

Draft Document www.Open3D.club

Introduction

Most of the products we use in our daily lives have travelled thousands of miles before we get to consume them, even though long distance transportation of goods and raw materials is not a very efficient way to manage resources. In order to take advantage of the inexpensive workforce, we had to develop and build large infrastructure projects related to transportation (roads, shipyards, railways, pipe lines, fleets etc.). Endless storage spaces and huge shopping malls are just another piece of that puzzle. It is all financed on the expectation of constant sales growth. Cost of these investments is mostly mispriced, payed through taxpayers' money, and only partly built in the price of products we use. As a society we are still revealing true economical cost and unintended consequences of such a system. The vast majority of production facilities ended up being located in Asia which led us to poor diversity of products, expensive recycling, slowly adaptable production facilities, long and expensive development cycle of products and short engineered lifespan - low quality. On the other hand, there are positive aspects of this production model as well - we have achieved a significant improvement in our production capabilities. It has also allowed us to successfully and quickly forefeel growing customer demands for the last century and as still in place it will keep doing so for some years to come, but it is becoming clear that further scalability and sustainability of the current production system is a big issue.



Nikola Tesla

"Invention is the most important product of man's creative brain. The ultimate purpose is the complete mastery of mind over the material world, the harnessing of human nature to human needs."

Approaching the mastery of mind over material world - Is our mission and all innovations that can be used to speed up the process of generating objects from ideas are welcomed. With better use of available technical tools and advanced fabrication technologies, we would like to suggest an alternative way of producing more goods with less use of raw materials. Redesigning and rethinking the production system from the ground up allows us to have a fresh perspective, free from existing constraints. Our team has decided to look out for a solution which can improve energy and material footprint. On top of that we want to embrace diversity of products, enable faster product development, improve delivery times and encourage recycling, while avoiding many marginal costs and big infrastructure investments.

Firstly, the aim is to develop the web platform www.Open3D.club - a large database of 3D printable digital blueprints, easy to use and open for everyone to participate in discussing and building it. Since these 3D objects are digital data they should, if done properly, be easy to search, be adjustable to user requirements and easily comparable to each other in terms of dimensions, weight and cost of material. By enabling people with 3D printing hardware to compete for deliveries of those 3D prints, significant reduction of many marginal costs of today's system of production will naturally follow: labour, packaging, need for advertisement, transportation, storage spaces and retail networks. We believe that this is the best way to move one step closer to our mission. In the beginning, we expect production of small, mechanically simple objects to be dominant on the platform. However, as 3D printing industry gains traction, existing technical boundaries for producing more complex objects will disappear.

Fundamentals and principals

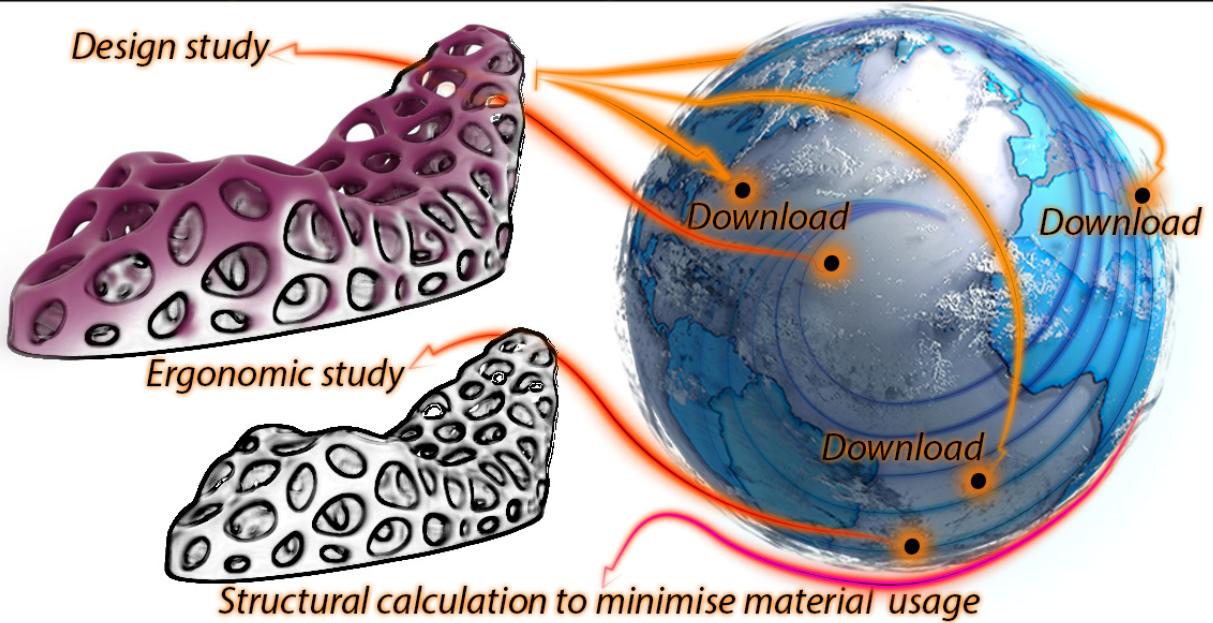
Last 25 years of internet have shown us that intellectual property laws are obsolete and that they are increasingly becoming an obstacle to progress and freedom of sharing. Sharing component is a fundamentally important part of our platform and we have established three principles as a guideline for all people who want to take a part in its future development. Our opinion is that these principles are essential for the success of Open 3D Club.

