

ICOrating

CROWD MACHINE Rating Review (<https://www.crowdmachine.com>)

ICO dates (01.04.2018 — 22.05.2018)



I C O R A T I N G

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1. Ratings

We assign the Crowd Machine project a "Positive" rating.

The Crowd Machine project is an ambitious undertaking in the IT sector. It focuses on the development of a technology for creating apps without coding, and for launching them using decentralized computer power. Anyone can contribute to these computing powers using their device, which carries out calculations for decentralized or blockchain applications, the user being rewarded with project tokens.

To create this new solution the project team must have incredible skills, and apparently they do. Crowd Machine is recently founded, but is built on the back of Metavine, whose founder is also the founder of Crowd Machine and has extensive experience in creating successful, uncompromising enterprise applications based on its platform without the need for coding. Other team members also demonstrate comprehensive skills and experience in various fields that relate to the project.

Crowd Machine does not just want to compete with the existing giants of cloud technology for a share of the growing market, but also to engage with them on a conceptual level. It carries risks which are inherent in any ideological endeavor, and it is impossible to predict the degree of success for the project in the long term. However, in our opinion, the advantages offered by the project are substantial grounds to count on its success. A detailed concept and a professional approach to product creation of the product only reinforce our belief that the high rating for the project is justified.

2. General information about the Project and ICO

The Crowd Machine project functions as a tool for the development of decentralized and blockchain applications, and provides a platform for this. The development and launch of decentralized applications takes extensive time and research; this is the issue that the project aims to resolve.

The project uses the achievements of the Metavine company, and is registered in the jurisdiction of the Cayman Islands. The authors are proud to have worked with the most significant companies on the Fortune Global 500 list, which is evidence of rich experience and an excellent business reputation.

On its website, the project states that it is staging an ICO to enable its customers to launch projects on the 'crowd computer'. This is a beautiful gesture for the project's target audience; however, 39% of funding that the project plans to spend on marketing and sales and 19% for R&D suggest that it needs funds to promote its product, attract new clients and launch the Crowd Computer itself.

The following is some brief information on the token sale. For more details click on the [link](#).

[Website](#)

[Whitepaper](#)

Token: CMCT of ERC20 type.

Supply: a fixed amount of 2,000,000,000 tokens divisible by 8 decimal places.

Token distribution: 1100MM – for sale; 500MM CMCT – bonus allocation; 25MM CMCT – incentive for Engagement Program Pool; 50MM CMCT – Team Bonus Pool; 25MM CMCT – Direct Sales Incentives (Retail and Wholesale) Pool; 300MM CMCT – Company Inventory Reserve.

Round 1: Private Sale (from 16.01.2018)

Price: no data

Bonuses: no data

Minimum Purchase Transaction: \$100,000

Round 2: Public Sale

Start: 0:00 UTC on April 1st, 2018.

End: 20:00 UTC on May 22nd, 2019

Price: Depends on the amount of funding received in a particular round and on the number of tokens intended for sale in this round. Thus, the price of tokens is freely set by the market.

Bonuses: 50% during the first 10 days of the Public Sale.

