

# 8 CIRCUIT STUDIOS

Leveling-Up the Video Game Industry with Blockchains

# ABSTRACT

In 2017, the video game industry broke the previous year's record for sales by reaching \$116 billion in revenue (up 10.7 percent from 2016)<sup>1</sup>. Blockchains stand to magnify this feat by introducing new ways to create value by enforcing asset ownership for gamers and reducing intermediation in exchange. However, gamers have very high expectations for intuitive user experiences, and if accessing the benefits of blockchains impedes their gameplay experience, the main value offered by blockchains is lost.

Developing with blockchains requires new technical and design approaches that must be accounted for to create a bridge to the general and hardcore gaming audiences. Tools must also be provided for game developers to participate in the open blockchain economy so they can focus on what they do best: ***creating amazing content and experiences***.

8 Circuit Studios is tackling the challenges of using blockchains in games by providing a **platform**, creating **products** (video games and digital assets), and releasing open source **protocols** for using digital assets across games and digital stores:

- A **Platform** to provide blockchain access for **gamers and producers** (video game developers)
- **Products/Games** create the context that amplifies the experience with digital assets through narrative or rich gameplay — thereby increasing their perceived value
- **Protocols** enforce ownership of the digital assets and enable cross game integration — providing additional weight to digital assets' economic value

Developing these three initiatives in tandem is what is required to demonstrate to gamers what is possible for them with a connected ecosystem:

1. Ownership enforcement of digital assets free of third party oversight
2. Free exchange on a globally connected open economy
3. Use digital assets across different games

# INTRODUCTION

The video game industry is an ecosystem where centralized systems benefit gamers by creating, marketing, and distributing games. Producers of video games primarily rely on these centralized systems to provide marketing, distribution, and mediate payment for the products they create. While this system has worked well in the past to connect producers and gamers, **blockchains are here** and they are already colliding with video games to provide insight into

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<sup>1</sup> Wijman, Tom. "New Gaming Boom: Newzoo Ups Its 2017 Global Games Market Estimate..." Newzoo.com.

<https://newzoo.com/insights/articles/new-gaming-boom-newzoo-ups-its-2017-global-games-market-estimate-to-116-0bn-growing-to-143-5bn-in-2020/> (accessed Feb 6, 2018).

how the game industry will change in the near future<sup>2</sup>. Not only are blockchains providing a new way for producers to have a more direct relationship with their audiences, they are beginning to unlock economic value in unprecedented ways by changing gamers' relationships with the games themselves<sup>3</sup>.

As platforms like Facebook, YouTube, Twitch, and Steam rise to offer producers convenient ways to market and distribute their work, blockchains like Ethereum provide a way to more directly facilitate value exchange from gamers to producers by using code to mediate and enforce payment contracts. This kind of code-based enforcement is revolutionary in and of itself. However, this kind of authority model also offers opportunities for gamers that were never before possible at scale. Gamers can now:

- Own their digital assets outside of a centralized system.
- Use the same digital assets *across* video games.

Authority enforcement on blockchains occur via **smart contracts**. While ownership is derived from this enforcement, benefiting from this kind of ownership is not easy for non-technical gamers. Producers of video games also face challenges because blockchains are a new data model that requires new ways of developing games. While demonstrating great promise, blockchains pose significant barriers to entry for both the producers of video game content and the gamers who enjoy the producer's work.

What is needed is a system that provides gamers and producers of content *convenient access* to the benefits of blockchains while overcoming the design and technical challenges they present. Only then can producers demonstrate the new ways that blockchains will change the way gamers play the games and interact with each other.

8 Circuit Studios has developed a system that will bridge the key technical and design challenges faced by producers and gamers as they begin to adopt blockchains into the game industry. 8 Circuit Studios' interoperating system consists of

1. A Platform.
2. Products.
3. Protocols.

## THE PARTICIPANTS

8 Circuit Studios has identified three key participants in the video game industry's ecosystem: **gamers, producers, and publishers**. These three participants each have different

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<sup>2</sup> Bowles, Nellie. "CryptoKitties, Explained ... Mostly." NYTimes.com. <https://www.nytimes.com/2017/12/28/style/cryptokitties-want-a-blockchain-snuggle.html> (accessed Feb 6, 2018).