Free - Instant and free access to public creativity through a free software and free 3D printable objects. Any 3D model, once uploaded to the platform is, and will be free forever for everyone to use it. On top of that we don't collect data about users' activity. This feature should always stay verifiable through the open source code. It represents our fundamental core value and a base for our marketing strategy as well.

Fair - All credits should be fairly attributed to the participants of the project. Their added value should be objectively measured by monitoring statistical data from the platform usage, or rated by other contributors in order to get a fair share of the potential income for their involvement.

Decentralised - This is our long term goal. Centralised solutions should be in use only if there is a lack of good decentralised ones. All areas of the platform should eventually evolve towards fully decentralised or at least distributed network which can reflect a will of the majority of participants.

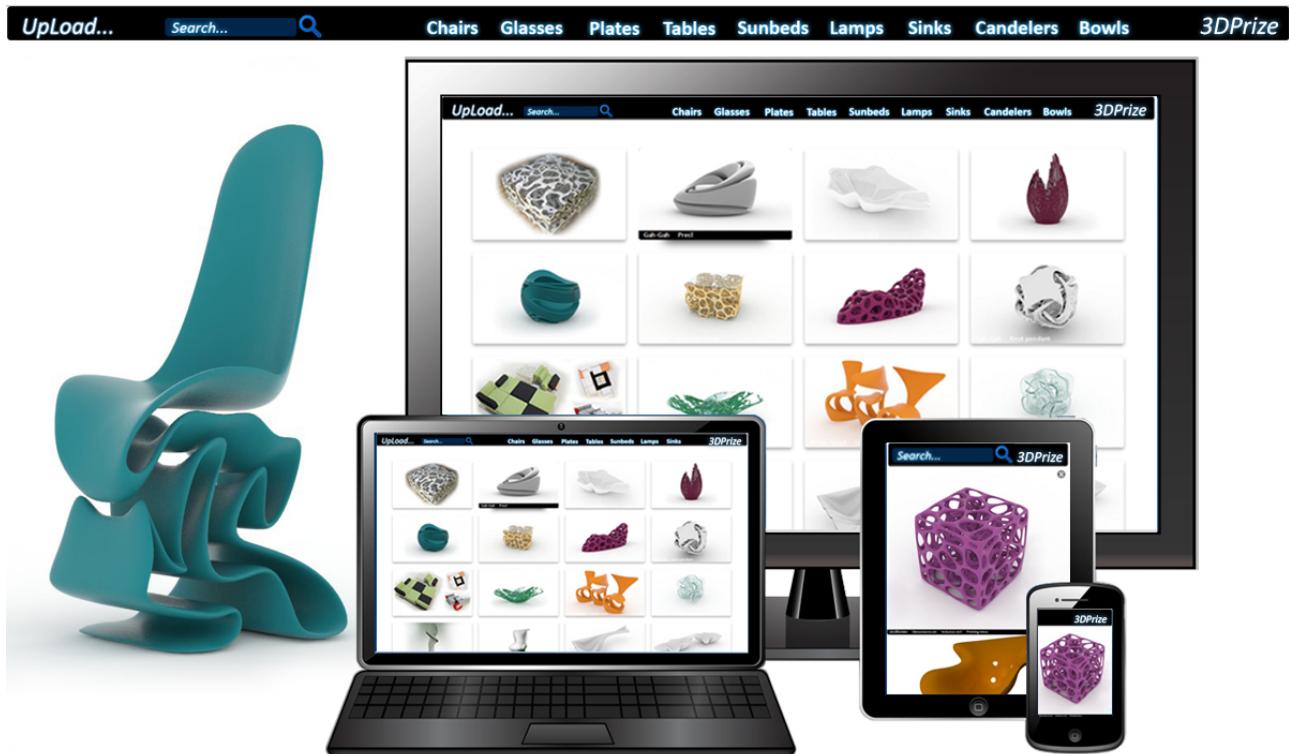
Free Software & Blueprints - allow us to build on top of each other's work, regardless of location



In this document we are suggesting a way of developing, monetising and steering this platform, backed up with some basic features on www.Open3D.club. We want to initiate a debate about the best and the most efficient way to achieve decentralization of production through 3D printing and internet sharing. Professional background of our team is 3D modelling, CNC milling, architectural designing, project management and presentation and we are entering this discussion from that point of view. We are looking for help from open-minded people who are willing to contribute and collaborate with each other in 3D modelling, software development, web design, structural design, production and all other necessary fields so that we can make the future a little bit better. The best source code and 3D models should dominate on the platform and people behind them should take over. Since we currently have control and responsibility over the platform we will try to avoid oversupply of simplistic 3D models and objects which sole purpose is to be a weapon.

