



Decorate the world with your imagination

- White Paper -

V 1.0

Table of Contents

04 Abstract

08 Overview

AR Market Environment	08
Birth of the ARGear World	13
Current State of the ARGear World	14
Use Cases for ARGear World	15
The Future of ARGear World	17

05 Introduction

Background	05
Proposal	06

19 ARGear World - Open Platform for AR

ARGear World	20
ARGear Application	22
ARGear Studio	25

28 ARGear World Community

Composition of the	
ARGear World	28
ARGear World Community	
Participants	28
ARGear World Content	29
ARGear World Hardware	
Tools	29
ARGear World Software	
Development Tools	30
Economic Activities in	
ARGear World	30
ARGear World Coin (AWC)	31
Economic Activities	31
Participant Scenarios	34
Community Fund	37

39 Roadmap

41 Member

Token Allocation	44
-------------------------------	-----------

45 Conclusion

46 Appendix

Abstract

ARGear World is a platform for Augmented Reality (AR) content creation and distribution backed by a blockchain ecosystem.

ARGear World provides a new distribution channel like internet on the wire where a variety of AR content (such as 2D & 3D stickers, masks, filters, avatars and virtual object) and AR apps could be distributed to and from anywhere in the world without being limited by devices, operating systems, or infrastructures. This open AR marketplace connects the creators and the app developers directly with the users and hence, returning more profits generated from content and services to actual participants without involving any intermediaries. Also, ARGear Solution Development Kit (SDK) will be available for developers and hardware manufacturers to allow ARGear World to reach their devices regardless of specific manufacturers or specific operating systems.

Seerslab has released a mobile AR camera app utilizing AR technologies such as facial recognition/tracking/transformation, and continued creating AR content and developing AR technologies since 2014, and evolved to become the leading AR total solution company. Our team at Seerslab is currently building a software package, “ARGear Studio”, containing tools that allow users to create a variety of AR content and build apps which could then be distributed in ARGear World. Anyone will be able to directly create and upload various different types of AR content and developers will be able to easily upgrade/build and distribute AR apps. In addition, ARGear World would allow anyone to add new AR technologies to the technical library in ARGear Studio (or to provide a plug-in) and thus the tools provided by ARGear Studio would be most up-to-date continuously. Our vision is to promote an global open platform for AR content and apps for everyone and run by everyone, and thus to achieve a democratization of the whole AR industry for a faster growth.

Introduction

Background

Over the past ten years, we experienced dramatic changes as the market moved from the 3G telecommunications environment to a universal dissemination of the 5G telecommunications environment, as well as the availability of smart devices to the general public. It is now common for all users to easily access, create or share data as necessary, whenever and wherever through a variety of smart devices including smartphones and tablets on the go.

The mobile ecosystem has grown into a giant industry flanked by an exponential distribution of smart devices, and such growth was largely driven by device manufacturers as well as operating systems providers such as Android and iOS. Now, the mobile ecosystem has become centralized including abundant content, APIs (Application Programming Interface) and SDKs (Software Development Kit) for software development, and marketplaces where applications are purchased and sold.

Led by giant high-tech companies such as Apple, Samsung, Google, and Facebook, this centralized mobile ecosystem continues to show impressive growth. However, the spectacular growth also had its drawbacks as the following issues have come to light.

First, developers today must develop applications to meet the policy requirements of Android and iOS marketplaces, register such applications with the corresponding marketplaces, and wait for the users to select them for use in the troublesome fragmented environment between different devices and OS. Moreover, the only way to get noticed or selected by users within the unending avalanche of applications is to invest an enormous amount of capital in marketing and promotional campaigns to let people know.

Second, in a mobile ecosystem dominated by a handful number of companies, the application suppliers that provide information and content as well as the users who consume such information and content are increasingly becoming subordinated as second-class citizens as they are forced to participate in this ecosystem only by providing great profits to those few dominant companies running the aforementioned centralized ecosystem.

Third, in a centralized mobile ecosystem, the applications developed by individuals or small businesses should ideally be universally compatible regardless of operating system or type

of device. However, as the centralized mobile ecosystem has evolved into several different segments and the device manufacturers incessantly release new models to increase sales, the ecosystem is getting more fragmented and thus, has lost its universality.

Additionally, newly-formed industries are following the footsteps of the mobile ecosystem and are moving to establish a centralized business ecosystem akin to the mobile ecosystem. For example, in the past few years, the Virtual Reality (VR) industry has seen companies such as Samsung, Google, Microsoft, and Magic Leap struggling in their attempts to establish their own centralized and segmented VR ecosystems. However, for each company, the device, infrastructure, and content/application creation tool environment are all different. Consequently, it has become more difficult and expensive for developers to create usable content and applications. Inevitably, such segmentation effect caused a slower dissemination of the VR ecosystem and an inhibition on the growth of the overall VR industry.

As explained above, the VR industry is currently facing a stagnant growth rate due to the establishment of fragmentary environment characterized by distinct devices, infrastructures, and immature content/application development ecosystem. However, the AR (Augmented Reality) industry is different from the VR industry. Unlike the VR industry, the AR industry can utilize smartphones which are already widely disseminated, and it is still at a nascent stage where the ecosystem has yet to completely evolve into multiple different segments similar to that of the current VR industry. However, movements by large companies seeking to establish such a segmented ecosystem for the AR industry have been observed.

The recent release of Google's ARCore and Apple's ARKit exemplifies the attempts by big brothers such as Google and Apple to establish their own ecosystems. As we have witnessed how the growth has been stunted in the VR industry, those centralized ecosystems which could be established by Google and Apple, and possibly by other large corporations are likely to create different segments within the AR ecosystem and limit the growth of the AR industry as a whole. As a result, the AR industry will face the similar issues that manifested in the VR industry. Our team understands that, in order for the overall AR industry to succeed, an effort to move away from the current centralized commercial ecosystem and to fundamentally change the AR ecosystem and economy as we propose in this white paper is much needed.

Proposal

Through our AR camera app – Lollacam - which was released about four years ago, our team has established a segment of an AR ecosystem focused on AR content relating to human

face. Since Lolicam, our team has expanded our experiences and knowhow in sprouting AR industry, working with major smartphone makers and application developers over the past four years. Based on those backgrounds, we aim to create a bigger foundation for the whole AR industry that would allow the AR industry to experience a smoother and faster growth going forward while avoiding the various issues that had plagued the existing mobile and VR ecosystems.

Our team believes that AR will become a part of our daily lives more rapidly than VR. Such a wide-range insertion into our daily lives would be made possible since, unlike the VR industry where the VR experiences are only possible through specific content/applications dependent on fragmented devices or operating systems, the AR industry can utilize smartphones that are now universally available, and further, AR content are smaller in size than VR contents, which allows even the current networking environments to provide sufficient bandwidths for the creation and using of AR content daily.

However, the AR industry has not yet established an ecosystem that can stimulate the creation of AR content or applications that can be enjoyed on our smartphones. There is not yet a marketplace in the AR industry where profits could be shared by all participants. In order to create a world where AR content can be enjoyed in our daily lives in an abundant manner, our team is using its best efforts to build a platform, ARGear World, which includes an open AR marketplace utilizing a cooperative business model connecting the creators of AR content directly with the users of such content, and to also distribute a device solution, ARGear Software Development Kit (SDK), which will allow ARGear World to reach devices regardless of specific manufacturers.

The world we intend to create through ARGear World can be described as follows:

1. Provide an open AR platform ecosystem not led by major high-tech companies such as Google and Apple, but rather, an ecosystem led by all participants.
2. Provide a business model that will stimulate the creation of AR content by authors and the consumption of such content by general people.
3. Provide authoring tools that will allow anyone to easily create AR content.
4. Provide a developmental environment and a business model where developers can use the latest AR technologies to develop and distribute decentralized AR apps not dependent on a particular market store or device.
5. Provide an open-ended developmental environment where individual and corporate developers can develop new AR technologies, and then supply, distribute, and commercialize such technologies through the ARGear SDK.

Overview

AR Market Environment

The emergence of the AR/VR world has long been extensively covered by movies and novels. In particular, since the appearance of smartphones in the 2000s, the AR sector has seen a variety of technologies and services that use smartphone cameras to recognize texts, faces, images, or objects, or overlay digital 3D images onto particular areas. However, these technologies all involve multiple technical issues in respect of the completeness of the hardware and software technologies involved and the UX (User Experience).

In contrast to the AR sector, the development of the VR sector has been led by major console game companies and such companies had already produced a variety of concept products since the 1990s. However, the real growth in the VR market segment was ushered in by the variety of VR devices, platforms, and contents released to the market from the mid-2000s as consequences of acquisitions of the relevant VR technology and hardware companies by IT industry giants including Facebook, Samsung, and Google.

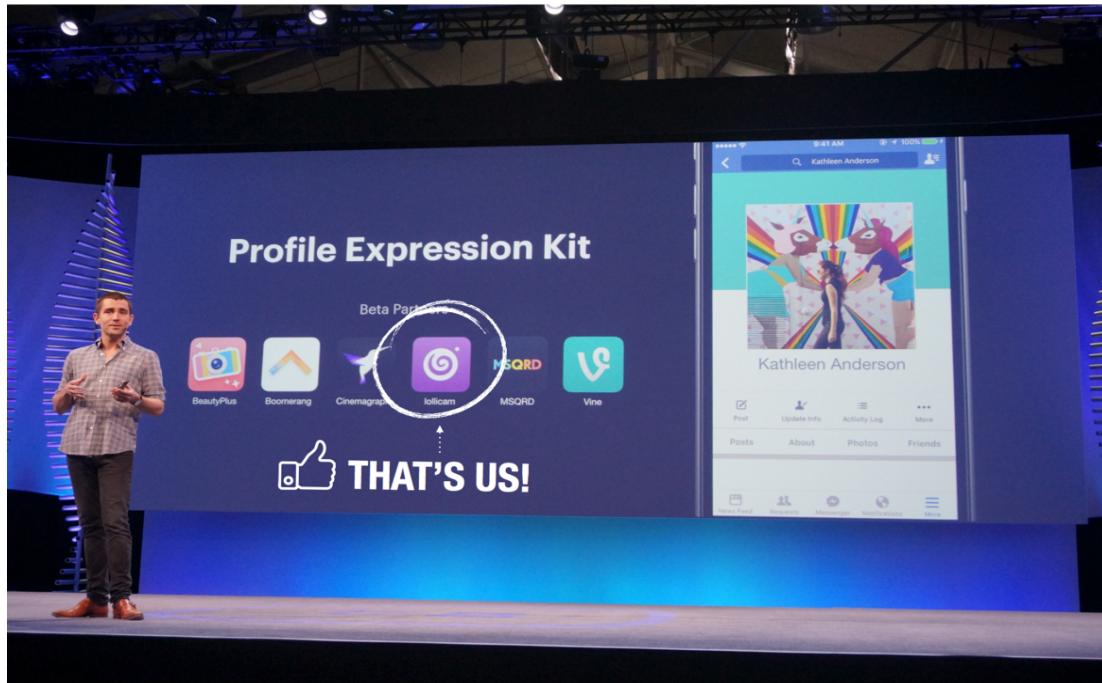
In particular, Facebook acquired Oculus VR, i.e., the company behind the success of Oculus Rift, in 2014 for the astronomical sum of USD 2 billion, thereby ushering in the era of VR for the masses. Subsequent to such purchase, Facebook attempted to combine the technologies of Oculus VR with Facebook's powerful content platform. Furthermore, with Samsung's release of their low-cost VR device, the Gear VR, even greater anticipation was formed in the market for the imminent arrival of the mass-market VR era.

