

ocean

**A decentralized data exchange protocol, powered by
blockchain technology and a native token**

Token Distribution Details

Information Memorandum

Ocean Protocol Foundation Ltd

Company Registration No. 201729912W
incorporated in the Republic of Singapore on 19 October 2017

A joint project of

BIGCHAIN^{DB}  DEX



Table of Contents

Disclaimers and Notices	4
Introducing Ocean Protocol	17
Why the world needs Ocean Protocol	19
Data is immensely valuable, yet remains locked up.....	20
A free market for data allows AI to become accessible.....	20
Challenges of Data Sharing.....	22
A market failure to properly value data and make it available	23
The Ecosystem.....	24
Powering a Two-Sided Market for Data.....	26
Tokens Are the Native Currency of the Protocol & Network.....	27
Ocean Protocol is being led by DEX, and BigchainDB.....	29
Customers & Partners	31
Singapore is the lead government partner for Ocean Protocol.....	31
Industry Partners	32
Service & Technology Partners	33
Lead Data Marketplaces	33
Technical Whitepaper.....	35
Ocean Token	37
Monetary Policy.....	37
Token Allocations	38
Token Release Schedule	39
Minting of Block Rewards	40
Token Distribution	42
Token Distribution Design.....	42
Distribution Phases for Purchasers	43



Distribution of Funds	48
Use of Funds	49
Team	52
Team Credentials.....	53
Founding Members.....	54
Competitive Products	56
Risk Factors & Disclosures	58
Risks relating to participation in the Ocean Token Exchange	58
Risks relating to the designated address and receiving address(es)	62
Risks relating to Ocean Foundation	63



Disclaimers and Notices

You must read the following disclaimer in full before continuing

The exchange for Ocean tokens (“**Ocean Tokens**”) which is the subject of this information memorandum (“**Information Memorandum**”) is only allowed to certain relevant persons and not to the retail public. Moreover, this Information Memorandum is not a prospectus or offer document of any sort and is not intended to constitute an offer of securities of any form, units in a business trust, units in a collective investment scheme or any other form of investment, or a solicitation for any form of investment in any jurisdiction. No regulatory authority has examined or approved of any of the information set out in this Information Memorandum. This Information Memorandum has not been registered with any regulatory authority in any jurisdiction.

By accessing and/or accepting possession of any information in this Information Memorandum or such part thereof (as the case may be), you represent and warrant to Ocean Protocol Foundation Ltd. (Company Registration No. 201729912W) (“**Ocean Foundation**”) that:

- (a) you are a Qualified Person (as defined herein);
- (b) you agree to be bound by the limitations and restrictions described herein; and
- (c) you acknowledge that this Information Memorandum has been prepared for delivery to you so as to assist you in making a decision as to whether to exchange for the Ocean Tokens.

Important notice

This Information Memorandum in current form is being circulated by Ocean Foundation for general information and to invite feedback only on the Ocean Protocol as presently conceived, and is subject to review and revision by the directors of Ocean Foundation, the board of advisers and/or legal advisers of Ocean Foundation. Please do not replicate or distribute any part of this Information Memorandum without this note in accompaniment. No part of this



Information Memorandum is intended to create legal relations between a recipient of this Information Memorandum or to be legally binding or enforceable by such recipient against Ocean Foundation. An updated version of this Information Memorandum may be published on a date to be determined and announced by Ocean Foundation in due course.

Please read this section and the following sections entitled “Disclaimer of liability”, “No representations and warranties”, “Representations and warranties by you”, “Cautionary note on forward-looking statements”, “Third party information and no consent of other persons”, “Terms used”, “No advice”, “No further information or update”, “Restrictions on distribution and dissemination”, “No offer of investment or registration” and “Risks and uncertainties” carefully.

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).

The Ocean Tokens are proprietary tokens to be developed and issued by Ocean Foundation to function as the native utility token used in the Ocean Protocol network as the means of value exchange, to power the Ocean Protocol and incentivize the keeper nodes of the Ocean Protocol network. References in this Information Memorandum to Ocean Tokens shall, save insofar that such references relate to the functionality of Ocean Tokens, be deemed to include a reference to Interim Ocean Tokens (to the extent issued by the Ocean Foundation). “**Interim Ocean Tokens**” means ERC20 Token Standard cryptographic tokens, which sole function is to exchange on a one-to-one basis for the Ocean Tokens on a date to be announced by Ocean Foundation. “**ERC20 Token Standard**” means the set of criteria, (including criteria in relation to functions and events) developed by the Ethereum community, which has to be met in a smart contract on a blockchain in order to enable inter-operability across multiple interfaces and distributed applications.

The Ocean Tokens are not intended to constitute securities of any form, units in a business trust, units in a collective investment scheme or any other form of investment in any jurisdiction. This Information Memorandum does not constitute a prospectus or offer document of any sort and is not intended to constitute an offer of securities of any form, units in a business trust, units in a collective investment scheme or any other form of investment, or a solicitation for any form of investment in any jurisdiction.



No Ocean Token should be construed, interpreted, classified or treated as enabling, or according any opportunity to, acquirors to participate in or receive profits, income, or other payments or returns arising from or in connection with the Ocean Tokens or the proceeds of the exchange for Ocean Tokens (the “**Ocean Token Exchange**”) by Ocean Foundation to persons falling within the meaning of “accredited investor”:

- (a) as defined under Section 4A(1)(a) of the Securities and Futures Act (Chapter 289) of Singapore, as may be modified, amended or supplemented from time to time;
- (b) as defined in Regulation D promulgated under the Securities Act of the United States of America (“U.S.”), as may be modified, amended or supplemented from time to time; or
- (c) as defined or such other equivalent term under the laws of such jurisdiction where the acquiror legally resides and/or which apply to the exchange for Ocean Tokens under the relevant agreement entered into by such acquiror with Ocean Foundation,

(collectively, the “**Qualified Persons**”), or to receive sums paid out of such profits, income, or other payments or returns.

This Information Memorandum does not constitute or form part of any opinion or any advice to exchange for, sell, or any solicitation of any offer by Ocean Foundation to exchange for any Ocean Tokens nor shall it or any part of it nor the fact of its presentation form the basis of, or be relied upon in connection with, any contract or investment decision.

Ocean Foundation will deploy all proceeds from the exchange for the Ocean Tokens to support ongoing development and growth of the Ocean Protocol network.

No person is bound to enter into any contract or binding legal commitment in relation to the exchange for the Ocean Tokens and no cryptocurrency or other form of exchange is to be accepted on the basis of this Information Memorandum.

Any agreement as between Ocean Foundation and you as a participant in the Ocean Token Exchange, and in relation to any exchange, of Ocean Tokens is to be governed by only a separate document setting out the terms and conditions (the



“SAFTE”) of such agreement. In the event of any inconsistencies between the SAFTE and this Information Memorandum, the former shall prevail.

No regulatory authority has examined or approved of any of the information set out in this Information Memorandum. No such action has been or will be taken under the laws, regulatory requirements or rules of any jurisdiction. The publication, distribution or dissemination of this Information Memorandum does not imply that the applicable laws, regulatory requirements or rules have been complied with.

There are risks and uncertainties associated with Ocean Foundation and its business and operations, the Ocean Tokens, the Ocean Token Exchange and the Ocean Protocol network. Please refer to the section entitled “Risks and Disclosures” set out at the end of this Information Memorandum.

This Information Memorandum, any part thereof and any copy thereof must not be taken or transmitted to any country where distribution or dissemination of this Information Memorandum is prohibited or restricted.

No part of this Information Memorandum is to be reproduced, distributed or disseminated without including this section and the following sections entitled “Disclaimer of Liability”, “No Representations and Warranties”, “Representations and Warranties By You”, “Cautionary Note On Forward-Looking Statements”, “Third Party Information and No Consent of Other Persons”, “Terms Used”, “No Advice”, “No Further Information or Update”, “Restrictions On Distribution and Dissemination”, “No Offer of Investment Or Registration” and “Risks and Uncertainties”.

Disclaimer of liability

To the maximum extent permitted by the applicable laws, regulations and rules, Ocean Foundation shall not 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 any acceptance of or reliance on this Information Memorandum or any part thereof by you.



No representations and warranties

Ocean Foundation does not make or purport to make, and hereby disclaims, any representation, warranty or undertaking in any form whatsoever to any entity or person, including any representation, warranty or undertaking in relation to the truth, accuracy and completeness of any of the information set out in this Information Memorandum.

Representations and warranties by you

By accessing and/or accepting possession of any information in this Information Memorandum or such part thereof (as the case may be), you represent and warrant to Ocean Foundation as follows:

- (a) you agree and acknowledge that the Ocean Tokens do not constitute securities of any form, units in a business trust, units in a collective investment scheme or any other form of investment in any jurisdiction;
- (b) you are not a citizen or resident of a country the laws of which prohibit or conflict with the Ocean Token Exchange or your participation in the Ocean Token Exchange;
- (c) you agree and acknowledge that this Information Memorandum does not constitute a prospectus or offer document of any sort and is not intended to constitute an offer of securities of any form, units in a business trust, units in a collective investment scheme or any other form of investment in any jurisdiction, or a solicitation for any form of investment, and you are not bound to enter into any contract or binding legal commitment and no cryptocurrency or other form of payment is to be accepted on the basis of this Information Memorandum;
- (d) you acknowledge and understand that no Ocean Token should be construed, interpreted, classified or treated as enabling, or according any opportunity to, token holders to participate in or receive profits, income, or other payments or returns arising from or in connection with the Ocean Tokens or the proceeds of the Ocean Token Exchange, or to receive sums paid out of such profits, income, or other payments or returns;
- (e) you agree and acknowledge that no regulatory authority has examined or approved of the information set out in this Information Memorandum, no action has been or will be taken under the laws, regulatory requirements or rules of any jurisdiction and the publication, distribution or



dissemination of this Information Memorandum to you does not imply that the applicable laws, regulatory requirements or rules have been complied with;

- (f) you agree and acknowledge that this Information Memorandum, the undertaking and/or the completion of the Ocean Token Exchange, or future trading of Ocean Tokens on any cryptocurrency exchange, shall not be construed, interpreted or deemed by you as an indication of the merits of Ocean Foundation, the Ocean Tokens, the Ocean Token Exchange, and the Ocean Protocol;
- (g) the distribution or dissemination of this Information Memorandum, any part thereof or any copy thereof, or acceptance of the same by you, is not prohibited or restricted by the applicable laws, regulations or rules in your jurisdiction, and where any restrictions in relation to possession are applicable, you have observed and complied with all such restrictions at your own expense and without liability to Ocean Foundation;
- (h) you agree and acknowledge that in the case where you wish to exchange for any Ocean Tokens, Ocean Tokens are not to be construed, interpreted, classified or treated as:
 - (i) any kind of currency other than cryptocurrency;
 - (ii) debentures, stocks or shares issued by any person or entity;
 - (iii) rights, options or derivatives in respect of such debentures, stocks or shares;
 - (iv) rights under a contract for differences or under any other contract the purpose or pretended purpose of which is to secure a profit or avoid a loss;
 - (v) units in a collective investment scheme;
 - (vi) units in a business trust;
 - (vii) derivatives of units in a business trust; or
 - (viii) any form of investment;
- (i) you are fully aware of and understand that you are not eligible to exchange for any Ocean Tokens if you are not a Qualified Person, at the time of your intended exchange or exchange for of Ocean Tokens in the Ocean Token Exchange;
- (j) you are legally permitted to participate in the Ocean Token Exchange and all actions contemplated or associated with such exchange, including the holding and use of Ocean Tokens;



