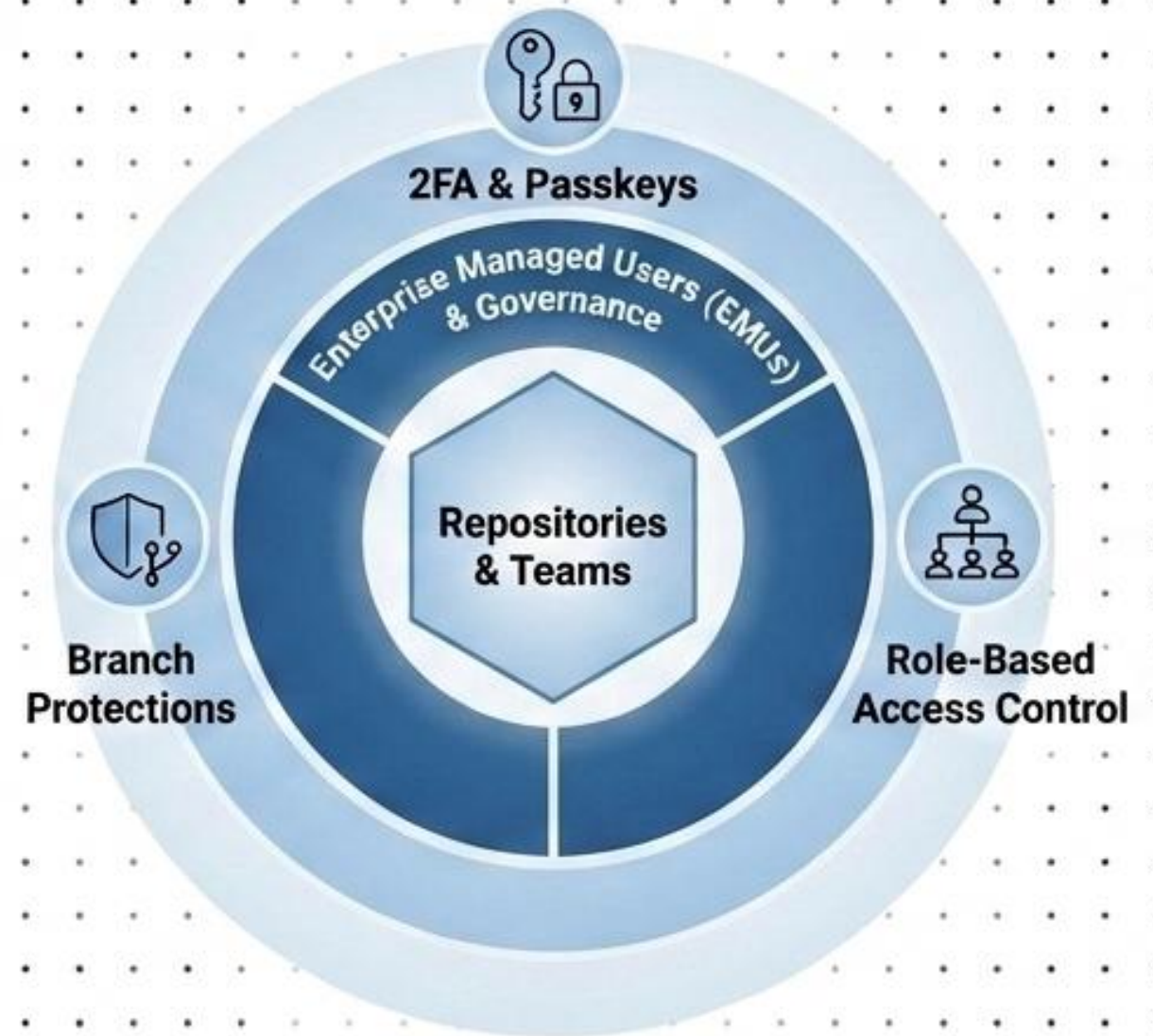


- **Adaptable Layouts:** Customize Projects using flexible board, table, and roadmap options.
- **Orchestrated Workflows:** Configure comprehensive tracking via custom labels and automated triggers.