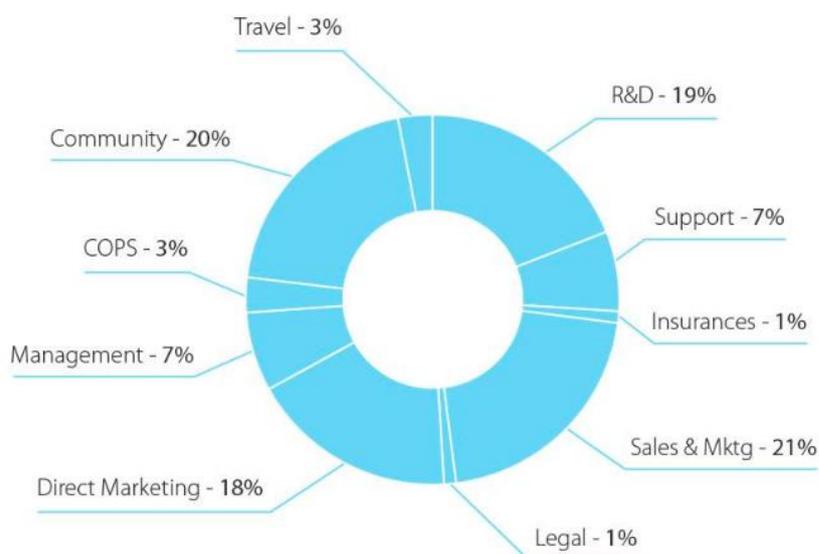
Minimum Purchase Transaction: 0.1 ETH

	Sale Period	Open	Close	Days	Price	Allocated Token Quantity	Bonus Tokens
PRESALE	PRIVATE					125,000,000	
	PUBLIC						
	Day 1 to Day 10	1 Apr 2018 00:00 UTC	10 Apr 2018 20:00 UTC	10	Initial Market Price with bonus tokens		0.5x (50% bonus)
	Day 11 to Day 20	11 Apr 2018 00:00 UTC	20 Apr 2018 20:00 UTC	10	Initial Market Price (no bonus tokens)	-	
	Day 21 to Day 27	7-day no sale period (21 April to 27 April 2018) to conduct an audit of proceeds (CMCTs also released to prior participants during this period)					
	Daily from Day 28 to Day 416	From 28 Apr 2018 00:00 UTC daily	20:00 UTC daily	389	Market price each day for Days 28 through Day 416	2,500,000 + any bonus tokens not claimed, divided by 390 (Thereafter, "Left Over Bonus Tokens").	-
Day 417	22 May 2019 00:00 UTC	22 May 2019 20:00 UTC	1	Market price	2,500,000 + Left Over Bonus Tokens	-	

CMCT Token Sale Schedule

Accepted currencies: ETH is the preferred method of payment. During the public sale, one can pay in USD with a minimum contribution of \$10,000. Information on other cryptocurrencies accepted as payment and on the terms and conditions will be published on the project website.

Funding allocation:



Token Issue Date: Pre-Sale CMCTs will be created after the completion of a successful ISRS4400 audit of paid-in contributions during the pre-sale period. This will occur before April 28th, 2018.

Daily Public Sale Period CMTs will be created within 4 hours of the close of each daily period.

Vesting: no data

To participate in the ICO, investors need to go through KYC and AML procedures. Non-ETH funds will be converted to ETH according to the current exchange rate at the time of verification of the transfer. USD will be converted to ETH without any obstacles at the time of verification of the transfer to the company bank account.