- (k) the amounts that you use to exchange for Ocean Tokens were not and are not directly or indirectly derived from any activities that contravene the laws and regulations of any jurisdiction, including anti-money laundering laws and regulations;
- (l) if you are a natural person, you are of sufficient age and capacity under the applicable laws of the jurisdiction in which you reside and the jurisdiction of which you are a citizen to participate in the Ocean Token Exchange;
- (m) you are not obtaining or using Ocean Tokens for any illegal purpose;
- (n) none of: (i) you; (ii) any person controlling or controlled by you; (iii) if you are a privately-held entity, any person having a beneficial interest in you; or (iv) any person for whom you are acting as agent or nominee in connection with this exchange is a senior foreign political figure, or any immediate family member or close associate of a senior foreign political figure, as such terms are defined below;
- (o) A “**senior foreign political figure**” is defined as a senior official in the executive, legislative, administrative, military or judicial branch of a government (whether elected or not), a senior official of a major political party, or a senior executive of a foreign government-owned corporation. In addition, a “**senior foreign political figure**” includes any corporation, business or other entity that has been formed by, or for the benefit of, a senior foreign political figure. “Immediate family” of a senior foreign political figure typically includes such figure’s parents, siblings, spouse, children and in-laws. A “**close associate**” of a senior foreign political figure is a person who is widely and publicly known to maintain an unusually close relationship with such senior foreign political figure, and includes a person who is in a position to conduct substantial domestic and international financial transactions on behalf of such senior foreign political figure.
- (p) if you are affiliated with a non-U.S. banking institution (a “**Foreign Bank**”), or if you receive deposits from, make payments on behalf of, or handle other financial transactions related to a Foreign Bank, you represent and warrant to Ocean Foundation that: (i) the Foreign Bank has a fixed address, and not solely an electronic address, in a country in which the Foreign Bank is authorized to conduct banking activities; (ii) the Foreign Bank maintains operating records related to its banking activities; (iii) the Foreign Bank is subject to inspection by the banking authority that licensed the Foreign Bank to conduct its banking activities; and (iv) the Foreign Bank does not



provide banking services to any other Foreign Bank that does not have a physical presence in any country and that is not a regulated affiliate;

- (q) you have a basic degree of understanding of the operation, functionality, usage, storage, transmission mechanisms and other material characteristics of cryptocurrencies, blockchain-based software systems, cryptocurrency wallets or other related token storage mechanisms, blockchain technology and smart contract technology;
- (r) you are fully aware and understand that in the case where you wish to exchange for any Ocean Tokens, there are risks associated with Ocean Foundation and its respective businesses and operations, Ocean Tokens, the Ocean Token Exchange, and the Ocean Protocol;
- (s) you bear the sole responsibility to determine what tax implications an exchange for Ocean Tokens may have for you and agree not to hold Ocean Foundation or any other person involved in the Ocean Token Exchange liable for any tax liability associated with or arising therefrom;
- (t) you agree and acknowledge that Ocean Foundation is not liable for any direct, 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 any acceptance of or reliance on this Information Memorandum or any part thereof by you;
- (u) you waive the right to participate in a class action lawsuit or a class wide arbitration against Ocean Foundation and/or any person involved in the Ocean Token Exchange and/or with the creation and distribution of Ocean Tokens; and
- (v) all of the above representations and warranties are true, complete, accurate and non-misleading from the time of your access to and/or acceptance of possession this Information Memorandum or such part thereof (as the case may be).

Cautionary note on forward-looking statements

All statements contained in this Information Memorandum, statements made in press releases or in any place accessible by the public and oral statements that may be made by Ocean Foundation or its directors, executive officers or employees acting on behalf of Ocean Foundation (as the case may be), that are not statements of historical fact, constitute “forward-looking statements”. 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 the exclusive means of identifying forward-looking statements. All statements regarding Ocean Foundation’s business strategies, plans and prospects and the future prospects of the industry which Ocean Foundation is in are forward-looking statements. These forward-looking statements, including but not limited to statements as to Ocean Foundation’s prospects, future plans, other expected industry trends and other matters discussed in this Information Memorandum regarding Ocean Foundation are matters that are not historic facts, but only predictions.

These forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause the actual future results, performance or achievements of Ocean Foundation to be materially different from any future results, performance or achievements expected, expressed or implied by such forward-looking statements. These factors include, amongst others:

- (a) changes in political, social, economic and stock or cryptocurrency market conditions, and the regulatory environment in the countries in which Ocean Foundation conducts its business and operations;
- (b) the risk that Ocean Foundation may be unable to execute or implement its business strategies and future plans;
- (c) changes in interest rates and exchange rates of fiat currencies and cryptocurrencies;
- (d) changes in the anticipated growth strategies and expected internal growth of Ocean Foundation and the Ocean Protocol network;
- (e) changes in the availability and fees payable to Ocean Foundation in connection with its businesses and operations or in the Ocean Protocol network;
- (f) changes in the availability and salaries of employees who are required by Ocean Foundation to operate their respective businesses and operations;
- (g) changes in preferences of users of the Ocean Protocol network;
- (h) changes in competitive conditions under which Ocean Foundation operates, and the ability of Ocean Foundation to compete under such conditions;
- (i) changes in the future capital needs of Ocean Foundation and the availability of financing and capital to fund such needs;



- (j) war or acts of international or domestic terrorism;
- (k) occurrences of catastrophic events, natural disasters and acts of God that affect the businesses and/or operations of Ocean Foundation;
- (l) other factors beyond the control of Ocean Foundation; and
- (m) any risk and uncertainties associated with Ocean Foundation and its business and operations, the Ocean Tokens, the Ocean Token Exchange and the Ocean Protocol.

All forward-looking statements made by or attributable to Ocean Foundation or persons acting on behalf of Ocean Foundation are expressly qualified in their entirety by such factors. Given that risks and uncertainties that may cause the actual future results, performance or achievements of Ocean Foundation to be materially different from that expected, expressed or implied by the forward-looking statements in this Information Memorandum, undue reliance must not be placed on these statements. These forward-looking statements are applicable only as of the date of this Information Memorandum.

Neither Ocean Foundation nor any other person represents, warrants and/or undertakes that the actual future results, performance or achievements of Ocean Foundation will be as discussed in those forward-looking statements. The actual results, performance or achievements of Ocean Foundation may differ materially from those anticipated in these forward-looking statements.

Nothing contained in this Information Memorandum is or may be relied upon as a promise, representation or undertaking as to the future performance or policies of Ocean Foundation.

Further, Ocean Foundation disclaims any responsibility to update any of those forward-looking statements or publicly announce any revisions to those forward-looking statements to reflect future developments, events or circumstances, even if new information becomes available or other events occur in the future.

Third party information and no consent of other persons

This Information Memorandum includes information obtained from various third party sources (“Third Party Information”). None of the publishers of the Third Party Information has consented to the inclusion of the Third Party Information in this Information Memorandum and is therefore not liable for the Third Party



Information. While Ocean Foundation has taken reasonable action to ensure that the Third Party Information have been included in their proper form and context, neither Ocean Foundation, nor its directors, executive officers and employees acting on its behalf, has independently verified the accuracy, reliability, completeness of the contents, or ascertained any applicable underlying assumption, of the relevant Third Party Information. Consequently, neither Ocean Foundation nor its directors, executive officers and employees acting on their behalf makes any representation or warranty as to the accuracy, reliability or completeness of such information and shall not be obliged to provide any updates on the same.

Terms used

To facilitate a better understanding of the Ocean Tokens being the subject of the exchange by Ocean Foundation, and the businesses and operations of Ocean Foundation, certain technical terms and abbreviations, as well as, in certain instances, their descriptions, have been used in this Information Memorandum. These descriptions and assigned meanings should not be treated as being definitive of their meanings and may not correspond to standard industry meanings or usage.

Words importing the singular shall, where applicable, include the plural and vice versa and words importing the masculine gender shall, where applicable, include the feminine and neuter genders and vice versa. References to persons shall include corporations.

No advice

No information in this Information Memorandum should be considered to be business, legal, financial or tax advice regarding Ocean Foundation, the Ocean Tokens, the Ocean Token Exchange, the Ocean Protocol or the Ocean Protocol network. You should consult your own legal, financial, tax or other professional adviser regarding Ocean Foundation and its business and operations, the Ocean Tokens, the Ocean Token Exchange, the Ocean Protocol and the Ocean Protocol network. You should be aware that you may be required to bear the financial risk of any exchange for of Ocean Tokens for an indefinite period of time.



No further information or update

No person has been or is authorised to give any information or representation not contained in this Information Memorandum in connection with Ocean Foundation and its business and operations, the Ocean Tokens, the Ocean Token Exchange, the Ocean Protocol or the Ocean Protocol network and, if given, such information or representation must not be relied upon as having been authorised by or on behalf of Ocean Foundation. The Ocean Token Exchange shall not, under any circumstances, constitute a continuing representation or create any suggestion or implication that there has been no change, or development reasonably likely to involve a material change in the affairs, conditions and prospects of Ocean Foundation or in any statement of fact or information contained in this Information Memorandum since the date hereof.

Restrictions on distribution and dissemination

The distribution or dissemination of this Information Memorandum or any part thereof may be prohibited or restricted by the laws, regulatory requirements and rules of any jurisdiction. In the case where any restriction applies, you are to inform yourself about, and to observe, any restrictions which are applicable to your possession of this Information Memorandum or such part thereof (as the case may be) at your own expense and without liability to Ocean Foundation.

Persons to whom a copy of this Information Memorandum has been distributed or disseminated, provided access to or who otherwise have the Information Memorandum in their possession shall not circulate it to any other persons, reproduce or otherwise distribute this Information Memorandum or any information contained herein for any purpose whatsoever nor permit or cause the same to occur.

No offer of investment or registration

This Information Memorandum does not constitute a prospectus or offer document of any sort and is not intended to constitute an offer of securities of any form, units in a business trust, units in a collective investment scheme or any other form of investment, or a solicitation for any form of investment in any jurisdiction. No person is bound to enter into any contract or binding legal commitment and no



cryptocurrency or other form of payment is to be accepted on the basis of this Information Memorandum.

No regulatory authority has examined or approved of any of the information set out in this Information Memorandum. No such action has been or will be taken under the laws, regulatory requirements or rules of any jurisdiction. The publication, distribution or dissemination of this Information Memorandum does not imply that the applicable laws, regulatory requirements or rules have been complied with.

Risks and uncertainties

Prospective acquirors of Ocean Tokens should carefully consider and evaluate all risks and uncertainties associated with Ocean Foundation and its business and operations, the Ocean Tokens, the Ocean Token Exchange, the Ocean Protocol and the Ocean Protocol network, all information set out in this Information Memorandum and the SAFT prior to any exchange for the Ocean Tokens. If any of such risks and uncertainties develops into actual events, the business, financial condition, results of operations and prospects of Ocean Foundation could be materially and adversely affected. In such cases, you may lose all or part of the value of the Ocean Tokens. Please refer to the section entitled “Risks and Disclosures” set out at the end of this Information Memorandum.



Introducing Ocean Protocol

Ocean Protocol is a decentralized data exchange protocol to make data universally available for applications in AI and beyond.

Ocean Protocol uses blockchain technology that allows data to be shared and consumed in a safe, secure and transparent manner. Ocean is a decentralized platform and network that connects providers and consumers of valuable data, while providing open access for developers to build services.

Ocean Protocol facilitates the network and infrastructure to bring together data providers, data consumers, and service providers into a marketplace commons. It does not impose vendor lock-in or extract monopoly rents. The control of the network is decentralized and distributed between the Foundation, the network keepers, the developers, the data providers, and data consumers.

