Q2 2020 GitHub Developer Activity - Digital Currencies Supersector

Overview

This report is the second installment of our Developer Activity Series for 2Q20 and is a collation of key GitHub metrics across 42 Target Repositories of the top public digital assets within DAR's Digital Currencies Supersector. For a broader overview on the ecosystem's GitHub developer activity please refer to 2Q20 Part 1.

Adoption and viability of public digital assets benefit from an ecosystem of demand, use, and support. Developer activity and engagement is one facet of this ecosystem, which can be measured by the underlying open source code repositories. The number of bugs fixed, the number of code changes proposed, the number of developers who return to contribute, and other measures all help better understand the depth of community involvement.

This series of reports uses DAR's Industry Taxonomy to compare developer activity across industry sectors. For this report, a set of metrics are employed to measure the developer activity during 2Q20 for the Digital Currencies Supersector. This Supersector is comprised of digital assets whose main objective is to replicate the fundamental functions of money: store of value, medium of exchange, and unit of account. To learn more about this framework please reach out to the DAR team or refer to the Appendix below.

A follow-up report will cover a comparison of developer activity across 2Q20 for both the Computational Platforms and Financial Instruments supersectors and their respective sectors and subsectors. A more detailed analysis of individual token activity is available for purchase.

Ecosystem Overview

FIGURE 1 – Digital Currencies Sector Activity (2Q20)

	Sector (# of Subsectors)	Commits	Releases	Developers (Repeat)	Developers (Casual)	Developers (One Time)
Digital Currencies	Privacy Preserving (2)	-83%	-62%	-161%	1%	3%
	General Purpose (4)	-54%	2%	-640%	-20%	-20%
	Stable & Fiat Backed (3)	-41%	83%	-34%	34%	18%

Notes 1-4: "N/A" stands for Not Available. During the data collection process, DAR notes that some digital asset project repositories are private and therefore DAR is unable to collect. A "casual developer" has contributed code 2-9 days in month period. A "repeat developer" has contributed code for minimum 10 days in a month period. A "one-time" developer has contributed code one day in a month period.

There are three sectors within the Digital Currencies Supersector: Privacy Preserving, General Purpose, and Stable & Fiat Backed. Each Sector is further comprised of subsectors. **Figure 1** provides an overview of the Q1 developer activity from the three sectors and compares the results to Q4 2019.

FIGURE 2 – Digital Currencies Sector Percent Difference (2Q20 vs 1Q20)

