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ABSTRACT

The usage of mobile health (mHealth) apps and wearables is ever-growing. More than 52% of smart phone users gather health-related information on their phone. In 2016 alone, mHealth app store downloads totalled 3.2 billion. Health-related data is a precious asset for both individuals and stakeholders in the data-driven sports, health and wellness industry.

However, the users generating this data cannot aggregate, share and monetize it. Moreover, because it lacks the means to interconnect existing data, the industry cannot unlock its full potential for the benefit of all market players. The rise of mHealth applications has not yet delivered on the promise of digital technology empowering individuals and resulting in better health care and a more connected sports and wellness market.

The Lympo ecosystem resolves this problem. Powered by user-generated and user-controlled fitness and wellness data, Lympo will allow the exchange of value through the introduction LYM utility tokens. Lympo's goal is an ecosystem where data is used efficiently by all industry stakeholders and everyone is rewarded fairly. It consists of three pillars: the Lympo fitness wallet, a marketplace and the Lympo crowdfunding platform.

The Lympo digital fitness wallet and user reward mechanism is at the core of the Lympo ecosystem. The wallet functions as an entry to the ecosystem and allows users to be rewarded in LYM tokens for their healthy lifestyle achievements.

These tokens can be used to purchase goods and services in a marketplace starting from an existing Lympo platform uniting more than 500 fitness professionals and later expanding to a broad network of sports, wellness and health goods and services providers. Finally, LYM tokens will be used on the Lympo crowdfunding platform to invest in innovative data driven companies in the industry which will contribute to the growth of this new ecosystem.

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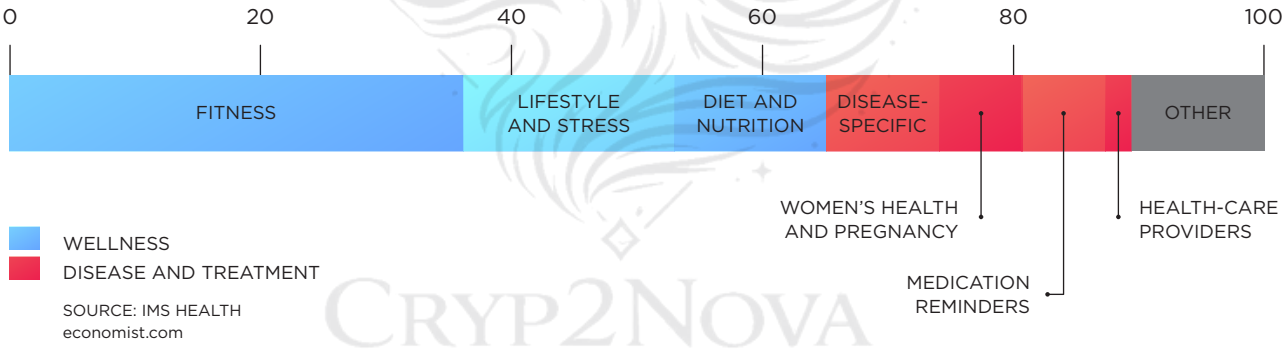
CHALLENGES OF THE MOBILE HEALTH DATA INDUSTRY

The digital health market is exploding both in number of new companies and with the expected market size of $233.3 billion by 2020. Much of growth is predicted to come from the mobile health (mHealth) market. In 2016 alone, the estimated total number of mHealth apps increased 57%2. In that same year, the number mHealth app store downloads totalled 3.2 billion, with 52% of smartphone users gathering health-related information on their phone3. Most newer phones have inbuilt health-related data gathering capacities predicating this number to soar in the upcoming years.

What data are we gathering? Over the years, the fastest-growing mHealth sector was the fitness and wellness domain with a projected compound annual growth (CAGR) of 48.1%4 . 65% of all mHealth apps in the U.S. connect to wellness services, among which fitness has a strong leadership position with 36% of the total apps. Top categories also include weight loss, exercise, women's health, sleep and meditation.

FROM WELLNESS TO NOT-SO-WELLNESS

United States, mobile-health apps, 2015, %



At the same time, since 2005 the sports & wellness market has almost doubled from 46 to over 90 billion US dollars. All key market players in this industry: from personal trainers, gyms, sports apparel and healthy food producers to health insurers and companies aiming to incentivize a healthy lifestyle among their employees, could benefit from cross-platform fitness and wellness data exchange. Nevertheless, the data which users track every day remains confined by a single

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[1] Global digital health market from 2015 to 2020, Statista,
https://www.statista.com/statistics/387867/value-of-worldwide-digital-health-market-forecast-by-segment/
[2] The mHealth app market is getting crowded reaching the 259.000 apps, Ticbiomed,
https://www.ticbiomed.org/2016/10/13/the-mhealth-app-market-is-getting-crowded-reaching-the-259-000-apps/
[3] Is Mobile Healthcare the Future, Greatcall,
http://www.greatcall.com/greatcall/lp/is-mobile-health-care-the-future-infographic.aspx?clickid=Vvj2G71CQzdyW2DVJSTXHW3XUkhV4pyzBRQvTI0&irpid=10078&utm_medium=affiliate&utm_source=Skimbit%20Ltd.&AG=BVA
[4] mHealth Solutions Market - Global Forecast to 2020, Markets & Markets,
http://www.marketsandmarkets.com/PressReleases/mhealth-apps-and-solutions.asp

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provider or a small network of partners at best, and said user has very limited ways to share it.

Notwithstanding, the growing market and the extensive use of mHealth apps have not yet deliver on the promise of digital technology that empowers individuals and results in better health care and a more connected sports and wellness market. The crucial shortages: 1. We are not the owners of the quantified self; 2. mHealth apps do not integrate with each other. 3. Due to restricted data flow, sports and wellness market lacks connectivity.

MAJOR INDUSTRY SHORTAGES

OWNERSHIP

In 2011, the World Economic Forum announced personal data to be a new asset class. Among all data classes, health related data is one of the most valued and expensive assets. However, it turns out that our personal data is not our personal asset.

The quantified self is a term denoting "self-knowledge through self-tracking". While it might have been a voluntary movement back in 20075, nowadays we are all voluntarily or involuntarily part of this movement if we use a smartphone with health data tracking, any mHealth app or a fitness wearable. The problem is that while we are busy quantifying ourselves, the companies whose products we are using are busy collecting our data and generating profits from it. And this is a big concern for users.

A study in the Journal of the American Medical Association finds that "many health apps may be sharing patients' health data without their knowledge"6. Another study on reducing cardiovascular disease (CVD) risk with the help of mHealth apps and wearables concludes that:

> Mobile health technology has shown the potential to optimize the management of CVD and other chronic diseases by empowering patients through better health self-monitoring and education. However, several challenges are present when patient's data are utilized and monitored in the healthcare setting. A common issue is the privacy and security of health information[7].

