Monthly Maturity Report: March 2025

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Organization:
Open Source Committee
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Cardano Ecosystem

Review Process	Approval
1st Pass: Tex M, OSO PM	✅**Approved**
2nd Pass: Christian T, Head of OSO	✅**Approved**

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Summary

In March 2025, the Cardano open-source ecosystem demonstrated **sustained development velocity**, with strong contributor participation, fast QA response cycles, and a major uptick in code volume. While overall growth moderated compared to February's historic spikes, the month still marked one of the most **productive and responsive periods** in recent reporting history.

Major contributors like **IOHK** significantly scaled up, while others such as **BinarApps** and **Sireto Technology** tapered off — indicating a possible shift in delivery responsibility or transition of project phases. The volume of modified code soared, especially in core repos like **cardano-ledger**, **plutus**, and **cardano-api**.

PRs, issues, and modified files all rose, and contributors across most time zones improved their delivery pace. Most notably, issue resolution time dropped from **9.2 to just 3.2 days**, showcasing exceptional engineering responsiveness.

General Observations

Organizational Contributions

- **IOHK** led with 990 commits and 1,154 authors — marking a 24% contributor increase and affirming its role as the primary driver of ecosystem development.
- **BinarApps and Sireto** scaled back by 33–54%, suggesting either project conclusion or strategic reallocation.
- Author contributions remained stable for **Well-Typed** and **Unknown**, reinforcing continuity among external and unaffiliated teams.

Geographic Distribution

- **Central Europe (UTC +1)** remained the most active timezone, though activity declined modestly.
- **UTC 0 and +2** saw notable increases in commits, suggesting diversification in regional contribution sources.
- **India and Central Asia (UTC +5)** fell off sharply, reversing prior gains.

Repository Activity

- **plutus.git** surged by +229%, signaling a renewed push in smart contract delivery.
- **cardano-ledger.git and cardano-api.git** saw large increases in estimated file changes — likely tied to architectural updates or integration enhancements.
- **govtool.git** saw reduced code activity but remained the most QA-tested repo.

Code Volume

- Over **1.16 million lines were added**, and **747K removed**, making March one of the highest months on record for code throughput.
- Total modified files rose 38% to 13,673, confirming large-scale updates across the ecosystem.

Issue Lifecycle

- 224 issues submitted (+18%) across 19 repos, with **resolution time falling to 3.2 days** — a 65% improvement.
- Top QA repos included **govtool**, **plutus**, and **cardano-node**, with feedback turnaround faster than ever.

Pull Requests

- 556 PRs submitted (+5.3%), by 67 contributors across 28 repos — sustaining the post-February velocity and confirming deep integration and delivery effort.

Conclusion

March 2025 reflected a **well-coordinated, high-performing open-source environment**. Code

volume was high, QA cycles accelerated, and contributor engagement remained strong. IOHK's scaling played a major role, but broader organizational input and fast feedback resolution confirmed ecosystem maturity.

As the Cardano community enters Q2 2025, the challenge will be to **sustain this velocity**, enable wider participation from emerging orgs, and ensure robustness across the most critical infrastructure layers.

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1. Github Overview

This section provides a comprehensive overview of activities and dynamics within the Github platform. It encompasses various metrics and statistics concerning the usage, engagement, and performance of projects and contributors.

Summary:

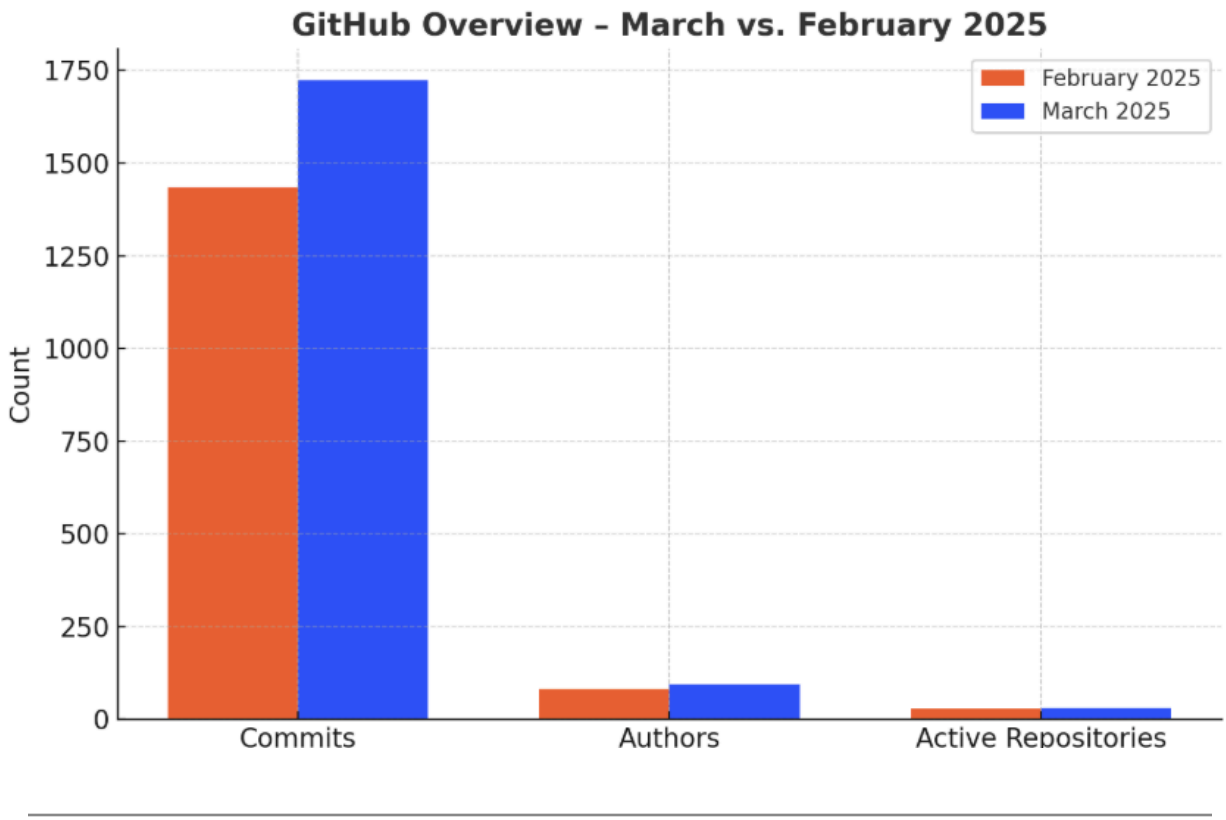
March 2025 – 1,723 commits were made by 95 contributors across 31 repositories.