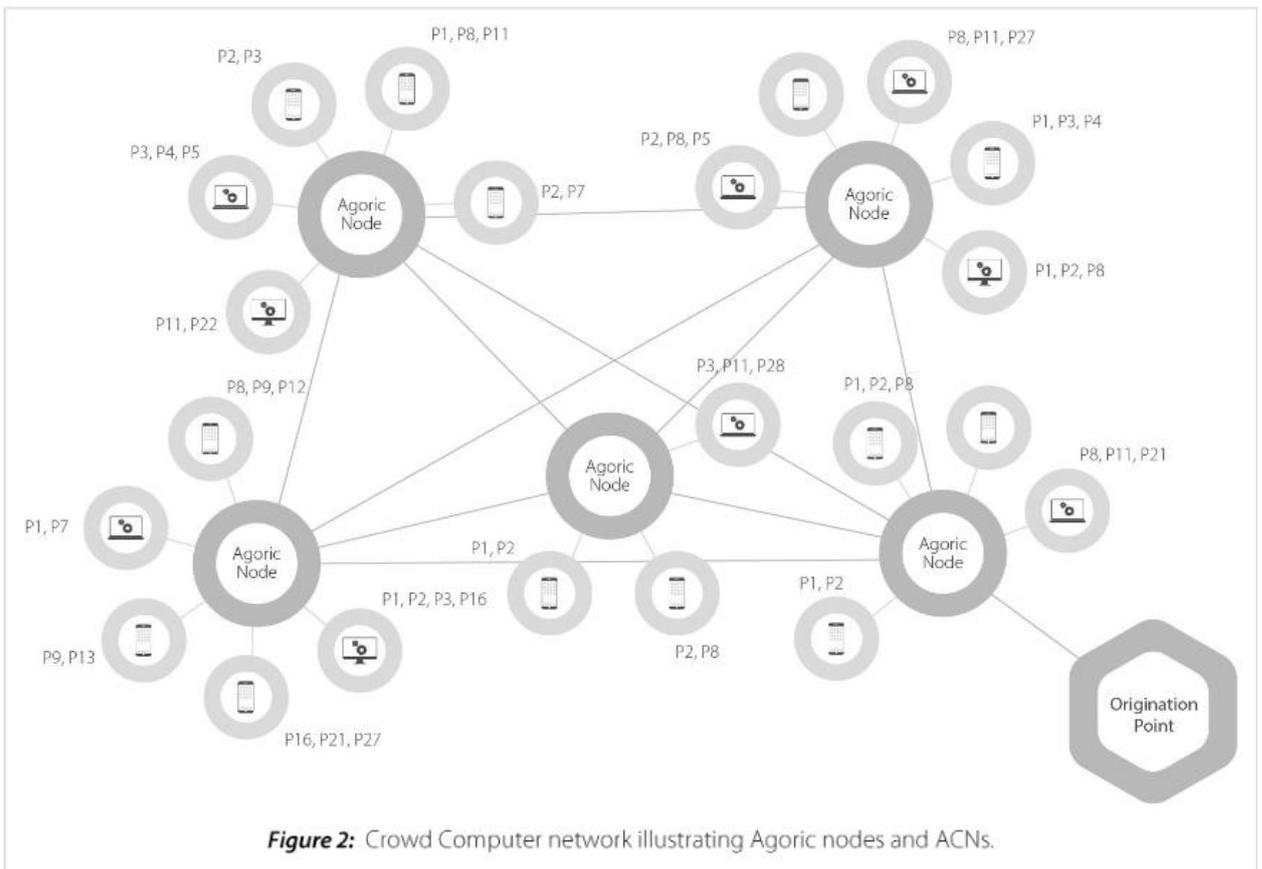
Citizens of North Korea, Cuba, Iran, Lebanon, Syria, Libya, Sudan or Somalia cannot participate in the ICO.

3. Description of the services and scope of the project

Each stage of the development of programming technology enabled developers to use tools of an increasing level of abstraction. For example, the transition from writing code in low-level languages to when a programmer requires a very high qualification, the ability to form repeating blocks of code into procedures and functions and call them repeatedly, has enabled an incredible leap in the efficiency of application development and has accelerated the process. The same increase in efficiency was demonstrated by the transition to languages with an object-oriented model. The class model for such programming languages allows programmers to describe classes, and objects with self-intuitive behavior are thus created. One of the proposals of the Crowd Machine project is a free development tool for decentralized or blockchain applications — known as App Studio Crowd. We believe that it also enables moving on to the next level of abstraction in comparison with the existing paradigm for building applications as no coding is required. A developer creates a unique chart that uses symbols for so-called Patterns. Patterns are already programmed features that you just add to the app. Patterns, in turn, are composed of Activities that are run and executed on ecosystem participants' devices.

To run applications, the company needs to provide a platform, and cloud services that provide their clients with remote resources for this are becoming increasingly popular in this respect. Crowd Machine is developing a so-called Crowd Computer, which is a network of many nodes which could consist of any devices such as smartphones, tablets, computers, and servers, on which Virtual Crowd Machine is installed. This program can perform the Activities of these applications. Such nodes are referred to as Activity-contributing nodes in the ecosystem; they perform tasks for carrying out Patterns or Activities and receive rewards in the form of CMCT.

The allocation of resources will occur through Agoric nodes that create the structure of a Strong federation necessary for the fast performance of the project's blockchain. These nodes also perform routing functions and select ACN nodes to perform Patterns and Activities during the operation of the app. They are rewarded for recording new blocks in the form of commissions (by the Ethereum blockchain) and for selecting ACN nodes, or for choosing the next Agoric nodes if a private subnet is not enough to perform the application's tasks. The first Agoric node will receive a greater reward than subsequent nodes. The figure below shows the structure of the Crowd Computer.



The Crowd Share platform will be available for creating apps; it is analogous to the GitHub site, with available Patterns for use in one's applications. Developers can monetize their intellectual work. Every time the app uses a Pattern from a particular developer, they receive a reward in the form of CMCT tokens. These and other payment transactions are automated and controlled at the level of smart contracts.

