Monthly Maturity Report - 07.24

July 2024 monthly report using Bitergia analytics

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References

- Previous Monthly Report - [June] [2024] Here
- Previous Quarterly Report - [Q1 Jan-Mar] [2024] Here

Summary

In July 2024, the Cardano open-source ecosystem experienced a significant surge in development activity, highlighted by an increase in commits, added lines of code, and pull requests. While some repositories saw reduced activity, others, such as those within the "Ouroboros Network," experienced a notable rise in contributions. Organizational contributions were led by IOHK, with additional support from Tweag and Well-Typed, although Intersect MBO showed a slight decline. The data also revealed a shift in the contributor base, with new key contributors emerging and some previous leaders reducing their activity. Overall, the ecosystem is progressing with a focus on critical projects and improving operational efficiency.

General Observations

Organizational Contributions:

- **Input Output (IOHK)**: continued to dominate contributions with a significant increase in activity, particularly in added lines of code, which skyrocketed from 234,120 in June to 4,114,511 in July. This indicates a major development effort, potentially related to significant new features or updates.
- **Tweag and Well-Typed:** showed notable increases in contributions, with Tweag's contributions growing from 694 to 941, and Well-Typed from 539 to 793. This reflects heightened engagement from these organizations.
- **Intersect MBO**: saw a slight decrease in contributions from 510 in June to 457 in July, which may indicate a temporary reduction in activity or a shift in focus to fewer, but more impactful, contributions.

Geographical Distribution of Commits:

- The distribution of commit activity across time zones revealed a notable shift. Commit activity in the **UTC -7** (Pacific Time) and **UTC -6** (Central Time) zones decreased significantly, with commits dropping from 70 to 20 and from 268 to 103, respectively. This suggests reduced activity from contributors in these regions.
- In contrast, the **UTC -4** (Atlantic Time) zone saw an increase in commits from 41 in June to 71 in July, indicating a rise in contributions from this geographical area. This shift could reflect changes in the active contributor base or shifts in project focus towards regions with greater contributor engagement.

Project-Specific Insights:

- **Ouroboros Network:** repository experienced a significant increase in commits, jumping from 168 in June to 317 in July. This rise in activity, along with increased contributions from multiple authors, indicates that this project is a major focus of development efforts.
- **Cardano Ledger:** saw a sharp decline in activity, with commits dropping from 346 in June to 148 in July. The reduced number of added and removed lines of code suggests that

this project may be entering a phase of stabilization or maintenance rather than active development.
- **Ouroboros Consensus:** also saw an increase in activity, with commits rising from 146 to 239, though the added lines of code decreased significantly. This might indicate a focus on refactoring or optimizing existing code rather than introducing new features.
- **Plutus:** maintained relatively stable commit activity but saw a significant reduction in added and removed lines of code, suggesting smaller-scale updates or refinements rather than large new features.

Repository Activity:

- Across the board, repository activity in July was marked by a focus on fewer projects but with more intensive development efforts. The number of active repositories decreased from 35 in June to 31 in July, indicating a strategic narrowing of focus on key projects.
- Per Repository Activity** showed that repositories such as "Ouroboros Network" and "Ouroboros Consensus" saw increased activity, reflecting their importance in the current development cycle. In contrast, "Cardano Ledger" and others saw a decline, suggesting a shift in priority or a completion of significant phases of work.
- The overall increase in pull requests, from 537 in June to 575 in July, points to active code integration and feature finalization processes. However, with fewer repositories receiving PRs (27 in June down to 21 in July), the focus seems to be on consolidating efforts in critical areas of the ecosystem.

Conclusion

The July 2024 report highlights a period of intensified development activity within the Cardano open-source ecosystem, with a clear focus on critical projects and improving operational efficiency. While organizational contributions were strong, particularly from IOHK, the evolving contributor base and shifting focus towards key repositories reflect a dynamic environment adapting to strategic priorities. The improvements in issue resolution times and pull request activity suggest that the processes supporting this development are becoming more effective. Moving forward, maintaining this momentum while ensuring alignment with long-term strategic goals will be essential to sustaining the growth and success of the ecosystem.