This marks a continuation of strong engineering momentum with sustained growth in participation and active codebases.

Metric	February 2025	March 2025	Change (%)
Commits	1,434	1,723	+20.2%
Authors	82	95	+15.9%
Active Repositories	28	31	+10.7%

Insights:

- **Commit volume rose 20%**, continuing February's delivery surge. The steady increase reflects sustained work across multiple concurrent streams.
- **Contributor base expanded** by 16%, confirming broader engagement across core and partner organizations.
- **Three additional repositories** became active, suggesting either revived projects or new workstreams — particularly in tooling and infrastructure (e.g. Plutus, LSM Tree).
- These trends reinforce the Cardano ecosystem's **momentum in iterative delivery, onboarding, and repo diversification**.



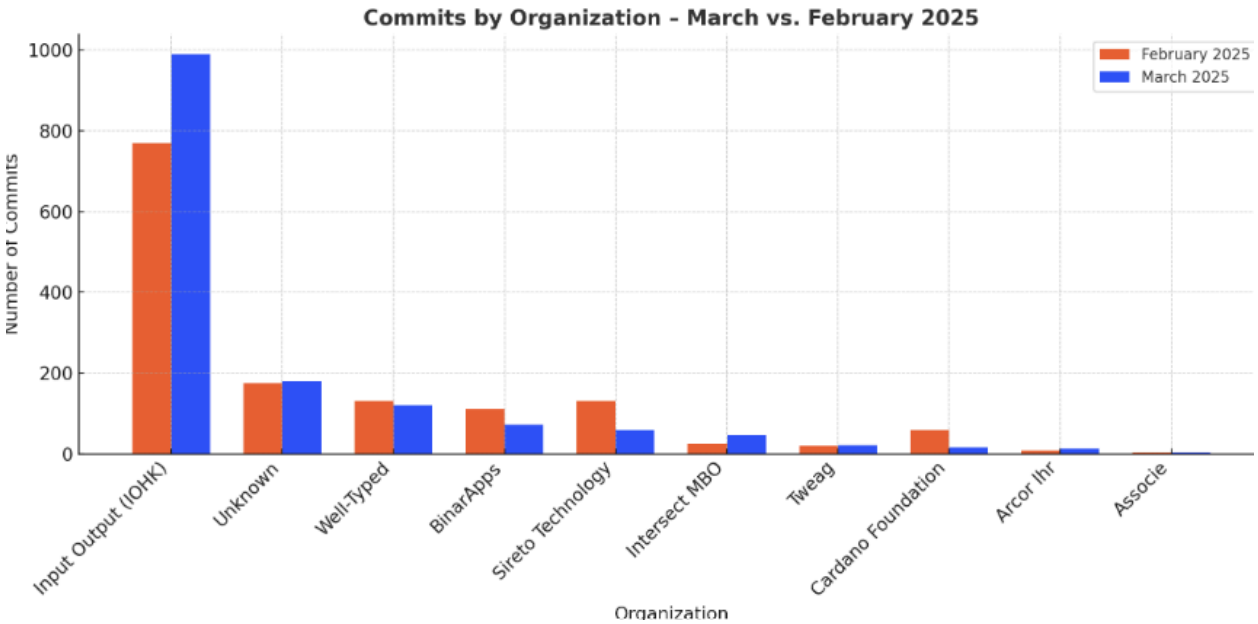
1.a) Organization Activity

Here is the data for how different organizations within the Cardano ecosystem were contributing to open-source projects during the current timeframe. Complete data available here in Bitergia.

Top Organizations – March 2025

Organization	Commits (Mar)	Change (%)	Authors	Lines Added	Lines Removed
Input Output (IOHK)	990	+28.7%	48	236,027	721,352
Unknown	180	+2.9%	18	970,314	26,949
Well-Typed	120	−7.7%	5	7,196	6,173
BinarApps	71	−35.5%	1	472,103	144,875

Sireto Technology	58	−55.7%	1	45,969	626



Insights:

1. **IOHK saw a 29% increase in commits** while maintaining stable author count — indicating intensified delivery or closing sprints. Code removals also jumped (+142K), suggesting ongoing refactor or system cleanup.

2. **Unknown contributors** remained active, with nearly 1M lines added — suggesting automation, bot commits, or anonymized third-party imports.

3. **BinarApps posted a sharp drop** in volume (−36%) while dramatically increasing average commit size (added lines 10× higher). This suggests large, batched contributions from a small team or specific module integration.

4. **Sireto Technology** fell 56% in commits and reduced code activity, which could signal completion of a sprint or handoff.

5. **Well-Typed** was stable, maintaining consistent engagement and commit scale in line with prior months.

