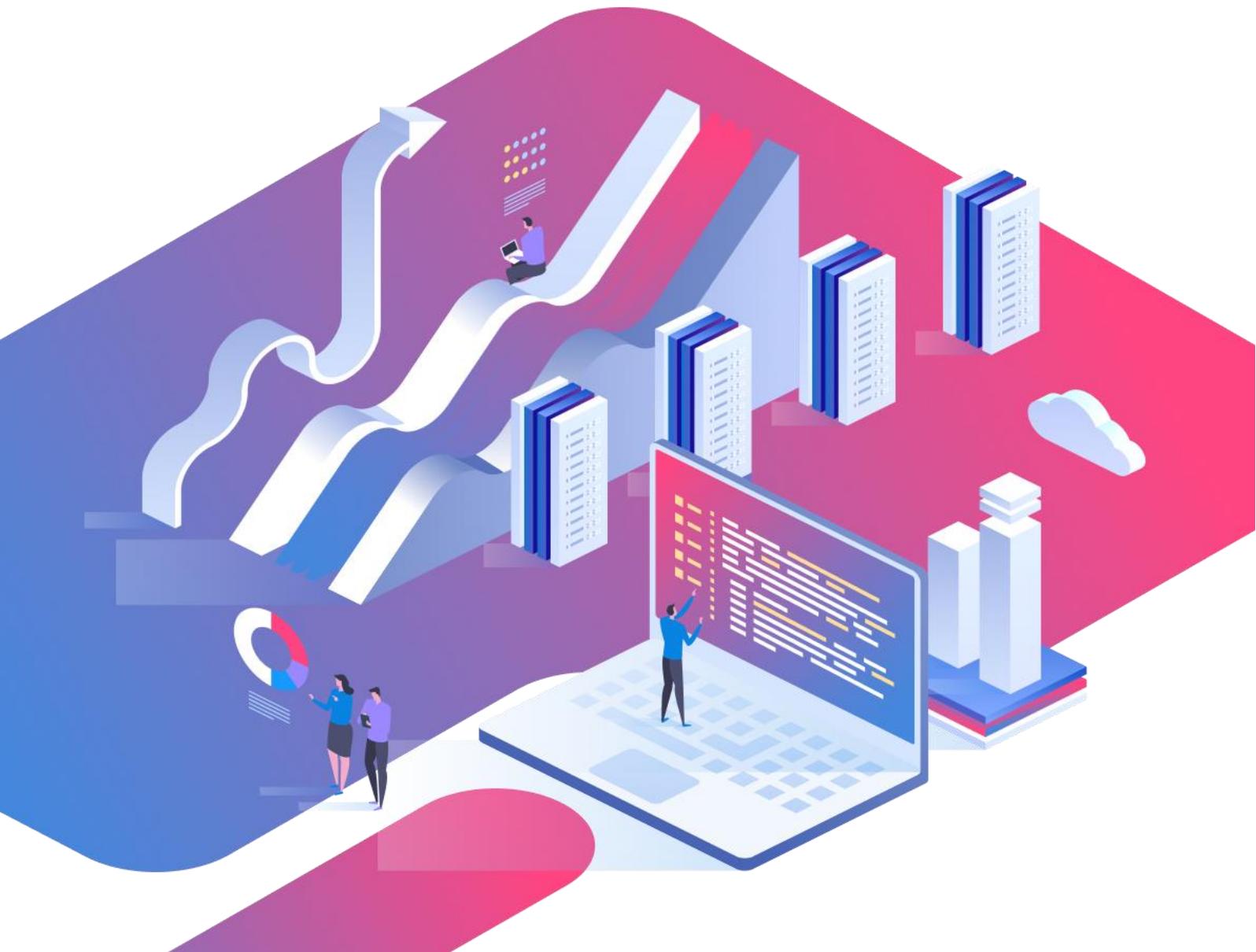


# SubQuery

# Network Whitepaper

Making the world's decentralised data more accessible.





Introduction



The Problem



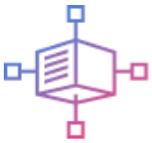
The SubQuery Network



Proposed Roadmap



Competitive Advantages



SQT Token Distribution

## Important Notice

This document (the “Whitepaper”) has been prepared by SubQuery Pte Ltd. This notice is intended for all readers who view or access the Whitepaper, regardless of the communication channel or platform. The Whitepaper is strictly for information purposes only, and shall not, under any circumstances, be treated as an offer of securities or an invitation to participate in any regulated investment scheme, howsoever defined in any jurisdiction around the world. In addition, none of the information contained herein is intended to form the basis of any advice or inducement to engage in any sort of investment activity.