The transition to decentralized applications and blockchain applications, just like any other technological trend, requires advanced training for many professionals. The more complex the technology, the longer this process, but companies and businesses do not have time and resources to spend on training their specialists in new areas of application development at the expense of more immediate development of the business. For these reasons, the opportunities offered for companies that accelerate the release of applications by up to 45 times are promising, and they will certainly find customers.

4. Market review

Key market sectors targeted by the Crowd Machine project are the public cloud service market and the enterprise software market.

To illustrate the potential for success within the enterprise software market, the authors cite 3 arguments:

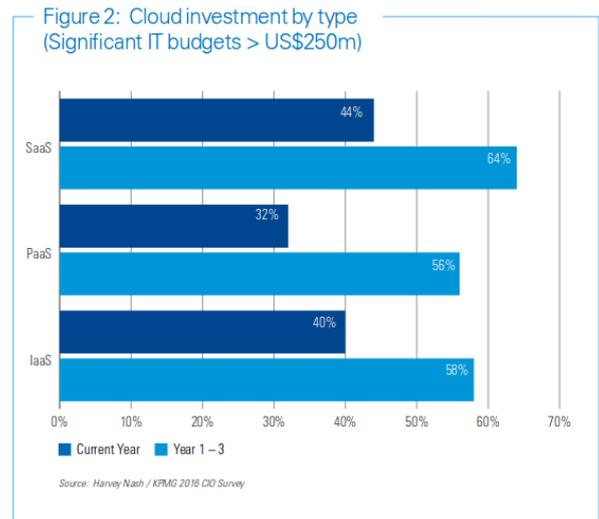
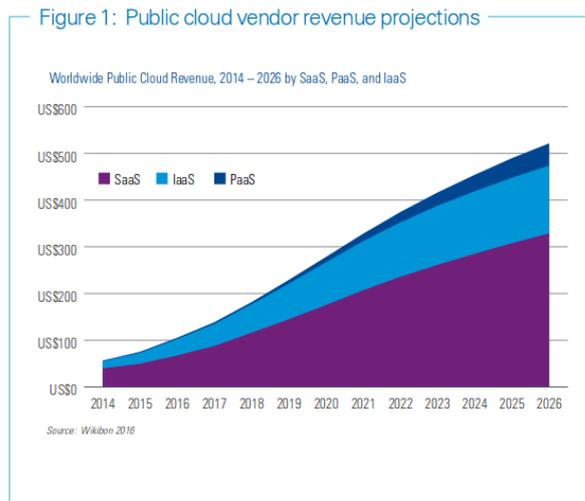
- Paid [research](#) from Gartner suggests that the enterprise software sector market value should have reached \$392b in 2017 and then continue to grow at a rate of 8.5% per year until 2021.
- The results of other paid [research](#) by Gartner predict an increase in added value from the use of blockchain technology up to \$175b by 2025.
- An [article](#) on the authoritative resource "ITProPortal" suggests that blockchain technology will change the processes of emergence, development, and consumption of products, platforms, and services. Moreover, decentralization of systems allows one to reduce costs and to ensure transaction traceability.

The market for enterprise applications is growing, and there is an increase in the application of blockchain technology, which can be used successfully in this segment according to many experts. All this together creates a demand for tools that will enable one to quickly and securely implement business objectives using all of the advantages of decentralization. Naturally, such development tools should be relatively easy to learn, so a company can instead focus on business development and not on the technical aspects. In our opinion, Crowd Machine could solve this problem.

Forbes magazine has prepared a useful [selection of articles](#) which describe the state of the market for cloud services and make forecasts for their further development. Here we present some excerpts that we believe to be important regarding analysis of the prospects for Crowd Machine.

An analysis by Wikibon states that there is a trend not just for the growth of spending on cloud services but also for using them to replace traditional IT services. From our point of view, this reflects companies' attention not just on cloud services but also to ways of delegating non-critical aspects of IT infrastructure administration to third-party services. In this sense, Crowd Machine is a possible alternative that may well suit individual companies better.

A KPMG [study](#) suggests that out of all types of cloud service, PaaS will demonstrate the speediest growth in use by companies, with 32% in 2017 and up to 56% by 2020.