[5] Quantified Self Institute,
https://qsinstitute.com/about/what-is-quantified-self/
[6] Things are looking app, The Economist,
http://www.economist.com/news/business/21694523-mobile-health-apps-are-becoming-more-capable-and-potentially-rather-useful-things-are-looking
[7] Felipe Lobelo, Hevall M. Kelli, Sheri Chernetsky Tejedor et all., The Wild Wild West: A Framework to Integrate mHealth Software Applications and Wearables to Support Physical Activity Assessment, Counseling and Interventions for Cardiovascular Disease Risk Reduction, Progress in Cardiovascular Diseases, 2016 May-June, 58(6): 584-594, accessed https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5362162/

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Furthermore, CVDs are the number one cause of death globally: more people die annually from CVDs than from any other cause. The World Health Organisation (WHO) estimates that 17.7 million people died from CVDs in 2015, representing 31% of all global deaths. At the same time, WHO stresses that "most cardiovascular diseases can be prevented by addressing behavioural risk factors such as tobacco use, unhealthy diet and obesity, physical inactivity and harmful use of alcohol"[8].

Thus, incentivizing healthy behaviour is one of the crucial challenges for health innovations. At Lympo, we believe that part of the answer is allowing users to own the data they generate. Lympo presents a health/fitness app data aggregator that does not share users' data, but enables them to monetize it instead.

TO SUM UP:

- We are not the owners of one of the most valuable assets we have, our health-related data, although we constantly gather this data voluntarily or involuntarily.

INTEGRATION

An additional problem with the mHealth sector is that the market is very segmented. Most apps focus on one specific area, while each of the providers gather only very specific information, thus lacking an overall picture. While various aggregators that allow integration exist, users are reluctant to connect their apps and wearables to them because there is no real advantage for a user to have this data in one place: aggregators rarely answer the question "What's next?". Usually integration only means that a user is transferring more data to one app provider with no reward mechanism for its user. Thus, the interaction stays mostly limited to occasional data sharing on social media.

In addition to this, numerous research accounts show that privacy is the number one concern for mHealth users. Most companies offering possibilities to integrate data are big players like Apple, Google or Microsoft that regardless own a lot of users' data and do not inspire the trust that is needed to store sensitive health information in one place. The 2017 report by Human Data Commons reveals that big corporations with extensive capacities to integrate data are weakest in terms of providing direct human contact for consumers[9].

These challenges make it difficult for a user to have all generated data in one place. While such a data set would be very valuable for getting feedback from a sports or mindfulness coach, physical therapist and even a general practitioner, it remains scattered among a variety of apps and devices.

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[8] Cardiovascular diseases (CVDs), The World Health Organisation, http://www.who.int/mediacentre/factsheets/fs317/en/
[9] 2017 Quantified Self Report Card: User Rights in the Age of Biometric Tracking, Human Data Commons Foundation, https://humandatacommons.org/pdfs/HumanDataCommons_QS_ReportCard_2017.pdf

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TO SUM UP:

- Market segmentation and lack of incentive for mHealth apps' integration prevents users from having an overall picture of all their activities or further reaping key benefits of the data they generate.

FREE DATA FLOW

In the world of data economy, users produce valuable data with literally every step they make. However, because it remains stored with a single provider, every ecosystem player is participating in the race to come up with a better mechanism to lock a user within one platform. For this reason, market players become discouraged to offer integration and data sharing mechanisms.

The second factor contributing to this situation are data protection laws that, for good reasons, prevent companies from freely sharing users' personal data not only with other businesses, but also within the company itself if its operations are across, for example, EU-U.S. borders. Allowing private ownership of sports and health data opens the doors to user-controlled data sharing whereby the information flow can be managed by the individual.

The sports and wellness market includes a wide variety of players who cover various aspects of user behaviour like choosing a fitness trainer, an exercise regime, a gym, healthy diet and supplements, sports clothes and shoes. Healthy lifestyle enthusiasts owning the data collected from a variety of sources could make the best use of it by connecting multiple industry products and services that enable all key players to profit from this free flow of data.

TO SUM UP:

- Due to the lack of a mechanism allowing users to effectively share their sports and health data, the sports and wellness industry cannot offer user-centred products and services for all aspects of a healthy lifestyle.

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THE HEALTH INDUSTRY AND THE BLOCKCHAIN

HOW CAN BLOCKCHAIN ADDRESS THE BIGGEST FITNESS/WELLNESS DATA MANAGEMENT PROBLEMS?

It is widely agreed that blockchain technology has the potential to disrupt the health sector by making user-generated data the core of the healthcare ecosystem. It can achieve this by increasing the security and interoperability of health data. In this paper, we focus on mHealth or more specifically on the fitness/wellness sector powered by mHealth apps and wearables. However, it is important to grasp the whole picture to realise Lympo's full potential in the future.

Blockchain is a distributed system which records and stores transaction records, in a fashion making it impossible to change the content of the transaction in a digital ledger. Each transaction block is stored in the ledger and chronologically linked to another block after the transaction records are verified by a distributed peer-to-peer network. End-to-end encryption makes an interaction like storing, exchanging and viewing information possible without established trust between the parties. Avoiding one central authority, blockchain relies on an anonymous network of participants preventing privacy and confidentiality breaches.

Blockchain-based smart contracts represent contracts that can be fully executed when contract conditions are met. This system unbundles the need for any kind of exchange with an intermediary checking contract conditions. Until now, intermediaries played a crucial role in exchange of value situations, thus earning from their role. Smart contracts enable end users to enter a trusted relationship without any other authority.

The sensitive nature of health-related data and the need to be able to delete this personal data in order to fulfil data protection regulations in some parts of the world (most notably the European Union) does not allow for storing this data itself on blockchain. In this case, blockchain technology is viewed as a secure and effective payment tool allowing micro-payments and a permission storing mechanism.

Registering permissions to access patient-generated data on blockchain, users are empowered to control who can access their data, and under which conditions. This capability enables individuals to be the owners of their precious data asset. This data set can be compiled from information originating from a variety of data sources; ranging from electronic medical records provided by hospitals, clinics and doctors, to fitness/wellness data generated by mHealth apps and wearables. It can also be complimented by disease and treatment monitoring applications and custom information added by a user individually.

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In addition, further data users will be able to demonstrate that the data owner gave her permission for the use of this data. With data protection regulations tightening around the world, this feature will enable third parties to give solid proof on data provenance on the blockchain.

BLOCKCHAIN APPLICATIONS IN THE HEALTH INDUSTRY

Healthcare might be a latecomer in the booming growth of enterprise blockchain apps, but it is getting more and more prominence as a promising technology to solve major issues in the sector of health data management even on a governmental scale.

ENTERPRISE BLOCKCHAIN APPS BY SECTOR *(selected)*

MARKETS	GOVERMENT & LEGAL	IOT	HEALTH	SCIENCE ART, AI
Currency Payments & Remittance	Transmitional orgs	Agricultural & drone sensor networks	Universal EMR	Community supercomputing
Banking & Finance	Personalized governance services	Smarthome networks	Health databanks	Crowd analysis
Clearing & Settlement	Voting, propositions	Integrated smatoity, connected car, smarthome sensors	OS Data Commons	P2P resource nets
Insurance	P2P bonds	Self-driving car	Big health data stream analytics	Film, dataviz
FinTech	Tele-attorney services	Personalized robots, robotic companions	Digital health wallet	AI: blockchain advocates, friendly AI, blockchain learners, digital mindfile services
Trading & Derivatives	IP registration and exchange	Personalized drones	Smart property	
QA & Internal Audit	Tax receipts	Digital assistants	Health Token	
Crowfunding	Notary service and document registry		Personal develoment contracts	

CRUCIAL BLOCKCHAIN PROPERTIES

Cryptoledger	Permanent record	Communication (messaging)	Universal format	Large-scale infrastructual element for coordination
Decentalized network	Public records repository	Large-scale coordination	Large-scale multi-data-stream integration	Checks-and-balances system for good-player access.
Trustless counterparties	Notarization time - stamping hashes	Entity ingress/egress	Privacy and security	
Independent consensus-confirmed transactions	Universal format	Transaction security	Real-time accessibility	
	Accessibility			

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Most existing or projected blockchain applications in healthcare fall into these categories:

- Interoperability between medical institutions
- Electronic medical records
- Insurance
- Medical trials
- Genomic research
- Patient-generated data/Quantified-self data commons

The Lympo ecosystem starts with a product that belongs to the 6th category.