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:

July 2024 - **1992 commits** made by **110 authors** in **33 repositories.**

In July 2024, the GitHub activity for Cardano open-source projects displayed the total number of commits increased from 1,848 in June to 2,001 in July, reflecting a rise in development activity. Additionally, the number of contributing authors grew slightly from 116 to 121, indicating a small but positive growth in the contributor base. Conversely, the number of active repositories decreased from 35 to 31, which may suggest a consolidation of efforts or a focused shift towards fewer, more critical projects.

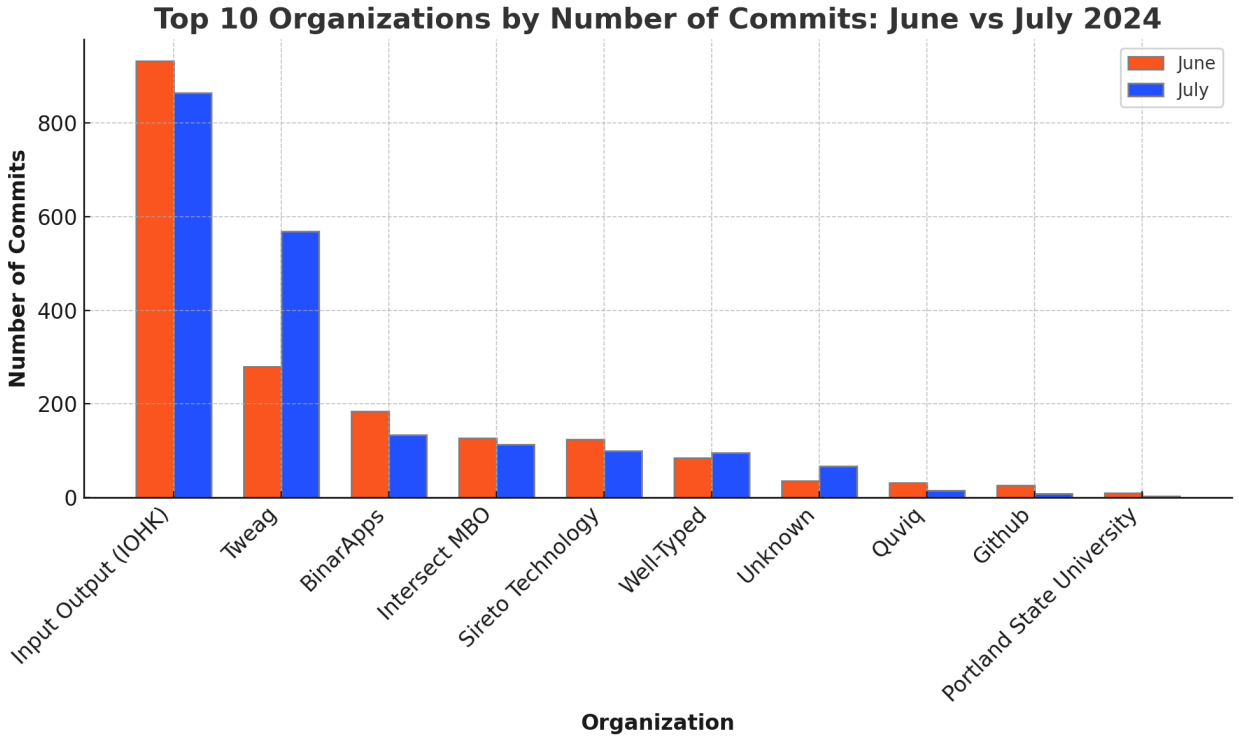
	Previous month - June	Current month - July
Commits	1848	**2001**
Authors	116	**121**
Active Repos	35	**31**

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 July

Organization	Commits	Authors	Touched Files	Added Lines	Removed Lines	Projects	Repositories	Avg. Lines/Commit
Input Output (IOHK)	864	65	14,138	4,114,511	282,843	11	18	5089.53
Tweag	568	7	1,188	18,567	10,054	6	8	50.39
BinarApps	113	6	10,274	6,900	3,767	4	4	1,289.65
IntersectMBO	134	7	469	85,165	60,566	3	3	79.60
Sireto Technology	100	3	6,117	24,146	2,092	4	4	262.38