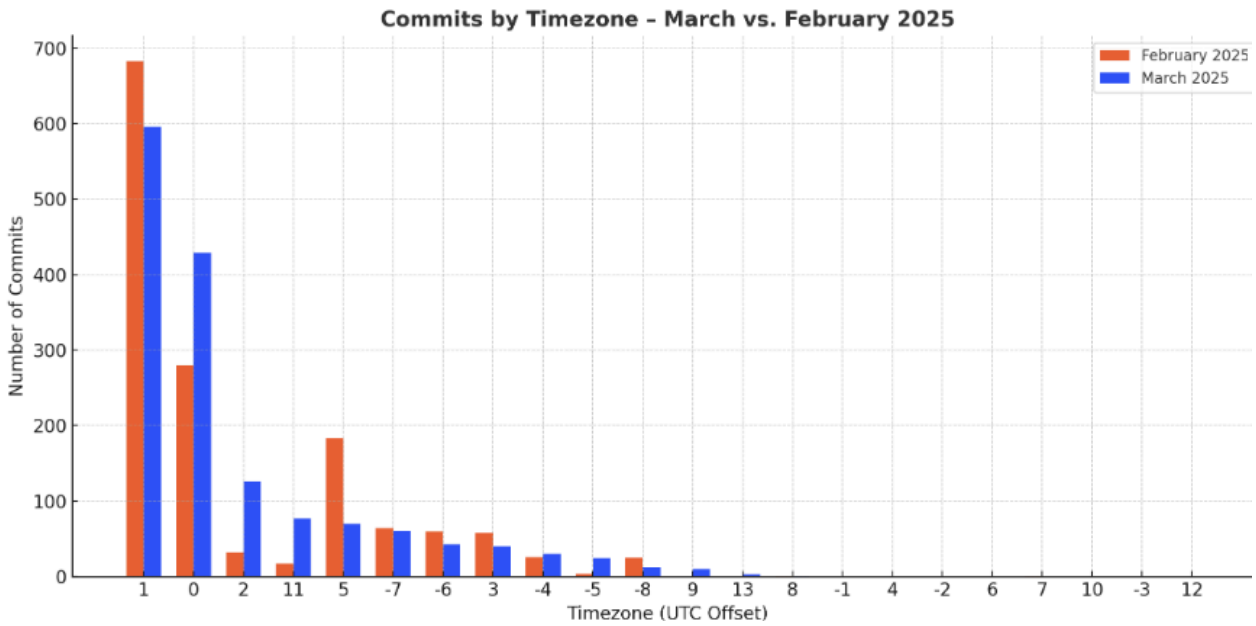
1.b) Commits by Timezone

Here is the data for commits per timezone. This view is important to understand how the

contributors are spread geographically. Complete data available here in Bitergia.

Top Timezones – March 2025

Timezone (UTC ±)	Commits (Mar)	Commits (Feb)	Change (%)
+1	596	683	−12.7%
0	429	280	+53.2%
+2	126	32	+293.8%
+11	77	17	+352.9%
+5	70	183	−61.7%



Insights:

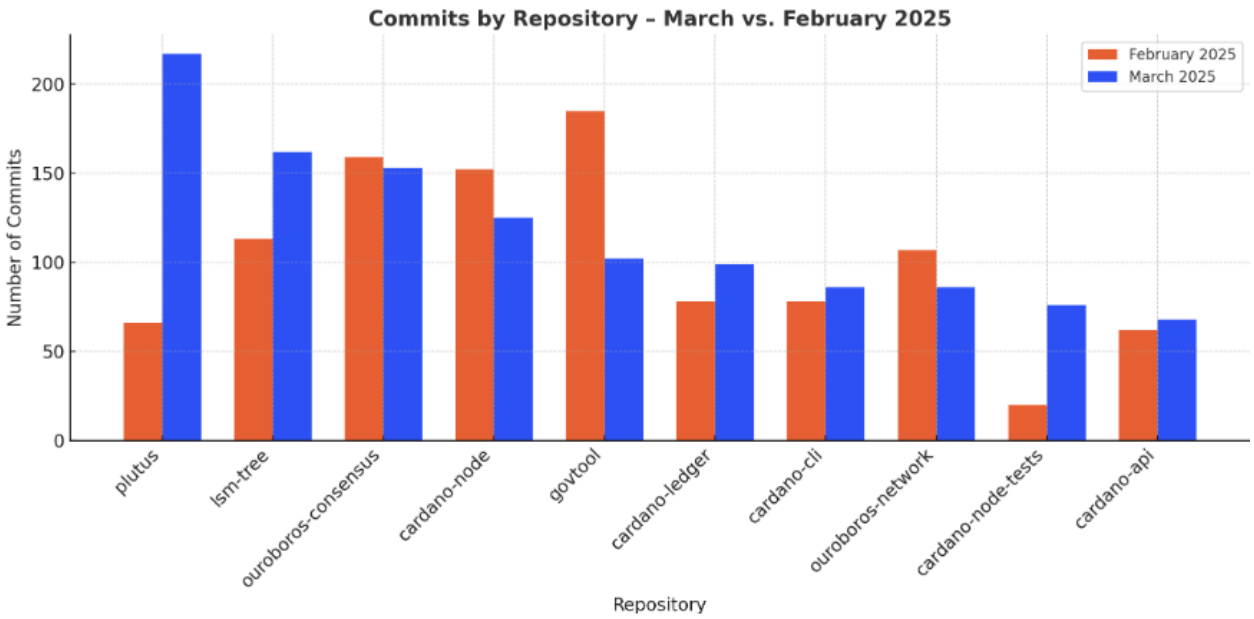
- **UTC +1 (Central Europe)** remained the top timezone, though it experienced a 13% dip in commits, possibly due to project handoffs or temporary shifts in focus.
- **UTC 0 (UK, West Africa)** saw a 53% increase, hinting at an expansion of delivery roles or greater contribution from globally distributed teams.
- **UTC +2 and +11** surged in activity — suggesting new contributors in **Eastern Europe** and **East Asia/Australia**, respectively.
- In contrast, **UTC +5 (India/Central Asia)** dropped 62%, reversing its major February gains. This could reflect paused workstreams, team transitions, or a seasonal lull.
- The net effect indicates **diversification of contributor geography**, with more balanced distribution across global timezones.

1.c) Per Repository Activity

This section shows activity for each repository in Cardano open-source. Complete data available here in Bitergia.