User interface and experience¹

User interface is an evolving category and it should take into account all emerging technological trends - virtual reality, augmented reality, voice control and similar. New devices are going to become increasingly important in this field. That is why the platform should aim and progress towards a holographic presentation with the possibility to interactively customise and adjust 3D models to users' preferences. Instant access to all available information regarding any particular 3D model (volume, structural strength, price, production time, delivery time, recycled material value) should allow us to make easier and better choices.



But, let's get to the basics first. We think that it is an imperative never to require registration or any personal information from users. That way our team can be focused on the platform and development of 3D models. Access to Open 3D Club platform has to be with no strings attached. The best way to embrace 3D printable items themselves is through a simple interface. It has to be intuitive and done mostly through a graphical presentation, so that people without any previous experience in using 3D software can easily browse through the platform. We think that interface simplicity, with a good balance of shown information about designers and 3D objects, is a way to maintain recognisability on all current and emerging devices. Users who want to have a closer look at a particular 3D model should be able to explore it interactively, rotate, zoom in and out, apply different materials and colours to it and see all technical data available (dimensions, weight, volume) about a particular 3D model.

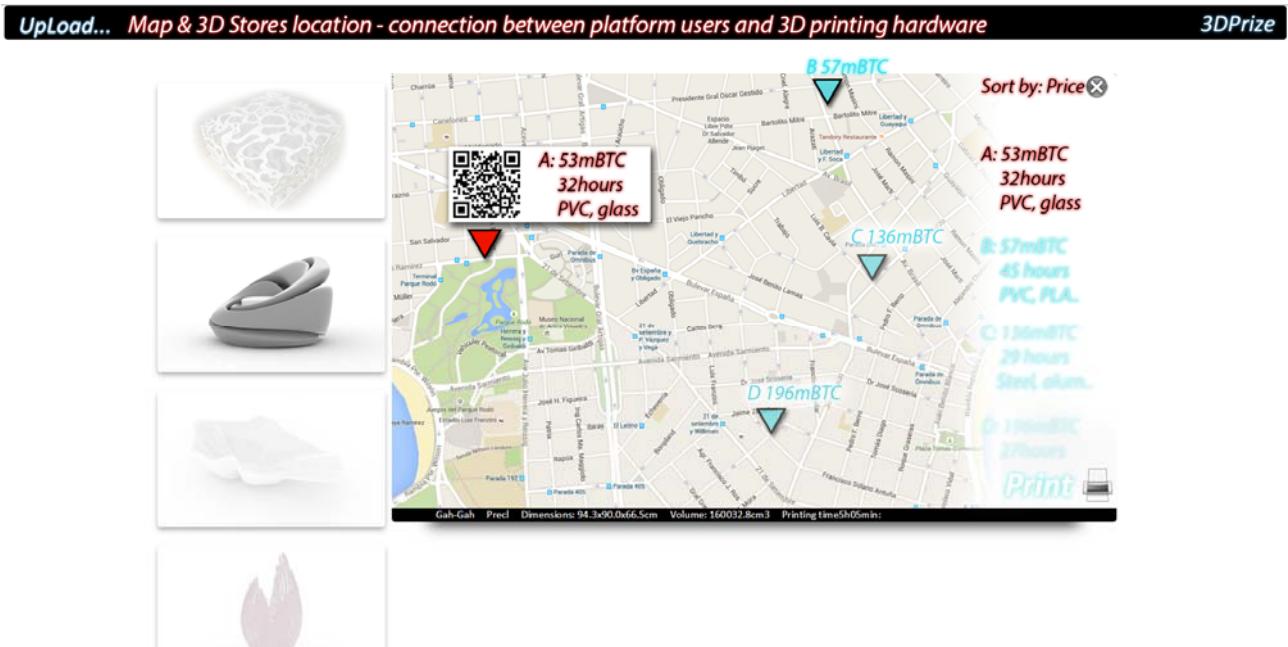
From 3D artists' perspective, UI for uploading files should be simple and pseudonymous – by dragging and dropping a properly named STL file (btc address included) all functionalities mentioned above should derive automatically.

In the early phase we would like to highlight advantages and possibilities of the additive manufacturing, by presenting highly complex items which can hardly be built by using traditional production methods. We hope that this way we can attract the best 3D artists to spark public's imagination and gain us some visibility.

¹ - Blender community probably has the most holistic understanding of this process and we would be happy to have them take over this part of the platform.

Connecting with 3D printing stores²

After browsing through the platform and making interactive modifications and adjustments to the chosen 3D printable object, once the user is happy with it, they can download the 3D model or should be able to request to print it in an independent 3D printing store, directly connected through Open 3D platform. Our goal is to present all these 3D printing stores on a map in user's proximity, so that he or she can determine where the closest ones are, what kind of materials they can print, time required for the particular object, price and other useful information.