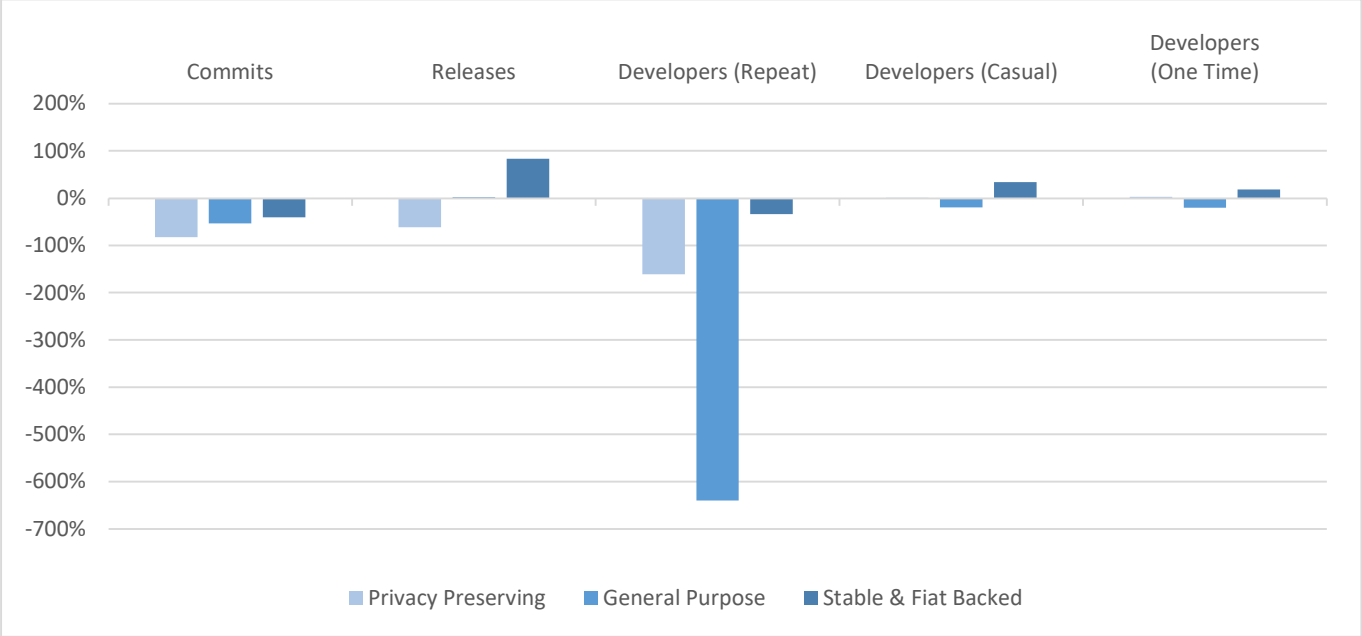

Figure 2 provides the percent change in developer activity for the three Digital Currencies sectors between 1Q20 and 2Q20. The calculated results are then compared to one another for each overview metric.

Sector Overview

Below are the results for the overview metrics of developer activity in 2Q20 for each subsector. Percent change columns compare 2Q20 with 1Q20.

FIGURE 3 – Digital Currency Subsector 2Q20 Totals

	Commits		Releases		Repeat Developers		Casual Developers		One-Time Developers	
Subsector (# of Assets)	Totals	% Change	Totals	% Change	Totals	% Change	Totals	% Change	Totals	% Change
Default Privacy Coins (6)	228	-83%	3	-57%	80	-80%	1152	-47%	874	-66%
Optional Privacy Coins (4)	145	-88%	2	-88%	145	-79%	1604	-41%	3642	-32%
Standard Money Protocols (22)	1490	-65%	50	43%	1727	-22%	8133	-29%	10052	-35%
Retail Payments & Point-of-Sale Currencies (3)	64	-56%	1	-50%	0	0%	1141	2%	1813	-23%
Commodity-Backed Coins (0)	0	0%	0	0%	0	0%	0	0%	0	0%
Gas Free Tokens (1)	0	0%	0	0%	0	0%	0	0%	0	0%
Fiat Collateralized Stablecoins (3)	553	-20%	11	57%	392	22%	1925	31%	1978	-27%
Crypto Collateralized Stablecoins (1)	0	0%	0	0%	0	0%	0	0%	0	0%
Algorithmic Non-Collateralized Stablecoins (0)	0	0%	0	0%	0	0%	0	0%	0	0%

Min	0.00	-88%	0.00	-88%	0.00	-80%	0.00	-47%	0.00	-66%
Max	1490.00	0%	50.00	57%	1727.00	22%	8133.00	31%	10052.	0%
Average	310.00	-39%	8.38	-12%	293.00	-20%	1744.38	-11%	2294.88	-23%

Supersector Constituents

Below are the results for the overview metrics of developer activity in Q2 2020. Each asset's Q1 performance is then compared to Q1 2020 and the results are shown below.

FIGURE 4 – List of Assets in Digital Currencies Supersector

		GitHub Metrics					Derived Metrics	
Name	Ticker	Commits	Releases	Developers (Repeat)	Developers (Casual)	Developers (One Time)	Open-To-Close Ratio	Average Time To Close Issue
Bitcoin	BTC	-67%	0%	29%	-19%	-13%	-49%	5%
Bitcoin Cash	BCH	-44%	0%	-14%	-27%	6%	17%	3%
Bitcoin Diamond	BCD	N/A	N/A	N/A	N/A	20%	N/A	N/A
Bitcoin Gold	BTG	0%	-100%	N/A	0%	0%	-67%	-100%
Bitcoin SV	BSV	-72%	-75%	-100%	-34%	-60%	178%	-71%
Boscoin	BOS	-49%	-50%	-81%	-31%	-49%	18%	-50%
Bytecoin	BCN	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Credits	CS	-100%	0%	-100%	-94%	-65%	N/A	-2%
Crypto.com	CRO	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dai	DAI	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dash	DASH	-40%	0%	183%	38%	30%	-18%	1%
DigiByte	DGB	7%	67%	9%	-6%	-13%	-14%	104%
Dogecoin	DOGE	N/A	N/A	N/A	N/A	66%	33%	N/A
Gas	GAS	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grin	GRIN	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Groestlcoin	GRO	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Horizen	ZEN	-86%	-100%	-100%	-71%	-25%	25%	-100%
HyperCash	HC	N/A	N/A	N/A	N/A	-44%	-25%	N/A
IOTA	MIOTA	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Komodo	KMN	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N1: If you are interested in using our data set for additional analysis, please reach out to the DAR team for more details.
N2: Open-to-Close Ratio is calculated by dividing the total number of Closed Issues by the total number of Open Issues in the GitHub repository.
N3: Average Time to Close Issue is a measure of a project's ability to efficiently close pull requests in a timely manner.

