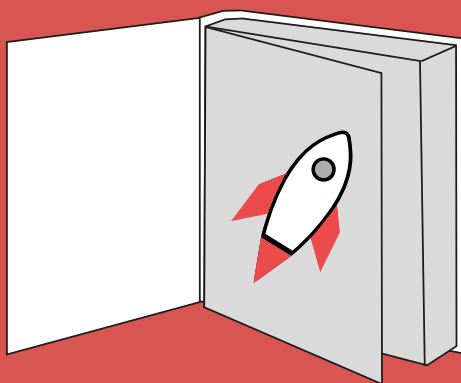


**BITIMAGE**

Next generation digital  
media marketplace

# WHITEPAPER



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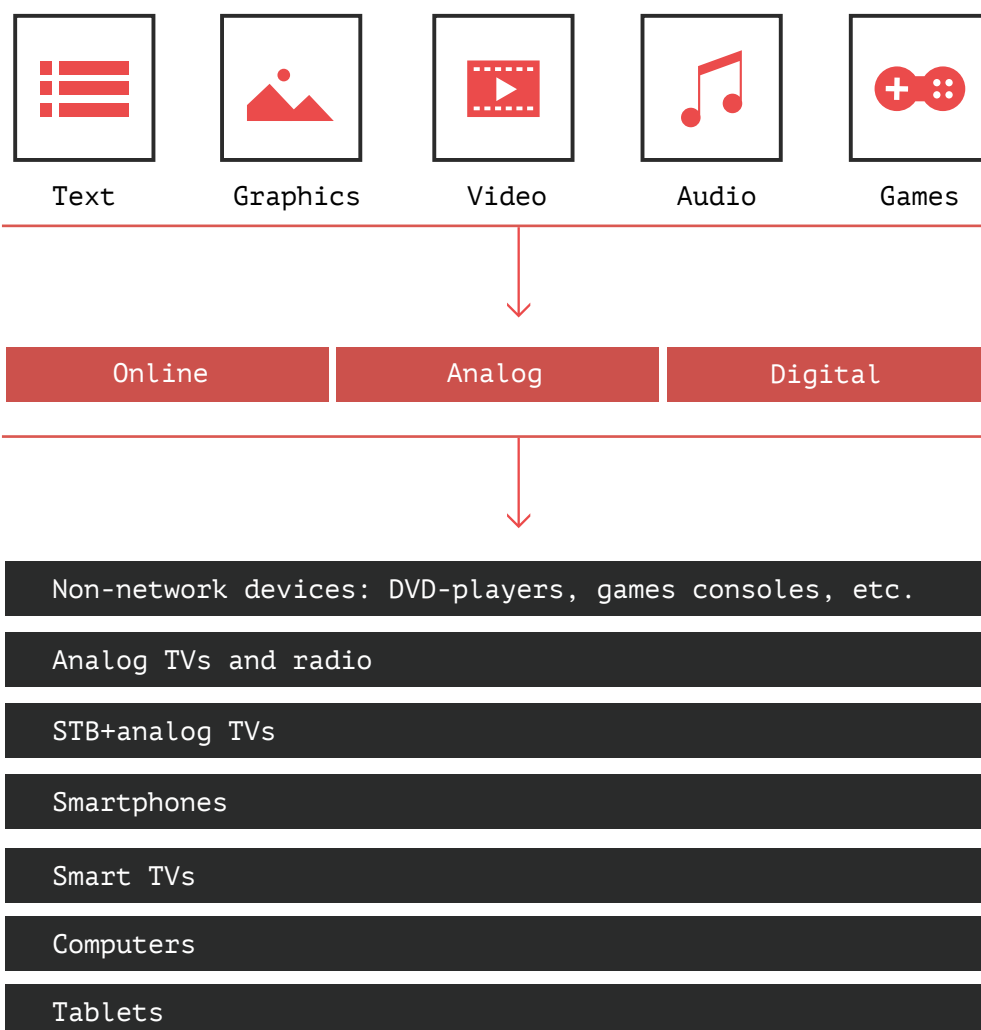
# 1. Digital Content Industry

## 1.1 Ecosystem

The term of digital content is used as an umbrella term to describe three segments of the multimedia products market:

- content production in digital format;
- multimedia products distribution in the digital environment;
- the users' consumption of digitally produced and transmitted content.

For digital distributors, internet websites, content stores, and also for ordinary consumers, digital content is an informative, entertaining or game product distributed over digital networks or a physical medium and consumed, recorded, and copied without the quality degrading. Below one can see the basic ecosystem of both analog and digital content.



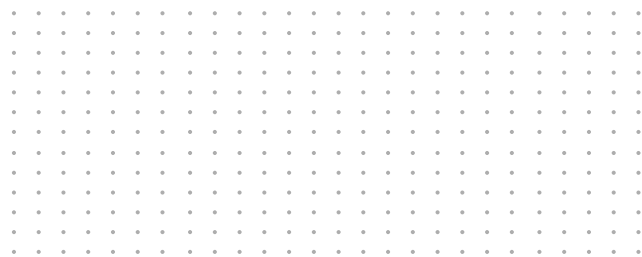
Digital content is a stock of information and entertainment materials distributed digitally over communication channels and intended for use on digital devices such as computers, smartphones, tablets and other specialized devices. Digital content can be presented in categories such as games, video, audio, text, images, and others.

## 1.2 Delivery and Consumption

When mankind entered a new digital era, the development of channels for digital content delivery and consumption became a particularly topical issue. The society's need for digital content is growing along with the penetration of mobile devices (smartphones, tablets, laptops, etc.) in our lives which leads to a more extensive use of this type of channels.

There have been major changes in public demands already. People feel the need to be always in touch while the Internet has become a necessary resource for constant information access. The mobile phone has ceased to be only a means of communication: for most users, a mobile device is an access to favorite music, videos, games, and images that one can watch on public transport, at home, on vacation or share with friends on social networks.

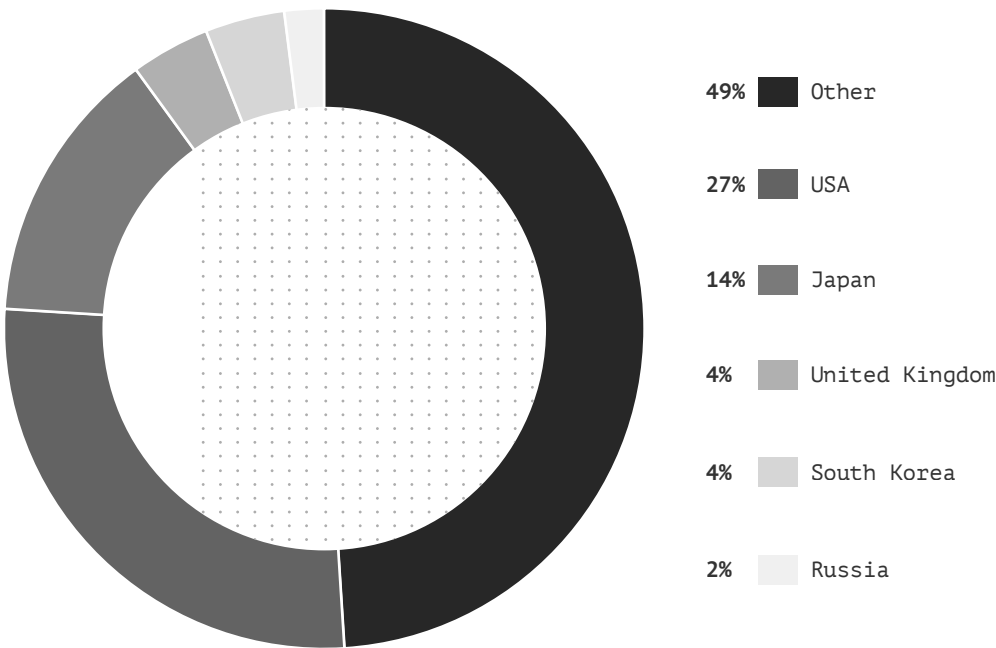
Thus, modern people no longer see themselves outside the information age. They constantly require access to various digital content through computers, laptops, and, especially, smartphones or tablets.



### 1.3 The Global Market

In 2017, the world digital content market amounted to **\$200 billion**, which is **10% higher** than last year. In the short term, it is forecasted that the digital content market will increase annually on the average by **9% in 2018-2020** and reach **\$259 billion in 2020**.

The largest market in the world is the US market - 27%, Japan goes second - 14%, the UK and South Korea occupy 4% of the total market, while Russia amounts to 2% for 2018.



## 1.4 Stock Content Market

The stock content market is a business of licensing pre-produced digital content for specific uses. The value chain of this industry consists of content creators (photographers, cinematographers, musicians, graphic designers, etc.), content users (e.g., mass media, games, advertising, publishers, etc.) and intermediate content suppliers who provide the commercial trade of usage rights in return for royalty payments.

### Stock content

consists of audio (any audio tracks: sounds, songs, minuses, backlogs, etc.), videos (footage and clips), images (photographs and vector graphics), and other digital content on a certain topic, which are sold on public trading platforms (on the world stock market) and can be used as an illustration, advertisement, or any other commercial activity. Stock content can be authorized for use (licensed) for various purposes.

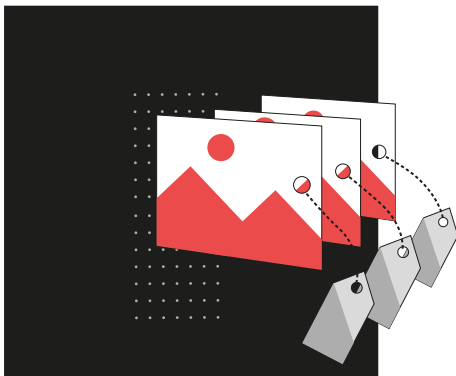
### 1.4.1 Market Size and Dynamics

The stock content market is a part of the global digital content market. The share of it in 2017 was about **\$20 billion**, which is 10% of the digital content world market. The experts estimate the worldwide growth rate to be 7.8 percent every year during 2018 and 2021.