**You are strongly encouraged to read the entire Whitepaper, particularly the section entitled “Risks and Disclaimers”, and familiarize yourself with all the information set out below. Please seek independent advice from your professional advisors, including lawyers, financial advisors and tax accountants, if you have any issues, uncertainties or doubts as to any of the matters presented in the Whitepaper.**

## Introduction

---

SubQuery’s mission is to make the world’s decentralised data more accessible. We are a data-as-a-service provider that aggregates and organises data from Polkadot and Substrate projects, serving up well-structured data for developers to use for a wide array of projects. Operating between layer-1 blockchains and decentralised apps (dApp), our service allows developers to focus on their core use case and front-end, without needing to waste time on building a custom backend for data processing.

SubQuery proposes to enable every Polkadot/Substrate team to process and query their data. The project is inspired by the growth of data protocols serving the application layer and its aim is to help Polkadot/Substrate projects build better dApps by allowing anyone to reliably find and consume data faster. Today, anyone can query and extract Polkadot network data in only minutes and at no cost.

# The Problem

---

*In order to build increasingly complex and intuitive applications, developers need powerful tools to process and query their data faster.*

A core weakness of blockchain data (and decentralised data in general) is inefficient process and query performance. In the way that decentralised data is stored (imagine a chain of pages with some data, each pointing to the next), answering common questions like how many tokens are in a given wallet is notoriously difficult. You either must go through every transaction made in history, or you need to index and transform the data.

We believe in a multi-chain future. As more parachains join Polkadot, and Substrate-based chains continue to be launched, the challenge of querying all of this rich data is going to grow exponentially. In our opinion, the world needs a unique, flexible, open-source platform that unlocks the value of this data.

## SubQuery's Current Solution

Indexing and transforming data is fundamentally what SubQuery does. We allow people to create a SubQuery Project, which is a set of instructions on how the Indexers should traverse the blockchain, what data to collect, and how it should be shown to users. Anyone can use our SDK tools to create their own Project, and then use SubQuery Projects to upload it to our managed service so we can run it for you, for free.

We're already powering some of the top applications in Polkadot and serving over a million daily API requests, including; DeFi apps like [Acala](#) and [Bifrost](#), wallets like [Fearless Wallet](#), NFT platforms like [KodaDot](#), cross-chain bridges like [Darwinia](#), and analytics platforms like [SubVis](#). We think the opportunities for SubQuery are endless.

## SubQuery's SDK

Through our involvement in the [Web3 Grants Program](#), the SubQuery team has delivered our open-source Software Development Kit (SDK). [This SDK](#) allows users to generate their own SubQuery Project, defining how the Indexer should traverse and aggregate their own protocol.

The SDK is open-sourced with the Apache license (v2.0) and is being actively maintained by the SubQuery team - we intend to bring new features and performance improvements to our SDK every day and anyone in the world can use this SDK to create, build, and even run their own SubQuery infrastructure,

We have also provided the community with help articles, walk-through guides, and other materials to help them get started with using SubQuery to unlock data for their use cases. In our view, SubQuery's success is dependent on the community's success.

## SubQuery Projects

[SubQuery Projects](#) is an online application where you can publish your own SubQuery Projects so that they are hosted on our managed service for free. Once you connect your GitHub account, you are only minutes away from sharing your SubQuery Project with the world.

The experienced SubQuery team will use our expertise to manage production infrastructure for your own SubQuery Project. We will deploy your Project to our high-performance nodes for a better user experience - we will focus on running production indexing servers so that you do not have to.

## SubQuery Explorer

SubQuery Explorer is an online managed service that provides access to published SubQuery Projects made by contributors in our community. You can test queries directly in your browser using our playground or get GraphQL API endpoints for each Project. Be inspired by what others are building so you can give back!

# The SubQuery Network

---

Providing productionised mission-critical services is a demanding task. Running complex, scalable, resilient infrastructure requires a small team of infrastructure engineers, and monitoring it constantly for outages is a task that nobody wants to do. We have always believed that development teams should not need to spend time managing infrastructure - they should focus on building the future.

Unfortunately, with economies of scale, centralised service providers may be seen to be dominating the markets. We're one of them, but we do believe that a healthy decentralisation future requires multiple data service providers, that is why we are going to focus on the SubQuery Network.

We will aim to move towards a globally decentralised network of participants organising blockchain data in order to ensure no single point of failure for SubQuery. We expect that this will massively increase SubQuery's uptime, provide better redundancy, and increase performance by driving down latency. We envision that applications will be able to use GraphQL to query any store of data (as defined by the SubQuery Project) from Indexers around the network.

*SubQuery will aim to power the future plethora of serverless applications in the Polkadot/Substrate ecosystem.*

Our guiding principle with the SubQuery Network is simplicity. It is our opinion that other approaches to decentralised data query services are overly complex and make it difficult for participants to predict their return on investment. Our aim is to make it easy for you to get involved in the network, and to clearly forecast your future potential return.

