

The Development of Ambient TV in 2016

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ABSTRACT

In this paper, we describe the potential trends of television industry in 2016. Now it seems that television has become an indispensable and critical smart terminal in ambient media researching field. After explaining the relation between ambient media and television industry, one consumer survey has been used to get more external opinions and subsequent predictions are obtained based on analyzing the survey. This paper is continuation report of the previous "Prediction TV in the year of 2013".

Keywords

Ambient media, television, broadcasting, advertisement, ecosystem

1. INTRODUCTION

1.1 What Are Ambient Media?

Ambient media is the technology that the media uses different channels for transferring information to users [1]. In the multimedia field, information subjects (broadcaster or individual) which want to spread information under the adaptation to the environment, use a variety of devices (intelligent or non-intelligent) and multiple technologies (innovative or common) to send the information to the receptor and thus affect various feelings of the receptor. All of these activities could be integrated to ambient media [2].

Since the late 20th century, the birth of Internet has made great changes for people lives [3]. The emergence of mobile Internet is bringing another revolutionary change for life and work styles. At present, the integration of telecommunication network, broadcasting network and Internet will lead to unprecedented changes for the traditional industry as well as information and communication technical industries [4]. The working and life style of ordinary people has been already permeated. And also, these great changes are stimulating the new market demands.

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MindTrek'11, September 28-30, 2011, Tampere, Finland.

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The following major changes can be foreseen (see [1] and [2]):

More spirited competition. There are revolutionary changings on all traditional information and communication industries [5]. Especially for television industry, not only these large Internet companies begin to compete for the consumer market by providing program content, but also they create new challenges in the transmission and broadcasting of the program following the emergence of new electronic equipment.

More integrated production. Televisions, mobile phones, computers and other intelligent devices have more and more convergence in the common functions [6]. Furthermore, consumers prefer personalized streaming services, freely controlling contents, peer to peer broadcasting service, especially movie on demand in anytime, anywhere and any device.

More emerging content. During the Internet era, consumers have begun to adapt to the wide range of personalized contents including video and audio data by Internet providers, rather than just programs from large broadcasting companies or national television stations [7].

1.2 The Relations between Ambient Media and TV Industry

Ambient media is not only referring to a single technology or product, but emphasizes on the certain technology, service and content which suit to the environment [7]. Ambient media experience has an irreplaceable role for television and telecommunication operators [8].

Avoiding risks and strategic mistakes. The most dominant companies are usually not the first inventors for these products.

Pre-researching innovative industries and achieving market returns. The person who firstly enters into an undeveloped market will be able to rapidly expand market share and result to huge gain in the future.

Upgrading and improving the existing product and service. The steadily updating and step improvement are another method gradually optimizing the industrial structure. The broadcasting operator could improve efficiency and increase incoming from the cross-disciplinary service and innovative technologies.

2. CONSUMER SURVEY

2.1 Context

In order to receive more reasonable predictions for the development of ambient media technology in 2016, one survey is designed and processed after the MindTrek 2011 conference. Partial results are highly related with the TV industry.

The response rate for survey is 34.41% from 93 candidates. There are 45 questions totally and the first 10 questions are background information of participants. The rest of 35 questions are various topics related to ambient media fields. The most group of participants' age is 28-35 taking up 41.1%. And 94.76% of participants have the master degree or even higher degree. The university academic is the major group taking up 34.4%. The second biggest group is broadcaster for 25%. Furthermore, 46% of participants have over 5 years' practical or researching experience. The group of professional, manager, director and president takes up over 50%. Finally, 63% of participants are working in the researching and developing department.

2.2 TV Industry Related Results

In technology, mobile platform (smart phone, tablet) will grasp more market from traditional TV and PC. Therefore, the operation system and communication technology will be main tendency. The multi-touch application, the screen display and interactive device are used for enhanced consumers' experience.

In content, HD content is rising although consumers have almost the equal preference for content genres. Personalized content are more popular, and location base data is important.

In service, consumers accept value added broadcasting services. Advertisers start to use new media technology to launch advertisements, which is a threat for TV industry.