<sup>3</sup> Tepper, Fitz. "People have spent over \$1M buying virtual cats on the Ethereum blockchain." <https://techcrunch.com/2017/12/03/people-have-spent-over-1m-buying-virtual-cats-on-the-ethereum-blockchain/> (accessed Feb 6, 2018).

expectations and goals to be addressed on the road to fusing games and blockchains in a way that is fun and profitable everyone.

## GAMERS

Gamers are the first of the three participants in the video game industry ecosystem. Their role is to play and consume the products developed by producers and publishers. They demand engaging games that are easy to access and play.

Providing gamers authority over assets will require the following tools in a convenient and understandable format:

- Cryptocurrency wallets.
- Access to cryptocurrencies or tokens.
- Management tools for their digital assets.

## PRODUCERS & PUBLISHERS

With the advent of self-distribution, asset marketplaces, and a shift from institutional publishers, the line between producers and publishers has blurred in recent years. Historically, producers have primarily focused on the creation of digital assets or code for companies while publishers have focused on intellectual property development, distribution, marketing, and other services to support the sale of their intellectual property.

Today, both must focus on making the best possible experiences for gamers. It is by creating this kind of experiential value that producers and publishers profit from their work and can stay in business to continue to create for gamers.

In order to produce the digital assets that can make use of the blockchain, publishers and producers require:

- Development and management tools for the digital assets they create or collaborate on.
- A way to participate in an open economy and receive fair compensation for their work.
- A platform for distributing digital assets.
- A platform to participate in an open economy and receive fair compensation for their intellectual property.

## RESPONDING TO PARTICIPANTS' NEEDS

Solving the issues of convenience for a single participant will not solve accessibility issues for the video game ecosystem that integrates blockchains. Making use of blockchains is challenging specifically because the participants cannot easily interact with each other. A combination of *concurrently applied* solutions is necessary to meet the needs of all participants to allow them to interact simply and effectively. In this way, the rewards of using the blockchain can be realized for all participants simultaneously.

# THE SYSTEM

As an integrated blockchain video game ecosystem does not yet exist, 8 Circuit Studios is developing three system components in parallel to meet each of the participants' needs simultaneously. These interlocking components are designed to address the specific needs of each participant group and the challenges they face when attempting to interact with each other:

1. **A Platform** that offers convenience, accessibility, and tools to all participants.
2. **Products** (games and digital assets) to provide an environment for digital assets.
3. **Protocols** to enforce ownership, allow asset evolution, and provide cross-game integration of digital assets.

Each component is designed to work in conjunction with the others seamlessly to provide an experience where the **gamer does not even know they are using a blockchain and yet still enjoy its benefits**. Focusing and iterating on this approach will reduce friction for new users and non-technical gamers as well as grow the blockchain-based video game ecosystem to all participants' advantage.

## PLATFORM

A blockchain, like Ethereum, allows for the creation of digital assets through smart contracts. While deploying smart contracts is relatively easy thing to do, using them economically-at-scale is a challenging prospect. Video games typically operate at the edge of innovation and have high requirements due to the expectations of gamers.