## Network Participants

Our plan calls for three types of participants in the SubQuery network:

- Consumers: Consumers will make requests to the SubQuery network for specific data and pay an advertised amount of SQT
- Indexers: Indexers will host SubQuery Projects in their own infrastructure, running both the node and query service to index data and answer GraphQL requests.

- Delegates: Delegates will participate in the network by supporting their favourite Indexers to earn rewards



Consumers



Indexers



Delegates

In other protocols there may be a *curator* role who is generally the creator of a particular source of data. Our protocol aims to essentially replace the *curator* role by using [Purchase Order Contracts](#). It is expected that the creator of the SubQuery Project can be any type of participant in our Network (they could index their own creation, or just consume it in their app).

## The SubQuery Token (SQT)

We aim to establish SQT as the token which powers the SubQuery network, providing an incentive for participation, as well as serving as a medium of exchange for transactions within the SubQuery network. We envision that holders of the SQT token will be able to inform the SubQuery Foundation about their vision for the overall direction of SubQuery as our network adopts some qualities of a decentralised autonomous organisation.

We have no intention for SQT to be used as a medium of exchange for goods or services outside of the SubQuery Network. SQT does not in any way represent or confer upon its holders any right to, title of, interest or participation in, the ownership, shareholding and/or management of SubQuery whatsoever. SQT will not entitle holders to any promise of fees, dividends, revenue, profits, or investment returns.

We minted for SQT to be tokenised and issued on another Polkadot parachain (including Acala or others).

## Means of Payment for Data Services

SQT is planned to form the means of payment for data from SubQuery Indexers. Each Indexer will advertise their prices when registering their ability to serve requests for specific SubQuery Projects. Consumers making requests will have to lock the tokens necessary to make that request, and at the end of a spending period, these tokens will be distributed to the Indexers. As part of our work to tokenise SubQuery, we will be implementing a conditional micropayment network on Substrate.

We envisage that in order to become an Indexer on the SubQuery Network, the Indexer must acquire the necessary hardware, run the required SubQuery services, and then choose what SubQuery Projects they index and provide a query service for. In exchange, they will be rewarded in SQT. Our view is that an industry can provide these services better than any single organisation can - we expect that the performance of SubQuery will only increase with progressive decentralisation.

It is expected that Indexers will attempt to co-locate nodes, Indexers, and query services to remain competitive in this space. Our prediction is that, over time, Consumers will tend towards the more efficient and faster Indexers that can provide better services at lower prices.

## Indexer Staking

In order to earn money from query revenue as an Indexer it is proposed that participants must stake SQT against a particular SubQuery Project that they are providing the service to. We plan to use the Cobb-Douglas production function to determine the query fee revenue distributed to each Indexer.

$$\text{Revenue}_{ij} = \text{Revenue}_j \times \left(\frac{\sigma_{ij}}{\sigma_j}\right)^\alpha \times \left(\frac{\theta_{ij}}{\theta_j}\right)^{1-\alpha} \text{ where } 0 < \alpha < 1$$

The query fee revenue that Indexer ( $i$ ) can receive for the SubQuery Project ( $j$ ) is defined by the Cobb-Douglas production function. Where  $\text{Revenue}_j$  is the total revenue for requests to SubQuery Project  $j$ ,  $\sigma_{ij}$  the number of requests provided by Indexer  $i$  for SubQuery Project  $j$ ,  $\sigma_j$  the number of requests for SubQuery Project  $j$  across the entire protocol,  $\theta_{ij}$  is the staked amount for Indexer  $i$  for SubQuery Project  $j$ ,  $\theta_j$  the staked amount for SubQuery Project  $j$  across the entire protocol.

This approach was also adopted by the 0x team, and in simple terms, means that revenue is allocated to competing Indexers as a proportion of both requests answered and revenues staked. In our view, the beauty of this equation is that a rational Indexer must maintain a stable level of staked SQT relative to the work they do in order to receive optimal revenue. As a result, we do not need to enforce arbitrary staking requirements because Indexers are incentivised to self-manage and maintain a stake or skin in the game.

If an Indexer is caught misbehaving (such as by providing invalid, incomplete, or incorrect data), they are liable to have a portion of their staked SQT (on the particular SubQuery Project ij) burned, severely diminishing their holdings of staked SQT in the network and therefore their potential reward. At this stage, we expect to limit the disincentive imposed for one particular SubQuery project so that it will not affect the Indexer's staking amounts or obligations on other SubQuery Projects.

## Indexer Delegation

We plan to allow SQT token holders to help increase Indexers' query fee revenue by delegating their own SQT tokens for staking.