Currently, cloud services offer no alternatives (such as remote storage of data) to data as a Service, and Crowd Machine does not claim to be part of this market but instead will utilise Amazon Web Services.

Potential clients for Crowd Machine are apparently companies that use cloud services primarily in the form of PaaS, the business processes of which allow for decentralization. For application development, they now need to spend significant resources on developing techniques for working with blockchain or other decentralized methods. Moreover, the authors note (and we agree) that for many companies, these expenses are not optimal. In the development of such applications, existing frameworks such as Hyperledger with its subprojects can be of use. For many large organizations with correspondingly large R&D centers, such an approach to the usual work at the coding level might be more suitable for serious projects. Thus, the Crowd Machine product has to fight for processing power with cloud services and PaaS with an automatic need to use libraries for decentralization or work with blockchain thanks to the Crowd Computer and the Crowd App Studio respectively.

The main advantage of the Crowd Machine product, in our view, is the possibility of a 45-times accelerated process (according to the authors) for developing and launching decentralized applications. This is achieved by the fact that the project is aimed at non-programmers. This means that companies whose businesses use IT infrastructure as a means of achieving their goals and no more would be interested in such an offer. The cost of such an acceleration is a potential lack of sufficient flexibility which could confuse those players who have sufficient resources to conduct full-scale research. However, this applies mostly to reasonably significant players in the IT market.

Regarding security, the execution of processes on the Crowd Computer as a decentralized system of nodes is architecturally less accessible to hacking. However, this is probably not a significant advantage, because critical processes would not be trusted to companies for remote execution.

5. Team and stakeholders

Crowd Machine is a very complex and ambitious project from a technical point of view. The team needs to have a diverse set of skills and practical experience to realize the set objectives with solutions that have no direct analogs. Moreover, as far as we can tell, the team has all chances for success.

The project founder, Craig Sproule, is also the founder and CEO of [Metavine](#) with extensive experience in the creation and maintaining of corporate applications. Under Craig's leadership, Metavine has achieved significant success in creating robust enterprise applications with its platform and tools that enable one to quickly create applications without coding. All this gives confidence that technically the project is finalized and well-tested, because it has effectively long been on the market. Moreover, all the issues and business processes that are necessary for the company to function have long been worked through with the Metavine company, so Crowd Machine should have no problems developing its marketing strategy, etc.

Key members of the team also have comprehensive, relevant experience in creation and management of successful companies. For example, Kurt Pfluger (CSO) has founded and managed 4 successful technology companies. Ben Gorlick (CTO) is an expert in blockchain with the experience of founding a mining company. James Duchenne (COO) is the founder of Sutton Stone, a company with experience of venture building and ICO consulting. Other team members have in-depth competence in client relations, development and UX/UI design, which is surely necessary for the creation of a development tool without coding.

The project advisors have extensive experience with cryptocurrency and blockchain. Apparently, a well-optimized platform of Metavine's designed for creating applications without coding, had gaps regarding decentralization and required integration with various blockchains. As a result, the project authors decided to involve advisors for an expert opinion when necessary.

It should be noted that the project is generating positive feedback from industry professionals. For example, [Charlie Shrem](#), on his Twitter account [described](#) the project as one of the most important and innovative of 2018. Professional recognition of the project's potential from important supporters of blockchain technology is a major marker that indicates demand for the proposed product.

6. Token analysis

CMCT tokens are utilities, necessary for transactions between participants in the ecosystem, controlled at the level of smart contracts. In the ecosystem built by Crowd Machine the following parties interact:

- Companies wanting to create decentralized or blockchain applications using Crowd App Studio and launch them on Computer Crowd. When creating applications, they can use ready-made Patterns from Crowd Share.
- Developers who create their Patterns or Activities and add them to Crowd Share.
- Activity-contributing nodes which together form the computing power of the overall Crowd Computer.
- Agoric nodes that are engaged in the administration of computer resources of the Crowd Computer and record data in the blockchain.

The classic scenario for interaction between ecosystem participants is as follows. A client company decides to create a decentralized application. To do so, its developers use the freely available development tool, Crowd App Studio, and use it to create an application without coding. The cost of interaction with CrowdMachine consists of two aspects: payment for Data as a Service for storing application data (the project uses Amazon Web Services for this purpose) and payment for the computing capacities of Crowd Computer used to launch the application. The ACN nodes are paid in CMCT for their work, and Agoric nodes are paid for solution of the routing problem when searching for the appropriate ACN and splitting tasks into Patterns and Activities. During application creation, developers may use ready-made Patterns available on Crowd Share.

