

## Industry Activation Scheme through mVoIP Technology Trends and Market Analysis

Se-Hwan Park<sup>†</sup>, Jong-Kyu Park<sup>\*</sup>, Cheong-Ghil Kim<sup>\*\*</sup>

<sup>†\*</sup> Korea Institute of Science and Technology Information, Korea

<sup>\*\*</sup> Department of Computer Science, Namseoul University, Korea

### Abstract

The mVoIP service is the technology which focuses on the wireless data service as the IP network having the transmission rate of 100 Mbps classes on the high-speed middle of movement through the WiFi, WiBro and 3G mobile radio communication network, and etc. and is developed. Since 2010, the mVoIP (mobile VoIP) service shows the rapid growth due to 4G-LTE service seriously disclosed from July with the Smart phone and 2,011 it begins to be rapidly popularized. In this research, additionally the mVoIP service industry activation plan is presented with the trends of technology development including the chip-set/module/terminal, etc. based upon local and foreign market trend searchlight through the market demand analysis. The mVoIP service downloads App to the mobile apparatus and or can provide the service as the software through the WiFi network. Therefore, the change which is large in the products development aspect is to be have no. Expected to is being provided as the added service in the case of 4G-LTE as a matter of course, the service deployment where it is based on the market principle and demand needs is needed.

**Key words:** Wireless mVoIP, IP network, smart phone, 4G-LTE, demand needs, industry activation, products development, added services

### 1. INTRODUCTION

In 2004, VoIP (Voice over Internet Protocol: Internet telephony) service system was introduced. Since 2008, the number improves call quality on an ongoing basis with the islands move. In addition, operators of the benefits of an aggressive marketing activities, such as free calls between subscribers of one VoIP service is rapidly spreading. This is an IP phone-to-IP phone, IP phone-to-Phone, Phone-to-Phone and PC-to-PC offers a variety of connectivity. From 2010, rapidly began to popularize the Smart phones of 2011. 4G-LTE (Long Term Evolution) service commenced in earnest since July mVoIP (mobile VoIP) services market is growing fast. mVoIP service is a mobile broadband network, WiFi, WiBro (Mobile WiMAX IEEE 802.16.e) and 3G mobile network (asynchronous

WCDMA, HSDPA, synchronous CDMA 2000 1xEVDO etc.) through the service.

Table 1. Service Type & Usage Method of mVoIP

Service Type		
MNO	- Mobile communication company, his company's network directly via the service	- US of Clearwire (WiMax)
MVNO	- MVNO Venders through a network of mobile communication company	- Japan of Truphone
mVoIP Vender	- Smart phone App in the form of a service	- Skype - Fring
Usage Method		
MNO	- WiFi/mobile communications integration mobile phone in WiFi zone	
MVNO	- Download VoIP software to use on mobile phone	
mVoIP Vender	- Mobile communication vender and VoIP companies in conjunction with VoIP-only phones	

\* source : S. H. Na(2010. 9. 27), p.3.

S. j. Han(2009 4. 15), p.28 / reconstitution.

Manuscript received : Sept. 27, 2012 / revised : Nov. 1, 2012

<sup>†</sup> Corresponding Author: world017@empal.com

Tel : +82-2-3299-6231, Fax: +82-2-3299-6234

Korea Institute of Science and Technology Information (KISTI), Korea

These are the speed of 100Mbps on the go as an IP network with wireless data services is a technology developed by focusing on[1][2]. This is an ISP (Internet Service Provider) service, depending on how the various services, such as <Table 1 [3][4].>

## 2. mVoIP Technology Development Trends

### 2.1. Chip set and Modules

The end users of smart phones and feature phones, mVoIP, subscribers of mobile communication. These are separate for mVoIP chip set without the need for a single App (application) and is mounted on a mobile form. Therefore, the current mobile terminals for 3G mobile communications baseband chipset, part WiFi chip set and modules and critical components. This has nothing to do with the core functionality of mobile devices like the mVoIP service specializes in the business of mobile communication subscribers mVoIP service in order to Java and Android App based on a mobile platform such as subscribers, the only way to provide solutions.