In the early phase of developing this feature on the platform, we should provide users with contact details like phone number, email and address of 3D printing stores on the map at list. With this level of information interested parties can get in touch to arrange production of a 3D object, but the experience won't be very smooth that way. To develop this service further and to reduce friction we should move towards providing a complete production information. By having access to the geometrical data of 3D models (dim, volume etc.), 3D printing stores can show an information like - 3D printing time, price, structural strength, delivery time and possibility to secure the deal through the bitcoin-lightning network escrow capability. This would allow us to introduce *Voluntary payment*³ as a reward for providing the whole service. 3D printing stores should be able to get involved in the platform without any barriers to entry, but their reputation over time should become reflective of users' satisfaction with their service, similar to any other selling platform on the web.

Entire experience should be free from any commercial interference until the user decides that he or she wants to download or print a 3D model. At that point, we have an opportunity to promote and present a commercial message. That can be useful for both 3D stores and users as well. We would like for all content on *0ΣAdvertisement*³ to be exclusively related to 3D printing industry or to some useful services connected to the industry. For example, 3D stores can advertise their capabilities, like material diversity, printing sizes or promotions to users around them. Other examples can be that 3D printing material and 3D printer producers can advertise their products or 3D modelling teams can advertise their skills. The best way to get to useful *Advertisement* content is a subject for further discussion, but it should probably evolve to some kind of a rating system.

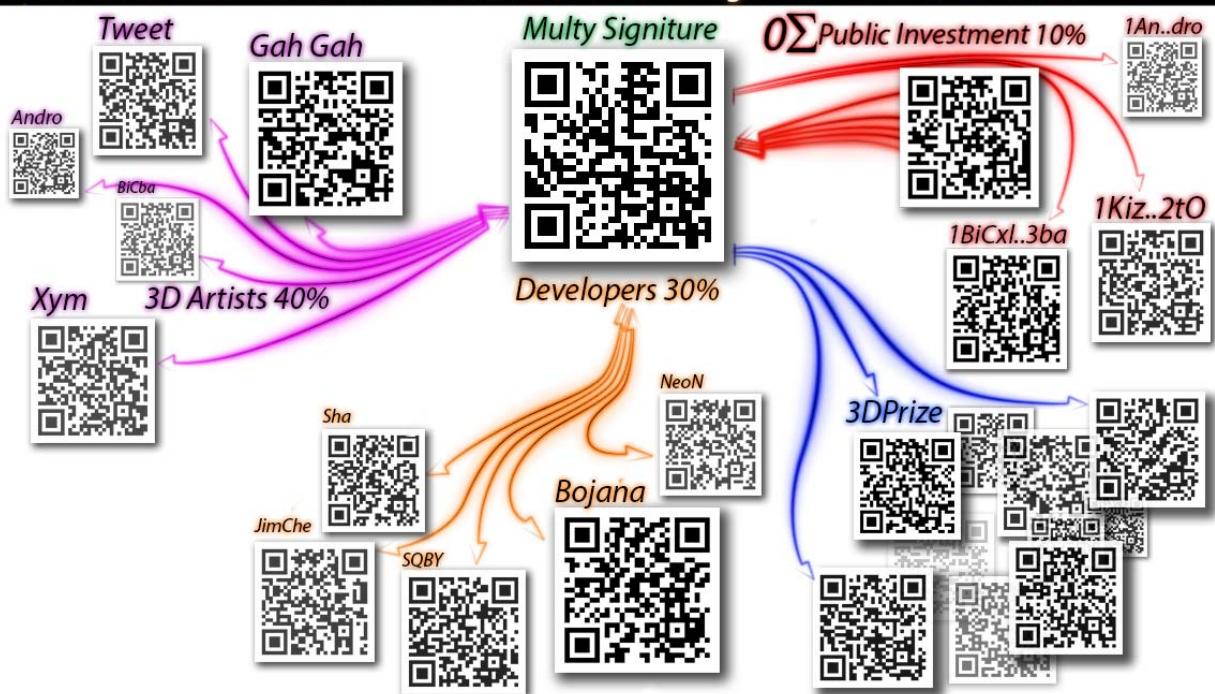
² - We find that www.3dhubs.com is the best fit to lead this part of connecting people with 3D printing hardware.

³ - Voluntary payment & 0ΣAdvertisement are methods explained in the Monetizing Platform section

Distributed Autonomous Organization⁴

Ideally, all functioning rules of Open 3D Club website would be encoded in an openly available source code without having anyone to be involved in the execution of all the rules. Statistical measurement of the platform usage should be in the constant feedback loop with a distribution of an income on a daily bases. Even though we currently operate only on Bitcoin network main chain, it is easy to see that all transactions should be done through Lightning network, were participants can choose to settle their balance on the main chain anytime. That way all potential income, regardless of how small the value is, can instantly be distributed towards the participants on the platform. We can offset the trust problem by not holding any funds, even in the beginning. Anyone should be able to upload a 3D model and get paid for it, if users find it useful. Same statistical measurement tool that is in charge for income distribution should define influencing power of participants. The whole platform should also be able to dynamically evolve and incorporate new ideas and features agreed by participants, using the same consensus mechanism. New ideas may be developed by anyone or suggested through the 3D prize page (described later). Every single aspect of the platform should eventually get decentralised: decision making process, payroll, accounting, hosting, storage etc.