The Ocean Token (OCN) is used as the means of value exchange within the Ocean Protocol network. OCN will be issued in a limited supply over several years.

Keepers who provide verification and network services receive OCN as part of the block reward function.

Ocean Protocol is supported by Ocean Foundation, which is a Singapore-based non-profit foundation. Ocean Foundation's mandate is to:

- (a) development of the Ocean Protocol and activate a community of stakeholders;
- (b) provide guidance for the development of the Ocean Protocol; and
- (c) support the growth, and governance of a vibrant data exchange network and ecosystem based on the Ocean Protocol.

In the conduct of the functions of Ocean Foundation, Ocean Foundation shall abide by the principals and guiding values of, among others, universally accessible data, the equitable distribution of value among the Ocean Protocol community by



ensuring open access to the Ocean Protocol network, and the discouragement of the monopolisation of power.

Why the world needs Ocean Protocol

The world's data is growing exponentially yet is massively under-utilized

In the past 30 years society has witnessed the transition from analog to digital. What the next decade will bring leveraging the power of data is virtually limitless.

While data was primarily a side-effect of successful business operations, today it is a vital element in the smooth operation of all aspects of daily life for consumers, governments, and businesses.

In 2010, the world produced 1 Zettabyte (ZB) of data¹, represented by the cube in Figure 1. In 2016, we produced 16 ZB and by 2025, we will produce 160+ ZB², represented by the large cube occupying most of this page.

Yet, according to McKinsey³, **only 1% of data is analyzed**. Massive amounts of data are collected, then sit dormant on servers.



¹<https://www.apixel.com.sg/blog/the-zettabyte-to-bring-more-business-and-success-to-singapores-economy/>

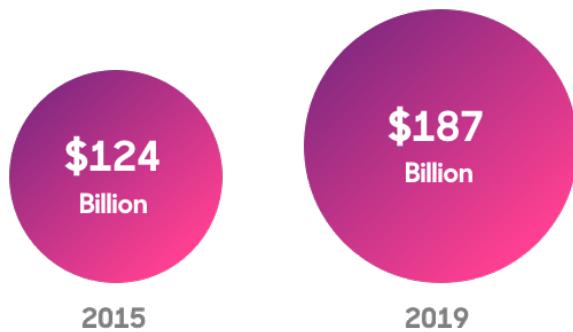
²<https://www.storagenewsletter.com/2017/04/05/total-ww-data-to-reach-163-zettabytes-by-2025-idc/>

³<http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/the-internet-of-things-the-value-of-digitizing-the-physical-world>



Data is immensely valuable, yet remains locked up

Data volumes already exceed manageable levels. It's estimated⁴ that big data and analytics sales will reach **\$187 Billion** by 2019, an increase of **over 50%** to 2015 levels. Even with these spending levels, the majority of data will remain under-utilized.



Leading organizations are learning that data can be a strategic asset. PwC estimated that revenue from commercializing financial data could be worth **\$300 Billion** annually by 2018.⁵ A Capgemini survey⁶ supports the PwC finding: **61%** of respondents state⁷ that big data is now a driver of revenues in its own right.

A free market for data allows AI to become accessible

AI will affect nearly every sector of the economy in the coming years, including advertising, finance, healthcare, retail, automotive, energy, transport and logistics, and aerospace. By 2025, revenues for AI software and services will reach **\$60 Billion**, according to Tractica⁸, which has identified **over 150** specific AI use cases across 29 industries⁹.

AI needs data. Without data, AI models are not accurate. With no accuracy, the AI model is unusable. The winners so far have been companies with vast data resources and internal AI expertise, like Google and Facebook.

⁴ [http://www.informationweek.com/big-data/big-data-analytics/big-data-analytics-sales-will-reach-\\$187-billion-by-2019/d/d-id/1325631](http://www.informationweek.com/big-data/big-data-analytics/big-data-analytics-sales-will-reach-$187-billion-by-2019/d/d-id/1325631)

⁵ <http://sloanreview.mit.edu/article/whats-your-data-worth/>

⁶ <https://www.forbes.com/sites/howardbaldwin/2015/03/23/drilling-into-the-value-of-data/print/>

⁷ <http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/the-internet-of-things-the-value-of-digitizing-the-physical-world>

⁸ <https://www.tractica.com/newsroom/press-releases/artificial-intelligence-software-revenue-to-reach-59-8-billion-worldwide-by-2025/>

⁹ <https://www.tractica.com/research/artificial-intelligence-market-forecasts/>



"Data, not algorithms, might be the key limiting factor to development of human-level artificial intelligence."

Elsewhere, progress in AI is being hampered by a lack of data. According to AI researcher Alexander Wissner-Gross, “many major AI breakthroughs have actually been constrained by the availability of high-quality training sets, and not by algorithmic advances.”¹⁰, and “data, not algorithms, might be the key limiting factor to development of human-level artificial intelligence.”

He says AI advances six times faster when data is available. “The average elapsed time between key algorithm proposals and corresponding advances was about 18 years, whereas the average elapsed time between key data availabilities and corresponding advances was less than 3 years, or about 6 times faster.”

To overcome the lack of data¹¹, researchers resort to simulating data. However, even simulated data needs to start from a source of real data. Researchers also have the challenge that data is hard to move, otherwise known as the data gravity problem.¹² One hundred human genomes can be up to 30 TB and transferring the data over a network is impractical.

The cultivation of high-quality training data is essential to continued advancements in AI. High-quality data might lead to an order-of-magnitude speed up in AI breakthroughs over purely algorithmic advances. There may even be a direct relation between the availability of large amounts of data and AI advances.¹³ The stark reality is that most startups are drowning in algorithms but starving for data.

¹⁰ <https://www.edge.org/response-detail/26587>

¹¹ <https://www.forbes.com/sites/forbestechcouncil/2017/04/10/the-commoditization-of-ai-and-the-long-term-value-of-data/print/>

¹² <https://blog.mccrory.me/2010/12/07/data-gravity-in-the-clouds/>

¹³ <http://www.spacemachine.net/views/2016/3/datasets-over-algorithms>



Challenges of Data Sharing

Data is locked up because sharing has been too risky. It comes down to control, privacy, and security.

Once data is shared, it is out of the hands of the owner and in the wild. Without measures that can provide a semblance of control, an audit trail on usage, and fair compensation schemes, the data will remain locked up.

A World Economic Forum¹⁴ report in 2012 highlighted that organizations and governments are hesitant to share data for risk of violating user trust and confidentiality. Privacy and security concerns must be addressed before personal data can be more widely shared. But even for non-personal data, enterprises have not opened the gates and let their data out.

Traditional, **centralized exchanges** should be the natural marketplace for the sharing of data. However, they are limited by the following reasons:

1. **Hosting** - data needs to be hosted at the data exchange, which is not acceptable for many data providers
2. **In Situ Data** - as an alternative, data could be hosted in situ at the data provider, but the range of is limited for data consumers.
3. **Cost** - data exchange finance themselves via transaction fees, commissions, and services, adding friction and cost.
4. **Pricing** - there is a lack of flexible pricing mechanisms for data used for building applications or model training.
5. **Audit** - data providers must periodically audit and confirm that their licensing terms are being adhered to.
6. **Control** - Data providers have no control over data use once the exchange is given the data.
7. **Trust** - A lack of trust frameworks, consent frameworks, and regulatory frameworks for data sharing.

¹⁴ <https://www.weforum.org/reports/big-data-big-impact-new-possibilities-international-development>



8. **Tracking** - A lack of mechanisms for usage tracking to enable royalty pricing models for data.

A market failure to properly value data and make it available

The market for data is not behaving optimally. The value of data tends to increase the more it is used¹⁵, but it is not being made available for use. There is a firehose of data supply that is under-utilized, unmanageable, and increasing in volume and velocity. Adding to this, there is a pent-up demand for data by AI algorithms that are starving for data, which holds back AI advances in multiple sectors, to the disadvantage of everyone. The problem is that existing data exchanges are limited in their scope and capabilities.

Data providers simply want

1. Controls in how their data is used and the ability to share different data depending on the usage.
2. Traceability on where their data flows and who uses it.
3. Compliance with local and international data regulations.
4. Confidence they will be paid a fair price, regardless of whether their licensing model is one-time, perpetual, or streaming.

Data providers and custodians need to feel safe before they can comfortably share data. Ocean Protocol provides a path to accomplish this.

¹⁵ <https://www.information-management.com/opinion/how-do-you-put-a-value-on-data>



The Ecosystem

A Network, A Protocol and Many Stakeholders.



Ocean Protocol is a business, technical, and governance framework that is brought together to serve the needs all stakeholders in the data ecosystem. Ocean Protocol enables the safe sharing of data and ensures payment to the provider, while guaranteeing control, auditability and transparency to everyone.

Each component of the Protocol, network, and Token is designed to give data providers full control over how they publish and share their data. Marketplaces and intermediaries can provide tools to offer discovery and value-added services to data consumers.

As Ocean Protocol is adopted, governments and public service organizations will need to tackle new challenges related to data governance, data privacy, and the protection of intellectual property. Ocean Foundation is tasked with nurturing and growing the ecosystem and working with stakeholders in solving issues that arise.



Data Providers

Any enterprise, government, group or data custodian that possesses valuable but under-utilized data.

Data Consumers

Any enterprise, government, startup or university that needs data for analysis and training AI/ML models.

Community

The general public, legislators, oversight agencies, internet advocates that wish to monitor and contribute their input to shape how data is used.

Marketplaces

Any portal that acts as a market, bringing buyers and sellers together.

Developers

Anyone who wants to build value-added services or marketplaces on top of Ocean Protocol.

Powering a Two-Sided Market for Data



Data Providers

- Store data on premise, in the cloud, or on decentralized networks such as IPFS, Swarm, or Storj.
- Publish data for sharing
- Curate free public data for a share of the block reward.
- Set pricing for data via the protocol to prevent vendor lock-in.
- Sell data via a marketplace provider or directly using Ocean Protocol reference marketplace.
- Choose from multiple pricing models
- Have control over who gets to buy data.
- Have visibility into who has touched or accessed the data.
- Have control over the usage model –time limited, one-time use, perpetual, and more.
- Sell data without exposing or revealing it.

Data Consumers

- Discover data for your needs, from anywhere on Earth.
- Buy from the marketplace with the best selection, UI, or customer service.
- Access free public data.
- Transparent pricing.
- Clear usage guidelines on data that you buy.
- Check samples of data before buying to ensure quality.
- See data quality reviews and reputation ratings.
- Bring AI models to the data, train them and then harvest the results without needing to see the data.
- Keep track of the data you've purchased and used.



Tokens Are the Native Currency of the Protocol & Network



The Ocean Tokens (OCN) are used on the Ocean Protocol network as the means of value exchange, to power the protocol and incentivize the keeper nodes of the network.

The Ocean Token is inseparable from the Ocean Protocol and Ocean Protocol network.

Earn Ocean by providing data

Data providers sitting on large sets of latent data can now publish data for sharing using a variety of pricing mechanisms, while maintaining full control over the data and complying with data privacy and compliance regulations.

Earn Ocean for curating data

Huge amounts of valuable public data sits unused on servers, always at risk of being removed when the funding dries up or when the political climate changes. Ocean Protocol network incentivizes the publication, curation and conservation of public data by expanding the market of buyers.