Supersector Constituents

		GitHub Metrics					Derived Metrics	
Name	Ticker	Commits	Releases	Developers (Repeat)	Developers (Casual)	Developers (One Time)	Open-To-Close Ratio	Average Time To Close Issue
Litecoin	LTC	-100%	-100%	-98%	-87%	-76%	13%	-100%
MonaCoin	MONA	200%	N/A	N/A	88%	6%	-81%	N/A
Monero	XRM	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NavCoin	NAV	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nucleus Vision	NCASH	200%	N/A	N/A	N/A	114%	100%	N/A
Paxos Standard	PAX	13%	100%	N/A	113%	-31%	-62%	101%
PIVX	PIVX	-82%	N/A	-96%	-43%	-27%	-40%	N/A
pundi x	NPXS	-23%	-100%	N/A	7%	-15%	63%	-100%
Raven Coin	RVN	-46%	N/A	-44%	7%	72%	477%	N/A
Request Network	REQ	12%	100%	N/A	-41%	-42%	53%	73%
Ripple	XRP	-37%	0%	1%	9%	26%	52%	2%
Ruff	RUGG	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stellar	XLM	-15%	56%	-36%	28%	11%	-28%	65%
Syscoin	SYS	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Telcoin	TEL	-50%	-33%	N/A	-58%	-65%	17%	-47%
TenX	PAY	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tether	USDT	-50%	100%	0%	50%	3%	-19%	300%
True USD	TUSD	-21%	50%	-41%	15%	43%	53%	55%
Verge	XVG	-13%	-57%	-18%	-4%	-36%	-23%	-56%
Vertcoin	VTC	-8%	33%	N/A	-19%	81%	N/A	213%
Zcash	ZEC	-100%	-67%	-21%	-5%	-14%	-92%	-66%
Zcoin	XZC	-90%	N/A	-62%	9%	19%	N/A	N/A

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N3: Average Time to Close Issue is a measure of a project's ability to efficiently close pull requests in a timely manner.

Calendar

Below are selected events from DAR's Crypto Events Calendar in 2Q20 for the 42 Digital Currencies Supersector assets highlighted in this report.

FIGURE 5 – List of Assets in Digital Currencies Supersector

Asset	Event	Description	Date	Source	Notes
BCH	Client Update	Bitcoin ABC 0.21.6	5/12/20	Link	Added autotools build system, improved JSON performance, bug fixes, etc.
BSV	Corporate Action	BSV Announces Technical Standards Committee	6/25/20	Link	This will include a set of protocol restoration changes that represent an almost complete return to the original Bitcoin protocol.
DASH	Token Governance Event	Dash Trust Protectors Election 2020 Results	5/4/20	Link	Application Period 4/3-4/20; Voting Period 4/21-4/30
UNUS SED LEO	Exchange Event	BTSE & Bitfinex Token Cross Listing	6/18/20	Link	Cross-listing of BTSE & LEO utility tokens that will increase inter-exchange settlement.
USDT	Corporate Action	Chain swap from TRC20 to ERC 20 for a sizeable amount of USDT.	6/29/30	Link	Additional details to be determined.
XMR	Token Governance Event	Developer Meeting	4/5/20	Link	Refer to link for meeting notes.
XRP	Storage& Custody Event	Anchorage Adds XRP	4/2/20	Link	New features and bug fixes

Note: For more information about our Crypto Events Calendar, please reach out to the DAR team for more details.