Distribution and Influence model- structure visible through source code & blockchain



Bitcoin technology and programmable money have pointed out a way towards the Distributed Autonomous Organisation (D.A.O.) and have put this idea in the realm of possible. Achieving this goal is not an easy task and we should use all available and useful tools⁵ and solutions, if we can decentralise the platform further without jeopardising simplicity of user experience. The team involved in Open 3D Club platform development will welcome people who are interested to get on board by uploading 3D models, improving source code or solving some of the tasks on the 3D Prize page (refer to the chart above).

Level of automatization on Open 3D Club is currently very low. All the transfers have been executed manually following the charts in this document (even a mistake occurred during that process). It is critical to develop and set up some sort of payment automatization as soon as possible to avoid further mistakes. BTC Pay server looks really promising in this regard, even to us with our limited technical understanding. We are looking forward to implementing potential solutions for this problem.

4 - We would like to see reputable people from lightning network community taking over this part of the project

5 - All percentage numbers on chart are arbitrary and can be changed through discussion

Dynamic reputation system for Artists⁶

Each group working on Open 3D platform (software developers, artists and possible other groups) will have to come up with a set of rules for measuring contribution and payments to people in their field. Anyone should be able to participate in this project and to get paid automatically through their earned reputation. Since we have 3D modelling background we will be presenting a reputation system ideas for this group only. As we don't have sufficient knowledge and understanding of software development, this reputation system is completely up to programmers and developers to create.

Distributed system - measuring artist's contribution by a number of achieved 3D prints or downloads



Our main objective and focus is to provide users with flawlessly working 3D printable models on demand. In the long run, once Open 3D platform is fully functional, and users can purchase real 3D objects, a number of executed 3D printed objects should become the most significant factor in the valuation process of contributing artists. 3D printing stores should provide us with their feedback about the quality of 3D objects. A number of 3D model downloads should be taken into account as a fraction of that value, in order to eliminate a possible manipulation. This should evaluate each 3D artist in the group and form a reward ratio between them.

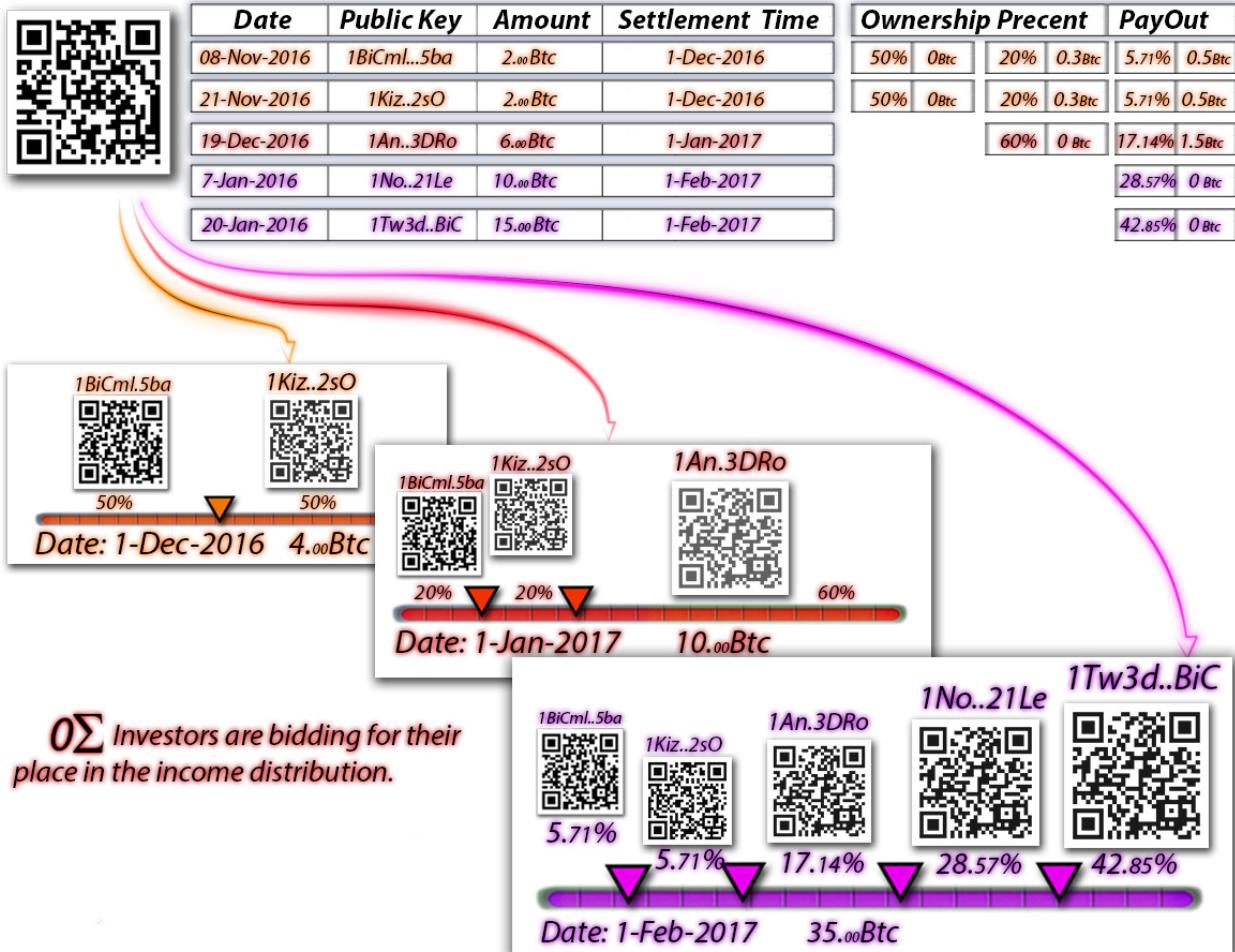
In the short term, we have to establish this website as a database of high end 3D printable models. Maintaining quality will be done through double checking each other's work. People with reliable history of good 3D models will check quality of the new ones, in the absence of a better solution. In the early phase, a reward for artists should be distributed equally based on the number of uploaded 3D models. We do encourage people to produce highly artistic and complex 3D models as a part of our marketing strategy to promote possibilities of additive manufacturing. We are open for suggestions to find a better way of maintaining quality and avoiding oversupply of simplistic models, while encouraging fair and equal chances for all participants.