Observations:

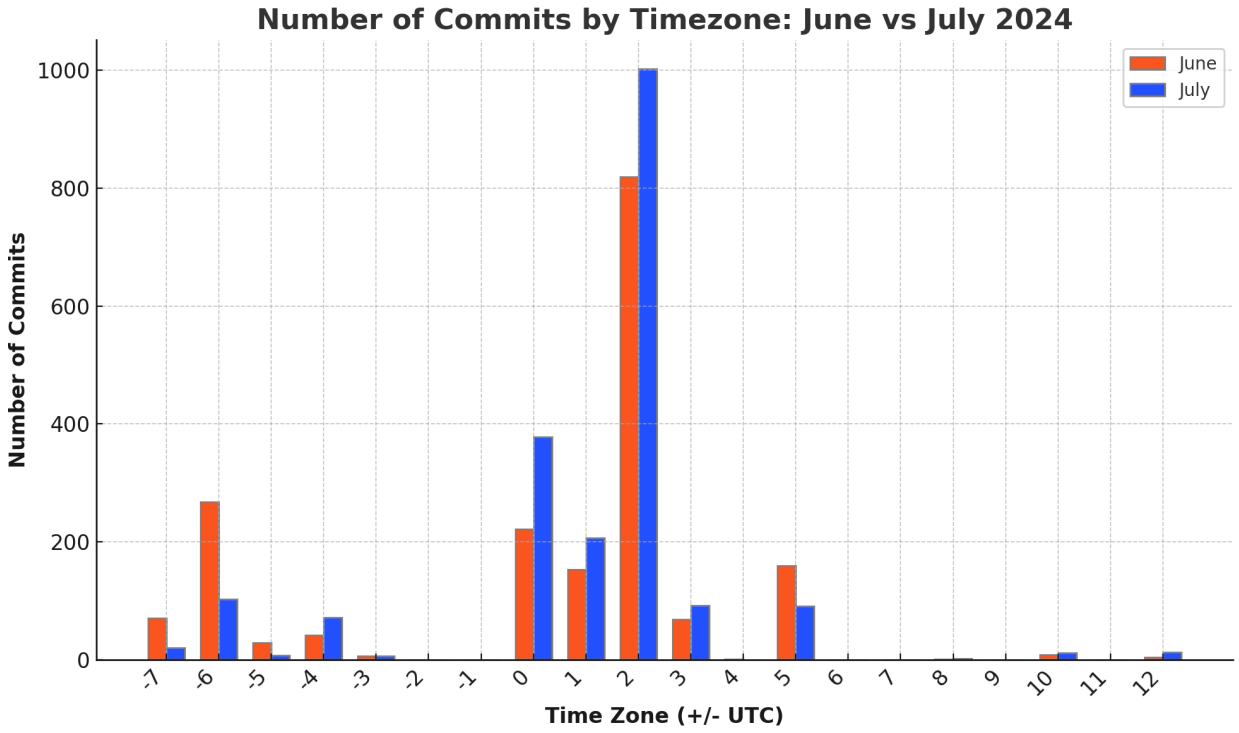
1. **Input Output (IOHK)** Commits decreased slightly from 933 in June to 864 in July, but the added lines of code increased dramatically from 234,120 to 4,114,511. This indicates significant changes or large-scale code additions during July.
2. **Tweag** Commits increased significantly from 280 to 568, and authors involved also increased. However, the average lines per commit decreased sharply, which may indicate smaller, more frequent commits.
3. **BinarApps** Commits and added lines decreased in July compared to June, but the average lines per commit increased, suggesting more substantial changes per commit.
4. **IntersectMBO** Consistent commit activity with a slight increase in July. However, both added and removed lines decreased, suggesting more refined or targeted updates.
5. **Sireto Technology** Commits decreased from 124 to 100, but there was a substantial increase in added lines and touched files, indicating larger updates despite fewer commits.