Appendix

Glossary

Metric	Description
Open Issues	The total number of Open Issues in the defined period.
Closed Issues	The total number of Closed Issues in the defined period.
Open-to-Close Ratio (OCIR)	A direct measure of developer effectiveness. It is calculated by dividing the total number of Closed Issues (issues with the codebase that have been fixed by the development team) by the total number of Open Issues (issues with the codebase that have not been fixed by the development team).
Minimum Proposed Pull Request Requirement (PPR)	A measure of developer activity. It is calculated by adding all Pull Requests (requests to change the codebase) proposed by internal or external developers, or by the users of the codebase.
Minimum Merged Pull Request Requirement (MPR)	A measure of developer activity. It is calculated by adding all Pull Requests (requests to change the codebase) implemented by internal or external developers.
Commits	A commit is an approved change to a project's source code that the project's community and administrators agree is an improvement. This metric can be used as a benchmark since a forked project inherits all the code commits of its predecessors.
Number of Releases	A measure of a project's software updates over a period.
Average Size of Release	A measure of a project's development team's ability to release efficient and clean software updates. Each release is compared to its predecessor to gather an average size across all releases. This metric is measured in megabytes.
Average Time-to-Close Pull Request (T2C)	A measure of a project's ability to efficiently close pull requests in a timely manner. In the case of this report, the period is one business quarter or approximately 90 days.
Developers (Total)	The total amount of developers that have contributed to a project in the time. In the case of this report, the period is one-business quarter or approximately 90 days.
Developers (Repeat)	A repeat developer has contributed code for a minimum 10 days in a month period.
Developers (Casual)	A casual developer has contributed code for a minimum two days and maximum nine days in a month period.
Developers (One Time)	A one-time developer has contributed code one day in a monthly period.
Number of Forks	A fork is a copy of a repository that a developer manages. Forks let you make changes to a project without affecting the original repository. You can fetch updates from or submit changes to the original repository with pull requests. In open source projects, forks are often used to iterate on ideas or changes before they are offered back to the upstream repository. A project can only be forked once per developer account; therefore, it is difficult for nefarious actors to manipulate the metric.

Appendix

Digital Asset Industry Taxonomy

Name	Description
Digital Currencies	The Digital Currencies Supersector is comprised of digital assets whose main objective is to replicate the fundamental functions of money: store of value, medium of exchange, and unit of account.
Computational Platforms	The Computation Platforms Supersector is comprised of assets that exist within networks that support highly expressive, Turing-complete smart contracts.
Financial Instruments	The Financial Instruments Supersector is comprised of assets that apply the decentralized properties of digital assets to financial contracts and corporate structures that exist in traditional finance.

DAR has devised a comprehensive industry taxonomy for digital assets that ranges from industry to subsector. Frameworks for classification and comparative analysis are important for understanding risk and exposure in emerging assets and technologies.

DAR's classification focuses on the underlying technology each asset employs and captures the nuance and peculiarities of the digital assets currently in the market. This bottom-up methodology is granular in its approach and stems from fundamental research and technological understanding of the assets.

The classification is structured so that it can continue to adapt and be comprehensively applied as new assets and technologies emerge, providing a future-proof framework to classify digital assets.

If you are interested in using this framework, please reach out to the DAR team for more details about the DAR Industry Taxonomy.

Appendix

Target Repository

A single digital asset and supporting network may have dozens of different repositories. Because of this, we make a qualitative assessment to determine the most relevant and comparable repository in the context of cross-sector statistical analysis. We call this repository the Target Repository and collect all statistics described in this report from that single location.

Native Digital Assets function as the main medium of exchange within their parent networks, like BTC in Bitcoin and ETH in Ethereum. For the majority of Native Digital Assets, the Target Repository is the Client. This piece of software is what network participants use to send, receive, relay, and validate digital asset transactions. The Client also enforces the rules that define the key properties of these digital assets, such as inflation, divisibility, and transferability.

Unlike Native Digital Assets, Application Tokens are digital assets issued within an existing network supported by token standards, like ERC20, ERC223, amongst many others. The majority of Applications Tokens do not have a Client. When evaluating developer stats of an Application Token, the Target Repository used is the core repository of the application itself, which is often in the form of a smart contract. In the case of ZRX, for example, the Target Repository is the smart contract codebase that supports its Decentralized Exchange protocol, which is 0x's main application.

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