6 - All percentage numbers on chart are arbitrary and they are subject to discussion

0Σ Public Investment ⁷

0Σ Public Investment is just a theoretical concept and as such is subject to further discussions as we are not sure if we should have it at all. This investment model is highly experimental and we do not advise anyone to invest any money in it at the moment. We think that this may be an honest way to finance an open source project, however no one can stop copying codebase and forking the whole project excluding investors.

0Σ Public Investment - Bidding for 10% of potential income distribution



This investment model is highly experimental and it is open for debate, we don't accept investments yet!!!

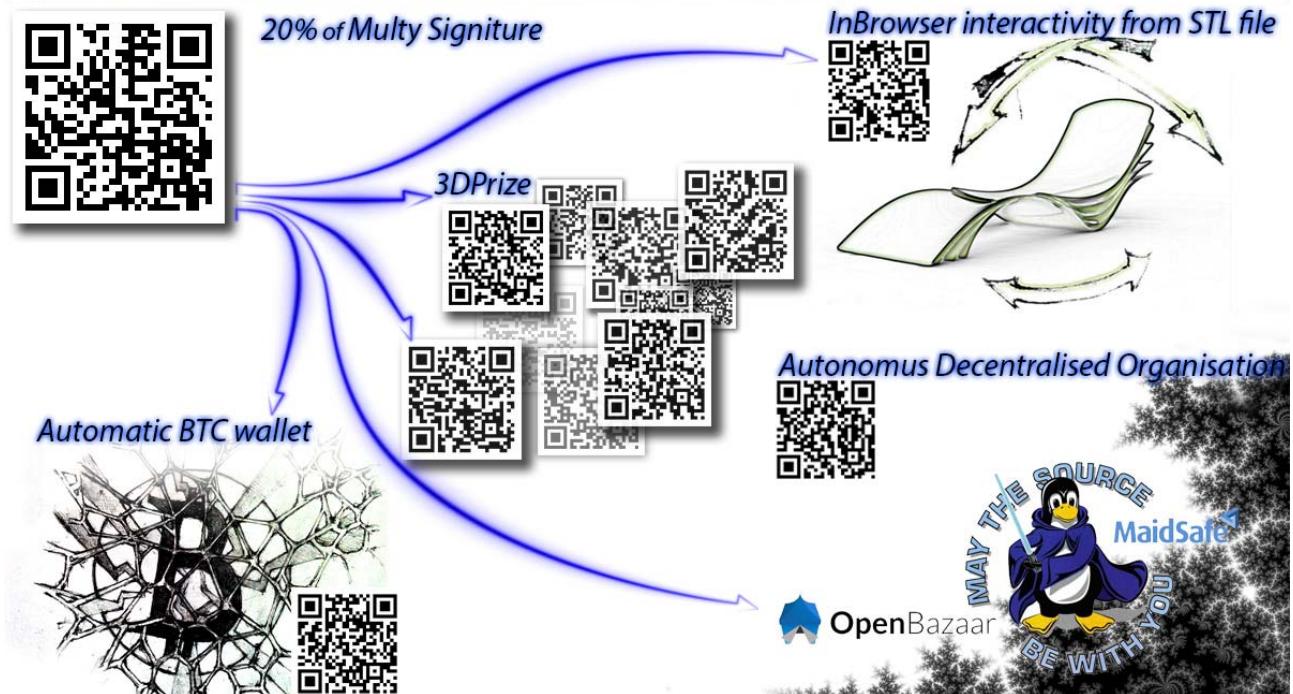
On the Open 3D platform, 3D Artists, Software developers and 3D Prize projects are getting 90% of the total potential revenue stream. The remaining 10% can be devoted for public investment in the Open 3D Club idea. Anyone can pay their way in and have their part in the distribution of the potential income. This model has some similarities to shares and dividends. Investment pool is going to be open for a constant bidding, having settlement time every month. While investors will get their percentage of all the income following the chart above (mimicking dividends), percentage that each investor has in the investment pool will go down as new investors join in, which is different from shares. Because this model is based on 0Σ Game, new entries would finance the whole team of contributors and earlier investors. We believe that using Bitcoin as an accounting unit will reward early investors, same way Bitcoin network has done through its appreciation. It is a double bet on bitcoin and our project at same time. Everything can be done through using BTC public keys only, "dividends" can be paid back to the same address that investment came from. Even allowing investors to change their payout address to cold storage address may be done through combination of email and bitcoin transaction (emailing in advance that such and such transaction will occur). There is no need to offer any digital token, altcoin or anything similar to represent 0Σ Public Investment.