However, despite the astronomical investments into the VR sector by major IT companies and the releases of a variety of VR devices that are cheaper than ever before, the VR market is experiencing a stunted growth. This prompted Facebook's CEO Mark Zuckerberg to even announce that the company will focus more on the AR market than the VR market going forward from 2017 at the F8 2017, the largest annual meeting of Facebook. In accordance with such announcement, Facebook has even incorporated an AR function similar to that provided by Seerslab's Lolicam in its camera functions even while our team had worked with Facebook team as its partner since 2016.



[“Camera Effect Platform” from Facebook F8 2017]

*“...I think eventually there are going to be people
who want a VR product and there are going to be people
who want an AR product. I would bet the AR one will be bigger
if it can get developed in a good way.”*
said Mark Zuckerberg on F8 2017



[“Lollicam” selected as Facebook’s partner from Facebook F8 2016]

There are multiple reasons why Facebook announced its intent to shift its focus to the AR market from the VR market where it had made significant investments. In July of 2016, Niantic, an American company founded by former Google employees, released the augmented reality (AR) game application Pokéémon Go. This game used the long beloved Pokéémon characters together with smartphone cameras to permit users to capture the aforementioned characters that exist in their surroundings, resulting in global revenues of over USD 1 billion in just seven (7) months after release. Until the explosive success of Pokéémon Go, augmented reality (AR) apps were merely provided as tech demos; however, the record-breaking commercial success of this app had truly opened the gate for the beginning of the AR era.

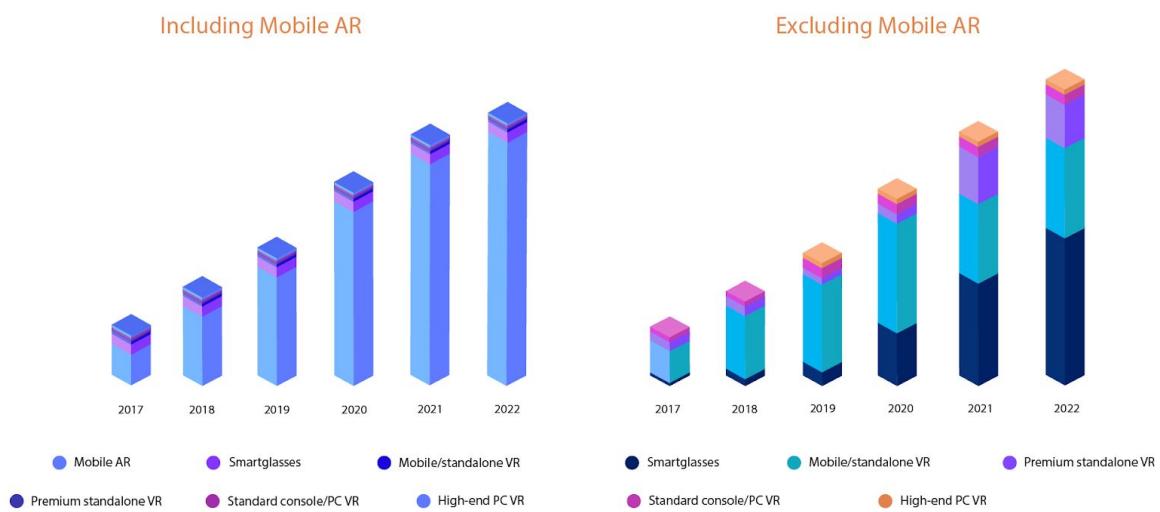
Prior to the advent of Pokéémon Go, the primitive forms of core AR camera functions such as AR stickers and emoji were represented by Seerslab's Lollicam and a Russian startup, Looksery. In particular, Looksery raised seeds funds through crowdfunding in the mid-2014 by using a Kickstarter campaign, which permitted Looksery to release its service at the end of 2014. Subsequently, in August of 2015, Looksery was acquired by Snapchat and its software now comprises the core engine behind the Snapchat Lens service.

After the official launch of Lollicam service in 2015 (its initial version called "pixbee" is released on 2014), not only did American companies, such as Snapchat and Facebook, release separate apps or include services similar to Lollicam within their own platform, but also major IT companies in Asia, such as Naver, Tencent, and Alibaba, had followed suit in rolling out their own copycat products and services. This spur of market entries by IT giants had since placed AR in the spotlight. At this juncture came the global success of Pokéémon Go in 2016, and Facebook then announced that they will be focusing on the AR sector in 2017. Now, in 2018, major smartphone manufacturers such as Apple and Samsung are even including AR camera functions as a basic feature in their default cameras.

Market research institutions are also predicting greater growth in the AR market than in the VR market for the next ten (10) years because of the larger "installed base" of the AR market. In an article¹ published in January of 2018, the renowned American tech media company, TechCrunch, predicted that the AR installed base will grow to more than 3.5 billion devices by 2022 and that the size of the market will reach roughly USD 90 billion. In contrast, the VR installed base is predicted to grow to roughly 600 million devices, while the size of the VR market is predicted to be roughly USD 15 billion, making its size roughly one-sixth of the AR market.

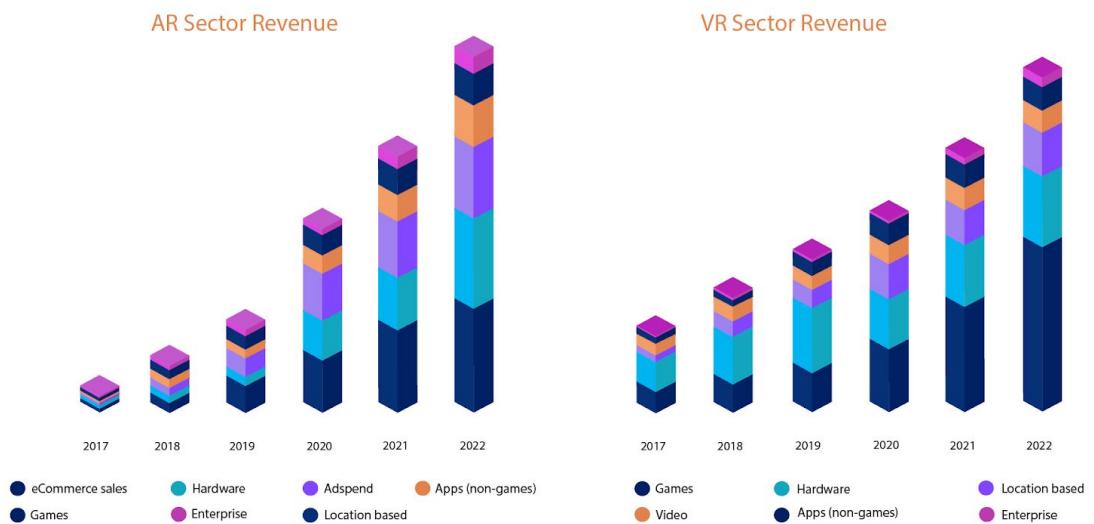
AR / VR Installed Base

(Note: scales on both charts are not the same)



AR / VR Sector Revenue

(Note: scales on both charts are not the same)



[Source: <https://techcrunch.com/2018/01/25/ubiquitous-ar-to-dominate-focused-vr-by-2022/>]

The powerful growth driver responsible for such a significant difference between the AR and VR markets is obvious—it is the potential of the mobile AR sector which began in 2014 with the release of Seerslab's AR camera application, Lollicam. Subsequent to the release of Lollicam, major smartphone manufacturers, such as Samsung and Apple, along with major

internet companies, such as Snapchat, Facebook, Naver, and Alibaba, had expanded their investments in similar services or technologies, which resulted in a variety of mobile AR market participants that work on everything from core technologies to AR contents. Many of the main startups from the existing VR ecosystem are also expected to leapfrog onto the mobile AR market as its exploding growth continues.

Apple and Google are working to grow their own developer communities in an attempt to establish a dominant ecosystem in the burgeoning AR market by releasing development tools such as ARKit and ARCore that allow easy development of AR applications. Similarly, Facebook and Snapchat have released authoring tools called Camera Effects Platform and Lens Studio, respectively, in an attempt to establish a diverse creator community for their own major platforms. In other words, the major IT companies are fighting to capture the early lead in AR technologies and contents in order to establish a dominant market position in the future.

In particular, the AR sticker function first introduced by Lolliscam is now available for use with the default cameras mounted on the smartphones released by companies such as Samsung and LG. Starting in 2018, such function is expected to be incorporated into the products of the diverse array of global smartphone manufacturers and to be established as the basic functions of default cameras used by various other applications.

Apple's ARKit released in September of 2017 and included in over fifteen million iOS applications in just six months has experienced rapid expansion in use. ARKit, along with Google's ARCore released in November of 2017 has led to industry-wide predictions that a variety of mobile applications, such as mobile commerce, games, and media, will all include an AR engine by default going forward.

The growth of the AR market is expected to be an unstoppable trend for the next five years. Moreover, the emergence of AR glasses and the combination of AR technologies with AI (Artificial Intelligence) will make AR become an indispensable part of our daily lives. Accordingly, the early market participants need to look at the failures of the VR market and think hard about how to improve the ecosystem in a healthy manner so that the market can grow into an environment where every participant worldwide can share the benefits. As a means to ensure that benefits of the high-growth AR market are shared by all participants, our team firmly believes that a blockchain currency provides the most upside as a compensatory tool, which could be introduced for fair compensation based on blockchain technology and contribution by the participants. Under blockchain-based compensation system, the AR market can grow in a healthier and more organic manner.