### 1.4.2 Trends and Drivers

With stock media content, communications can become more effective, provide engaging UX and help express ideas quicker. Combined with proper social media efforts, it makes the content more impactful. Today companies make an emphasis on the visual content in the marketing strategy as opposed to the previous approach which used text as a marketing tool. This makes the urge of stock content one of the major driving factors for the market that boosts the customer engagement.

One more trend in the global digital content market is the demand for premium content. Professionals like publishers or brand managers seek for a high-quality content only, which is also relevant, unique, and doesn't interfere with the cultural standards. The fresh perspective is also very requested.



Another great trend for the market is the evolution of new business models that will deliver stock content to the end user more adequately. It's known the existing models do not satisfy all the needs of the industry and have several considerable shortcomings.

**The key drivers for the stock content market growth are:**

- the increase in the number of smartphones and tablets sold worldwide and their penetration growth, especially in developing countries;
- the alteration of public behavior and the needs of the population (a shift to mobile device, Internet, and digital content consumption);
- the rise of the popularity of social networks, mobile games, streaming services and Internet sites for sale;
- the growing popularity of mobile applications, which are an important tool in promoting digital content. Over the past year, their consumption has grown by 2-3 times;
- the evolution of a paid content consumption culture and its growth in developing countries where users are accustomed to listening to music, downloading images, watching videos for free with new technologies;
- legislative regulation of the content distribution, which is aimed at protecting the authors and holders rights.

**All this will drive the market to new heights more and more efficiently.**



### 1.4.3 Key Vendors and Market Share

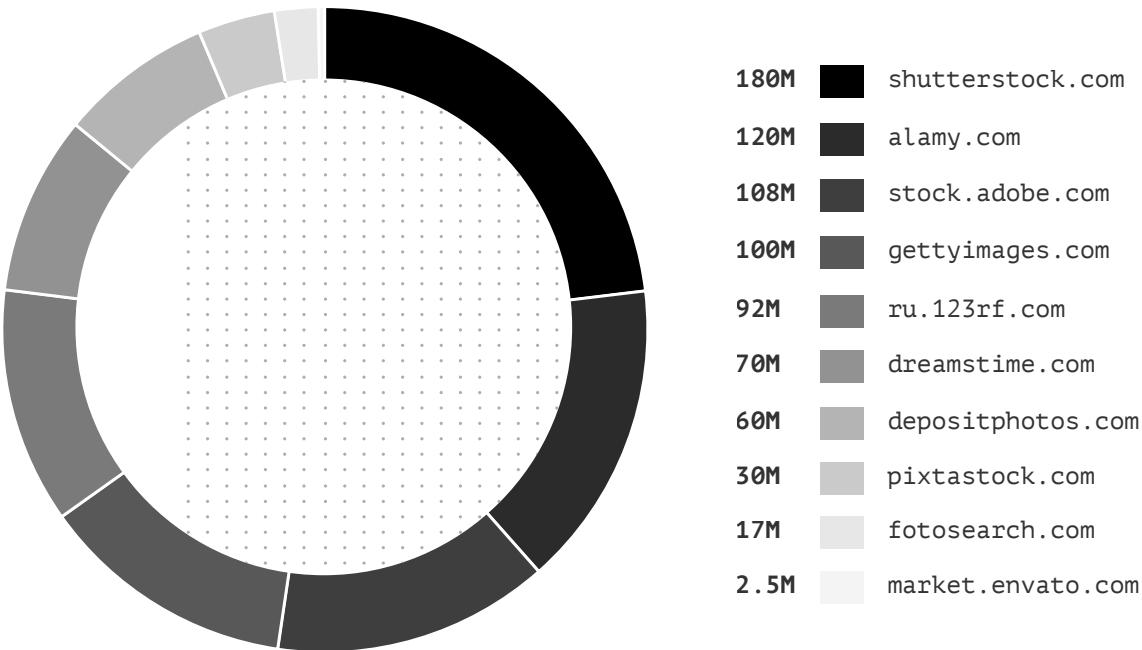
The market is divided into macro- and micro stocks.

MACROSTOCKS	MICROSTOCKS
<p>Macrostocks are all about premium content which prices are several times higher than on microstocks, and the cost of one sale can vary a lot. The prices depend on the type of license and purpose of use (typically they distribute content on the Right Managed license). On average, <b>every sale brings to the author about \$20-\$200</b>, this amount can rarely be larger.</p>	<p>Microstocks are websites that offer buyers works at lower prices compared to macrostocks and are targeted mainly at a mass-market customer with a small budget such as small design studios, freelance designers, website owners, and small businesses, etc. In this segment, the stock content market has three main sales models: by-piece model, batch sales, and subscription sales. Despite such a variety of sales models, the author receives a very limited payment range: <b>from \$0.2 to \$5 for each sale</b>. In rare cases, if the buyer purchases an extended license, <b>the author can get \$20-\$100</b>.</p>
<b>Leading vendors</b>	
<a href="http://gettyimages.com">gettyimages.com</a> <a href="http://alamy.com">alamy.com</a>	<a href="http://shutterstock.com">shutterstock.com</a> <a href="http://stock.adobe.com">stock.adobe.com</a>
<b>Other prominent vendors</b>	
<a href="http://offset.com">offset.com</a> <a href="http://123rf.com/evo/">123rf.com/evo/</a>	<a href="http://canstockphoto.com">canstockphoto.com</a> <a href="http://fotosearch.com">fotosearch.com</a> <a href="http://pixtastock.com">pixtastock.com</a> <a href="http://envato.com">envato.com</a> <a href="http://www.pond5.com">www.pond5.com</a> <a href="http://depositphotos.com">depositphotos.com</a> <a href="http://dreamstime.com">dreamstime.com</a>

As we can see on the graphic, **Shutterstock** has occupied the leading position in the industry with almost 180 million images, videos and audios online early in 2018.

Summing up, being a moderately consolidated, the global stock content market has not many great market shareholders. So, a new entrant will capture quite a decent market share in a short term.

**Companies ranking by the number of available content:**



As we can see on the graphic, Shutterstock has occupied the leading position in the industry with almost 180 million images, videos and audios online early in 2018. Summing up, being a moderately consolidated, the global stock content market has not many great market shareholders. So, a new entrant will capture quite a decent market share in a short term.

#### 1.4.4 Stock Content Consumers

Today the Internet has penetrated into all the spheres of life and easily resolved the materials shortage problem, as the content for the production of games, films, books, brochures, magazines, newspapers, website design, etc. can be bought without any difficulty at the stock platforms. At the same time, you will not need to hire an individual person to your office to prepare the necessary material. People or companies come to stock sites in order to buy licensed content and not to violate anyone's copyright. This is necessary for not having problems with the law in the future and not being convicted.

**Basically, stock digital content is used for:**

- advertising;
- books industry;
- film industry;
- brochures, magazines and newspapers;
- computer games;
- video clips & slideshows;
- programs and websites;
- other commercial projects.

**The main consumers are:**

- advertisers and advertising agencies;
- small to medium businesses;
- photographers;
- videographers;
- musicians;
- designers (e.g. computer and smartphone games);
- creative professionals and bloggers;
- media and corporate organizations;
- filmmakers, editors and production houses;
- technology companies;
- government agencies;
- educational institutions;
- interior decorating companies;
- anyone who loves and needs amazing digital content.

For example, a film can contain numerous sounds, music, video clips and images. Video games contain numerous background pictures. Only one major New York image company received a request for nearly 600 images for a software company and up to 1000 images for children education program. That's why the demand for ready-made stock media content can be considered as high enough and it is continuously growing.

### 1.4.5 License Types

<b>Royalty Free (RF)</b>	RF is the most common type of license in the stock areas. It allows an author to sell the same content an unlimited number of times at different stock sites. A buyer pays only once and can use content many times for various purposes, but with limitations in commercial use.
<b>Extended Royalty Free (extrRF)</b>	Typically, it's used in cases where the work is used for commercial purposes (printing on post-cards, on T-shirts, posters, etc.) and if the user needs are not satisfied by the regular royalty free license limitations. The profit for one sale is at least 5 times higher than when sold under a common royalty-free license.
<b>Right Managed (RM)</b>	All the conditions (like time period, amount, usage area, and geography) under this license are negotiated, and therefore, the price for the content will depend on the required parameters.
<b>Exclusive Buyout (EB)</b>	Exclusive license. This is the most expensive type of licensing: the buyer receives unlimited rights to use the content. Such a content can only be sold once. After that, the content should be removed from all the stocks.
<b>Editorial</b>	The license for editorial works. By purchasing editorial content the buyer can use it only for educational purposes, but in no case can this type of license be used for advertising and commercial purposes.
<b>Rights-Ready license</b>	The image is used in a particular project and for predetermined purposes. The buyer indicates for which project and purposes the content will be used.

## 2. Existing Problems and Consumer Pain Points

### Copyright and Licensing

In the world of digital content and intellectual property aggregators, authors and buyers faced a number of significant problems that directly and implicitly affect the entire stock digital content market. Before describing consumer experience, let's first determine the main reasons why authors and buyers may need digital content.

#### Authors

are artistic professionals creating intellectual assets using their own extraordinary outlook and world perception. The result of their work is the creation of various images, video, audio, etc. The main method for authors to monetize their work is to transfer of non-exclusive rights to use copies of their works to other users for money with certain restrictions or to transfer exclusive rights through the full sale. For this, the authors come to the stocks using their existing content sales models.

#### Buyers

are people or companies from such industries as mass media, games, cinematography, publishing houses, advertising and many others for which digital content consumption is an integral part of the business. Since the legislation and intellectual property economy is now widely used in developed countries and is only gaining momentum in developing countries, the consumption of paid licensed/legal content progresses by leaps and bounds. Already today people are ready to pay for quality/legal content not to have problems with the law.