Earn Ocean by being a marketplace

Data marketplaces can connect to Ocean Protocol network to leverage their existing data and find new buyers. Meanwhile, developers, corporations, and governments with new ideas can build value-added services on top of the protocol, or launch their own data marketplace.

Earn Ocean for providing network services

Network keepers provide validation and verification services for the network, as well as store the blockchain history of transactions.



Ocean Protocol is being led by DEX, and BigchainDB

Ocean Protocol is the sum of everything we've learned through our mutual journey to develop blockchain technology, our deep experience in AI/ML, and our expertise in Big Data and data exchanges.

October	2013	DEXTRA Alpha launch for Singapore Smart City initiative	For ascribe.io, we developed a service and protocol to register and license intellectual property on blockchain. At Ocean Foundation, data is treated as intellectual property.
February	2015	ascribe Production Release	In building AI/ML tools for image recognition, we experienced first-hand the difficulty in getting data. We built our own webcrawler and spent \$100k on AWS in 3 months.
May	2015	DEX platform launch with 250 data providers	With DEX, we learned the challenges in sharing data: that data providers wanted control over privacy, licensing, pricing, security and to have transparency and auditability over their data so they could comply with laws and get fair value.
July	2015	BigchainDB project start, a scalable blockchain database	We built BigchainDB, a core blockchain technology uniquely suited to handle data in a scalable manner, while connecting to IPFS, Ethereum, IOTA, and other decentralization technologies.
October	2015	coalaip.org project with IPFS, Consensus / Ujo, COALA & others	
February	2016	BigchainDB v0.1 Released in San Francisco	
October	2016	IPDB Testnet Released	
October	2016	COALA IP v1.0 Released	
December	2016	Blog Articles on combining blockchain & AI	
January	2017	Ocean Project start, with DEX and BigchainDB	
May	2017	AVDEX MVP Released at Consensus 2017 in New York	



With IPDB, we developed the methods to deploy a global database network and design appropriate governance models that can stay true to the values and intent of decentralization, where power should be spread to the community.

It's as if all of our learnings were streams and tributaries of knowledge that would eventually converge together, at Ocean.



Customers & Partners

To create a vibrant ecosystem that can make data universally available, the Ocean Protocol Foundation has signed agreements with a host of stakeholders ranging from the national government of Singapore, multinational data providers, data consumers, data marketplaces, leading service providers and technology partners.

Singapore is the lead government partner for Ocean Protocol

We are supporting Singapore's goal to be the pre-eminent hub for data sharing around the planet. Singapore will coordinate the relevant ministries and agencies to provide an approved legal and regulatory framework for data sharing by industry and government alike. This framework includes partners such as DEX, PwC and cloud service providers such as Microsoft Azure, who will provide necessary data governance and technical services for approved sandboxes.

Technical and regulatory sandboxes will allow all participants to remain compliant with regulations while experimenting with Ocean Protocol and marketplaces. The sandboxes will lead to accelerated learning and faster go-to-market adoption for all participants, while providing regulators with the ability to update governance rules required to operate decentralized data marketplaces..

Singapore is supporting an 18-month development roadmap with DEX and Ocean Foundation, that enables safe, secure, trusted access to government and multinational corporation data, with clear milestones and targets to unlock value across six industry verticals. Our work will allow Ocean Foundation to build a generalized data exchange protocol that can be applied to all jurisdictions, forging a path to resolve data governance and data privacy challenges, while protecting intellectual property.



Participating Agencies and Authorities of Singapore Government



Industry Partners

With the support of Singapore, all companies can participate in the data sharing sandboxes, assuming that they receive approvals from their headquarters. Based on the progress in building the decentralized data exchange protocol, we hope that more companies will embark on the path to unlock their data.

The first group of Data Providers and Consumers will be announced shortly. If you would like to explore more or contribute data, please contact us at oceanprotocol.com.



Service & Technology Partners



Tax



Data Governance



KYC, Intake



Legal



Ethics



Data Analytics



Secure ML



Grand Challenges



Data Audit



Governance



AI Marketplace

Lead Data Marketplaces

Ocean Protocol and Ocean Protocol network will be more viable if, on top of enterprises and governments, other data exchanges and marketplaces integrate with the protocol and offer their data for discovery.

To this end, DEX plays a unique role. As a founding member of Ocean Foundation and the lead marketplace user, DEX will release a reference implementation of their decentralized data marketplace under an open source license. This means existing data marketplaces and new entrants can freely use the code and logic that DEX creates to build competing products on the Ocean Network.

The role of DEX is to define an end-to-end data sharing solution that can meet the demands of all stakeholders, or provide a framework for them to build their own. In a co-development approach, DEX will take the lead to execute development sprints with government and industry in regulatory sandboxes in multiple verticals.

DEX is incentivized to allow competition and grow the network because they will receive an allotment of genesis OCN. If the tokens rise in value because the network and ecosystem are thriving, DEX benefits. At the same time, by being the first marketplace participant, DEX will have the first view on which additional services and products can be offered to customers when the surge of latent, valuable data gets unlocked.



DEX PTE Ltd



The first group of Data Marketplaces will be announced shortly. If you would like publish data from your data marketplace, please sign-up on oceanprotocol.com.



Technical Whitepaper

Ocean: A Decentralized Data Exchange Protocol

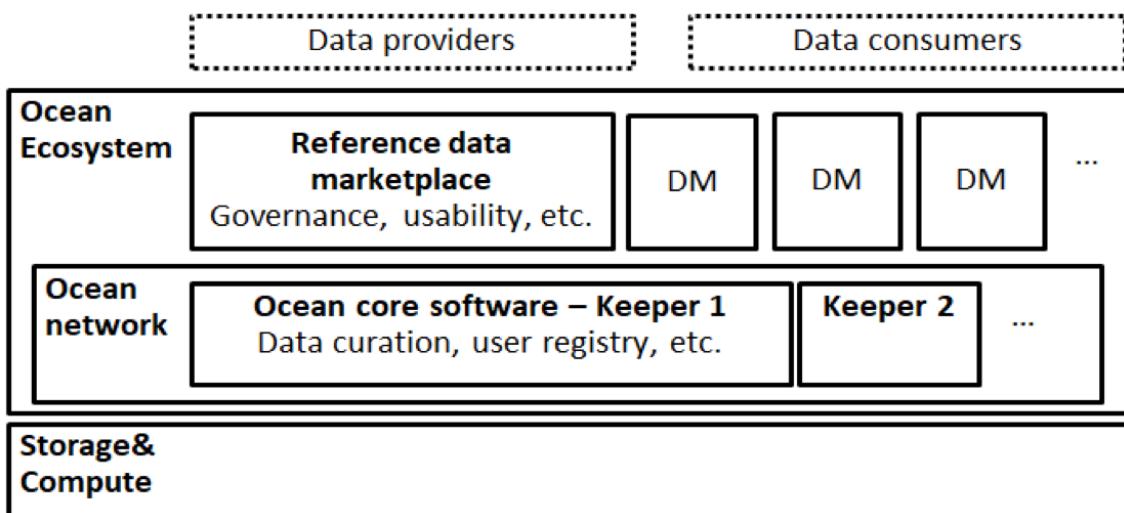
This paper presents a decentralized data marketplace protocol and network called Ocean, on which data marketplaces can be built.

The whitepaper will shortly be available for download at oceanprotocol.com



The world has recognized the value of data, but it's been very difficult to establish a price for the data (especially non-fungible data) while reconciling privacy concerns. Many enterprises have tremendous amounts of data, but have difficulty exploiting it. Conversely, many startups have deep expertise in artificial intelligence (AI), but lack the data to make their AI models perform. To address this problem, data marketplaces have emerged, but they are silos themselves.

Ocean is a protocol and network to ease building of decentralized data marketplaces. Ocean handles storing of the metadata (who owns what), links to the data itself, and data IP licensing information. On top of Ocean there can be thousands of data marketplaces and exchanges, all accessing the same data. Each marketplace acts as the last mile in connecting buyers and sellers. Crucially, pricing offers are at the shared Ocean layer, not at the marketplace layer, to help liquidity and avoid lock-in of a dataset offer to a given marketplace. Ocean incentivizes uploading data, especially for data commons. Each dataset is controlled by the respective rights holder, with privacy measures. Ocean provides programmable market mechanics, making fair yet flexible pricing easy. Ocean is designed for industrial scale usage.



Ocean Protocol will deploy state-of-the-art blockchain technologies for pricing, intellectual property licensing (COALA IP), tokenized read permissions, DPoS consensus and on-premise computing.



Ocean Token

Ocean Protocol uses a native utility token, Ocean Token (OCN) to power the protocol, as a means of value exchange, and to incentivize the keeper nodes of the network. The token is inseparable from the protocol and network.

Ocean Tokens will be issued in a limited supply over an extended period of time. Network keepers who provide verification and network services earn Ocean Token. Tokens may in the future be traded on cryptocurrency exchanges or converted for fiat currencies such as the USD and EUR.

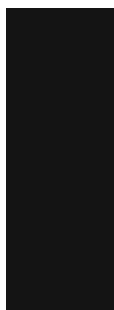
Monetary Policy

Supply	Limited and capped at 1.41 billion tokens
Minting	Block reward, with a block interval in seconds
Genesis Allocation	To fund development, deployment and reward the Founding team
Utility	Token is inseparable from the network, protocol, and acts as the means of exchange



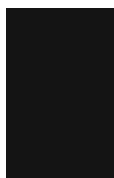
Token Allocations

The distribution of tokens is designed to incentivize the Founding team, investors and network participants to build a thriving and sustainable ecosystem for unlocking data. Significant work will be required to build the full range of software and tooling to serve all stakeholders as the protocol is developed.



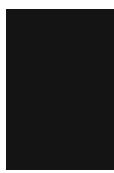
45% - Network Keepers and Data Providers (Minted Block Reward)

Maintain the blockchain, validate transactions, provide data



25% - Acquirors (Genesis)

Funding the protocol development, partnerships, lead customers and providing liquidity (with 10% in reserve for a secondary token exchange)



20% - Founding Teams – BigchainDB and DEX (Genesis)

Core protocol, network and software development, along with business development, marketing and community support



10% - Ocean Protocol Foundation (Genesis)

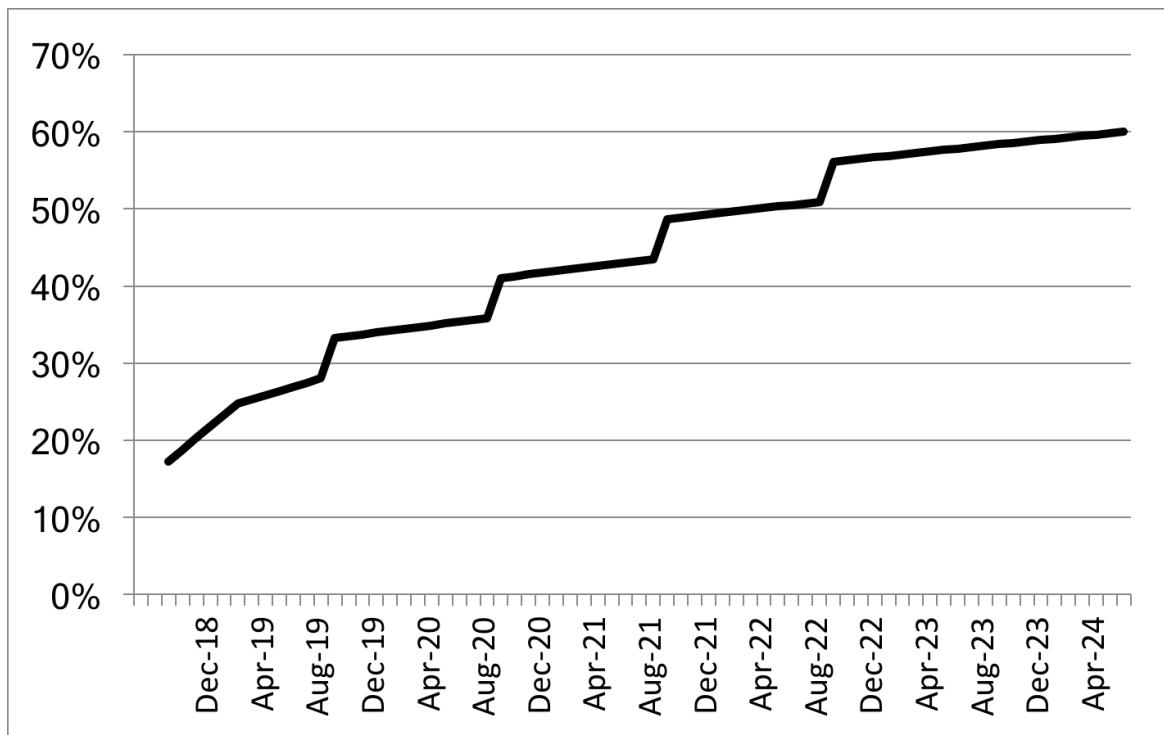
To build the community and ecosystem via partnerships, grants, prizes, rewards and bounties.