Birth of ARGear World

Seerslab, the matrix from which our team was born, was founded in May of 2014 in Seoul, South Korea. Seerslab developed applications that allowed ordinary people to easily create fun video contents in their daily lives and released the real-time video creation application called Lollicam one (1) year after its establishment.

Lollicam used face recognition technology, which had previously been used mostly for industrial purposes, in a mobile camera application, thereby allowing for previously impossible facial recognition stickers that moved with the face of the user in real time for real-time selfie expressions, and also incorporated the expression technology which applied the cinematic effects previously used in movies and commercials.

At the end of 2014, roughly around the time when Looksery service was launched, the predecessor of Lollicam, i.e., Pixbee service, was launched. One year later, in May of 2015, the name was changed to Lollicam AR camera for a formal release. Lollicam AR camera was no longer a prototype app applying facial recognition/tracking/transformation technologies, but, rather, a finished app reaching one (1) million global downloads in a span

of just four (4) months based only on organic marketing. The fact that the aforementioned application had introduced innovative service concepts to the AR camera service sector already enjoyed by the users, in addition to its setting forth the direction of a business model involving contents such as stickers made in cooperation with brands and movie stickers made jointly with Disney, shows its significance in the development of the AR technologies.

In particular, the Geo-sticker feature of Lollicam was inspired by the DocBasket service of Seerslab, which was the company's location-based document provisioning service. When it is applied to locations such as amusement parks and movie theaters, the Geo-sticker feature permits Lollicam users to download particular AR stickers at particular locations, allowing the users to use them for their own content creation. A similar feature was provided by Snapchat via its Geo-filter feature released in the first half of 2016.

After the release of Lollicam, major companies have strengthened their own businesses by acquiring startups possessing portfolio of technologies and contents similar to that of Seerslab, or internally developing such technologies and contents on their own, in order to capitalize on AR camera functions. However, the imbalance in the AR market worsened as most companies were forced to purchase expensive SDKs in the open market in order to have AR camera functions and they also had to have the ability to run their own servers or create their own content in order to allow for an AR camera service. By observing such market imbalance, Seerslab became keenly aware of the need to develop an AR SDK freely available to all market participants, along with ARGear World that does not have a

fragmented developer base, is not controlled by major capital, and allows for the free development and distribution of AR content.

Currently, Seerslab has launched a device SDK (Software Development Kit) called, ARGear SDK, in June 2018. This device SDK allows global application developers to easily incorporate Lollicam's facial recognition and geo-sticker features to their own camera functions. Additionally, it includes an API and other development environment features allowing for an easy utilization of the over 5,000 AR content already created by Seerslab. Through these developments and product launches, we anticipate the basic cameras, AR glasses, and various other next generation AR apps from app developers and mobile device makers worldwide would be able to utilize the AR technologies and content owned by Seerslab.

ARGear World in this White Paper would contribute to the early stimulation of the AR market by providing the platform itself and the ARGear SDK, which is a device SDK allowing the ARGear World to be used with various devices, from the early stages of AR market development as an open source. Here, ARGear World is a platform that allows even more participants to jointly create and accumulate AR content on top of the platform developed based on the experience, skills, and content, which had been accumulated since 2014 and already proven by the operation of similar services in the AR industry by Seerslab.

Current State of ARGear World

Our team has launched a beta version of ARGear SDK (Software Development Kit) providing a development environment including various core AR technologies offered by ARGear World, which allows developers to easily upgrade/build AR apps.

The ARGear SDK of Seerslab is an integrated development environment containing the development tools that help support the device companies, app companies, and individual developers wishing to develop new AR technology by allowing them to use the latest AR technologies to create AR apps for various different devices. As such, AR apps created through the use of the ARGear SDK allows for the realization of AR services within each individual app by allowing for the easy use of AR technologies even if the developers do not have any technical knowledge relating to AR. In addition, an API, which permits the applications to directly use the diverse array of AR content provided by the ARGear World marketplace, is provided. In other words, SDK allows any user to easily and quickly offer an AR camera service within its own app similar to SnapChat's Lens, even if such user lacks the AR related technologies or content creation capabilities.

The diverse array of AR content uploaded onto the ARGear World marketplace can be used by end users through variety of different interface points, such as the basic camera functions of a mobile application made using the ARGear SDK, AR glasses, or the like; furthermore, it also supports Geo-AR (location-based AR), where virtual AR content related to a physical location anywhere in the world could be uploaded into the specific geo-point.

Going forward, various other functions will be added to the ARGear World marketplace so that users can choose AR content that they seek to directly upload or set the scope of sharing and price of such AR content. Moreover, the new functions would also establish a marketplace where the users could check the information such as the use status or sales status of the content that the users own and where the users could also make direct sales. To allow any users to easily create and upload content using the authoring tools, Seerslab has made more than 5,000 AR content available for immediate use from the nascent stage of the market and allow users to produce AR content on their own using those content.

By incorporating the ARGear SDK and connecting to Seerslab's content server through API, the smartphone manufacturers, AR glass manufacturers, app developers, and the like could create an environment where the users are able to consume and enjoy diverse AR content, apps, and Geo-AR (location-based AR) content created by other users worldwide and to participate in ARGear World by directly creating their own AR content and presenting them in the global space.

Use Cases for ARGear World

ARGear World is expected to provide new lifestyle patterns that would be of practical use of virtual content in our everyday lives. Here are a few examples:

First, anyone can use the ARGear Studio authoring tools provided by ARGear World to create virtual content such as AR stickers or 3D object and use devices such as smartphones, tablets, applications, and AR glasses that support ARGear World to distribute those new contents to the entire world for a profit.

Second, developers can use ARGear World to develop original applications that provide AR services they desire (i.e., AR games, AR educational apps, etc.) and sell them globally through the ARGear World marketplace. ARGear World would provide supports to such developers by providing free resources at the beginning, and developers could freely promote their own applications on various devices and applications that include ARGear World.

Third, users can explore ARGear World, the AR surrounding the users, by using the camera viewfinder of various ARGear World devices and find or save new location-based content. For example, when a user's friends look at such a user while wearing AR glasses or through a smartphone camera, the friends could discover the user's digital selfie as they would be able to see the user wearing the user's own preferred digital gear, such as AR stickers, masks, sunglasses, accessories, or outfits from famous movie or animation.

Fourth, if a user were to share AR content created at the Eiffel Tower in France, then when other users actually visit the Eiffel Tower, they would get a notification informing the existence of such AR content and would be allowed to download such created content. This would allow people to enjoy messages or memories in AR form that have been left by their friends, or even create their own memorable pictures or videos using AR stickers designed and shared by their friends.

Fifth, users can use ARGear World to share restaurant menus or coupons with everyone in the restaurant, upload collaborative documents to an office environment in advance, and develop and distribute AR games that can be enjoyed in particular locations, much like Pokémon Go. Furthermore, users can leave video messages to their loved ones at home to be viewed only by such loved ones. Users can use ARGear World to enjoy a variety of different AR content based on the user's current location and they can create their own digital worlds through ARGear World.

In particular, the Geo-AR function supported by ARGear World allows for push notifications to be sent to users automatically through a particular app on ARGear World when they approach a physical location where such content is available. Once at the location, users could then activate the content or an app, or see or peruse the content in ARGear World if they are using AR glasses, and save it to their own storage (Basket). Of course, this is limited to the AR content that is allowed to be saved.

Furthermore, users can use and enjoy free AR content provided by ARGear World as much as they desire. The paid content can also be purchased by using cryptocurrency issued by ARGear World, i.e., ARGear World Coin (AWC). We expect the development of ARGear World to bring about the birth and provision of various different secondary services, such as camera views used to identify real world text, images, human faces, products (objects), and the like in real-time to conduct a real-time Google search in order to display relevant information, conduct real-time translations, or recognize a criminal's face in advance and sound an alarm.

The Future of ARGear World

The ARGear World aims to evolve into a platform that is more than just a marketplace where various digital AR content could be distributed to and from anywhere in the world without being limited by device, operating system, or infrastructure. The ARGear World provides a new content distribution channel that allows for the various types of virtual content and information that had previously been distributed through closed web or app channels to be utilized directly at a user's current physical location. In other words, if Google could be characterized as a system that had provided a variety of information and services as the portal that go beyond the limits of time and location through standardized channels such as PCs or mobile devices on the network called the Internet, ARGear World would then be characterized as an attempt to utilize, in the real world, the infinite expansion of the digital world at our fingertips as a distribution channel for new forms of information and digital content in future.

From the perspective of a content creator, the distribution method for personally created digital content – in other words, the scope of sharing, price, Geo-AR feature support, etc. – can be set by the creator directly, which would allow the expansion and growth to happen on their own through the same principles of supply side economics that applies in the real world. Creators can carry out various types of actual business activities in ARGear World, such as PR, information exchanges, commerce and the sale of authored works. In the future, spaces in ARGear World would be sold and leased just like actual real estate.

From an application developer's perspective, the ARGear World development environment can be used to create and distribute various applications even with a limited amount of resources, and a developer would be able to also make open source contributions of its own newly developed AR technologies to the ARGear Studio under the GPL (General Public License), allowing for a licensing business model where royalties or a share of the revenue may be received from the device manufacturers and content creators by using such technology. Under such system, blockchain technology will enable not only the management of such integrated, open, and collaboration-based licenses, but also just compensation for technological developments and their subsequent use.

From the perspective of an user, the AR apps and content of ARGear World can be enjoyed anywhere and at any time through various devices that support ARGear World, such as smartphones, tablets, and AR glasses. The initial screen of services supporting ARGear World would be the camera view or the initial display screen of a device such as AR glasses that can show virtual world and objects. Through this initial screen, users would be able to experience "ARGear World," a new virtual digital world superimposed on reality. Additionally, there are also plans for ARGear World to support AR content, apps, and the location-based AR content that could be used without having to turn on a device's camera functions.

Furthermore, even individuals could upload themselves digital AR content and apps, and get compensated based on their popularity (i.e., degree of usage). New forms of AR content could be created directly through ARGear World, and information such as the management of the content and profits, and the status of its usage could be freely accessed. In addition, business users who wish to increase the number of offline visitors to the store using ARGear World could do so by giving away free ARGear World coins as promotional campaigns or by providing coupons within the store's ARGear World space.