⁷ - We would like to see broad discussion about this financing model, is it suitable for an open source projects?

3D Prize page

This page is envisioned as a place where we can advertise sub-projects we find important for the platform development and put bounty for their solutions. 20% of the total income will be automatically allocated towards 3D-Prize page. Each bounty address (QR code) is connected to a particular project only, transparent and publicly open. Anyone is able to check the financial honesty through the block chain. Since the whole project is open source, people who find a particular bounty useful for a different purpose, can increase the reward for the needed solution. Latter on the amount of external investment can help us to rank the importance of bounties. Once someone makes a claim that he or she has solved a particular problem, we will check truthfulness of that claim and if shown as valid, that will trigger one month ending period. During that period other participants can finish and send us their work. If other, later arrived solutions, are technically better, well optimised or more elegant (simple) the bounty will then be split. The split ratio will be 38% for the first working solution and 62% for the better quality solution. The idea behind this is to motivate people to approach solving these challenges as thoroughly as possible without cutting corners. We value quality more than speed and encouraging the best engineering solutions is very important for Open3D club.

3D Prize - Bounties for needed technical solutions to develop the platform



In the short run, Open 3D team will be publishing what the most pressing issues are, for the platform development, that needs to be solved at 3D prize page. Programmers and software developers who solve the first set of problems will get in charge of the IT part of the platform. As soon as Open 3D becomes more decentralised, public should become a force in charge of this page by putting some skin in the game. That way, engineers and 3D artists will have an opportunity to see public's interest before devoting their time. Anybody should be able to start their own 3D Prize by attaching a Satoshi to it, as long as it is relevant to Open 3D Club mission. Before we get to this point, we need to make this page highly automated and easy to use, where projects are ranked by the amount of money they offer. At that point, a payment of 20% from the main wallet should be spit to mimic the existing reword ratio between 3D Prizes.

We would like to have a discussion about possible ways to achieve automatization on the 3D Prize page. In the beginning, all the bounties will be mostly about software development, but in the later stages, as software issues get resolved, we expect nature of prizes to slowly shift more towards mechanical engineering and hardware tasks.