Top Repositories – March 2025

Repository	Commits (Mar)	Commits (Feb)	Change (%)
plutus.git	217	66	+228.8%
lsm-tree.git	162	113	+43.4%
ouroboros-consensus.git	153	159	−3.8%
cardano-node.git	125	152	−17.8%
govtool.git	102	185	−44.9%



Insights:

1. **plutus.git more than tripled its commit activity**, reflecting a deepening focus on smart contract infrastructure — likely spanning feature upgrades, bug fixes, and API extension.

2. **lsm-tree.git** continued its growth trajectory (+43%), suggesting its increasing centrality in ledger or database-layer development.

3. **govtool.git**, after peaking in February, fell 45% in commits — possibly indicating stabilization or reduced iteration following intense feature delivery.

4. **ouroboros-consensus.git** and **cardano-node.git** saw modest or moderate drops, signaling possible cooldown phases, cleanup, or triaged handoffs.

5. Overall, the development pulse remains strong but appears to be shifting from **governance and core protocol to Plutus and data infrastructure**.

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2. Areas of Code

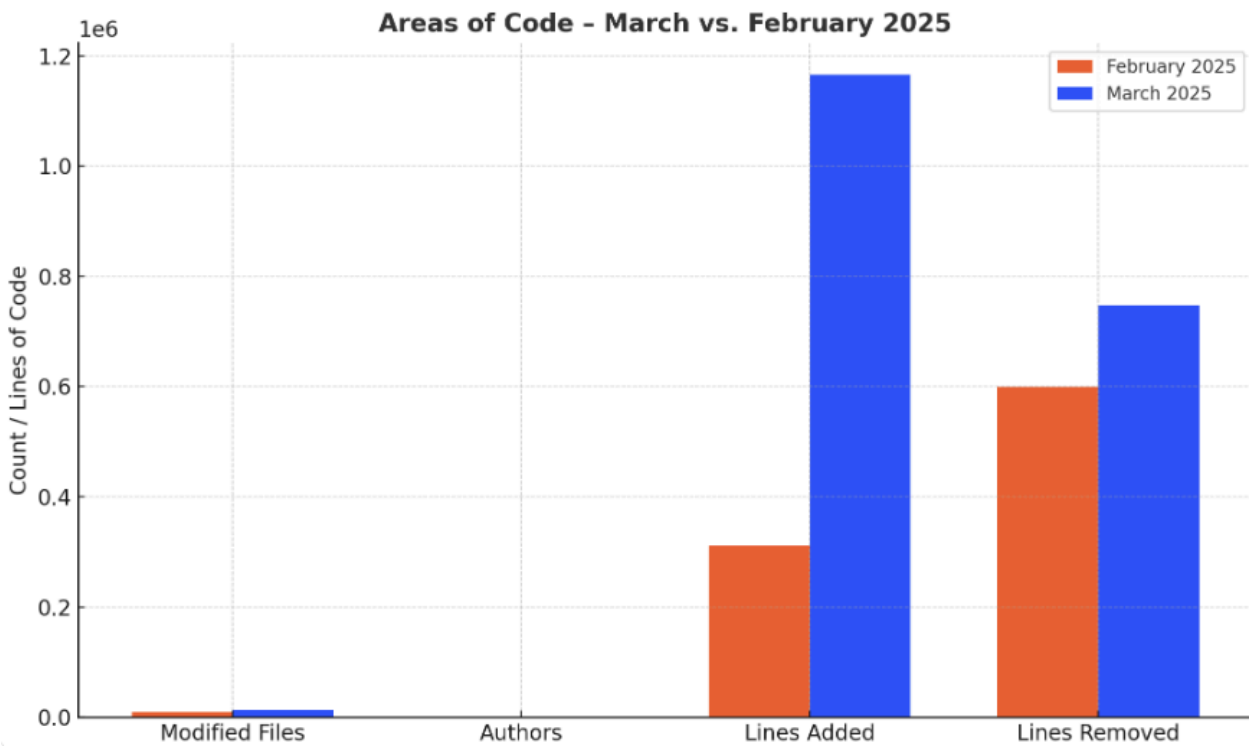
This category outlines the diverse areas and aspects of code development and management within the Github environment.

Summary

March 2025 – 13,673 files were modified by 65 authors, with over **1.16 million lines added** and **747,604 lines removed**.

This marks a **historic peak in code volume**, signaling major development, refactoring, and expansion cycles across multiple projects.

Metric	February 2025	March 2025	Change
Modified Files	9,897	13,673	+38.2%
Authors	62	65	+4.8%
Lines Added	311,737	1,166,034	+274.0%
Lines Removed	599,051	747,604	+24.8%



Insights:

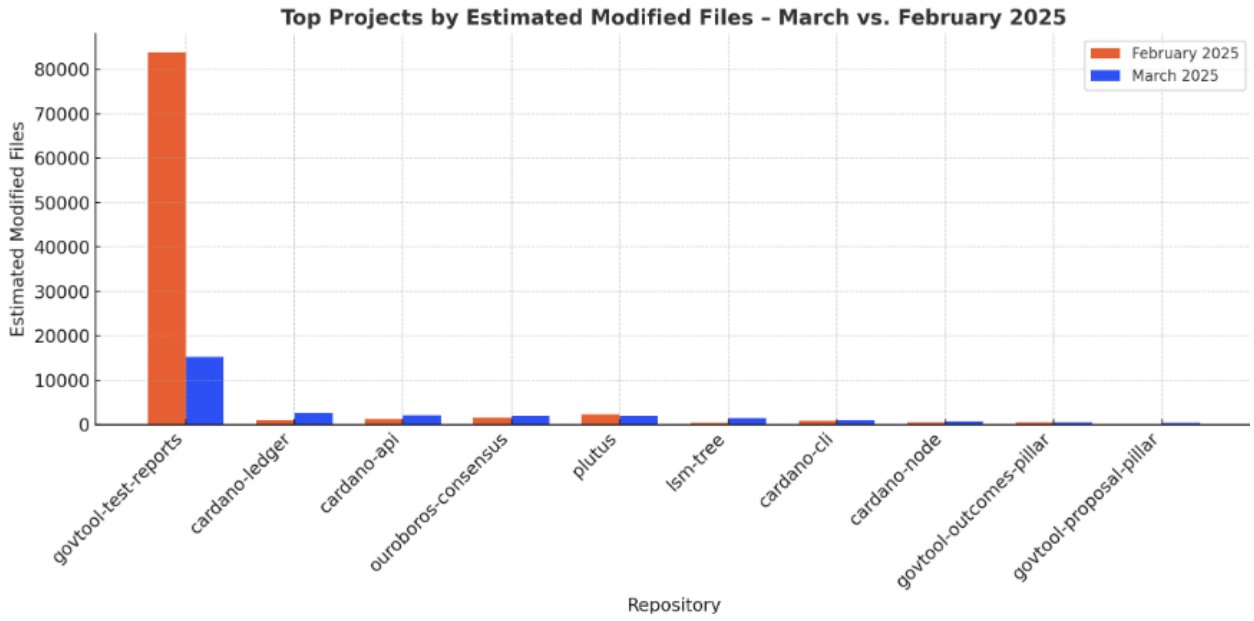
- **Lines added surged by 274%**, pointing to significant feature expansion, new module introductions, or bulk data imports.
- The number of modified files rose 38%, affirming the broad technical footprint of ongoing development.
- Code removal remained high — topping 747K — indicating **continued investment in cleanup, refactor, and optimization** workstreams.
- The slight rise in contributors (+3 authors) demonstrates consistent team engagement even as code throughput skyrocketed.
- Overall, March marked a **milestone month for development volume**, particularly in **Plutus, ledger tooling, and infrastructure** domains.

2.a) Projects

Top Projects – March 2025

Repository	Files (Mar)	Files (Feb)	Change (%)
govtool-test-reports.git	15,292	83,891	−81.8%

cardano-ledger.git	2,731	1,015	+169.1%
cardano-api.git	2,086	1,311	+59.1%
ouroboros-consensus.git	1,975	1,638	+20.6%
plutus.git	1,913	2,301	−16.9%



Insights:

1. **govtool-test-reports.git** saw a steep drop (−82%), likely indicating that intensive batch processing or test asset generation in February was a one-time event.
2. **cardano-ledger.git** experienced a 169% increase in file activity — suggesting a major protocol update, structural rework, or broad spec refactor.
3. **cardano-api.git** rose 59%, reflecting increased integration work — potentially in support of new toolkits or user-facing extensions.
4. **ouroboros-consensus.git** maintained strong activity, with a steady +20% gain, reinforcing its centrality in ongoing consensus development.
5. **plutus.git**, while still highly active, declined slightly in file modification — possibly stabilizing after a heavy February push.

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3. Issues

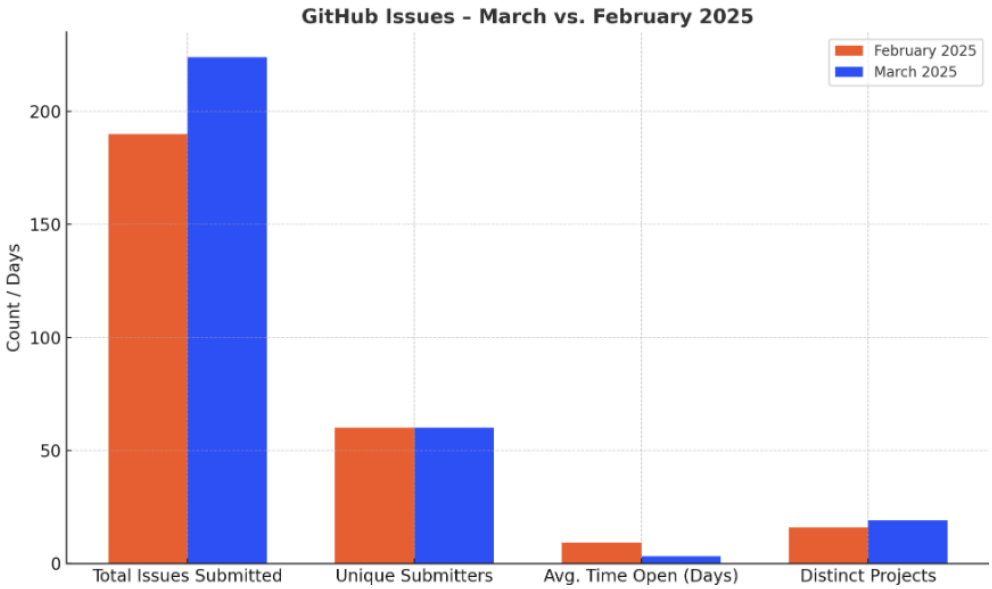
This segment revolves around the identification, tracking, and resolution of issues within Github projects. It encompasses discussions on problem-solving methodologies, issue management practices, and related metrics.

Summary

March 2025 – 224 issues were submitted by 60 contributors across 19 repositories.

Resolution times dropped sharply to **3.2 days**, representing a **65% improvement** in engineering responsiveness.