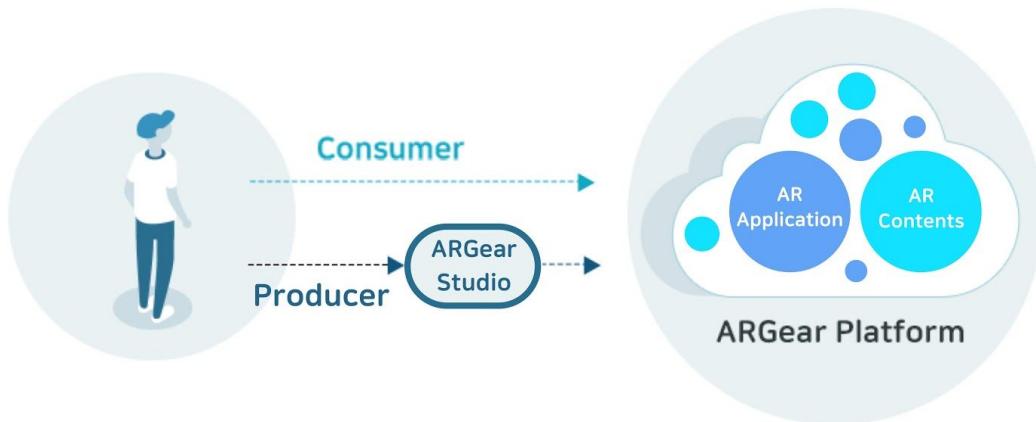
ARGear World would allow people to use and enjoy the various digital services and content they had formerly consumed within the closed space represented by online space in a whole new manner. The emergence of ARGear World would not only allow us to enjoy an even greater variety of AR content and services through ubiquitous smartphones and tablet devices, but also accelerate the emergence of innovative new products and services by allowing the users to experience a variety of different virtual content through new smart devices of the future like AR glasses.

ARGear World- Open Platform for AR

Our team aims to establish an open and integrated platform called ARGear World, which would allow anyone to create and distribute a variety of different AR content and services. Through this platform, developers will be able to release AR apps and individuals will be able to create AR content without having to rely on the traditional somewhat monopolized markets or technologies, and users can use this platform with any compatible hardware devices such as mobile devices or AR glasses regardless of specific manufacturers or specific operating systems.

Based on the current existing systems, in order to release or launch a product or service in digital world, it requires registering and distributing the service through a traditional marketplace (marketplaces fragmented by devices, operating systems, and internet portal sites, e.g., Apple App Store, Google Play Store). As a result, developers and creators have no choice but to abide by the policy set by a traditional centralized marketplace where they must pay high fees. This, in turn, would cause a imbalanced and somewhat unfair distribution of profits.

It is this current commercial environment that led us to start building a platform providing a more integrated service environment where AR content and apps are not dependent on the traditional centralized markets. In ARGear World, AR content and apps can be created and developed, registered, distributed and operated more democratically, and we plan to extend Seerslab's ARGear Studio and SDK into an integrated platform and upgrade it by developing new features.



[ARGear World]

ARGear World

All ARGear World users will first come into contact with a type of portal or a view including the default services as ARGear Apps. Through this portal or view, users will be able to see and experience the most basic services of ARGear World, and will be able to approach and access a variety of different ARGear Apps that are provided by ARGear World.

The service can be accessed through an iOS / Android / Windows smart devices or an application on newly invented device such as AR glasses. Further, all ARGear Apps are made to support standard web interfaces, so there is a support for directly accessing the various different ARGear Apps within ARGear World without having to go through any existing centralized marketplaces or existing distribution channels.

Similar to the background of a Windows desktop screen, ARGear World first provides a map of virtual locations, a marketplace, and basic content and ARGear Apps.

The basic services of ARGear World are as follows:

Basic View	Basic view for each accessing device: <ul style="list-style-type: none">- Smartphones: an AR camera screen onto which digital objects can be projected- AR glasses: a camera display screen that supports AR- A smartphone app: the map screen or the app's default screen- A web app, a custom web browser and the app's default screen
Global Menu	Default menus always accessible in the Basic View: <ul style="list-style-type: none">- Exit- Wallet- Market- Global Navigation Menu- Message / Chatting Menu
Custom Menu Area	App or service default menu screens that extends from the Global Menu



[Example of ARGear World Screen]



[Example of ARGear World Screen]

ARGear Application

ARGear Applications refer to the AR content and apps that consumers can use in ARGear World (collectively referred as “ARGear Applications” in this chapter) and they are decentralized applications that operate on ARGear World through the default menus or Basic View of the ARGear World.

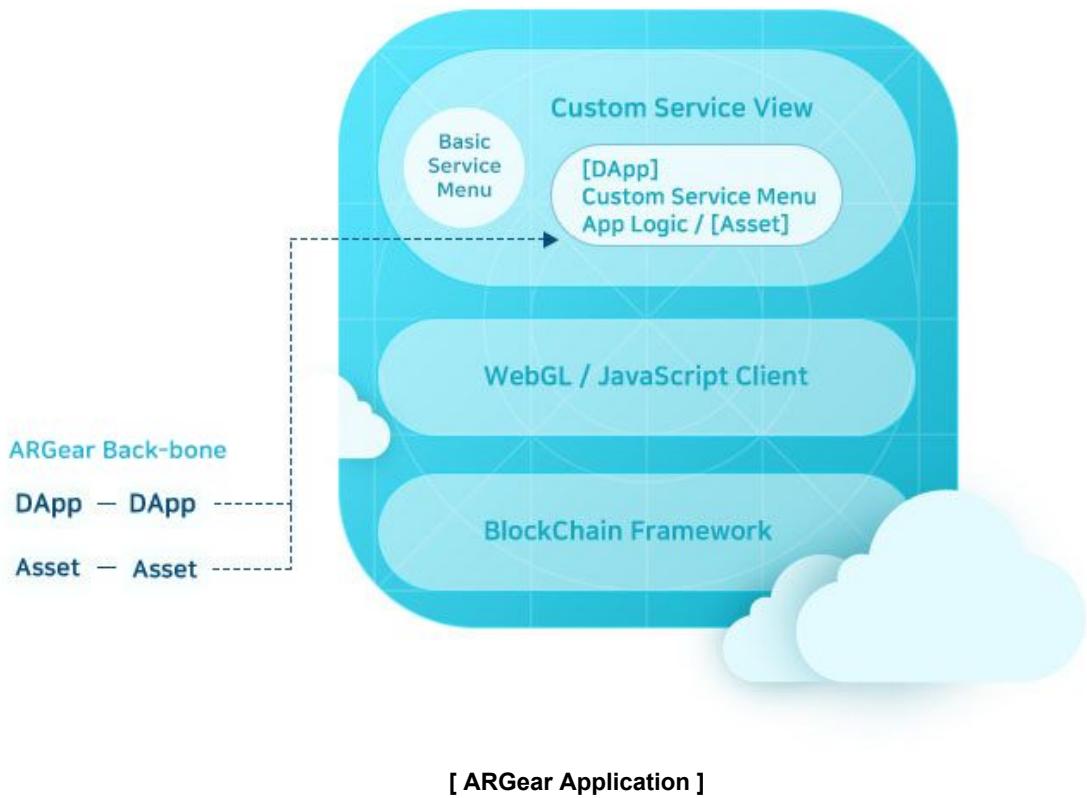
All ARGear Applications are operated on the web-based ARGear Engine, and will be distributed through the ARGear Back-bone Platform.

The types of ARGear Applications can be defined as follows.

- Native App (iOS / Android / Windows)
- Web App (applications that are used browsers in the forms of Chrome, Firefox, Safari, MS Edge)
- Custom App (Applications that can be used with AR glasses and the like)
- AR content consisting of simple images, 3D objects, and AR stickers (comprised of assets)

Moreover, ARGear Applications can be formed from any unit of digital content or general services that can be expressed as a specific ARGear service, such as text, images, videos, software code, or links. Hence, ARGear Applications can be exclusive services that take up all of ARGear World’s screen and resources, or they can be a single unit of digital content within a separate ARGear Application. In other words, an AR sticker created by a designer and distributed through ARGear World can be considered a single unit of digital content.

All ARGear Applications are created by inheriting the basic properties of ARGear World’s Basic View, and such basic properties and the relevant structure of the ARGear Applications are shown below.



All ARGear Applications will have a standard web runtime environment, meaning that they can be run on all devices that support a standard web runtime environment without requiring any additional work.

The ARGear Engine supports such an environment by creating a digital environment that runs the native web client application of each device, allowing for the decentralized AR apps to carry out AR functions independent of device manufacturers or operating systems.

The specific application runtime environments supported by ARGear World are as follows.

- Native Web environment
- Web OS environment
- Embedded environment

Native Web Environment

Native Web environment refers to an web runtime environment running on iOS / Android / Windows operating systems, and it supports an environment where the web-based code blocks can be run/operated. This provides a method whereby applications can be run even

as web apps, and if a compatible native app is installed on a mobile device that supports the web, then the environment that can run ARGear Applications can be provided.

Web OS Environment

Web OS environment refers to an environment that can be run / operated on a Web OS such as Chrome OS, and it is a runtime environment specific to a web browser much like Chrome Extensions and Chrome Apps.

Embedded environment

Embedded environment refers to a standard web base runtime environment that can be used by devices such as AR glasses. This environment provides a virtual web runtime environment so as to avoid runtime environment fragmentation based on device manufacturers and operating systems.

Furthermore, the ARGear Engine that supports the APP runtime environment on which the above-explained ARGear Applications are run is composed of the following elements.²

- AR WebGL Engine
- AR Core Engine

AR WebGL Engine

As the WebGL based application engine supports web standards, AR WebGL Engine supports the final runtime environment in which most OpenGL 2D/3D objects, scenarios, and scenes are interpreted and run by the relevant engine. The AR WebGL Engine has the following interfaces and engines, and is responsible for running the binary builds compiled by AR Studio.

- HTML5 Interface
- WebGL Interface³
- JavaScript Interface
- Rendering Engine

AR Core Engine

This is an engine that provides a computer vision and image processing interface for the various sensors and devices/hardware that are relevant to AR services, such as camera input, sound input/output, face detection/tracking, hand gesture recognition, and ground plane detection. AR Core Engine provides the following functions.

- Camera
- Audio
- Geo-Location
- Face Tracking
- Face Recognition
- Eye Tracking
- Hand Gesture Tracking
- Head Tracking
- Light Tracking
- Ground Planes / World Planes
- Depth Image Segmentation

ARGear Studio

ARGear Studio is a software package made up of tools that allow for the creation of ARGear Applications, which are finished product of ARGear World. Users will be able to directly create and upload various types of digital work through ARGear Studio. ARGear Studio currently supports web-based services, and in near future, it will provide authoring tools that support native desktop app development environments where high quality 3D content can be created directly, as well as an IDE (Integrated Development Environment) allowing developers to easily develop AR apps using the latest AR technologies.