**Based on the reasons described above, consumers have the following main problems:**

Authors	Buyers
<p><b>The theft and illegal use of their content.</b> This problem is very essential at the moment as the digital content market is constantly expanding and, therefore, the competition also grows. Authors spend a lot of energy, time, and money to create exclusive content and enlarge the earnings. Consequently, theft and illegal use threaten large financial losses and complete violation of copyrights.</p>	<p><b>The purchase of illegal, copyright-infringing content.</b> Since the use of this content violates laws it may result in administrative and civil liability, which is a direct threat to consumers of stock digital content.</p>
<p><b>Incorrect use of a licensed content.</b> This also leads to the financial losses of the authors and their copyrights violation. For example, according to the Right-Managed license, the author specifies the terms of use with the buyer. Very often after issuing a license under the previously stipulated restrictions, buyers violate them specifically or simply forgetting/missing some of the details stipulated in the contract.</p>	<p><b>Stock platforms do not have incentives to actively interact in case of any issues.</b> The buyers own any licenses or documents confirming their legitimacy of purchase. No platform will give you a paper to confirm your rights. If there is a legal claim, the stock sites can ignore the issue, which creates a number of obstacles for consumers.</p>

## Prices and Market Model

A market is one of the many varieties of systems, institutions, procedures, social relations and infrastructures whereby parties engage in exchange.

Markets can take many forms. One of the main criteria of the market is the freedom of actions of participants, which ensures the competition. The greater the number of independent participants, the higher the market competitiveness. A market with one major seller and several buyers is called a monopoly.

Since all existing stock leaders form the price on their own, there is no stock market leader that would allow the authors to set their price for selling their works. The choice is only up to buyers and limited due to the sale models described above. This creates a monopoly on the price and prevents open market relations.

Consequently, the only way to succeed in a market economy is to offer customers the goods and services that they want and can pay for. In the current situation, we see that this condition is not met. We have one price for everyone that imposes a big restriction on the development of this market.

If you look at such markets for the sale of digital content like the Apple Store and Google Play, then the price may be formed by the sellers themselves.

In open market conditions, everyone can enter the market and sell their goods and services at a price that potential customers are willing to pay for them. For example, in case of an open market:

- the range of offered products and services is wider and the activity is higher.
- the competition is more developed and market relations are more dynamic & creative.
- the range of offered products and the freedom of potential buyers action is greater while the price is lower.

The content cost on all existing platforms has been formed and is still being formed taking into account developed countries where the living standards have always been higher compared to developing countries and hence the cost is significantly overstated these days. That's why a large market segment (developing countries) is simply not covered.

With the subscription model implementation, the content has become cheaper and stock sites sales have increased but nevertheless, the prevailing number of people who want to acquire content legally cannot do this because it still has the high price.

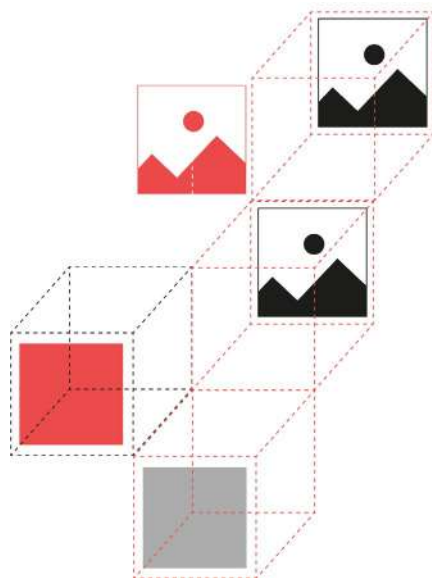
## Content Validation

The validation in the existing stock content platforms can take up to 1-3 weeks, which is a very long time in our era of information technology. This delay negatively affects the earnings of the authors. The faster the content will get to the stock, the faster it could be sold.

**Today at all stock platforms, content is validated manually by people, which is ineffective and requires a lot of time.**

In case of manual validation, the content is judged by people. They decide whether it will be sold, whether it is suitable for sale and hence as a result the content will always be asserted in different ways that leads to instability. For example, you are a photographer and you know that now the trees with cones are in the trend, you are sure that your picture will be sold in large numbers. Then you submit it and, after the check, you see it was rejected as unnecessary because there are already a lot of photos of trees without cones and someone decided that there is no difference - why should people need just another tree?

All this leads to problems of income loss for authors.

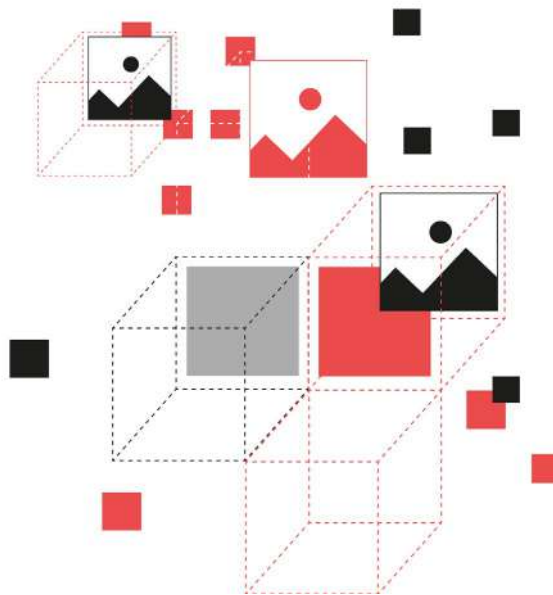




## Content Search

The stock leaders have over 100 million different stock content items each and it takes a huge amount of time to find the necessary content there, which nowadays is not an effective way of searching. For example, busy people simply cannot afford it. They either choose quickly what they have searched for or spend a lot of time looking for what they need, while do not always find what they want. Besides, now the content uniqueness is in the trend while the ability to order this uniqueness is simply not provided. Customers can only choose from what they see, which is a big limitation.

In the past, some large stocks have implemented **Artificial Intelligence** into their search algorithms to seek the necessary content more quickly, but with the growth of content volumes on the stocks, this decision has not proved its efficiency.



## Authors Earnings & Existing Business Model

Authors working with stock sites sign a license agreement with them, which gives stocks the right to sell their content. After each sale the authors receive royalties.

If you look at Shutterstock, one of the leaders in the market, their sales rates by subscription are:



- beginning authors get \$0.25 per sale;



- when they earn \$500 and more, then deductions increase to \$0.33;



- when sales reach \$3000 - \$0.36;



- when sales reach \$10,000 - \$0.38.

For On-Demand sales a novice author will receive **\$0.81** if subscribing to small sizes and **\$1.88** if subscribing to any sizes; after some time, these deductions grow to **\$1.24** and **\$2.85**.

In case of the sale under the expanded license or a video sale, **the author will receive from 20% to 30%.**

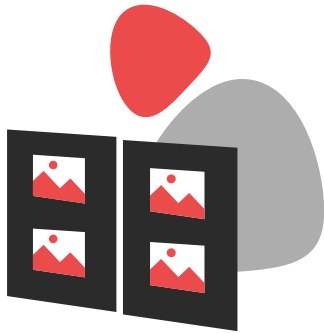
Let's say the beginner author uploaded 100 images. On average each image costs \$6 regardless of the sales model and the average amount of royalties for the image will be \$1, regardless of what license the sale was. Based on simple calculations, the author received only \$100 (at best) per month while stock platform earned \$500. If you still take into account commissions from banks, the amount will be even less.

That's why entry threshold for beginner authors when they can reach at least \$1000 per month is very high. During this time, a lot of authors leave such sites disappointed without realizing their potential, which is a big problem. In addition, the stock sites put limits on the funds' withdrawal. That is, the author will only be able to withdraw the funds when the specified amount is reached, which imposes restrictions. In case the author has earned not enough money for a month, the situation aggravates and the author can remain without money at all.

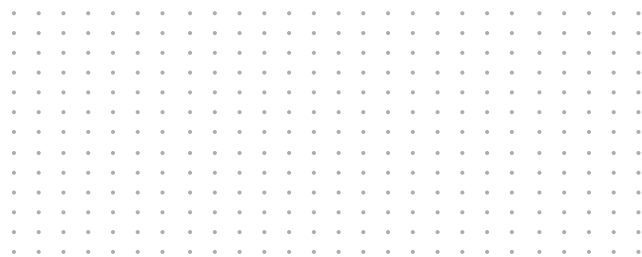
## Authors Earnings & Existing Business Model

Summing up, the existing stocks business model is based on the fact that the authors load their works and the stock itself provides sales for a large percentage. But in practice, this is not so. A lot of authors or agencies (consisting of many authors) are promoting themselves independently, attracting customers and thereby increasing their sales. In fact, they are forced to do so due to the extra-high fees the stock platforms require for such services. The authors are creative people, they do not have the basics of marketing.

**This all suggests that the business model and the stocks work principle are outdated based on the current market situation.**



**A lot of talented authors simply cannot start realizing their dreams and make money on their favorite business which makes a big piece of the market unexplored in the current situation. And those of them who are already working face great difficulties.**



### 3. BitImage Solutions

BitImage is the next generation digital media marketplace designed to eliminate the problems described above and create a new standard in the trade of intellectual assets through the new technologies use and approaches such as:

#### Decentralized Content Licensing

All licenses that will be issued to intellectual assets (digital media content) in our system will be recorded and stored in an unchangeable distributed registry, which is known as the blockchain, thus forming a **digital asset ledger**, where the stock digital media content ownership rights for authors and the buyers' rights to use the purchased asset will be fixed.

Each sale will generate a smart contract in which all terms of the transaction under the license agreement will be registered. Since smart contracts are executed and saved in the blockchain, they remain unchanged after they have already been recorded. In short, a smart contract is an analog of a license agreement.

Thanks to this, authors and buyers will have an unchanging proof of their transaction and since this information is publicly available, it can be found and applied as evidence in case of disputable moments. Using our platform, authors and buyers can be sure that their rights will be protected.