Metric	February 2025	March 2025	Change
Total Issues Submitted	190	224	+17.9%
Unique Submitters	60	60	+0.0%
Avg. Time Open (Days)	9.2	3.2	−64.7%
Distinct Projects	16	19	+18.8%



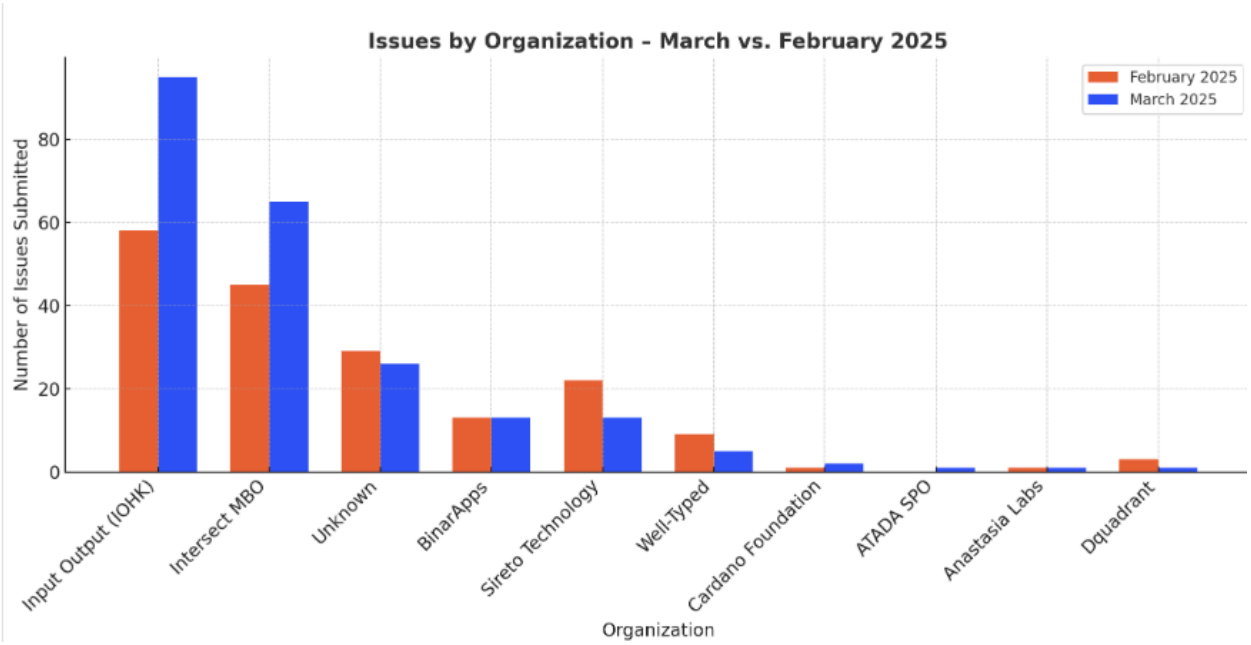
Insights:

- **Issue volume increased 18%**, continuing an upward trend in QA engagement, likely tied to new features and broader testing across components.
- **Resolution times dropped from 9.2 to 3.2 days**, indicating rapid triage and resolution processes — possibly supported by automation, triage squads, or pre-staging workflows.
- **Contributors remained consistent**, but the increase in project spread (+19%) confirms a broader technical footprint for QA engagement.
- These results signal a **mature, responsive feedback loop**, with fast turnaround even amid rising issue loads.

3.a) Organizations

Top Organizations – March 2025

Organization	Issues (Mar)	Issues (Feb)	Change (%)	Median Open (Mar)	Median Open (Feb)
Input Output (IOHK)	95	58	+63.8%	3.2 days	11.9 days
Intersect MBO	65	45	+44.4%	3.6 days	6.1 days
Unknown	26	29	−10.3%	4.4 days	10.4 days
BinarApps	13	13	+0.0%	1.3 days	0.3 days
Sireto Technology	13	22	−40.9%	1.1 days	8.5 days



Insights:

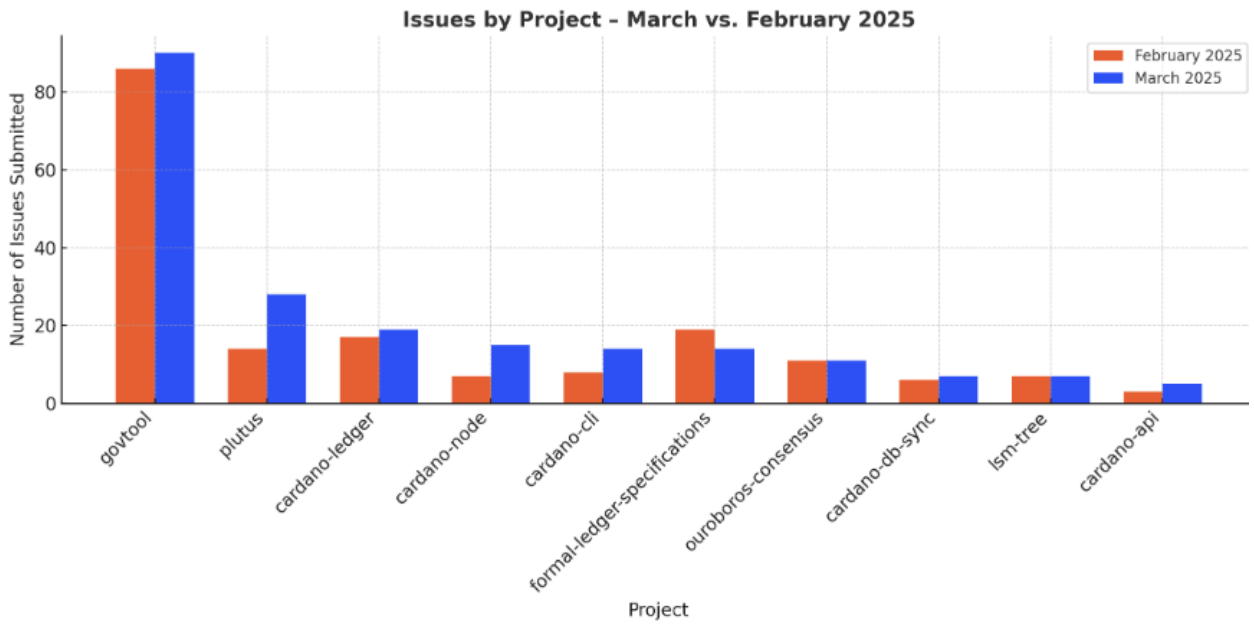
1. **IOHK submitted 95 issues**, a 64% increase — while resolution time dropped from nearly 12 days to just over 3. This reflects **aggressive feedback loops and rapid triage**.
2. **Intersect MBO also ramped up QA**, with 65 issues (+44%) and fast turnaround — indicating high-volume internal reviews or test cycles.
3. **Sireto and Unknown contributors** posted fewer issues but drastically improved resolution times, especially Sireto (8.5 days → 1.1 days).
4. **BinarApps maintained volume but slightly lengthened resolution**, though still resolved issues in ~1 day on average.
5. Across the board, **March saw better throughput and faster QA handling**, even as volume surged.