The current ARGear marketplace allows uploading of created AR content and distributing such content to devices or apps using the ARGear SDK. The ARGear Studio, in near future, will allow even individuals to create and distribute their own AR content and AR apps.

In order to provide authoring tools in near future, there must be the ability to build and distribute software in the form of a single application that imports, edits, and properly defines within the scenario the 2D/3D objects to be used by AR apps, and also includes the programming for various additional AR functions and effects. In order to do this, the following tools are planned for release through ARGear Studio.

- Authoring Tool
- ARGear SDK
- Asset Market
- Build / Debug Tool
- Distribution Tool

Additionally, there are also plans to provide plug-ins for the representative development environments used by the traditional AR and game industries (Unity / Unreal) that can create / build / distribute AR content and apps.

Authoring Tool

The IDE (Integrated Development Environment) where AR content and apps can be created using ARGear Studio, which provides an authoring tool similar to Unity or Unreal where AR content and apps can be created. A single program that provides a development environment where all of the works that go into developing a program including importing assets created using existing 3D / 2D creation tools (Maya, 3D Max, Photoshop, etc.), creating scenes to fit the application scenarios, connecting scenes together, adjusting the order of scenes, and all of the related coding, debugging, compiling, and distribution can be done. Furthermore, the ARGear SDK allows for the development of necessary AR technologies through Tech Plug-ins that can bring in and allow for the utilization of AR function APIs required for development and creation.

ARGear SDK

ARGear SDK supports the most basic AR functions, such as the basic AR Plug-in / Face Tracking Plugin / GeoLocation Plug-in / Object Tracking Plug-in / Hand Tracking Plug-in in an SDK (Software Development Kit) form. The SDK supports the add-on of individual AR technologies through an Open Interface Plug-in format, and will also allow for the inclusion of support for existing devices and a diverse array of compatible open-source AR technologies through the Plug-in Interface of the SDK.

Asset Market

The Asset Market is a marketplace within the ARGear Studio where users or creators can register, reproduce, or sell the 3D / 2D objects, or scenes that apply various service scenarios, that they have created; the creations can be registered and sold / shared free of charge or for a price, and a developer or a service provider can use this marketplace to create AR content and apps using pre-existing assets.

Build / Debug Tool

This tool allows for building and debugging AR content/apps projects in DApp binary form, and creates a proper DApp binary for the DApp's runtime environment.

The final build environment will provide support for device-optimized DApp binaries by providing debugging and preview functions that can check optimization and proper implementation for each device.

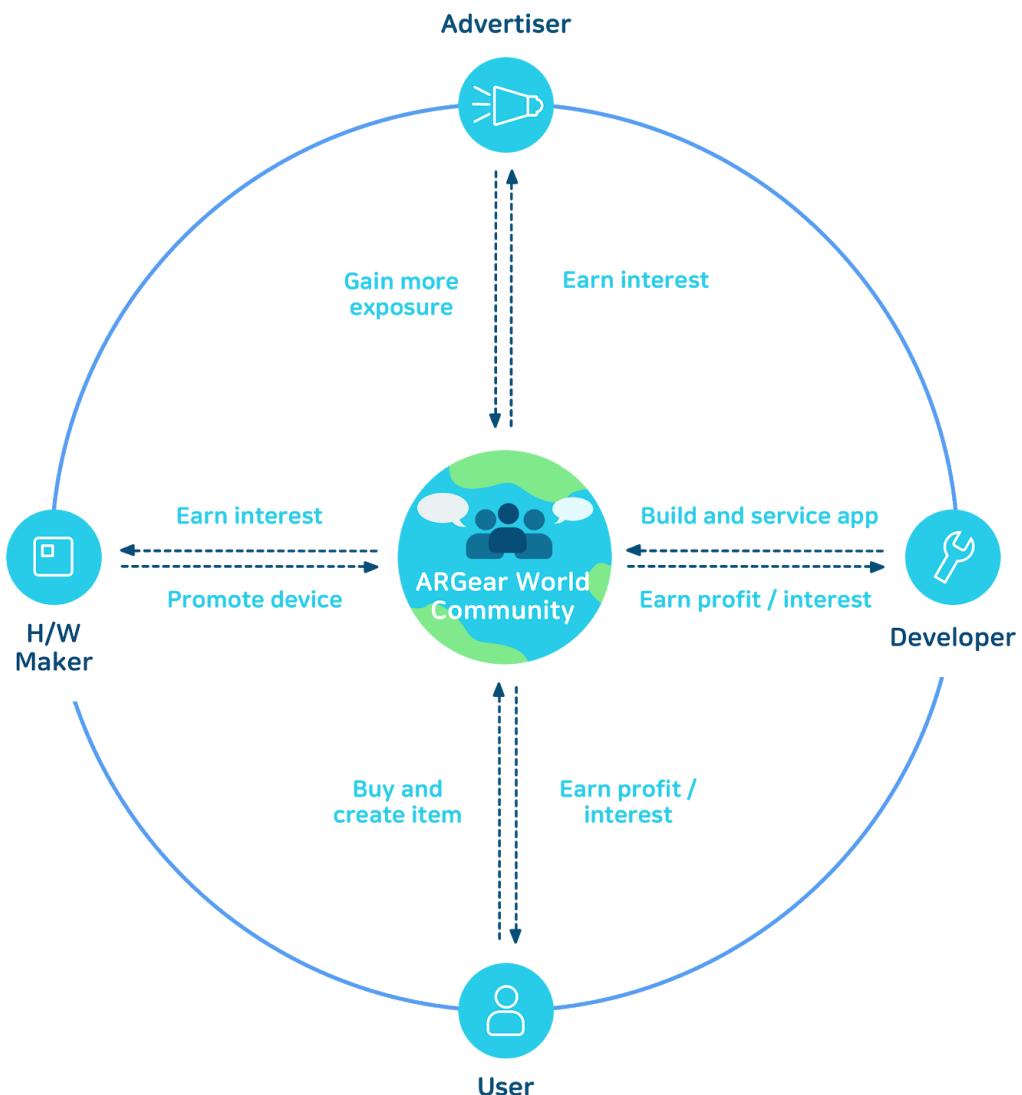
Distribution Tool

The distribution tool is a tool that allows for finalized AR content and apps to be distributed via the ARGear Cloud, and as such, it supports product registration, price registration, sales, releases, and service controls for the product in question. The final form will be similar to the current mobile app market registration screen; however, the big difference will be that products will be able to be distributed to the ARGear Cloud, in addition to which the use logs for the relevant product will be trackable due to the blockchain.

ARGear World Community

Composition of the ARGear World

ARGear World Community Participants



[ARGear World Participants]

The major players in ARGear World who participate in various economic activities are generally defined as follows: users, developers, advertisers and H/W makers. The users are those who buy and use AR content/AR apps as well as those who create and sell/share AR content in ARGear World. The developers are those who build and service apps on ARGear World. The advertisers could be anyone or any company who want to advertise in ARGear World. The H/W makers are companies who manufacture AR-related devices.

ARGear World Content

- Text and documents
- Images
- Audio
- Video
- 3D contents
- 3D video
- AR stickers
- Games
- Children's applications
- Real estate applications
- Dating applications
- Other augmented reality creations

AR content can be provided in a variety of different formats, ranging from simple formats such as images and audios to more sophisticated formats such as games and applications. Furthermore, there are many different devices that permit the use of such AR content, with some examples provided below.

ARGear World Hardware Tools

- Mobile devices such as smartphones and tablets
- AR glasses
- AR headsets
- Other devices that offer a augmented reality

Currently, many AR functions and services can be used through smartphone cameras, and many services and applications are already being provided. However, smartphones also come with the inconvenience of having to constantly hold and look through the screen; hence, AR glasses and AR headsets that aim to resolve such issues are making their

introductions in the market. By wearing such devices, users can continuously and easily use a variety of different AR content.

In order to create such content and apps, a variety of different tools will be used. While creating a simple image or a document is simple, developing a complicated application requires the following software authoring tools.

ARGear World Software Development Tools

- ARGear SDK (Smartphone manufacturers, AR glass manufacturers, app developers)
- ARGear authoring tools
- ARGear monitoring

These tools will be distributed in ARGear World for free, and users/developers can use these tools to easily develop content and applications utilizing AR functions. Moreover, developers seeking to provide additional functions in such tools can develop and add additional functions by using the plug-in methods, and such contributions will be compensated in the future by coins.

Economic activities in ARGear World

The economic activity that occurs within ARGear World revolves around AR content and AR apps. Economic activities in ARGear World are generally triggered by motivations to use and enjoy AR content/AR apps, and to create and sell AR content/AR apps. Those activities in ARGear World would provide more profit to sellers since there are no intermediary fees and provide rewards for activities such as evaluating AR content/AR apps, viewing advertising content, and etc.

Also participants could promote their content/apps based on their reputations which determines the exposure level in ARGear world. The level of reputations would be based on the amount of activities in ARGear World, the reviews/evaluations provided by other participants in ARGear World, and in addition, they could also be based on external evaluations such as CryptoBadge in CAN.

Developers who build and service their apps on ARGear World could earn interest on the

stakings which is necessary in order to use the network resources provided by ARGear World (e.g., CPU, RAM, bandwidth in EOS), and as they use more resources, they would earn more interest. There would be some support provided by Community to developers for early entries. Also as the reputation level grows, the participant either get more exposure power in ARGear World as mentioned above or actually earn money since they can convert their reputations into coins.

ARGear World uses one blockchain token concept, which is ARGear World Coin (AWC).

ARGear World Coin (AWC)

AWC is the coin that can be paid and received for all transactions within the ARGear World. The number of issued coins is determined from the outset and would be fixed. Also AWC is the coin that is actually transacted on cryptocurrency exchanges and could be exchanged into real world currencies.

Economic Activities

- Buy AR content
- Build and service your apps
- Create AR content using tools provided by ARGear Studio
- Add technology to the technical library (software package containing tools) or provide it as a plug-in in ARGear Studio
- Upload AR content onto ARGear World to share or sell
- Promote your hardware devices
- Advertise
- Earn/buy exposure power for your app/content
- Earn interest
- Share profits from AR content/AR technology contribution

All economic activities in ARGear World are based on the following:

1. AR content and apps;
2. Usage of the network resources provided by ARGear World (e.g., CPU, RAM, bandwidth in EOS); and
3. Reputations.