The Indexer will advertise a *Query Fee Revenue Share Rate* on a particular SubQuery Project, which reflects the portion of revenue that the delegation pool will receive from that Indexer for the specified Project. This portion of revenue will then be shared within the delegation pool proportionally to the individual delegation value in the pool. Delegators will only receive revenue for staking eras that they were a part of for the entire period (which will be a 28-day period). For example, if they join a staking era in the middle of the relevant period of 28 days, then they will not earn any Query Fee revenue for that particular era.

If an Indexer wishes to decrease the *Query Fee Revenue Share Rate* that they offer to their Delegators, they must advertise this for an entire staking era (the 28-day period). The Indexer will be able to increase their *Query Fee Revenue Share Rate* at any point to raise more delegated SQT for staking in the short term. Delegators can withdraw or undelegate their staked amount at any time, but they will forfeit any rewards earned within the staking era (as they were not part of the delegation pool for the entire duration of the staking era).



We intend to set a limit to the amount of delegated staking an Indexer can accept. The delegation capacity ensures that Indexers still have enough personal skin in the game with their own SQT at stake to prevent them from misbehaving.

## Purchase Order Contracts

SubQuery is intended to function as a marketplace where both Consumers (buyers) and Indexers (sellers) can meet to exchange data for SQT tokens. However, there is a lot of up-front costs that an Indexer must incur before they are able to sell data from a new SubQuery Project. In order to encourage Indexers to index and support an entirely new SubQuery Project, we plan to implement market mechanisms for Consumers to signal what SubQuery Projects are needed to guarantee revenues to Indexers of new SubQuery Projects.

To illustrate our plans, a Consumer of SubQuery data (regardless of if the Project has already been indexed or not), will be able to advertise a purchase order contract for a specific SubQuery Project. Each purchase order includes the SQT price per request, the number of requests, the advertising period, and the maximum lifetime of the purchase order. A purchase order is either “*open*” meaning any Indexer can fulfill it, or “*closed*” meaning that it is limited to the first Indexer that accepts it (or is offered it).

This purchase order will be submitted on-chain, and the Consumer will deposit away the entire amount of SQT required. If no Indexer accepts the purchase order within the advertising period, then the SQT will be returned to the Consumer at the end of the said period (minus a small portion which shall be burned). If any Indexer accepts this purchase order, they will be routed requests to fulfil this purchase order. For each request, a portion of the deposited SQT will be unlocked for the rebate pool, and the remaining deposited SQT will be unlocked and paid to the Indexer at the end of the purchase order lifetime or once all the requests are satisfied (whatever is sooner).

If the purchase order is “open”, multiple Indexers can compete to fulfil the guaranteed requests in the purchase order at lower prices or better performance. The SQT from the purchase order will be split to participating Indexers the same way that the SQT are split with Indexers (using our Cobb-Douglas production function).

$$\text{Revenue}_{ip} = \text{Revenue}_j \times \left(\frac{\sigma_{ip}}{\sigma_p}\right)^\alpha \times \left(\frac{\theta_{ij}}{\theta_{jp}}\right)^{1-\alpha} \text{ where } 0 < \alpha < 1$$

The query fee revenue that Indexer (i) can receive for an “open” purchase order (p) on SubQuery (j) is defined by the Cobb-Douglas production function. Where  $\text{Revenue}_p$  is the total revenue from the purchase order p,  $\sigma_{ip}$  is the number of requests provided by Indexer i for purchase order p,  $\sigma_p$  is the number of requests provided for purchase order p across all Indexer participants,  $\theta_{ij}$  is the staked amount for Indexer i for SubQuery project j,  $\theta_{jp}$  is the staked amount for SubQuery Project j by all Indexers participating in the purchase order p.

These purchase orders can give Indexers confidence that there is a market for data from a particular SubQuery Project, and essentially signal to them which Projects should be indexed. Purchase orders can also be placed on existing SubQuery Projects to attract additional Indexers to that SubQuery Project. This may be useful in situations where the existing monopolistic Indexer may be charging an unreasonable amount for the data or there is a lack of competition to drive prices to equilibrium.

## Indexer Discovery

For Consumers to discover and select Indexers in the SubQuery network, we plan to implement a discovery network based on a Kademlia DHT. Any participant can run a DHT service in our network and Consumers can use these to discover SubQuery Projects. Since the compute requirements for this directory service are low, and high traffic Consumers might find it useful to run their own directory service for performance, we do not intend to provide any reward for operating this service.

