Television Commerce Global

Smart IP Cloud TV Interactivity Service

(Interactive TV Commerce)

Version 1.2

Trion Corporation Inc.

Home page; https://tcgcoin.net

Table of Contents

1. Overview **04**

2. Business Background **09**

2.1 Comparison with Example 09

2.2 Problems 13

2.3 About the Platform 15

2.4 Platform Technology 18

2.5 User Advantage 34

3. Market Analysis **39**

2.1 Thailand 39

2.2 ASEAN 43

2.3 Market Synthesis 46

2.4 Competition Analysis 47

4. Business Plan **53**

4.1 Service Provided 53

4.2 Attracting Subscribers 62

4.3 Service Evolution 64

4.4 Platform Investment 68

4.5 Sales and Operation 70

4.6 Dividend of Profit 72

5. Economy **73**

5.1 TCG Token 73

5.2 Use of TCG 74

5.3 TCG Sales 75

5.4 TCG Allocation 75

5.5 TCG Compensation 76

5.6 TCG Benefits 77

6. Roadmap **78**

6.1 Milestones 78

6.2 Footsteps 79

6.3 Possibility 82

7. Members **85**

8. Legal Notice **88**

9. Value-oriented Direction **91**

TCG Token

Smart IP Cloud TV Interactivity Service

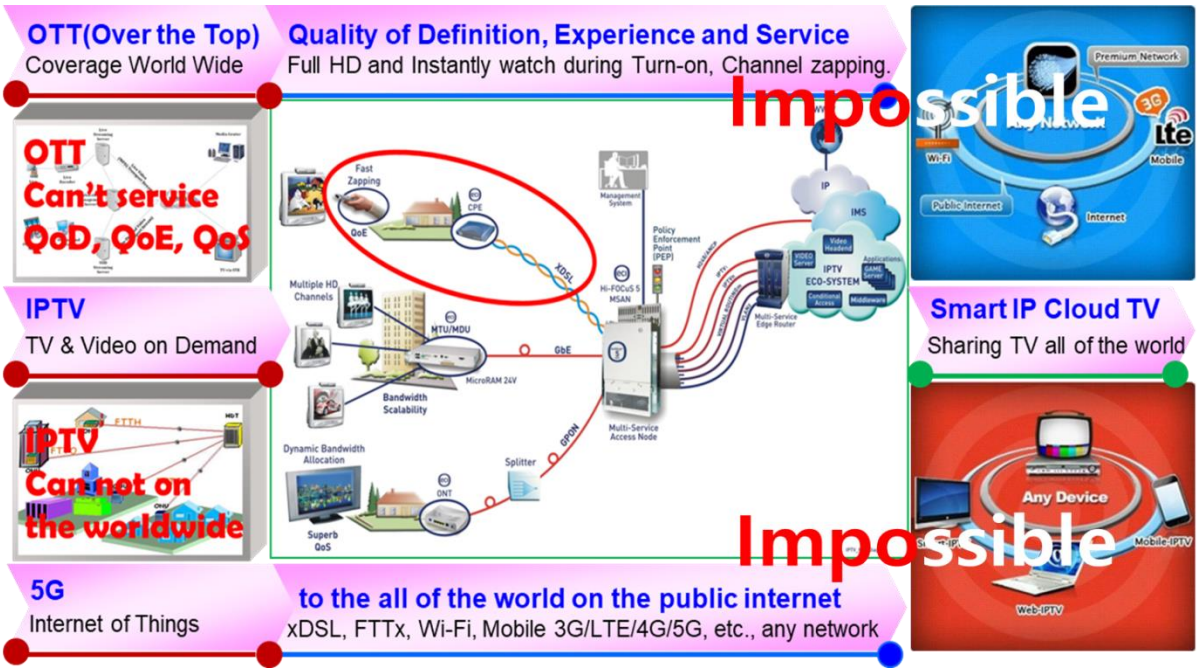
1. Overview

In the digital multimedia era, IPTV (Internet Protocol TV) services have been created in all countries around the world due to the global demand for television channels and multimedia. It is a service that allows users to watch TV channels and multimedia anytime, anywhere without any restrictions on time and space through various terminals including Internet-connected PCs, smartphones, smart TVs, set-top boxes and mobile devices. In the past, it was very inconvenient to share digital multimedia with TV channels because there was a barrier between countries, but now various languages of each country are being translated and translated in real time through computer artificial intelligence, and it is also quite a long time ago that shopping things around the world online.

< Figure: Definition of IPTV(Internet Protocol Television) Service >

In response to these times, several developed countries are providing IPTV services that improve quality and service based on digital TV-level picture quality. Korea also has been provided with IPTV services since 2018, but currently, if all IPTV services are available through the public Internet, they cannot meet the quality, quality and service of digital TV, and therefore only Internet service users

who provide premium networks with speed and quality can watch IPTV services provided by the company, and IPTV services from other companies are not available. Of course, it is actually an intranet service, not the Internet, because it is a local service that is more difficult to watch in other countries.

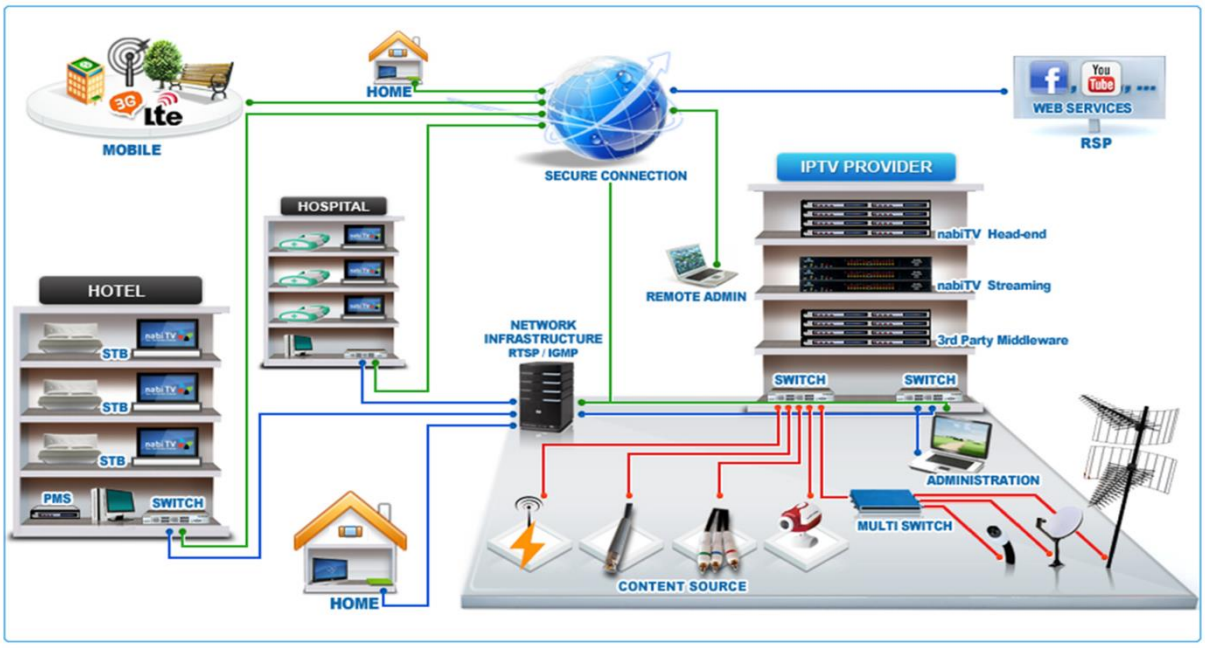


<Can't QoD, QoE & QoS of digital TV level on the public internet>

<IPTV service to their own internet subscribers only in Korea of 3 ISP>

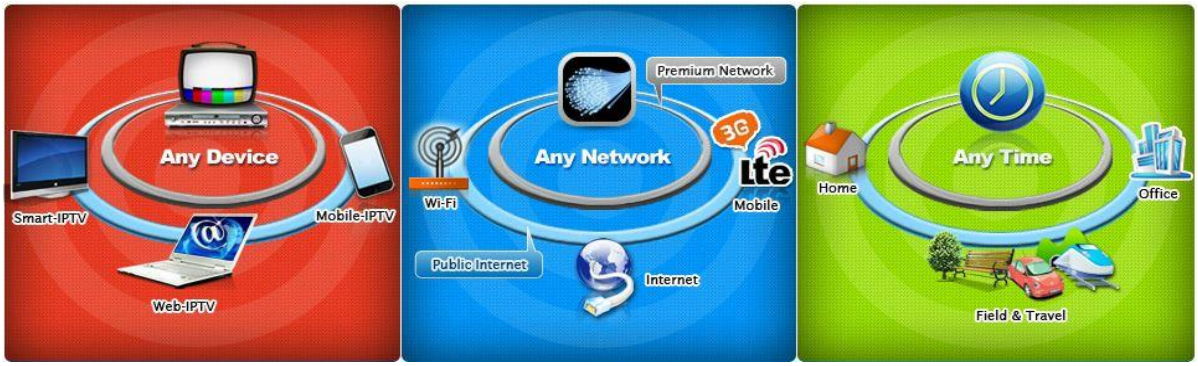
Therefore, we have developed and completed the Smart IP Cloud TV Platform, which has digital TV-level quality, quality and service through various terminals

using public Internet connection anytime and anywhere in the world, and thus has already been recognized for its performance and quality in Southeast Asian markets with poor communication environment.



<Our Smart IP Cloud TV Platform achieved QoD, QoE & QoS on the public internet>

Our own unique technology, Smart IP Cloud TV Platform, make OTT/IPTV services that satisfy the quality and quality of digital TVs not only within high-speed and high-quality premium networks but also on the public Internet in poor speed and quality environments can be viewed anywhere, anytime through a variety of devices including PCs, Smart Phone, Smart TV, Set-top Box and Mobile Devices.

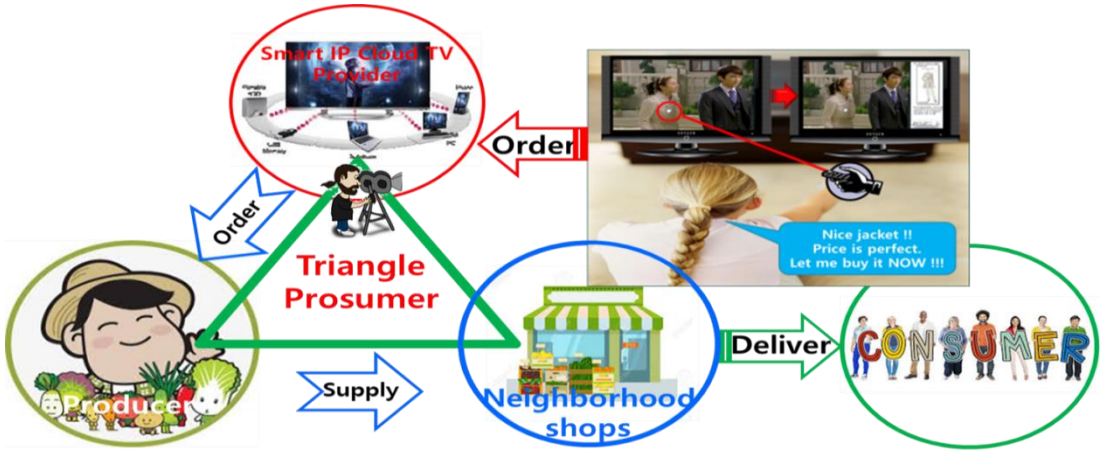


<Our OTT/IPTV can be able to service various devices at anytime and anywhere>

This allows various information to be provided to advertisers by converging with new concept advertising techniques that implement digital multimedia content or direct and indirect advertising of TV broadcasts in the form of CPX (Click Per X = Cost Per Click, Cost Per Action, and Cost Per Link) like Internet advertising.

<Interactive TV on-screen advertisement of Smart IP Cloud TV Platform>

Our platform innovatively even offers a shopping service where viewers buy these direct and indirect advertising products at once. Thus, although it is difficult to build a premium network, there is a strong demand for digital multimedia, and we are providing Smart IP Cloud TV Interactivity Service, starting with countries with a certain level of purchasing power, and now we want to expand the service around the world.



<Interactive TV on-screen commerce of Smart IP Cloud TV Platform >

Our Smart IP Cloud TV Interactivity Service provides TV channels and digital multimedia content from each country, as well as TV channels and digital multimedia content from around the world, while maximizing the effectiveness of advertising through audience participation in direct and indirect advertising products of content and TV broadcasts, as well as **"Interactive TV on-demand advertising services"** that providing advertisers with a wide range of information, including regionally, age and response, and some of the advertising revenue generated is paid to viewers that are become from Consumer to Prosumer as a new subject for industries. Direct and indirect advertising products can be purchased at once and delivered on the same day, as well as paid with tokens compensated for **"Interactive TV on-line shopping services,"** which provide thorough pre- and post-service. In our Smart IP Cloud TV Interactivity Service, it is used not only for viewing costs, but also for payment of goods and services from advertisers using this service. And further this service will be expanded to all areas of the real economy.

<Starting from Thailand to expand to the worldwide service>

Our innovative services began in Thailand and expanded to Indochina Peninsula countries and Asia-Pacific countries, and by moving beyond the Middle East, Africa and South America to North America, our Smart IP Cloud TV Interactivity Service will be the service that everyone in the world wants, and people around the world will be with us. To this end, subscribers of our Smart IP

Cloud TV Interactivity Service can obtain rewards, make it easier to use for payment of subscription fees and shopping, while at the same time providing TCG Token, a decentralized block chain-based encryption currency, as a means of saving and investment. Of course, this will also be expanded to be a monetary instrument of the real economy.

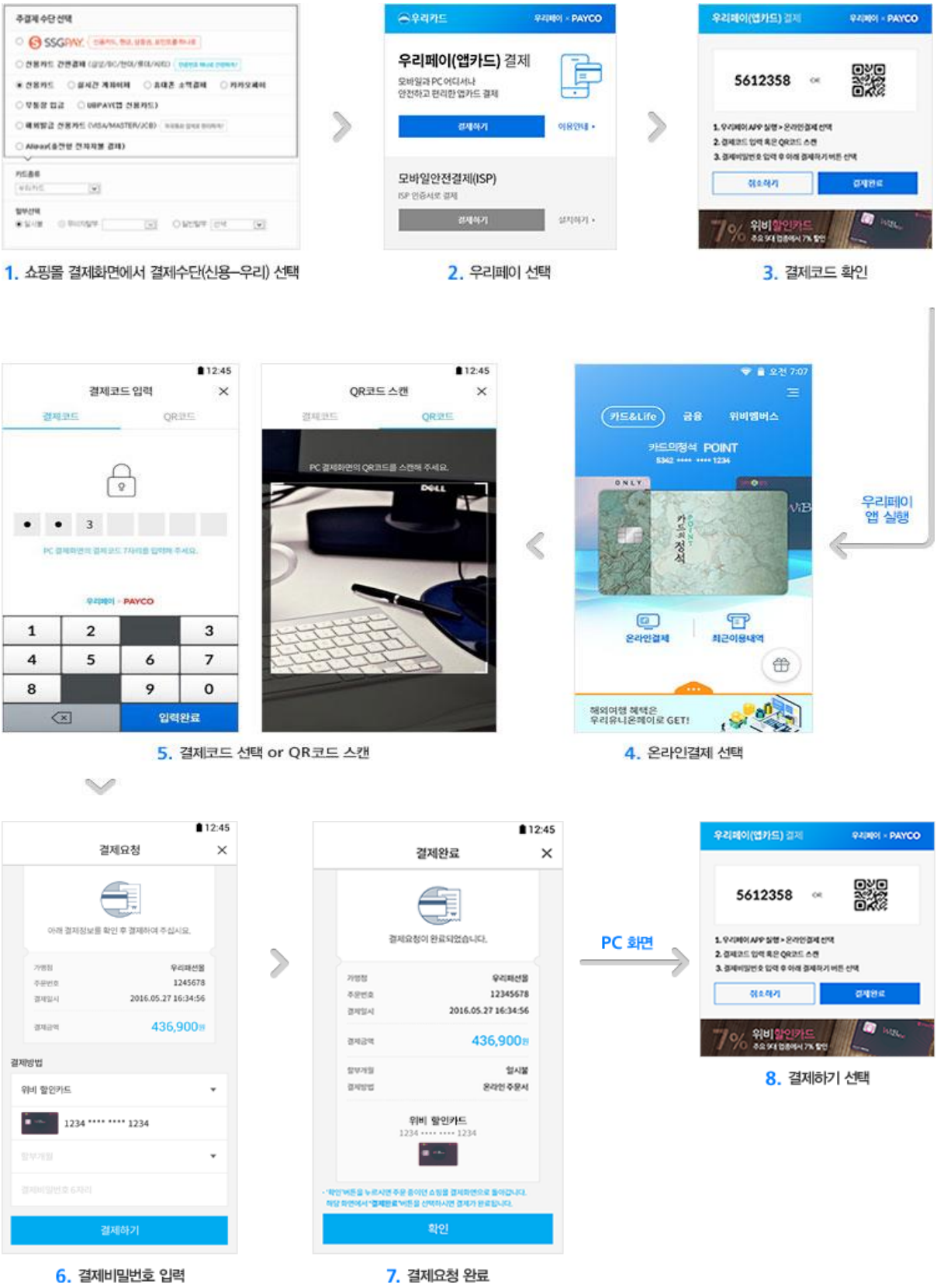
2. Business Background

2.1 Comparison with Example

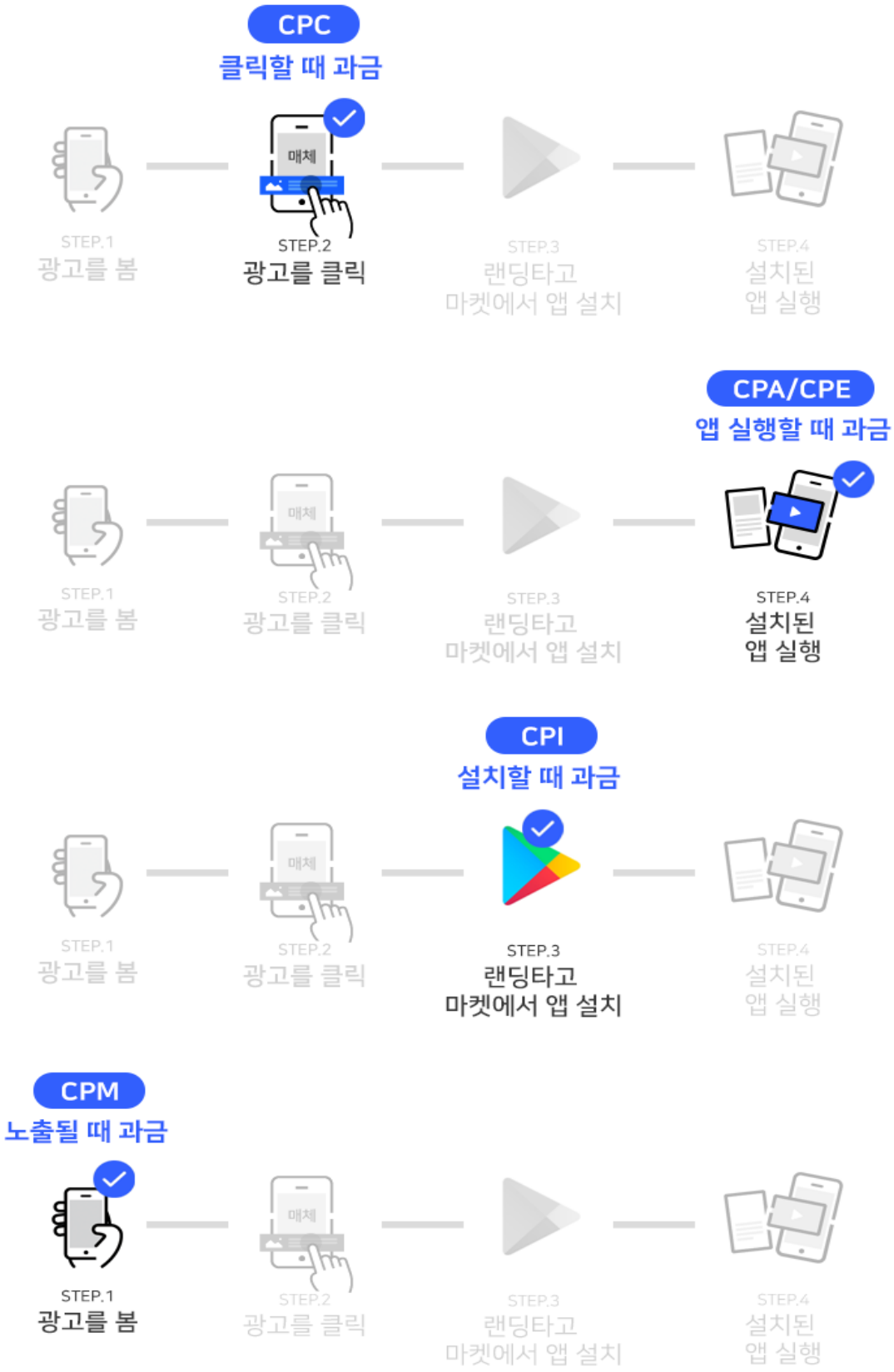
You already know about the IPTV service and OTT services such as Netflix,

<OTT(Over The Top) service providers of international with Korea>

and you're probably already using Internet shopping and TV home shopping like Amazon. And in the use of these services, you will be annoyed and exhausted by the experience of complex procedures to pay for your subscription or commodity prices.

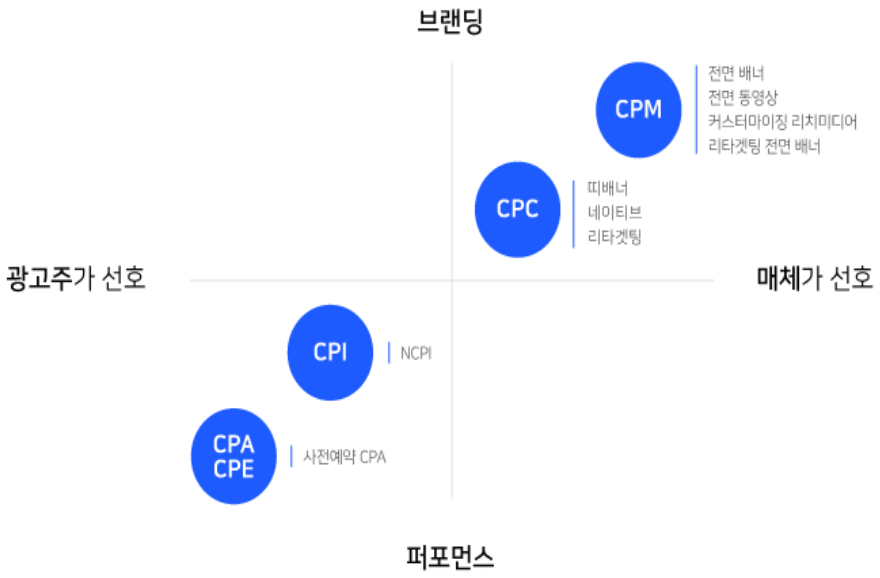


< Complicated payment procedures for online shopping >



<Various on-line advertising models of CPX styles>

In addition, you may have had experience receiving rewards by responding to CPA/CPC/CPL ads in CPX techniques on Internet Web pages, and may have experienced the complex processes of receiving rewards and the reality of being unable to be linked as a means of payment when purchasing goods and services in the real economy.



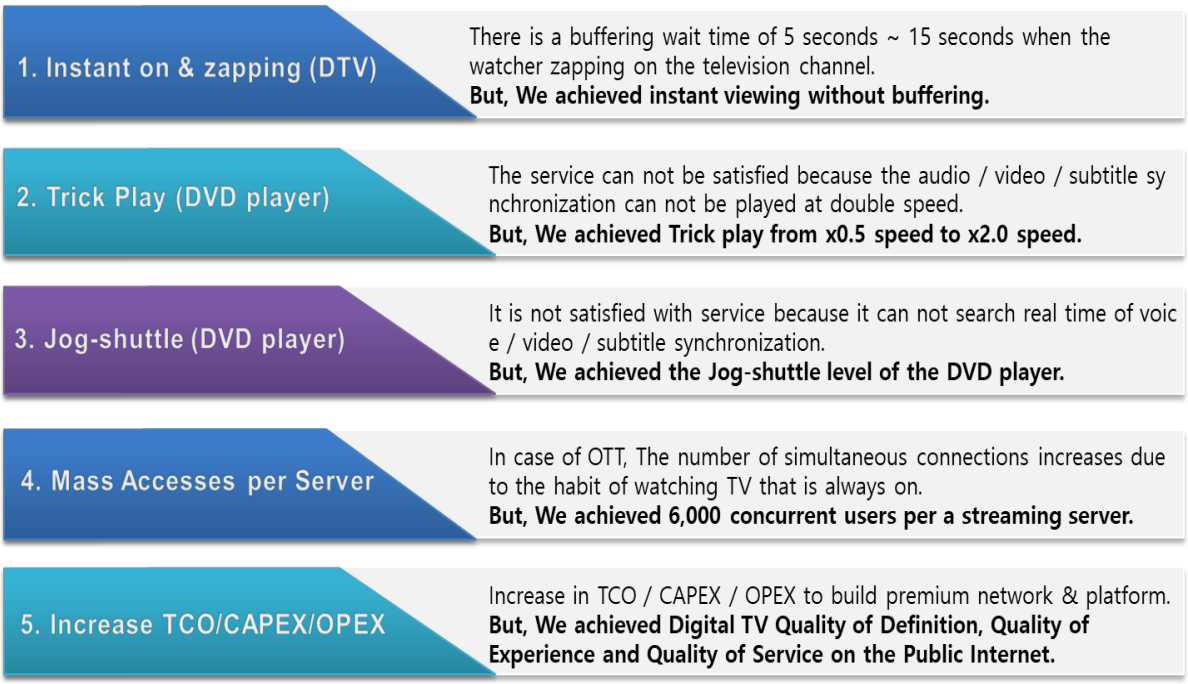
< Preference for various advertising models of CPX styles>

Through **Smart IP Cloud TV Interactivity Service**, which integrates all of the aforementioned services into a single service, we provide **"OTT/IPTV Service"** of digital TV level quality and quality satisfaction and service satisfaction, while providing **Interactive TV on-demand advertising services** that integrate direct and indirect advertising with CPX advertising techniques on web pages, and **Interactive TV on-line shopping services** that combine Internet shopping on TV home shopping.

TCG provides one-stop service for the revenue and payment required to use these services. In addition, TCG creates new and potential areas through the expansion into the means of payment in the current real economy and good results of saving and investing.

2.2 Problems

Except for Korea and some of the developed countries, most countries are unable to provide IPTV services due to environmental limitations of the Internet infrastructure and Internet service industries, and even OTT services that do not achieve digital TV-level image quality, quality and service satisfaction are not properly available. In a public Internet environment where speed and quality are not guaranteed, people have to wait 5 to 15 seconds for buffering to watch digital multimedia, which is lower than SD quality, experience video and voice breaking every 10 minutes, and non-face-to-face education is emerging as a global culture of reluctance to contact people due to viruses such as COVID-19, but these countries are being discriminated against because they cannot upgrade their Internet infrastructure overnight.



<User requirements of the IPTV/OTT(Over the Top) service >

In addition, the United States, where Amazon's Internet shopping services are active, cannot find convenience stores within a radius of a few kilometers, and the spread of Internet shopping to people around the world has long begun to destroy local commercial rights, threatening local jobs, and over packaging

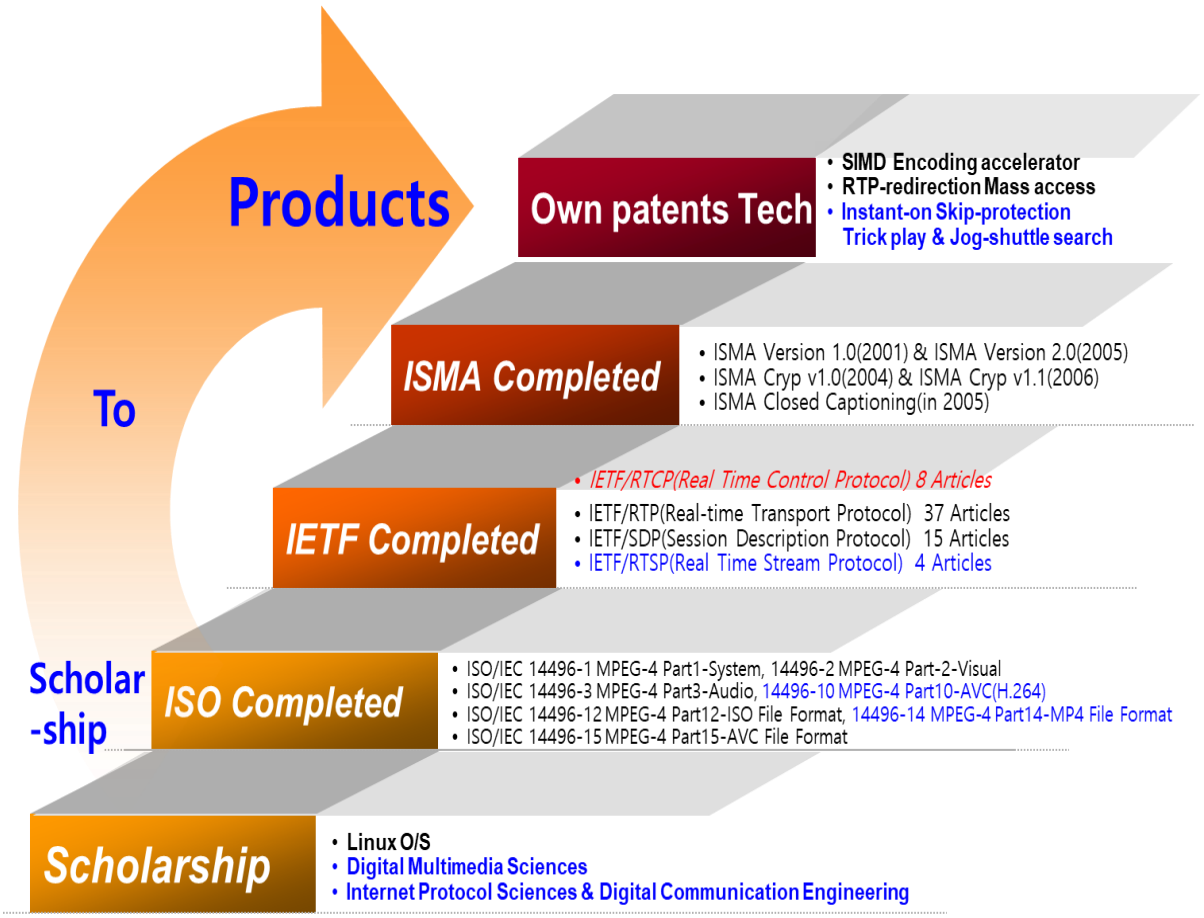
packages are poised to become garbage and cover the planet, and are tired of the lives of deliverymen due to poor working conditions and incomes that fall short of the minimum cost of living. Also, high private education costs have forced their children to live a warlike life where they cannot have dreams and can't predict the future.