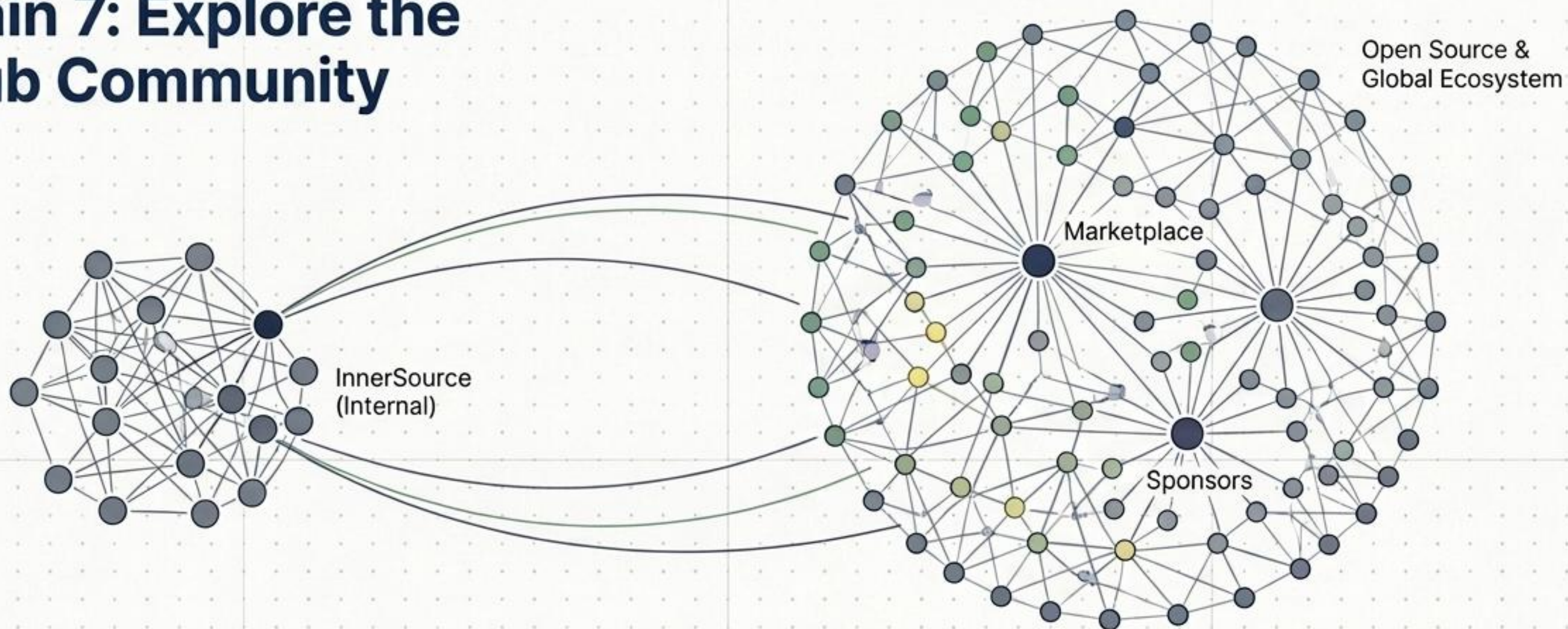
- **Streamlined Operations:** Accelerate triage and communication via intelligent assignee routing.
- **Productivity Analytics:** Monitor team velocity and capacity through built-in project insights.

Domain 6: Understand Privacy, Security, and Administration

- **Identity & Access Security:** Enforce strict account protection through 2FA and Passkeys.
- **Granular Permissions:** Implement robust role-based access across organizations and repositories.
- **Enterprise Governance:** Centralize administration using EMUs and organization-wide Copilot policies.
- **Codebase Integrity:** Safeguard assets utilizing tailored privacy options and strict branch protections.



Domain 7: Explore the GitHub Community



- **Ecosystem Engagement:** Maximize benefits from the open-source community, Sponsors, and Marketplace.

- **InnerSource Transformation:** Apply transparent, collaborative open-source principles internally.

- **Cross-Team Discovery:** Promote organizational synergy using discoverable repositories.

- **Code Reusability:** Leverage forks and standardized templates to break down internal silos.