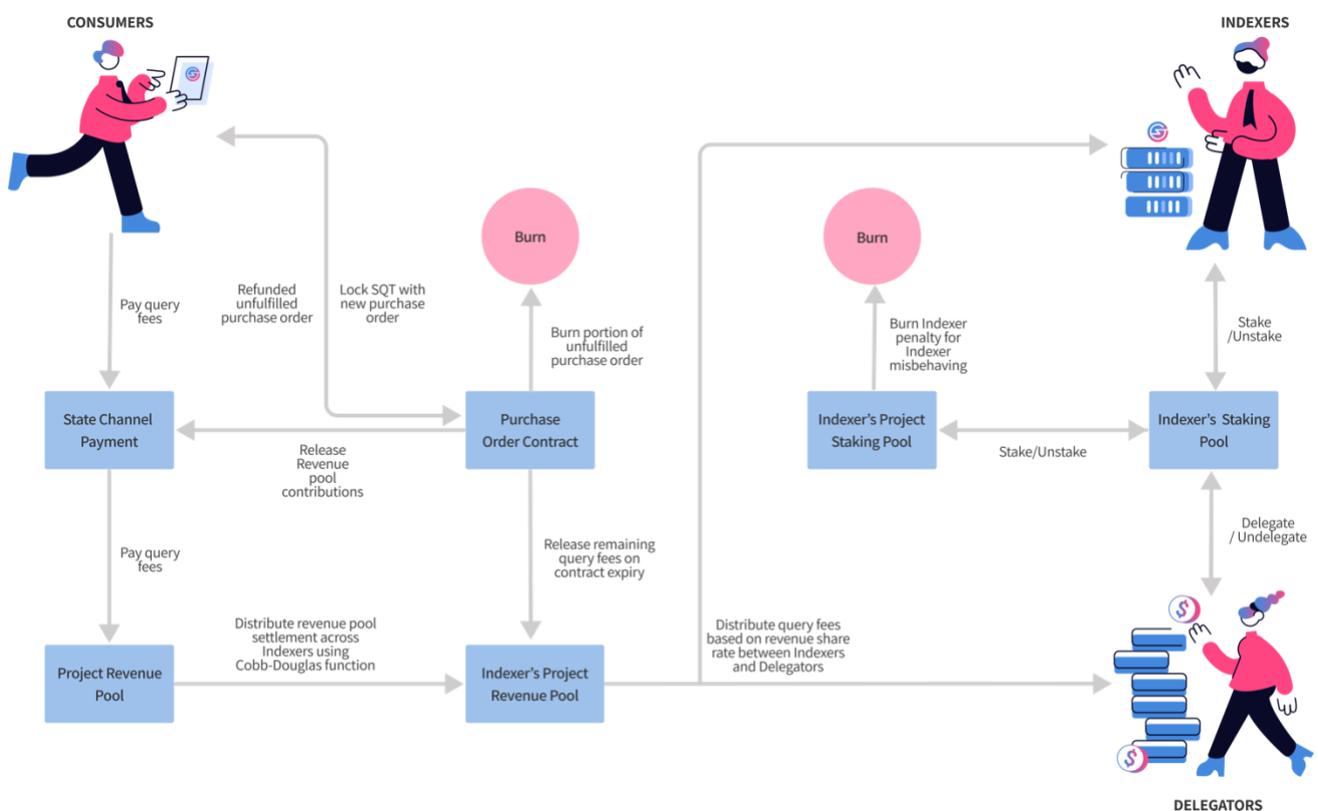
The DHT network will provide information about SubQuery Project hashes for each Indexer, and for each Project, it will list that Indexer’s endpoint URL, current block, the summary of latest service reports (latency etc), and an allowlist of IPs that this data can be provided to.

These service reports will be provided by Consumers when unlocking their payment for Indexers in their payment channel. By recording and aggregating average speeds

from these Indexers, the network will reward more performant providers with more traffic.

The IP address allowlist allows Service Providers to focus on providing their service to a specific geographic region to ensure they are most competitive in terms of performance. An Indexer may run infrastructure in multiple regions, each dedicated to that region for a globally distributed network. Additionally, this allows private companies to run private SubQuery Projects for private Consumer groups limited by the IP address allowlist (e.g., internal-only data for a private organisation).

## Network Value Flow



# Proposed Roadmap

SubQuery is already providing thousands of GraphQL requests to production applications each day. We have open-source SDKs, online managed services, and other tools already available to the public. Based on our experience, we have the ability to deliver and meet the needs of the market.

For the future, we plan to adopt a phased plan for progressive decentralisation that aims to maintain full feature-parity with the existing centralised service throughout.

Initially, we will seek to mint and deploy SQT on a parachain (e.g. Acala) to ensure community involvement in our ecosystem. We will then aim to progressively introduce decentralised features, starting with Indexers, delegation, and discovery/routing, then micropayments, and finally with purchase orders.



## Proposed Milestone 1

- WASM Contract v1 complete.
- Subquery-coordinator for indexer
- Subquery-client-sdk for consumer
- Launch an internal testnet program



## Proposed Milestone 2

- Start testing micropayment internally
- Subquery Network Explorer Beta
- Public (incentivised) testnet launch and 3-months campaign.