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LYMPO: ECOSYSTEM POWERED BY USER-GENERATED DATA

INTRO: HOW IT WORKS?

Lympo aims to create an ecosystem powered by user-generated and user-controlled fitness and wellness data allowing the exchange of value through the introduction of LYM utility tokens. Lympo's goal is a marketplace where data itself is used efficiently by ecosystem members and everyone is rewarded fairly. A mHealth app/wearable user is at the centre of this ecosystem including all key players in the sports and wellness industry:

PLAYER	GOALS	BENEFITS
Users living a healthy lifestyle	Searching for personalised healthy lifestyle goods and services, seeking to benefit from data generated, storing health and sports data in one place	Extra motivation and fun to reach healthy lifestyle goals, monetizing user-generated data, aggregating data for viewing or sharing, deciding on further data use and its price, receiving tailor-made services based on interests and health data
Personal trainers and sports coaches	Selling services, attracting new clients, managing clients' progress	Easy to monitor system for achievements and rewards, Fitness progress gamification for clients, Unique value proposition for advertising
Gyms	Attracting clients to gym locations, marketing new services, optimizing gym use	Reward system to promote gym visits on specific times Monitoring users' progress Promoting loyalty by organising group challenges
Sports and wellness businesses	Selling products, marketing to precise key audience	Interaction with customers via reward system Insights from users' data from various platforms Innovative marketing tool Partnerships with token ecosystem companies
Health insurers	Incentivizing healthy lifestyle, analysing data of existing clients, reaching out to potential customers	Great incentives for a healthier lifestyle Data-based management decisions powered by clients' data
Employers	Growing number of healthy and happy employees, searching for a user-friendly and trusted method to promote sports	Fun and rewarding tool to incentivize healthy lifestyle Possibility for tailor-made challenges to address every employee

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		Group challenges enhancing team building
Health and fitness apps	Promoting a health or fitness app, searching for innovative ways to strengthen consumer engagement	Added value for customers Interaction with a wide client base
Fitness/wellness/health start-ups	Spreading own ideas and early stage products, searching for mentors and business partners, seeking investment	Access to investors interested in the industry Industry experts' reviews and mentorship Opportunity to easily find business partners
Investors	Searching for innovative companies, seeking community due diligence	Carefully pre-selected start-ups Reviews and ratings by industry experts Data access enabled by LYM tokens for faster growth and better returns

The Lympo ecosystem starts from the existing platform which enables users to find the best personal trainer with 500+ fitness professionals operational in Lithuania, www.lympo.lt, and expanding to California, U.S. and Melbourne, Australia.

The ecosystem is composed of three main parts: 1. The Lympo digital fitness wallet and user reward mechanisms; 2. Lympo marketplace; 3. Lympo crowdfunding and investment platform.

I PART: THE LYMPO WALLET AND USER REWARDS MECHANISM

The Lympo digital fitness wallet and user reward mechanism is at the core of the Lympo ecosystem. Lympo fitness wallet functions as an entry to the ecosystem and allows a user to create their profile, fill in their health data and connect it to their favourite sports and health tracking apps. The individual data submitted via Lympo fitness wallet will be accessible to its user and can be viewed or shared by storing a permission on blockchain.

The rewards issued by market players interested in having direct access to Lympo digital fitness wallet users can be of two different types:

- A reward for achieving a healthy lifestyle goal, i.e. running 5 kilometres or following a precise diet and submitting app records to Lympo profile.
- A reward for checking into a particular location for a specified amount of time, i.e. joining a gym class or attending a karate competition.

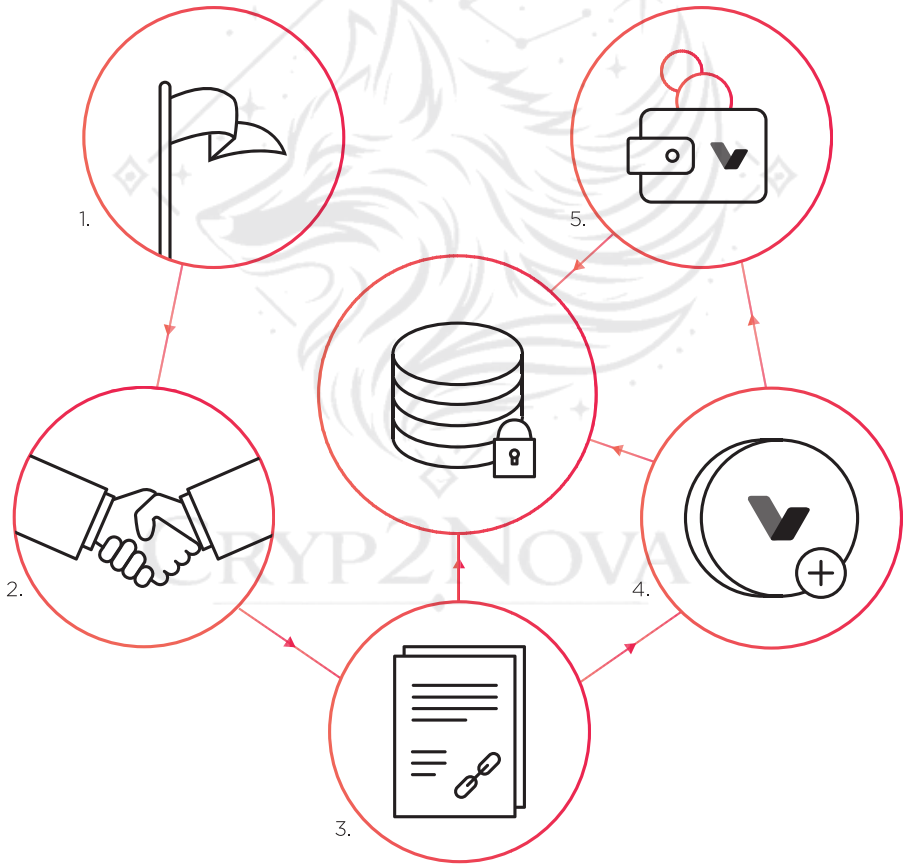
The Lympo health wallet will be rolled out in multiple steps. In order to bring the product to the market as soon as possible, Lympo tokens will be first used as utility tokens on the existing

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Lympo platform to buy online and offline training sessions with the best fitness trainers, including training or any sports coach sessions, consultations by a physical therapist or a dietician. Lympo users will be able to utilise the Lympo fitness wallet to get reward tokens for achieved training goals. As more partners join, Lympo tokens will be used to access a wide range of healthy lifestyle products and services like sports clothes and shoes, healthy food and gyms with a possibility to reward achieved health goals with the help of smart contracts.