All this gives:

Authors	Buyers
<ul style="list-style-type: none"> <li>• A distributed ledger for tracking property rights. With the help of decentralized licensing and smart contracts, we will solve <b>the original content property ownership problem</b>, as information about the ownership will be permanently preserved and unchanged in the blockchain. No need to sign any documents, spend money on it, and be afraid that they will be lost as your unique digital content will always be yours. This information is public and unchangeable and is always stored in one place.</li> <li>• In the case of illegal content use through the ledger, it will always be possible to prove the ownership right.</li> </ul>	<ul style="list-style-type: none"> <li>• A single mechanism for tracking licenses issued to customers. With the help of decentralized licensing and smart contracts, buyers will always have a confirmation of their content purchase in an unchanged and public place.</li> <li>• Also, with the help of decentralized licensing and smart contracts, we will solve the problem of the content misuse by customers as they will always be able to easily and quickly see the terms of the license agreement. Furthermore, the ledger will encourage them to use the purchased content correctly as this information is publicly available to the whole world.</li> <li>• There is no need to sign any documents, spend money on it and be afraid that they will be lost as the unique content you bought will always be yours.</li> <li>• The ledger will allow customers to track the history of content sales they are interested in to prevent an unwanted purchase or a legal claim.</li> </ul>

## Artificial Intelligence

### Artificial Intelligence (AI)

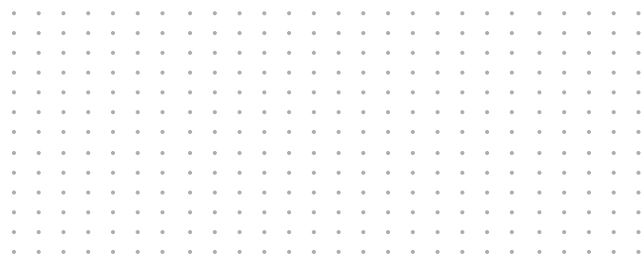
is the science and technology of creating intelligent machines, especially intelligent computer programs; the intellectual systems ability to perform creative functions that are traditionally considered the prerogative of a person.

In our era of information technology, AI is already actively used in various human activity areas from virtual assistants to the recognition of objects on video, making our life easier and brighter.

**The future is not far off so why not use it?!**

Thanks to Artificial Intelligence, BitImage will be able to:

- eliminate time delays in content validation to a couple of minutes;
- constantly learn and improve the validation process through machine learning based on accumulated experience;
- guarantee impartiality and uniformity in making decisions to eliminate the human factor;
- guarantee the best solution choice in a matter of seconds;
- analyze a huge amount of information and give it to the analyst at a click;
- analyze trends thereby helping authors to earn more;
- constantly learn and improve the processes to provide an increased value to the consumers.



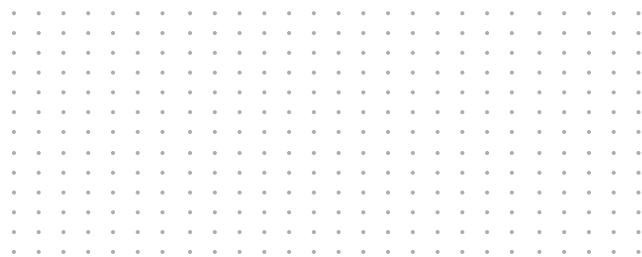
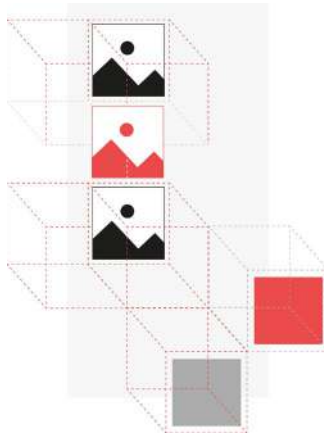
## On-Demand work implementation

No popular stock platform provides an opportunity to order a custom content.

Thanks to the on-demand works implementation, BitImage:

- will create a completely new area of earnings for authors and a completely new area for buyers' needs satisfaction;
- will give customers a way not to spend an enormous amount of time searching for unique content, thereby simplifying their lives;
- will make it possible to order the new unique content if there is nothing similar available.

**Previously, this kind of services was expensive, but now in the freelance and remote work era it will be cheap and done in a matter of hours. To order a custom content from hundreds of thousands of talented authors has never been so easy.**



## Cryptocurrency

Cryptocurrency hit our world with an explosive wave. Many companies and services now prefer them instead of fiat money because thanks to their decentralization and new technologies they solve numerous problems related to the centralized nature of paper currencies and other instruments, and provide many undeniable advantages.

Thanks to cryptocurrency, BitImage offers such advantages as:

- reducing the cost of all digital content kinds. Since the nature of crypto money is decentralization, we can exclude such a centralized link like banks and their commission from monetary transactions. This will significantly reduce the cost of digital media content.
- instant money sending. There is no need to wait for some statement from the bank for a few days as everything happens in a matter of seconds.
- cryptocurrency transfers do not have the boundaries. Being geographically in Europe, you may require a money transfer from a company or a person from Australia which can involve some difficulties. But now there is no such problem: cryptocurrencies can be transferred from point A to point B in no time. All this expands the interaction boundaries between different people from different countries around the globe.
- now the authors do not need to wait until a certain amount of money is accumulated on the account for funds withdrawal; one can do it anytime and without any sum limitations.
- no requisites and preconditions for transactions are required.
- **24/7/365 availability**. Focus on your business and do not worry whether it is a weekend or lunchtime in your bank. If you want to send a transfer at 3 am on Sunday, then it will be sent at 3 am on Sunday.
- Cryptocurrencies are secure and more reliable compared to fiat money.

By lowering the content cost, **BITIMAGE** will be able to cover such market segment as actively developing countries and thus authors will be able to significantly increase their income. A lot of new customers will be able to enter the market of legal content consumption owing to the cryptocurrency with all its benefits in transactions.



## Smart Contracts

The usage of smart contracts will give BitImage the ability to perform reliable and confidential transactions without any external intermediaries. Besides, such transactions are traceable, transparent, and irreversible.

Smart contracts not only contain information about the parties obligations but automatically ensure the fulfillment of all the terms of the contract.

The parties fix the arrangements and conditions for the fulfillment using a programming language in such a way that the occurrence of certain events will automatically cause the execution of a predefined code. The distributed ledger will use smart contracts as a **guarantee** of purchase between authors and buyers, which means they will automatically be executed. Having unimpeded access to the contract objects, a smart contract tracks the specified conditions, achievements or violations and makes independent decisions based on the programmed terms. Thus, the main smart contract principle is the complete automation and reliability of the contractual relations fulfillment.

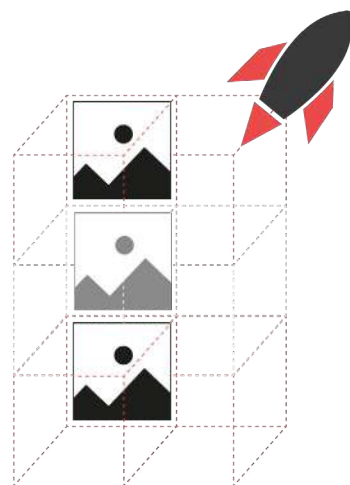
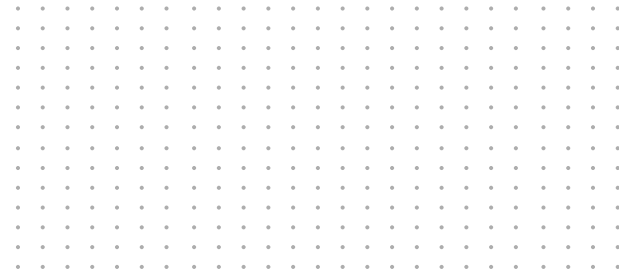


## Analytics

Using the Artificial Intelligence BitImage will provide authors with an analytical service where they can track and receive information about what trends are currently on sale. It will not be necessary to read many articles and sit for hours in search of necessary information on the Internet as well as rack your brains guessing what you need or take risks. Now everything will be in one place - in BitImage.

All this will enable authors to increase their earnings and reduce the time required to achieve their goals while for the end user the content will become more relevant.

BITIMAGE is a revolutionary service that will become a new standard by bringing modern technologies to the stock media content market.



## 4. How does BitImage work?

BitImage is a smart new generation platform intended to exchange exclusive licensed digital content. It will become a perfect bridge between content creators and consumers.

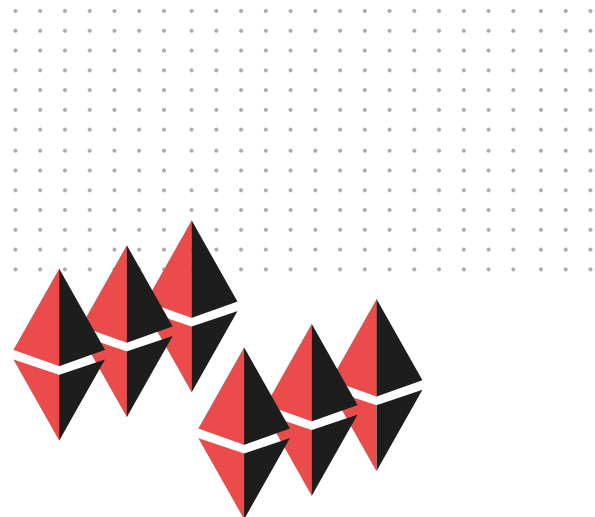
Authors can post their works (audio, video, images and other digital content) on the BitImage platform. Thanks to the latest technologies like blockchain, smart contracts, and Artificial Intelligence, BitImage will license in a decentralized manner, quickly deploy, and reliably sell the digital content for authors to earn more.

In their turn, buyers can purchase the content in two ways:

- by searching through the existing digital media from the extensive collection;
- by placing a job with any requirements and, as a result, receiving the “turn-key” content.

Thus, they will always be able to find what they need at the decent price.

BITIMAGE is destined to change the industry of digital stock content forever!



## 4.1 Platform Structure

To implement the core BitImage concepts such applications will be developed:

- iOS application (iPhone, iPad);
- Android application (Phones, Tablets);
- Web application with adaptive layout;
- Administrative Panel.

Also:

- Plugins for all popular graphics editors;
- API for 3rd party service integration.

## 4.2 Functionality

The features for iOS, Android and Web applications will be the same which will allow people to use the platform anytime, anywhere.