In business structure, existing broadcasters indeed have the chance to build up their own ecosystems. However, there is also possible for new players from outside traditional broadcasting. There are three questions below selected as examples:

Table 1. Sensors for Enhancing Consumer Media Experience

Question 1: the attitude from participants about sensors for enhancing consumer's media experiences in 2016.

Result: The supporting rates are rather averaged. Ambient surround sound and multi-point touching screen are the most popular technologies having the equal highest rate 22%, while participants think 3D image and portable TV have less enhancing experiences.

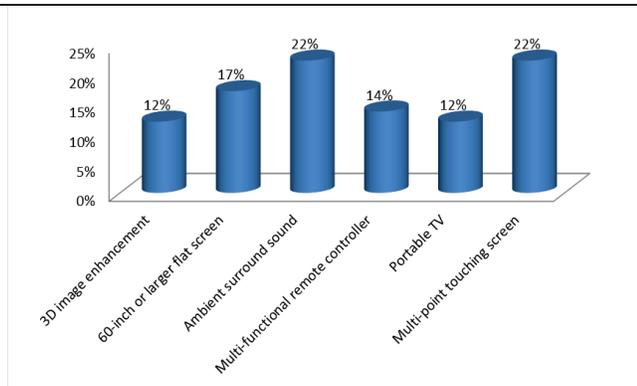


Figure 1. Sensors for Enhancing Consumer Media Experience

Table 2. Frequency of Using Mobile Broadcasting

Question 2: the attitude from participants for the frequency of consumers using broadcasting services on mobile devices in 2016.

Result: 53% of people choose mobile broadcasting every day and 33% choose it several times per week, which are very high rate

and good news for broadcasting industry including TV.

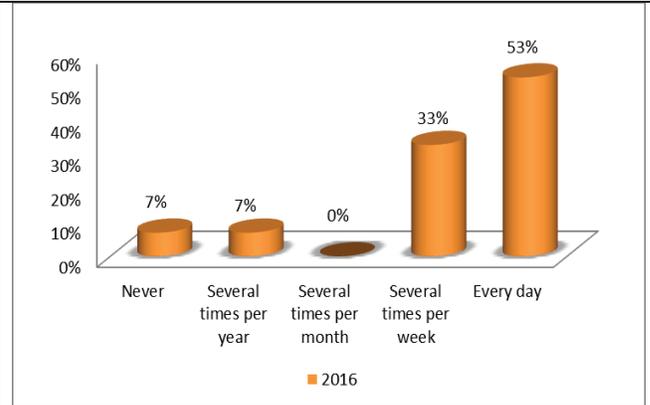


Figure 2. the Frequency of Using Mobile Broadcasting

Table 3. New Player for Broadcasting Industry

Question 3: the attitude from participants about whether new players still have the chance to enter broadcasting industry in 2016.

Result: 47% people agree new players still have the chance to enter broadcasting industry in 2016, while still 27% people choose skip this question which show there are indeed existing some concerns for industry monopoly.

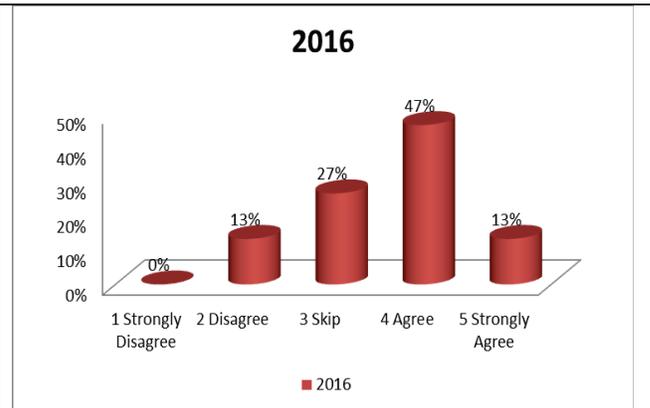


Figure 3. New Player for Broadcasting Industry

3. THE DEVELOPMENT OF AMBIENT TV IN 2016

Some predicting corrections have been obtained for TV technology after the consumer survey. It is listed and divided into technology, content, service and business structure parts [10].