3.b) Projects

Top Projects – March 2025

Project	Issues (Mar)	Issues (Feb)	Change (%)	Median Open (Mar)	Median Open (Feb)
govtool	90	86	+4.7%	3.0 days	5.4 days

plutus	28	14	+100.0%	4.3 days	7.4 days
cardano-ledger	19	17	+11.8%	1.6 days	9.8 days
cardano-node	15	7	+114.3%	3.5 days	17.7 days
cardano-cli	14	8	+75.0%	2.8 days	22.6 days



Insights:

1. **govtool** remained the top QA target, but resolution time dropped from 5.4 to 3 days — showing improved triage despite high issue load.

2. **plutus** doubled in submissions, suggesting new feature rollouts, test exposure, or devnet QA phases.

3. **cardano-ledger** posted slight growth, but with **dramatically faster resolution** (from 9.8 to 1.6 days), hinting at refined testing loops.

4. **cardano-node** and **cardano-cli** both saw major upticks in feedback (75–115%) with improved resolution speed — confirming active maintenance and interface-level updates.

5. Overall, March showcased **widespread, high-velocity QA cycles** across core protocol and tooling repositories.

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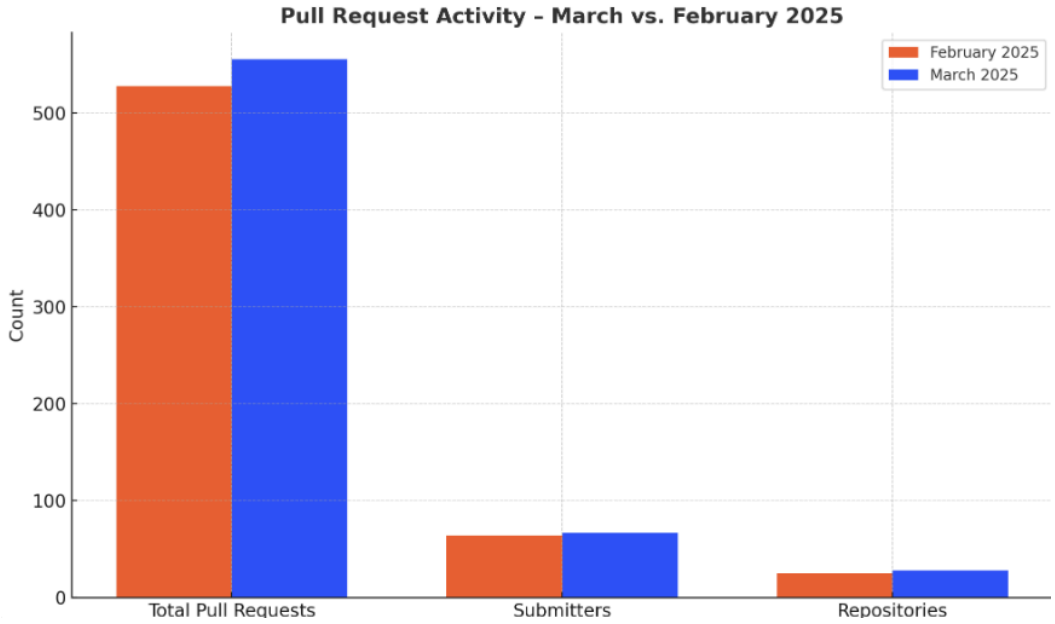
4. Pull Requests

Summary:

March 2025 – 556 pull requests were submitted by 67 contributors across 28 repositories.

This represents steady growth across all dimensions, reflecting sustained team delivery and a slight broadening of workstreams.

Metric	February 2025	March 2025	Change
Total Pull Requests	528	556	+5.3%
Unique Submitters	64	67	+4.7%
Repositories Touched	25	28	+12.0%



Insights:

- PR volume grew 5%, maintaining February's high velocity and confirming **continuous integration cycles** across the ecosystem.
- The contributor base increased modestly (+3 new authors), suggesting stable team structures with minor onboarding or re-engagement.
- Repository coverage expanded by 12%, confirming that more components — possibly tooling, specifications, or infrastructure — were being updated or reactivated.
- These indicators collectively point to a **healthy delivery rhythm**, with depth and distribution across active projects.