The following main functional elements can be distinguished:

- Login and registration through third-party services (Facebook, Google, and others);
- Home Feed with the display of all the latest published works from authors divided into categories and on-demand works from customers;
- Content search by keywords;
- Sell my media - a feature set for posting your digital content on the platform, which includes:
  - ▶ video recording or photo taking feature using a native camera;
  - ▶ sounds recording feature using a native microphone;
  - ▶ photo/video/audio editing tool;
  - ▶ content upload from the device's or computer's gallery;
  - ▶ filling all the necessary information for placing content for sale;
  - ▶ an ability to set a custom price for content;
  - ▶ an analytical tool that advises the average content cost;
  - ▶ full view of the post before posting;
  - ▶ validation of uploaded digital content.

## 4.2 Functionality

- Post my request - a feature set for an on-demand work, which includes:
  - ▶ video recording or photo taking feature using a native camera;
  - ▶ sounds recording feature using a native microphone;
  - ▶ photo/video/audio editing tool;
  - ▶ content upload from the device's or computer's gallery;
  - ▶ validation of uploaded digital content and on-demand works;
  - ▶ filling all the necessary information to post the on-demand work;
  - ▶ setting the price range for work;
  - ▶ relevant authors selection according to rating and work description;
  - ▶ full view of the work before posting;
  - ▶ an opportunity for authors to apply for a work;
  - ▶ a choice of a suitable work performed from the list of authors applications for customers;
  - ▶ chat between the author and the customer.
- The user's personal cabinet, which includes:
  - ▶ account settings;
  - ▶ an analytical tool that provides information on sales and trends;
  - ▶ user rating;
  - ▶ activity stream with all recent events;
  - ▶ BIM wallet with the possibility of funds deposit and withdrawal;
  - ▶ personal user's portfolio:
    - gallery with the possibility of creating personal collections;
    - gallery of purchased content;
    - gallery of on-demand works.
- Content purchase feature set;
- The complaints system for an illegal content identification;
- Support Center for users.

This functionality described above is essential for the platform's operation and can be improved or changed in the future as the project develops.

More details and functionality of the platform can be found on the [interactive prototype](#).

## 4.2 Functionality

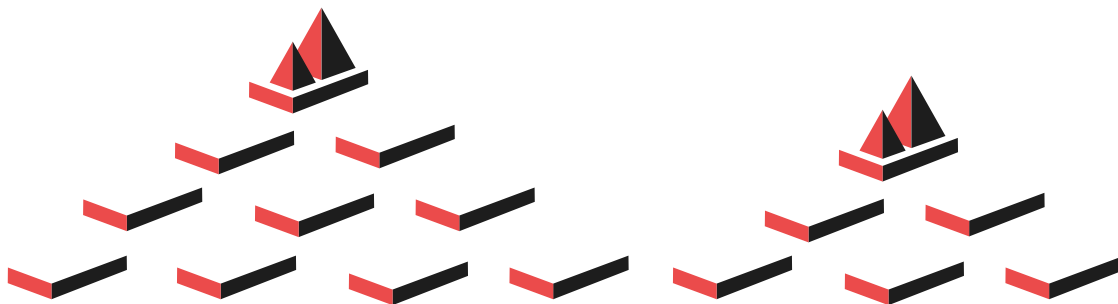
The administrative interface features will serve to manage and monitor the platform's operation. They will include the following:

- Users management;
- Content management;
- Management of administrators;
- Management of the analytical tool;
- Support center:
  - ▶ ticketing system;
  - ▶ chat functionality.
- Complaints management:
  - ▶ ticketing system;
  - ▶ chat functionality.
- Health monitor, which is a system for monitoring the platform's operability;
- System for managing textual information on the site and in applications;
- Content validation management system.

This functionality described above is essential for the platform's operation and can be improved or changed in the future as the project develops.



## 4.3 Artificial Intelligence Usage



**To implement content search by keywords** we will analyze all available data, preprocess it and extract the most informative indicators for the relevant search. To optimize performance, appropriate data structures will be used with indexing and other approaches to speed up the search.

**To implement an analytical tool that provides information on sales and trends**, analytical tools will be used that relate to the processing of time series, the extraction of users' opinions from text content, and general statistical indicators will be tracked to cluster all users into interest groups. Collaborative algorithms in conjunction with the trends analysis will advise a customer how to behave to maximize profits. In turn, the use of real-time information with online neural networks training will help us to monitor how the trends and opinions of people are changing right now.

The time series will be processed using the LSTM model along with reinforced learning. This will allow the model not only to predict quantitative indicators but also to use some approaches in the reasoning that will restrict the model from making decisions against the rules of the market.

**To implement the validation of uploaded content**, convolutional neural networks will be used. It will classify content on images and filter out inappropriate one.

For audio, recurrent neural networks will be used to extract information in a certain context. Thus, it will be possible to understand the type of content in the audio and handle it accordingly.

To process the video, not only recurrent networks will be applied, but also content analysis using convolutional networks (RCNN, Fast RCNN, ResNet, AlexNet). If we look at the general picture, then we can say that such a bunch can process any digital signals and extract information from them.

## 4.4 Blockchain and smart contracts usage

Thanks to the blockchain and smart contracts in BitImage, the decentralized process of licensing digital content becomes possible.

Let's first understand what a license is:

### License

is a contract signed between the author of an intellectual asset and a buyer to transfer non-exclusive rights to use copies of their content for money with certain usage restrictions/conditions or exclusive rights transfer by the full sale. In other words, it is a contract to transfer rights from the author to the buyer for the use of certain agreed content.

Suppose the photographer A puts up for sale a new image of the Alpine mountains and buyer B has long been looking for this kind of picture. Buyer B expresses the desire to buy this content and explains that they will use it to realize the dream, namely print it on T-shirts with edition of 500 copies and that's all. Photographer A agrees and, based on the terms of use, sets the appropriate price. Then, a contract is created where all these conditions are prescribed and after a successful signing, a copy of the image is given to the buyer to accomplish the goal.



## 4.4 Blockchain and smart contracts usage

As in the example in BitImage, when buying digital content, a smart contract will be formed between the author and the buyer where the following conditions in the contract code will be prescribed:

- text information describing the remaining details of the transaction;
- the name of the buyer (if indicated in the personal account);
- the author's name (if indicated in the personal account);
- wallets addresses of the author and the buyer;
- a link to the model release (if necessary);
- link to the purchased content;
- link to the Licensing Terms;
- author ID in BitImage;
- buyer ID in BitImage;
- the terms of purchase;
- the date of purchase;
- price.

ID - once the user is registered, a unique identification number will be formed by which the user can be found in the system through the search.

### Model Release

is an agreement between a model and a photographer, empowering the photographer to publish, sell, distribute, and perform other non-defamatory actions with photos on which the model is depicted.

Due to the conditions prescribed in the smart contract, BitImage will be the environment where these conditions will be automatically executed. This means that smart contracts will exist only within an environment that has unrestricted access to the executable code of smart contract objects. All contract terms will have a mathematical description and clear logic. In this regard, smart contracts will have the task of formalizing the simplest relationships, with a small number of conditions.

Having unimpeded access to the objects of the contract, a smart contract tracks compliance with the terms of use and their violations as well as makes independent decisions based on the programmed conditions. Thus, the main principle of a smart contract is to entirely automate and verify the performance of contractual relationships between users in BitImage.

**All this will be stored in an unchanged distributed blockchain registry that will allow authors and buyers to make reliable and 100% feasible transactions.**

## 4.5 Reputation and Trust Management

As embedded in the functionality, each user will have a personal rating in BitImage. The rating is formed on the basis of the rank that the user receives under certain conditions which forms the user's reputation.

Rating is necessary to stimulate users to make honest deals and trust each other, namely:

- for authors:
  - ▶ place only high-quality and non-infringing content;
  - ▶ upload quality and exclusive content for sale;
  - ▶ set an adequate price for their content;
  - ▶ make as many successful transactions with customers as possible;
  - ▶ authenticity and completeness of the author's account.
- for customers:
  - ▶ prevent violation of the transactions terms for purchased licenses;
  - ▶ place as much quality orders on content creation as possible;
  - ▶ set an adequate price for the on-demand works;
  - ▶ make as many successful transactions with authors as possible:
    - on-demand works;
    - the usual content purchase.
  - ▶ authenticity and completeness of the customer's account.

## 4.5 Reputation and Trust Management

### Rating formation

For authors	For customers
<b>Positive factors that affect the formation of the rating</b>	
<ul style="list-style-type: none"> <li>• the number of uploaded high-quality, exclusive, valid digital content;</li> <li>• total number of user's sales per month;</li> <li>• the successful on-demand work transaction, namely a good 5-star review with top recommendations from the customer;</li> <li>• detection of illegal content in the system by posting a complaint, which was subsequently confirmed;</li> <li>• a fully completed account, with identification documents provided.</li> </ul>	<ul style="list-style-type: none"> <li>• the number of on-demand works that passed validation;</li> <li>• total number of content purchases;</li> <li>• a successful transaction for the on-demand work, namely a good 5-star review with top recommendations from the author;</li> <li>• detection of illegal content in the system by posting a complaint, which was subsequently confirmed;</li> <li>• a fully completed account, with identification documents provided.</li> </ul>
<b>Negative factors that affect the formation of the rating</b>	
<ul style="list-style-type: none"> <li>• the number of rejected content that has not been validated thereby violates the rules of the platform;</li> <li>• unsuccessful on-demand work, namely bad feedback with negative recommendations from the customer;</li> <li>• confirmed complaints from users.</li> </ul>	<ul style="list-style-type: none"> <li>• the number of on-demand works created that did not pass the validation;</li> <li>• the number of on-demand works created that received a confirmed complaint;</li> <li>• unsuccessful on-demand work, namely a bad feedback with negative author's recommendations.</li> </ul>