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.

May 2024:

Time Zone (+/- UTC)	# Commits
-7	20
-6	103
-5	7
-4	71
-3	6
-2	0
-1	0
0	378
1	206
2	1002
3	92
4	0
5	91
6	0
7	0
8	2
9	0
10	11
11	0
12	12



Observations:

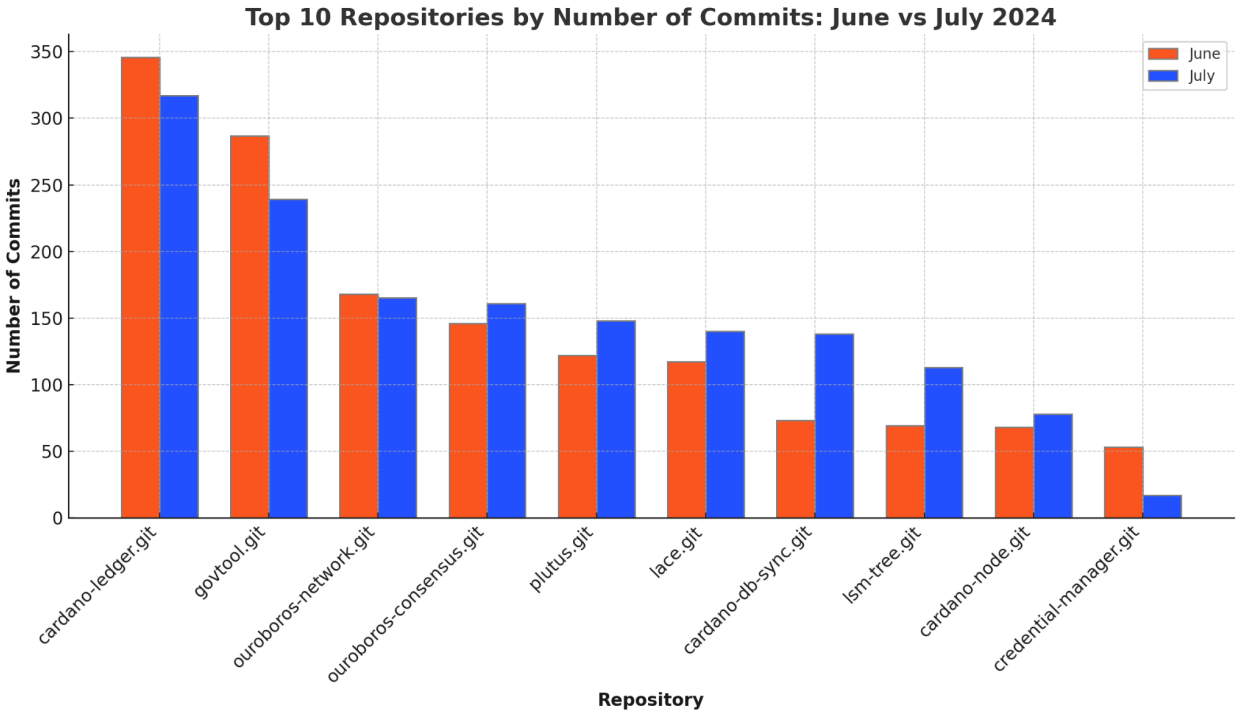
1. **Time Zone -7 (Pacific Time):** There was a significant decrease in commits from 70 in June to 20 in July, indicating reduced activity in this time zone.
2. **Time Zone -6 (Central Time):** The number of commits decreased from 268 in June to 103 in July, showing a notable decline in contributions during this period.
3. **Time Zone -4 (Atlantic Time):** The commits in this time zone increased from 41 in June to 71 in July, suggesting an uptick in activity.
4. **Other Time Zones (-5, -3):** These zones remained relatively low in activity, with minimal changes between the two months.

   This analysis highlights a shift in contributions away from certain time zones while increasing in others, such as UTC -4.

1.c) Per Repository Activity

This section shows activity for each repository in Cardano open-source. Complete data available [here in Bitergia](#).