AR content and apps are the items that users enjoy and buy in ARGear World. Also it includes creating AR content, building and servicing apps in ARGear World. A user could create AR content and leave the content at a specific location as a message for someone, or an app developer could turn their mobile app into having snapchat-like features within a week in ARGear World. This is what would attract people to ARGear World.

The following table summarizes how each participant use AWCs and earn AWCs in ARGear World:

	Using AWC	Earn AWC
User	<ul style="list-style-type: none"> * Buy items (AR content and AR apps) * Create and share/sell AR content * Promote your content 	<ul style="list-style-type: none"> * Using items/writing reviews/recommending items/sharing items * Profit from sales of AR content * Earn interest on AWC used for some activities
Developer	<ul style="list-style-type: none"> * Build and service your app * Buy AR content for your app * Promote your app 	<ul style="list-style-type: none"> * Contributing and license your AR technology * Earn interest on AWC used for some activities
Advertiser	<ul style="list-style-type: none"> * Gain more exposure for your ad * Reward users for reviewing your ad * Participate in the default ad bidding platform * Place your ad using geo-fence 	<ul style="list-style-type: none"> * Earn interest on AWC used for some activities
H/W Maker	<ul style="list-style-type: none"> * Reward device users as promotional campaigns * Use AR services in ARGear World 	<ul style="list-style-type: none"> * Earn interest on AWC used for some activities

The token economy based on the usage of resources relate to retaining participants by providing interest on AWC they stake. It allows the participants to earn more money as their participation grows.

The reputation is earned by being active in ARGear World and also by good evaluations received from other participants. It could be provided on content/apps or on activities in ARGear World. It could be also based on external recognition protocols such as CryptoBadge by CAN. As the reputation level goes up, more interest could be earned and the participant could get higher exposure power for their own content/apps, comments, recommendations, etc. Also it could be turned into cash.

The below table describes each basis in more detail:

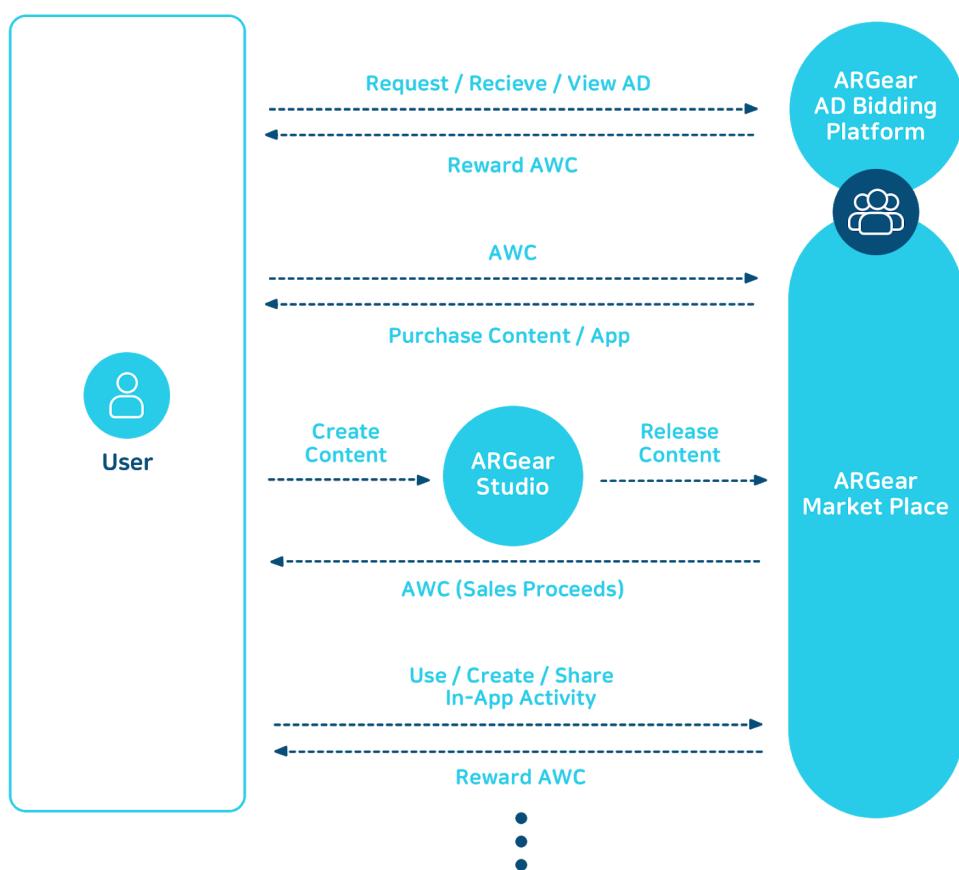
TP	Time Power	Time period a participant could stay active. It is provided by staking AWC and it is refilled periodically. Unstaking would take 2 days. It also provides: <ul style="list-style-type: none"> - Worker Proposal voting right - Evaluation right - Earning interest (the interest rate would be determined based on RP)
DP	Data Power	Data usage (byte) for Tx, Tx receipt, smart contract, storing account information, etc. <ul style="list-style-type: none"> - Automatic transactions in accordance with Banchor Alg at System Exchange.
EP	Exposure Power	Determines ranking. Higher ranking provides more exposure on items. <ul style="list-style-type: none"> - Bought/sold with AWC: $EP = AWC * 0.5 + RP * 0.5$
RP	Reputation Power	Reputation level determined by: <ul style="list-style-type: none"> - Points earned by activities - Points based on evaluations by other participants and on external recognition protocol such as CryptoBadge
Item	ARGear Item	All items that could be distributed in ARGear World defined by Community: <ul style="list-style-type: none"> - User created content - paid-DAPP - Account (Name Auction) - DP (Data Power) - EP (Exposure Power)

Participant Scenarios

The economic activity scenarios from the perspective of actual ARGear Platform community participants to provide a more detailed explanation.

Scenario 1. User

A user can download AR content/apps and use it for free, or it can use AWCs to purchase pay-to-use AR content/apps, and possesses or uses them. In addition, a user could earn AWC by downloading apps including advertisements provided in ARGear World and using them for an extended period of time, or by sharing images or videos including AR content on Instagram or other social media platforms, or by providing reviews, rating or clicking recommendation buttons. Moreover, users can also make AR content using the tools provided by ARGear Studio and upload them onto the ARGear marketplace and earn AWC as sales proceeds.

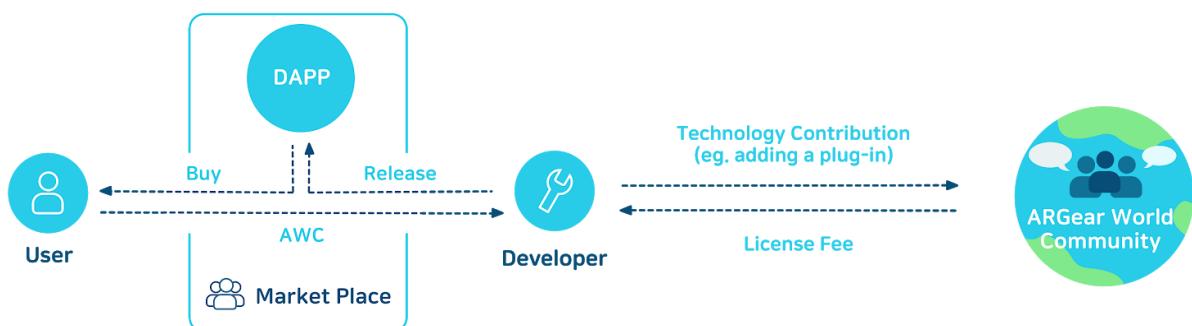


[Examples of Users' Activities]

A user can register and distribute the created content, and such created content will belong to the creator and the authorship will be recorded under the creator's ID in the ARGear World, which would then allow the creator to exercise its ownership right if necessary.

Scenario 2. Developer

A developer can build and service app on ARGear World. It would be easier to build because all the tools would be provided in ARGear Studio as well as content, and it would be cheaper to service due to the token economy provided by ARGear World where it is devised to earn money as the usage grows. Also the tools provided in ARGear Studio would get updated as more developers use ARGear Studio and continue to add new technology to its technical library or provide a plug-in for the new technology. Developers would be incentivized to contribute new technology because they would get license fees or revenue shares or some type of benefits from using that technology. In addition, a developer can promote its own app by ranking up in the marketplace using AWC. Users' ratings would also be used in determining popular apps ranking.

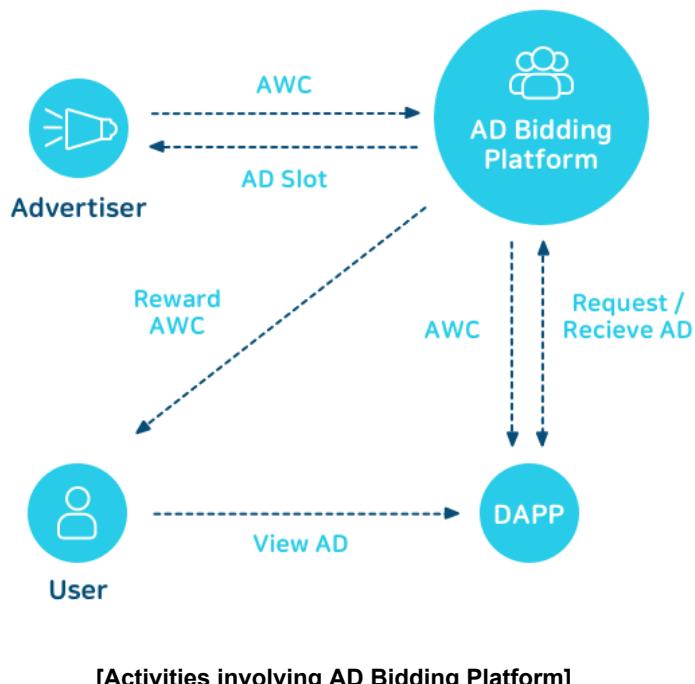


[DAPP Registration and Technology Contribution]

When mobile applications are sold in the currently available marketplaces such as Apple's App Store or Google Play Store, a developer has to pay 30% of the total revenue to the platform as commission. Subsequently, if there is a distributor, the commission for such distributor would be paid in accordance with the distributor's policy out of the remaining 70% and then the residual amount would be paid to the developer as final revenue. Moreover, the settlement of such revenue has to also follow the policy of the platform which provides a settlement of accounts once per month. ARGear World democratize the policy of such platform and results in more profit to developers and thus to users, as well as achieving horizontal transactions for immediate settlements of accounts.