## 5. Business model

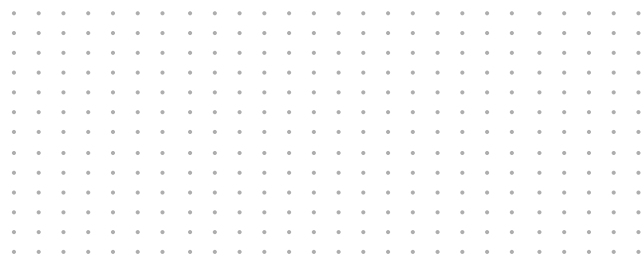
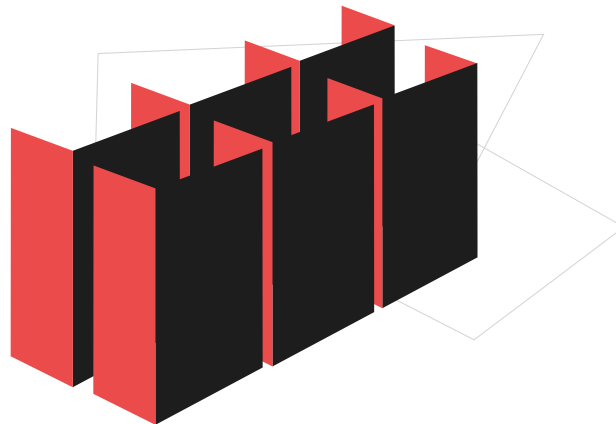
According to the most current business models categorization created by Michael Rappa, a professor at the North Carolina State University, the BitImage will be a mixture of Brokerage (Transaction) and Subscription business models. It means that monetization is implemented through the introduced commissions for any transaction between the author and the buyer, along with the purchase of subscriptions by authors which will allow them to access the trends analytical tool.

The commission percentage will be around **20-30%** of each transaction. There will be two types of the analytical tool subscriptions:

- monthly;
- annual.

The subscription price for a month is equivalent to approximately **\$30**, for a year to **\$190**.

The internal payment method on the service is BitImage Token.

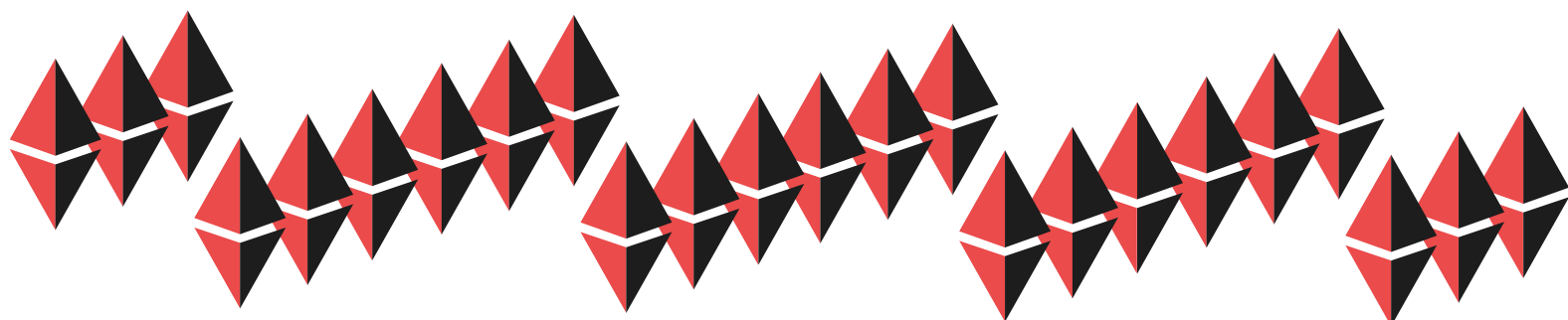


## 6. BitImage Token

### 6.1 Token description

BitImage token or BIM is a cryptographic token of the ERC-20 standard based on the **Ethereum blockchain**.

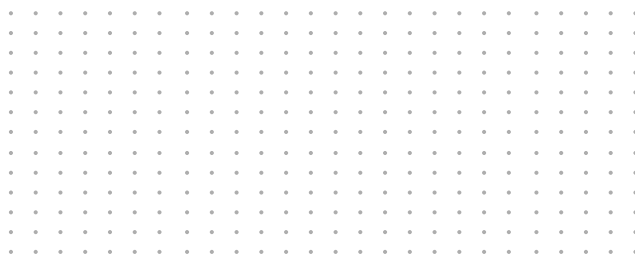
The **ERC-20 standard** ensures that the Ethereum-based token will properly work in the ecosystem, in decentralized programs, smart contracts, and will meet the fixed security standard.



### 6.2 Token usage on the service

BIM will be used for the following operations:

- **the usual digital content purchase by the buyer under a given license.** Buyers will be able to buy any intellectual asset (digital media content) put up for sale by the authors for BIM by searching the necessary content through the search form or directly in the author's personal portfolio.
- **the customer's rewards of the on-demand work.** All users can create on-demand works and invite necessary or top-rated authors for the execution. After successful work completion, the author receives reward in BIM from the customer.



## 6.2 Token usage on the service

- **the content adding to the digital assets ledger.** Since executing a smart contract in the Ethereum blockchain account consumes GWEI, which, in its turn, requires payment in ETH, the authors who upload the digital content to the system will have 2 ways to add content to the digital assets ledger:

- ▶ adding with the record formation allows the author to fix their digital content copyrights in the system as soon as they are added. In this case, the author will be charged commission to add a contract to the Ethereum blockchain, and thereby the author eliminates the risk of theft of their assets.

When adding an intellectual asset to the system, a transaction will be generated in the blockchain, namely a smart contract with the next details:

- the author's name (if it is indicated in the personal account);
- the author's ID;
- the link to the downloaded content;
- the addition date;
- text information describing the remaining details;
- the link to the model release (if necessary).

Adding this record to the blockchain guarantees that this particular user is the author of the given content and has all copyright and exclusive rights to it.

- ▶ adding without creating a record allows the author to add content to the system without creating an entry in the Ethereum blockchain and shift the commission fee for GWEI to the buyer. It's suitable if the author does not want to pay a commission or does not have tokens to add. The risk of content theft remains until someone buys it in BitImage.

In this case, the content is available for sale on the platform and only when purchasing content, a record (smart contract) will be created in the Ethereum blockchain with the next details:

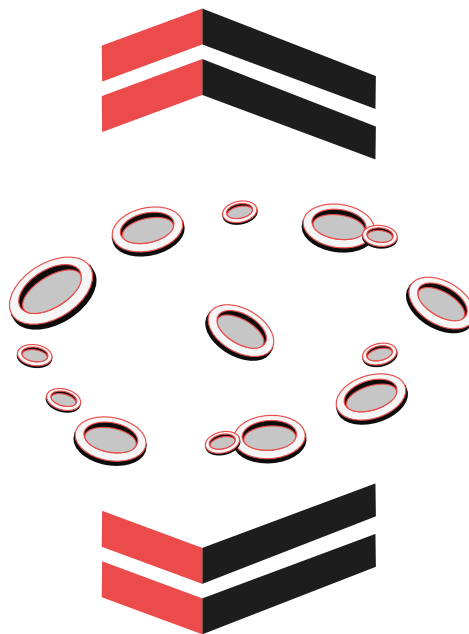
- the author's name (if it is indicated in the personal account);
- the name of the buyer (if it is indicated in the personal account);
- the author ID in BitImage;
- the buyer ID in BitImage;
- addresses of wallets of the author and the buyer;
- the link to the purchased content;
- its price;

## 6.2 Token usage on the service

- the date of purchase;
- the term of purchase;
- text information describing the remaining details of the transaction;
- the link to the model release (if necessary);
- the link to the Licensing Terms.

The generated record after the purchase in the blockchain will guarantee this particular user is the author of the given content and has all copyright and exclusive rights to it. As for the buyer, it is guaranteed that their purchase rights will be fixed in an unchanged environment.

- **trends analytical services subscription.** The authors can use BIM to obtain one of the subscriptions and use the analytical tool to get the information generated by AI on the trends to increase their sales.






## 6.3 The Reserve Fund

Users who will gain and use BIM are conventionally divided into 3 groups:

1st type	2nd type	3rd type
Users who want to buy BIM after the initial sale and do not know how to work with cryptocurrencies comes under the 1st type.	Users who bought BIM on the initial sale and use them on the platform. This kind of users knows how to work with cryptocurrencies and comes under the 2nd type.	Users who bought BIM on the initial sale and use them for further resale, but not for the service. This kind of users knows how to work with cryptocurrencies and comes under the 3rd type.
<p>In order to meet the needs of all types of users in BitImage, the Reserve Fund will be integrated which will include reserved 1,000,000,000 BIM. The main purpose of this fund is to provide users with the necessary number of BIM for continuous operation on the service and increase the token value.</p> <p><b>Let's look at the situations for each type of user under which the Reserve Fund will be needed:</b></p>		
The 1st type of users has no BIM. As they do not know how to use cryptocurrencies and where to buy them, they will come to the service mainly with fiat money. In order to make the minimum entry threshold for this type of users, the Reserve Fund, a BIM wallet, and a third party service for currency conversion will be used.	The 2nd type of users has BIM and other cryptocurrencies, hence they know how to use them and where to buy them. That's why they will commonly come to the service with digital currency.	The 3rd type of users has BIM and knows how to use cryptocurrencies, as well as where to buy them, will not come to the service and use their BIM only for resale.