## Proposed Milestone 3

- Mainnet launch, deploy to partner parachain
- Complete gateway
- Completing governance module



## Proposed Milestone 4:

- Migrate to a self-owned parachain to enable all features

# Competitive Advantages

---

It is no secret that the decentralised data industry is massive. We hope to differentiate ourselves from larger players in a meaningful and advantageous way. Our guiding principle with the SubQuery Network will be simplicity and flexibility (for different use cases and Substrate-based networks).

It is our opinion that our competitor's economic model is overly complex and therefore difficult for participants to engage and predict return on investment. Our aim is to make it easy to get involved in the network by simplifying and reducing the total incentive mechanisms, making it easier to clearly forecast the participants' potential rewards for contributing.

## Flexibility

We believe the potential of SubQuery lies in its flexibility - our users will have the freedom to adapt and transform decentralised data to suit their needs. You as a dApp developer need data in a specific format tailored for your dApp, or you might want to also show some other details in your dApp to set it apart from others.

Unlike other “unified” decentralised API service providers, SubQuery is open source, so you will have the freedom to define your data set specifically for your needs. Rather than having to combine queries from different API endpoints - you can define the shape of your APIs data models yourself. It saves time, money, and provides a vastly better experience for your users.

There are endless possibilities for the variety of data sources that can be analysed and served using SubQuery. We cannot wait to see what our community comes up with!

## Development Ease

You do not need to be an expert to take advantage of what SubQuery offers. The key focus of the SubQuery Foundation is to ensure that there is enough support that anyone, from the expert blockchain team to a new hobbyist developer, can build their own Project.

Our focus will be on making SubQuery easier to use and build on than our competitors - SubQuery's success depends on the success of others creating the future on it.

## Indexer/Delegator Imbalance

Among some of our competitors, we have observed that there is a serious imbalance between Indexers and Delegators in terms of the ability to change delegation rates on the fly. We have tried to equalise this imbalance by requiring that the Indexer advertise a decrease to the Query Fee Revenue Share Rate for an entire staking era (28 days). Delegators are also free to withdraw their delegated tokens at any point during the staking era, but they will lose any rewards that they could have been eligible for during that era.

## Purchase Orders Instead of Curators

With marketplaces like what SubQuery is proposing, where you have both buyers and sellers attempting to commoditise data, signalling demand for future supply tends to be a tricky issue. Other networks use “curators” to achieve this, where a participant attempts to predict future demand, and is rewarded when that future demand materialises. Our plan is to take a different approach, one that requires up-front commitment signalling.

A Consumer can submit a contract for a purchase order in order to facilitate and encourage supply at a fixed price and volume (essentially helping secure pre-allocated rewards for Indexers of a SubQuery Project). This can be used both to attract Indexers to new SubQuery Projects, or to attract additional Indexers to existing and uncompetitive SubQuery Projects.

## Incentives for Query Performance

To become a high-performance, mission-critical platform - we believe that the SubQuery Network must operate at the highest level. That is why our Indexer discovery process will include performance data (latency and uptime) for all Indexers, and we will take steps to ensure that Consumers report on query speed when unlocking micropayments to Indexers.

We will also provide tools to limit the availability of Indexers to a certain geographical region so that they can focus on providing the best service to that region, attract the most requests, and potentially maximise rewards for their contributions. This will allow larger and more mature Indexers to run location specific infrastructure all around the world.

## Focus on Substrate/Polkadot

SubQuery is inspired by the growth of data protocols serving the application layer, we have expressed our commitment to focus on Polkadot and Substate from the day we started. Our service and tools were built from the outset to work with Substrate and we are already in the market helping some of the leading Substrate teams unlock the data in their own parachains.

Polkadot's unique architecture means that we can focus on one protocol and be able to support multiple current and future blockchains automatically. We intend on becoming the core data infrastructure for this ecosystem, and to unlock the power of data for the next generation of dApps.

While providing support on just Polkadot is easy, supporting hundreds of other Substrate-based chains with minimal custom development work will be our eventual goal in order to differentiate us from other platforms. We believe our relationships with all the top Substate teams will be essential to help us achieve this outcome.

# SQT Token Distribution

---

The exact details of how the SQT token will be allocated and distributed are still subject to finalisation, and will be announced closer to the public sale.

At a high level, the SubQuery network will be managed by a SubQuery Foundation. We see SubQuery as a long-term project and therefore, we anticipate that the token vesting schedule for the SubQuery Foundation, and for the core development team may be over a longer period of time (such as multiple years).