### 2.2. User Terminal Devices

Terminations for mVoIP WLAN (Wireless Local Area Networks) and the WiFi-only terminals and WiFi capabilities, features, and services for mobile devices equipped with a target. Other WiBro mobile voice services was excluded because it failed to be activated[1][5][6].

- WiFi and 3G feature phones and Smart phones system implemented dual mode capabilities and the ability to mount the App mVoIP is needed. (Apple's iPhone, Google's Android phones, most smart phones only)
- WiFi-only device is WiFi networks must be able to implement mVoIP. (Voice and video calls are possible UniDataCom of SQ-3000, etc.)
- Other WiFi VoIP and wireless of Skype with Skype Lite beta-App(released January 2009). This is not in a WiFi zone can use Skype. (LG/ Motorola/Nokia/SAMSUNG/Sony Ericsson etc. terminals mounted on a possible 'G1' T-Mobile, etc.)

## 3. mVoIP MARKET TRENDS

### 3.1. Market Demand Analysis

mVoIP service WiFi mobile device features and software you can WiFi mount via low cost Internet access with voice communications are available. In addition, wireless data networks with national coverage, is to accommodate ₩18 per 10 second in the current fee for mVoIP was in call rates ₩40 per 3 minute has the effect of raising the level of Unity[7].

This demand now represents the aggressive use of physician services. However, the carrier's perspective, all equipped with WiFi capabilities on the mobile device by voice call revenue loss would be concerned. However, the current domestic private WiFi networks only if we consider that more than 4 million EA, free mVoIP service is expected to be quickly spread soon.

### 3.2. Global Vender Business Trends

The global market leader in offshore services, major carriers mVoIP trends can be summarized as follows[7]. (The first major hire announced soon)

- Israel's Fring: In 2007, 2~3G or WiFi networks such as Google Talk voice chat service Mobile Soft phone service launched.
- Truphone the UK: In August 2007, Nokia-N and E-Series through a partnership with eXpansys dual mVoIP service as the target phone service launched.
- Skype in the UK: In April 2008, mount the handset Java available in feature phones 'Skype for your mobile' while launching mVoIP service launched.
- The Netherlands of Nimbuzz: In May 2008, mVoIP calls/Conference calls/group chat and file sharing features of IM community, etc. while providing the mVoIP service launched.
- Google in the United States: In March 2009, Google Voice service to 100 million from Google Voice-only number resources while ensuring mVoIP service is launched.

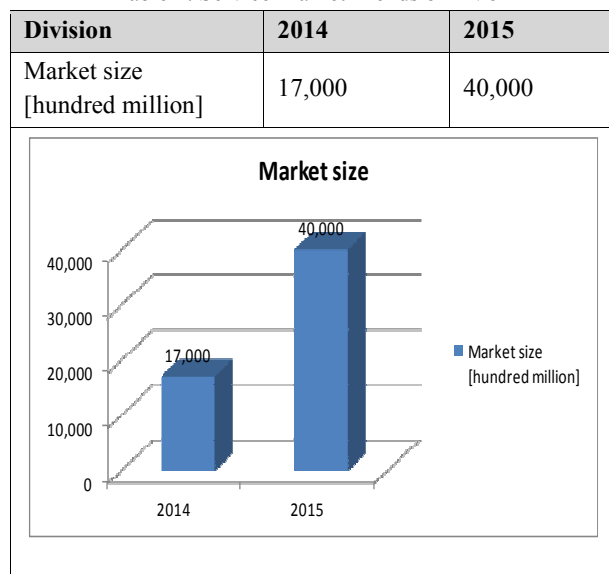
### 3.3. THE DOMESTIC MARKET TRENDS

#### 3.3.1. mVoIP Service Market Trends

Omni directional of mVoIP market this whole communication (mobile phone+mobile Internet) services market in 2009. At the end of August from ₩17.205 billion yen (year-on-year growth of 4.6%)[8]. When 4G service popularization of mVoIP is that commercialization is expected around the end of 2012~2013[2]. This is based on a variety of data service revenues increased due to the

decrease in sales of voice calls, this pain has improved the efficiency of network transport as well as decreases and the burden of data services is expected to depreciate the cost of timely service to[2]. Considering the environment in these markets to grow the domestic market for the early commercialization of mVoIP service 2014 ₩1,700 billion in the second year of commercialization, and in 2015 is expected to form a large market of more than ₩4,000 billion. (see Table 2)