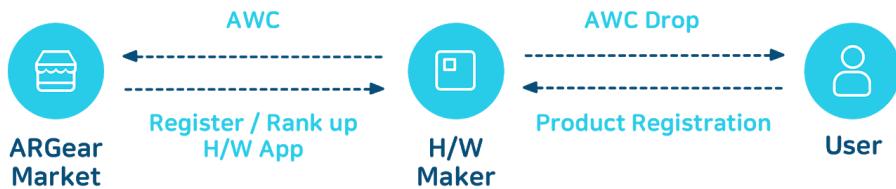
Scenario 3. Advertiser

An advertiser wants to expose its brand/product in the ARGear World and there are diverse brand/product promotions and exposure methods. EP determines the advertising exposure range and the order of priority. An advertiser can use AWC to buy the exposure range, time and a specific geo-fence location, and use the default advertising bidding platform in ARGear World to place its ads on those apps in ARGear World which employ advertising inventory services, or at some specific locations. It can deliver a direct advertising compensation to the app developer that actually exposes the advertising and the users who have been exposed to the advertising.



Scenario 4. H/W Maker

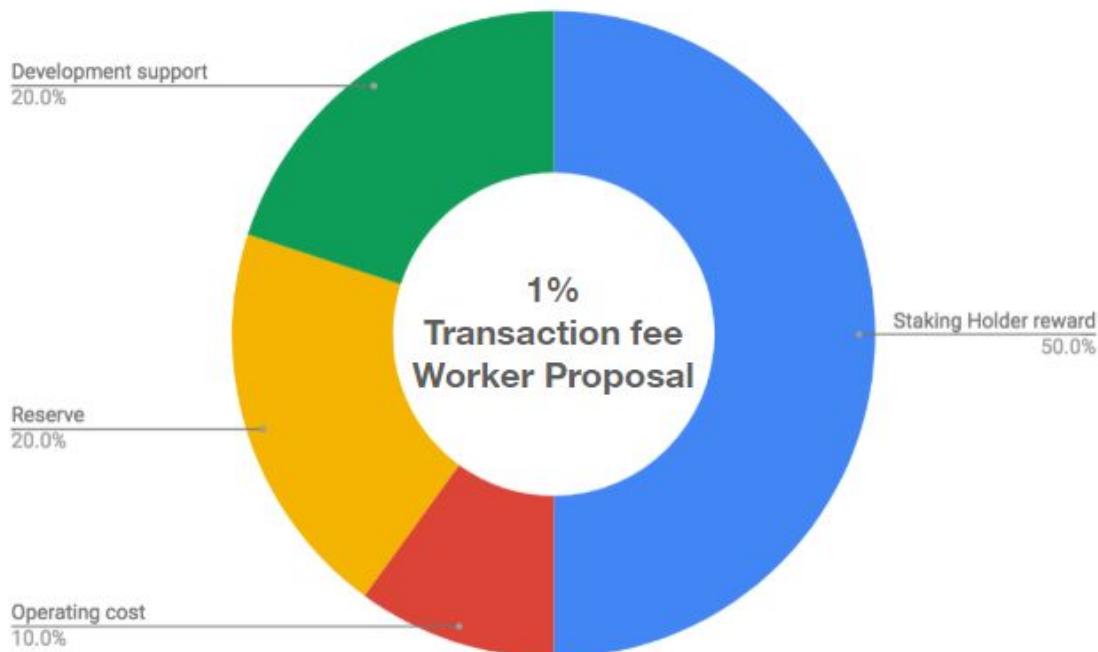
A H/W maker can air-drop AWCs for promotional marketing to ARGear World users. The air-drop procedure is performed through a smart contract wherein AWC is automatically transferred to a user's wallet once such user registers the serial number of the H/W maker's hardware product in ARGear World. A H/W maker can develop its own OS and SDK, and create/provide its own AR service and market platform only for its own hardware device. Instead of incurring a large sum of project development, marketing and operation costs, the H/W maker can provide its own service for its hardware device at a much lower cost if it adopts ARGear World.



[Examples of H/W Maker's Activities]

Community Fund

In ARGear World, the following transactions contribute 1% of their transaction costs to Community: buy/sell DP, EP and items (AR content and AR apps). For example, if a user buys an item at 20 AWCs, 0.2 AWC would be contributed to Community. The funds contributed to Community are subject to the below Worker Proposal and would be used accordingly.



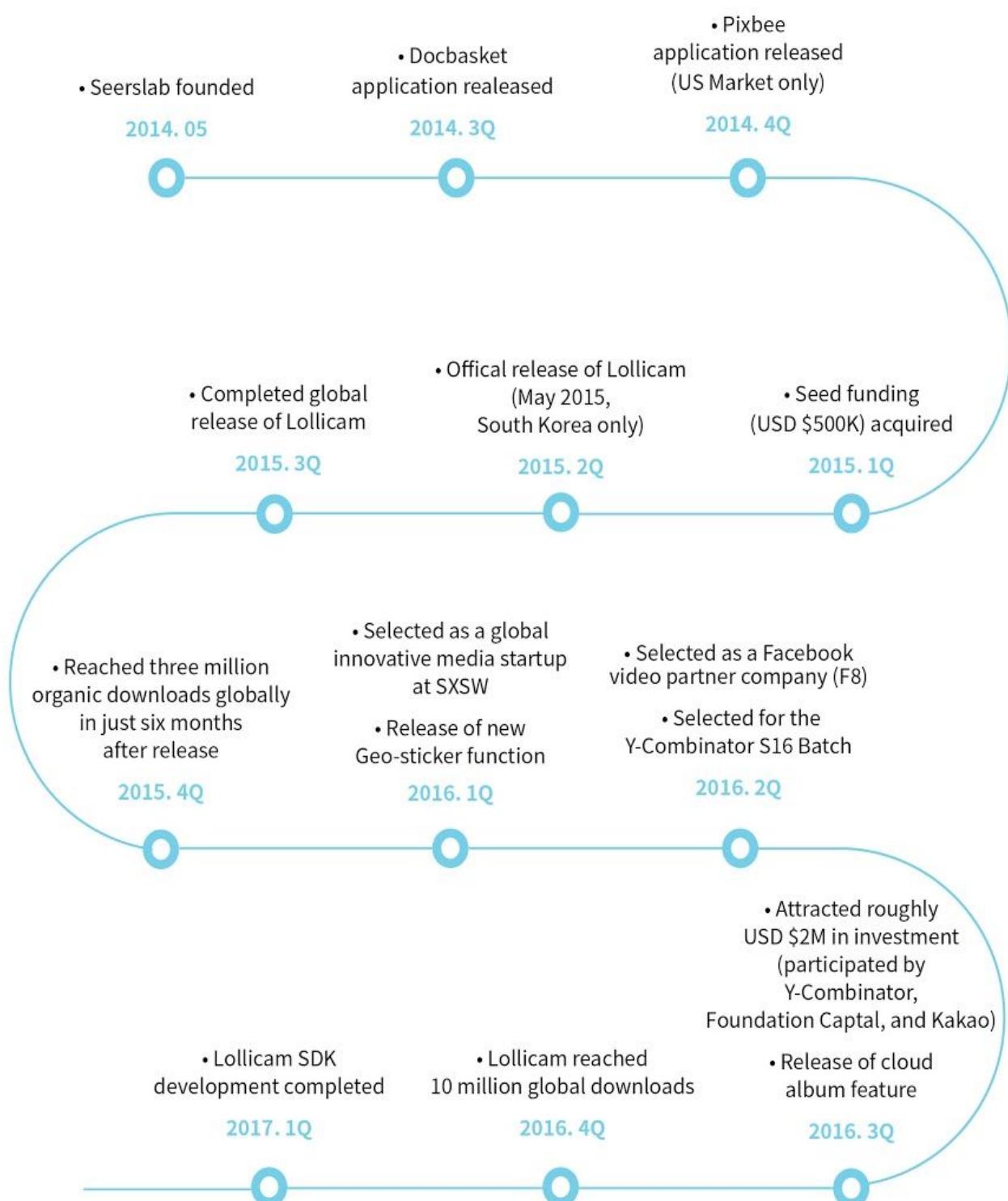
[Initial Worker Proposal]

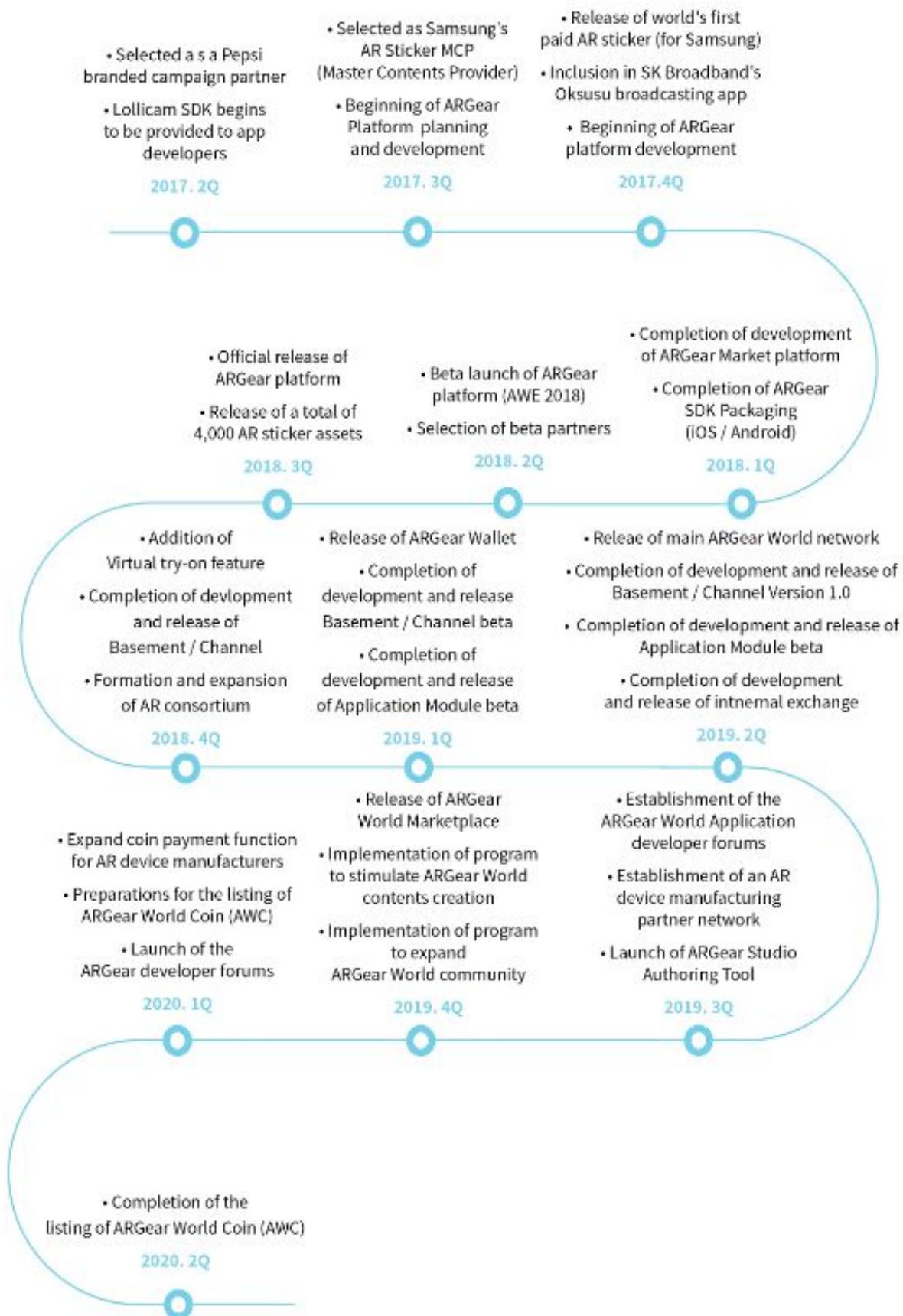
Based on the initial Worker Proposal, 50% would be used for providing interests to the stakeholders (e.g., those who purchased TPs for their activities in ARGear World). 20% would be used to support Dapp developers (e.g., TPs and DPs are initially provided free of