< The actual situation of courier workers driven to death due to excessive labor>

<The global village is becoming a pile of garbage with disposable parcel packaging>

2.3 About the Platform

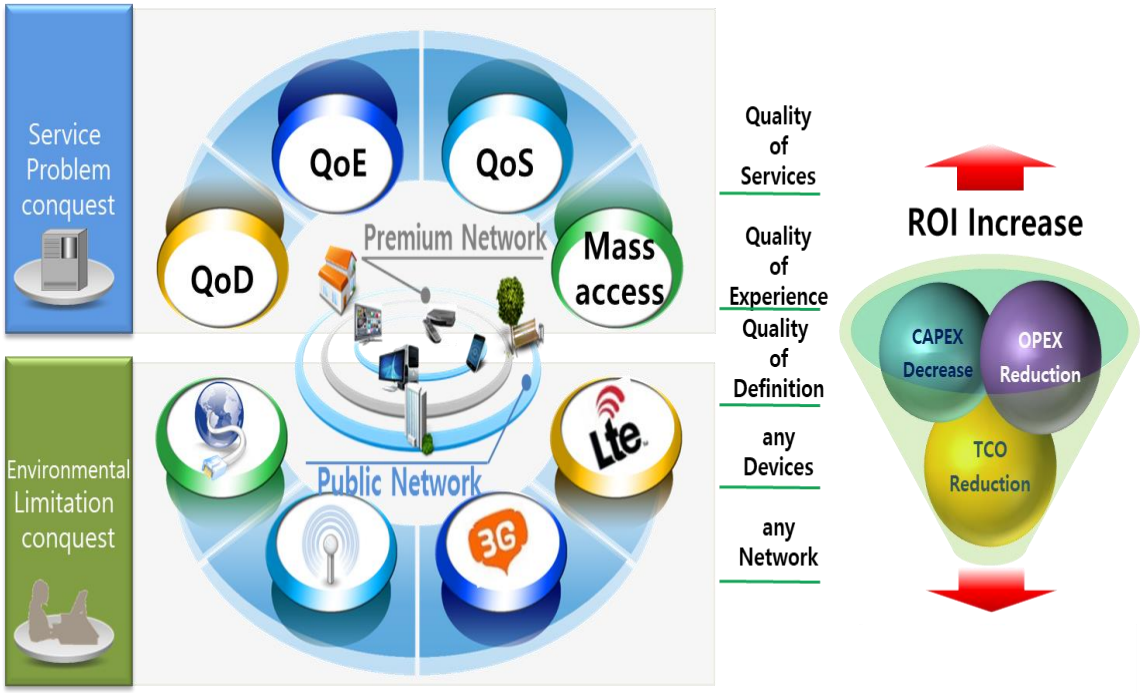
Today's IPTV services have established premium networks that require significant investment to meet the quality, quality and service of digital TV. We have developed our own unique and innovative Smart IP Cloud Platform TV based on the technology accumulated by contributing to the establishment of ISMA (Internet Streaming Alliance) in cooperation with scientists and technicians in the establishment of the ISO/IEC, IETF in our pioneering academic research and related fields, in response to the needs of viewers who want these services to be implemented on the public Internet, where speed and quality is not guaranteed.



<Step-by-step application technology for viewers' service satisfaction>

We solved the aforementioned problems, as well as the quality satisfaction and quality satisfaction and service satisfaction of the digital TV level in the

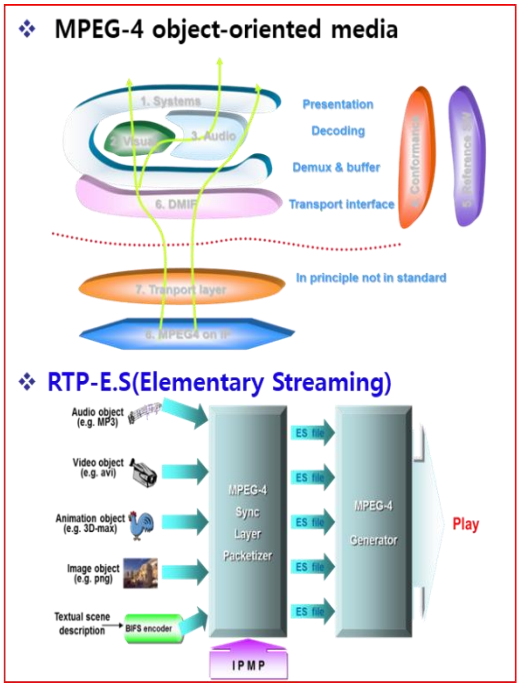
public Internet, as well as the current premium network's IPTV service, VTR-level service in the broadcast playback and navigation, DVD player-level video and voice synced on the Internet, distribution playback and voice synchronized jog-shuttle level of video and voice, as well as service satisfaction, as well as the service operator's platform construction and operating cost and maximization of profitability.



< Quality of Definition, Q of Experience & Q of Service on the public Internet >

By transferring the current IPTV service to transfer each object that constitutes digital multimedia in a composite of two types, such as images and audio, by not taking advantage of the characteristics of each object that MPEG-4-based digital multimedia has, the viewer does not recognize the particular object of the image even if the viewer does not recognize it, we have a technical problem in the image and the limitations of the object-centric interactive TV service does not provide an object-centric interactive TV service. Select the transmission technology of the mountainous Elementary Streaming method to ensure the quality by reliably transmitting without loss of image quality without loss of image quality in the real-time transmission through the public Internet

that speed and quality is not guaranteed, and instant viewing and voice without the need for buffering latency, the video is synchronized, the speed playback and voice. We have created our own unique and innovative Smart IP Cloud TV Interactivity Service, which realizes Interactive TV on-demand advertising and shopping.



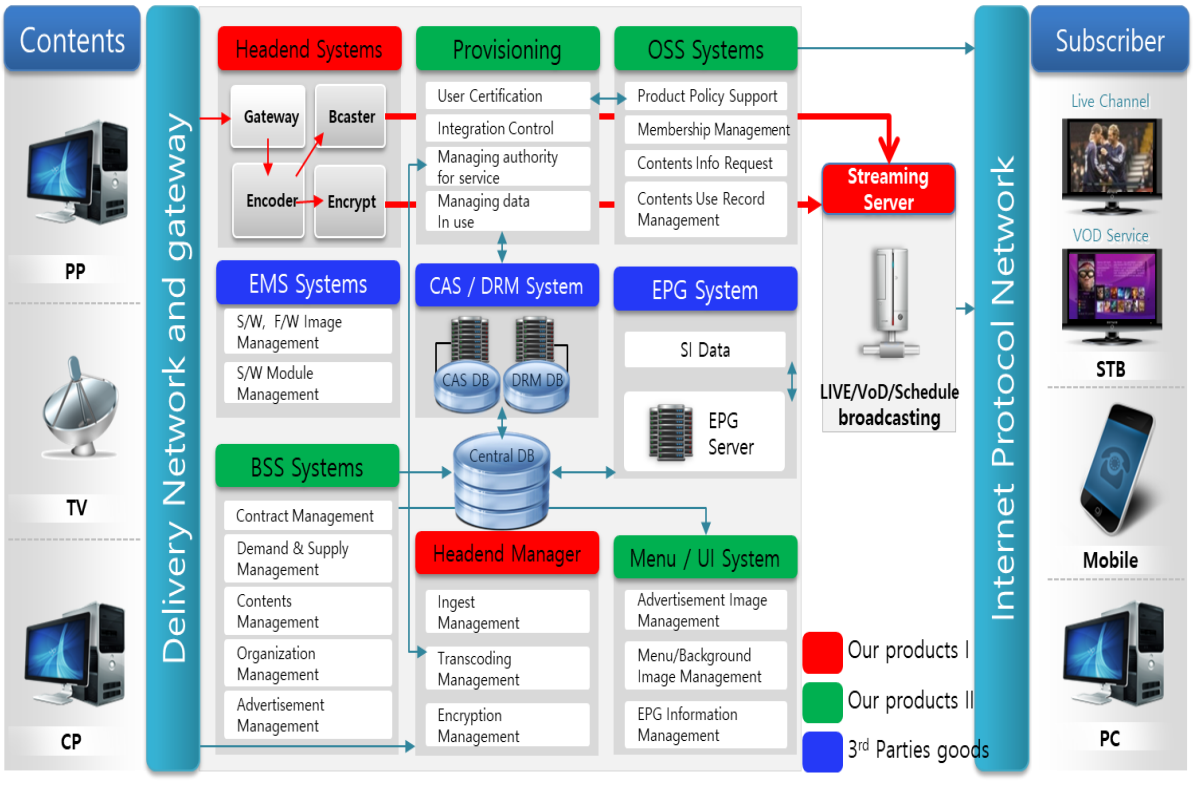
< Object-oriented Interactive TV on-line shopping >

Our innovative Smart IP Cloud TV Interactivity Service's "Interactive TV on-demand advertising Service" allows subscribers to monetize, allowing them to use it as a currency for watching tv broadcasts and digital multimedia content around the world that provides quality satisfaction and service satisfaction at the digital TV level, thus moving subscribers to Prosumer's location, allowing them to enjoy the same cultural life regardless of the gap between the country and the poor. Our own specialized "Interactive TV on-line shopping service" provides goods and services in stores within a 10km radius where subscribers are located, so that the company provides goods and services, as well as the day delivery, and at the same time, to create local jobs and revitalize the area, while providing a high-quality service of engineering technology and pre-post-service, such as installation, not just delivery, and stable jobs and sufficient wages to create a

human economy, not only in the educational field of children, but also for human rights.

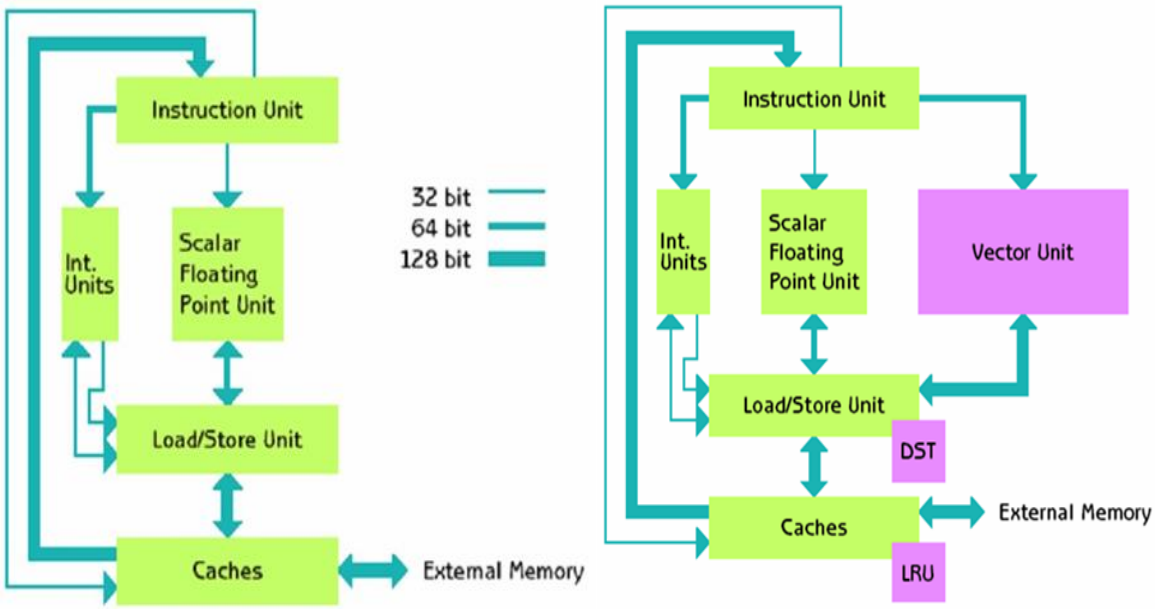
2.4 Platform Technology

Our innovative Smart IP Cloud TV platform enters multimedia sources, compresses them into digital multimedia, packetizes them, transmits them over the Internet to streaming servers located in remote Internet data centers (IDCs), and cuts live and on-demand broadcasts to digital TV-level, full HD buffers on the public Internet at the request of global viewers connected to the Internet. In addition, while existing on-demand broadcasts support VTR-level distribution and navigation, even in premium networks, we have innovative technologies that are DVD-level voice and video on the public Internet. It consists of a core shearing system (Headend Systems), which combines technologies that enable real-time exploration of images, voices, and subtitles at the level of a jog-shuttle where subtitles are synchronized, as well as a middleware that adds convenience to services and supports various additional services.



<Architecture of the Smart IP Cloud TV Platform>

Our differentiated headend system requires expensive, high-performance systems that meet both ISO and IEC and ITU international standard technical specifications in compressing multimedia, while also being encoded to transmit digital multi-media to a public Internet with limited speed and bandwidth. In particular, in the case of real-time broadcasting, expensive exclusive equipment (Encoder) must be used to ensure high quality, so the total cost of ownership (TOC) of service providers can only be increased, but our innovative patent technology guarantees high quality even in laptops.



<Scalar Floating Point vs Single Instruction Multiple Data>

In the Finite field called TTM (Tame Transformation Method), these patented technologies are transposed by the rational number of structures that are given through addition and multiplication that meets the law of algebra. So, the two methods of this transposition can rather be combined in a complex way. However, it is possible to infer about their effectiveness and the complexity of analysis, and the Tame Transformation Method is based on the combination of these replacements.

- Arithmetic Infinite Fields

A field is a collection of objects that define the performance of addition and

multiplication. These practices require that the general nature of addition and multiplication satisfy the execution of real number.

1. Exchange law (x+y=y+x) and combination law ((x+y)+z=x+(y+z);

2. There are numbers 0 and 1. All numbers x , x+0=x and x*1=x)

3. The reciprocal of addition (there is x+y=0 y for all x);

4. Non-zero numbers have the reciprocal of multiplication (there is y that is all x !=0 xy=1)

The field is defined by a set of variables with two symbols (0,1) and by the following execution.

0+0=0, 0+1=1, 1+0=0, 1+1=0 and, 0*0=0, 0*1=0, 1*0=0, 1*1=1

Mark the above fields as Z_2, and this is a Boolean execution.

0=false , 1=true +=XOR , * = AND. That is, Z_2 is a field with 0 and 1.

A field with an element of 2^k can also be created, and if k is 8, each yaw in the field can be combined with an 8-bit (1 byte) value. Because it is 28=256, the generation of 256 components proceeds as follows.

Considering a polynomial with a coefficient in Z_2 with an order smaller than 8, the coefficient in each paragraph of the polynomial is zero or one.

For example, $X^7 + X^3 + 1 = 1*X^7+0*X^6+0*X^5+0*X^4+1*X^3+0*X^2+0*X^1+1*X^0$

With eight possible coefficients, each can be 0 and 1. So there are 28=256 different polynomials of this type.

Adding coefficients to them can add polynomials.

For example,

$(x^7+x^3+1)+(x^6+x^3+x^2+1) =$

$1*x^7+0*x^6+0*x^5+0*x^4+1*x^3+0*x^2+0*x^1+1*x^0+$

$0*x^7+1*x^6+0*x^5+0*x^4+1*x^3+1*x^2+0*x^1+1*x^0$ =

$1*x^7+1*x^6+0*x^5+0*x^4+0*x^3+1*x^2+0*x^1+0*x^0$

The relationship between bytes and polynomials is very simple, and bits in bytes are simply the coefficients of polynomials.

Therefore, can write as a follows, because 10001001= $1*x^7+0*x^6+0*x^5+0*x^4+1*x^3+0*x^2+0*x^1+1*x^0$

10001001 + 01001101 = 11000100

If you think that addition is just XOR between two bytes, you'll sense that it can be computed very quickly.

Considering that one-byte XOR combined with another is the opposite, adding a fixed byte B in (A XOR B) XOR B=A " is a substitution of possible values of 256 of 8 bits.

The addition becomes more complex, adding a polynomial of less than 8 is a polynomial of 14th order.

The coefficient of this polynomial requires 15 bits to be stored.

We need multiplication to think of the multiplication of two 8-bit values to the other 8-bit values.

This can be done by the eighth formula, which has the remainder of the multiplication polynomial when divided by the formula. We do not define here what cannot be divided. We have such a polynomial in the example of our addition.

$(x^7*x^3+1)*(x^6*x^3*x^2+1) = x^7*(x^6+x^3+x^2+1)+x^3*(x^6+x^3+x^2+1)+(x^6+x^3+x^2+1)$

$= x^{13}+x^{10}+x^9+x^7+x^9+x^6+x^5+x^3+x^6_x^3+x^2+1$

$= x^{13}+x^{10}+x^7+x^5+x^2+1$

$= (x^8+x^6+x^5+x+1)*(x^5+x^3+x+1)+(x^6+x^5+x^4+x^3)$

or $(x^7+x^3+1)*(x^6+x^3+x^2+1) = x^6+x^5+x^4+x^3 \bmod(x^8+x^6+x^5+x+1)$

In this field, polynomials other than each zero have the reciprocal of multiplication. So multiplication by non-zero field elements is the substitution of a possible value of 256 in the field.

Written by bytes is 10001001*01001101 = 01111000, and because there is a possible value of 28 for the number of squares on the left, all 2^8*28-2^{16} can be calculated in advance.

Each entry in the table is a single byte containing the results.

So the multiplication of byte a and b is simply multi-application_table [(a << 8)+b]

- Fast Linear Algebra Infinite Fields

The two main linear algebra vector include additions and scalar multiplication. If these are fast, **the standard technique allows for fast matrix-vector multiplication. Standard technique is a fast matrix We now analyze how this basic execution is executed with SIMD.**

The addition in this field is only bitwise exclusive-or, so the quick addition is obvious. For example, if a,b,c is an unsigned char pointer assigned to a 16-byte boundary and n is a multiple of 16, we can simply record as follows:

```
(void)

finite_field_vector_addition (unsigned char *a,

unsigned char *b,

unsigned char *c,

int n)

{

int i
```

vector unsigned char *vec_a = (vector unsigned char *) a;

vector unsigned char *vec_b = (vector unsigned char *) b;

vector unsigned char *vec_c = (vector unsigned char *) c;

for(I = 0; I < n; I + = 16)

vec_c++ = vec_xor (*vec_a++, *vec_b++);

}

The fast scalar multiplication is rather subtle.

Here we have y= αx where α is scalar (so the elements of the field having 256 elements) and x is the vector of n element in the same field.

Again we assume that n is a multiple of 16. So each element is yi=α*xi, 0≤n<n, and x is written in the form of a bit expression as follows.

$\alpha*x_i$ = α*abcdefgh = α*(0000efgh+abcd0000) = α*0000efgh+α*abcd000

Of course * is multiplication in finite area. And + is the addition in the same field, 이다 is a fixed value, and there are only 16 possible values for α*00efgh. So αx00000000=0000000000, α*00000001=α, ... α*0000111.

Similarly, there are possible values of exact 16 at α*abcd0000. So for each of the 256 different values of α, we have 16 different values.

Low products α*00efgh,efgh=000000, 0001, ...,111 and 16 other high products, h*abcd0000, abcd = 0000,0001,...,11111 can be calculated in advance.

In our scalar multiplication function, by recording the value of α and loading two 16-byte tables into the SIMD vector unsigned char variable, multiplication by α, which is the low part of x_i, can only be identified by a low-part multiplication table.

The vectors replacing the instruction vec_perm found in the SIMD instruction set are ideal as indexes for small byte tables. Typically, you can have 16 simultaneous

indexes from 32-byte tables, which can be specified by a single vector unsigned char register.

Then, a 32-byte table can be specified by two vector unsigned char registers. Five lowest bits of each index byte are used as an index of 32 bytes. Since we use an index in a 16-byte table instead of a 32-byte table, we specify the same 16-byte vector unsigned char register for each half of the 32-byte table. Since the same table can use both the first 16 bytes and the second 16 bytes of the 32-byte table, each x_i low part has the additional advantage of having the fifth bit of each unmasked index.

For the high-part search we need to shift each element x_i to the right by four bits for the purpose of the vec_sr_Altivec instruction we use, and the function fully transmitted is as follows.

```
        Vector unsigned char low_products[256];

        vector unsigned char high_products[256];

      /* Initialize low products and high products tables. */

        (void)

        finite_field_scalar_multiplication(unsigned char alpha,
unsigned char *x,
unsigned char *y,
int n)

        {

        int i

        vector unsigned char *vec_x = (vector unsigned char *) x;

        vector unsigned char *vec_y = (vector unsigned char *) y;
```

```
vector unsigned char low = low_products[(int) alpha];

vector unsigned char high=high_products[(int) alpha];

for(i=0;i<n;i+=16,vec_x++,vec_y++)

{

vector unsigned char l,h

l=vec_perm(low,low,*vec_x);

h=vec_perm(high,high,vec_sr(*vec_x,(vector unsigned char )(4)));

*vec_y=vec_xor(l,h);

}

}
```

Here we assume again that a is a multiple of 16, and x,y is allocated 16 bytes.

- Performance of SFP & SIMD

We focus on the encryption process, which is slower than the decoding process using the private key, in comparing SIMD processing-capable programs that encrypt data using scalar and TTM.

The TTM processing procedure is block cipher. If the input block has the length of m-byte and the output block has the length of n-byte, the special cipher is $n \geq m+36$.

The Public key consists of two parts, an entry consisting of n-lower trigonal matrices A_i with each m x m size in a field with 256 elements of the Matrix key, and a n-vector $v_i$with a length of m with an entry in the field of 256 elements of the Vector key has an entry in the field of 256 elements. When an input block-x consisting of m bytes is given, the Ith byte of the output is calculated as follows:

$x^T*(v_i+A_ix)$

x^T indicates the binary value of column vector x. And x*y is a dot product of x and y. The private key consists of two matrices. One is the vector of m*m, the other is n*n, and the other is the length m. The number of bits in the private key is m^2+n^2+m multiplied by the number of bits in each key entry. It has been proved that using 8 bits for each entry in the Public key and Private key can bring a more crypto logically secure system than using 4 bits.

In a simple example, m=28 and n=64 so private keys (28^2+64^2+28) * 4 = 19,632 bit, require ability based on higher mathematics. However, all this ability requires at least more 2^{90} execution than is declared cryptographically secure. So, we limit it to a 4-bit key entry. This attempt provides a significant increase in throughput in the vector operation outline in the previous item. Now we use just one vector exclusive-or for one vector load, one vector substitution, and 16 scalar multiplication execution. The results of our experiment showed that the scalar program for well-structured TTM encryption required about 2.56 cycles per addition and multiplication in the Motorola 7400 (PowerPC G4) processor. Multiplication according to addition is compiled into two load constructions and one exclusive-or operation. Thus, it was shown that a certain amount of construction-level parallelism is utilized by the program, and the scalar performance of TTM encryption encrypts a single input block, with the formula of the result defined as follows.

$$2.56*(m(m+1)/2 + m)*n \text{ cycles}$$

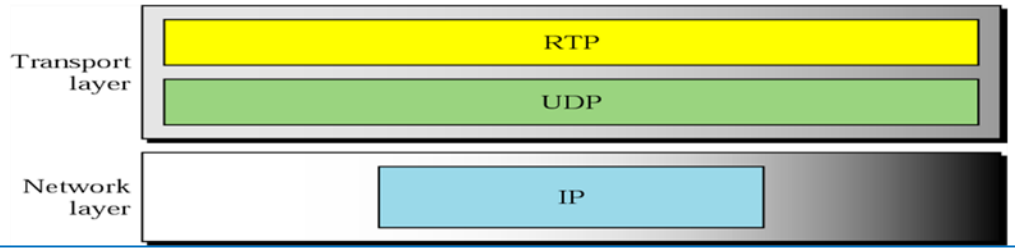
Our first examples have m=28 and n=64. Here, Ai and vi , i=1,...64, together with high product and low product tables and temporary storage, **all achieved near-perfect speed improvement of 14.9 times in scalar code suitable for 23kbyte L1 data cache on the PowerPC G3/G4 process.** Output block 64/28=2.29 times the size of the input block of this code. This is an extension of this code. The actual number required to encrypt larger m and n, which increases in two dimensions from m, was clearly derived from the formula provided above. On the other hand, larger input blocks and encoded n=m+36 are inferred to have smaller expansion factors. So, by experimenting with the speed of encoding with

36 bytes of input block and 72 bytes of output block, the expansion factor is two, and the 36/72 code is even more difficult. In fact, we calculated it in 36/80 code because SIMD register is 16 bytes long. And we wanted the size of the output block which is multiplying the SIMD register area. The 80 half-byte matrix factor is again required to fill the Public encryption key with 40 bytes that are not divided by 16. Finally, unlike our previous example, the public key by this code is not suitable for multiple-cation tables, temporary storage we use, and L1 data cache with input and output blocks. This results related to the performance of the SIMD code, which brings only 8.4 times the speed increase in scalar code, are caused by the cycling of L1 cache.

The L1 cache on Motorola 7400 is the latest and least used data line-related in L1 cache as 32 Kbytes and eight-way archive, and it is entered temporarily by using the lvxl construction that loads the vector register while checking it and the data that wanted to reside in the L1 cache was a matrix key (the block). **This significantly reduced the level of cache thrashing and resulted in 11.1 times faster speed improvements in scalar code. And the 12.3x speed increase is more impressive when configured in 36/80 code. This is because the scalar program is slower while the SIMD program is running at the same speed. As a result, SIMD technology that efficiently uses MMX, MMX Ext, SSE, SSE Ext**, and embedded in the computer's central processing unit can handle 50,000 bits per second of data, giving the expectation that 1080P-level IPTV content with a bandwidth of 9Mbps (9,437,184 bit/sec) can be trans-coded in 5 seconds for one second, and the above 400MHz shows the above. The is also available on portable terminals.

For internet streaming of digital multimedia generated based on high-definition and high-speed digital multimedia compression technology, ISMA v1.0 & v2.0, ISMA Cryp, ISMA Closed Captioning, and RTP, SDP, RTSP, RTCP, and ISMA(Internet Streaming Media Alliance) specifications are used. In order to fully implement the closed captioning and overcome the technical limitations of these specifications, we succeeded in producing patented technology products that support the quality and service of digital TV level not only in premium networks but also in public internet where speed and quality are not guaranteed..

■ RTP : Real-time Transport Protocol, International Standard about the method to transfer streaming data over the network, as communication protocol for the transmission of mass multimedia in real-time
■ Nov 1995 IESG(Internet Engineering Steering Group) : IETF Announced the each codec standards .
■ Background appear
-. As the upper UDP protocol, It was developed to enable the mass transmission even though it is less confidential protocol.
■ Feature :
-. Achieve QoS/QoE by minimizing buffering time with one-way mass data and fast data transmission.
. RTP itself can not guarantee the quality and reliability, RTSP/RTCP combination improves the quality and reliability
. Achieve high-quality multimedia streaming services by providing the synchronization function of time information and media.
-. RTP can not be encapsulated in IP packets, so encapsulating data in UDP datagrams on application layer transmits as packet. .
. RTP is used with Layer3 and Layer4. It has less dependence on lower protocol and uses even-number port.



<Real-time Transport Protocol of ISO technologies apply to our platform>

Technology specifications of Real-time Transport Protocol (37 Cases, more details, www.ietf.org)

p. RFC 2862 RTP Payload format for Real-time Pointers
p. RFC 3016 RTP Payload format for MPEG-4 A/V Streams**(Updated 6416)**
c. RFC 3095 Robust Header Compression: Framework & four profiles: RTP/UDP/ESP/uncompressed**(3759, 4815)**
c. RFC 3243 Robust Header Compression: Requirements & Assumptions for 0-byte IP/UDP/RTP Compression
c. RFC 3409 Robust Header Compression: Lower layer guidelines: RTP/UDP/IP Header Compression
p. RFC 3640 RTP Payload format for Transport of MPEG-4 Elementary Stream**(Updated 5691)**
p. RFC 3984 RTP Payload format for H.264 Video**(Updated 6184)**
t. RFC 3550 A transport protocol for real-time application**(Updated 5506, 5761, 6051, 6222)**
t. RFC 3551 RTP Profile for A/V Conferences with minimal control**(Updated 5761)**
p. RFC 3558 RTP Payload format for Enhanced Variable Rate Codecs(EVRC),Selectable Mode Vocoders(SMV)**(4788)**
t. RFC 3711 The Secure Real-time Transport Protocol(SRTP)**(Updated 5506)**
p. RFC 4103 RTP Payload for Text conversation
c. RFC 4170 Tunneling Multiplexed Compressed RTP(TCRTP)
p. RFC 4348 RTP Payload format for the Variable-Rate Multimode Wideband(VMR-WB) Audio CODEC**(Updated 4424)**
p. RFC 4351 RTP Payload for Text conversation interleaved in an audio stream
p. RFC 4352 RTP Payload format for the Extended Adaptive Multi-Rate Wideband(AMR-WB+) Audio CODEC
c. RFC 4362 Robust Header Compression: A link-layer assisted profile for IP/UDP/RTP**(Updated 4815)**
t. RFC 4383 The use of timed efficient stream Loss-Tolerant Authentication(TESLA) in SRTP
p. RFC 4867 RTP Payload format and File storage format for the Adaptive Multi-Rate(AMR) and Adaptive Multi-Rate Wideband(AMR-WB) Audio CODEC
c. RFC 4995 Robust Header Compression Framework
p. RFC 5188 RTP Payload format for Enhanced Variable Rate Wideband Codecs(EVRC-WB) and the media subtype updates for EVRC-B CODEC.
p. RFC 5219 A more Loss-Tolerant RTP Payload for MP3 Audio
c. RFC 5225 Robust Header Compression ver.2: Profiles for RTP/UDP/IP/ESP/UDP-Lite

<Specifications of the RTP of ISO technologies apply to our platform>

■ SDP : Session Description Protocol , International Standard about the definition of real-time multimedia session which provides the information needed by the users for participating multimedia sessions on the internet.