Table 2. Service Market Trends of mVoIP



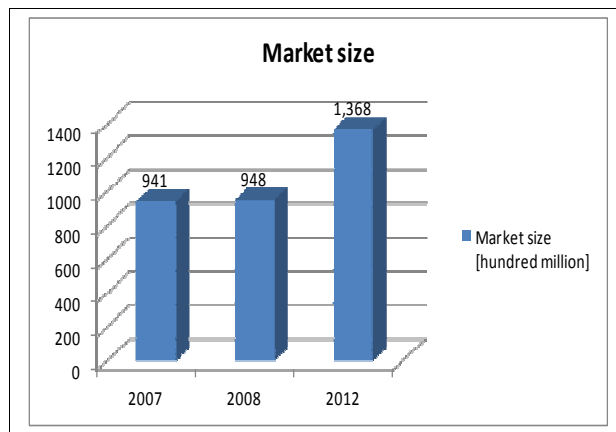
\* source : S. j. Park(2010. 8), p.28 / reconstitution.

### 3.3.2. mVoIP Equipment Market Trends

VoIP equipment market ₩94.1 billion in 2007 at ₩94.8 billion(CAGR 7.8% growth) by 2012, ₩136.8 billion is expected to reach the scale. VoIP equipment market enterprise (IP-PBX, IP phone etc.) market operators (soft-switch, media gateway etc.), somewhat lower than the market growth rate. In the future, when you view the unified communications (UC) in the long term and increase efficiency and productivity through a combination of a promising enterprise is expected to be a growing market[2][9]. (see Table 3)

Table3. Equipment Market Trends of mVoIP

Division	2007	2008	2012	CAGR[%]
Market size [hundred million]	941	948	1,368	7.8



\* source : S. j. Park(2010. 8), p.28.

IDC Korea( 2011) / reconstitution.

## 4. mVoIP SERVICE ACTIVATION METHODOLOGY

### 4.1. Service Addressing Regulatory Issues and Trends

The current Smart phone subscribers can use the service of the only WiFi zone mVoIP. This is the move fearing a reduction in revenue for mobile doctors, blocking the service from the network. However, if you consider the needs of moving mesh of openness seems to be inevitable. Just because of this, network quality of service degradation, depopulation induced by investment and dampen growth of the industry-based wireless Internet possibilities for institutional response is needed. This is provided in the form of a free App for mVoIP, additional services include classification by reducing the risk posed to the telecommunications regulatory users need the convenience of a policy[3].

MNO (Mobile Network Operator) mVoIP service strategy of 'unconditional block' to what extent can preserve profits 'conditional acceptance of' changing the reality is[10]. This is demand needs will be accepted as effective for gaining subscribers, it is possible that a single competition. All-IP oriented mobile services are being deployed rapidly at the present time this pain's breakthrough in the turning point seems to need a servicing strategy for mVoIP. However, the somewhat off-balance billing current voice and data systems that need to be realized. In other words, if the fare changes, the data center will be available for free mVoIP services[11].

### 4.2. Ramifications and Implications in Accordance with the Regulatory

Due to the proliferation of mVoIP international dialing and multiple users can expect the effect of the communication of

the cuts, the impact on the neutral network investment. The introduction of flat rate unlimited data for this whole country 3-mobile communication company cases is mVoIP service if you receive a demand likely to accommodate suggests that competitively. From 2009, domestic and international calling of 68.9% of the mobile phone used to disprove this point. (home phone long distance and international phone call rates than about 80% cheaper) Go through mVoIP service market, the gradual acceptance of the autonomic capabilities through desirable. Therefore, the optimal policy direction in order to reduce communication costs due to the convenience of ' settings ' and ' underestimated the cost of investing in the network ' and compares the results of the quantitative/qualitative needs to sort out.