Repository	Commits	Authors	Organizations	Added Lines	Removed Lines	Avg. Lines/Commit	Avg. Files/Commit
Cardano Ledger	148	15	6	10,950	5,954	114.22	4.69
GovTool	165	11	6	54,306	61,950	704.58	2.68
Ouroboros Network	317	11	3	10,215	8,159	57.96	2.05
Ouroboros Consensus	239	12	3	11,032	7,251	76.50	3.60
Plutus	126	12	3	8,616	5,762	114.22	4.69



Observations:

1. **Ouroboros Network:** Commits increased significantly from 168 in June to 317 in July. This was accompanied by a slight increase in the number of authors and a moderate rise in added lines of code. However, the average lines per commit decreased, indicating more frequent but smaller updates.
2. **Govtool:** Commits decreased from 287 in June to 165 in July, while the number of authors increased. The added and removed lines decreased, but the average lines per commit increased, suggesting more substantial changes per commit.
3. **Cardano Ledger:** Commits decreased significantly from 346 in June to 148 in July. The added and removed lines also saw a substantial reduction, which might indicate a stabilization phase or fewer updates.
4. **Ouroboros Consensus:** Commits increased from 146 to 239, but both added and removed lines decreased drastically. The drop in average lines per commit may suggest more granular and possibly refactoring changes.
5. **Plutus:** Commits remained stable with a slight increase from 122 to 126, but there was a significant drop in added and removed lines, indicating smaller-scale updates.

These observations suggest varying activity levels across different repositories, with some focusing on smaller, more frequent changes and others possibly entering phases of stabilization or refinement.

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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

In July 2024, there was a significant expansion in development activity, as indicated by a substantial increase in the number of files worked on. This broader scope of development was accompanied by a slight growth in the number of contributing authors. Additionally, there was a dramatic rise in added lines of code, suggesting a large-scale development effort or the introduction of significant new features. The number of removed lines also saw a moderate increase, reflecting heightened refactoring or code removal activities during this period.

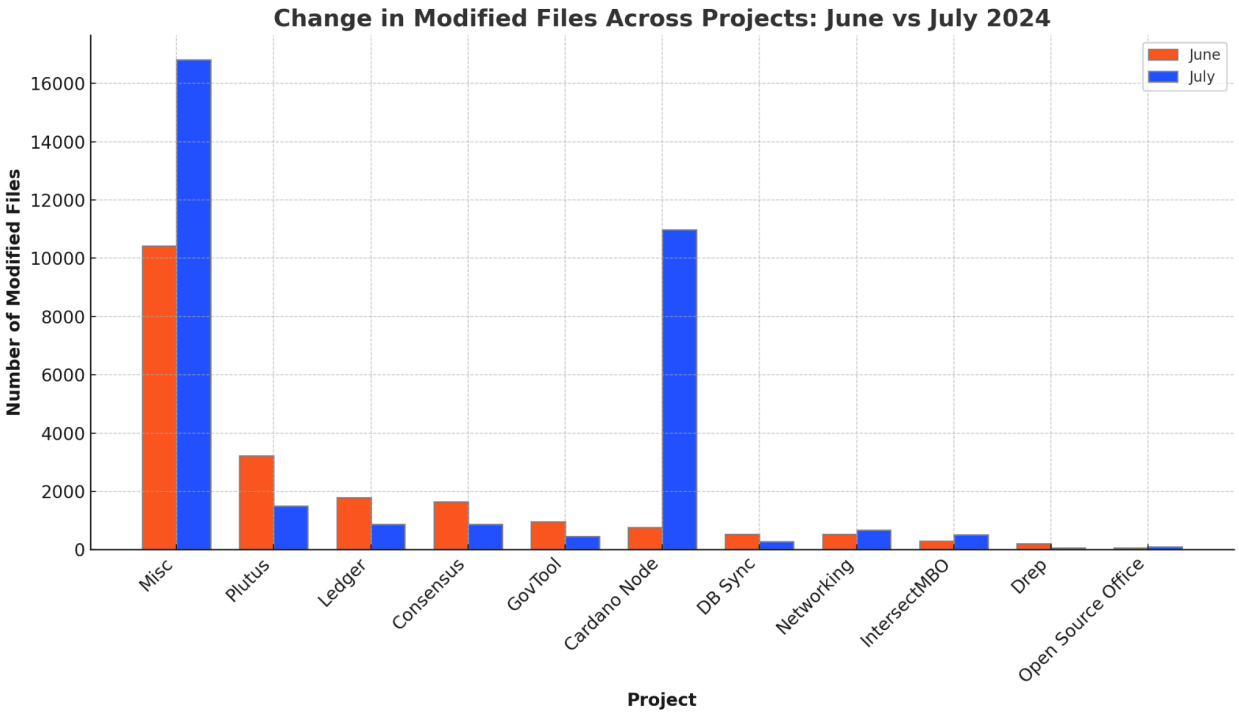
Previous Month (June 2024) vs. Current Month (July 2024):