■ RFC2327(4566) : MMUSIC(Multiparty Multimedia Session Control) Working Group

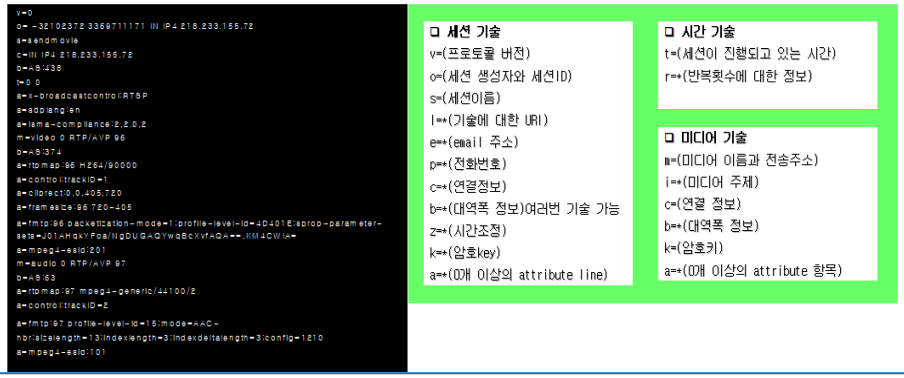
■ Background appear

-. Needed functionality of providing and transfer information in order to Client participate in the session

■ Feature : Foundation for expansion of concurrent access user number by mass transfer and port Redirection through instant play and multiplex port.

-. SDP file notices produced file through Parser program by real-time broadcasting. It is produced as soon as Viewer selects contents and provided to Client. It helps Client to play without analyzing the media information.

-. Expand the accommodate availability by Redirection RTP port to 10,000 ~ 65,000 UDP port.



<Session Description Protocol of ISO technologies apply to our platform>

Technology specifications of Session Description Protocol (15 Cases, more details, www.ietf.org)

. RFC 3388 Grouping of media lines in the Session Description Protocol(SDP)(Obsoleted 5888)
3407 The Session Description Protocol Simple Capability
3556 The Session Description Protocol Bandwidth Modifiers for RTP Control(RTCP) Bandwidth
3605 Real Time Control Protocol(RTCP) attribute in Session Description Protocol
4566 The Session Description Protocol
4568 The Session Description Protocol Security Descriptions for media streams
4570 The Session Description Protocol Source filters
4572 Connection-Oriented media transport over Transport layer security(TLS) protocol in the SDP
4574 The Session Description Protocol Label attribute
4583 The Session Description Protocol Format for binary floor control protocol(BFCP) streams
4796 The Session Description Protocol Content attribute
5159 The SDP Attributes for Open mobile alliance(OMA) broadcast(BCAST) service & content protection
5432 Quality of Service(QoS) mechanism selection in The Session Description Protocol
5547 The Session Description Protocol Offer/Answer mechanism to enable file transfer
5888 The Session Description Protocol Grouping Framework

< Specifications of the SDP of ISO technologies apply to our platform>

Technology specifications of Real Time Streaming Protocol (4 Cases, more details, www.ietf.org)

. RFC 2326 Real Time Streaming Protocol 1.0 up to RTSP 2.0
4567 Key management extensions for SDP and RTSP
6064 SDP & RTSP Extensions defined for 3GPP packet switched streaming service & multimedia BCAST

< Specifications of the RTSP of ISO technologies apply to our platform>

■ RTSP : Real Time Streaming Protocol , International Standard about the method to control VCR and flow of streaming data on network for receiving and transmitting multimedia, as application layer protocol performing media transmission on real-time

■ April 1998 IETF : Real Networks, Netscape communication, Columbia University.
RTSP Ver. 1.0(RFC2326), RTSP Ver. 2.0

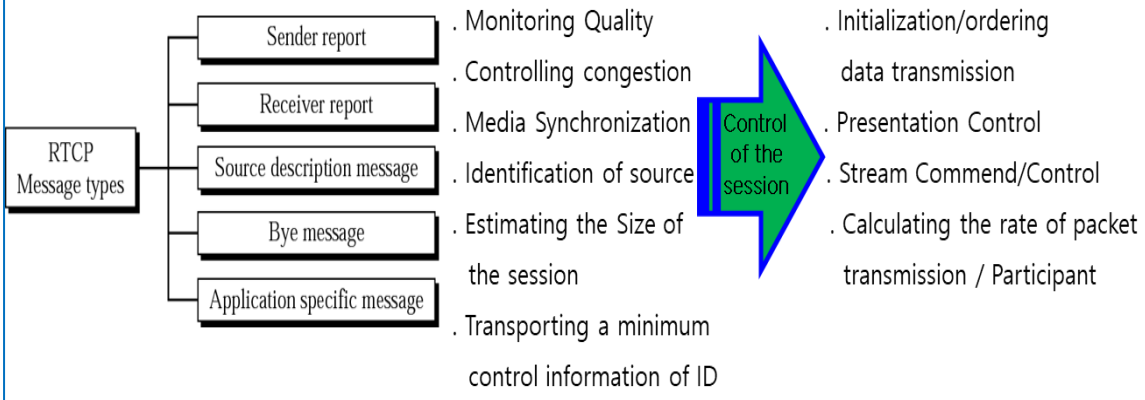
■ Background appear
-. TCP is safe for transferring data but the slow speed is problem.
-. UDP can be alternative but packet loss and violation of the order affect the quality of media .
-. Require real-time protocol that can replace TCP and UDP for real-time applications.

■ Feature :
-. Achieve QoS/QoE by controlling network overhead and Jitter(delay in arrival time). RTSP controls both-way real time flow and improves data reliability of RTP transmission.
. If the loss factor is big, reduce the transmission rate and if it is small, increase by detecting packet loss in real time.
. When the Client Buffer is Over flow, reduce the transmission rate and under flow, increase the rate.
-. Achieve QoS by realizing Play, Rewind, Fast forward, Pause and Result, as VTR on the Internet

<Real Time Streaming Protocol of ISO technologies apply to our platform>

■ RTCP : Real time Control Protocol, International Standard about the method to real-time control multimedia streaming between the client and server , as a non-connection protocol based on UDP Layer rather than RTP

■ 1997 IETF : RFC 4571
■ Background appear
-. Need accessory RTP protocol to complement the problem of unidirectional RTP
■ Feature :
-. Achieve QoS/QoE by Seamless and high-quality media services through exchanging and evaluating QoS information between Server and Client



-. Using efficient network by control the network traffic increasing by varying the frequency of transmission depending on the number of the log-ins and limiting the size of RTCP packet less than 5%
-. RTCP uses an odd number after RTP and the request for RTCP control uses TCP.

<Real Time Control Protocol of ISO technologies apply to our platform>

Technology specifications of Real Time Control Protocol (8 Cases, more details, www.ietf.org)

, RFC 3611 RTP Control protocol Extended reports(RTCP XR)
4571 Frame RTP and RTP Control protocol(RTCP) packets over connection-oriented transport
4585 Extended RTP profile for Real Time Control Protocol(RTCP) based feedback(RTP/AVPF)(Updated 5506)
4586 Extended RTP profile for RTCP based feedback: Results of the Timing rule simulations
4961 Symmetric RTP/RTP Control protocol(RTCP)
5093 BT's extended network quality RTP Control protocol(RTCP) extended reports(RTCP XR XNQ)
5124 Extended secure RTP profile for RTCP based feedback(RTP/SAVPF)

< Specifications of the RTCP of ISO technologies apply to our platform>

ISMA are quality of service and experience of IPTV on the public network

■ Detail how to stream over public IP network(5 Cases)

ISMA Version 1.0(2001) : MPEG-4 SP& ASP
-. Profile 0(for Mobile), Profile 1(for Internet P.C & S.T.B)
ISMA Version 2.0(2005) : H.264/MPEG-4 AVC Video, HE-AAC Audio
-. Profile 2(HE-AAC@L2, stereo-AVC main & baseline@L2-1.2Mbps),
-. Profile 3(AAC@L4, 5.1-AVC main@L3-3.7Mbps) – for SD(Standard Definition)
-. Profile 4(AAC@L4, 5.1-AVC high@L4-15Mbps) – for HD(High Definition)
These are relevant with all fields (Encode, Transport, and Play), and complement all fields of deficiency points of RTSP/RTP/RTCP/SDP ISO, and achieve enhanced service of QoS & QoE in public network

■ Specifies an end to end Encryption system for ISMA 1.0, 2.0 streams(2 Cases)

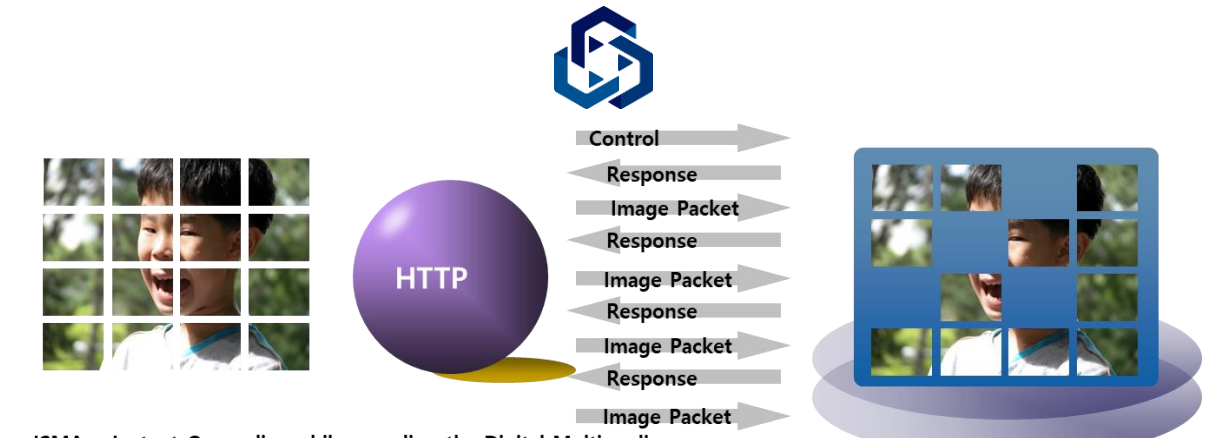
ISMA Cryp Version 1.0(in 2004) for ISMA 1.0,
ISMA Cryp Version 1.1(in 2006) for ISMA 2.0

■ Specifies how to carry closed caption data as a third stream over IP network(1 Cases)

ISMA Closed Captioning(in 2005)

ISMA is a result of effort for preparing the Internet Streaming Media Public Standard, and is a nonprofit organization, which CISCO System, IBM, Kasenna, Philips, Sun Microsystems participated in Dec, 2000, and later Apple Computer participated as well.

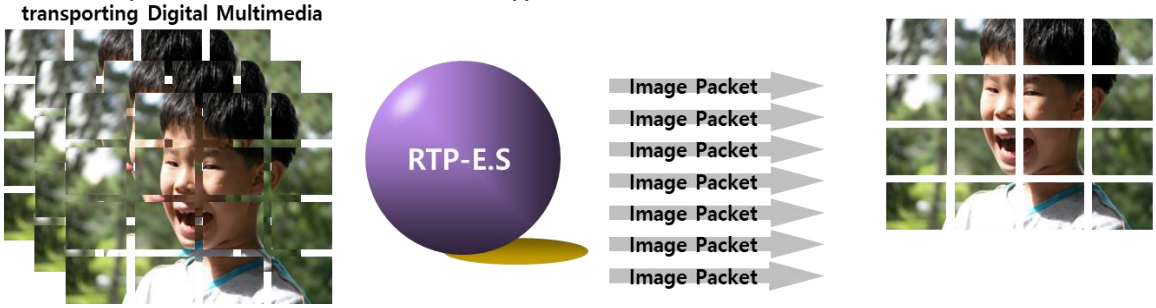
<Specifications of the Internet Streaming Alliance apply to our platform>



• ISMA + Instant-On applies while encoding the Digital Multimedia

• RTP-Elementary Stream applies while transporting Digital Multimedia

• RTP Multiple Port(#6950 ~ #6999) Transmission applies while transporting Digital Multimedia

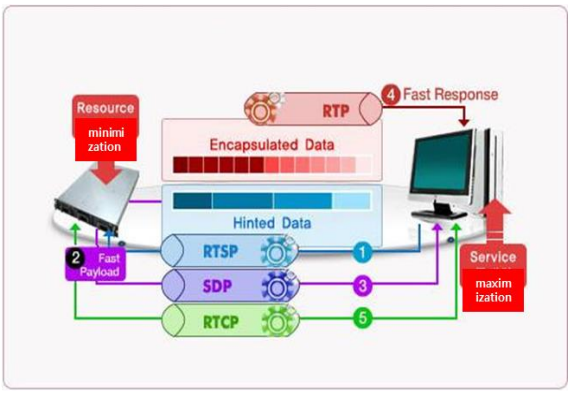


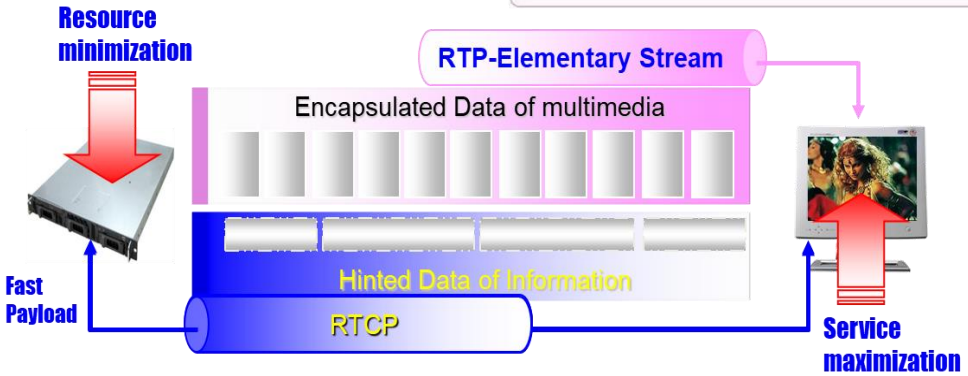
<Instant-on patent technology for need not buffering times >

• Instant-on + RTP-E.S/SDP/RTSP/RTCP applied

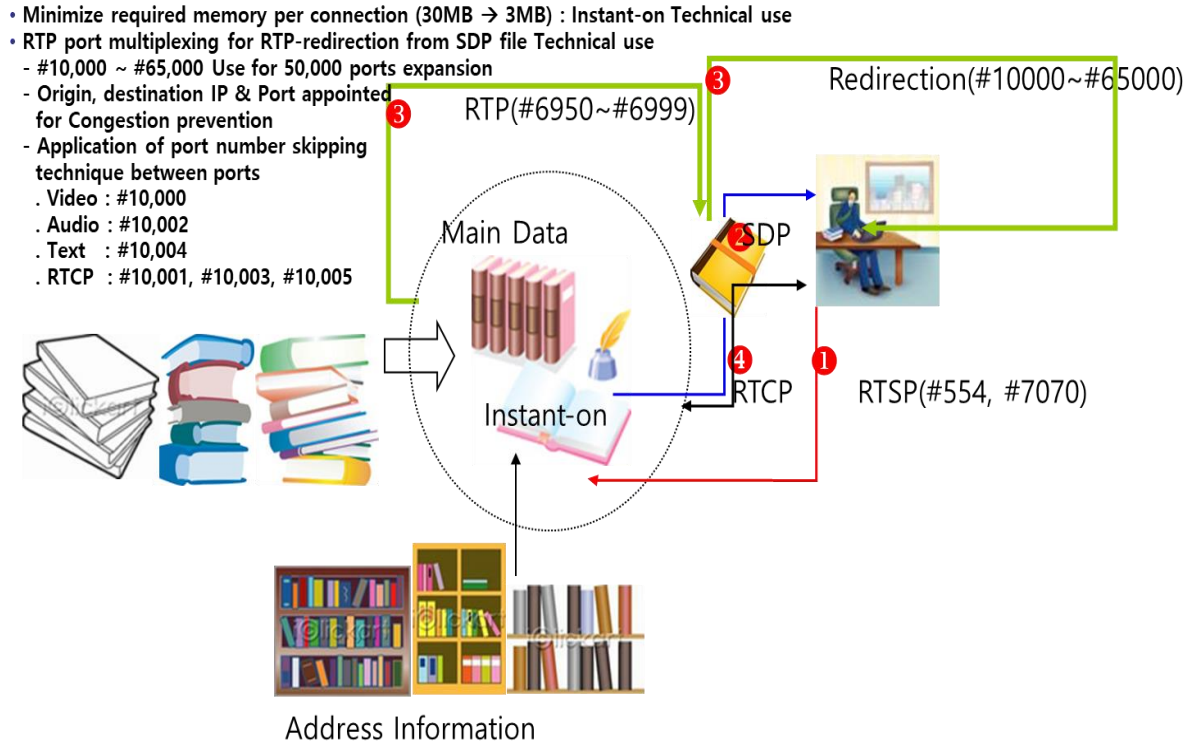
- Real-time Streaming Port : RTSP(#554, #7070)
- Extracts & Applies Multimedia HDD Address : SDP file
- Mass Storage Transport Multi Port : RTP(#6,950 ~ #6,999)
- Interactive Real-Time Control Port : RTCP(#RTP + 1)

• i-frame Skip-Protection skill applied with no additional bandwidth



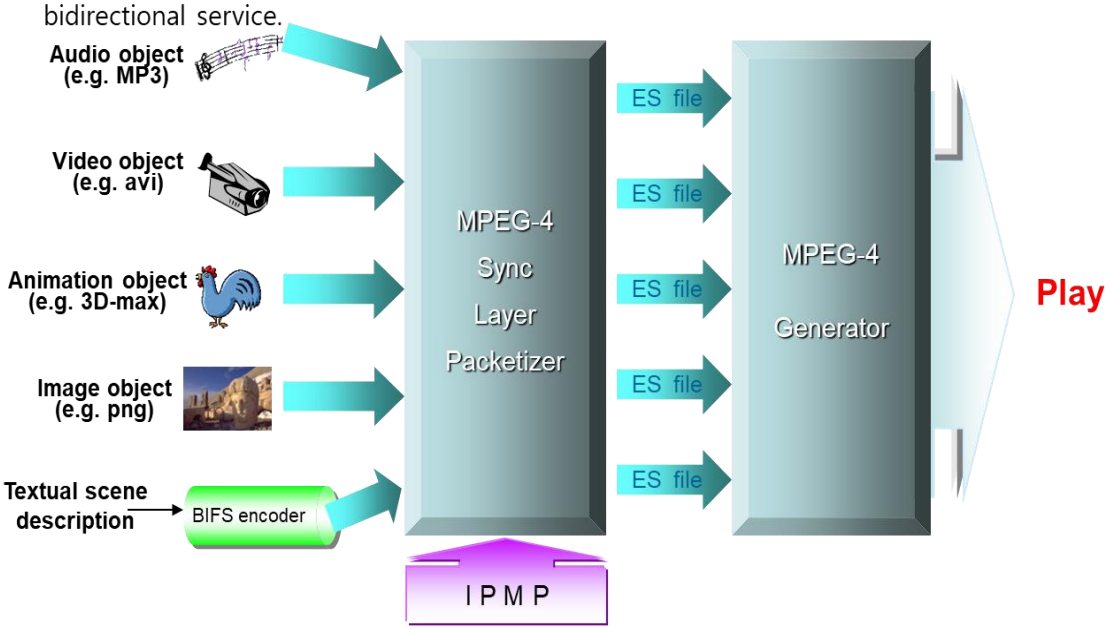


<Skip-Protection patent technology for Jog-shuttle like DVD player>



<RTP-Redirection patent technology for mass access of concurrent users>

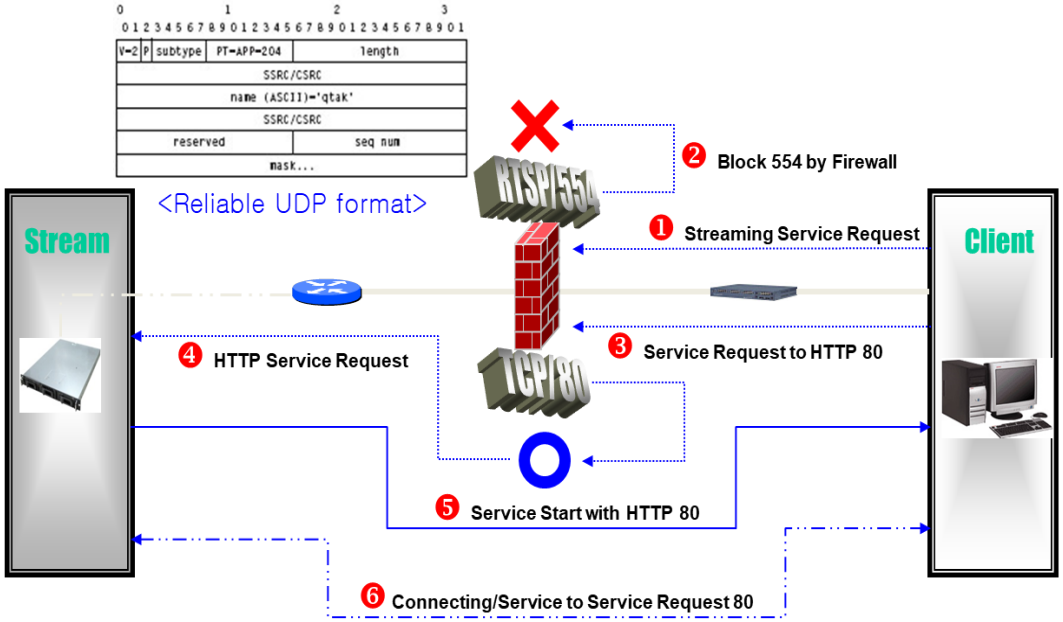
■ E.S? : It is a method of transmitting each element of multimedia through a separate RTP port, which enables more data to be transmitted per unit time at a higher speed than TS (Transport Streaming) that alternately transmits video and audio packets, and object-oriented two-way service It enables to implement and provides various advantages such as reduction of network overhead by not having to create a separate network block for bidirectional service.



<Interactivity Elementary Streaming patent for interactivity TV service>

In addition, our services, which are broadcast on the public Internet to Real Time Streaming Protocol (RTSP) for digital TV-level image quality, quality satisfaction and service satisfaction, have problems that cannot be reached by clients using the router and firewall, as many Internet users connect and use firewalls for security purposes. However, there is nothing in the way of us achieving challenging R&D and technological innovation. Rather, whenever these barriers blocked us, technological innovation took place.

■ Firewall tunneling : RTSP uses 554 and 7070 port but most of client in company are protected by a firewall. The blind spot may be issued because the firewall is basically opened only 80 port so it is essential to adopt Reliable UDP (HTTP Tunneling) Technology.



<Reliable UDP patent technology for Passover firewall & router >

2.5 User Advantage

Based on the innovative Smart IP Cloud TV platform as mentioned earlier, we will provide 6 million university students across Thailand with strong consumption of multimedia content and a strong desire to purchase shopping and generate profits from June 2021, with additional VR/AR convergence on-screen and advertising services starting with **OASIS FARM Service**, including 50 Thai terrestrial broadcasting and Korean terrestrial broadcasting and Korean remote education broadcasting. With our innovative **Smart IP Cloud TV**

Interactivity Service, **every customer is a prosumer**, not a consumer, in a business that extends its services to neighboring countries and around the world.

The University in Thailand, a **remote educational institution**, is enhancing the efficiency of education and the value of schools by receiving free support for Smart IP Cloud TV Platform and VR/AR Convergence Education Broadcasting Studio, which can provide real-time remote education broadcasting with digital TV-level quality and service to each campus and classroom even on the public Internet where speed and quality are not guaranteed. In particular, open universities (with 1 million students) with education centers in each province, including Ramkhamheang University, have solved the costs and inconveniences that professors paid to visit education centers in each province over the weekend.

The **remote education professors** can provide students with education with digital TV-quality services even on the public Internet, where speed and quality are not guaranteed through Smart IP Cloud TV Platform, which enables the production of full HD quality educational content at the level of digital TV even on laptops and the powerful function of VR/AR Convergence Education Studio. In addition, professors will automatically archive these real-time remote educational broadcasts on our Smart IP Cloud TV Platform to compensate 30 percent of the service fees paid by students when they watch them on video on demand, and secure a funding base for better content production.

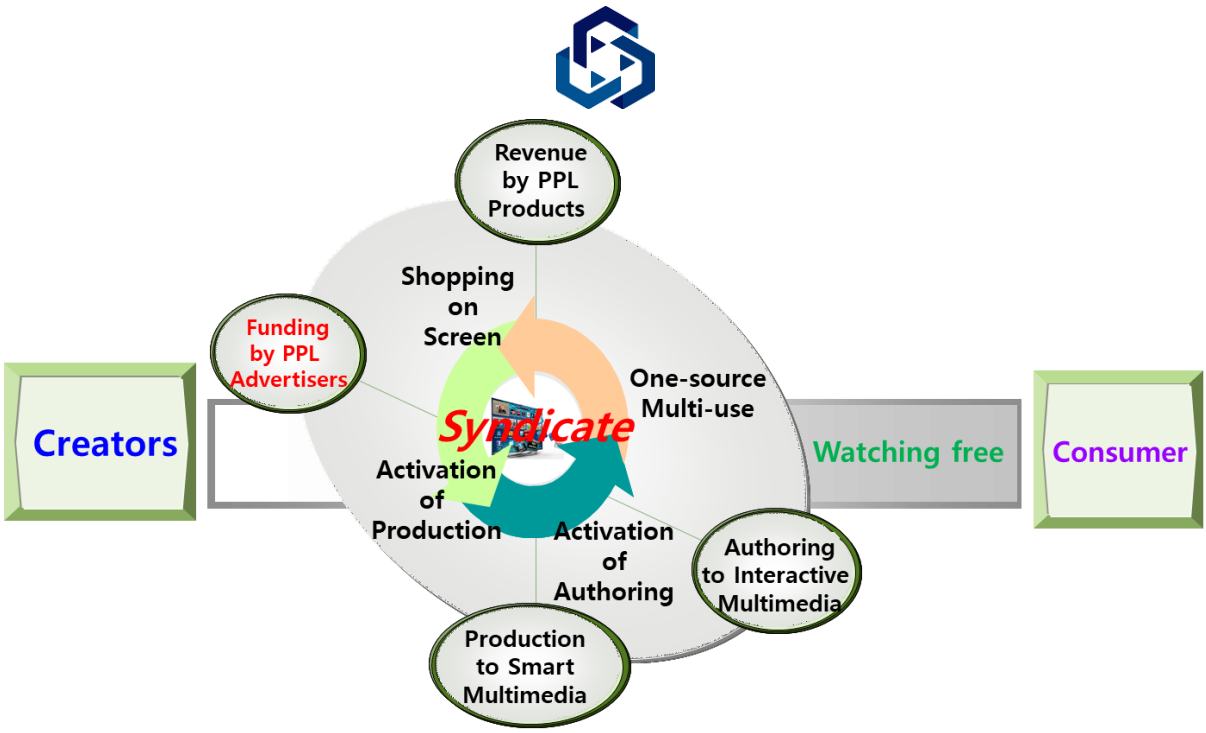
In addition to the benefits of the aforementioned remote education, **students** can use the SNS provided by the OASIS FARM Service to efficiently obtain information needed for college life, enhance communication skills, and generate economic benefits by utilizing services such as used bookstores and job openings provided by the OASIS FARM Service, and receive 30% of the compensation for using the app and Interactive TV on-demand advertising in Korean. One year's tuition and living expenses can be secured during the two-month vacation.

In addition, based on the expertise and capabilities of each individual, the

powerful features of Trinity Studio, where we distribute our own knowledge and capabilities free of charge, and the production of personal broadcasting content with full HD quality at the digital TV level and the Smart IP Cloud TV Platform, provide real-time personal broadcasting at the digital TV level, and at the same time, these personal broadcasting contents can be rewarded by viewers, and our own IP Cloud. They can also be compensated for 30 percent of the advertising fee when offering.

TV broadcasting companies in Thailand are currently in a vicious cycle of failing to secure high-quality broadcasting contents due to falling profitability as more than 50 terrestrial TV operators are unable to provide nationwide services due to the burden of transmission fees paid to cable TV operators, and real-time TV broadcasting with digital TV quality and quality guaranteed even on the public Internet, which is not guaranteed speed and quality using our Smart IP Cloud TV Platform. In addition to increasing advertising revenue by expanding the base of viewers, real-time TV broadcasting contents are automatically saved (archiving) in our Smart IP Cloud TV Platform and provided as Video On Demand, and 30% of the viewer's viewing fee or advertising fee due to watching advertisements are compensated, thereby securing high-quality content and achieving high profits by securing continuous growth engines for services.