#### 4.3. mVoIP Service Activation Issues

mVoIP services, such as mobile WiMAX and emerging through the popularization of 4G-LTE is expected to do. In addition, the rapid adoption of smart phones, mobile vendors, open platform App market according to the policy, such as mVoIP market growth drivers. mVoIP service activation is required for the future challenges that summarized as follows[10][11].

- Rapid mobile networks due to high awareness of environmental change and ISPs, this pain can be a threat to buy this bucket of this urgently needed measures.
- Let's demand at affordable rates but now stay secure layers of predictability, quality of service, ease of users, terminals and the diversity of the various purchase costs should accommodate the needs of consumption has challenges.

### 5. CONCLUSION

All-IP technology oriented mobile services, voice/data, wired/wireless, communications/broadcasting convergence is going fast, and at its heart is an Internet based mVoIP service. This will download the App to your mobile device software can provide the service. In addition, WiFi network through mVoIP service is possible because of the chip set and modules are not large in terms of the change in product development.

#### ACKNOWLEDGMENT

This study has been done by the 「ReSEAT program 2012」 that is KISTI(Korea Institute of Science and Technology Information) and MEST(Ministry of education, science and technology) as science & technology promotion

fund.

#### REFERENCES

- [1] J. Y. Back, "Market Trends & Product Development Trends of Mobile VoIP", EIC, KETI, 2009. 9.
- [2] S. J. Park, "The Present Condition & Development Trends of m-VoIP", EIC, KETI, 2010. 8.
- [3] S. H. Na, "Regulation Issues of mVoIP", Premium Report 10-05, KISDI, 2010. 9. 27.
- [4] S. J. Han, "VoIP, Spread of Mobile Communication", Weekly Focus, LG Business Insight, 2009 4. 15.
- [5] H. C. Song, K. I. Ban, "Development of Remote Management and Control System for VoIP Terminal", Journal of the Institute of Webcasting, Internet and Telecommunication(IWIT), Vol. 11 No. 6, pp.73-80, Dec. 2011.
- [6] S. T. Kim, "The Implementation of VoIP Terminal using PPTP for Voice Security", Journal of the Institute of Webcasting, Internet and Telecommunication(IWIT), Vol. 9 No. 2, pp.73-80, Apr. 2009.
- [7] G. S. Jang, "Market & Regulation Trends of m-VoIP", EIC, KETI, 2010. 8.
- [8] "Wired and Wireless Subscriber Statistics\_2012. 7", NIPA, 2012. 8.
- [9] "Equipment Market Trends of VoIP", IDC Korea, 2011.
- [10] "Mobile operator responses to VoIP: the six steps", Ovum, 2010.
- [11] "m-VoIP Denunciation, Data-centric Fare Overhaul Challenge", Digital daily, 2012. 7. 12.



**Se-Hwan Park** received the ph.D. majoring with Electronic Engineering at University of Chosun, Korea. He has been worked as a professor at Dept. of Computer Science, University of Hanyoung, Korea. Currently he is a Senior Research Fellow at Korea Institute of Science and Technology Information(KISTI), Korea. His research areas are Broadband Information Communication & Control of Traffic, ICT Industry Analysis, and so on. Dr. Park is a Member of the Institute of Webcasting Internet and Telecommunication(IWIT) Korea.



**Jong-Kyu Park** received M.S. majoring with Electronic Engineering at University of Chungang, Korea. He has been worked as a researcher at Institute of LG Electronics. Currently he is a Principal Researcher at Korea Institute of Science and Technology Information(KISTI), Korea. His research areas are Visual Communication and Information Analysis, and so on.



**Cheong-Ghil Kim** received B.S. majoring with Computer Science at University of Redlands, USA. He received M.S. and Ph.D. from Dept. of Computer Science, Yonsei University, Korea, in 2003 and 2006, respectively. He worked as Post-Doctor and Research Prof. at the same department from Sep. 2006 to Feb. 2008. Currently he is a Prof. at Dept. of Computer Science, Namseoul University, Korea. His research areas are Smart Devices, Multimedia Embedded Systems, Mobile AR, 3D Contents, and so on.