Token Release Schedule

OCN will be released to the community according to the following plan:

Minting (Block Rewards)	Asymptotic release with 50% of tokens released in 10 years
Acquirors	15% on network launch 10% withheld for secondary offering
Founding Teams	Released in 6 equal tranches over 5 years, starting at the beginning of Q4/2017
Ocean Foundation	Released in 6 equal tranches over 5 years, starting at the beginning of Q4/2017

The cumulative number of OCN released will abide by the following graph and timeline:



OCN Supply from Network Launch for the First Six Years (10/2018-09/2024)

As seen above, approximately 60% of all OCN will be emitted within 6 years (assuming a network launch on 11/2018), with the possibility that the Foundation conducts a Secondary Token Exchange of up to 10% of the total OCN.



Minting of Block Rewards

A total of **634.5 million** OCN will be emitted by the network. Emissions of block rewards will follow a bounded exponential growth curve where Y-axis represents the total tokens that will be emitted and X-axis represents the time and according to the following formula:

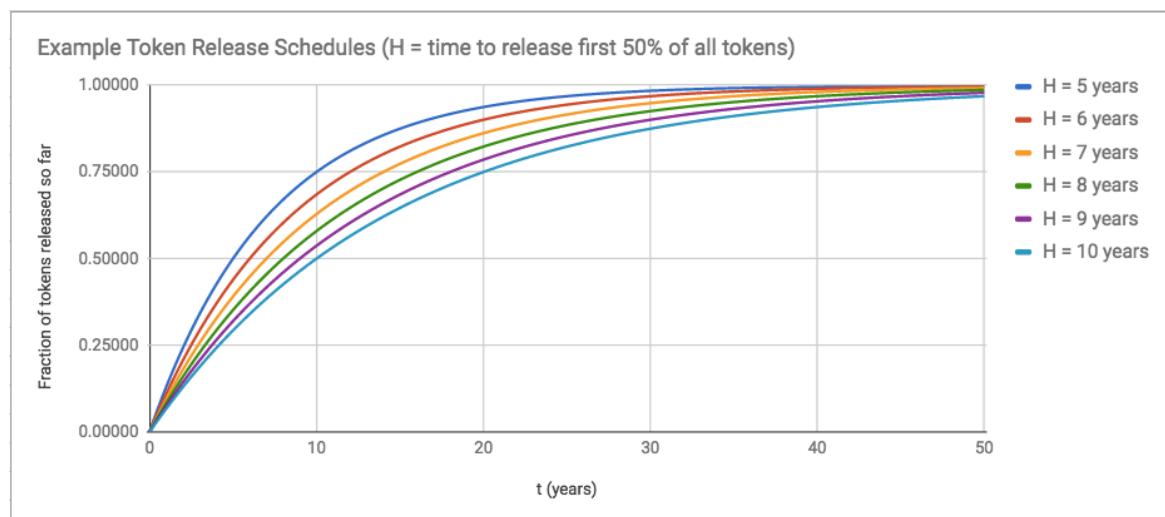
$$M = 1 - 0.5^{\left(\frac{t}{H}\right)}$$

Where:

M = Cumulative Tokens Issued via Block Reward

t = Time (Years)

H = half-life in years



Token Emission Simulations for Half-Lives of Intervals Between 5-10 years

The Ocean protocol will emit 50% of block reward tokens in 10 years.



Token Emission Plan for Network Keepers

Years	Tokens Emitted (%)	Tokens Emitted (Million)	Remaining (Million)
10	50%	317.25	317.25
20	75%	475.88	158.63
30	87.5%	555.19	79.31
40	93.8%	594.84	39.66
50	96.9%	614.67	19.83



Token Distribution

Ocean Foundation will offer Ocean Tokens (OCN) for exchange to the community to fund and build the Ocean protocol software and network.

Much work is needed to build the multitude of components to handle the end-to-end processing of data and make it easy to share data.

BigchainDB will be contracted to build the mining software, client software, and technology specific plug-ins. Meanwhile, DEX will focus on regulatory sandboxes, compliance issues, marketplace development, business development, marketing and working directly with enterprises, to help them along the complex journey to unlock data. Both teams, along with the Foundation will work to activate a vibrant community around the protocol.

There's a reason why data has been locked up and siloed until now. We can't under-estimate the long-term focus and effort needed to shift mindsets, create incentive structures and build the necessary tooling to let organizations to easily share data.

Token Distribution Design

To design the token distribution, our guiding principle is **fairness**. With a broad set of stakeholders; data providers, data consumers, researchers, the crypto-community, institutional investors, and the founding teams, we are crafting a token distribution that aims to respect each stakeholders' value and perspective.

For the design to be acceptable to everyone, we do not want an unacceptable price gap between early and public acquirors. The valuation of the Ocean Protocol network needs to benchmark to other projects of similar maturity and quality. We



need to ensure that the Ocean Token price reflects the intrinsic utility value of the Ocean Token.

High-Level Design Objectives

- Use **Fairness** to all stakeholders as our guiding principle
- Aim for the broadest distribution possible, either via the token distribution event or via airdrops
- Incentivize network users and participants, such as data providers and AI researchers
- Reward long-term acquirors and believers in the utility value of the network
- Ensure that the Foundation receives the required funds to build the network, activate the ecosystem and meet any potential liabilities
- Ensure that early acquirors receive a “better” deal for taking on more risk and accepting lock-up periods.
- Ensure that data providers and large enterprises are comfortable with the token distribution, so that they will be comfortable sharing data and transacting on the network
- Benchmark Ocean Protocol network and Ocean Token valuations to other projects of similar maturity and quality
- Respect and comply with applicable securities laws.

With our design, we would like upwards of **20,000 acquirors** to obtain OCN.

Distribution Phases for Purchasers

Ocean Foundation will exchange **25%** of the total OCN supply to acquirors. The distribution to have four phases:

1. Seed
2. Pre-Launch
3. Public Token Exchange
4. Secondary Token Exchange



Seed, Post-Seed and Public Token Exchange

In total, **211.5 Million OCN** will be released during the Seed, Pre-Launch and Public Token Exchange, representing **15%** of the total supply of OCN.

Seed and Pre-Launch

We aim to raise no more than **25M€** for the initial development of the protocol, network and ecosystem during the Seed and Pre-Launch.

The **Seed** phase is reserved for early acquirors who funded both DEX and BigchainDB to get us to this point and advisors that have provided product, technical and business feedback leading up to the token exchange. These are our **Champions**, many who have been with us since mid-2013 when cryptocurrency was unacceptable to all but a few groups. The money raised will be used to fund the initial Ocean Protocol proof-of-concept and pay suppliers for the token distribution event.

The **Pre-Launch** phase is designed to recruit a broader range of community members, including data providers who have a clear desire and need to publish their data via Ocean Protocol. These **Early Community & Ecosystem** stakeholders will commit to running proof-of-concept projects to help develop various components of the protocol and commit to publishing large datasets upon network launch, in exchange for access to the Pre-Launch. Large enterprises typically hold large datasets, so we have the flexibility to dynamically allocate more tokens to enterprises, if there is demand. Conversely, if the community demonstrates strong enthusiasm for the token distribution, we will allocate more towards the community.

All acquirors will sign **SAFTEs** (Simple Agreements for Future Token Exchange – pronounced ‘safety’), which will, if applicable and required under relevant laws and regulations, be registered with the relevant regulatory bodies. Furthermore, **Seed** acquirors will receive their tokens in equal installments over 1 year after network launch, while **Pre-Launch** acquirors receive their tokens in equal installments over 6 months after network launch. This means that in return for early access, Seed and Pre-Launch acquirors will be locked-in for a longer period of time than Public acquirors.



Token Distribution and Lock-Ups by Phase

Phase	Tokens Distributed Over	Installments
Seed	1 year	12
Pre-Launch	6 months	6
Public Token Exchange	Immediately	1

Public Token Exchange

The exchange of OCN will be open to everyone and will be executed just prior to network launch. Between 40-120 million tokens will be made available to public acquirors.

There are two current options to release tokens to the public, (1) a “rising tide” approach or a (2) Dutch auction.

For the “rising tide” approach, a hard cap will be announced shortly before the Public Token Exchange. Each whitelisted acquirer would have a minimum guaranteed allocation of OCN that assumes that everyone would contribute their full contribution allocation. For the token distribution event, each acquiror may send more than their minimum allocation amount with the hope that some others may not have fully used their allocations. In this way, all unused allocations get re-allocated to others (hence “rising tide”) until a hard cap is reached. This approach ensures the widest possible distribution of OCN, while limiting the raise amount for the Foundation.

For the Dutch auction, an initial price for OCN will be set. As the auction progresses, the price of OCN decreases. Acquirors may submit their bids at the price they feel comfortable with.

We intend to poll the community on the approach that they prefer – the broadest possible distribution of tokens with a “rising tide” or the approach that gives the best price discovery mechanism.

To get the latest updates for the Public Token Exchange, please sign up at
oceanprotocol.com.



Secondary Offering

An additional 141 Million OCN will be held in reserve for a future secondary exchange. The trigger for a secondary exchange could be one or more of the following:

1. Need for additional liquidity in the market;
2. Need for additional funds to build a vibrant community.

If none of the triggers occur within a reasonable timeframe, Ocean Foundation reserves the right to burn the non-issued Ocean Tokens or grant tokens pro rata to existing token holders. The Foundation can also disburse the tokens on open exchanges according to a public schedule, in lieu of a formal secondary token distribution.

Acquiror Eligibility

To participate in the sale, all acquirors must be whitelisted and have confirmed their identities. Identities will be checked against international lists for money laundering and terrorism. This is to ensure that individuals do not try to acquire more tokens under fake identities and to comply with international laws.

The identification process will include the following:

1. Citizenship confirmation;
2. Residency confirmation;
3. Email address, date of birth, and phone number.

Note to Residents of the United States: We are offering access to the token distribution pre-launch under a Regulation D exemption of the Securities and Exchange Commission which means that the offering is a private placement and all US resident acquirors **must** be accredited investors to participate. An electronic Form D will be filed with the SEC. The public token distribution will be open to all US residents without restriction.