charge) and another 20% would be reserved for any unknown circumstances. 10% of the funds would be used for block productions and the operation of the network and etc.

The Worker Proposal would be revised by Community's votes. Those participants who have staked AWCs by holding AWCs in a specialized staking wallet would get the rights to vote on Worker Proposal, as well as obtaining TPs which would then be refilled on a rolling basis.

Roadmap





Member



Michael Chong

Michael Chong is Founder and CEO of Seerslab Inc., a global AR camera business which was funded by Y-combinator, one of the world's best start-up accelerator. Before starting his own business, he worked at Samsung Electronics and SK Telecom for 15 years strategizing and developing new businesses for those companies. He majored in Technology Management and Entrepreneurship at University of Texas in Austin.



Jaecheol Kim

Jaecheol Kim is Co-Founder and CTO of Seerslab Inc. He also participated in the Y-combinator accelerator program and is in charge of engineering. Previously, he worked at KT Hitel and SK communications for over 10 years and has extensive experience in developing mobile cameras and SNS services.



Seungmo Yang

Seungmo Yang is a media service expert including video and music services who marketed Milk at Samsung Electronics and developed Hopin service product at SK Telecom. He majored in Electrical Engineering at Yeonse University.



Rosa Kim COO

Rosa Kim worked at Samsung Electronics last 6 years focusing on IP matters. Previously practiced law at Quinn Emanuel Urquhart & Sullivan LLP specialized in patent litigations. She majored in Electrical Engineering and Economics at Brown University in Rhode Island.



Soohyun Kang CFO

Soohyun Kang is CEO of Cosin Investment and an angel investor who has invested in variety of businesses.

Advisior



Sangdo Park

Sangdo Park has extensive experience in establishing global sales network and service developments. He obtained his Ph.D. in Electrical Engineering focusing on image processing and AI at Korea University and worked in New Business Development and Investment at LS Industrial Systems Co. Ltd. He has strategized and developed new businesses in the IoT, electric cars and renewable energy areas. He currently works at Hanwha Energy focusing on developing global renewable energy businesses.



Jonghwan Jeon

Jonghwan Jeon is CEO of Nomad Connection, the technology consulting company specialized in blockchain which continues to develop blockchain solutions for various industries and also develops Fintech AI core platforms. He graduated POSTECH with CSE major and has extensive experience in operating mobile services and developing network solutions.



Jack Kim

Jack Kim has built and launched consumer products to hundreds of thousands of users. His work has been featured in 200+ publications around the world. Studied Product Design and Computer Science at Stanford University.

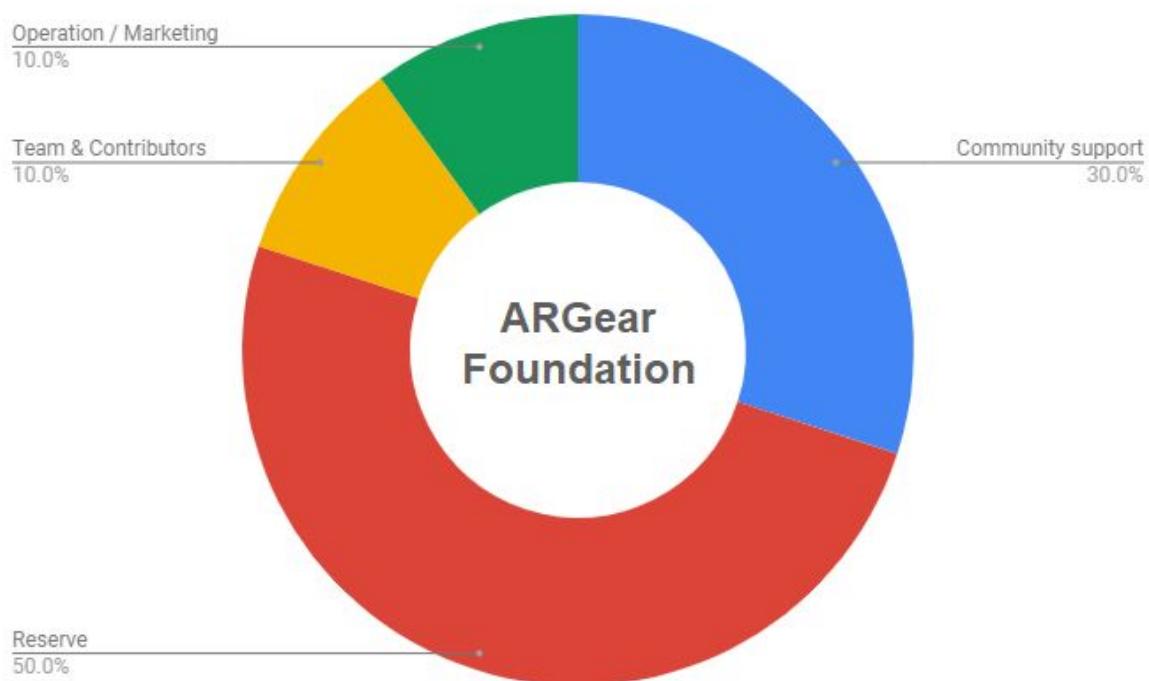


Benjamin Mattingly Advisor Creative Director

Benjamin Mattingly is a Filmmaker and Creative Director from San Francisco, California. After a decade working in Hollywood he moved to Silicon Valley to bring his experience to the world of tech, where he believes a compelling, classically crafted narrative is vital to brand identity and a strong presence in the market. He has worked for Focus Features, Massive Post, and Pretty Bird Entertainment in a variety of creative roles, collaborating with clients such as Nike, Dick's Sporting Goods, VW, NCAA and many more. His past films include Dumping Ground, Short on Time, and Electric Heart. Benjamin is currently a Creative Producer at Box.com, where he leads content creation for Customer Engagement, a team focused on media to drive product adoption and retention.

Token Sale

Token Allocation



Conclusion

By launching ARGear World, Seerslab seeks to share its AR content and technology, that it has acquired through four years of hard work with its developers and content creators, in order to create a bigger AR world with more developers and content creators where their imaginations, thoughts, and life records could be distributed not through the existing internet channels, but instead, through new virtual channel in the form of AR.

On the foundation of the blockchain technology, ARGear World would distribute the benefits of AR technologies and contents in a fair manner among all participants and contributors worldwide that had helped to create and grow the ARGear World. Moreover, the blockchain technology will further prevent any one industrial giant from dominating the AR market solely for its own benefits, thereby allowing everyone to help revolutionize the future together, benefiting each other and take a step closer to achieving Seerslab's vision of new AR-based world.

ARGear World is not something that exists solely as an idea within this white paper. The beta version of the ARGear World (www.argear.io) has already been released to the market, and over 5,000 AR content are available for use and accessible through the ARGear SDK and Studio. In addition to such content, the ARGear SDK provides all features like Snapchat's Lens or Facebook's AR camera when installed on smartphones and adopted by mobile apps.

ARGear World would be created using the funds raised by launching a new cryptocurrency, ARGear World Coin (AWC). And it would be available not only on smartphones used daily, but also on AR glasses, kiosks, and other devices that are available and will be available to us, and would grow into a service that is included by default in AR applications. Furthermore, an ecosystem would be created where it is not just the Hollywood studios such as Universal and Disney, but even ordinary creators could create AR content with more ease by using ARGear Studio and share such created content with everyone through the new channel with more ease, and receive fair compensations.

Whether AR content and technology would be dominated by a single entity (i.e., the major corporations reap all the benefits from the content and technology created based on the idea and effort of an individual user) is entirely on your hands since you would be participants of ARGear World. We envision the world where everyone receives a fair compensation for his/her effort in creating valuable AR content and technology, and is actively working towards transforming the world together for a democratization of the Digital World in front of your eyes.

Appendix

1. (<https://techcrunch.com/2018/01/25/ubiquitous-ar-to-dominate-focused-vr-by-2022/>)
2. (EX: <https://uploadvr.com/ar-js-efficient-augmented-reality-for-the-web/>)
3. (Reference: <https://ko.wikipedia.org/wiki/WebGL>)
4. (<https://hackernoon.com/the-top-critiques-on-ethereum-a-bubble-waiting-to-pop-6ccf9b577d11> - Source)
5. (<https://ethereum.stackexchange.com/questions/2404/upgradeable-smart-contracts> - Source)
6. (<https://ethereum.stackexchange.com/questions/2100/what-is-a-block-hash> - Source)
7. (<https://blog.nem.io/what-are-poi-and-vesting/> - Source)
8. (<https://nem.io/investors/harvesting-and-poi/> - Source)
9. (https://en.bitcoin.it/wiki/Proof_of_work - Source)
10. (<https://en.wikipedia.org/wiki/Proof-of-stake> - Source)
11. (https://en.wikipedia.org/wiki/InterPlanetary_File_System - Source)
12. (<https://github.com/ethersphere/swarm> - Source)
13. (<https://ipfs.io> - Source)
14. (<https://bitshares.org/technology/delegated-proof-of-stake-consensus/> - Source)