Because the current position of **content producers** is an abbreviation of the distribution structure that provides the content to TV broadcasters and brings less than 30% of its revenue, our innovative Smart IP Cloud TV Interactivity Service supports Interactive TV on-demand advertising that is providing a variety of data, including viewer ratings and responses to advertisers of the Product Placement who have invested in content production, as well as generating additional revenue from sales of products of the Product Placement through Interactive TV on-line shopping, On the further, with the provision of Video On Demand service, profits from interactive TV on-demand advertisements and shopping are further maximized, Through this process, high profits are realized by securing continuous growth engines for quality content production.

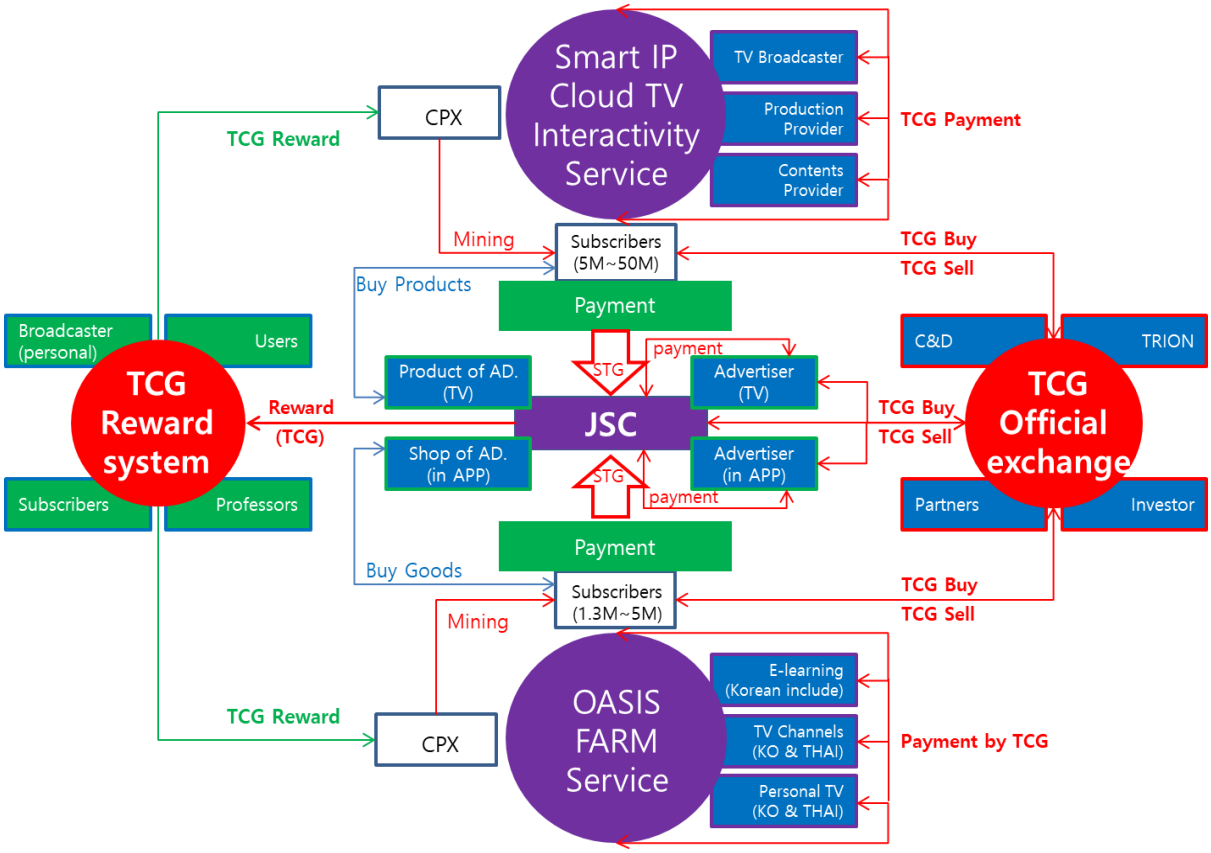


<Achieved Syndicate of digital multimedia contents (digital multimedia ecosystem)>

As **production advertising customer** service providers, they were unable to obtain various information about the audience's age-specific response to the CPX (Cost Per X) type of advertising provided by Internet advertising, regardless of the high cost of TV advertising, services and services, but our innovative Smart IP Cloud TV Interoperability Service can enjoy all the benefits of TV advertising and Internet advertising directly through interactive TV-on-To realize high profits by expanding the sales network, increasing sales and securing continuous growth engines through the implementation of follow-up services.

With **retailers** facing the threat of their own existence due to Internet shopping, which has become commonplace in the busy daily lives of modern people, our innovative Smart IP Cloud TV Interactivity Service helps viewers buy products from direct and indirect advertisements while watching TV through Interactive TV on-line shopping. If a viewer chooses to purchase a product, the customer not only delivers the product on the same day from the viewer's neighborhood shopping mall, but also presents the various styles, colors, and sizes of related products to the buyer, thereby securing a continuous growth engine such as securing new customers through the complete pre-service and post-service of customer satisfaction that cannot be realized.

Service users are no longer just TV viewers. Our innovative Smart IP Cloud TV Interactivity Service is a pioneering service of the Fourth Industrial Revolution and upgrades TV viewers who have been consumers to Prosumers. Our service users receive 30 percent of their advertising fees as compensation while watching interactive TV commercials, while enjoying all digital multimedia culture, and as a **private broadcaster**, compensation from viewers and advertising revenue exposed to their broadcasts will add to their lives' affluence and relaxation.



<Smart IP Cloud TV Interactivity Service & TCG ecosystem>

While **Internet operators** are investing heavily in upgrading the Internet, subscribers are not easily choosing an upgraded service with Korean subscribers. This is because the Internet services they are receiving are not too difficult to use SNS, and the quality of digital multimedia services such as YouTube and Netflix cannot be satisfied by waiting 10 to 15 seconds for buffering, even if they use the upgraded Internet service, even if they wait for 10 to 15 seconds for buffering at the digital TV level, or because transmission is repeatedly interrupted

at intervals of tens of minutes during viewing. However, our innovative technology, Smart IP Cloud TV Platform technology, meets the quality and service of digital TV levels even in the Internet environment as mentioned earlier, facilitating viewers' upgrade of Internet services and improving Internet operators' profits. By receiving 30% of the viewer fee through the installation and maintenance service of the domestic set-top box, we can not only provide full HD but also ultra-high-definition services such as 2K and 4K by creating a virtuous cycle ecosystem that can be invested to improve the level of the Internet and attracting investment from Internet service providers. In addition, it will provide a continuous investment environment for Internet operators and a high growth engine.

Based on these investments, we can ensure the future of **developing countries** and people, especially our own Smart IP Cloud TV Interactivity Service, a convergence service of broadcasting and information and communication that is not available in any developed country around the world, providing an opportunity to share the experience of the Fourth Industrial Revolution, thereby realizing the human life of the world through shared growth.

3. Market Analysis

3.1 Thailand

The broadcasting market started with 25 digital terrestrial channels in 2014, and is merged in 2019 into 15 channels, since there are various terrestrial channels, the TV market in Thailand is mainly watching terrestrial channels, and in August 2019, the current digital terrestrial channel viewing rate has risen to 59% (professional source, Thai broadcasting market trend, July 2019 issue, published by Korea Creative Content Agency). Also, the rapid growth of the OTT market is remarkable, the Thai OTT market increased by 24% year-on-year to 94 million dollars (120 billion won) in 2019, and is expected to double to **188 million dollars in 2024(220 billion won)**. (Professional source NBTC (Thailand Broadcasting and Communications Commission), announced on June 23, 2020) In

addition, the market size of TV broadcasting in Thailand was 254 million dollars (300 billion won) in 2019, and is expected to reach **293 million dollars (350 billion won) in 2022** (Professional Source, Thailand Broadcasting Market Trend 2019 July issue, published by Korea Creative Content Agency).

Unit: million USD

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
TV View fee	6	10	14	9	10	12	13	14	15	16
TV Another	377	439	549	413	208	224	241	257	267	276
	383	449	563	422	218	235	254	271	283	293

Source : PwC Global entertainment & media outlook 2018~2022 report

Source : report of the PwC Global entertainment & media outlook 2018~2022

< Thailand TV market size and forecast >

Unit: million dollars

구분	2010	2011	2012	2013	2014p	2015	2016	2017	2018	2019	2014-19 CAGR 247)
Publishing	2,412	2,488	2,559	2,660	2,654	2,672	2,708	2,749	2,802	2,861	1.5%
manga	20	23	23	20	20	19	19	19	18	18	-2.1%
music	304	304	302	287	279	273	269	268	269	268	-0.8%
Game	241	288	341	388	430	468	505	541	576	612	7.3%
movie	349	411	433	425	429	454	469	485	501	517	3.8%
animation	49	63	74	80	88	101	114	128	132	137	9.2%
broadcast	2,377	2,619	2,846	2,915	3,135	3,343	3,567	3,801	4,014	4,253	6.3%
Advertising	2,926	3,185	3,430	3,482	3,531	3,644	3,774	3,920	4,052	4,207	3.6%
Character license	21	19	20	21	22	23	23	24	25	26	3.2%
Knowledge information	1,245	1,440	1,678	1,962	2,155	2,411	2,687	2,985	3,316	3,701	11.4%
Arithmetic sum	9,944	10,840	11,706	12,240	12,743	13,408	14,135	14,920	15,705	16,600	5.4%
Sum	7,062	7,707	8,334	8,831	9,301	9,871	10,486	11,150	11,837	12,607	6.3%

< Thailand Contents Market Size, Source: PWC, KOCCA>

In the **advertising market**, the size of the TV advertising market in Thailand was 2,088 billion dollars (2.5 trillion won) in 2019, and advertisements on terrestrial channels are overwhelmingly large compared to pay-per-views such as cable and satellite, accounting for more than 90% of the total TV advertisement cost, and expected to reach **$2.44 billion (2.85 trillion won) in 2022**.

Unit: million dollars

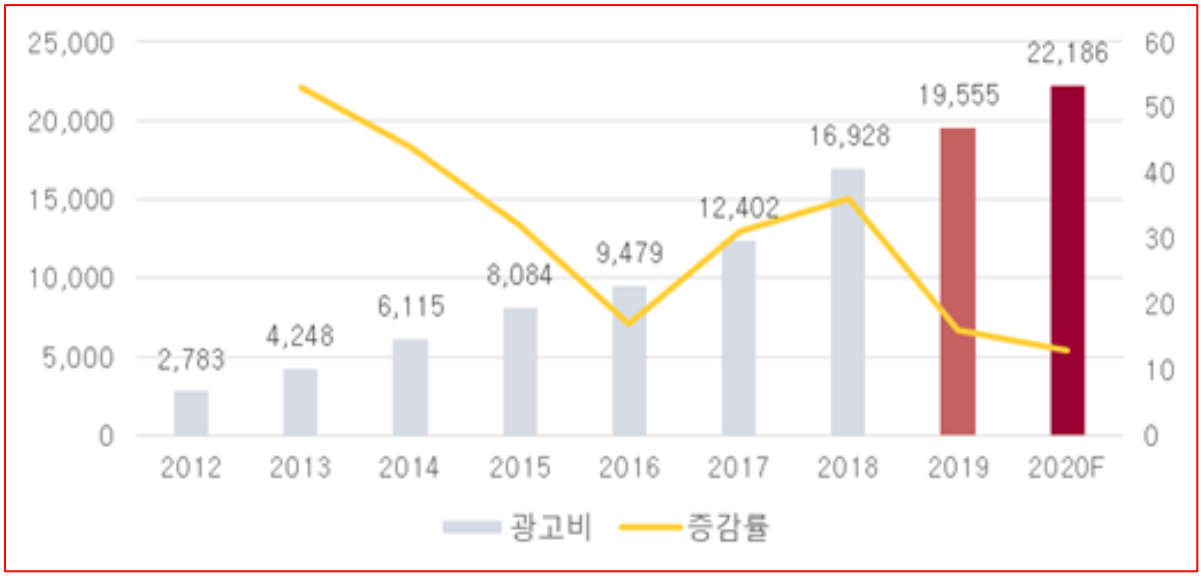
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Paid Channel	137	162	184	144	156	177	198	218	237	260
Terrestrial channel	1870	1937	2006	1712	1752	1830	1890	1982	2048	2143
	2007	2098	2190	1856	1908	2007	2088	2200	2285	2404

Source : PwC Global entertainment & media outlook 2018~2022 report

Source : PwC Global entertainment & media outlook 2018~2022 보고서

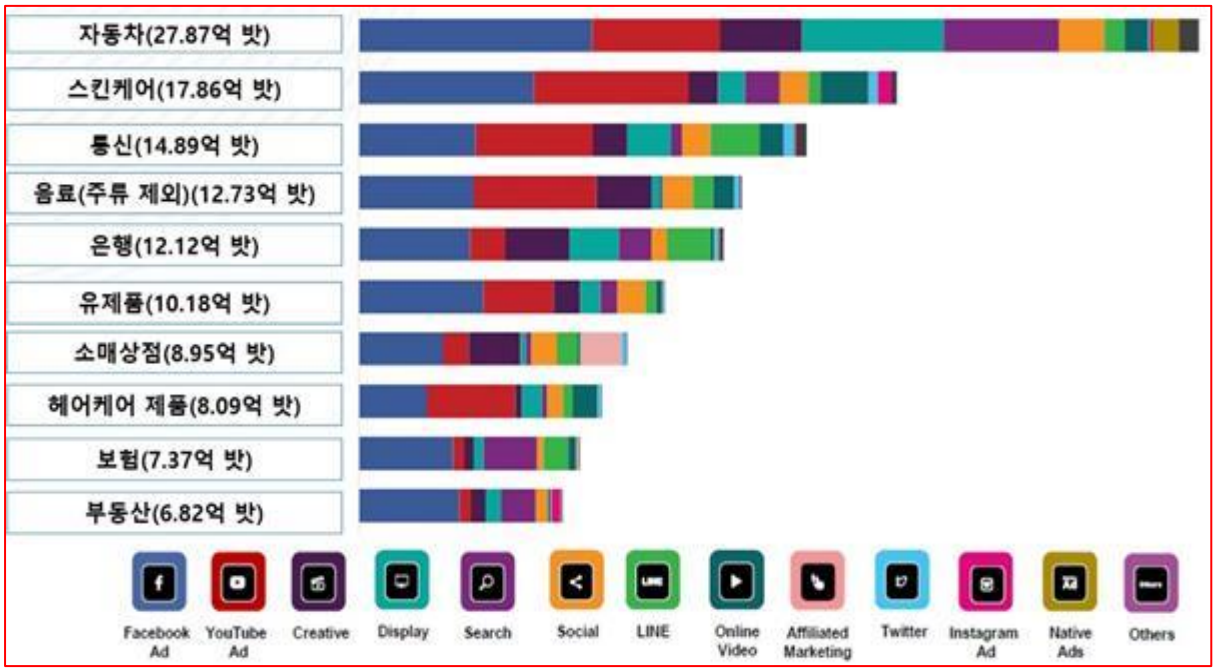
< Thai TV Advertising Market Size and forecast>

Unit million Baht



Source : Digital Advertising Association Thailand (DAAT), Kantar Insights Thailand

< Thailand Digital Advertising Market Size and forecast>

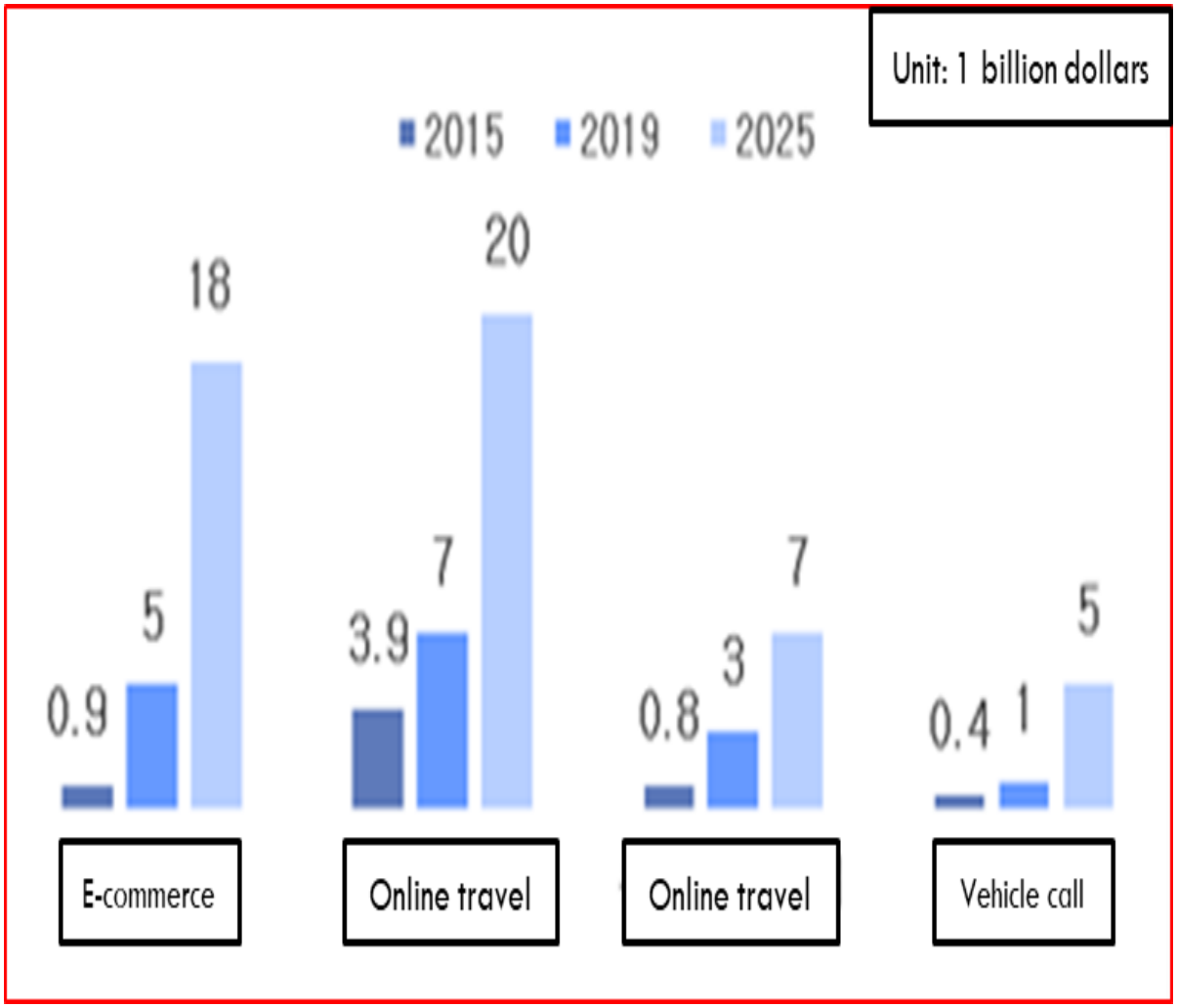


Source : DAAT, Kantar Insights Thailand

<Thailand's Top 10 Digital Advertising Expenses and Platforms (as of 2019)>

The scale of the digital advertising market in Thailand is expected to exceed 19.5 billion baht (650 million dollars, 720 billion won) in 2019 and **22.2 billion baht (734 million dollars, 820 billion won) in 2020**. The three major sectors in Thailand with the largest digital advertising expenditures are automobiles, skin care, and mobile communications, while Facebook and YouTube occupy half of the digital advertising platforms, as of **2020**, the total size of the advertising market is **$2,944 million (3.26 trillion)**.

The **e-commerce market** is rapidly expanding, centering on B2C and B2B, and the size of the Thai e-commerce market from 900 million dollars as of 2015 has increased more than five times to 5 billion dollars (5.8 trillion won) in 2019 and is expected to reach **18 billion dollars (20.8 trillion won) in 2024**. The five major trends in the Thai e-commerce market are revitalization of e-marketplaces, rapid increase in registration of reverse direct products, increase in sales due to Corona 19, activation of live commerce, and increase in official brand registration. (Professional Source: Trade Economy News (http:/ /www.tradetimes.co.kr), July 8, 2020)



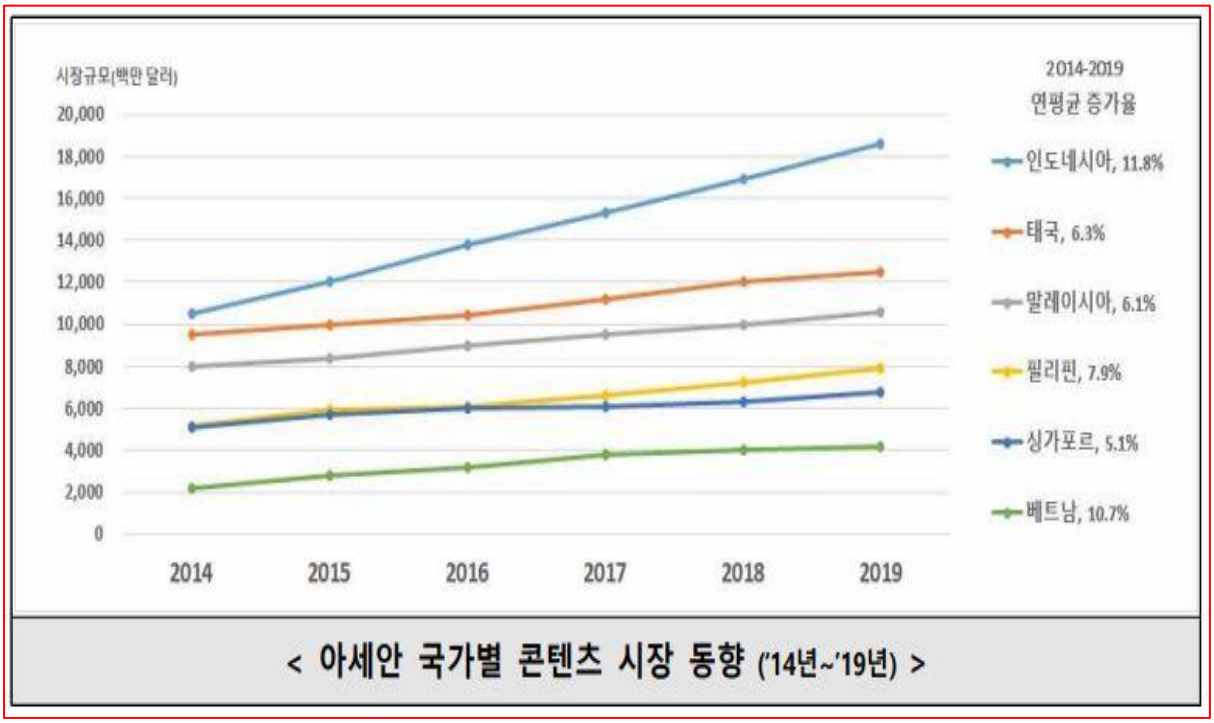
Source : Trade Economy Newspaper (http://www.tradetimes.co.kr), 7, AUG. 2020

< Thailand e-commerce market size and market size and forecast by sector >

3.2 ASEAN

The **broadcasting market (contents)** is focusing on fostering and expanding the digital, convergence content industry by selecting 'New Media and Content' as one of the 7 core strategies of the 'ASEAN ICT Master Plan 2020'. The content market in ASEAN countries is showing a high growth rate of over 8% per year from 2014 to 19, and the market size is forming in the order of publishing, broadcasting, and knowledge information. As a result, the size of the content market in the six major ASEAN countries (Indonesia, Thailand, Vietnam, Malaysia, Singapore, and the Philippines) was estimated at $49.5 billion (55.23 trillion won) in 2016, and is expected to grow by about 10% (**55.4 billion dollars, 60.8 trillion**

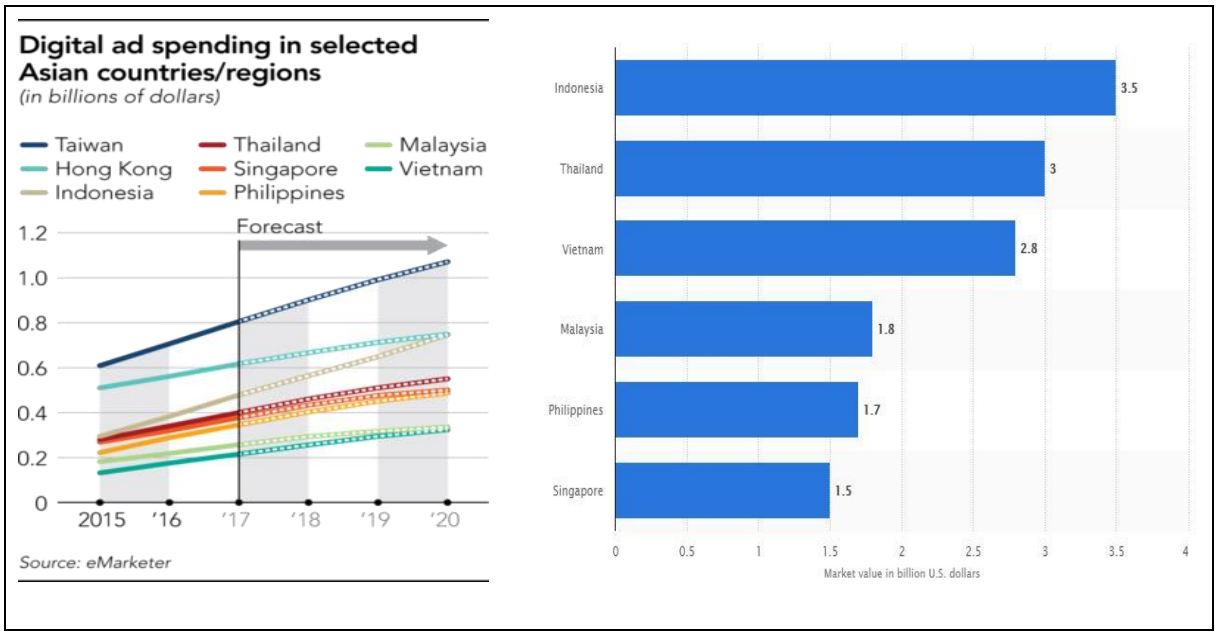
won) by **2021**. (Professional Source: Contents Market Trends in ASEAN Countries and Content Partnership Business Introduction, April 12, 2019, Korea Creative Content Agency).



Source : Korea Creative Content Agency, KOTRA 2018

< Content market trends by ASEAN country (2014 ~ 2019 year)>

Globally renowned e-Marketer in the **advertising market** predicted the size of ASEAN's advertising market in 2020 to be 40.5 billion dollars (4,4889 billion dollars) including Taiwan 1 billion dollars, Hong Kong 700 million dollars, Indonesia 500 million dollars, Thailand 500 million dollars, Singapore 470 million dollars, Philippines 450 million dollars, Vietnam 2.8 billion dollars, but STATISTA's **2019** ASEAN digital advertising market performance announced in 2020 was **$14.3 billion (15.85 trillion won)** including $3.5 billion in Indonesia, $3 billion in Thailand, $2.8 billion in Vietnam, $1.8 billion in Malaysia, $1.7 billion in the Philippines, and $1.5 billion in Singapore. It recorded more than 3.5 times growth than expected, which proves that ASEAN's advertising market continues to grow tremendously.



< ASEAN Digital Advertising Market Size by Country & Performance in 2019>

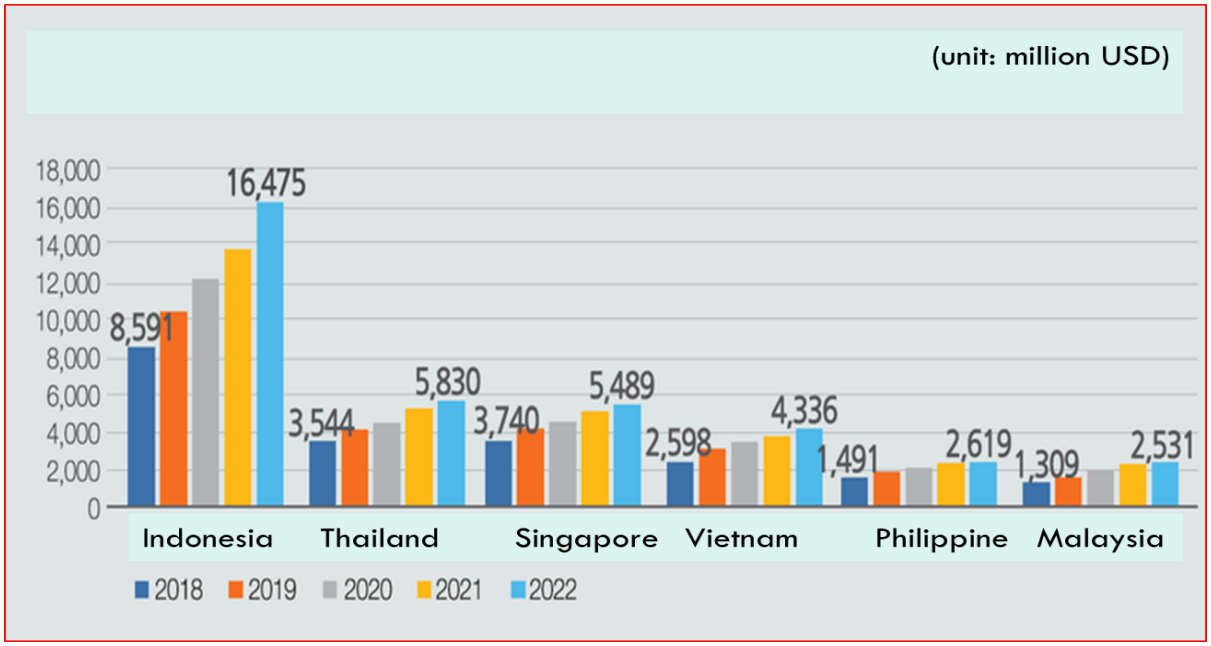
The **e-commerce market** is growing the fastest compared to other retail channels, and in the last 5 years, sales increased by 164.5% (2014 sales of $5.29 billion (6,1,255 won), 2018 sales of $14.15 billion (16) Trillion won) was recorded (professional source: Euro monitor). It continues to grow steadily every year and is expected to reach **$37.28 billion (41.35 trillion won) by 2022**.