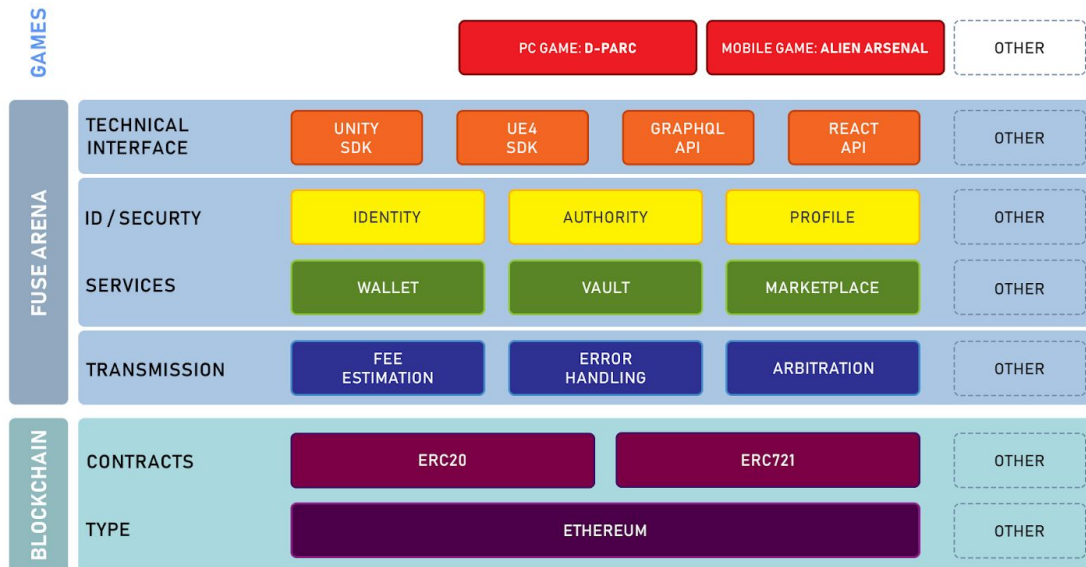
Because blockchains are structured as a distributed database, it requires new ways of saving and managing data on the blockchain for publishers and producers. It also requires introducing novel ways of approaching usability for gamers interfacing with their assets on blockchains.

## FUSE ARENA

To address the challenges faced by the participants when using blockchains, 8 Circuit Studios has developed a convenience platform called **Fuse Arena**. Fuse Arena is a portal to introduce gamers to the blockchain and provide a secure environment for using wallets, tokens, and managing digital assets. For the producer and publisher, the platform provides the tools necessary to develop and distribute their digital assets or use those digital assets within their game worlds.

The diagram below outlines the conceptual framework that Fuse Arena operates in as it manages the layered relationships between games and blockchains.

## FUSE ARENA: CONCEPTUAL FRAMEWORK



Fuse Arena interfaces with the Ethereum **blockchain** and creates and manages tokens via smart contracts. At the **transmission** level Fuse Arena provides error handling and fee estimation for the coordination of transactions. The **services** offered include a wallet and a vault to all users. The marketplace services are the mechanics to produce a full marketplace and allow gamers and producers to sell and purchase assets. The **identification** and **security** layer uses profiles that are provided through industrial authentication services. Finally, the technical interface accommodates standard development tools that make it easy to integrate games with the Fuse Arena platform.

## VIDEO GAMES

### EMOTIONAL, TECHNICAL, ECONOMIC VALUE

While Fuse Arena underpins 8 Circuit Studios convenience model for the three participants, there remains a need to present thematic context for digital assets. For gamers, it is the game itself that is the instrument which amplifies emotional experience and connection to the digital asset, thereby increasing the digital asset's value. For publishers and producers telling captivating stories and participating in creative expression yields lucrative economic return.

8 Circuit Studios believes in order to best serve the publishers and producers it must first develop titles that demonstrate what is possible on blockchains - both creatively, technically, and economically. 8 Circuit Studios is developing two episodic games on 5 of the most common game development platforms/operating systems:

1. Mobile: Android & iOS
2. Console: Xbox and PS4
3. Windows PC

## ALIEN ARSENAL: BATTLE FOR THE BLOCKCHAIN

“Crypto-Collectible” Alien Battle Game

**Release Date:** Spring/Summer 2018

**Platforms:** Mobile: iOS & Android

Alien Arsenal: Battle for the Blockchain is a mobile game where gamers collect, battle, and evolve adorable aliens to fight galactic bosses. It is designed to showcase game mechanics making use of the Ethereum blockchain and giving gamers their first experience of blockchain-based digital assets.