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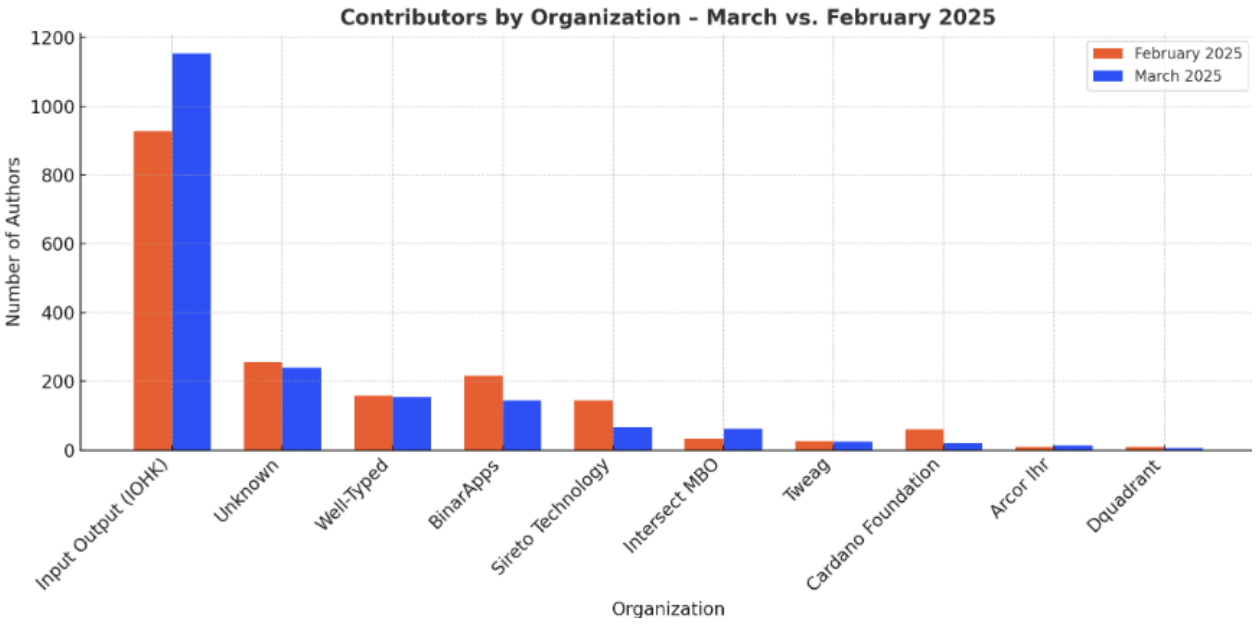
5. Analysis of Contributions by Organization

Top Organizations – March 2025

Organization	Authors (Mar)	Authors (Feb)	Change (%)
Input Output (IOHK)	1,154	928	+24.4%
Unknown	239	257	−7.0%
Well-Typed	154	158	−2.5%
BinarApps	145	216	−32.9%
Sireto Technology	66	144	−54.2%



Insights:

- **IOHK significantly scaled up**, increasing its contributor base by over 24%. This signals a broad internal ramp-up or reclassification of previously unaffiliated contributors.
- **Well-Typed and Unknown contributors** remained stable, with only minor changes in participation, maintaining their steady presence in ecosystem development.

- **BinarApps and Sireto Technology** saw large pullbacks — down 33% and 54% respectively — suggesting the end of major delivery cycles, resource reassignment, or project handoffs.
- While total contributor count grew across the board, these shifts reflect **a consolidation around IOHK** and **a redistribution of engineering effort** among other contributors.

Glossary

Report Technical Definitions:

- **Repository(Repo):** In Git, a repository, often abbreviated as "repo," is a storage space where your project's files and their entire revision history are stored. It typically includes various files such as source code, documentation, images, and more. Repositories can be either local (on your computer) or remote (hosted on a server like GitHub, GitLab, Bitbucket, etc.).
- **Issue:** An issue is a feature request, bug report, task, or any other item that needs to be tracked within a project. In Git repositories hosted on platforms like GitHub or GitLab, issues are commonly used for discussing and tracking tasks or problems related to the project. They can include labels, assignees, comments, and other metadata to facilitate collaboration and organization.
- **Pull Request (PR):** A pull request is a proposed change that a user wants to merge into a target branch of a repository. It's commonly used in distributed version control systems like Git to facilitate code review and collaboration. When a developer completes a feature or fixes a bug in a separate branch of the repository, they can initiate a pull request to merge their changes into the main branch or another designated branch. Pull requests often include a summary of the changes, discussions, reviews, and automated checks.
- **Contributor:** A contributor is anyone who participates in a project by making contributions such as code changes, documentation improvements, bug fixes, feature enhancements, etc. Contributors can be individuals or organizations, and their contributions can take various forms, from writing code to providing feedback, reporting issues, or reviewing pull requests.
- **Git:** Git is an open-source distributed version control system designed to handle everything from small to very large projects with speed and efficiency. It allows multiple developers to work on the same project simultaneously, coordinating their work through branching, merging, and version tracking. Git is widely used in software development for managing source code revisions and collaborating on projects.
- **GitHub:** GitHub is a web-based platform that provides hosting for Git repositories and offers collaboration features such as issue tracking, pull requests, code review, and project management tools. It's one of the most popular platforms for hosting Git repositories and facilitating collaboration among developers and teams. GitHub also provides additional features like wikis, continuous integration, and deployment services.
- **Commit:** In Git, a commit is a snapshot of the changes made to the files in a repository at a specific point in time. It represents a single revision or change set and includes a unique identifier (SHA-1 hash), a commit message describing the changes, and a pointer to the previous commit(s). Commits are fundamental to version control in Git, as they allow developers to track changes, revert to previous states, and collaborate on code changes.
- **Organization:** In Git and GitHub, an organization refers to a group or entity that can own repositories, manage access permissions, and collaborate on projects. Organizations are often used by companies, open-source projects, or groups of developers to centralize their repositories and manage their collective work. Organizations on GitHub can have multiple members with varying levels of access, allowing for collaborative development within a structured environment.
- **Project:** A project in the context of Git and GitHub typically refers to a specific software development endeavor or initiative. It encompasses all the related tasks, code,

documentation, issues, and resources needed to achieve a particular goal. Projects are often organized within repositories on GitHub, where developers can collaborate, track progress, manage tasks, and share code. A project may involve multiple contributors working together to develop and maintain software, with each contributor contributing to different aspects of the project.

- **Community:** In the Git and GitHub ecosystem, a community refers to the collective group of developers, users, contributors, and other stakeholders who are involved in a particular project, organization, or open-source initiative. Communities are essential for fostering collaboration, sharing knowledge, providing support, and driving the growth and sustainability of projects. They often gather around shared interests, goals, or values, and may interact through various channels such as forums, mailing lists, chat platforms, and social media. A strong and engaged community can contribute to the success and longevity of a project by providing feedback, contributing code, reporting issues, and supporting fellow members.