Note to the Residents of Canada: We are offering access to the token distribution pre-launch under a National Instrument 45-106 Prospectus and Registration Exemption, which means that the offering is a private placement and all Canadian resident acquirors **must** be accredited investors to participate. However due to



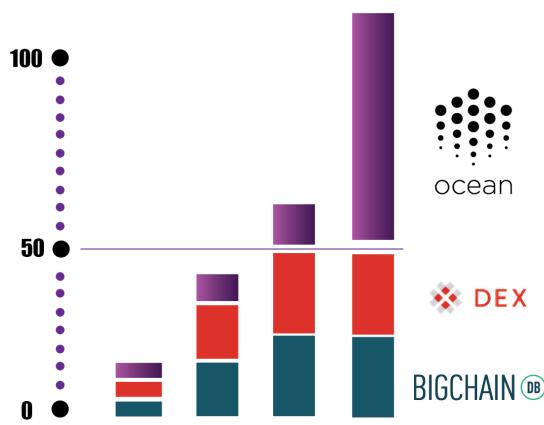
Canadian know-your-customer laws¹⁶ going into effect on January 24, 2018, we must see a physical original of each identification document. This rule is extremely cumbersome and means that we will not be able to perform KYC in Canada unless we have an agent physically located in Canada. Thus unless you can fly to Germany or Singapore for a physical check of your documents, you will not be able to participate in the token distribution. We're sorry.

Note to Residents of the EU: We will comply with all requirements of GDPR for the storage and processing of your personal data, which means that your data never leaves the European Union.

¹⁶ <http://www.fintrac-canafe.gc.ca/guidance-directives/client-clientele/Guide11/11-eng.asp>

Distribution of Funds

The Ocean Token Exchange will have a capped number of tokens offered to the community.



Proceeds from the sale of tokens to token buyers will be distributed in the following manner¹⁷:

- 45% to BigchainDB, up to a maximum of 25M€
- 45% to DEX, up to a maximum of 25M€
- 10% to Ocean Foundation up to approximately 60M€, then all remaining proceeds.

Example Funds Distribution

Scenario A

50M€ raised:

- 22.5M€ to BigchainDB (45%)
- 22.5M€ to DEX (45%)
- 5M€ to Ocean Foundation (10%)

Scenario B

75M€ raised:

- 25M€ to BigchainDB
- 25M€ to DEX
- 25M€ to Ocean Foundation

¹⁷ Net of launch expenses - legal, marketing, KYC, launch platforms, staff, etc. and Singapore income taxes



Use of Funds

The goal of the Token Distribution is to provide resources to build the protocol, network, and ecosystem around Ocean Protocol to sustain it in the long-term.

We believe that a maximum cap of the proceeds raised to each of the founding partners—BigchainDB and DEX—is fair and sufficient to build the technology and kickstart the business development. The remaining funds will be kept by Ocean Foundation for ecosystem, advocacy, lobbying and community efforts.

Ocean Foundation

Ocean Foundation will take the lead to build a vibrant and healthy ecosystem. Given that data is currently designed to be siloed and locked up in many organizations, we believe that a long-term and resource-intensive effort is needed to educate, lobby government, seed the ecosystem with advocates, and help organizations along the journey to unlock their data. Large organizations also need to feel comfortable that Ocean Foundation will be a long-term and reliable partner.

Please refer to our forthcoming Ecosystem whitepaper on oceanprotocol.com to learn more about how we'll deploy the funds.

All funds retained by Ocean Foundation will be audited by an internationally respected auditing firm. We currently have retained PwC to support on data governance and KPMG to support on tax planning. One of these two organizations will likely be retained to provide auditing of the funds of Ocean Foundation, providing the community with transparency and confidence that funds are being properly deployed.



BigchainDB & DEX

BigchainDB will be responsible for deploying the technology and protocol components. DEX will be responsible for deploying the features of an initial data marketplace application on top of Ocean Protocol, building technology, and working with public and private entities to help unlock their data.

Ocean Foundation will strike a 5-year deal with BigchainDB and DEX to build the following components:

Ocean Protocol core (Keeper) software

This includes:

- Support the designed token dynamics, including token storage and smart contracts business logic. Support for free, non-fungible, fungible, and programmable pricing schemes
- Individual identity / KYC, individual reputation, data identity, data reputation
- Support for intellectual property claims & licensing (e.g. COALA IP)
- Integrate metadata storage, w/ privacy considerations (e.g. integrate zero knowledge proofs)
- Integrate blob storage (on-premise, cloud, decentralized), w/ privacy considerations
- Integrate compute (on-premise, cloud, decentralized), w/ privacy considerations (e.g. integrate secure containers, homomorphic encryption)
- Short time scale governance / consensus (e.g. is a transaction valid)
- Long time scale governance (e.g. how to update protocol)
- Well-defined http API and drivers (JS, Py, etc)
- Individual node deployment tools (e.g. Kubernetes, nginx)
- This includes work to improve SW of building blocks as needed. This means BigchainDB + IPDB (metadata storage), but also work on IPLD (data interoperability), ILP (value interoperability), COALA IP, IPFS, Ethereum etc. as needed



Management & analytics of Ocean Protocol network

- Dashboard for management & analytics of individual nodes
- Dashboard for analytics on overall network
- Dashboard for voting in long time scale governance

Data marketplace template software & legals (to be used by DEX; open-sourced for others)

This includes:

- GUI for discovering data
- GUI for making commons data available in Ocean
- GUI for buying & selling data according to various pricing schemes
- Data compliance frameworks (e.g. GDPR)
- Data quality frameworks
- Well-defined http API and drivers (JS, Py, etc)

Software & support to support the ecosystem and catalyze the community

- Low friction for crypto wallets (e.g. follow latest token protocol)
- Low friction for crypto exchanges
- Hooks into other data networks

Enable and grow the two-sided marketplace



Team

The Ocean team combines a deep background in big data, blockchain, artificial intelligence and data exchanges, with real-world business experience as entrepreneurs, designers and technologists who have started over 20 companies.



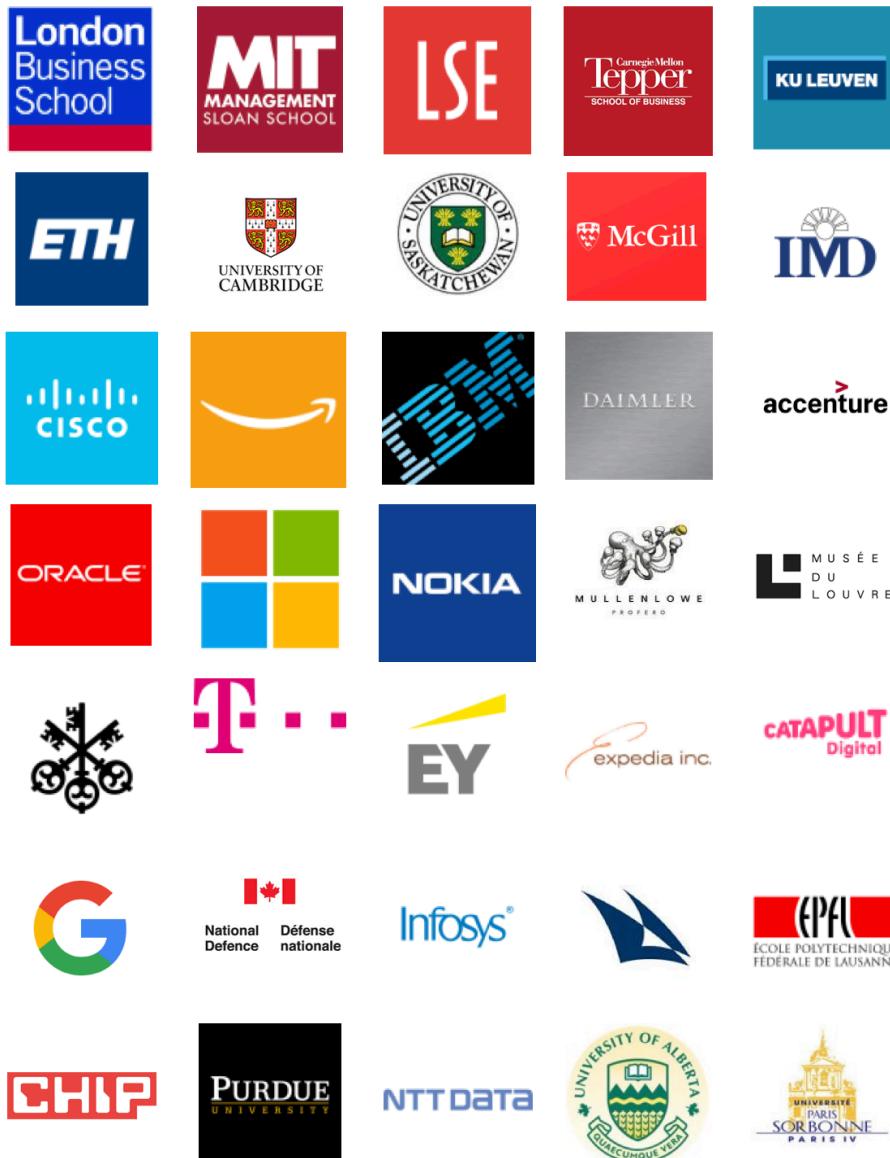
Our diverse team from 18 nations has worked for a wide range of global technology and consulting multinationals, building leading edge technologies and services.

Experts within the team have developed state-of-the-art AI/ML software to help drive Moore's Law forward, calculated gravity assisted trajectories between Earth and Mars, paving the way for low cost space travel, built a dozen banks around the globe, executed data transformation projects for large multinationals, built one of the world's largest digital marketing agency and managed operating budgets in excess of \$30 million.



Team Credentials

Our team is or has been affiliated with the following institutions, organizations and companies.

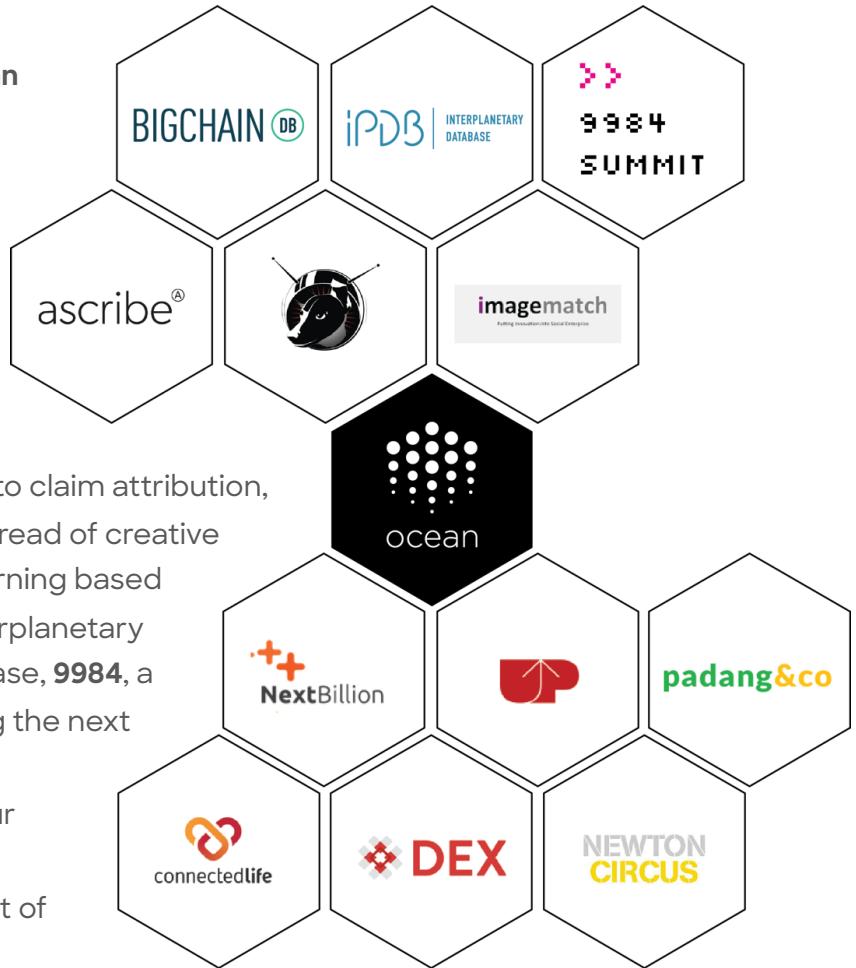




Founding Members

BigchainDB GmbH and **DEX Pte. Ltd.** (a subsidiary of **Newton Circus Pte. Ltd.**) are two companies that are driven to build planetary scale technologies for human scale development. **Ocean Protocol** is the natural point of confluence for our mission.