Trainers will be able to be more competitive, proposing packages where their services are offered together with a built-in reward program. Also, any other ecosystem player can either attach the reward system to the product sold or purchase a certain number of tokens and organise challenges and tasks for Lympo users in exchange for their data.

Use case I: Lympo users receive a notification that a challenge to run 5 km this week is being organised by a big athletic shoe producer. No matter which app they use, they can complete this task and get token rewards with the Lympo platform.



1. Athletic shoe producer publishes a 5km running challenge
2. User decides to participate
3. The agreement is registered
4. User completes the challenge and submits the app tracking data
5. LYM token rewarded

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Use case II: a new boxing club in the city notifies users in this city that a certain number of tokens will be distributed to those attending their first boxing class for beginners. Users check-in to a club location at the specific time using their Lympo account and get LYM reward tokens.

A further service offered by the Lympo platform is a time-stamped permission issued by users to utilise their personal data. This is key to ensure the highest data protection regulation standards, such as the General Data Protection Regulation (GDPR) in the European Union.

II PART: LYMPO MARKETPLACE: MONETIZING DATA

The next step in the Lympo ecosystem is to enable users to spend tokens to receive further healthy lifestyle goods and services and make in-platform purchases. The marketplace, starting with the existing platform to find the best personal trainer, offers a variety of ways to do so:

- Getting premium features in the Lympo platform. E.g.:
  - A personal trainer can buy enhanced profile options and more exposure for their listing.
  - A user can purchase more options for their health and sports data storage on the Lympo platform, like reminders and health advice based on the data submitted.
- Everyone owning tokens will receive discounts and products offered by our partners: sports and wellness businesses, healthy food and supplement providers, etc.
- Businesses use tokens to pay for listing their products and services on the platform.

Lympo foresees its existing platform to be the market entry tool for the user-generated data powered healthy lifestyle ecosystem which will further expand with more partners accepting LYM tokens. A part of LYM tokens are allocated to incentivize community growth and to add new businesses to the Lympo network. The ultimate Lympo goal is that its token holders can access a wide range of products and services with the initial platform being only one part of the much wider network.

At this later stage, the user-generated data marketplace will open for businesses such as health insurances, research institutions, and big data companies within and outside of the sports and wellness industry that are interested in accessing the data of Lympo digital wallet users. The users will be enabled to decide whom they trust their data to, to know what exactly they are sharing and to earn tokens by doing so.

III PART: LYMPO CROWDFUNDING PLATFORM

The third arm of the Lympo ecosystem is a crowdfunding and investment platform allowing LYM token holders to invest in the most promising fitness/wellness/health start-ups which are

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reviewed and rated by Lympo ecosystem members who know what the industry needs best. LYM token holders will be able to receive company shares for the tokens contributed.

The unique value proposition of this crowdfunding platform is 1. Public reviews and ratings by sports and wellness market players; 2. Access to data of a big user base enabled by LYM tokens.

- The crowdfunding platform will allow for businesses and service providers active in the Lympo ecosystem to review and rate new companies seeking investment for a certain token reward offered by a start-up listed. This will help investors to better evaluate the potential of the new venture and for start-ups to find potential partners and customers operating within the same industry.
- Many new companies are following the usual data economy business cycle: build a product, attract a large user base, then start analysing and monetising data. But with the help of invested LYM tokens, start-ups on the Lympo crowdfunding platform will be able to start working with a big data base immediately purchasing fitness and health data directly from our users or proposing new challenges for reward tokens if the existing data set lacks some particular qualities.

This way, new innovative fitness/wellness/health companies will have a much lower market entry cost and can successfully launch their products and maximise returns for investors.

LYMPO BLOCKCHAIN FOR SPORTS FOUNDATION

A part of the tokens reserved for the ecosystem empowerment will be allocated to Lympo Blockchain for Sports Foundation. The aim of this foundation is to support various sports events and initiatives around the world with the goal to promote Lympo fitness wallet and to encourage a healthy lifestyle.

The foundation board, composed of famous athletes, Lympo partners and leaders in sports communities from various countries, will oversee the foundation activities. Lympo token holders of at least 1,000,000 LYM (the amount will be adjusted in two years based on community vote) will be able to vote on funding proposals. The composition of the board and foundation governing principles will be announced before the Lympo token sale in the first quarter of 2018.

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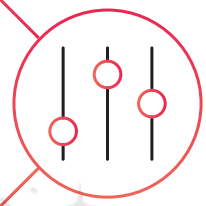
ROADMAP



DEC. 2016

START OF THE LYMPO PLATFORM DEVELOPMENT.
ANGEL INVESTMENT RECEIVED.

#COMPLETED



MAY 2017

START OF THE PREPARATION FOR THE TOKEN SALE.

#COMPLETED



SEP. 2017

LYMPO PLATFORM MVP LAUNCHED WWW.LYMPO.LT
(NO BLOCKCHAIN SOLUTIONS YET).

#COMPLETED



NOV. 2017

FIRST PARTNERSHIPS FOR THE FUTURE LYMPO
ECOSYSTEM.

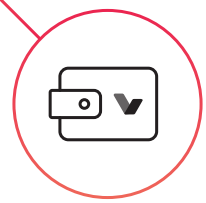
#COMPLETED



JAN. 2018

LYMPO PRE-SALE.

#SOON!



FEB. 2018

LAUNCH OF THE LYMPO FITNESS WALLET PROOF OF
CONCEPT.

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MAR. 2018

LYMPO TOKEN SALE.



Q2 2018

LYMPO FITNESS WALLET FULL BETA RELEASE.



Q3 2018

LYMPO FITNESS WALLET INTEGRATED WITH THE FIRST LYMPO ECOSYSTEM PARTNERS.



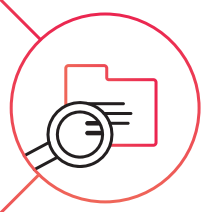
Q1 2019

START MONETISING LYMPO TOKENS PARTNERING WITH EMPLOYERS AND HEALTH INSURANCES.



Q2 2019

OPEN API FOR FURTHER DATA SOLUTIONS BY THIRD PARTIES LAUNCHED.



Q3 2019

FIRST PARTNERSHIPS WITH RESEARCH INSTITUTIONS ON FITNESS DATA USE.



2020

LAUNCH OF THE FULL TWO-SIDED MARKETPLACE FOR FITNESS DATA.