Unit: Million USD, %)

National	2014	2015	2016	2017	2018	Increase 5 year decrease rate	2018 rate
Total	5,298	6,748	8,496	10,833	14,015	164.5	100.0
Indonesia	1,455	1,978	2,543	3,307	4,360	199.6	31.1
Thailand	1,380	1,566	1,801	2,107	2,479	79.6	17.7
Vietnam	586	863	1,282	1,703	2,127	262.9	15.2
Singapore	910	1,038	1,224	1,372	1,992	119	14.2
Malaysia	519	737	953	1,434	1,956	276.9	14.0
Philippine	448	566	693	910	1,101	145.8	7.9

* 주 1: 1IDR - 0.000071달러 기준(2019.07.01.)
* 주 2: 1THB - 0.033달러 기준(2019.07.01.)
* 주 3: 1VND - 0.000043달러 기준(2019.07.01.)
* 주 4: 1SGD - 0.74달러 기준(2019.07.01.)
* 주 5: 1MYR - 0.24달러 기준(2019.07.01.)
* 주 6: 1PHP - 0.02달러 기준(2019.07.01.)
* 주 7: 1달러 - 1156.20원 기준(2019.07.01.)
* 출처: 유로모니터

<ASEAN e-commerce market performance by country Source: Euro Monitor>



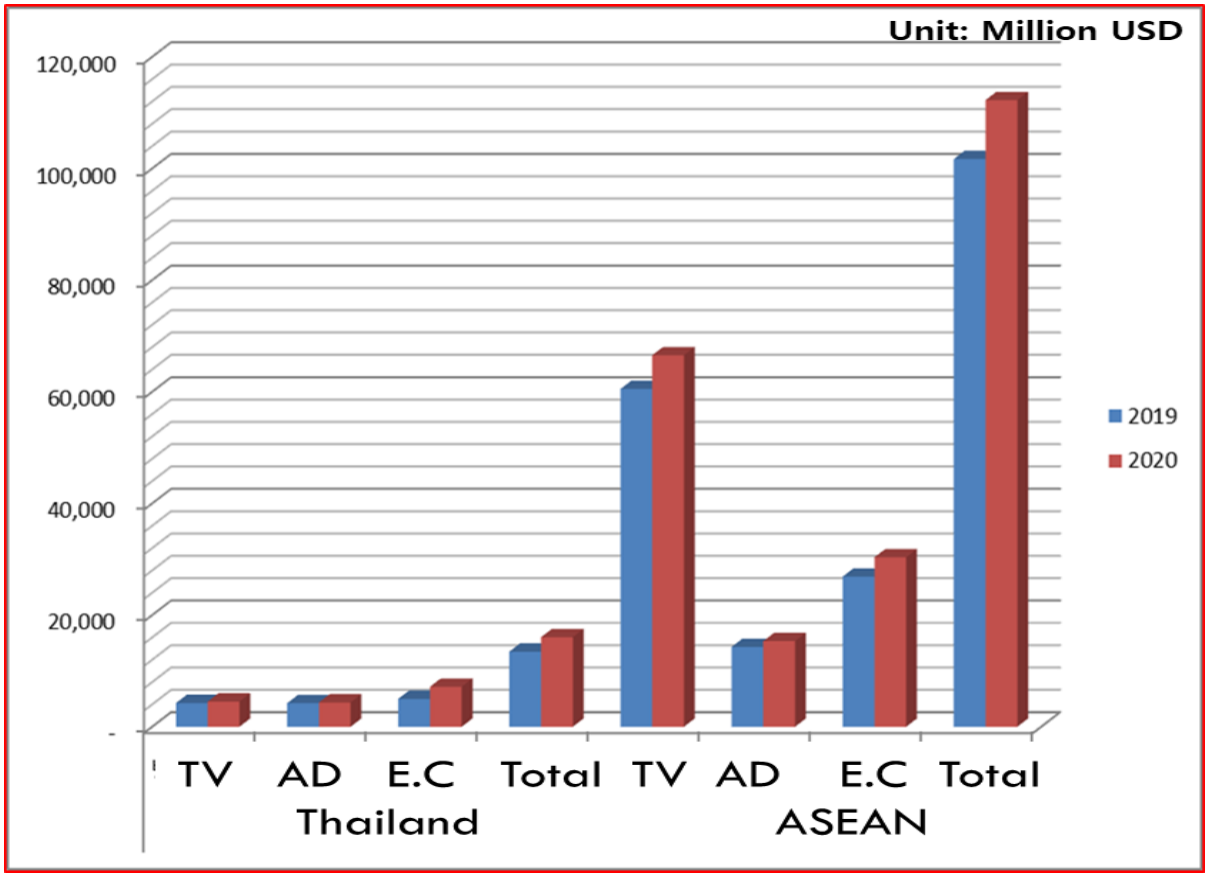
< ASEAN e-commerce market size and forecast by country Source: Statista >

3.3 Market Synthesis

In the aforementioned market analysis data, ASEAN member countries and three countries of the Indochina Peninsula, Myanmar, Laos, and Cambodia, are excluded, these countries are still in the beginning stage of the broadcasting, telecommunications and e-commerce markets, and the market size is due to the unsatisfactory economical scale, but in light of the high-speed growth characteristics of emerging countries, by the time our service started in 2021 and serviced all over Thailand through set-top boxes and smart TVs distributed to homes in 2023, these countries will also stand as our absolute customers.

When considering the aforementioned market analysis data, Thailand's broadcasting market in 2019 grew by 6.3% from $4.25 billion to **$4.521 billion(4.83 trillion won)** in 2020, and the advertising market grew in 2019 grew by 3.6% from $4.27 billion in 2019 to **$4.358 billion(4.83 trillion won)** in 2020. It is analyzed that the broadcasting and advertisement markets steadily grow together with the achievement of growth. On the other hand, the e-commerce market continues to grow tremendously by 43.4%, from $5 billion in 2019 to **$7.17 billion (7,946 billion won)** in 2020.

Analyzing the overall market situation of ASEAN countries, the broadcasting market in 2019 is growing 10% from $60.5 billion in 2019 to **$66.5 billion in 2020 (73.75 trillion won)**, and the advertising market is also growing at a high speed from $14.3 billion in 2019 to $14.3 billion in 2020. E-commerce market reached **$15.34 billion (17 trillion won)** with a high growth of 7.3%, and it can be seen that the e-commerce market is growing rapidly from $26.9 billion in 2019 to **$33.6 billion (33.6 trillion won) in 2020**.



<Analysis of broadcasting, advertising and e-commerce markets in Thai & ASEAN>

3.4 Competition Analysis

In 2014, Netflix began accelerating its global business after capturing the U.S. OTT market, and ASEAN's leading telecommunications companies began preparing their own OTT services to respond. And unfortunately, in 2015, HOOQ led by Singtel in Singapore, Viu led by PCCW in Hong Kong, and iflix, made by Catcha group in Malaysia, were launched simultaneously to compete in good

faith to dominate the Southeast Asian market. Surprisingly, Hook, who seemed to have the strongest allies, was first eliminated from the competition, and then iFlix hurried to sell it under pressure to repay convertible bonds, and eventually fell into the arms of Tencent in China.

Division	HOOQ 훅(HOOQ)	iflix 아이플릭스(iflix)	viu 뷰(Viu)
Overview	OTT Service of JVC with SingTel, Sony, W.B	OTT Service of Malaysia	OTT Service of PCCCW In Hong Kong
Viewer/Month	-	2,100 million users	41.40 million users
Price (Indonesia)	- HOOQ subscription: $5 USD per Month Don't service of the TV channels	$3 USD per Month Don't service of the TV channels	$2 USD per Month Don't service of the TV channels
Characteristic	Hollywood contents	A few kinds contents, Chipper	Korean contents provide earlier
Remark	Bought by Coopang in Korea July, 2020	Bought by Tintento in China Jun, 2020	-

< Comparison of OTT service competitors' services in ASEAN countries >

The biggest reason for this change is, of course, the entry of global operators (Netflix, HBO, Amazon Prime Video) into the ASEAN market and expanding their market share, but it cannot be ignored because each operator has not completed a stable profit model (BM) in the long term.

Hook was launched as a joint venture, invested by Sony Pictures and Warner Brothers, a large studio of Singtel's leading Lohan, and the first competitive advantage was Singtel's sales network shareholders' appreciation and movie TV series developed in ASEAN. Although customers browse wallets and expect to spend blockbusters, the situation continues to be unpredictable due to the **absence of local content** and a **flat monthly fee tailored to the income level of Singapore**, which has high GDP in ASEAN. Recognizing this situation, we started to provide regional-based original content creation and advertisement-based free services, but withdrew in time and failed to secure additional investment costs, we will liquidate the joint venture and provide services in March 2020.

In the early days of the business, **iflix** completed a revenue model of providing services to telecom operators at wholesale prices. Telecom companies pay attention to OTT because of the increase in mobile traffic use, the change is to change (upsell) products to high-priced plans, or to prevent (hold) churn of high-priced plans, and iflix, an independent system that has no interest with other carriers, knows that they do so. Was the most partner you could ever have. iflix has grown in size by entering more than 20 Nulls over the years by copying and pasting the profit model for the following telecommunications companies, and from investors paying attention to this growth, $350 million (about 420 billion won). It has been dreaming of the birth of all media unicorns to be listed on the Australian stock market in 2019 by attracting more than KRW) investment. Demand for new growth engines is increasing as expansion into new countries is stagnant. Iflix launches 'iflix free', an ad-based free service in 2018. Iflix wanted to get a higher valuation at the time of public offering (IPO) based on expanding its free service more than a new revenue stream business through advertising. As much as the increasing profits, the investment has been exhausted at a rapid pace, but it is decided to postpone more listings after listing. In early 2020, the pandemic caused by Covid-19 wiped out all these expectations at once, and as the deadline for repayment of convertible bonds of $47.5 million (approximately 57 billion won) approaches, in the end the company is far lower than originally expected. Selling to China's Tencent at the price is very unfortunate.

From the beginning, **Viu** has wisely overcome the barriers to low media consumption spending in Southeast Asia through a revenue model that provides services for free and then switches subscriptions to paid products. If you upgrade from an ad-based free 'Free Viu' to a paid product, 'Viu Premium', the service not only allows you to watch VOD for 8 hours after airing on TV (advertisement takes 3 hours after paying), internal download and full access to TV. You can receive support for listening in HD quality. The proportion of subscribers to paid products has gradually increased, and in recent years, the proportion of advertisements and subscription fees for paid products has reached almost 5:5. It

is nagging to say how much the increase in paid products will help in the recent downturn in the global advertising market. Along with the revenue model, Viu's secret to success is wise content sourcing and production. Viu recognized Hallyu content at its core from the beginning of its launch and signed a Southeast Asian copyright contract with three terrestrial broadcasters to take the monopoly. Particularly noteworthy is that it did not increase the cost burden as it brought the content monopoly and shortened the validity period of the contract. Based on Hallyu content, which is welcomed in the Asian market, advertisement-based free is collected, and the line expansion cycle has created a cycle of increasing advertising inventory and subscribers to paid products. This will prepare you for the competition with the only surviving global company through Viu's 2015 OTT Southeast Succeeded Viu, which succeeded in generating the resources to create original content.

You can recognize two changes in the Southeast Asian OTT market in one slide contained in the 2019 Annual Report of Hong Kong PCCW.

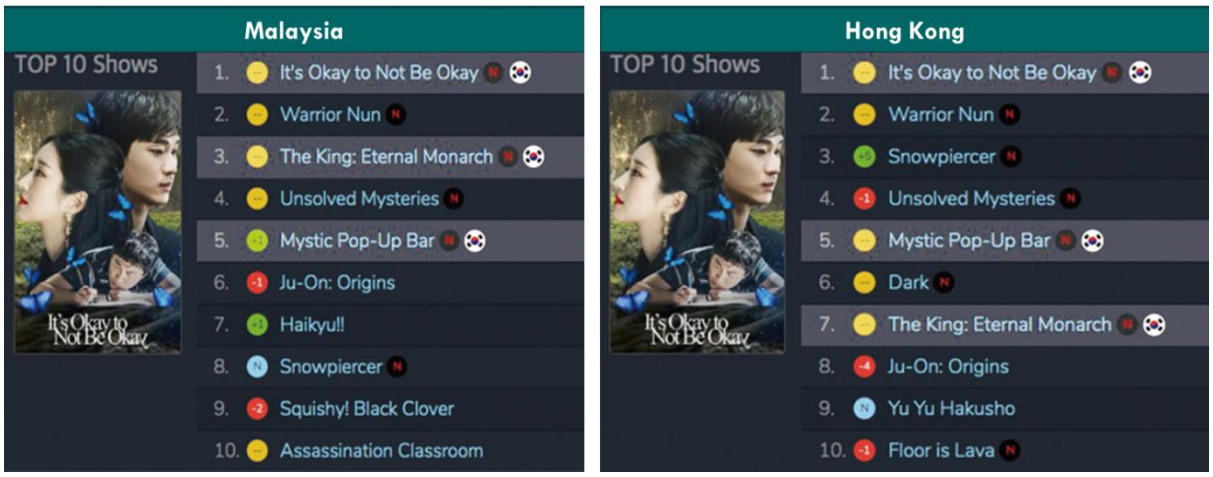
Rank	Income in APP.	MAU	Time	Watching time per user
1	Netflix	Netflix	Netflix	Netflix
2	Viu	Viu	Viu	Viu
3	WeTV	iflix	iWant TV	Youtube Kids
4	V-Live Broadcasting	TruelD	Youtube Kids	iWant TV
5	MONOMAXXX	iWant TV	WeTV	AIS PLAY
6	TruelD	LINE TV	iflix	HOOQ
7	HBO GO Singapore	Google Play Movies and TV	TruelD	iflix
8	iflix	YouTube Kids	Twitch	TruelD
9	HOOQ	HOOQ	HOOQ	LINE TV
10	iQIYI	AIS PLAY	LINE TV	Google Play Movies and TV

Source: PCCW 2019 Annual Results, 13, FEB. 2020.

< ASEAN countries' OTT service market share indicators >

First, Netflix ranked first in the ASEAN OTT market, and I think I will explain about the company. The content that was not yet powerful does not include Hallyu content from the second half of 2019, and the top 10 content of the

current ASEAN event is definitely Hallyu content. Still, in the Asia Pacific market (APAC), Netflix estimates all rates at 10% and only offsets the price resistance (if monthly subscriptions are discounted or Southeast Asian income levels rise), it could take a far superior position than it is now.



Source: www.flixpatrol.com.

< Top 10 Netflix in Malaysia and Hong Kong (Korean content is popular)>

Second, Chinese services such as WeTV and iQIYI are expanding. WeTV (global version of Tencent Video) and Baidu's iQIYI, which had been operating only in China due to proposals and various regulations, leading the global OTT market together with the United States, aims to actively promote global business in ASEAN. In ASEAN, Chinese-speaking Chinese is widespread, and Chinese entry is actively progressing through trade strategies such as one-to-one (一帶一路) recently, and demand for OTT centered on Chinese content is expected to increase. In this context, Tencent acquired iFlix for the rapid expansion of Wi TV service.

In the future, competition between ASEAN OTT services will be seen in Netflix, which will be much more intense than it is now, and it seems clear that Hallyu content will act as a key element of the competition. As a result, it is likely that a time of agony will come to businesses that produce and distribute Hallyu contents. Various tours have been interested in the ASEAN OTT market and have made various attempts, but it was a repository that achieved various desired

outcomes. Therefore, it is possible to consider the discussion on OTT integration, which has become a recent issue, from the perspective of global expansion. Still, in Korea, many OTT services are taking monthly flat rate as a profit model. There is no big issue in a time when various services grow together. Various global OTT companies will enter Korea as well. Already in the U.S., Hulu, Peacock, etc. have seen a profit model that combines advertising and a monthly amount, and as the subscribers of OTT expand and the competition in Southeast Asia as seen earlier intensifies, the structure that is advantageous for the long-term survival of entrepreneurs with an advertisement-based profit model prepared can be seen.

It is suggested that from now on, a real-time plan to evolve from a free service that focuses on inducing OTT service experience to an advertisement-based service based on the current channel. (Professional Source: ASEAN OTT Market Changes and Implications, S.G IM)

On May 18, 2020, on the first day of online classes held in Thailand, satellite TV DLTV (channel 1 to 15) and two types of internet distance education application platforms were all down. All services including education and TV channels were unavailable.

Children waiting for online learning crashes every system

Source: https://www.komchadluek.net/

< All systems for distance education in Thailand collapse >

Thailand's NBTC has approved a set of training channels for 17 programs classified as channels 37-53, which air from 18 May 2020 to 30 June 2020. However, when the service was started as specified, all channels and applications below did not work properly.

ชั้น	KU-Band (จานทึบ)	ช่องสัญญาณ จานทึบ	ช่องสัญญาณ ดิจิตอลทีวี	C-Band (จานตะแกรง)	ช่องสัญญาณ AIS
อ.2	ช่อง 187	ช่อง 196	ช่อง 38	ช่อง 186	ช่อง 710
อ.3	ช่อง 188	ช่อง 197	ช่อง 39	ช่อง 187	ช่อง 711
ป.1	ช่อง 189	ช่อง 186	ช่อง 40	ช่อง 188	ช่อง 700
ป.2	ช่อง 190	ช่อง 187	ช่อง 41	ช่อง 189	ช่อง 701
ป.3	ช่อง 191	ช่อง 188	ช่อง 42	ช่อง 190	ช่อง 702
ป.4	ช่อง 192	ช่อง 189	ช่อง 43	ช่อง 191	ช่อง 703
ป.5	ช่อง 193	ช่อง 190	ช่อง 44	ช่อง 192	ช่อง 704
ป.6	ช่อง 194	ช่อง 191	ช่อง 45	ช่อง 193	ช่อง 705
ม.1	ช่อง 195	ช่อง 192	ช่อง 46	ช่อง 194	ช่อง 706
ม.2	ช่อง 196	ช่อง 193	ช่อง 47	ช่อง 195	ช่อง 707
ม.3	ช่อง 197	ช่อง 194	ช่อง 48	ช่อง 196	ช่อง 708

Source: https://www.komchadluek.net/

< Distance education channel approved by the NBTC of Thailand>

4. Business Plan

4.1 Service Provided

Starting from Thailand, ASEAN will expand OTT services to the world. Netflix, which ranked No. 1 in the ASEAN OTT market, cannot provide a real-time TV

service with satisfactory service that supports instant viewing without the need for digital TV quality and quality satisfaction and buffering waiting time due to the poor Internet environment in Thailand.

However, our innovative technology can provide real-time TV service with service satisfaction that provides channel switching without buffering latency, as well as satisfaction of digital TV quality and even in Myanmar, Laos, Cambodia, etc., where the Internet environment is worse than Thailand. As in the case of Korea, it provides real-time TV viewing that satisfies the quality, quality and service of digital TV even at a speed of 200 km/h even when using all means of transportation that do not provide internet access service inside public transportation.

< OTT service: real-time transmission of Thai terrestrial TV channels >

In the environment of terrestrial broadcasting in Thailand, we are not obligated to pay for content usage in retransmission of terrestrial broadcasting, but rather, we can charge a fee for transmission, and due to the various terrestrial broadcasting channels, Thai TV centered on terrestrial channel viewing. In the broadcasting market, no one can deny the fact that our service has secured great competitiveness.

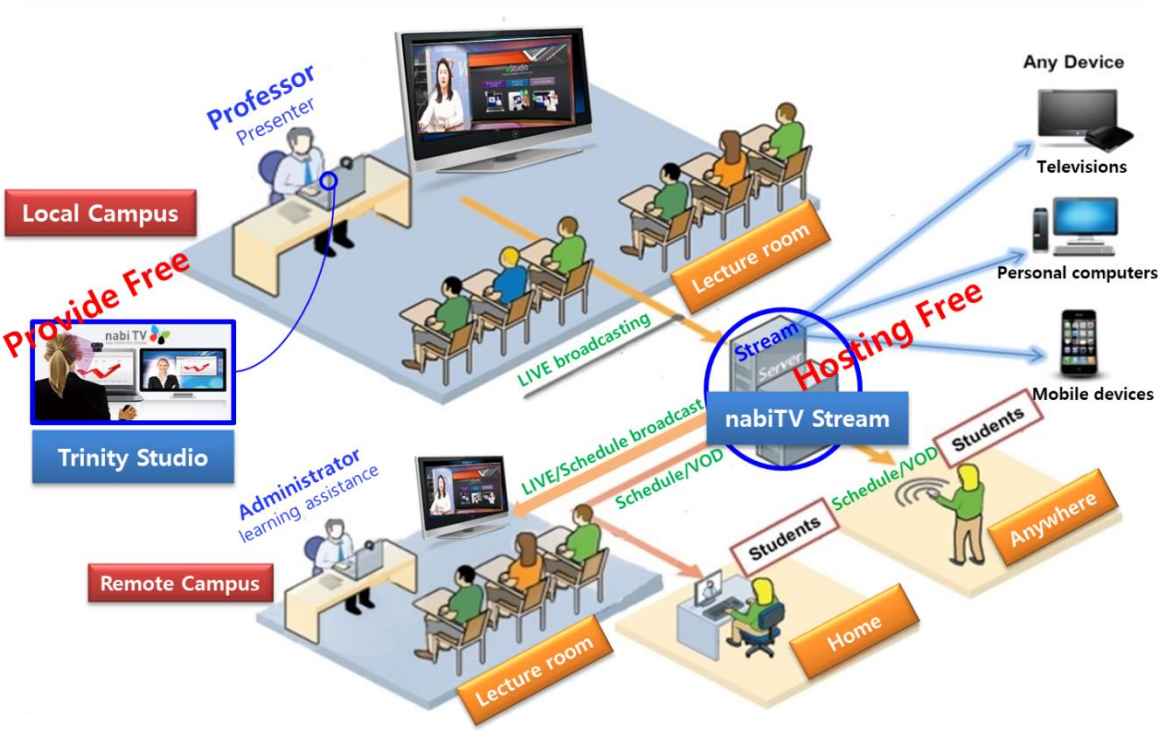
Our innovative technology realizes real-time TV transmission that satisfies the quality and service of digital TV even on the public Internet network. Therefore, we realize real-time transmission of Korean terrestrial broadcasting at low cost with our service platform built in Thailand in Korea.

< OTT service: real-time transmission of Korean terrestrial TV channels >

This transmission of terrestrial broadcasting does not require separate consultation with each broadcasting station, and there is no need to pay for content. The fact that the top 10 contents in the ASEAN OTT market is the Korean Wave means that our service has already secured great competitiveness.

In addition, in the face of the COVID-19 outbreak, the distance education platform established by the Thai education authorities, which desperately needed distance education, did not function properly in all services through the Internet

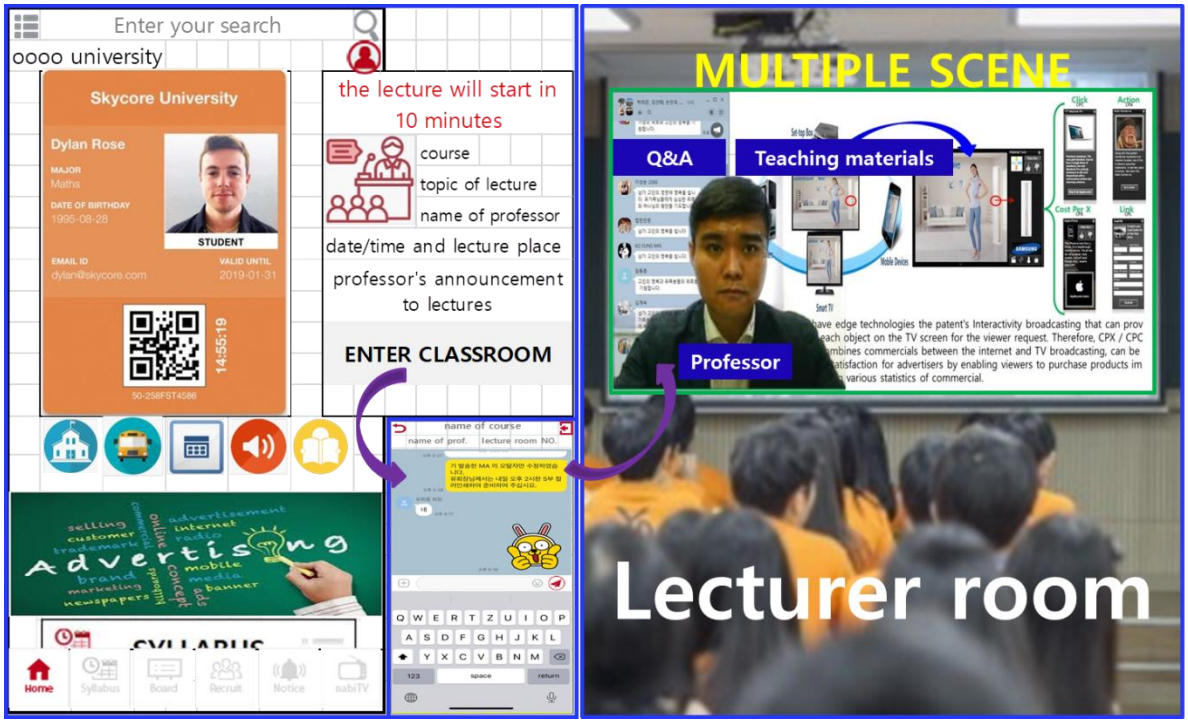
and satellite, so our innovative technology Smart IP Cloud TV Platform As an opportunity to be recognized for the excellence in performance, quality, and service, Chulalongkorn university, which is considered the best in Thailand, and the Assumption University belonging to the same foundation, wish to participate in this project. therefore a green light was turned on to secure 6 million Thai college students as subscribers of our service. Because, her majestic princess Maha Chakri Sirindhorn held a forum to adopt our platform as the Thai royal project about distance education service. The president of the Royal University Foundation who has 5 million students enrolled among 6 million Thai college students all over the country attended this forum on the 30th, June 2020.



<Remote education service: Real-time distance education broadcasting platform>

Our innovative technology transmits real-time distance education broadcasts that achieve digital TV-level picture quality, quality, and service satisfaction through the public Internet, which is not guaranteed in speed and quality, between universities and colleges, campuses and campuses, and classrooms and classrooms. In addition, Trinity Studio, a remote education authoring tool provided together, is a combination of virtual reality and augmented reality

technologies, and is a high-quality, immersive and highly immersive educational aid material such as documents, videos, and Q&A functions. It supports the creation of contents, and our innovative digital multimedia compression technology supports real-time encoding of high-definition multimedia like digital TV even in general notebook computers.



< Real-time distance education broadcasting with various textbooks>

The application provided together provides a convenient lecture schedule creation and lecture management that maximizes the convenience of students, and at the same time, by sharing with friends, a meeting appointment that does not interfere with each other's lecture schedule is set, and through various types of anonymous public bulletin boards. Without worrying about the exposure of personal information, information on school life and experiences of seniors are shared, and textbooks are shared through mutual communication through direct messages and used bookstores. By providing self-reliance, we offer more and more students the opportunity to pursue higher education.

In addition, the real-time Korean language education broadcasting in Korea maximizes the educational effect by enhancing students' immersion in the class

with a vivid sense of the realism of the education, as the enrolled students can inquire and receive responses from the instructor in real time. Provides students with a chance to learn not only to review students, but also to students who missed a lecture, and to learn vivid Korean conversation through real-time viewing of terrestrial broadcasts transmitted from Korea. Even if there is a bar to take the Korean language proficiency test at the university, we do not even have a private academy that teaches Korean language, so not only students who had no choice but to study on their own, and to all those who wish to learn Korean language, we want to play a role as an oasis in the desert. Students who have passed the Korean Language Proficiency Test are provided with an opportunity to earn tuition by participating as short-term trainees in agricultural, fishing and industrial sites in Korea using the vacation period, and to resolve the labor shortage in industrial sites in Korea Through smooth communication with Korean employers, we contribute to strengthening friendly relations between countries through the formation of intimate relationships with each other based on mutual understanding, mutual benefit, and respect.

< Oasis farm service: learning efficiency, convenience, and income creation >

Most of the Oasis Farm services we provide for students are free, but there are services provided for a fee. However, students do not have to pay their own fees for paid services. When students use each service, they see the advertisement displayed between the service and the service and respond in the form of CPX, so that 10% (CPM) or 20% (CPC/CPI/CPL) and % of the TCG Token that the advertiser pays to us as an advertisement fee. You will receive 30% (CPA /CPE) as a reward.

Trinity Studio, the aforementioned distance education authoring tool, is distributed free of charge to not only professors for distance education, but also students and all subscribers who use our service to provide their talents through real-time broadcast or on-demand broadcast to viewers with knowledge and wisdom. Not only does it give us joy, but it also gives us joy, and we donate TCG Tokens from viewers who are impressed by this, and it can be used not only to pay for our paid service, but also to pay for goods and service fees of advertisers of our service, and furthermore, Of course, it can also be exchanged for cash at the exchange.

< Personal broadcasting service: Talent broadcasting to generate income >

Trinity Studio, a personal broadcasting authoring tool, is fused with our innovative patented technology for digital multimedia, and supports high-definition and high-quality compression of digital TV level even on ordinary

laptops, and even on the Internet for general users who do not guarantee speed and quality. It supports the provision of real-time broadcasting and on-demand broadcasting that satisfy the quality, quality, and service to viewers around the world through various terminals connected to the Internet.