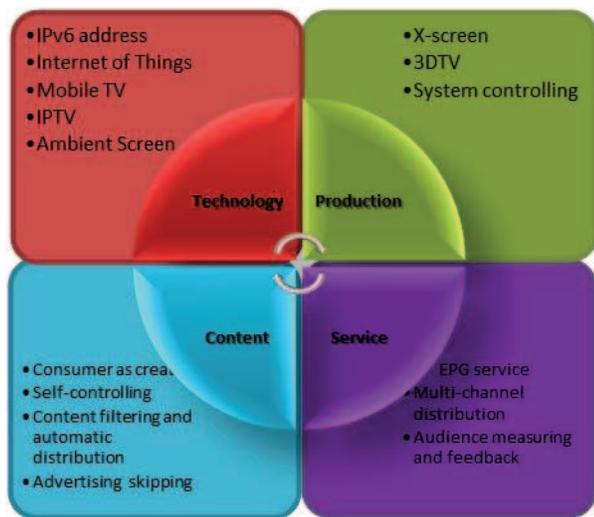


Figure 4. Television and Ambient Media

3.1 Technology

- Displaying technology for television changes
- Strong shift towards LCDs, TFTs; slight shift towards 3D; death of CRT; skeptical view towards new displays (plastic, paper, video beamer); skeptical view to 3D
- Interaction via eyes, gestures, and X-screens gain on importance
- IPTV is popular in mature markets and increasing fast in emerging markets
- HD screens will gradually entry household living room
- Television operation systems become another competitive market for operation system supplier
- Uncertainty tendency of the leading OS to Android, Apple, Windows, DVB; however, strong declining tendency towards OS: Symbian, Sony TiVo, Proprietary Systems, TV-Anytime, Chrome
- Unclear tendency that 3G, UMTS, WLAN will replace traditional broadcast distribution
- Multi-touch technology enhances consumers' interactive experience
- The network called Internet of Things for smart household appliances is shaping

3.2 Content

- More TV content will become HD program
- Clear tendency towards recommender based TV systems and personalized content offerings
- Clear trend towards consumer experience rather than consuming time
- Broadcasting system spreads application on mobile platform
- Mobile TV content genres are almost equal important
- The consuming rate of broadcasting contents produced by individual consumers will rise
- 3D contents specially produced for 3D screen are on trial

- The emerging of television and computer seems to be inevitable in the future

3.3 Related Service

- Advertisers will use more mobiles, outdoor digital signage and 3D ads as their media channels which are belonging TV industry now
- Consumer attitude for the importance of subtitles is high
- Advertisers begin to plan personal advertising program
- Advertisers use more electronic media and higher efficiency method to monitor the reaction of consumers for advertising
- The television content provider and the third part company provider recording service
- Low-end processing requirements lead to terminal TV always need a basic decoder chip and some simple manipulations to connect with television cloud center
- Open video cloud platform. This TV application platform can allows developers, consumers as well as broadcasters to design applications as mobile phones
- TV is an important distribution channels in real-time web-content, news discovery and emergency information
- Consumer monitoring is used to get feedbacks to the broadcasters
- Public data center could be established for commercial and private usage

3.4 Business Structure

- The Apple iTunes Store model is the fore-rider for store models for broadcaster
- Slight tendency that broadcasters building up new service ecosystem
- External Internet companies and independent content brokers are likely to invade the market of TV industry
- On the contrary, large broadcasters will also enter the business of Internet companies

4. FUTURE

After tendencies of Internet, smart and interactive, television industry may be developing toward the Internet of Things, which means all household appliances are connected together and controlled by the certain user by anytime, anywhere and any place. The future of the world is changing so fast that no one can accurately predict what will happen. Five years are sufficient for the next revolutionary product. But two things are obvious: television is still a very important terminal to delivery information [10], and the transition from traditional TV to ambient TV is accelerating [6].

5. CONCLUSION & ACKNOWLEDGEMENTS

This paper is the follow-up reports for the prediction TV in 2013. It also collects many external comments about ambient media as well as TV industry. We would like to sincerely express the highest appreciation to our research colleagues at NELME project and EMMi Lab. group, especially these great teammates from VTT.

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