### 6.3 The Reserve Fund

1st type	2nd type	3rd type
		
<p>The user enters the BIM wallet on the service and chooses to deposit the fiat currency. Next, a third party service (UpHold or others with the most advantageous rate for the conversion), to which our Reserve Fund is connected (namely <b>1,000,000,000 BIM</b>), converts the fiat money sent to BIM at the best rate. The BIM taken from this Fund are transferred to the user's wallet in BitImage. The funds received from users will be directed to restore the Reserve Fund. The self-restoration, in this case, will guarantee the availability of a required number of BIM for this user type.</p>	<p>In order to take advantage of the BIM, the user can just transfer them into the Bitimage wallet. If the user decides to use the other digital money, the conversion process is the same as for the 1st type of users. Therefore, in this case, the fund's self-restoration will also guarantee that the required number of BIM will be always available for this type of users.</p>	<p>For these users, the function of the fund self-restoration will be interesting only if the value of the token increases: the more users of types 2 and 1 will come to the service, the more the Reserve Fund will be used, therefore the more BIM tokens will be redeemed from the trading platforms and accumulated on the service. Thus, the demand for them will increase, which is equivalent to increasing the value of the token.</p>

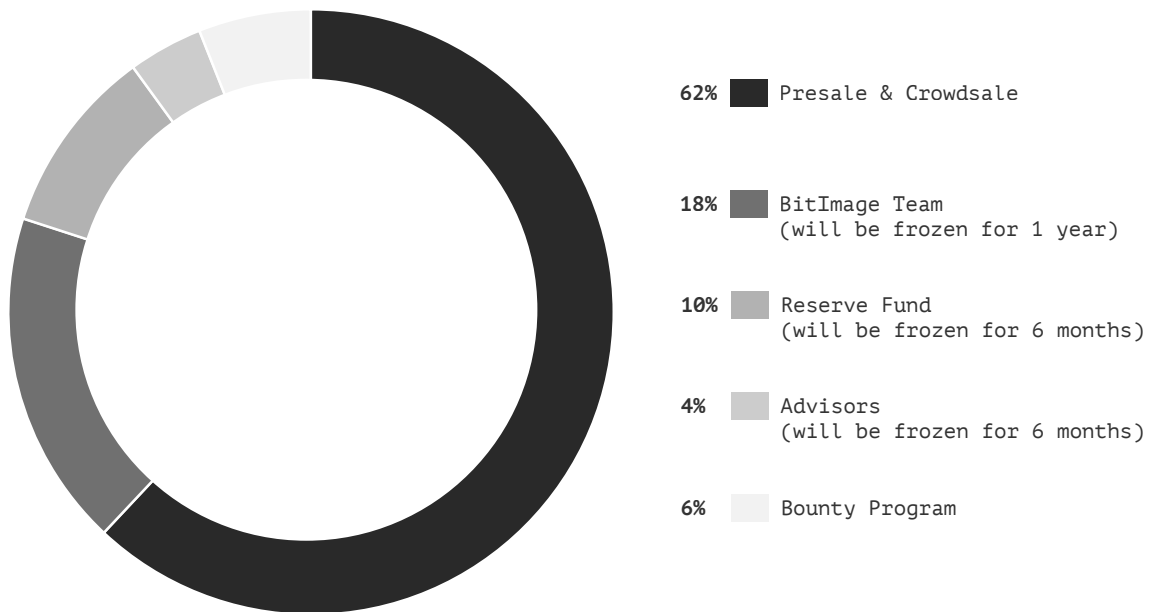
Summarizing, we can say that the Reserve Fund is a convenient and simple mechanism that plays a crucial role in the service by providing the necessary number of BIM for all interested users, thereby increasing the token value.

## 7. BitImage Token Sale Structure

**10,000,000,000 BIM**  
tokens will be created.

**62%**  
of them will be sold in

**2 rounds:**  
**Presale and Crowdsale**



The hard cap is to collect **42,000 ETH** in order to implement the product in full according to the roadmap.

## 7.1 Token Presale

### Distribution of tokens

**10%** of the total pool of released tokens will be available to contributors during the Presale period, which is **1,000,000,000 BIM**.

The minimum goal (Soft Cap) of Presale is to collect **2000 ETH**.  
The maximum goal of Presale is to collect **6000 ETH**.

The minimum contribution is **0.1 ETH**.  
The maximum contribution is **500 ETH**.

### Date of Presale

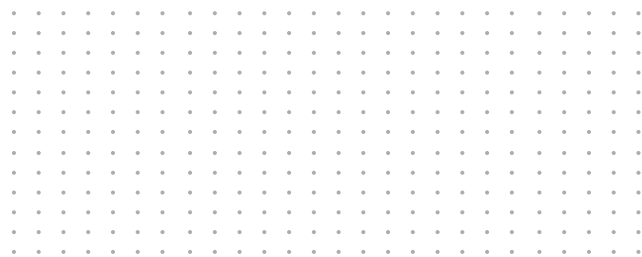
The Presale will **start on April 26 at 1pm UTC** and **end on May 24 at 1pm UTC**.

### The price of token during the Presale period and bonus

During the Presale period, the highest bonus will be at a rate of **30%**, which is **1 ETH = 169,000 BIM**.

### Unsold tokens

All unsold tokens will go to the Crowdsale.



## 7.1 Token Presale

### Presale algorithm

The Presale algorithm consists of the following conditions:

**Condition 1.** **if** we do not collect up to **2000 ETH** within 4 weeks, then a refund function will be activated to contributors;

**Condition 2.** **if** we collect **>= 2000 ETH** but **< 6000 ETH** then we recognize that the product is of interest to users and this ETH amount is enough to develop an MVP product (iOS, Android and Web applications with minimal functionality + start marketing for certain countries), make a pause, and spend some of the collected ETH for Crowdsale marketing;

**Condition 3.** **if** we collect the maximum Presale target **>= 6000 ETH** before the end of 3 weeks, we will continue the Presale for another week and lower the bonus by 5% until we reach the following **>= 6000 ETH** within a week. If we achieve that, we again extend the Presale for a week and reduce bonus by 5% and repeat until we either reach the Hard Cap of selling the tokens = **42,000** or collect **< 6000 ETH**, within the extended week and the corresponding percent;

In case of the **Condition 3**, the Presale period is as follows:

```
2 weeks >= 6000 ETH - 30% bonus = 6000 ETH;
1 week >= 6000 ETH - 25% bonus = 12,000 ETH;
1 week >= 6000 ETH - 20% bonus = 18,000 ETH;
1 week >= 6000 ETH - 15% bonus = 24,000 ETH;
1 week >= 6000 ETH - 10% bonus = 30,000 ETH;
1 week >= 6000 ETH - 5% bonus = 36,000 ETH;
1 week <= 6000 ETH - 0% bonus ~ 42,000 ETH.
```

**Condition 4.** **if** we do not collect **>= 6000 ETH** within the additional week, then we pause and spend part of the collected ETH for Crowdsale marketing.

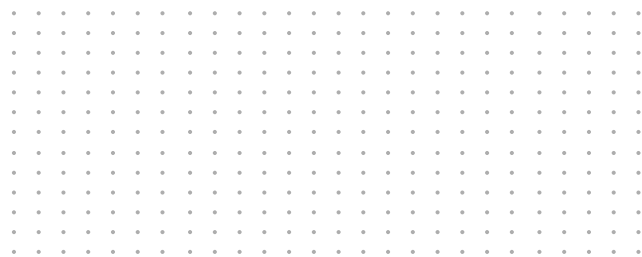
## 7.1 Token Presale

### How can I participate?

In order to participate in the Presale, it is enough to perform the following simple steps:

- Create or use your existing compatible Ethereum wallet;
- Make a decision about the amount of BIM you want to purchase;
- Buy ETH coins;
- Accept the terms & conditions at the [BitImage website](#);
- Send your Ether to the official Presale contribution address: **bitimage.eth**;
- See your BIM contribution at the balance.

More detailed instructions can be found at [bitimage.io](#).



## 7.2 Token Crowdsale

### Distribution of tokens

52% of the total pool of released tokens, which is **5,200,000,000 BIM**, will be available to contributors during the Crowdsale period.

The purpose of the Crowdsale is to collect **36,000 ETH** together with presale's ETH to develop a profound product according to the roadmap. There is no minimum price threshold for Crowdsale, so the closer to **42,000 ETH** (Hard Cap) we can collect the more functionality we can implement according to the roadmap and cover more countries to market the product.

The minimum contribution is **0.1 ETH**.  
The maximum contribution is **500 ETH**.

### Date of Crowdsale

The Crowdsale will start 2 weeks after the last week of the Presale and will last 6 weeks.

### The price of token during the Crowdsale period and bonus

If the **condition 2** of the Presale takes place:

week 1 - 25%		1 ETH = 162,500 BIM;
week 2 - 20%		1 ETH = 156,000 BIM;
week 3 - 15%		1 ETH = 149,500 BIM;
week 4 - 10%		1 ETH = 143,000 BIM;
week 5 - 5%		1 ETH = 136,500 BIM;
week 6 - 0%		1 ETH = 130,000 BIM.

### Unsold tokens

All unsold tokens will go to the Reserve Fund.

## 7.2 Token Crowdsale

### Crowdsale algorithm

It consists of the following conditions and is closely depends to the Presale algorithm:

1. **if condition 1** of the Presale takes place, then we will not start the Crowdsale;
2. **if condition 2** of the Presale takes place, we pause for 2 weeks and move on to the Crowdsale within 6 weeks and start with the **25% bonus**. Also, we will decrease the % after the end of each week or when the sum reaches **>= 6000 ETH** before the end of the week;
3. **if condition 3** of the Presale takes place, we will not pause and complete the Crowdsale as part of the Presale;
4. **if condition 4** of the Presale takes place, then we pause for 2 weeks and continue with the last bonus minus **5%** on the Presale and decrease bonus % after the end of each week or when the sum reaches **>= 6000 ETH** before the end of the week.

## 7.2 Token Crowdsale

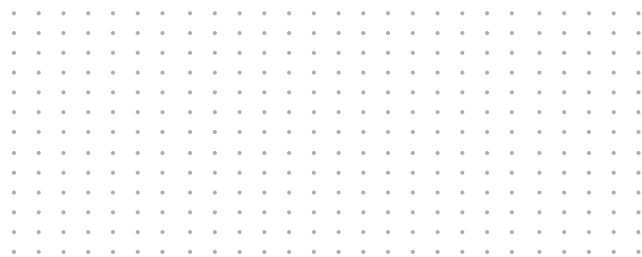
### How can I participate?

In order to participate in the Crowdsale, it is enough to perform the following simple steps:

- Create or use your existing compatible Ethereum wallet;
- Make a decision about the amount of BIM you want to purchase;
- Buy ETH coins;
- Accept the terms & conditions at the [BitImage website](#);
- Send your Ether to the official Crowdsale contribution address: **bitimage.eth**;
- See your BIM contribution at the balance.