Metric	Previous Month (June 2024)	Current Month (July 2024)
Files	22,122	36,288
Authors	116	121
Lines Added	540,302	4,823,436
Lines Removed	305,783	439,229

2.a) Projects

July Numbers:

Project	Modified Files	Developers	Added Lines	Removed Lines
Plutus	1,499	13	128,795	96,775
Ledger	867	19	14,120	7,846
Cardano Node	10,985	25	4,438,823	181,410
Misc.	16,820	22	83,444	5,037



Observations:

1. **Misc** saw an increase in modified files from June to July, indicating increased activity.
2. **Plutus, Ledger, Consensus, GovTool, DB Sync,** and **Drep** all experienced a decrease in modified files from June to July, suggesting a reduction in activity.
3. **Cardano Node, Networking, IntersectMBO,** and **Open Source Office** saw an increase in modified files from June to July, indicating increased activity in these projects.

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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

The data for July shows that several projects experienced changes in activity from June to July. Notably, Misc, Cardano Node, Networking, IntersectMBO, and Open Source Office all saw increased activity, as indicated by the rise in the number of modified files. On the other hand, Plutus, Ledger, Consensus, GovTool, DB Sync, and Drep experienced a reduction in activity, with fewer files being modified in July compared to June. These shifts suggest that development efforts have been redirected or intensified in certain areas while slowing down in others.

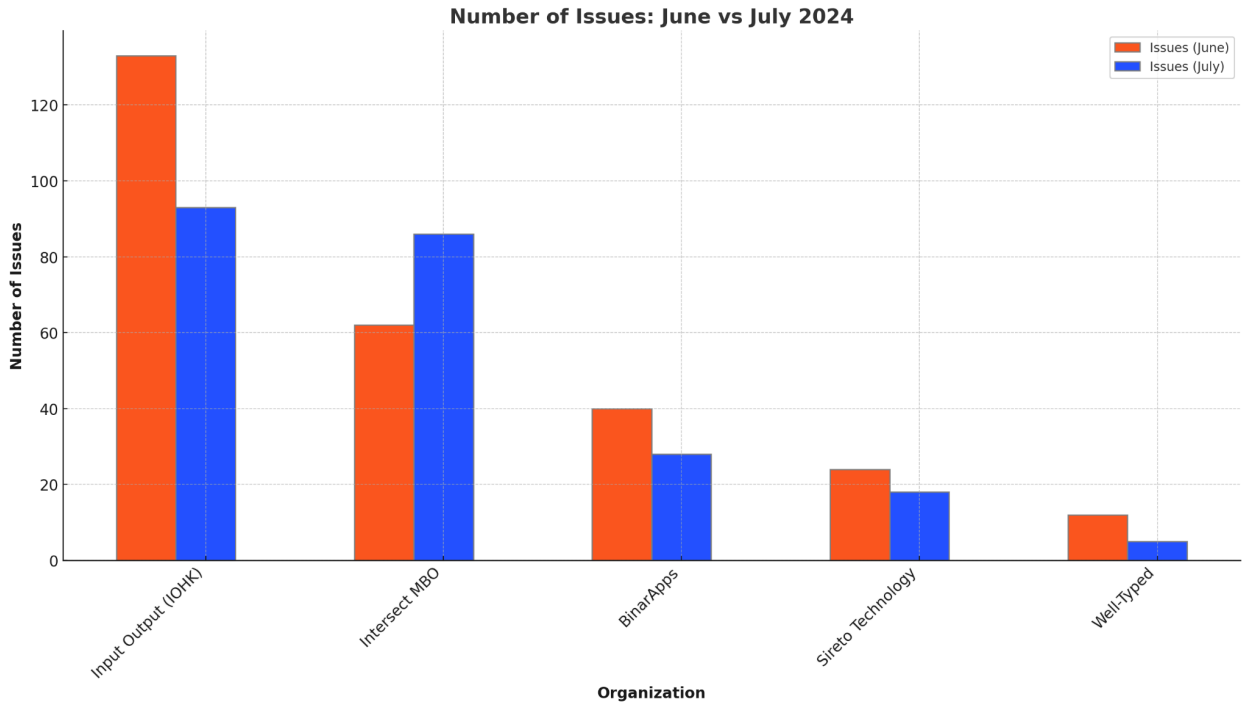
Previous Month (June 2024) vs. Current Month (July 2024):