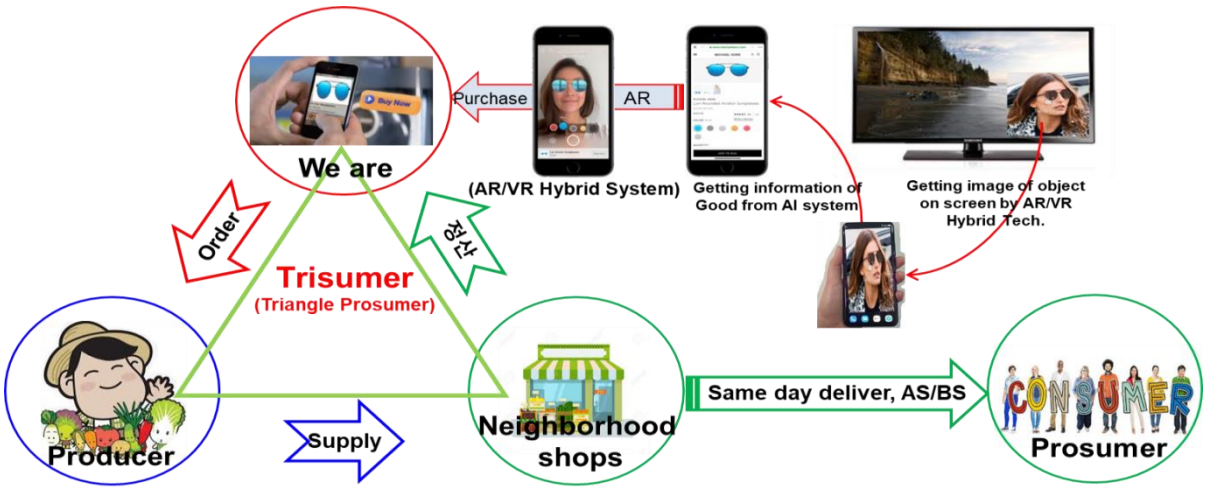
All of our innovative services turn every user who uses it into a prosumer, not a consumer. As described above, the Oasis Farm application receives TCG Tokens through CPX-type advertisements. In addition to receiving TCG Tokens from viewers for individual talent broadcasting, the creative service business model based on our innovative virtual reality and augmented reality technology is the TV video that watches terrestrial broadcasting, cable broadcasting, satellite broadcasting and IPTV broadcasting. Direct advertising and indirect advertising products through the virtual reality and augmented reality technology cameras built into our Oasis Farm application, viewers respond in CPX format. It is shown to viewers and is provided with a variety of information on the effectiveness of advertisements (by time zone, region, gender, age, occupation, preferences and opinions through consumer participation, etc.), helping to establish various policies for marketing. Of course, it can be used for planning, and viewers will be rewarded with 10% (CPM) or 20% (CPC/CPI/CPL) and 30% (CPA/CPE) of TCG Tokens paid as advertising fees to us.

< VR/AR convergence technology smart phone interactive advertisement >

In Thailand, advertisements for terrestrial channels account for more than 90% of the total TV advertising expenditure and are expected to reach **$2.44 billion**

(2.85 trillion won) in 2022. As a platform service for convergence of broadcasting and communication and advertisement that provides the best profit model that provides the world's one and only exclusive service that is unique and innovative, it is expected that subscribers who use the service will also receive more TCG Tokens as compensation.

Our innovative service does not end with advertisements, but on-screen delivery of same-day delivery from neighboring stores that guarantees thorough pre- and post-services that viewers can purchase information about direct or indirect advertisement products in one month. Maximize the advertising effect to advertisers through shopping, expand the sales network, and secure loyalty to reorganize into a producer-centered industrial system, focusing on product development, supplying high-quality products at low and stable prices, and supplying high-quality products to buyers from neighborhood stores. Thailand's e-commerce market worth **11.1 billion dollars (12.300 billion won) in 2022** by providing the world's only and unique, and innovative service that provides thorough pre-service, packaging material reduction, and convenient and quick post-service by direct delivery. There is no doubt that it will be at the forefront of leading the 4th industrial revolution around the world as a broadcasting, communication and e-commerce convergence platform service that dominates the world.



<VR/AR convergence technology smart phone interactive shopping prosumer>

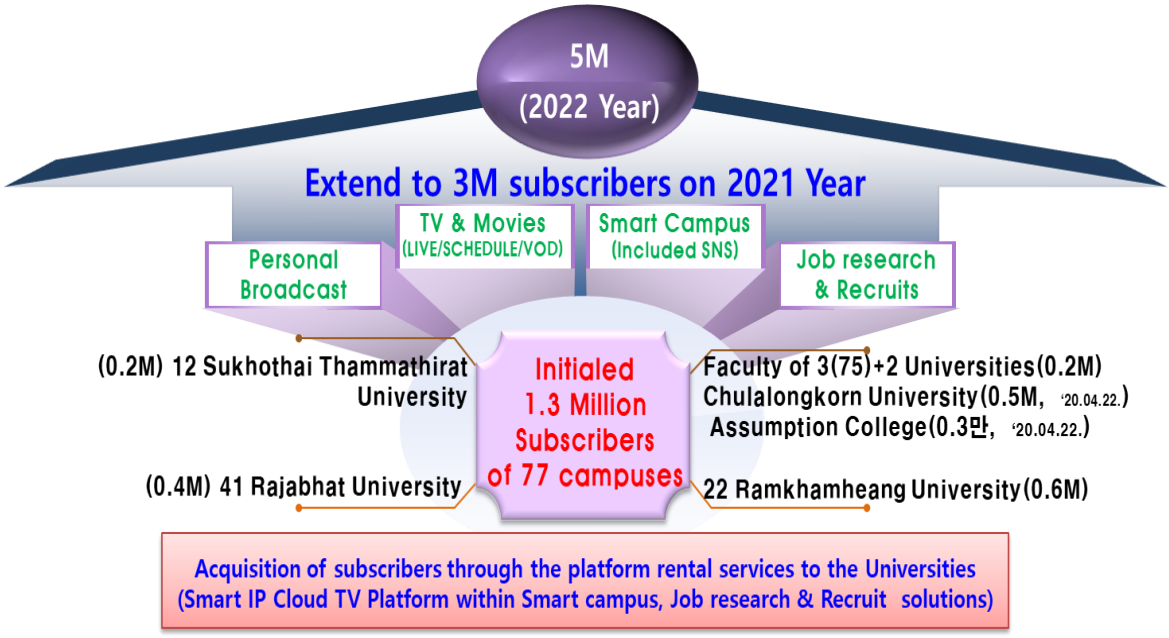
Above all, our TCG Token's effectiveness as a simple and secure payment tool will increase more and more, and no one will deny that it will become a reality for all who use TCG Tokens to experience increasing value day by day.

4.2 Attracting Subscribers

Since 2012, we have determined our target customers for our OTT service through in-depth consideration and experience on the broadcasting, telecommunications, and e-commerce markets of ASEAN countries. No matter how innovative technology and original service, if the user's terminal used to use this service cannot play digital multimedia, attracting subscribers using the service will be a difficult journey.

Therefore, we identified a group of college students who own smart phones that are not compatible with playing digital multimedia and considered a plan to attract them as subscribers.

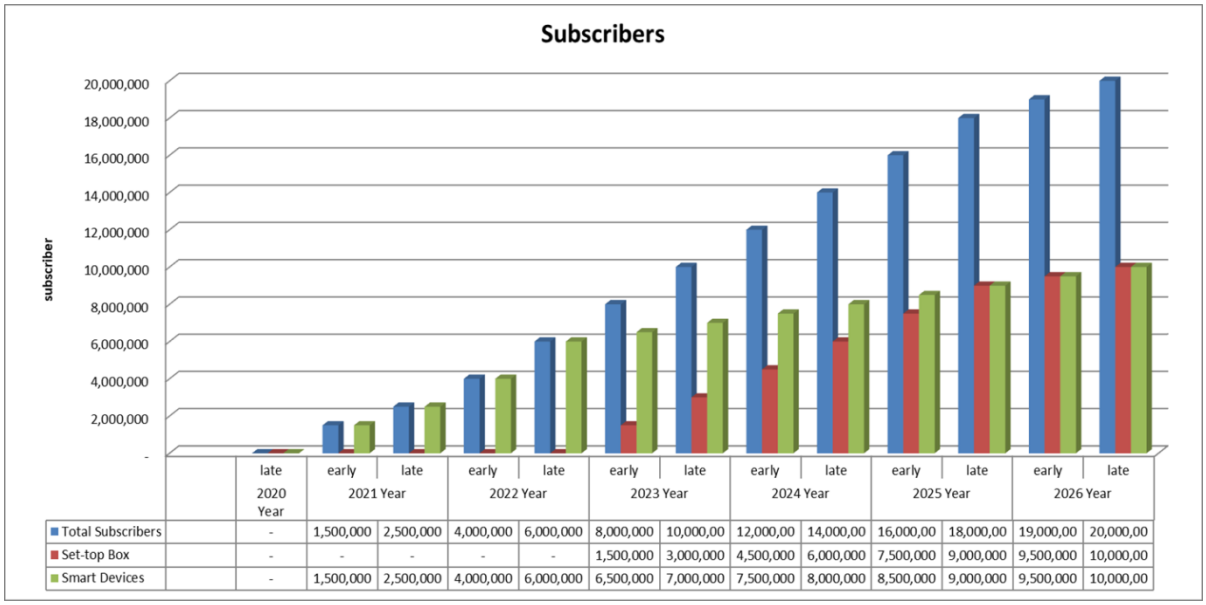
As a result, the focus was on distance education, which is a trend of the times and is the basis for national competitiveness. The participation of the three universities. Ramkhamheang University, Thailand's largest open university with 600,000 students studying in 22 campuses nationwide, Rajabhat University with 400,000 students in 41 campuses nationwide, and Sukhothai Thammathirat University with 200,000 students in 12 campuses, was well brought up.



< Oasis farm service and OTT service: How to secure initial subscribers >

At the end of 2019, the need for non-face-to-face education was raised due to the COVID-19 situation, and as Thailand's top prestigious university, Chulalongkorn University, where 50,000 students attend, hoped to participate in the project, and 30,000 belonging to the same foundation as the university. Student's Assumption University participated, and due to the poor Internet environment in Thailand, all non-face-to-face education platforms were not functioning properly. As a result, the mother of education, the mother of the Internet, was called by Maha Chakri Sirindhorn her majestic princess of the Thailand. The presidents of the Royal University Foundation from all over the country, of which 5 million university students are enrolled in Thailand, were convened and a forum for technology and services on our platform was held on June 30, 2020, and 6 million Thai university students were subscribers of our OTT service. The green light was turned on.

Accordingly, we launched a pilot service from June to July 2021, attracting 1.3 million subscribers, and starting commercial services from August when the semester begins, securing 3 million subscribers including professors and students by the end of the year. At the end of the year, after securing 5 million subscribers, 5 million set-top boxes were distributed to each of these subscribers' homes. By 2023, the company's innovative technology Smart IP Cloud TV Interactivity Service was provided to 10 million subscribers, providing the service to Myanmar. Secure a bridgehead to expand to countries such as Cambodia and Laos.

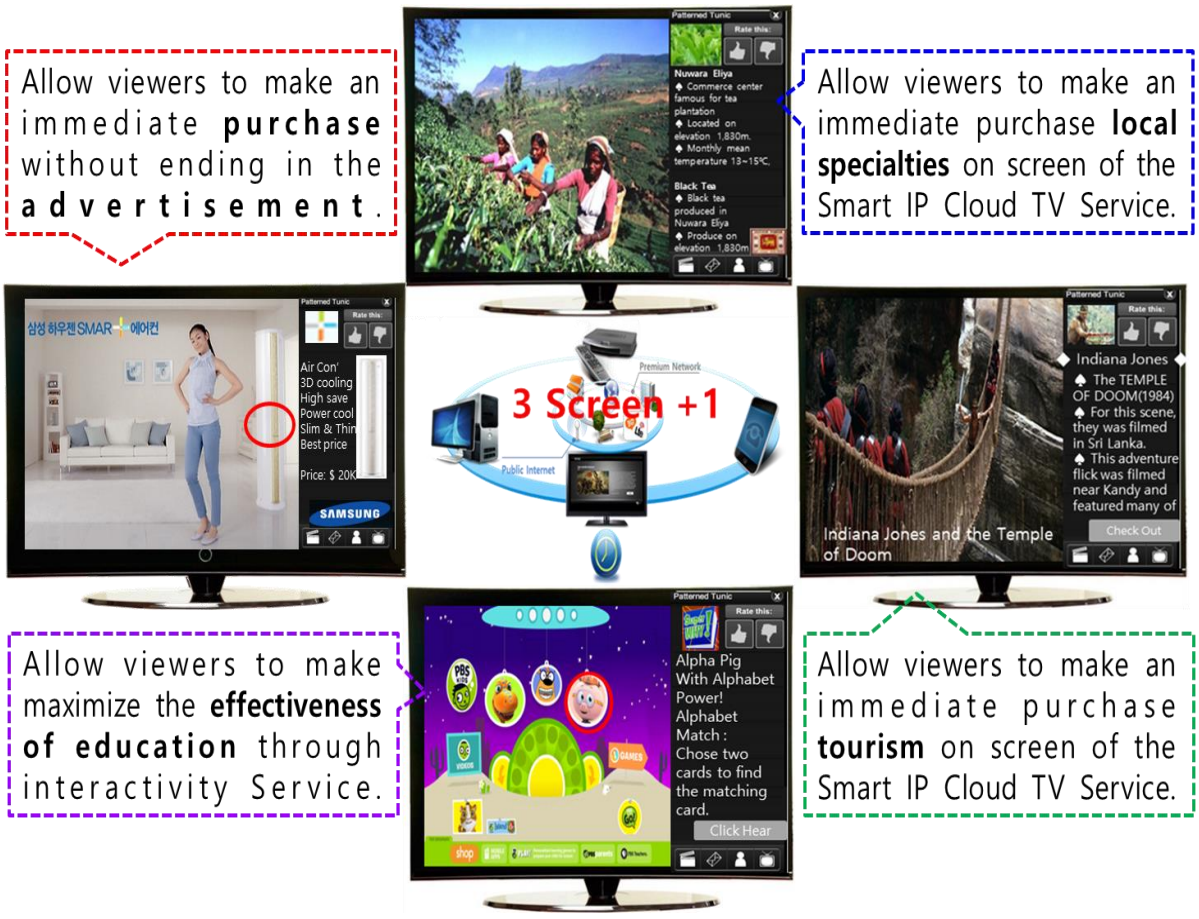


		late 2020 Year	early 2021 Year	late 2021 Year	early 2022 Year	late 2022 Year	early 2023 Year	late 2023 Year	early 2024 Year	late 2024 Year	early 2025 Year	late 2025 Year	early 2026 Year	late 2026 Year
Total Subscribers		-	1,500,000	2,500,000	4,000,000	6,000,000	8,000,000	10,000,00	12,000,00	14,000,00	16,000,00	18,000,00	19,000,00	20,000,00
Set-top Box		-	-	-	-	-	1,500,000	3,000,000	4,500,000	6,000,000	7,500,000	9,000,000	9,500,000	10,000,00
Smart Devices		-	1,500,000	2,500,000	4,000,000	6,000,000	6,500,000	7,000,000	7,500,000	8,000,000	8,500,000	9,000,000	9,500,000	10,000,00

< Smart IP Cloud TV Interactivity Service: Subscriber attraction plan >

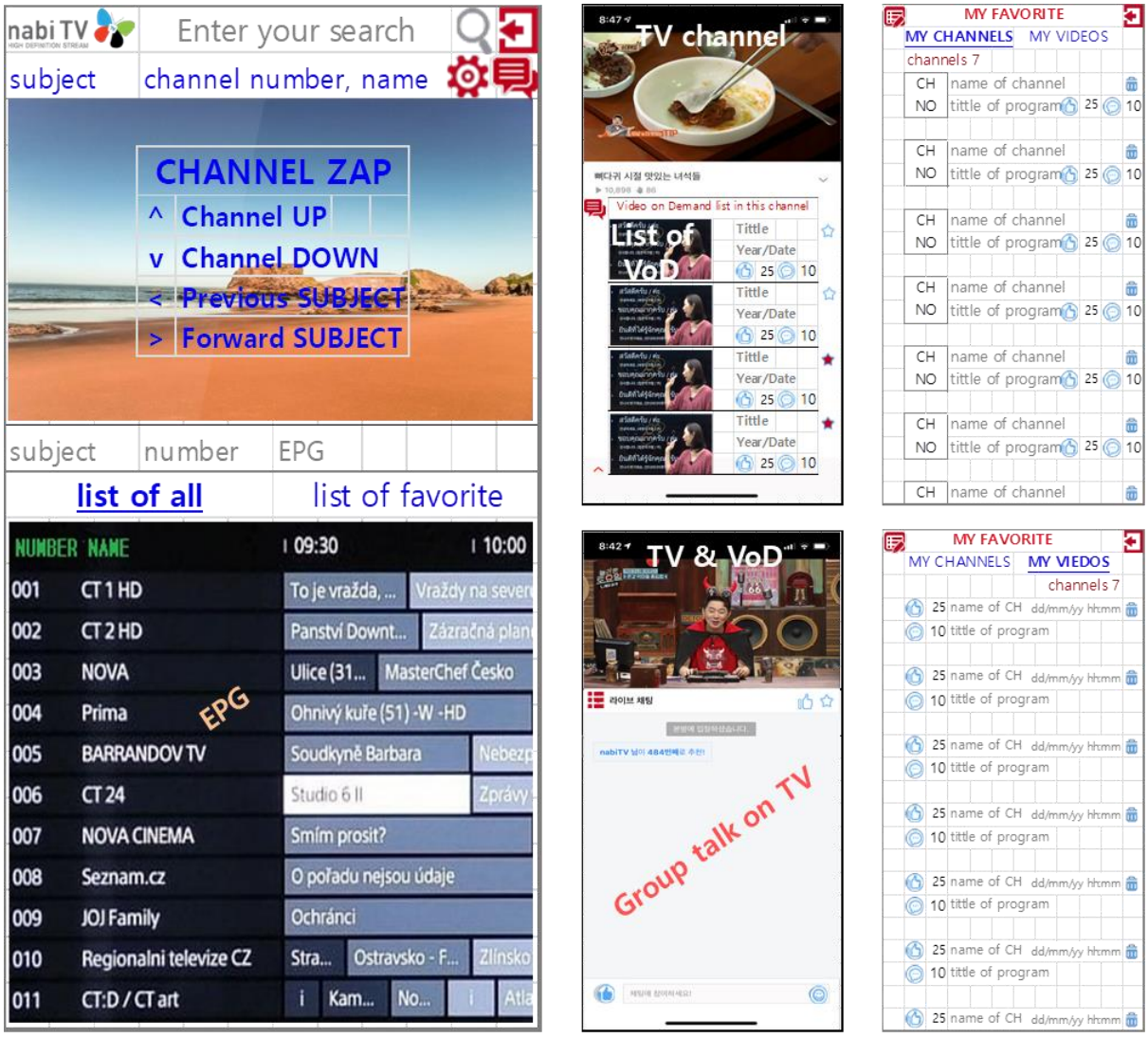
4.3 Service evolution

By distributing set-top boxes and dongles to TV connection devices in each home, we will strengthen real-time broadcasting and on-demand broadcasting services of not only Thai terrestrial TV channels, but also cable and satellite TV pay channels and Korean terrestrial TV channels, as well as the latest Korean contents. Providing all TV channels and expanding SVOD and TVOD services and realizing interactive TV services on TV screens by providing a true Smart IP Cloud TV Interactivity Service, such as interactive TV on-screen advertisement and Interactive TV on-line shopping. Of course, it completes the digital multimedia syndicate of One Source Multiuse through services that support shopping for educational broadcasting services, shopping for textbooks, and shopping for tourist products and indirect advertising products, including information on tourist destinations in contents such as dramas and movies.



< Smart TV Cloud TV Interactivity Service: Interactive TV services >

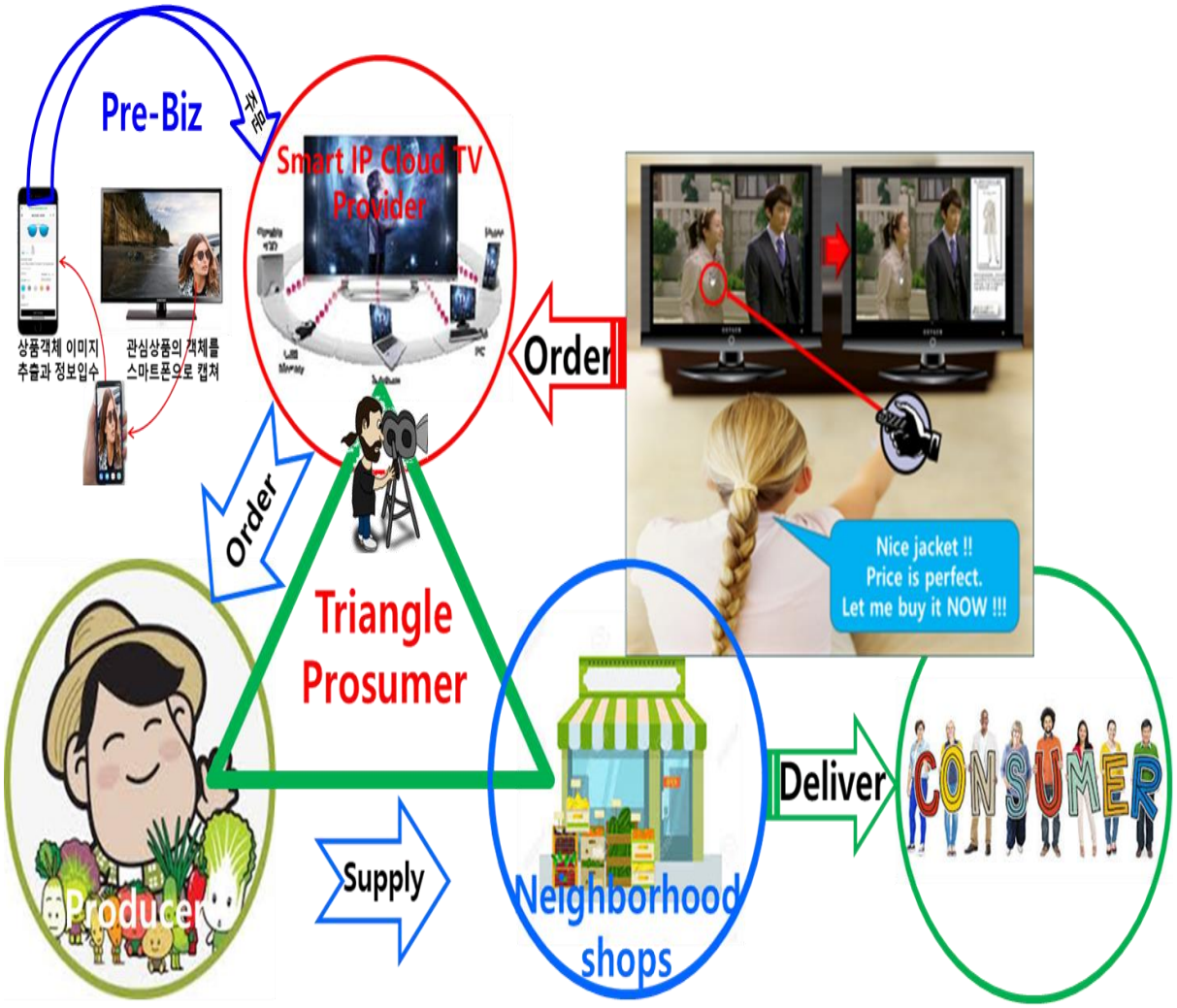
The completion of the interactive TV-based One Source Multiuse digital syndicate will establish a virtuous cycle structure of the ecosystem of digital multimedia contents, so that producers, product advertisers, and investors will establish a voluntary cooperative system in content production to create a large-scale fund. A large-scale fund drives the creation of high-quality contents, while a wider variety of products and products capture the attention of viewers, inducing interest and stimulating the desire to purchase. Therefore, by doubling satisfaction for consumers and profitability for business operators, the content market and advertisement and distribution of products and products must drive the growth of the industry more actively.



< Smart IP Cloud TV Interactivity Service: Viewer participation service >

Furthermore, by breaking away from the fixed frame of unidirectional TV viewing so far, the viewers express their opinions and provide specialized real-time broadcasts and on-demand broadcasts that communicate with each other to further enhance the enjoyment of viewers through a TV forum where viewers participate In addition, information on each object displayed on the TV screen is provided only with the TV remote control, and revenue is generated by receiving TCG Tokens by participating in interactive TV on-screen advertisements, and intuitive information on these products and products is obtained. It provides a one-month service of Interactive TV on-line shopping that adds convenience by using TCG Token as a means of payment for quick purchase decisions and purchases.

< Smart IP Cloud TV Interactivity Service: Interactive TV on-demand advertising >



<Smart IP Cloud TV Interactivity Service: Interactive TV on-line shopping >

Our innovative service does not stop here, not only real-time transactions of the products and products of operators included in the video being broadcast, but also ICBM (IoT), Cloud Computing, Big Data, Mobile, which is called **LIVE T-Commerce**, which mutually trades products owned by viewers. Our customers will experience the innovative service of the 4th industry combined with artificial intelligence technology, and TCG Token is a convenient and investment currency as a popular payment method that can be used in all business areas that are fast, simple and secure. It is a fact that no one can doubt that it will establish itself as a cryptocurrency that everyone with the value of wants to hold.

4.4 Platform Investment

Smart IP Cloud TV Platform consists of Head-end Systems, Middleware (including DRM & EMS) System, and Oasis Farm System, with an investment of about 11.7 billion won. This is the amount when the solutions of the Smart IP Cloud TV Platform composed of our products are converted into market prices, and the goods actually procured from outside are Oasis Farms (Front-end & Back-end) developed outsourced, and other equipment admit.

Price schedule for 100 live channels, 1.2M Subscribers

Unit ; USD

Div.	Description	2020 Year 100 CH, 1.2M Subscribers
0	Smart IP Cloud TV Solutions of C&D, 24.66%	5,321,510
	Add Value Solutions of 3rd parties, 8.04%	1,735,000
	Server Hardware & Equipments of 3rd Parties, 8.52%	1,839,361
	Professional Service of C&D Thailand, 7.77%	1,676,622
	Grand Total	10,572,492

I. Head-end System

Div.	Description	Phase 1 100 live channel
1	Head-end System	1,091,849
2	Professional service	163,777
2.1	Sub-materials, Installation, Testing and Commisioning	109,185
2.2	Training	54,592
Sub Total		1,255,627

Div.	Description	1.2M subscriber
3	Streaming System	2,081,491
3.1	Hardware	359,251
3.2	Software	1,722,240
4	Encrypt & Manager	235,312
4.1	Hardware	39,312
4.2	Software	196,000
5	Professional service	347,520
5.1	Sub-materials, Installation, Testing and Commisioning	231,680
5.2	Training	115,840
Sub Total		2,664,324

II. Middleware System

6	**Middleware System**	**1,572,927**
6.1	Hardware	200,927
6.2	Software	1,372,000
7	**DRM/CAS System**	**708,684**
7.1	Hardware	146,684
7.2	Software	562,000
8	**EMS System**	**662,476**
8.1	Hardware	74,476
8.2	Software	588,000
9	**Professional service**	**783,854**
9.1	Sub-materials, Installation, Testing and Commisioning	522,570
9.2	Training	261,285
Sub Total		**3,727,940**

III. Optional system

Div.	Description	NAS
10	**Storage system**	**100,000**
11	**Professional service**	**15,000**
11.1	Sub-materials, Installation, Testing and Commisioning	10,000
11.2	Training	5,000
Sub Total		**115,000**

IV. Additional system

12	**Network Switch**	**100,000**
13	**Add value(Board/Talk/AD)**	**2,193,132**
14	**Control Center**	**150,000**
15	**Professional Service**	**366,470**
15.1	Sub-materials, Installation, Testing and Commisioning	244,313
15.2	Training	122,157
Sub Total		**2,809,602**

<Build Smart IP Cloud TV Platform : Details of construction cost by detailed item >

4.5 Sales and Operation

The basic principle for our service is the paid payment service for the product. However, the viewer does not actually pay the amount, and the payment for our service is compensated by TCG Tokens through advertisements and on-screen advertisements of Oasis Farm application. By implementing the service, the viewer has no burden of paying for the service.

OUR smart IP Cloud TV Service Price list(Unit; USD) THAILAND

Division		Contents	Monthly price (1 Year)	Monthly price (1 Year over)	Mobile TV
Public	Basic	50 CH	Puchase STB subscribers		Free
	TV	100 CH	5.00	4.50	3.00
	TV more	200 CH	10.00	8.50	5.00
Premium		tVoD(6)+200CH	15.00	12.75	8.00
tVoD(TV Video on Demand)		Package 1(+3)	3.00	2.70	2.00
		Package 2(+6)	6.00	5.10	3.50
Video on Demand of Movies		1 tittle			
e-learning	LIVE pack	Engineering	5.00		
		Science	3.00		
		Humanities	2.00		
	VoD pack	Engineering	5.00		
		Science	3.00		
		Humanities	2.00		
Korean Contents package		Korean TV channels	-		
		Movies channel	5.00		
		Musics channel	3.00		
		Korean language	5.00		
		Video on Demand			

<Smart IP Cloud TV Interactivity Service: Unit price by service product >

Since our service is operated in Thailand, we establish a joint service company with a local person or a local company in accordance with local laws and do not require permission from the Thai government to implement this service project. The necessary resources for our service are platform investment, Internet infrastructure, and resources for sales and operation. Our service requires a large-capacity backbone of IDC (Internet Data Center) and a service that charges hundreds of millions of won per month for the upper surface, so we have a large-capacity network (Backbone) all over Thailand, Malaysia, Myanmar, and Laos. In addition to providing international Internet access to countries such

as Cambodia, Vietnam, etc., INTERLINK Telecom PCL, listed on the Thai Stock Exchange, was selected as a joint venture as an ISP operator connected to the Internet of a 300Gbps submarine cable between Korea and Thailand. In addition, the operation of the Smart IP Cloud TV Platform to provide 24-hour, 365-day, uninterrupted, zero-defect service requires a large number of highly skilled and skilled technical personnel, so we established a joint venture company for engineering in 2013. This joint venture (JVC) has already secured technical and operational experience for 8 years while supporting the establishment and operation training and maintenance of the Smart IP Cloud TV Platform for OTT service of broadcasting and telecommunications operators in Thailand and Myanmar. As it is in charge of operation, it reduces initial cost investment.