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LYMPO: USER REWARD SOLUTION DESCRIPTION

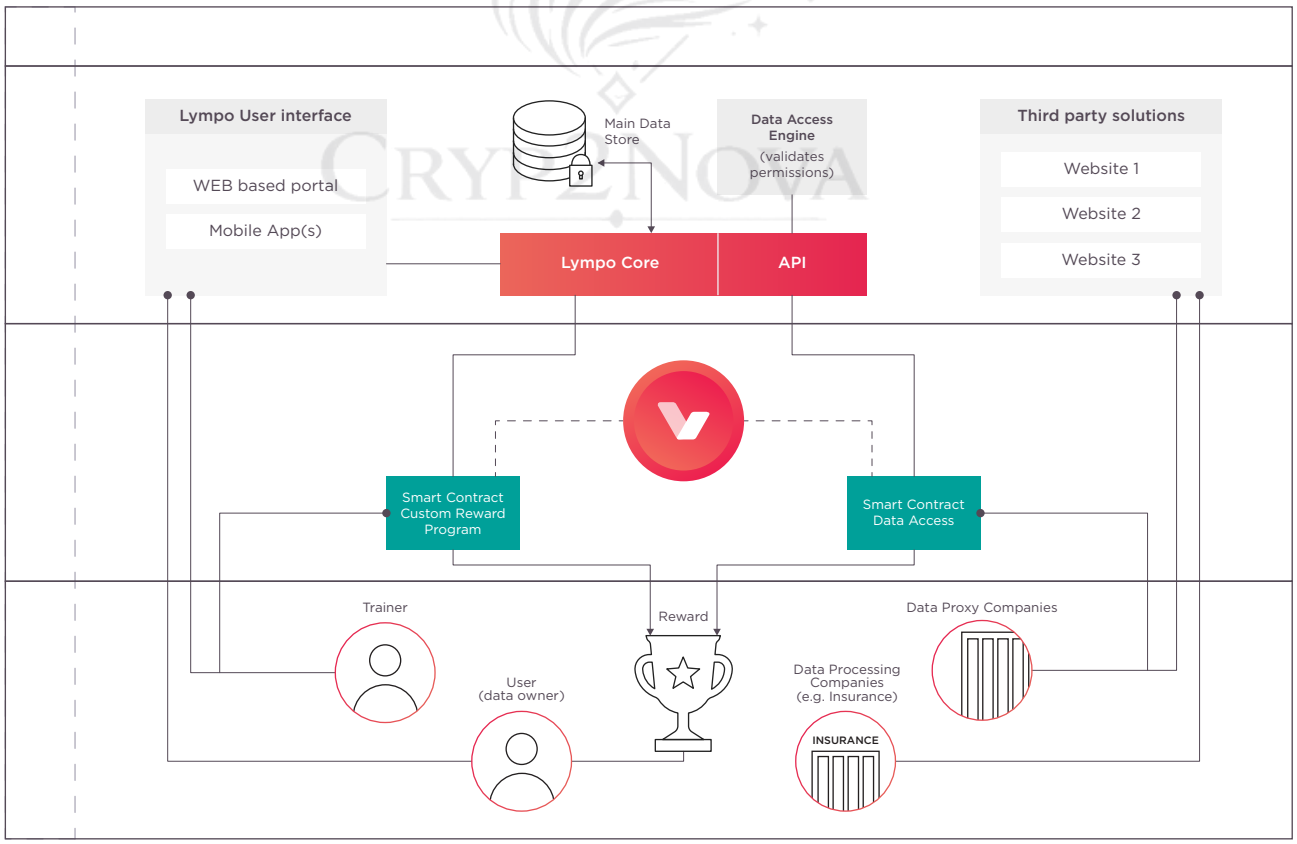
While Lympo includes three major parts, a user reward mechanism, a marketplace and a crowd-funding platform, rewards for a healthy lifestyle are at the core of the product and will be discussed in detail. We have also included a provisional model of the data sharing environment with description of components, permissions and actors.

The fitness/health data sharing ecosystem is based on three major components:

- Lympo Platform: core components developed by the Lympo team and partners
- Blockchain: Lympo tokens, smart contracts and crypto wallets
- User community: Users, who will live healthy lifestyles and will interact with different actors in the ecosystem to find trainers, partners, make agreements, share data and get rewarded.

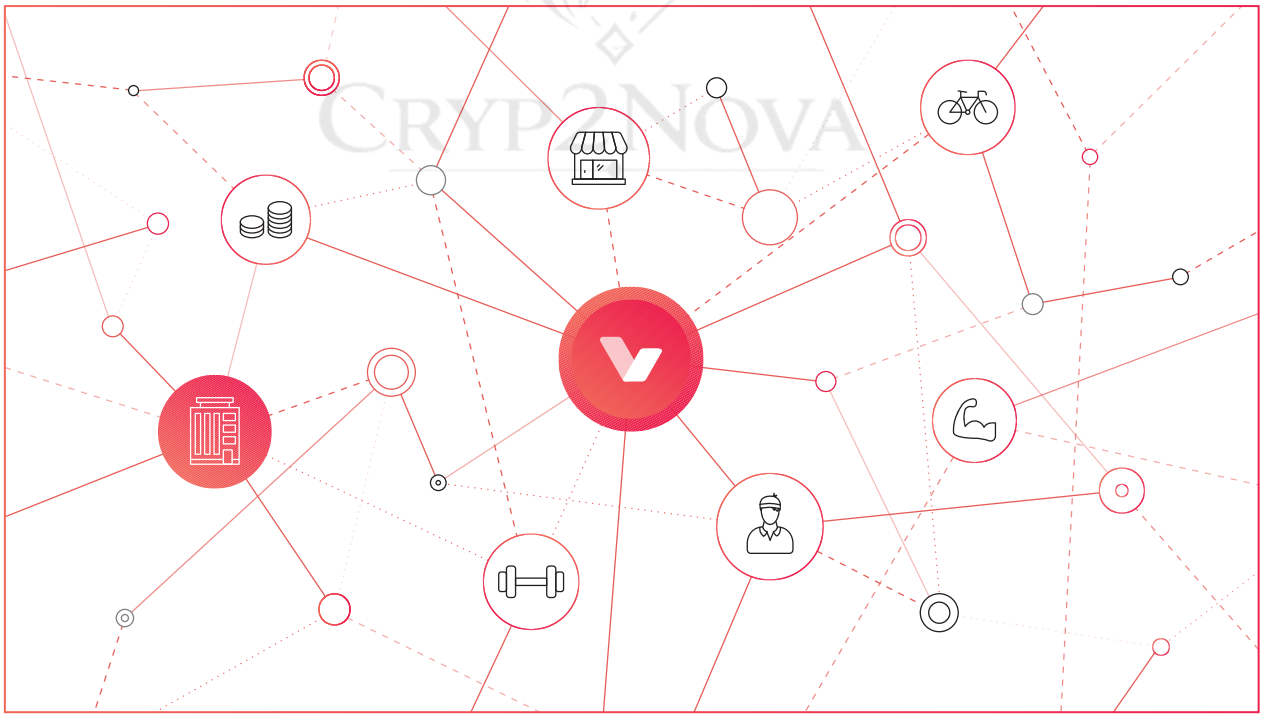
The Lympo tokens are a key element which facilitate all interaction in the system in relation to the community and a healthy lifestyle. The tokens are used to incentivize people to be active participants, make connections and improve their health. The tokens are distributed on the Ethereum cryptocurrency blockchain. This, of course, imposes certain standard rules for the community.