Users establish a fee for the use of their device's resources connected to the ecosystem. It is logical that regions with cheaper available electricity will set lower prices and therefore will be more loaded. Companies can vary the execution speed of their devices through prices for Crowd Machine services and flexibly adjust their expenditure.

The Crowd Machine project was founded in 2017, but its functionality has been under development for quite a long time. The authors argue that they chose a model of selling tokens at ICO without a hard cap because they received a lot of preliminary requests for participation. This participation is probably accurate in level because the concept and other aspects of the functioning of the ecosystem have been carefully worked out by the Metavine company. The project leaves the impression of a great deal of work already done. At the moment, App Studio Crowd and the Virtual Machine are already operating, and the authors promise to present the MVP for Crowd Computer in Q4 2018.

It is difficult to predict what share of the market the project will be able to take from existing cloud services firmly established in their niches. The principal competitive advantage is Crowd App Studio. It is not just a fight between services, but a confrontation of ideas. Moreover, if the initiative to create applications without coding is accepted by the community in the long term, it will change the very paradigm for the cloud services market. The main players are the most powerful corporations and without a doubt will be able to provide development tools of this type, but Crowd Machine will still be the flagship. The

main question is whether the concept of creating apps without coding survive and if it will be dominant? These questions remain unanswered.

Nevertheless, the project has gained much popularity on social media, gathered much positive feedback from potential users and enthusiasts and plans to spend 39% of raised funds on marketing and promotion. The project's experts obviously know the market for enterprise applications development from the inside. Therefore, we believe that in the short term the project will manage to maintain the hype around it and that the functioning Crowd App Studio and Virtual Machine will contribute to this. The time period before the implementation of the Crowd Computer MVP can be spent focusing on the developing the possibilities for rapid application development in Crowd App Studio. Development of the project in the medium term will depend on the success of Crowd Computer. We estimate the chances to be high because the project materials indicate an in-depth study of the conceptual aspect.

7. Investment risk analysis

As noted above, Crowd Machine is entering its market with a new proposition, to create apps without coding, where apps are 'pieced together' from different elements in the form of diagrams. Standard methods of development involve the use of different libraries and frameworks. We note the risks for realization of set objectives in the expected time frame; they are connected primarily with the fact that a new approach always takes time to achieve public recognition.

The floating cost of tokens during the public sale may confuse potential investors. We saw negative comments about this on the project's social media. The fact that one cannot buy a fixed number of tokens in advance for the same amount of ETH means that an investor will not give money to the project on any convenient day, but will try to find the ideal date by their own reasoning. Alternatively, they even might refuse to invest because such a pricing model offers no guarantee. On the other hand, these statements work for small and medium-sized projects without much public attention. According to the authors, they decided to replace the classical approach to a hard cap with a fixed price of tokens, due to a large number of requests to participate in the ICO. Now the market itself will determine the price of tokens by demand. Moreover, trading tokens in the secondary market will also affect the cost of tokens sold and stabilize it in the future. The authors refer to a similar ICO structure employed by EOS, the most successful project to date. We would like to note that for similar success the project has to maintain a reasonably high level of hype around Crowd Machine. The key stage which has to be paid particular attention to is the release of Crowd Computer. We believe that its success will determine the success of the ICO and the future dynamics of CMCT tokens in general.

Development and testing of the Crowd Computer may take longer than expected. The assertion that any device from a smartphone to a server is suitable for running tasks on the virtual machine, means that the project needs to perform a tremendous amount of work for ensuring operation under a variety of operating systems, which in turn have many versions and support features. This ambition could seem like an attempt to seize the unseizable. Moreover, the advantage of centralized cloud services is that one or several operating systems can be supported, and the performance of the OS is easily controlled by specialists on the staff. This risk can be assessed as high.

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Our goal is to increase the transparency and reliability of the young ICO market and to minimize the risk of fraud.

We appreciate feedback with constructive comments, suggestions and ideas on how to make the analysis more comprehensive and informative.