BigchainDB was founded in 2014 in Berlin, with the mission to give power back to people using blockchain technologies. With breakthrough products of **ascrbe.io**, a service for creators to claim attribution, **WhereOnThe.Net**, to track the spread of creative works, **ImageMatch**, machine learning based image recognition, **IPDB**, the Interplanetary Database, a shared global database, **9984**, a community dedicated to building the next generation of decentralization technologies, and **BigchainDB**, our flagship open source blockchain database, the team has built a set of tools to serve the needs of our community.



BigchainDB is a card-carrying contributor to the **Enterprise Ethereum Alliance**, **Trusted IoT Alliance**, **Decentralized Music Society**, **Decentralized Identity Foundation**, **Estonia eResidency Program**, **eWingz Aviation Working Group** and the **German Bundesblock** working group. We have co-written standards for decentralization for **COALA IP**, **Interledger Protocol**, **DIN (ISO)** standards, and support efforts towards **GDPR** compliance for blockchain technologies.

DEX Pte. Ltd. was founded in 2013 in Singapore, with the mission to enable the sharing of data for data analytics and AI companies.



As part of the **Newton Circus** family of companies, DEX has been working deeply with public and private sector groups to leverage the value of data and build applications, solutions and prediction models to solve real industry, societal and public challenges.

DEX has pioneered data sharing platforms to connect government and industry. DEX was a lead partner of **Data City : Data Nation**, a public, private and international partnership between Singapore, UK and multinationals that provides the data governance and regulatory framework to unlock data and encourage data sharing.



Competitive Products

It's obvious that other teams working on decentralization technology will consider building data exchanges and data protocols. Here are some other projects

Enigma enigma.co

A data marketplace for financial data, and sharing of trading algorithms.

Datum datum.network

A data marketplace for personal and structured data, to be built using BigchainDB technology.

Dentcoin dentcoin.com

A data marketplace for mobile data

Pandora Boxchain github.com/pandoraboxchain

A marketplace for AI kernels, computations and big data powered by Proof of Cognitive Work (PoCW). Pandora Boxchain is a strategic partner of Ocean Protocol.

Streamr streamr.com

A data marketplace for streaming IoT data.

Morpheo arxiv.org/abs/1704.05017

A trusted compute economy for traceable ML on hidden data, on blockchain

Wolk wolk.com

A data marketplace for ad data.

Zenodys www.zenodys.com/wp-content/uploads/zenodys-ico-1pager.pdf

A visual IoT marketplace platform

Ideally, Ocean Protocol can build the tooling and network that allows all these marketplace products to co-exist with each other and leverage Ocean Protocol to reach more customers. For instance, Enigma could build a marketplace on top of



Ocean Protocol to facilitate the trading of time-sensitive financial and corporate data, using the multiple pricing mechanisms provided by Ocean Protocol. Datum advertises BigchainDB as part of its technology stack, meaning Ocean Protocol will be compatible if Datum decides to open a marketplace using Ocean Protocol.



Risk Factors & Disclosures

Prospective acquirors of the Ocean Tokens should carefully consider and evaluate all risks and uncertainties associated with Ocean Foundation and its business and operations, the Ocean Tokens, the Ocean Token Exchange, the Ocean Protocol and the Ocean Protocol network, all information set out in this Information Memorandum and the SAFTE. If any of such risks and uncertainties develops into actual events, the business, results of operations and prospects of Ocean Foundation could be materially and adversely affected. In such cases, you may lose all or part of the value of Ocean Tokens.

Please read the following risks and warnings before deciding to exchange for Ocean Tokens. It should be noted the following list of risks and warnings is not exhaustive. Accordingly, prospective acquirors should not place undue reliance on these statements.

Risks relating to participation in the Ocean Token Exchange

There is no prior market for Ocean Tokens and the Ocean Token Exchange may not result in an active or liquid market for the Ocean Tokens.

Ocean Tokens are intended to be native tokens to be used on the Ocean Protocol network, and the Ocean Foundation has not and may not actively facilitate any secondary trading or external exchange of Ocean Tokens. In addition, there is and has been no public market for the Ocean Tokens. In the event that the Ocean Tokens are traded on a cryptocurrency exchange, there is no assurance that an active or liquid trading market for the Ocean Tokens will develop or if developed, be sustained after the Ocean Tokens have been made available for trading on such cryptocurrency exchange. There is also no assurance that the market price of the Ocean Tokens will not decline below the value at which it was exchanged for (“**Exchange Value**”). The Exchange Value may not be indicative of the market price of the Ocean Tokens after they have been made available for trading on a cryptocurrency exchange.



An Ocean Token is not a currency issued by any central bank or national, supra-national or quasi-national organisation, nor is it backed by any hard assets or other credit. Ocean Foundation is not responsible for nor does it pursue the circulation and trading of Ocean Tokens on the market. Trading of Ocean Tokens merely depends on the consensus on its value between the relevant market participants, and no one is obliged to purchase any Ocean Token from any holder of the Ocean Token, including the purchasers, nor does anyone guarantee the liquidity or market price of Ocean Tokens to any extent at any time. Accordingly, Ocean Foundation cannot ensure that there will be any demand or market for Ocean Tokens, or that the Exchange Value is indicative of the market price of Ocean Tokens after they have been made available for trading on a cryptocurrency exchange.

Negative publicity may materially and adversely affect the price of the Ocean Tokens

Negative publicity involving (a) Ocean Foundation; (b) the Ocean Protocol; (c) the Ocean Network; (d) the Ocean Tokens; or (e) any of the key personnel of Ocean Foundation, may materially and adversely affect the market perception or market price of the Ocean Tokens, whether or not such publicity is justified.

There is no assurance of any success of the Ocean Protocol

The value of, and demand for, the Ocean Tokens hinges heavily on the performance of the Ocean Protocol. There is no assurance that the Ocean Protocol will gain traction after its launch and achieve any commercial success.

The Ocean Protocol has not been fully developed, finalised and integrated and is subject to further changes, updates and adjustments prior to its launch. Such changes may result in unexpected and unforeseen effects on its projected appeal to users, and hence impact its success.

While Ocean Foundation has made every effort to provide a realistic estimate, there is also no assurance that the cryptocurrencies raised in the Ocean Token Exchange will be sufficient for the development and integration of the Ocean Protocol. For the foregoing or any other reason, the development and integration of the Ocean Protocol and network may not be completed and there is no



assurance that it will be launched at all. As such, distributed Ocean Tokens may hold little worth or value, and this would impact its trading price.

The trading price of the Ocean Tokens may fluctuate following the Ocean Token Exchange

The prices of cryptographic tokens in general tend to be relatively volatile, and can fluctuate significantly over short periods of time. The demand for, and corresponding the market price of, the Ocean Tokens may fluctuate significantly and rapidly in response to, among others, the following factors, some of which are beyond the control of Ocean Foundation:

- (a) new technical innovations;
- (b) analysts' speculations, recommendations, perceptions or estimates of the Ocean Tokens' market price or Ocean Foundation's financial and business performance;
- (c) changes in market valuations and token prices of entities with operations similar to that of Ocean Foundation that may be made available for sale and purchase on the same cryptocurrency exchanges as the Ocean Tokens;
- (d) announcements by Ocean Foundation of significant events, for example partnerships, sponsorships, new product developments;
- (e) fluctuations in market prices and trading volume of cryptocurrencies on cryptocurrency exchanges;
- (f) additions or departures of key personnel and/or advisors of Ocean Foundation;
- (g) success or failure of the management of Ocean Foundation in implementing business and growth strategies; and
- (h) changes in conditions affecting the blockchain or financial technology industry, the general economic conditions or market sentiments, or other events or factors.

The digital assets raised in the Ocean Token Exchange are exposed to risks of theft

Whilst Ocean Foundation will make every effort to ensure that digital assets (such as cryptocurrencies, blockchain assets and/or cryptographic tokens) received from the Ocean Token Exchange are securely held at its designated address on



the relevant blockchain (“**Designated Address**”) or address(es) on the relevant blockchain as Ocean Foundation may transfer such funds to (“**Receiving Address(es)**”) through the implementation of security measures, there is no assurance that there will be no theft of the cryptocurrencies as a result of hacks, mining attacks (including but not limited to double-spend attacks, majority mining power attacks and “selfish-mining” attacks), sophisticated cyber-attacks, distributed denials of service or errors, vulnerabilities or defects on such Designated Address, Receiving Address(es), the Bitcoin blockchain, the Ethereum blockchain, or any other blockchain, or otherwise. Such events may include, for example, flaws in programming or source code leading to exploitation or abuse thereof. In such event, even if the Ocean Token Exchange is completed, Ocean Exchange may not be able to receive the cryptocurrencies raised and Ocean Foundation may not be able to utilise such funds for the development of the Ocean Protocol, and the launch of the Ocean Protocol and network might be temporarily or permanently curtailed. As such, the issued Ocean Tokens may hold little worth or value, and this would impact its trading price. The Ocean Tokens are uninsured, unless you specifically obtain private insurance to insure them. In the event of any loss or loss of value, you may have no recourse.

The acquiror may be subject to adverse legal and/or tax implications as a result of the acquisition or transfer of Ocean Tokens

The legal character of cryptocurrency and cryptographic assets remain uncertain. There is a risk that Ocean Tokens may be considered securities in certain jurisdictions, or may be considered to be securities in certain jurisdictions in the future. Ocean Foundation does not provide any warranty or guarantee as to how Ocean Tokens will be classified, and each acquiror will bear all consequences of Ocean Tokens being considered securities in their respective jurisdictions, and bear the responsibility of the legality, use and transfer of Ocean Tokens in the relevant jurisdictions.

Further, the tax treatment of the acquisition or disposal of such cryptocurrency or cryptographic assets might depend on whether they are classified as securities, assets, currency or otherwise. As the tax characterisation of Ocean Tokens remains indeterminate, acquirors must seek their own tax advice in connection with the exchange for Ocean Tokens, which may result in adverse tax consequences or tax reporting requirements for the acquiror.



As Ocean Tokens may be traded on third-party cryptocurrency exchanges in the future, acquirors may buy or sell Ocean Tokens on such exchanges. Existing laws on the circulation or transaction of cryptocurrency or cryptographic tokens in certain jurisdictions may prohibit the transaction or exchange of Ocean Tokens in such jurisdictions or to residents of such jurisdictions. Acquirors must be aware of the restrictions on the secondary trading or external exchange of Ocean Tokens and seek their own legal advice in connection therewith.