Metric	Previous Month (June 2024)	Current Month (July 2024)
Total Issues	304	278
Total Submitters	69	68
Total Repositories	17	23
Avg. Time Open (Days)	19.87	12.44

3.a) Organizations

Top five for July:

Organization	Issues	Submitters	Median Time Open
Input Output (IOHK)	93	27	7.25
Intersect MBO	86	5	18.30
BinarApps	28	4	10.55
Unknown	18	2	23.09
Sireto Technology	5	2	7.27



Observations:

1. **Input Output (IOHK):** The number of issues decreased from June to July, along with a slight reduction in the number of submitters. The median time open for issues significantly decreased, indicating faster issue resolution in July.
2. **Intersect MBO:** The number of issues increased from June to July, while the number of submitters remained constant. The median time open for issues also decreased, suggesting improved efficiency in handling issues.
3. **BinarApps:** Both the number of issues and submitters decreased in July compared to June. The median time open for issues also shortened, reflecting quicker resolution times.
4. **Sireto Technology:** There was a decrease in both the number of issues and submitters in July. The median time open for issues saw a slight decrease, indicating a modest improvement in issue resolution speed.
5. **Well-Typed:** The number of issues and submitters decreased significantly in July. The median time open also dropped sharply, suggesting that despite fewer issues, those that were open were resolved more quickly.

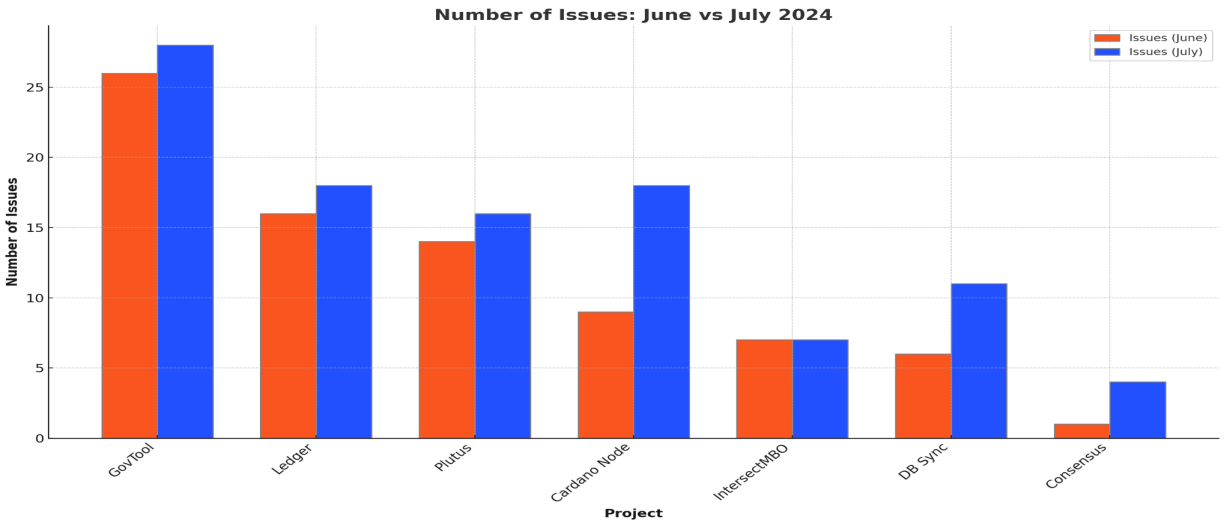
Conclusion:

The July analysis of issue management across the top five contributing organizations in June and July 2024 shows a general trend towards increased efficiency in resolving issues. Most organizations saw a decrease in the number of open issues, alongside a reduction in the median time those issues remained open, indicating quicker resolution times. However, the number of submitters generally decreased, which may suggest a more concentrated effort among fewer contributors or a shift in focus to specific tasks. Overall, these changes reflect improvements in handling project maintenance, with organizations like Input Output (IOHK) and Intersect MBO demonstrating significant advancements in their issue management processes. management of projects within the Cardano ecosystem.

3.b) Projects

Top Five Projects for July 2024

Project	Issues	Submitters	Repositories
GovTool	28	10	1
Ledger	18	6	2
Plutus	16	5	2
Cardano Node	18	16	3
IntersectMBBO	7	3	4
DB Sync	11	8	1
Consensus	4	3	1



Observations:

1. **GovTool:** The number of issues and submitters slightly increased in July, but the number of repositories involved decreased from 2 to 1, indicating a more concentrated effort.
2. **Ledger:** The number of issues increased slightly in July, while the number of submitters decreased. The number of repositories remained stable, suggesting a consistent level of focus.
3. **Plutus:** Both the number of issues and submitters increased, with an additional repository being involved in July, indicating growing complexity or scope.
4. **Cardano Node:** There was a significant increase in the number of issues and submitters in July, while the number of repositories remained the same. This suggests a surge in activity focused on this project.
5. **IntersectMBO:** The project saw stability in the number of issues and submitters, but the number of repositories involved increased, possibly reflecting broader engagement across different parts of the project.
6. **DB Sync:** The number of issues and submitters increased, while the number of repositories stayed the same, indicating a rise in contributions but within a consistent scope.
7. **Consensus:** The number of issues and submitters increased, though the number of repositories involved remained constant, indicating more activity within existing frameworks.

4. Pull Requests

Metric	June 2024	July 2024
# of Pull Requests (Total)	537	575
# of Submitters	97	95
# of Repositories	27	21

1. **Increase in Total Pull Requests:** The number of pull requests increased from 537 in June to 575 in July, indicating a rise in code integration and feature contributions.
2. **Slight Decrease in Submitters:** The number of submitters slightly decreased from 97 to 95, which suggests a minor decline in unique contributors despite the increase in total PRs.
3. **Decrease in Repositories:** The number of repositories receiving pull requests decreased from 27 to 21, which may indicate a more concentrated focus on fewer repositories or projects during July.

5. Analysis of Contributions by Organization

Organization	June 2024	July 2024
Input Output (IOHK)	3,513	4,426
Tweag	694	941
Well-Typed	539	793
Intersect MBO	510	457
Unknown	438	939

Observations:

1. **Input Output (IOHK):** Significant Increase: Contributions from IOHK increased from 3,513 in June to 4,426 in July, reinforcing its position as the leading contributor.

2. **Tweag:** Notable Growth: Contributions from Tweag also saw a notable increase from 694 to 941, indicating heightened activity from this organization.

3. **Well-Typed:** Moderate Increase: Contributions grew from 539 to 793, suggesting steady involvement from this organization.

4. **Intersect MBO:** Slight Decrease: Contributions from Intersect MBO slightly decreased from 510 to 457, indicating a minor reduction in activity.

5. **Unknown Contributions:** Sharp Increase: Contributions marked as "Unknown" increased significantly from 438 to 939. This may require review to understand the change in contributions.

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.