## D-PARC

Characters that can Live Forever on the Blockchain

**Release Date:** Q4 2019

**Platforms:** Windows, Xbox, PS4

D-PARC is a deep space survival game about a starship-bound AI that must save 100,001 cryogenically frozen “heirloom” humans from the world they destroyed. It has an emphasis on narrative while weaving epic space fire-fights with first-person gameplay. It is designed to showcase rich game assets like complex characters and giant industrial stations with their own economies on the Ethereum blockchain

While these games will provide meaningful experiences and important context for digital assets, it is the digital assets themselves that offer the most exciting opportunities for gamers, producers, and publishers alike.

## PROTOCOLS: SMART GAME OBJECTS

In-game assets (also known as in-game objects) have traditionally been restricted to the games and intellectual property they exist in. This was based on technological limitations and how intellectual property was defended at the time. These restrictions primarily benefited centralized systems in the industry. The potential value of digital assets was limited to other participants because they typically constrained ownership and authority.

Blockchains offer an alternative approach to digital assets and exchange between peers<sup>4</sup>. Ownership and authority over one's digital assets alone is enough to disrupt the game industry's intermediated business models.

## THE NEW PARADIGM OF DIGITAL ASSETS

The diagram on the next page outlines the distinctions between the three models of in-game objects as it relates to digital assets and what is possible using the blockchains. This guide outlines the approach to developing Smart Game Objects for D-PARC and Alien Arsenal: Battle for the Blockchain. It will serve as the foundation for the release of 8 Circuit Studios proposals for protocol development.

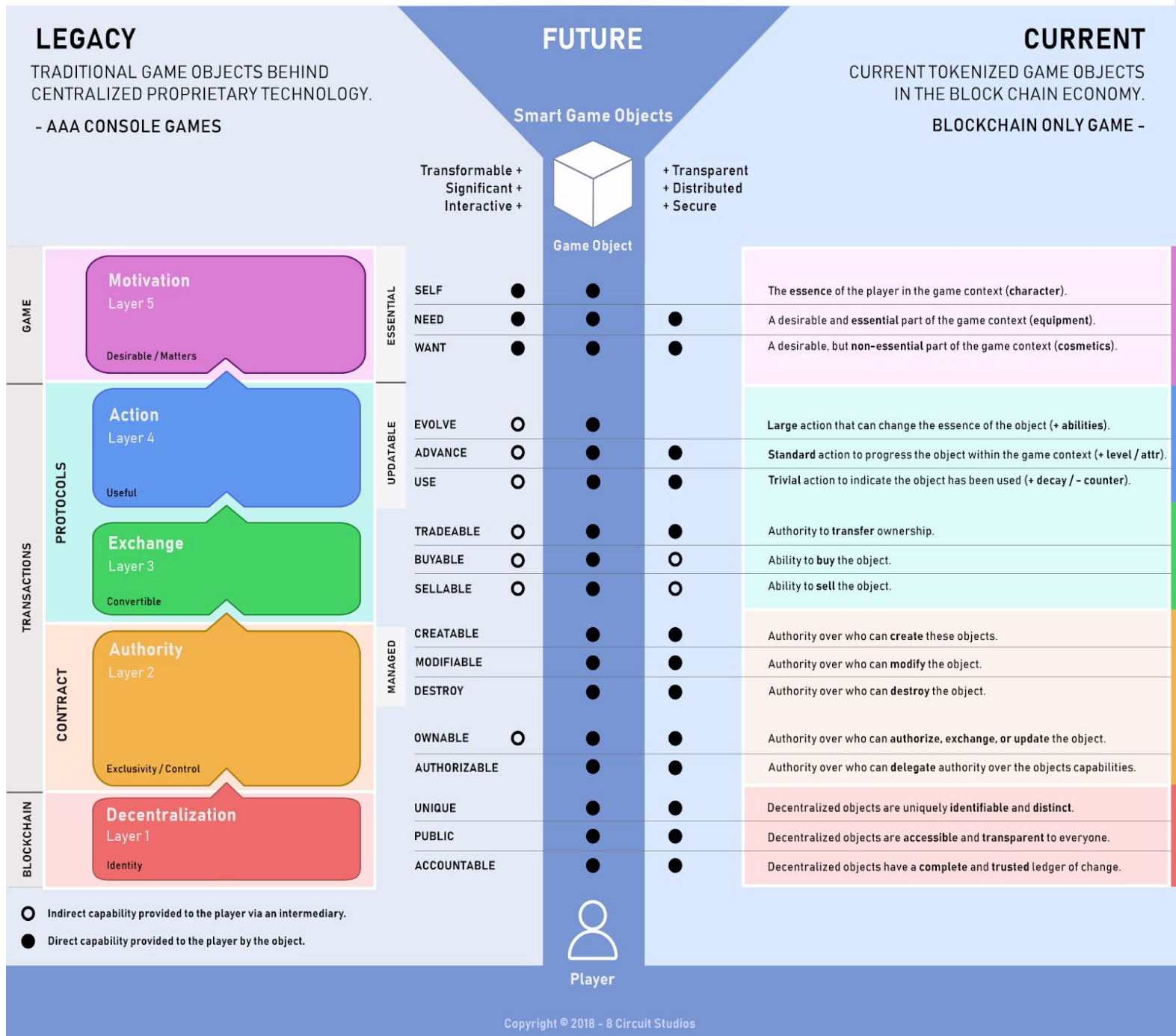
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<sup>4</sup> Nasdaq.com. "Using the Blockchain to Track Assets for Proof of Ownership."  
<https://www.nasdaq.com/article/using-the-blockchain-to-track-assets-for-proof-of-ownership-cm715872>  
(accessed Feb 6, 2018).