Risks relating to the designated address and receiving address(es)

The Designated Address and Receiving Address(es) may be compromised and the cryptocurrencies may not be able to be disbursed

The Designated Address and Receiving Address(es) are designed to be secure. However, in the event that the Designated Address and Receiving Address(es) are, for any reason compromised (including but not limited to scenarios of the loss of keys to such Designated Address and Receiving Address(es)), the funds held at the Designated Address and Receiving Address(es) may not be able to be retrieved and disbursed, and may be permanently unrecoverable. In such event, even if the Ocean Token Exchange is successful, Ocean Foundation will not be able to receive the funds raised and Ocean Foundation will not be able to utilise such funds for the development of the Ocean Protocol, and the implementation of the Ocean Protocol and network might be temporarily or permanently curtailed. As such, distributed Ocean Tokens may hold little worth or value, and this would impact its trading price.

The loss or compromise of information relating to your wallet may affect your access and possession of the Ocean Tokens

Your access to the Ocean Tokens in a cryptocurrency wallet (“Wallet”) depends on, among other things, the safeguards to the information to such Wallet, including but not limited to the user account information, address, private key and password. In the event that any of the foregoing is lost or compromised, your access to the Wallet may be curtailed and thereby adversely affecting your access and



possession to the Ocean Tokens, including such Ocean Tokens being unrecoverable and permanently lost.

The Wallet or Wallet service provider may not be technically compatible with the Ocean Tokens

The Wallet or Wallet service provider may not be technically compatible with the Ocean Tokens which may result in the delivery of Ocean Tokens being unsuccessful or affect your access to such Ocean Tokens.

Risks relating to Ocean Foundation

Ocean Foundation may be materially and adversely affected if it fails to effectively manage its operations as its business develops and evolves, which would have a direct impact on its ability to maintain the Ocean Protocol and consequently the trading price of the Ocean Tokens.

The financial technology and cryptocurrency industries and the markets in which Ocean Foundation operates in have grown rapidly and continue to grow rapidly and continue to evolve in response to new technological advances, changing business models and other factors. As a result of this constantly changing environment, Ocean Foundation may face operational difficulties in adjusting to the changes, and the sustainability of Ocean Foundation will depend on its ability to manage its operations, adapt to technological advances and market trends and ensure that it hires qualified and competent employees, and provide proper training for its personnel.

As its business evolves, Ocean Foundation must also expand and adapt its operational infrastructure. Ocean Foundation's business relies on its blockchain-based software systems, cryptocurrency wallets or other related token storage mechanisms, blockchain technology and smart contract technology, and to manage technical support infrastructure for the Ocean Protocol effectively, Ocean Foundation will need to continue to upgrade and improve its data systems and other operational systems, procedures and controls. These upgrades and improvements will require a dedication of resources, are likely to be complex and increasingly rely on hosted computer services from third parties that Ocean Foundation does not control. If Ocean Foundation is unable to adapt its systems



and organisation in a timely, efficient and cost-effective manner to accommodate changing circumstances, its business strategies, results of operations and prospectus may be adversely affected. If the third parties whom Ocean Foundation relies on are subject to a security breach or otherwise suffer disruptions that impact the services Ocean Foundation utilises, the integrity and availability of its internal information could be compromised, which may consequently cause the loss of confidential or proprietary information, and economic loss.

The loss of financial, labour or other resources, and any other adverse effect on Ocean Foundation's business strategies, results of operations and prospects, would have a direct adverse effect on Ocean Foundation's ability to maintain the Ocean Protocol. As the Ocean Protocol is the main product to which the Ocean Tokens relate, this may adversely impact the trading price of the Ocean Tokens.

There may be weaknesses, vulnerabilities or bugs in the Ocean Tokens' smart contract

Ocean Foundation will make reasonable efforts to ensure that the smart contracts underlying the Ocean Tokens are audited, tested and approved by technical experts. However, as smart contract technology is still in its early stage of development and its application of experimental nature carries significant operation, technological, financial, regulatory and reputational risks, there are inherent risks that such smart contracts could contain weaknesses, vulnerabilities or bugs.

Acquirors of Ocean Tokens should understand and accept that there are no warranties that Ocean Tokens are fit for a particular purpose or do not contain any weaknesses, vulnerabilities or bugs which would cause loss in their worth or value. In the event that any of the aforementioned risks materialises, Ocean Foundation's business strategies, results of operations and prospects may also be adversely affected.

Ocean Foundation may experience system failures, unplanned interruptions in its network or services, hardware or software defects, security breaches or other causes that could adversely affect Ocean Foundation's infrastructure network, and/or the Ocean Protocol.



Ocean Foundation is unable to anticipate when there would be occurrences of hacks, cyber-attacks, mining attacks (including but not limited to double-spend attacks, majority mining power attacks and “selfish-mining” attacks), distributed denials of service or errors, vulnerabilities or defects in the Ocean Protocol, the Ocean Network, the Ocean Tokens, the Designated Address, the Receiving Address(es), the Wallet or any technology (including but not limited to smart contract technology) on which Ocean Foundation, the Ocean Protocol, the Ocean Network, the Ocean Tokens, the Designated Address, the Receiving Address(es) and the Wallet relies or on the Bitcoin blockchain, the Ethereum blockchain or any other blockchain. Such events may include, for example, flaws in programming or source code leading to exploitation or abuse thereof. Ocean Foundation may not be able to detect such hacks, mining attacks (including but not limited to double-spend attacks, majority mining power attacks and “selfish-mining” attacks), cyber-attacks, distributed denials of service errors vulnerabilities or defects in a timely manner, and may not have sufficient resources to efficiently cope with multiple service incidents happening simultaneously or in rapid succession.

Ocean Foundation’s network or services, which would include the Ocean Protocol, could be disrupted by numerous events, including natural disasters, equipment breakdown, network connectivity downtime, power losses, or even intentional disruptions of its services, such as disruptions caused by software viruses or attacks by unauthorised users, some of which are beyond Ocean Foundation’s control. Although Ocean Foundation will be taking steps against malicious attacks on its appliances or its infrastructure, which are critical for the maintenance of the Ocean Protocol and its other services, there can be no assurance that cyber-attacks, such as distributed denials of service, will not be attempted in the future, and that any of Ocean Foundation’s intended enhanced security measures will be effective. Ocean Foundation may also be prone to attacks on its infrastructure intended to steal information about its technology, financial data or user information or take other actions that would be damaging to Ocean Foundation and users of the Ocean Protocol. Any significant breach of Ocean Foundation’s intended security measures or other disruptions resulting in a compromise of the usability, stability and security of Ocean Foundation’s network or services (including the Ocean Protocol) may adversely affect the trading price of the Ocean Tokens.



Ocean Foundation is dependent in part on the location and data centre facilities of third parties

Ocean Foundation's infrastructure network will be in part established through servers that which it owns and houses at the location facilities of third parties, and servers that it rents at data centre facilities of third parties. If Ocean Foundation is unable to renew its data facility lease on commercially reasonable terms or at all, Ocean Foundation may be required to transfer its servers to a new data centre facility, and may incur significant costs and possible service interruption in connection with the relocation.

These facilities are also vulnerable to damage or interruption from, among others, natural disasters, arson, terrorist attacks, power losses, and telecommunication failures. Additionally, the third party providers of such facilities may suffer a breach of security as a result of third party action, employee error, malfeasance or otherwise, and a third party may obtain unauthorised access to the data in such servers. As techniques used to obtain unauthorised access to, or to sabotage systems change frequently and generally are not recognised until launched against a target, Ocean Foundation and the providers of such facilities may be unable to anticipate these techniques or to implement adequate preventive measures. Any such security breaches or damages which occur which impact upon Ocean Foundation's infrastructure network and/or the Ocean Protocol may adversely impact the price of the Ocean Tokens.

General global market and economic conditions may have an adverse impact on Ocean Foundation's operating performance, results of operations and cash flows

Ocean Foundation could be affected by general global economic and market conditions. Challenging economic conditions worldwide have from time to time, contributed, and may continue to contribute, to slowdowns in the information technology industry at large. Weakness in the economy may have a negative effect on Ocean Foundation's business strategies, results of operations and prospects. Additionally, in a down-cycle economic environment, Ocean Foundation may experience the negative effects of a slowdown in commerce and usage of the Ocean Protocol and Network. Suppliers on which Ocean Foundation relies for servers, bandwidth, location and other services could also be negatively impacted by economic conditions that, in turn, could have a negative impact on



Ocean Foundation's operations or expenses. There can be no assurance, therefore, that current economic conditions or worsening economic conditions or a prolonged or recurring recession will not have a significant adverse impact on Ocean Foundation's business strategies, results of operations and prospects and hence the Ocean Protocol, which would correspondingly impact the trading price of the Ocean Tokens.

Ocean Foundation or the Ocean Tokens may be affected by newly implemented regulations

Cryptocurrency trading is generally unregulated worldwide, but numerous regulatory authorities across jurisdictions have been outspoken about considering the implementation of regulatory regimes which govern cryptocurrency or cryptocurrency markets. Ocean Foundation or the Ocean Tokens may be affected by newly implemented regulations relating to cryptocurrencies or cryptocurrency markets, including having to take measures to comply with such regulations, or having to deal with queries, notices, requests or enforcement actions by regulatory authorities, which may come at a substantial cost and may also require substantial modifications to the Ocean Protocol. This may impact the appeal of the Ocean Protocol for users and result in decreased usage of the Ocean Protocol network.

Further, should the costs (financial or otherwise) of complying with such newly implemented regulations exceed a certain threshold, maintaining the Ocean Protocol may no longer be commercially viable and Ocean Foundation may opt to discontinue the Ocean Protocol and/or the Ocean Tokens. Further, it is difficult to predict how or whether governments or regulatory authorities may implement any changes to laws and regulations affecting distributed ledger technology and its applications, including the Ocean Protocol, Ocean Network and the Ocean Tokens. Ocean Foundation may also have to cease operations in a jurisdiction that makes it illegal to operate in such jurisdiction, or make it commercially unviable or undesirable to obtain the necessary regulatory approval(s) to operate in such jurisdiction. In scenarios such as the foregoing, the trading price of Ocean Tokens will be adversely affected or Ocean Tokens may cease to be traded.



There may be risks relating to acts of God, natural disasters, wars, terrorist attacks, riots, civil commotions widespread communicable diseases and other force majeure events beyond the control of Ocean Foundation

The Ocean Token Exchange and the performance of Ocean Foundation's activities may be interrupted, suspended or delayed due to acts of God, natural disasters, wars, terrorist attacks, riots, civil commotions, widespread communicable diseases and other force majeure events beyond the control of Ocean Foundation. Such events could also lead to uncertainty in the economic outlook of global markets and there is no assurance that such markets will not be affected, or that recovery from the global financial crisis would continue. In such events, Ocean Protocol's business strategies, results of operations and prospects may be materially and adversely affected. Further, if an outbreak of such infectious or communicable diseases occurs in any of the countries in which Ocean Foundation, the developers, data providers or data consumers have operations in the future, market sentiment could be adversely affected and this may have a negative impact on the Ocean Protocol network and community.

There may be unanticipated risks arising from the Ocean Tokens

Cryptographic tokens such as the Ocean Tokens are a relatively new and dynamic technology. In addition to the risks highlighted herein, there are other risks associated with your exchange for, holding and use of the Ocean Tokens, including those that Ocean Foundation cannot anticipate. Such risks may further materialise as unanticipated variations or combinations of the risks discussed herein.



Ocean Protocol Foundation. A Non-Profit Foundation
www.oceanprotocol.com