There may be a small rate of inflation and newly minted tokens are expected to go directly to a treasury-like token pool, which may be in turn managed by the SubQuery Foundation. However, we anticipate that the overall ecosystem will be deflationary due to the following hypothetical scenarios:

- An Indexer is caught misbehaving or providing false information, which results in a portion of the Indexer's portion of their staked SQT (on the particular SubQuery Project  $\theta_{ij}$ ) being burned, or
- If no Indexer accepts a purchase order within the lifetime of the advertising period, which then results in a portion of the SQT that has been deposited as part of the said purchase order being burned.

# Risks and Disclaimers

Please read this section titled “Risks and Disclaimers” very carefully and in its entirety. If you are in any doubt as to the action you should take, you should consult your legal, financial, tax or other professional advisor(s). By accessing the information set forth in this document or any part hereof, you represent and warrant to SubQuery Pte. Ltd. (referred to in this section, “Risks and Disclaimers” as “SubQuery”) that you unconditionally and irrevocably accept and agree with the following:

## 1. No viewing in a Restricted Territory

It may not be lawful in certain jurisdictions for individuals, or certain categories of individuals in other jurisdictions, to view this document. An individual who wishes to view this document must first satisfy himself or herself that he or she is not subject to any local requirements that prohibits or restricts him or her from doing so. In particular, unless otherwise determined by SubQuery and permitted by the applicable law and regulations, it is not intended that any offering of the tokens mentioned in this document (the “Tokens”) by SubQuery should be made, or any documentation be sent, directly or indirectly, in or into, countries where participating in Initial Coin/Token Offerings are banned due to legal restrictions, and countries sanctioned by the US or countries considered as high risk and monitored by the Financial Action Task Force (“FATF”) (each, a “Restricted Territory”) and nor should it be accessed by any individual who is a national citizen or resident of a Restricted Territory, including corporations, partnerships, or other entities created or organized in any such jurisdiction, unless they are exempted from the prohibition against participating in Initial Coin/Token Offerings. SubQuery shall not be responsible for individuals who access this document from territories whose laws prohibit such access or where any part of the document may be illegal. Such individuals do so at their own risk.

## 2. No Offer

This document is for information purposes only and does not constitute or form, and not intended to be, an offer or solicitation of an offer to buy or sell, subscribe for, underwrite or purchase any form of investment or securities or other financial instruments, nor shall it or any part of it form the basis of, or be relied upon, in any way in connection with any contract or investment decision relating to the same. No regulatory authority has examined or approved of any of the information set out in this Whitepaper. No such action has been or will be taken under the laws, regulatory requirements or rules of any jurisdiction.

## 3. Information

All information is provided without any warranties of any kind and SubQuery, its employees, officers and/or advisors make no representations and disclaim all express and implied warranties and conditions of any kind and each of SubQuery, its employees, officers and/or professional advisors assume no responsibility or liability to you or any third party for the consequence of reliance on such information, errors or omissions in such information or any action resulting therefrom.

The information contained on this document may contain statements that are deemed to be “forward-looking statements”, which are prospective in nature and are not statements of historic facts. Some of these statements can be identified by forward-looking terms such as “aim”, “target”, “anticipate”, “believe”, “could”, “estimate”, “expect”, “if”, “intend”, “may”, “plan”, “possible”, “probable”, “project”, “should”, “would”, “will” or other similar terms. However, these terms are not exhaustive. Forward-looking statements inherently contain risks and

uncertainties as they relate to events or circumstances in the future. Therefore, the information, opinions and forward-looking statements, including estimates and projections, in this document in respect of the anticipated roadmaps, development and projected terms and performance of the relevant entities, are selective and subject to updating, expansion, revision, independent verification and amendment.

SubQuery is not making any representation or warranty or undertaking, including those in relation to the truth, accuracy, and completeness of any of the information set out in this paper. SubQuery also expressly disclaims any obligation or undertaking to update or revise any forward-looking statements except to the extent required by law and neither SubQuery, its employees, officers or professional advisors make any assurance, representation or guarantee that any event referred to in a forward-looking statement will actually occur. Whilst SubQuery intends to fulfil all the goals set out in this document, in case of unforeseen circumstances, the goals may change or may not be achieved without any notice to you.

## 4. No Advice

None of the contents of this document constitutes legal, financial, tax or other advice. You must conduct your own due diligence and ensure you comply with all local laws regarding cryptocurrency, tax, securities and other regulations in your jurisdiction. We encourage you to consult with the relevant professional advisors independently.

## 5. Regulatory risks

The regulatory status of cryptographic tokens, including any digital currency, digital assets and blockchain applications is unclear or unsettled in many jurisdictions. The publication and dissemination of this document do not imply that any relevant laws, regulations and rules have been complied with. No regulatory authority has examined or approved this document. Where any relevant governmental authority makes changes to existing laws, regulations and/or rules, or where financial institutions make certain commercial decisions, it may have a material adverse effect and/or impair the ability of any relevant entity referred to in the document to function as intended, or at all.