LYMPO PLATFORM COMPONENTS



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COMPONENT	DESCRIPTION
Lympo Core	Main business logic will be implemented in this component. The component will contain all relevant rules and algorithms processing activities in the ecosystem. It will do data validation and will interact with blockchain to process contracts and issue some transactions, when needed.
Lympo API	A collection of various programming functions and interfaces to make Lympo ecosystem accessible for the software development companies. The API will give sufficient flexibility, while respecting all security rules implemented in Lympo Core. Lympo will encourage third parties to create additional services in the ecosystem, which will be beneficial for system users and investors.
Main Data store	The database where all system data will be stored. It will include user accounts, system data and detailed information about the smart contracts. The fitness data recorded by Lympo users will also be stored in this data storage. The elaborated security measures will be taken to protect the data, and it will only interact with Lympo Core system, which will make sure that only authorized persons and processes can access relevant data.
Lympo User Interface	Web portal and mobile applications developed by the Lympo team. The user interface will be the main entry point for the users to create and manage their Lympo accounts, propose different training programs and reward options, pay for the services, create smart contracts and monitor the balance of the Lympo tokens in their accounts.
Data Access Engine	A separate component in the Lympo Core, developed exclusively to add extra security checks for the data shared with the third parties. External developers will get access to the system via Lympo API, however the private data is a big concern and requires additional handling. Permissions to access the data can be given by the data owner only, and this component will perform validation of these permissions. In addition, the data access engine will audit every external call to the API, therefore every user will be able to see who has accessed their data. Moreover, the component will do automatic monitoring of system behaviour, to analyse data usage patterns and alert system administrators on malicious behaviour.



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BLOCKCHAIN: SMART CONTRACTS

The Lympo ecosystem will use Lympo Token as a main facilitator of the user contracts and interactions. The unique user community and collection of the fitness/wellness data gives a wide range of opportunities for smart contracts and data exchange. The Lympo team takes user privacy very seriously, therefore all source code for the smart contracts related to the data exchange, will be fully verified by the Lympo developers. In addition, Lympo core will stay as authorizing entity for the agreements and rewards. Already at this early stage several examples of the smart contracts will be implemented:

SMART CONTRACT: USER REWARD PROGRAM

User reward programs, will be made between the Lympo ecosystem participants, such as trainers/physicians/gyms/sports inventory providers and Lympo digital fitness wallet users. Let us look at a case of a fitness trainer and her client. In order to encourage users to live a healthy lifestyle, the fitness trainer will propose a contract on the Lympo platform, giving specific goals for the end user to achieve. The contract itself will be made using standard user interface. The components of such contract are the following:

- Account of the person/company which is creating a contract
- Account of the end user who will receive the rewards, after reaching the goals
- The amount of Lympo tokens, which will be transferred as a reward
- The detailed description of activities and goals, which needs to be met. This information will be hashed into one string, to limit the size of parameters sent to the smart contract.

The creator of the smart contract will use all the parameters from above and will sign the call to blockchain with his/her password. The smart contract will lock the reward tokens for a given number of days. After the user reaches training goals specified in the contract, the Lympo Core validates this information, and invokes the call to a smart contract, confirming transfer of the Lympo tokens to the user. If the goals are not met during the agreed time, the tokens will be transferred back to the Lympo platform or the creator of the smart contract depending on the conditions for the specific token reward program.

TRAINING PACKAGE USING A REWARD PROGRAM SMART CONTRACT

The Lympo system will give options for the trainers/physicians to propose training packages, which automatically would include a reward program. The trainers will be free to choose how they advertise their services in the system, but to be competitive, the pricing might contain an option for the user to get back a specific percentage of payment. The implementation of the smart contract is very similar to previously defined model. However, in this case the workflow will have a few additional steps:

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- Trainer in the Lympo system creates a package to offer a customer. The package contains:
  - Trainer services (detailed description)
  - Price for a whole package
  - The percentage which will be given as reward after goals are achieved
  - Conditions to get the reward (similar as specified in the smart contract above)
- Trainer sends this information to the smart contract (signing with his/her blockchain account). Some parts will be set directly (like the price, percentage, etc.). Other details will be hashed into one string and stored in the smart contract as a proof.
- When a user finds a package which he/she wants to purchase, the Lympo system will additionally verify that the information signed by the trainer in the smart contract is correct.
- The user then makes a transaction to the smart contract using Lympo tokens. A part of the tokens is immediately transferred to the trainer's account, but a specified percentage of them are automatically locked by the smart contract.

Unlocking is similar to the contract defined sabove: after the user reaches training goals specified in the contract, Lympo Core validates this information and invokes the call to a smart contract, confirming transfer of the Lympo tokens back to the user. If the goals are not met during the agreed time, the tokens will be transferred to the trainer.

SMART CONTRACT – CUSTOM REWARD PROGRAM FOR CHECK-INS

Various companies will be able to attract users by creating specific locations where users can receive LYM tokens just for showing up and staying during a specific time. The smart contract will be signed by these companies, and the main goal of it will be to have a specific number of tokens locked for the distribution to the end users. The components of this smart contract would be the following:

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- Account of the person/company which is creating a reward program
- The amount of Lympo tokens, which will be shared by all participating users as a reward
- The detailed information on the conditions and rules for sharing the tokens. This information will be hashed into one string, to limit the size of parameters sent to the smart contract.

Unlocking is similar to the contract defined sabove: after the user reaches training goals specified in the contract, Lympo Core validates this information and invokes the call to a smart contract, confirming transfer of the Lympo tokens back to the user. If the goals are not met during the agreed time, the tokens will be transferred to the trainer.

All conditions related to the reward program will be detailed in the Lympo portal. Participants will use their mobile devices to track their location and will provide this information to the system. Lympo will offer a possibility to issue a security or a QR code to be placed at the location as an additional fraud protection mechanism. After the specified time, the Lympo core

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will use the information received from users, will calculate the rewards and will send the information to the smart contract per which accounts shall receive tokens.

SMART CONTRACT: DATA ACCESS

The smart contract will be created by the data proxy companies in order to reward users, when the fitness data is fetched. The data proxy companies, could create interfaces for various data processing companies, who need such data. This data access contract will be created firstly in the Lympo portal. The user will sign a contract with the data proxy company to share the information. The components for the smart contract are similar to the previously detailed reward program:

- Account of the person/company which is creating a contract
- Account of the end user who will receive the rewards, after authorizing the access
- The amount of Lympo tokens, which will be transferred as a reward
- The detailed description of the agreement: which data will be used, who will get access to it, etc. This information will be hashed into one string, to limit the size of parameters sent to the smart contract.

The creator of the smart contract will use all the parameters above and will sign the call to blockchain with his/her password. The smart contract will lock the reward tokens. After the user inside the Lympo platform gives the authorization to access the data, Lympo core will check if all conditions detailed in the agreement are met. If everything is correct, Lympo core will invoke the call to a smart contract, confirming transfer of the Lympo tokens to the user. The data proxy company will be able to access the user data by using Lympo API and Data Access Engine component.

SYSTEM ACTORS

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The ecosystem is built around an active and dynamic community. These people care about their health or are providing services in the fitness/wellness domain. The community also includes research and insurance companies who can use the data collected by system users and can develop better products, analyse trends and encourage the healthy lifestyle.

Every system participant will need to have an account in the Ethereum blockchain and account in Lympo platform. The Ethereum account's public key will be linked to the Lympo account in order to collect Lympo tokens, participate in reward programs or other smart contracts. The private key will remain in full control by the user and will not be visible to the Lympo platform.

The main actors analysed in the ecosystem:

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USERS: DATA OWNERS

Users who want to improve their physical condition, and are rewarded for their lifestyle. These users will create most of the data inside the system, and will be able to monetize their activities. They will be in full control of their data inside the system, and on request will be able to authorize access to the Data Proxy Companies.

TRAINERS/PHYSICIANS/SPORTS INVENTORY MAKERS/GYMS

A big focus of the Lympo portal is to create connections among trainers and the end users. The trainers, physicians, sports clubs or even companies who specialize in sports inventory, will find users who want to be healthy. The ecosystem will provide features for the trainers to create reward programs, and to reward participants using Lympo tokens. Sports club promotions, new equipment, innovative devices... everything will find their place in the system.