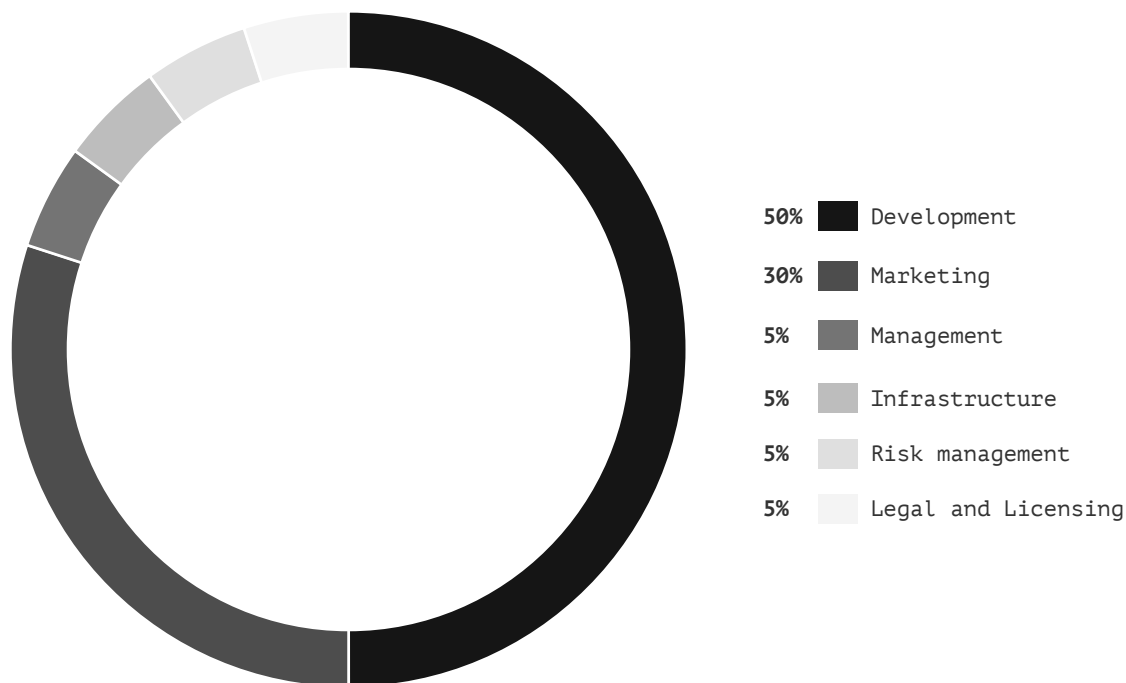
More detailed instructions can be found at [bitimage.io](#).

Please, pay attention that the ETH exchange rate can be altered without prior notice before the Token Sales starts. Such fluctuations are caused by the market situation. Although, as soon as the sale begins, the exchange rate will be held steady.





## 7.3 Funds allocation



### **Development - 50%**

The development of BitImage is conducted in the full compliance with the roadmap.

### **Marketing - 30%**

The marketing campaign design is aimed at increasing the buyers and authors volume of the platform. It also involves building of the relationships with other organizations, such as currency exchange service providers or other strategic partners, including possible joint ventures or the platform use facilitation.

### **Management - 5%**

The inner management of the project including salaries and human resources.

### **Infrastructure - 5%**

This sum will cover the supplementary costs of web servers expansion, firewalls, DDoS protection, and load balancers minimum for 5 years.

### **Risk management - 5%**

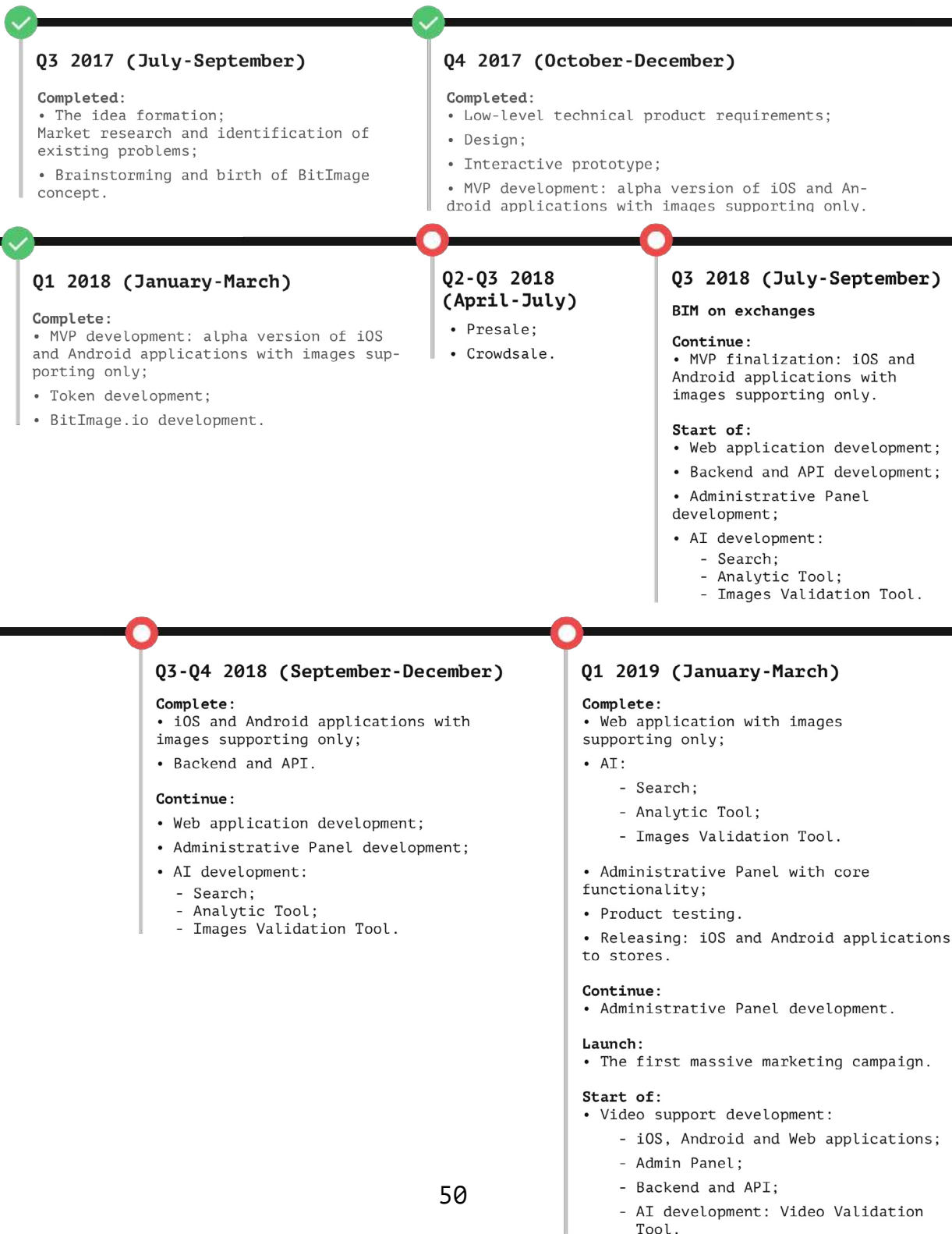
The fund to cover unforeseen costs.

### **Legal and Licensing - 5%**

We strive to ensure operation in a full accordance with the law in every business area we work. That's why we require an appropriate legal advice, which will help us to manage all the unforeseen legal issues that may occur.

## 8. Roadmap

Below one can see a roadmap of the full functionality implementation. We would do our best to bring value to the digital content world as soon as possible while focusing on the quality of the system. We strive to finish the implementation even before the target dates to make the consumers' lives easier and allow them taking the advantage of modern technologies.



## 8. Roadmap

### Q2 2019 (April-June)

#### Complete:

- Receiving the first users' feedbacks from campaign and make changes on the platform according to them;
- Video support:
  - Admin Panel;
  - Backend and API.
- Administrative Panel development with full functionality.

#### Continue:

- Video support development:
  - iOS, Android and Web applications;
  - AI development: Video Validation Tool.

#### Start of:

- Web Application Online Editor development.

### Q3 2019 (July-September)

#### Complete:

- Video support:
  - iOS, Android and Web applications;
  - AI: Video Validation Tool.
- Video support testing and releasing.

#### Continue:

- Web Application Online Editor development.

#### Launch:

- The second massive marketing campaign.

#### Start of:

- Audio support development:
  - iOS, Android and Web applications;
  - Admin Panel;
  - Backend and API;
  - AI development: Audio Validation Tool.

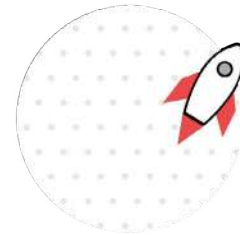
### Q4 2019 (October-December)

#### Complete:

- Receiving the users' feedbacks from campaign and make changes on the platform according to them;
- Audio support development:
  - Admin Panel;
  - Backend and API.

#### Continue:

- Audio support development:
  - iOS, Android and Web applications;
  - AI development: Audio Validation Tool.
- Web Application Online Editor development.



### Q1-Q4 2020 (January-December)

#### Complete:

- Audio support:
  - iOS, Android and Web applications;
  - AI: Audio Validation Tool.
- Web Application Online Editor;
- Audio support and Online editor testing and release.

#### Launch:

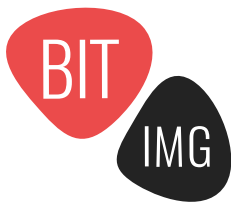
- The third massive marketing campaign.

#### Start of:

- Support development for another popular digital content:
  - iOS, Android and Web applications;
  - Admin Panel;
  - Backend and API;
  - AI development: Validation Tool for another popular digital content.
- API for third-party applications development;
- Plugins for most popular editors;
- Receive the users' feedbacks from campaign and make changes on the platform according to them;
- Other new revolution ideas development.

The implementation plan can be changed in the course of product development due to various unpredictable situations.

# WHITEPAPER



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