Detail statement

Unit : USD

Division		2022 Year	2023 Year	2024 Year	2025 Year	2026 Year	Remark
TV	Set-top Box	-	-	105,000,000	240,000,000	375,000,000	
	Smart Devices	19,575,000	62,100,000	82,350,000	94,500,000	106,650,000	
E-learning		16,000,000	56,700,000	56,700,000	63,000,000	98,280,000	
Korean Contents		12,500,000	51,500,000	84,400,000	120,400,000	153,350,000	
Portal Service		-	14,175,000	14,175,000	15,750,000	24,570,000	
Total sales		48,075,000	184,475,000	342,625,000	533,650,000	757,850,000	
Reinvestment	Platform	25,280,932	35,899,417	32,928,425	16,530,287	20,000,000	
	Set-top Box		144,222,000	143,623,500	143,623,500	143,623,500	
	Sub total	25,280,932	35,899,417	32,928,425	16,530,287	20,000,000	
Operation costs	Contents costs	14,278,275	20,436,000	72,915,900	146,047,800	208,984,800	
	Labor costs	96,465	177,621	177,621	291,240	291,240	
	social insurance	12,052	22,192	22,192	36,388	36,388	
	Employee benefits	4,823	8,881	8,881	14,562	14,562	
	Office supplies fee	965	1,776	1,776	2,912	2,912	
	Sub total	14,392,580	20,646,470	73,126,370	146,392,902	209,329,902	
Total 1st cost		39,673,512	56,545,887	106,054,796	162,923,190	229,329,902	
Operating profit		22,794,068	148,575,583	309,696,575	517,119,713	737,850,000	
Managing costs	Labor costs	85,726	121,287	121,287	180,554	180,554	
	social insurance	10,711	15,154	15,154	22,558	22,558	
	Employee benefits	4,286	6,064	6,064	9,028	9,028	
	Office supplies fee	857	1,213	1,213	1,806	1,806	
Marketing costs	Labor costs	106,787	205,609	343,959	521,837	521,837	
	social insurance	13,342	25,689	42,974	65,198	65,198	
	Employee benefits	5,339	10,280	17,198	26,092	26,092	
	Office supplies fee	1,068	2,056	3,440	5,218	5,218	
	Marketing fee(public)	48,075	184,475	342,625	533,650	757,850	
	Marketing fee(Special)	48,075	184,475	342,625	533,650	757,850	
Total 2nd cost		324,267	756,302	1,236,538	1,899,592	2,347,992	
Total SG & A expenses		39,997,779	57,302,189	107,291,334	164,822,781	231,677,894	
Profit before TAX		8,077,221	127,172,811	235,333,666	368,827,219	526,172,106	
Profit rate before TAX		17%	69%	69%	69%	69%	

<Smart IP Cloud TV Interactivity Service: Sales and operation plan >

4.6 Dividend of Profit

A Joint Service Company is established in Thailand, where the business begins, in which local companies participate.

The establishment of this joint venture (JSC) includes C&D and MA Corporation Co., Ltd. It localizes all Oasis Farm applications through JVC between the company, is in charge of platform construction, sales, and operation, and owns a 26% stake in a joint venture (JSC) for this business.

Another Thai operator, INTERLINK Telecom PCL, provides IDC resources. In order to distribute the set-top box, install and maintain subscribers, connect with ISP operators nationwide, and own 25% of the joint venture (JSC) for this project.

C&D of Korea, which leads this business, is the owner of the Smart IP Cloud TV Platform for this business, and invests all of its platform and Oasis Farm application in this business, and is a joint venture for this business. (JSC) owns a 49% stake. However, 19% is given to TRION Corporation Inc.

TRION Corporation Inc. is a blockchain company with exclusive license rights for the business model patent for Trinity Studio, a virtual reality and augmented reality convergence personal broadcasting authoring tool, and Interactive TV on-demand advertising and shopping business model patents required for the service. We invest 300 million TCG Tokens in building the platform for this business and provide 500 million TCG Tokens to JSC through C&D for the circulation of this service. In addition, 19% of the 49% stake acquired by C&D is acquired and a title trust is made to C&D. The dividend of the Thai joint venture (JSC) is received as shown in the table below.

Sales plan and estimated operating profit for 5 years — Unit : USD

Division	2022 Year	2023 Year	2024 Year	2025 Year	2026 Year	Remark
Selling ammount	48,075,000	184,475,000	342,625,000	533,650,000	757,850,000	
Cost of products	39,673,512	56,545,887	106,054,796	162,923,190	229,329,902	
Operating profit	22,794,068	148,575,583	309,696,575	517,119,713	737,850,000	
Total SG & A expenses	39,997,779	57,302,189	107,291,334	164,822,781	231,677,894	
Reinvestment	25,280,932	35,899,417	32,928,425	16,530,287	20,000,000	
Net profit	8,077,221	127,172,811	235,333,666	368,827,219	526,172,106	
Tax(20%)	1,615,444	25,434,562	47,066,733	73,765,444	105,234,421	
Profit share(49%, Korea parties)	3,166,271	49,851,742	92,250,797	144,580,270	206,259,466	496,108,545
Profit share(19%, TRION)	**1,227,738**	**19,330,267**	**35,770,717**	**56,061,737**	**79,978,160**	**192,368,620**

<Smart IP Cloud TV Interactivity Service: Dividend income 5-year plan>

5. Economy

5.1 TCG Token

TCG Token is issued for investment for this business and reserved business, as well as circulation currency in this service and reserved service, and it is expected to have potential value to derive good areas of savings and investment.

Name	Symbol	Platform	Standard	Quantity
TCG Token	TCG	Ethereum-based	ERC-20	1,000,000,000 TCG

TCG Token is an ERC-20 token that anyone can freely trade on an authorized exchange and can be used freely as a payment currency for payment for using this Smart IP Cloud TV Interactivity Service and other reserved services. When the service is expanded to other countries including Thailand, there is a plan to issue tokens of constant value, and at this time, TCG of value volatility with potential value that will lead to good areas of saving and investment as the key currency to purchase them. It is 500 million tokens. Details on the use of the key currency are planned to be officially announced after being decided through a pilot project in the future and is expected to be in the first half of 2022.

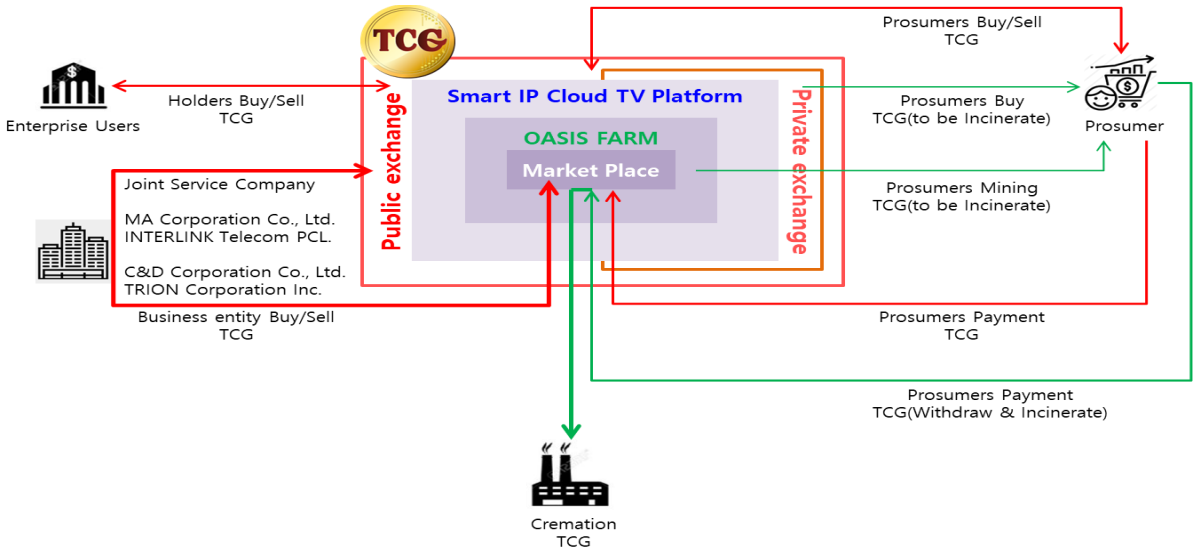
The other type is 500 million currency tokens for this service that cannot be traded on an official exchange, and 500 million currency tokens registered on the private exchange of this Smart IP Cloud TV Platform are Thai currency 3.00 THB per 1 TCG Token (Bath, It is an invariable currency token with a value of KRW 110), which is sold to prosumers who subscribe to this service and used to pay for the use of this service, and is given as compensation for OASIS FARM and CPX advertisements. When these tokens are redeemed to JSC, all of them will be incinerated immediately, and they cannot be recycled, and it is expected that all 500 million TCG Tokens will be incinerated at the end of November 2021. Thereafter, the ERC-20 tokens given as rewards to prosumers in this service, including rewards for CPX advertisements in OASIS FARM applications or interactive TV on-screen advertisements, to prosumers of this service, and JSC as a reward to the prosumers. It is immediately burned from the ERC-20 tokens it owns. This is expected to continue until a new currency is established for this service.

5.2 Use of TCG

We guarantee that all TCG Tokens can be used at any time as a payment method for the use of this Smart IP Cloud TV Service and reserved services, regardless of type.

300 million TCG Tokens sold for investment in the platform construction of this service are ERC-20 tokens, which are allowed to be redeemed from August 2, 2021, and can be freely traded on authorized exchanges. This Smart IP Cloud TV Interactivity Service and other It can be used freely as a currency for payment of the service, and will issue an invariant currency token when the service is expanded to Thailand and neighboring countries in the future. TCG Token is the key currency for purchasing this and is called saving and investment. It is among the 500 million worth of potential to derive good areas.

500 million TCG Tokens given to preserve income for operating expenses, etc. at the beginning of this service of the Thai joint venture (JSC) are sold or given as compensation to prosumers on the private exchange of the Smart IP Cloud TV Platform, and as a payment for service usage fees. When exchanged to a Thai joint venture (JSC), all 500 million units will be incinerated. Probably, it is expected that all 500 million TCG tokens will be burned at the end of November 2021. Even afterwards, TCG Tokens owned by the Thai Joint Venture Corporation (JSC) will be immediately burned as much as the amount given as compensation to prosumers.



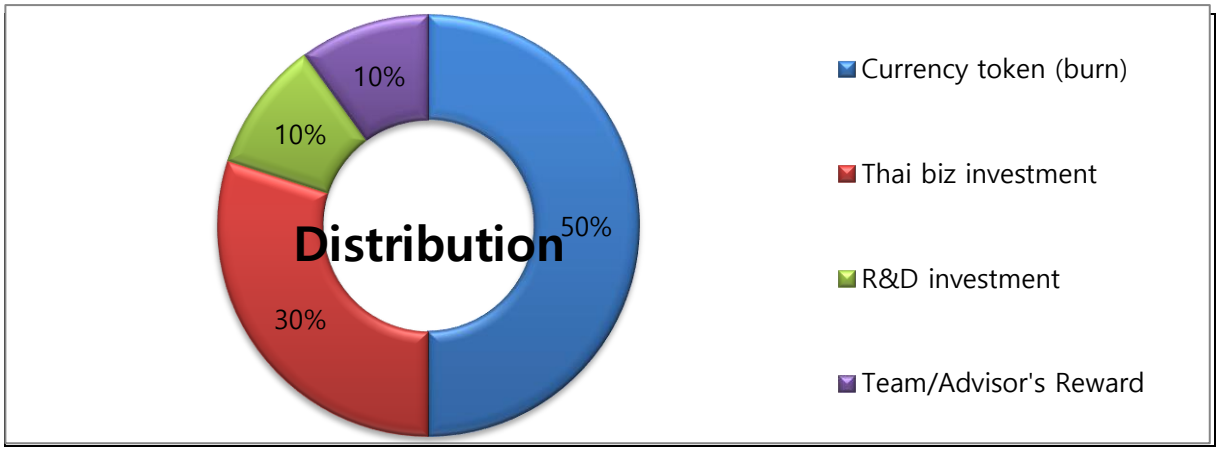
< Procedures for purchasing, selling, rewarding, using TCG tokens and burning >

5.3 TCG Sales

Name	Initial token price	Minimum purchase quantity	Maximum supply quantity	Token sale period
TCG Token	35 won ($0.03 USD)	10 TCG	300,000,000	Until the consumption

5.4 TCG Allocation

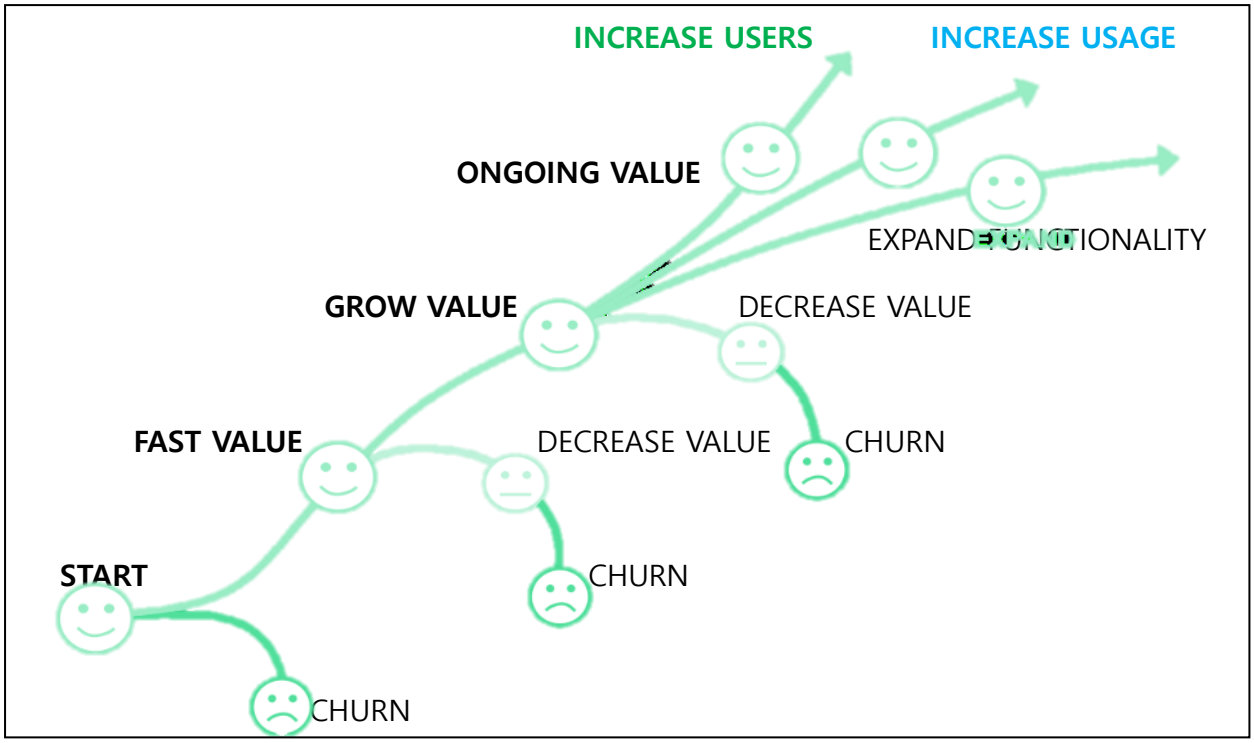
Distribution information for each use of TCG Token is as follows. However, depending on the progress of the project, some ratios may be changed later within the required scope of purpose.



Classification	Ratio	Lockout Period	Remarks
Distribution token (burn)	50%	burn hierarchy (non-tradeable)	Refer to 5.2 TCG utilization
Thai business investment	30%	End of July 2021	C&D, invests 300 million units
R&D cost	10%	End of Dec. 2021	TCG key currency-development project
Team, torture compensation	10%	End of Dec. 2022	

Note> The lockout period refers to the period in which transactions are frozen on the exchange and off-the-shelf by individuals, companies, and institutions holding TCG Tokens, and C&D who has received tokens for the purpose of investing in Thailand business through a contract with TRION Corporation Inc., The lockout period is not subject to the lockout period, and individuals, companies and institutions that have acquired it from C&D are subject to the lockout period in accordance with this table.

5.5 TCG Compensation



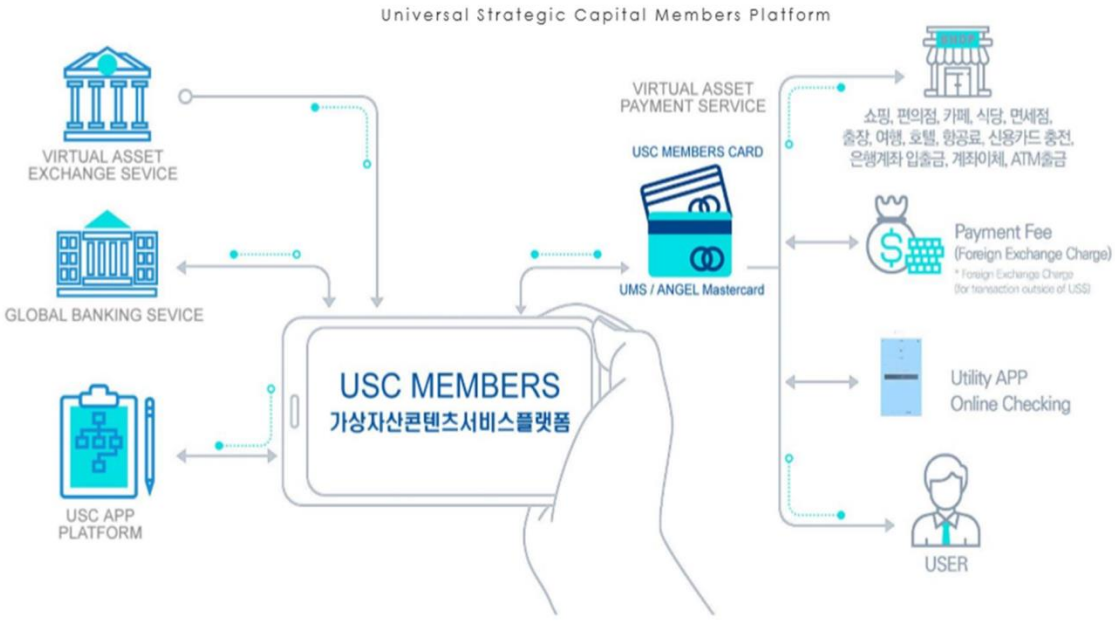
< VALUE CHAIN of TCG token >

As for TCG Tokens, 300 million TCG Tokens are invested in C&D first, and these tokens are sold on exchanges and off-the-shelf for investment to build the Smart IP Cloud TV Platform, and investors who purchase them lock the transaction until the end of July 2021. The period is applied, and the token holder is compensated at the end of each month by dividing 10% of the currency tokens burned in the Thai joint venture (JSC) from September 2021 (10%/5 billion TCG Tokens). This proceeds until all 500 million TCG tokens given as currency tokens to the Thai joint venture (JSC) are burned.

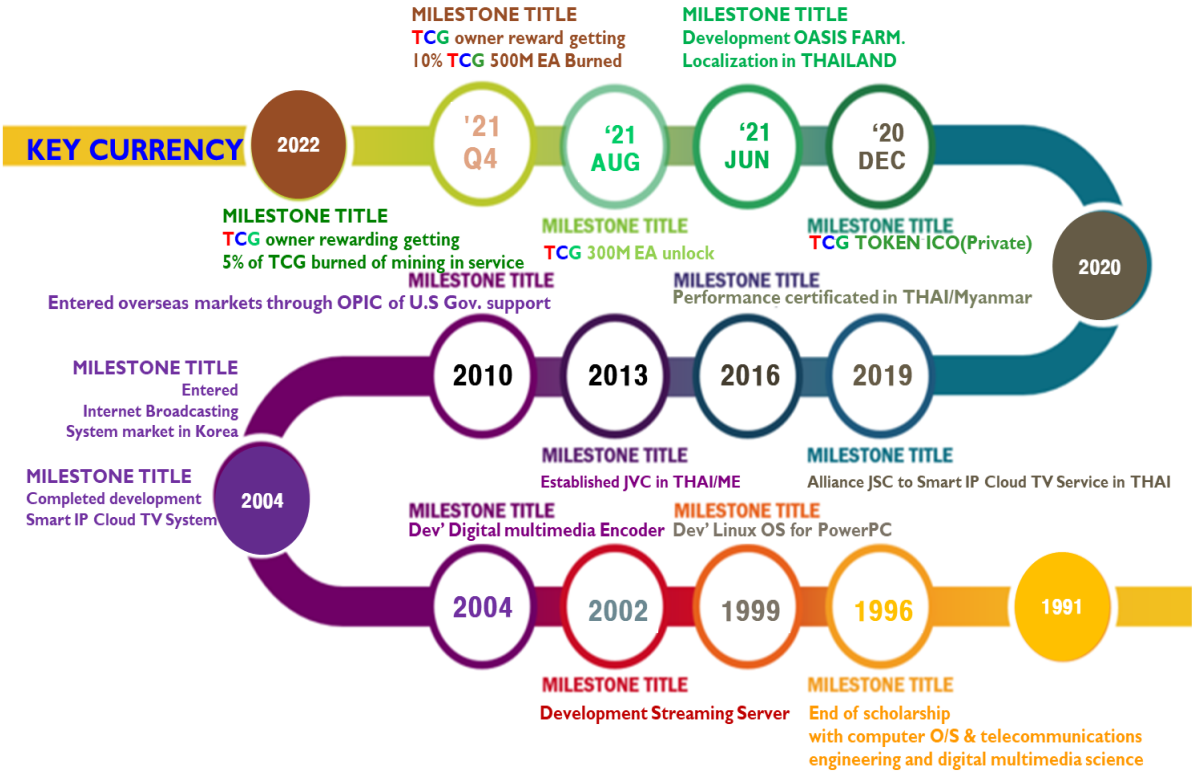
Afterwards, 5% of the TCG Tokens burned by the Thai Joint Venture Corporation (JSC) are divided and compensated at the end of each quarter. This will continue until the end of December 2022. Future compensation plans will be announced on the first business day of January 2023, and there may be no compensation plans.

5.6 TCG Benefits

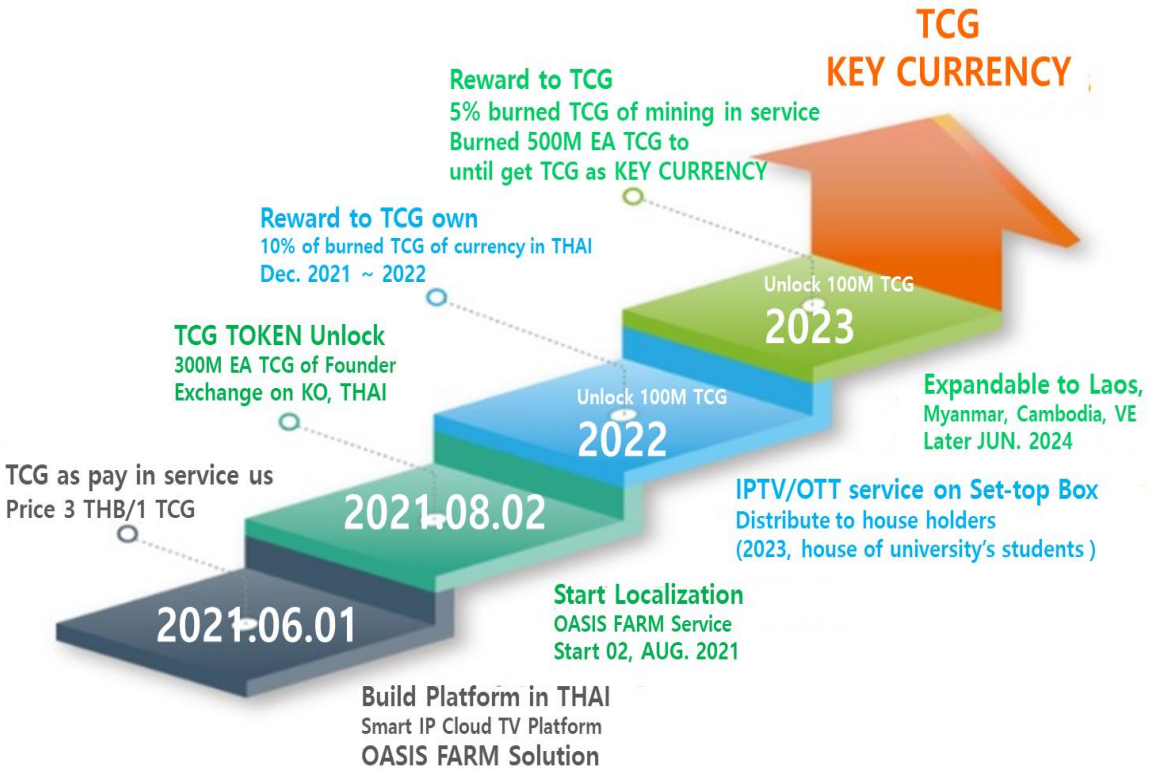
TCG Token users become USC MEMBERS and can receive Master card regardless of their creditworthiness and can be used at MasterCard merchants around the world. in 2022 year, when 500M of the TCG Token burning period ends, it is mastered with TCG Token. The payment of the card is made. In other words, when you use Master Card, the amount of TCG Token is transferred from your e-wallet to the Master Card Company.