DATA PROXY COMPANIES

To offer more features to the system, the Lympo team will open API to software development companies, which can create additional solutions where fitness/wellness data will be used. The Data Proxy Companies will not necessary use the data themselves, but will serve as data providers for additional actors: Data Processing Companies. The Data Proxy Companies will have direct contracts with the end users, and will be required to provide full transparency where user data is used.

DATA PROCESSING COMPANIES

Companies which can use the data for different needs. The data can be used by research centres to analyse habits of society and to propose new ideas or programs for health improvement. Notwithstanding, by having access to user's data insurance companies could provide better service and suggest tailored insurance plans with more convenient pricing models. Data Processing Companies can use the Lympo API and have smart contracts with end users. However, it's more likely that professional software houses (Data Proxy Companies) will propose simplified interfaces to access the data.

SECURITY MEASURES

The Lympo team is aware that security is a key necessity for its users sharing their healthy lifestyle data. Even though this type of data is much less sensitive than medical records and thus HIPAA, for example, does not cover fitness and wellness sectors including mobile apps and wearables. Lympo is committed to ensure the highest-level security measures mirroring the latest developments in cybersecurity best practices.

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To ensure the confidentiality of the data, or prevent data from unauthorized disclosure, all the data in the database will be encrypted with modern encryption algorithm. All communication (service to service, service to the client) will be protected by TLS. Access to the database is strictly limited to very few to no people, access credentials are managed by a password manager and rotated in a timely manner, and the access list will be audited in a timely manner as well.

To ensure data integrity, the Lympo team will establish a procedure to perform periodic checks of data and system functionality to identify integrity issues (e.g., corrupted data, failing hardware, software errors, etc.).

To ensure the availability of data, the database will be backed up periodically, and the backup will be verified to be restorable. The Lympo team will also establish a Business Continuity Plan (BCP) and Disaster Recovery Plan (DRP) to ensure the highest possible availability of Lympo services.

The Lympo team will adopt technology with high-security robustness, such as using a HIPAA compliant cloud host from cloud service providers such as AWS. In addition, security would be built-in early into our software development lifecycle, making sure our technology architecture follows security best practices, we audit our system via security experts to find potential issues. Additionally, our team is trained with security awareness in mind.

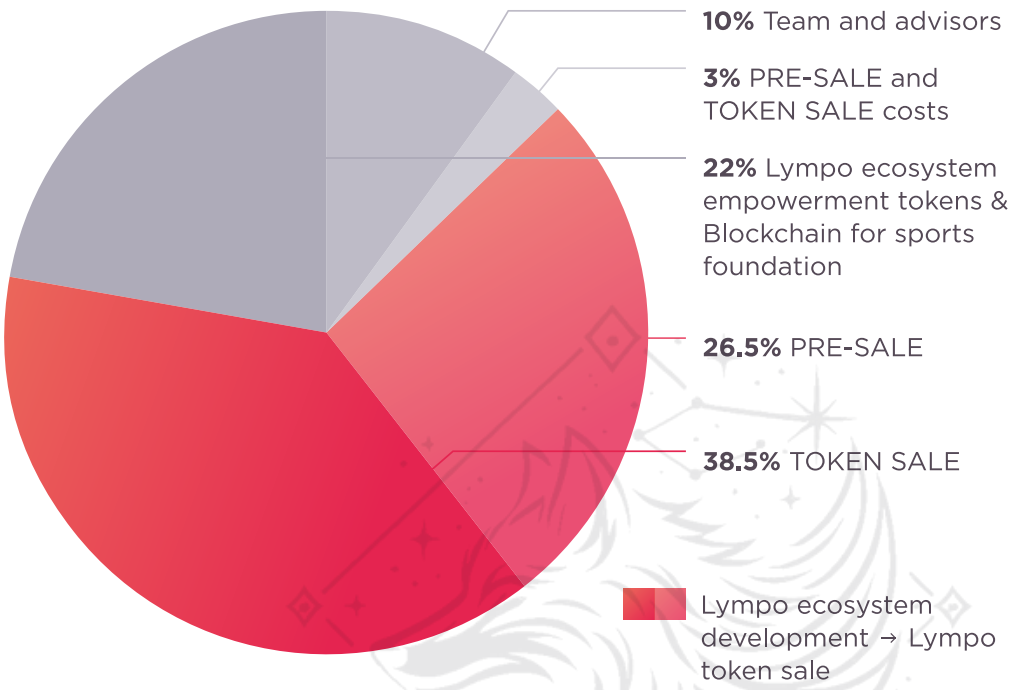
Furthermore, a private bug-bounty programme for white-hat hackers will be set up to receive support from top white-hat security researchers globally.

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LYMPO (LYM) TOKEN SALE

TOKEN DISTRIBUTION



Team tokens will be locked for 24 months after the end of the token sale. Advisors' tokens will be vested in 12 months.

Lympo ecosystem empowerment tokens will be locked and released in 3 years, i.e. 1/3 tokens made available in 2018; another 1/3 in 2019 and the rest 1/3 in 2020.

TOKEN SUPPLY

- Total token supply:
  1.000.000.000 LYM
- Total hard cap:
  14.625 ETH = 650 mln. LYM
- Soft cap: 15%

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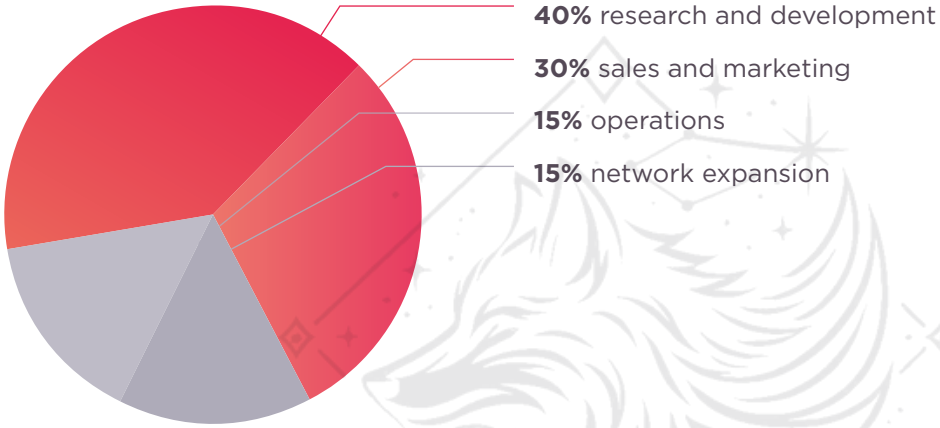
PRE-SALE

- 265 mln. LYM = 5000 ETH
- 20% bonus for 90 mln. LYM 1 ETH = 60.000 LYM
- The rest 175 mln. LYM 1 ETH = 50.000 LYM
- Date: January 23 — February 3
  (or as long as supply lasts)

TOKEN SALE

- 385 mln. LYM = 9625 ETH
- 1 ETH = 40.000 LYM
- Date: February 17 — February 28
  (or as long as supply lasts)

THE USE OF TOKEN SALE FUNDS



Please join our Telegram channel https://t.me/lympo for more news and updates!