# IN-GAME OBJECTS DESCRIBED

Legacy Game Objects vs Digital Assets in the Blockchain Economy



8 Circuit Studios will develop Smart Game Objects for its initial products to field-test within the 8 Circuit Studios economy.

# 8Bit TOKENS

On July 17th, 2017, 8 Circuit Studios made available its **8Bit Token** in its Wave 1 token sale. It is **currently live** on the Ethereum blockchain<sup>5</sup>.

The 8Bit Token (**symbol: 8BT**) offers a gateway for all participants to engage in the video game blockchain ecosystem. More importantly it will power the very gameplay that makes 8 Circuit Studios blockchain-based games unique. The 8BT utility model will be familiar to most gamers as it will operate similarly to facilitate in-game purchases. It is also the critical link that “metabolizes” smart game objects - or in other words: runs the smart contract code to perform specialized functions. As an ERC20 token, the 8BT is fully transferable by the managing authority (owner) of the token<sup>6</sup> and not restricted to the walled garden of an in-game economy.

## A NEW ECOSYSTEM

In a mature ecosystem, specialized participants are positioned to provide the required means to support production, distribution, and consumption. The introduction of video games into the blockchain economy has resulted in a market that focuses on specific aspects of the ecosystem and they primarily operate independently from one other.

8 Circuit Studios has developed the three interlocking components of a system that caters to the needs of all three primary participants within a video game ecosystem. Fuse Arena offers convenience while offering tools for them to manage their digital assets. It will also provide blockchain access and development tools for producers and publishers.

Initially, 8 Circuit Studios will function as two of the participants of the ecosystem — the publisher and the producer — developing both the games and the digital assets that will populate them.

Two games are currently in production: Alien Arsenal: Battle for the Blockchain for mobile devices and D-PARC for the PC market to demonstrate the proposal for game design and technical architecture using the Ethereum blockchain and the 8Bit token economy.

8 Circuit Studios uses the ERC20 and ERC721 standards as the basis of the 8Bit Tokens and Smart Game Objects. Once the Smart Game Objects are field tested in Alien Arsenal: Battle for the Blockchain and D-PARC, the contracts will be the first proposals released to the community for protocol development using the open source software model.