## 6. No Agreement

This document shall not be relied on to enter into any contract or to form basis of any investment decision. Any agreement(s) between SubQuery and you are to be governed by a separate document (“Sale Document”). In the event of any inconsistency between this document and the Sale Document, the terms contained in the respective Sale Document shall prevail.

## 7. Advertisement and Distribution

The publication, distribution or dissemination of this Whitepaper does not imply that the applicable laws, regulatory requirements or rules have been complied with. This document is for general information purpose only and is not an advertisement, nor is it intended to be used to call for an offer on behalf of SubQuery. Persons to whom a copy of this Whitepaper has been distributed or disseminated, provided access to or who otherwise have the Whitepaper in their possession shall not circulate it to any other persons, reproduce or otherwise distribute this Whitepaper or any information contained herein for any purpose whatsoever nor permit or cause the same to occur. Distribution of this document may be restricted or prohibited by law or regulatory authority in your jurisdiction. This Whitepaper, any part thereof and any copy thereof must not be taken or transmitted to any country where distribution or dissemination of this Whitepaper is prohibited or restricted. Recipients should inform themselves of and comply with all such restrictions or prohibitions and SubQuery does not accept any

liability to any person in relation thereto. No part of this Whitepaper is to be reproduced, distributed or disseminated without including this part titled “RISKS AND DISCLAIMERS”.

## 8. Disclaimer of Liability

In no event shall either SubQuery, or any of their respective current or former employees, officers, directors, partners, trustees, representatives, agents, advisors, contractors, or volunteers be liable for any indirect, special, incidental, consequential or other losses of any kind, in tort, contract or otherwise (including but not limited to loss of revenue, income or profits, and loss of use or data), arising out of or in connection with:

- (i) any acceptance of or reliance on this Whitepaper or any part thereof by you;
- (ii) any failure by SubQuery, or any of their its affiliate companies, partners, or third party contractors or licensors to deliver or realize all or any part of the project described in or envisaged in this Whitepaper;
- (iii) any information contained in or omitted from this Whitepaper;
- (iv) your use or inability to use at any time the services or products or Tokens offered by SubQuery,
- (v) mistakes or errors in code, text, or images involved in the Token sale or in this Whitepaper; or
- (vi) any expectation, promise, representation or warranty arising (or purportedly arising) from this Whitepaper;
- (vii) the purchase, use, sale, resale, redemption, or otherwise of the Tokens; or
- (viii) the volatility in pricing of tokens in any countries and/or on any exchange or market (regulated, unregulated, primary, secondary or otherwise);
- (ix) any security risk or security breach or security threat or security attack or any theft or loss of data including but not limited to hacker attacks, losses of password, losses of private keys, or anything similar; and

your failure to properly secure any private key to a wallet containing Tokens.

## 9. Other Disclaimers

There are risks involved in the technologies relating to the blockchain technology referred to herein, the Tokens, and the Initial Coin/Token Offering, such as unforeseen bugs, security issues or disruptions. By way of the above and other factors not within our control, the entire sum used to purchase the Tokens may be lost.

Despite our best efforts, SubQuery may not be able to execute or implement its goals, business strategies and plans.

Certain proposed activities and functions described in the Whitepaper may require obtaining further regulatory or licensing approval from relevant authorities, which may be protracted, incur significant cost, or be denied completely. In such event, the proposed features and functions herein may never come to fruition as intended.

There may be changes in political, social, economic and stock or cryptocurrency market conditions and/or there may be no or little acceptance/adoption of the relevant Blockchain system and/or Tokens, such that the relevant Blockchain system and/or the Tokens become no longer commercially viable.

If any provision or part of any provision in this section titled, “RISKS AND DISCLAIMERS” is or becomes invalid, illegal or unenforceable, it shall be deemed modified to the minimum extent necessary to make it valid, legal and enforceable. If such modification is not possible, the relevant provision or part-provision shall be deemed deleted. Any modification to or deletion of a provision or part of any provision under this section titled, “RISKS AND DISCLAIMERS” shall not affect the validity and enforceability of the rest of this section titled, “RISKS AND DISCLAIMERS”.

To the fullest extent possible, SubQuery shall not be liable for any responsibility, liability, claims, demands and/or damages (actual and consequential) of every kind and nature, known and unknown (including, but not limited to, claims of negligence), arising out of or related to any acceptance or reliance on the information set forth in this document by you.

Where references have been made to third-party websites or sources of information, we may not have sought further verification as to the accuracy, completeness, or timeliness of the information referred to therein, and no warranties whatsoever are made as to the same.

The disclaimers set out above are not exhaustive.