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TEAM



ADA JONUŠĖ

CEO AND FOUNDER

Co-founder of Lympo.lt, a platform to find the best personal trainers, advisor to ETHLend, a decentralized lending platform, blockchain events speaker and organiser, named an emerging European tech star by the Financial Times, Google and other New Europe 100 list partners. Previous experience: VC Labas Ventures (Seattle, U.S.), European Parliament, United Nations. Sports: yoga, running.



PAT BROWN

SOLUTION ARCHITECT

Blockchain and business automation expert with 2+ year of experience at Asta, a leading End-To-End professional managed IT service provider to the SMB market in Australia, New Zealand, Hong Kong & Singapore. Pat joined Asta in Melbourne, Australia, after this studies in business, management and information systems.



MARIUS SILENSKIS

HEAD OF OPERATIONS

Founder of Anyldeas – IT and creative advertising agency. IT project manager with 5+ years of digital project management experience working with clients such as Mercedes-Benz, Newsec, and GCube. Key areas of expertise: IT team management, exceptional taste and understanding of modern design, advanced programming skills in several languages. Sports: fitness.



JUSTAS KREGZDE

SMART CONTRACT LEAD

Online gaming software developer with 12+ years experience. An author & contributor to 10 published iOS and Android games. 3+ years experience as an online poker software developer. Over the last year, he has been focusing on blockchain related projects & smart contracts.



ADOMAS DICIUS

SENIOR FULL STACK DEVELOPER

Travelling entrepreneur with a background in ICT engineering and 4+ years experience in full-stack development and UX design. Having worked in various start-ups, Adomas is now a co-founder and CTO at a start-up disrupting the wholesale food business industry Smackway and an independent IT consultant and developer. Sports: yoga.



TADAS MAURUKAS

HEAD OF DIGITAL MARKETING

Passionate marketing strategist. Tadas use most effective tools to generate ROI for various businesses ranging from local start-ups to international multi-million profit companies like Mercedes-Benz. Tadas joined the crypto community back in 2014 and has remained involved ever since. Sports: no sweat. Chess and online poker.



KAROLINE VON TSCHURTSCHENTHALER

LEGAL AND OPERATIONS

Attorney, strategist and blockchain advocate, Karoline holds a Business Law M.A. from London School of Economics and specialises in IP/IT law. 3+ years of consulting experience for start-ups in legal and business matters focussing on tax structures, business strategy, global expansion. Sports: certified yoga teacher.



DIMITRA PAPADOPOULOU

HEALTHCARE PARTNERSHIPS

Expert on blockchain for healthcare and medical research, senior information systems manager with experience at Airbus, Prosieben Media, Accenture and the European Commission, founder of meHealthX, lead consultant at CGI (Germany) for the public sector and healthcare in blockchain use cases.



ZIVILE KAIRYTE

COMMUNITY MANAGER

2+ years experience in sales, human resources and marketing. Worked with B2B and B2C companies to ensure their customer satisfaction targets. Addicted to growing brands and creative adverts. Sports: horseback riding.



ERNESTA PETKEVICIUTE

UX/UI EXPERT



DOMAS AMBRAZEVICIUS

GRAPHIC DESIGNER

Senior graphic designer and animator at Anyldeas creative advertising agency. Always looking for new inspirations, loves travelling the world and experiences everything he can. Sports: skiing, voleyball.

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ADVISORS



ANTANAS GUOGA

CRYPTOECONOMICS & BUSINESS

Member of European Parliament. Also known as TonyG, Antanas is a serial entrepreneur, investor, philanthropist and a well-known poker player. He is actively participating in political discussions regarding cryptocurrencies and cyber security. Cryptoeconomy expert and advisor of Bankera and CoinPoker token sale projects.



DANILO S. CARLUCCI

MARKETING & GROWTH

Startup founder, growth hacker and marketing expert with 6+ years experience. Currently at Google, leading YouTube's community efforts in the UK.



DR. DAVID MANSET

TECH

Senior engineer and blockchain entrepreneur focussing on technologies for sensitive medical data sharing. Former CEO of cerebro, cloud platform for large-scale imaging analyses for clinical trials, founder and CEO of gnubila, data privacy solution designer, currently Head of Research and Innovation at Almerys, healthcare delivery data management company managing uniting 230.000 professionals and part of My Health My Data consortium, EU leader in blockchain for healthcare solutions.



HAINAN HU

TECH

Security engineer and white-hat hacker. Security engineer at Boston Consulting Group Digital Ventures, Berlin. Previously worked in companies like Zalando and SoundCloud. Hainan is a red team (offensive security) specialist, but able to do blue team (defensive security) as well. Hainan's skill set: penetration testing, security architecture review, threat modelling, risk assessment, training.



BILL ANGELIDIS

BUSINESS & ASSET MANAGEMENT

Bill, aka 'Pick', is a highly experienced all-rounder — software engineer, director, marketer and strategist. Bill is the Managing Director at Asta Solutions, an IT services company based in Melbourne which he co-founded in 1999. He's also CEO at wineonline.com.au, Director and Treasurer at VACRO and a Director at The Art Cabriolet. He loves volunteering for good causes and his local soccer team, Hawthorn Football Club.



ALEKS SOTIROVSKI

TECH

Senior software developer. Previously, founder of Gympro, a client management tool for fitness professionals, uniting 3000+ professionals in United States, Australia, New Zealand and UK. Currently, senior developer at ELMO Talent Management Software.



NERIJUS SKRUODYS

TECH

Senior software engineer passionate about blockchain technology with more than 15 years of experience in the analysis, technical design and development of software solutions using various technologies (C++, ASP.NET, Java, etc.). Currently coordinating development of several IT projects in an international public sector organisation.



VIKTORAS VATINAS

BUSINESS & ASSET MANAGEMENT

CFA: portfolio manager at Partners Group (Zug, Switzerland) managing private debt funds, private loans, private credit strategies, asset allocation, cash level management. Former investment analyst at XL Catlin (Zurich, Switzerland), private banker and research assistant at the Swiss Finance Institute.



TOMAS GURVICIUS

BUSINESS & ASSET MANAGEMENT

Crypto-investor, Dash Digital Cash community member, a partner at Crypto Tax & Legal and an advisor for various blockchain related projects.



STAN KULIAVAS

BUSINESS & ASSET MANAGEMENT

Vice President, Sales & Business Development at Levaero Aviation, Toronto, Canada. Investor & philanthropist. Former NCAA basketball coach. Passionate about basketball and sports, organiser of basketball charity events and other pro & amateur sports-related activities.

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BLOCKCHAIN FOR SPORTS ALLIANCE



JORDAN TRAVERS, AUSTRALIA

HOLISTIC HEALTH COACH



LAURYNAS GUMBIS, LITHUANIA

PHYSICAL THERAPIST, SPORTS ENTREPRENEUR



PAULIUS RITTER, U.S.

FITNESS COACH, FORMER BOXER

MEMBERSHIPS

Blockchain for Healthcare and Medical Research: association of scientists, researchers and private sector to discuss, accelerate and apply blockchain solutions in healthcare sector, Germany.

PARTNERSHIPS

SMACKWAY

Organic food wholesale marketplace, www.smackway.com, Denmark

GYMPRO

A client management tool for fitness trainers, www.gympro.com, Australia

LEGAL SUPPORT

CRYPTO TAX & LEGAL

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