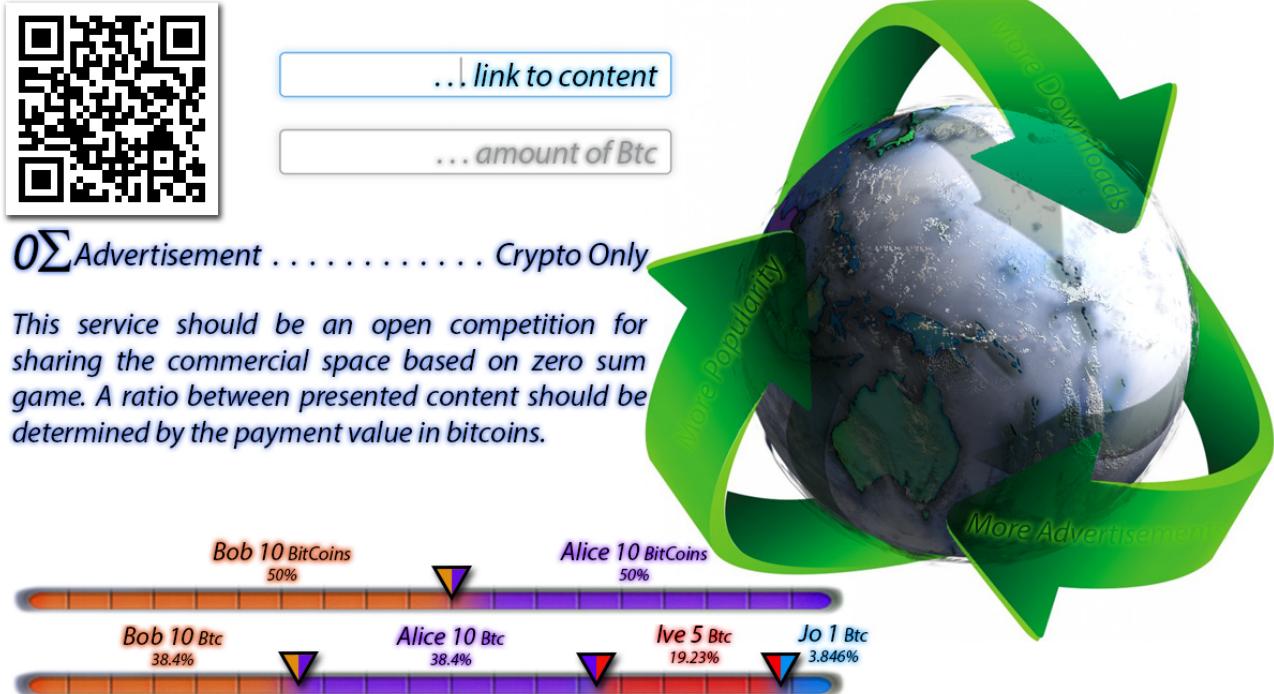
Ways of monetizing the platform

At the moment, we can perceive two different ways of monetizing this platform, which are consistent with our idea. So called **$O\Sigma$ Advertisement** and **Voluntary fee** are in the development stage, yet to be built. We have created some basic suggestions and we are open to new ideas and solutions on how to develop these services in order to align incentives for all interested participants. As we progress forward and keep building Open 3D Club platform, new ways of monetising will appear. As long as they are not in violation of our core principles, they should be deployed and utilised. **Donations** is the third, not that serious, way of monetisation and it has been implemented. Hopefully it can help us jump start the project.

Revenue sources

$O\Sigma$ Advertisement - As previously mentioned, advertisements will be shown on the platform while 3D models are being downloaded or being sent to 3D printing stores. We would like to have an Automatic Add wallet system where anyone can participate by simply relating each payment transaction to URL (web address) which contains a commercial content. An algorithm should measure a ratio between payments and automatically adjust a number of displaying ads to users. You can see the diagram example below with Bob, Alice & Jo which explains this further. Every year, the system should be restarted and bidding for the marketing space should start all over again. Bitcoin is used as the currency and the accounting unit, while some other crypto currencies will be accepted and transferred back to BTC.

Automatic Advertisement - Bidding for a percentage of the commercial space

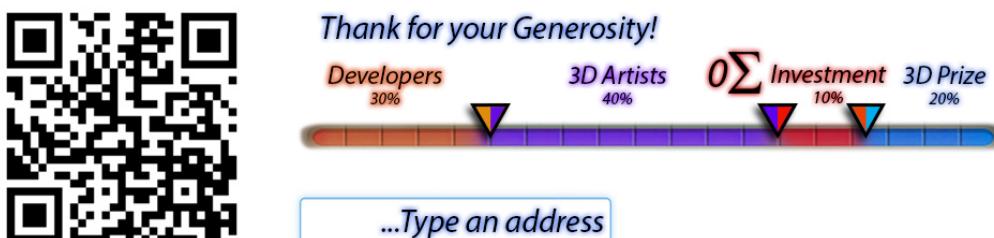


Besides calculating advertisements ratios and displaying them, the algorithm should use IP addresses and geographical data, to allow small 3D printing stores to get involved in the marketing of their businesses to interested people in their proximity. This is going to be mutually beneficial to all parties involved.

Voluntary payment - This revenue source is possible in the long run. Once users can buy real physical objects from 3D stores and execute payments on Open 3D Club platform, we should process that transaction and charge a fee, if that is technically possible⁸. On top of that, we should take a small optional cut (for example several Satoshis – small amount) on each payment to reward Open 3D Club platform contributors (artists, developers and engineers). Users should always have an option to disable this voluntary fee by simply unticking the box on the screen. Potential income should be distributed following the distribution chart.



Donations – are accepted and currently in function. Fill free to help if you like the Open 3D Club idea. Donation model may find it interesting for people who often do explain and promote bitcoin (Lightning Network) to newbies. Instead of only sending a small amount to their newly installed wallets, you can ask them to send half or more of that amount towards Open3D Club. It may help you to explain what yet unseen capabilities BTC protocol has. From our experience we can say that newbies usually lose those funds anyway. All donations will be split according to the chart below. This should be verifiable through the block chain forever. In order to advance this option further, we would like to allow donators to control splitting ratio themselves, by simply moving the adjustment sliders. That way, they can have a full control over their donations.



Many features on this platform are yet to be built and developed. This is our vision of how Open 3D should function and all suggestions on how to improve user experience and functionality of the website are welcomed. We cannot emphasize enough that this has to be a joint effort of many different groups of people having a wide range of various skills. All contributions will be respected and rewarded. Self-involvement of enthusiasts and their mutual cooperation is the only way to constantly evolve and improve Open 3D Club in the coming years. Thanks.

www.Open3D.club

open3dclub@gmail.com

[Github: Open3Dclub](#)

[Tweeter: Open3Dclub](#)

⁸ - If our understanding of lightning network is good, structure like Open3D platform would make a useful hub