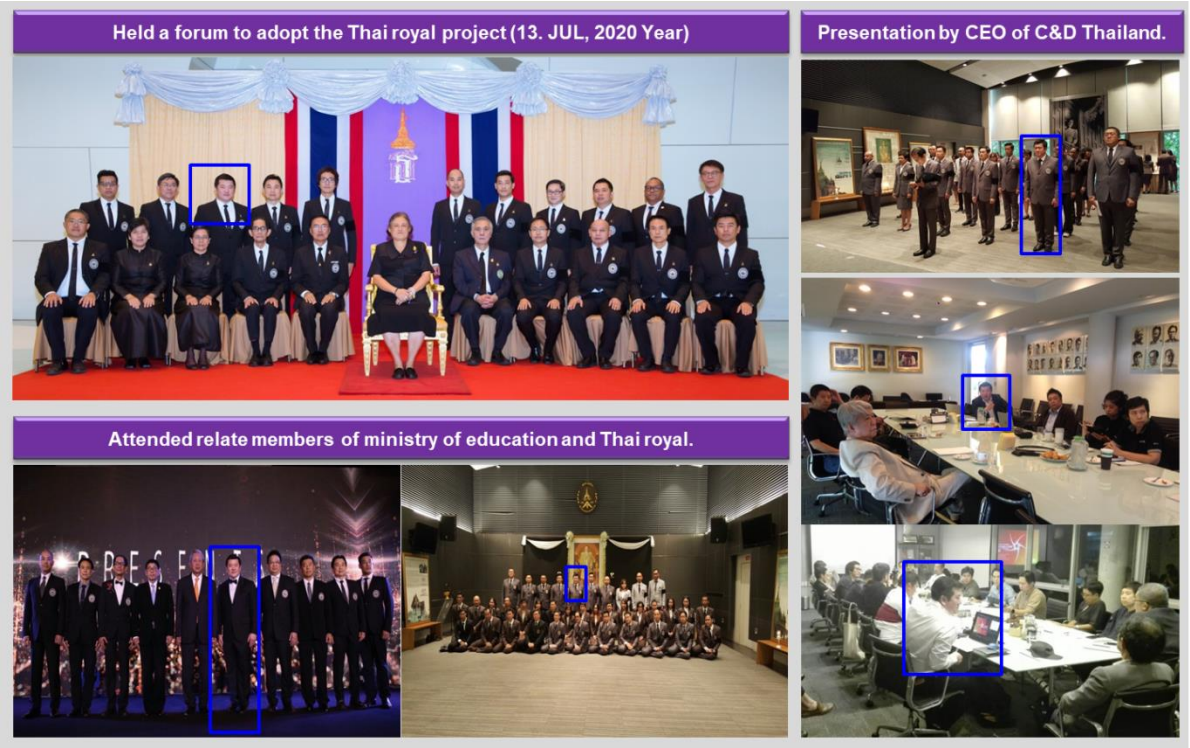
6. Roadmap



6.1 Milestones

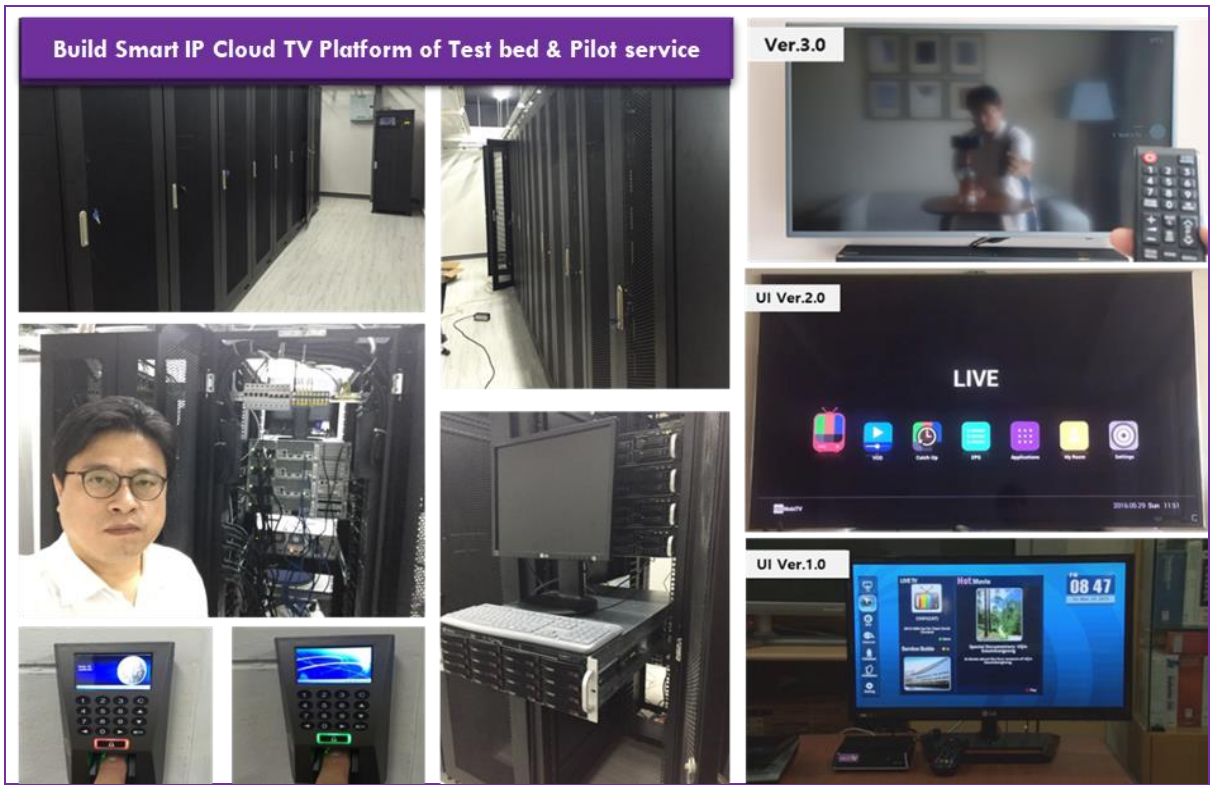


6.2 Footsteps

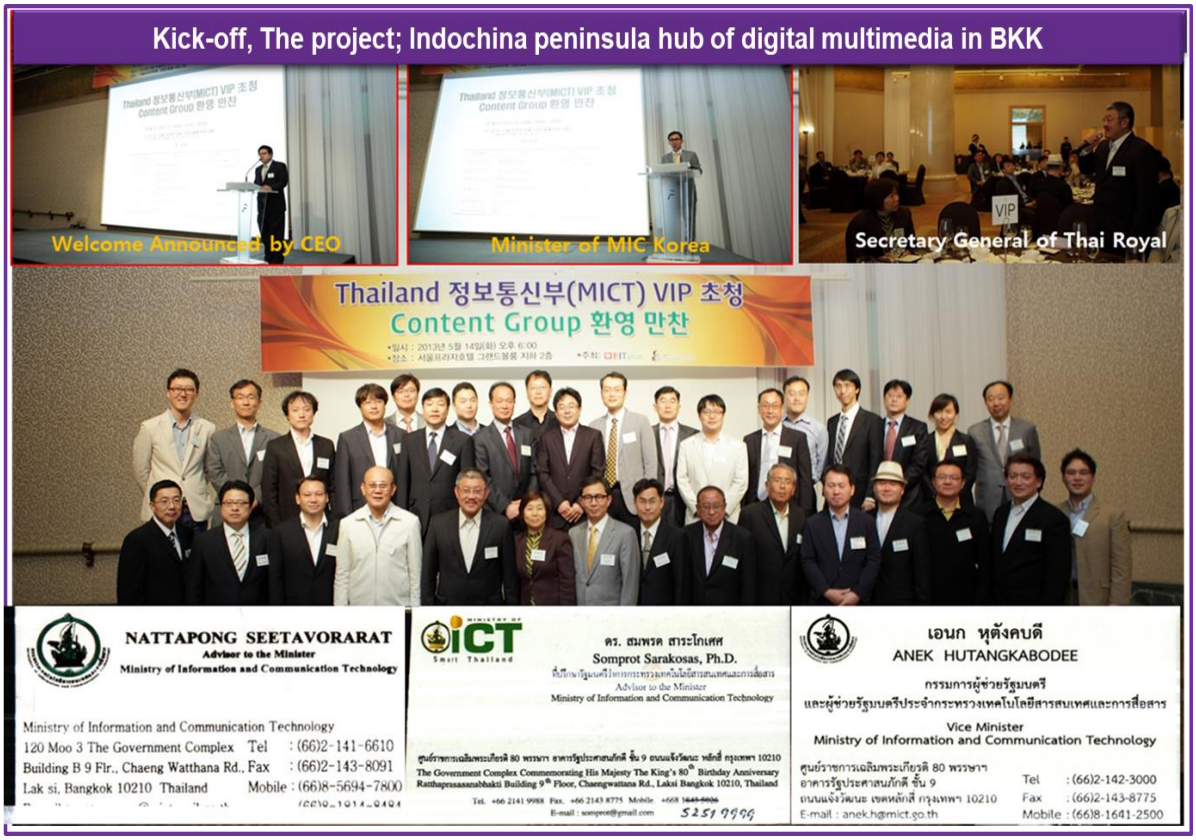


< June 13, 2020, the Royal Forum for Distance Education Broadcasting >

< January 22, 2020, signed a cooperation agreement with a Thai joint venture (JSC)>

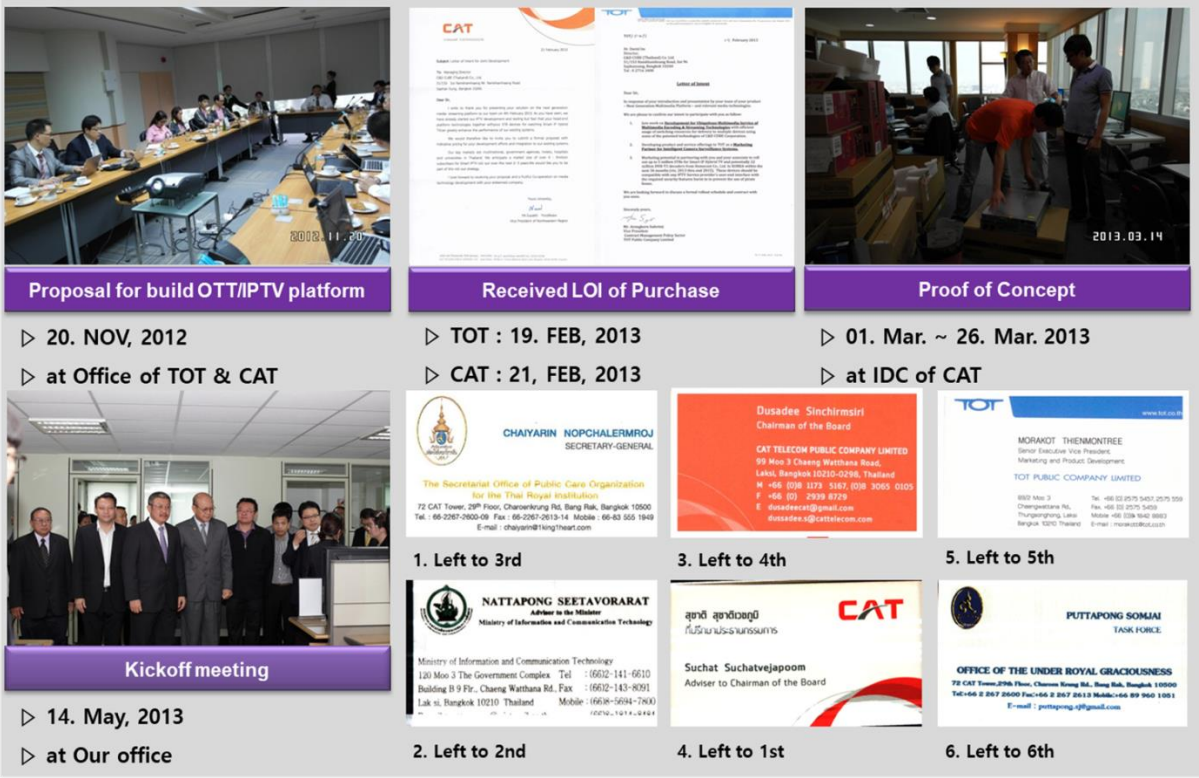


<2016~2013, pilot project: Build Smart IP Cloud TV Platform >



<2013, Kick-off: Build Smart IP Cloud TV Platform >

<2013, established a joint venture in Thailand, C&D CUBE THAILAND Co., Ltd. >



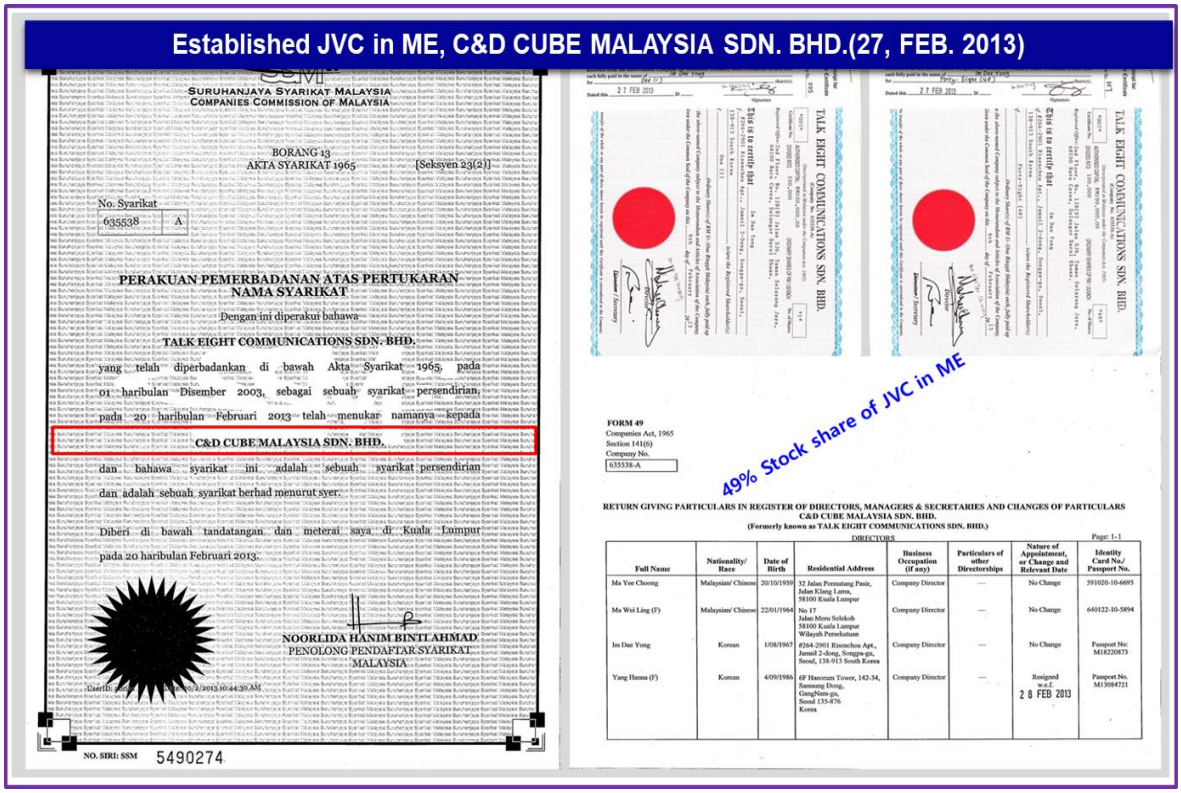
<2013~2012, verification of POC by CAT/TOT (state telecommunications company) >

6.3 Possibility

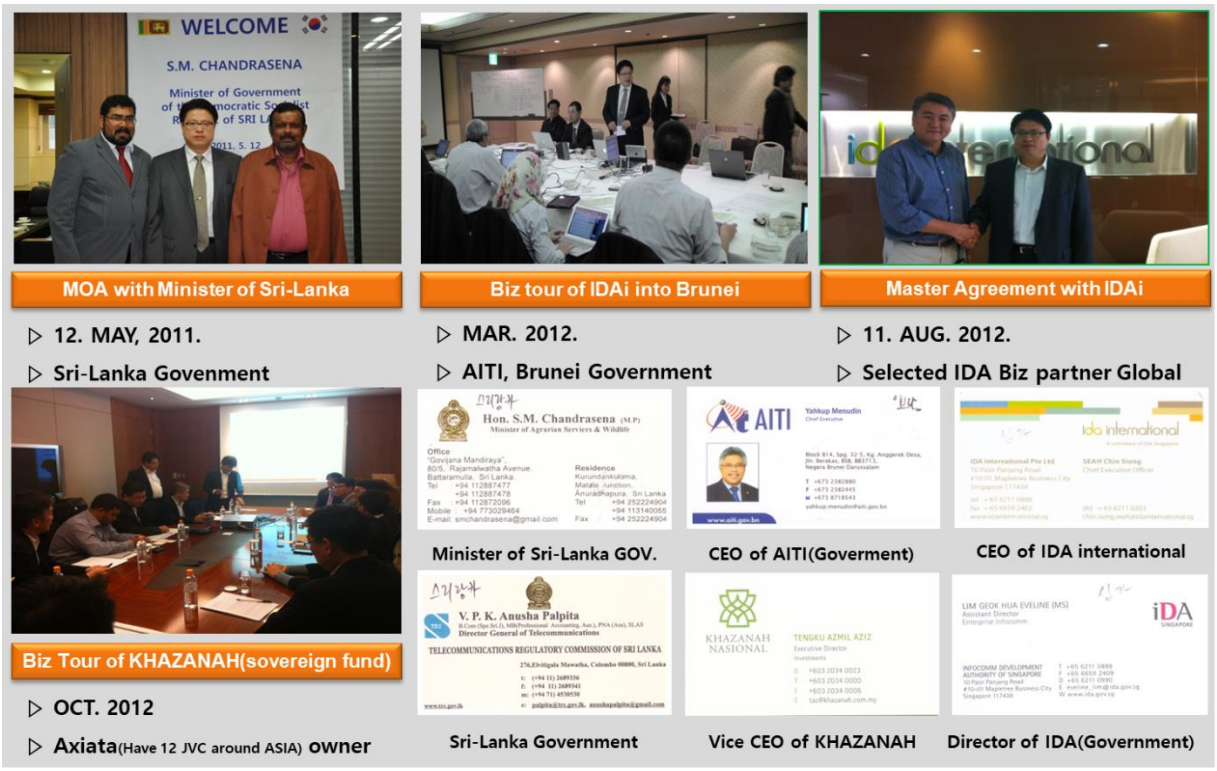
< Securing global cooperation, Asia, Pacific Rim, Middle East, and America >

<2016, securing application cases, building Smart IP Cloud TV Platform, Myanmar >

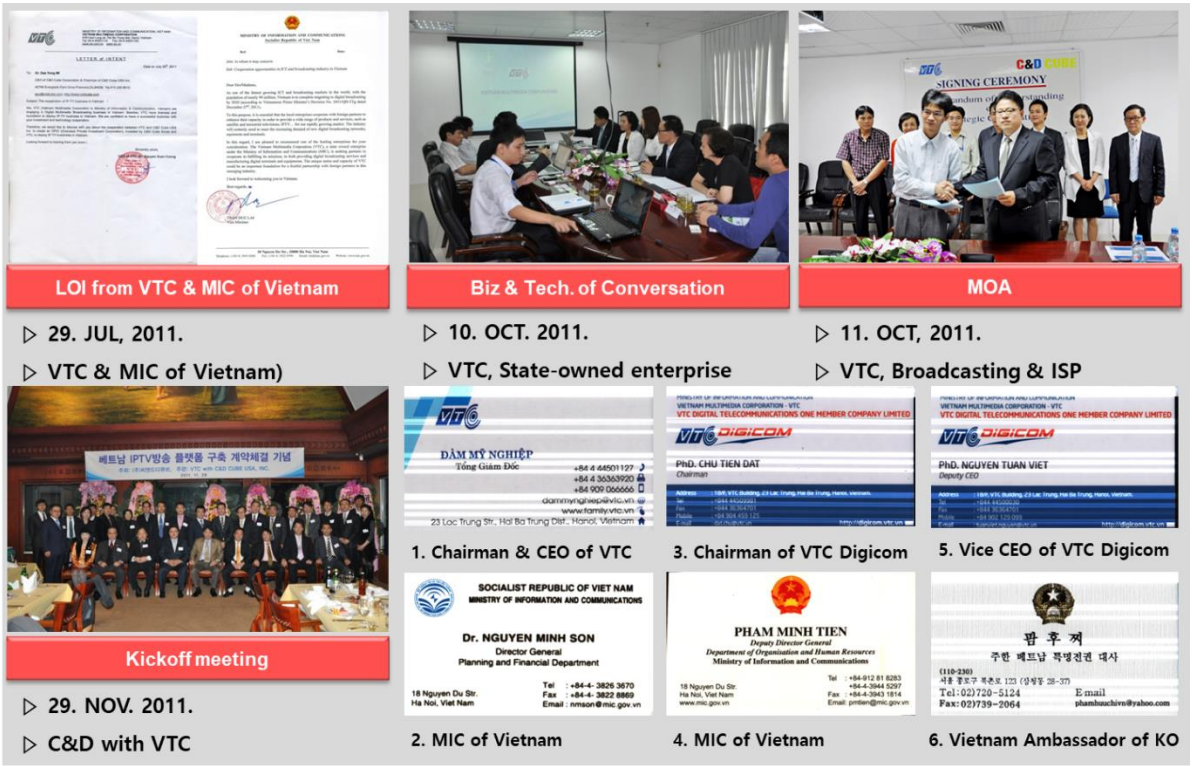
<2013, securing cooperative relations, Cambodian & Laos state run company >



<2013, established a Malaysian joint venture, C&D CUBE MALAYSIA SDN. BHD.>



<2012, securing cooperation, Sri Lanka/Brunei/Singapore/12 Asian countries >



< Securing cooperative relationship: Vietnam VTC state-run broadcasting company >

7. Members

Chairman Daud Bin Chong Alharthy, C&D Corporation Co., Ltd. President/CEO

Dr. David D.Y IM, AUG. 1st, 1967 was born

EDUCATION

- **1996** St. Cross College, University of Oxford in UK, MSc/Ph.D
  . Computer Operating System & Communications Engineering
  . Digital Media Science (Data processing & Communications)
- **2010** Green International University in US, MBA

CAREER

- **1997** LinuxPPC KOREA, INC. CEO/President (~2003)
  . Biz for Linux O/S & Solution for PowerPC Processor
  . Biz for PSTN/ISDN/xDSL base Digital Multimedia Network
- **2004** Established C&D Corporation Co., LTD.
- **2008** Grateful Award from the president, M.B Lee
- **2009** Ubiquitous Media Contents Association, IP media chairman
- **2010** Director/IPTV Chairman of Korea Communication Society
  . Presented QoS, QoE and Interactive IPTV Platform over public network
  . Presented Digital multimedia encoding acceleration technology based on SIMD
  . Presented 3 Screen Plus 1 Smart IP Cloud TV Head-end Platform
  . Presented Global Multimedia Platform based on CINE GRID Network
- **2010** Grateful Award from the province governor, M.S. Kim
- **2010** Selected as one of 33 Korea Leaders
- **2011** People's Movement alliance for Korea Clean Contents , Chairman of IP Media
- **2011** Policy consultant for Korea Communication Commission
- **2011** Selected as 33 Leaders among 363 Korea Leaders 2000-2010
- **2012** Appointment "Chairman of Cyber Committee" and Chairman of Broadcasting & Communications Committee" from Ms. Park of Elected President
- **2012** Appointment "Member of Presidential Transition Commission" From Ms. Park of Elected President
- **2014** Selected as 33 Leaders among 495 Korea Leaders 2000-2014

Deputy Chairman R.H KANG, C&D Corporation Co., Ltd. Vice President/COO

Age: 66 Years Old

Education: YeonSei University Bachelor

-UBIX SYSTEM Co., Ltd. President/CEO

-Hyosung Information Systems Co., Ltd. CMO

Experience

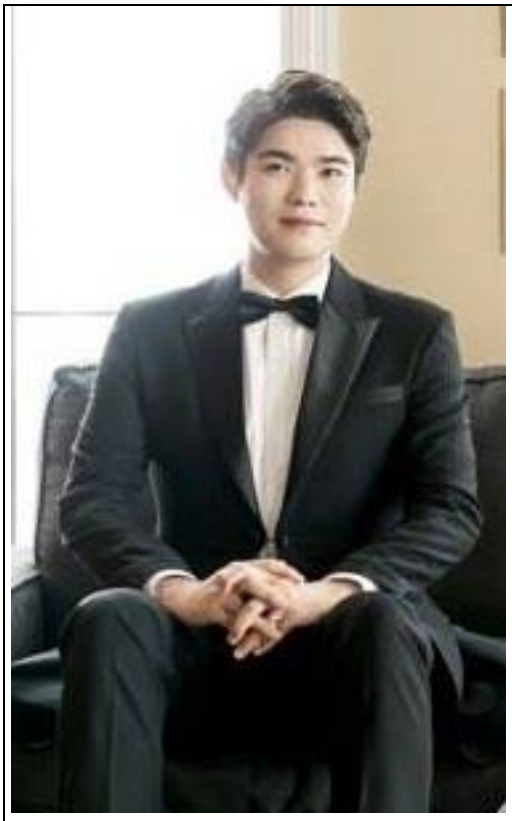
깨진 유리창의 법칙

강래훈 효성인포메이션시스템 전략사업본부 상무

이 국.. 입력 2006-08-22 14:49

He joined Hyosung Group as an employee and worked on projects such as large Unix systems and storage CD Network Clusters, experienced large-scale projects such as data emergency recovery and WDS WAN acceleration, and retired as executive director.

President/CEO S.P CHOI TRION Corporation INC. President/CEO

	Age: 34 Years Old Education: Indiana state University, Ba. Experience -CWO, C&D Corporation Co., Ltd. -Manager, KCIA (Korea Consultancy Industry Association) Certificate -Korea Foundation Quality (ISO9000 & 14000 Global standardization) Co Author(Korea B & C Association) -Ontology triangle prosumer T-commerce. -Public benefit of Shopping and U-commerce Patents -Interactivity TV On-screen advertisement -Interactivity TV On-screen commerce Development: Trinity Studio APP.

Board/CSO H.P KIM, tFarm Co., Ltd. President/CEO

	Age: 53 Years Old Education -Hanyang University in Seoul, Bachelor -State University of New York, Master Experience -tfam Co., Ltd. President/CEO -Daelim Corporation Vice President -Daelim Industrial Co., Ltd. VP & CIO/CISO -LG U+, Head of the IT Department Technologies: -Smart Factory & Construction platform -Wire Tap Solutions -Robotic Process Automation -Block chain End to End

Board/CMO NATHASITH ITTHITHAVORN, C&D THAI .Co., Ltd. President/CEO

	Experience: 32 Years in Business Age: 54 Years Old Education -Chulalongkorn University in BKK, Bachelor -Columbia University in NEW YORK, Master President/CEO -MA Corporation Co., Ltd. I.T & Construction -ASIA Expert Ltd.(홍콩), Oil/Gas Trading -ULTIMATE Property Co., Ltd. Real estate biz. -POWER I.Q Co., Ltd. Green energy fund -DESIGN I.Q Co., Ltd. Architect & Planner -DEVELOPMENT I.Q Co., Ltd. Consultant R.E Honors & Awards -BANGKOK in The Future as Design Competition -Vacation House as a Experimental Design Com. License: Registered Architect.

Advisor H.E. KORN DABBARANSI, C&D THAILAND Co., Ltd. (JVC)

	Chairman of Foundation Rajabhat University Age: 75 Years old Education -University of Massachusetts Experience -Vice Prime Minister ('02~'03) -Vice Prime Minister ('98~'00) -Vice Prime Minister ('96~'97) -Minister of Science & Technology ('04~'05) -Minister of Public Health ('98~'00) -Minister of Industry ('96~'97) -Minister of the office of the P.M ('89~'90)

8. Legal Notice

This whitepaper is intended to provide information about business models, technologies and teams to those interested in the TCG Token platform and [Listing Tokens and Reward points (collectively, "TCG Tokens")]. This whitepaper is based on the status at the time of the writing (As-is), and whether that the TCG Token team is correct or appropriate for any content, including the conclusion, schedule and performance of the project as its appears in the roadmap for the future is not guaranteed. This whitepaper may change in accordance with the policies and decisions of the TCG Token team, and the final version shall take precedence over any changes.

The information or analysis contained in this whitepaper does not contain any recommendations to encourage you to participate in this project. This whitepaper is not an investment advisory, nor a document to recommend an investment in securities or financial products and in addition to the information contained in this whitepaper, we recommend that you seek the advice of a specialist to ascertain any risk assessment, application of applicable laws or taxation.

You are solely responsible for any damages, losses, and expenses resulting from the decisions you make in references to or use of this whitepaper and the TCG Token team does not bear any responsibilities other than those caused by intentional false information.

This whitepaper contains information about third parties and publications. The TCG Token team makes no warranty as to the accuracy or completeness of such information and assumes no obligation to update, modify, or alter this whitepaper, even if such information changes.

This whitepaper is not reviewed or approved by regulatory authorities, nor does the publication, distribution, or dissemination of this whitepaper signify that this whitepaper complies with all applicable laws and regulations. In some cases, the publication, distribution, and dissemination of this whitepaper may be prohibited or restricted by applicable laws and regulations. Moreover, regulatory authorities may restrict the sale, possession, use, and retention of TCG Tokens and these regulatory actions may affect the sale and use of TCG Tokens.

TCG Tokens have no other purposes other than their use in the TCG Token platform set forth in this whitepaper, and their value and functionality are not guaranteed. TCG tokens are not securities or investment products, and the

ownership of TCG tokens is not to be constructed as a right to claim any distribution or repayment of profits, etc., to the TCG Token team, nor shall it be constructed as having any intellectual property rights.

Purchasing tokens involves significant risk. You may lose all or a substantial portion of the funds used to purchase the tokens, and the TCG Token team makes no warranties regarding the purchase price or the value of the TCG tokens. When you refer to this whitepaper to purchase TCG tokens, be sure to understand and accept these risks.

Exclusion of Liability

The information contained in this whitepaper may be translated into other languages from time to time or used in the communication process with multiple participants. We acknowledge that there may be changes or misinterpretations in the course of such translation or communication, and since the Korean whitepaper on the homepage has the highest overriding effect, it is your responsibility to verify the whitepaper with the highest priority.

The TCG Token team notices and explains the risks as follows. The TCG Token team does not make any representations or warranties with respect to any of the following risks described by the TCG Token team, and the risks below are entirely bone by TCG Token buyers and participants in the TCG Token platform.

Warnings about Future-forecasting Statements.

This whitepaper contains information about plans and practices (“Future Plans”) at this time. These plans are expressed with words and phrases such as “can”, “will do”, “expect”, “anticipate”, “goal”, “predictions”, “intend”, “plan”, “look for”, “believe”,
“potential”, “continue”, “it will be there”, and these words were used based on the assumptions and analysis that are considered reasonable in light of the [TCG Token] team’s experience, current situation, anticipation of future developments and other factors. However, there are risks and uncertainties in the contest, and the actual results and outcomes of the [TCG Token] project may be different from plans.

Potential Risks

Before deciding to purchase and participate in TCG tokens, we strongly

encourage you to read and understand the elements and risks involved carefully. Risks include, but are not limited to: Tokens or coins are closely scrutinized by various regulatory agencies around the world, including the SEC, and TCG tokens may be considered as securities in many countries, including the United States. In this case, the terms of the securities law may limit the possession of more than a certain amount of TCG tokens, transfer of TCG tokens may be restricted, certain conditions may be added for selling TCG tokens and other related business that facilitates exchange or transfer may be restricted.

You may lose your TCG tokens due to the loss of your private key to your digital wallet. If access to the private key is not possible due to loss, destruction or damage of the private key, the holder, may not have access to the block chain-based digital assets, such as the TCG token, and the TCG Token team cannot restore it.

Smart contract technology is still in its early stages of development, and its application involves significant risks associated with operational, technical, regulatory, and financial factors. A smart contract may not be suitable for the original purpose, and deficiencies, vulnerabilities, or other issues that may be inherent in the smart contract may cause technical problems or loss of TCG tokens.

Potential participants, such as individuals and companies, may choose not to participate in TCG Tokens or use TCG tokens after launch, and their awareness of such coins/tokens and their potential use may not be high. In addition, TCG Tokens may not be operational. In such cases, the value of TCG tokens, etc. can be significantly reduced or lost.

The function of the TCG Token includes the storage and transmission of personal information of participants, and it is exposed to the risk of leakage of personal information due to security problems caused by various methods, such as cyber terrorism. Although the TCG Token team will take various security measures, like preventing unauthorized access to the database, privacy violations could still occur for a number of reasons. This can result in legal and financial loss, loss of confidence, such as a decline in the reputation of TCG Token and TCG Tokens, and may have a negative impact on the TCG Token project.

The risk of government regulation on block chain-related industries is increasing. Depending on whether or not the government is regulating the block chain industry and the level of government regulation, the business of these

companies may be significantly affected, directly or indirectly. The TCG Token team strives to comply with relevant laws and regulations and ensure stable operation within the limits permitted by law in order to ensure the sound development of block chain technology.

However, due to future legal regulations, the TCG Token project may be negatively affected; moreover, if government regulatory measures are taken against TCG tokens, a considerable amount of time and resources may be spent to respond.

9. Value-oriented Direction

The direction to go forward is that TCG(To promote practicality and economic value Oriented TCG) is a virtual currency that aims for practical aspects and takes the normal value increase and the protection of investors and consumers' assets as the first value. After the advent of bitcoin, numerous coins and tokens flooded, but only the goal of implementing a vague technology and deception against investors was rampant. Therefore, most of the investors, except those who made profits through some initial cryptocurrency investments, have repeatedly failed in numerous investments. As a result, distrust in cryptocurrency has become full and the industry-wide bubble has extinguished and has been regarded as a minor business group.

TCG is a cryptocurrency designed with a great emphasis on guaranteeing the actual usage and currency, which are the basis of virtual currency. Most of the other cryptocurrencies have the risk of bombing after listing on the exchange, but TCG is focusing on expanding its infrastructure to become a cryptocurrency that can be used in real life. We firmly believe that all of this will be reflected in TCG's market price, and we aim for a long and stable value increase, not a fluctuating coin. "End"