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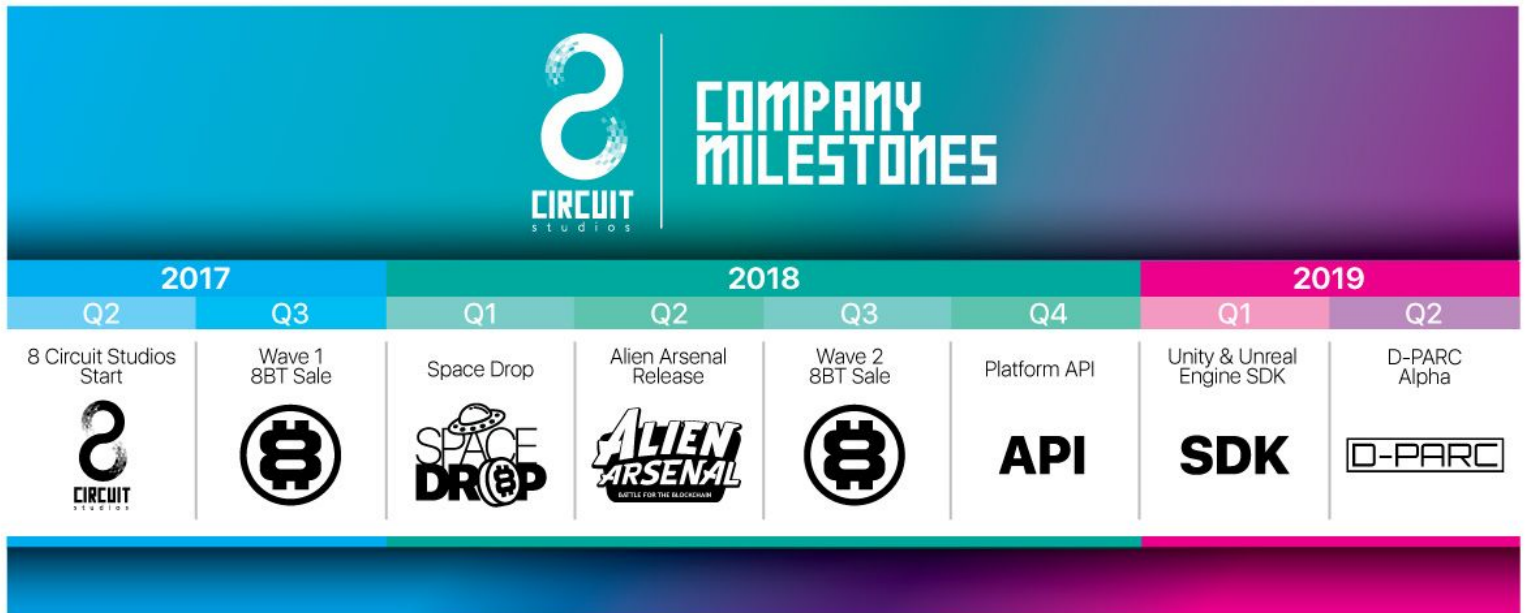
<sup>5</sup> Etherscan.io. ERC20-TOKEN 8 Circuit Studios Token.

<https://etherscan.io/token/0x20f4eb38c210490839cdd7bc60636171abb7bf94>

<sup>6</sup> TheEthereumWiki.com. “ERC20 Token Standard.”

[https://theethereum.wiki/w/index.php/ERC20\\_Token\\_Standard](https://theethereum.wiki/w/index.php/ERC20_Token_Standard) (accessed Feb 6, 2018).

## TIMELINE HIGHLIGHTS



## IN CONCLUSION

The three tiered system outlined in this whitepaper is an 8 Circuit Studios' approach. 8 Circuit Studios believes that gamers will quickly understand the power of blockchains when they do not have to struggle to access and use them.

Once producers and publisher observe successful economic models, a portal to a new video game industry will have arrived and all participants will benefit from a virtuous cycle of creative expression, technical achievement, and economic incentives.