An Exploratory Study on the Impact of 4D Concert of K-POP and the Korean Wave

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Abstract
The Popularity of K-POP concerts confirmed the possibility of Korean music industry to enter the markets of Europe and USA, and further opens the continuing possibility of the spread of the Korean Wave. The purpose of this study is to explore the potential of 4D concert of K-POP in which new technologies were applied including holography and comprehend its value as a new content for the Korean Wave. For this, in-depth interviews were conducted on experts in the areas of performance and broadcasting to analyze the results. It is estimated that K-POP concert, which becomes an international issue rare for Korean production culture, can open further possibility combined with 4D technology. 4D concert of K-POP can make the dance stage more dynamic, express the idol singers more attractively, and solve the problem of absence of some of the group members. It is expected that 4D K-POP concert would upgrade the charms of K-POP one step further, and contribute to continuation of the Korean Wave of the next generation, combined with development of our own unique culture technology. But the question of appropriate combination of technology and contents as well as the problem of profitability due to expensive cost for technology are challenges to be solved in future.

Keywords: 4D concert, K-POP, Korean Wave

1. Introduction
With development of technology, as 3D and 4D images and performance technology have been the focus, this research herein aims to discuss the possibility of K-Pop 4D concerts and the effect of it on proliferation of the Korean Wave. With the recent Popularity of K-POP, K-POP concerts are stretching themselves to the world beyond Asia: SM Entertainment concerts in the U.S. and France; Broadcasters' Korean Wave concert in Australia, JYJ's concert in Spain and Cube's concert Brazil. In addition, as shown in the example of 'Korean Connection' that is active in voluntary flash mobs in Europe and South America, the phenomena of the fandom of the Korean Wave, in particular, K-POP are gradually accelerating. Like this, attention is being paid to K-POP and K-POP concert again as the core contents of the revival of the Korean Wave to the entire world. For research purpose, analyzed were success factors of K-POP concerts, the influence of the Korean Wave, and the possibility of development in K-POP 4D performance to which cutting-edge technology is applied including holography by conducting in-depth interviews on experts involved in performance planning and content production.

2. Literature Review
2.1. Complex genre performance and definition of 4D performance
A complex genre performance is a performance which breaks the existing form of tradition arts performance, including existing music, dance, etc, and merges all kinds of genres. Recently, complex genre performance is developed that technology is more than just an ancillary element and used as a core element. This form is called as 4D performance. Like Ah Young Lee’s explanation which is “4D is made when real is added to generated three dimensional image,” The 4D performance is conducted to reproduce and show various imaginations beyond the limitation of stage by using new technology such as holography and adding imaginary persons or space to actual persons or objects.
2.2. Development and application of stage performance technology

Recent performance art tends to create a new stage by adding the technical element to a good scenario. For example, ‘black light’ technology is special lighting which is designed to reflect only white color and used <Marionette>, which is b-boying performance. Opera <L Elisir d’amore>, which sublimates background of stage into universe stage, make all stars appear in 3D image. Play <I am you > also draws audience by introducing ‘hyper façade’, which is a technology for three dimensional image, to screen with a big background.

‘Circus of sun,’ which is a Japanese permanent stage, and ‘Zed Theatre’ are controlled by navigator software and motor controller which combines air wire equipment and equipment for all kinds of big stages, including a mega stage. By this remote control console for navigator software, control of a detailed equipment which is adjusted to a motion of performer becomes possible, ‘Circus of sun’ has sales of $800 billion by combining contents which add a narrative to an existing circus and innovative new technology well.

Recently, cases which appropriately apply holography technology newly draws an attention by causing dramatic effect. Holography is a display technique which records three dimensional image and restore image on the space perfectly. At present, holography technique is beyond analog holography and welcomes age of digital holography. Unlike 3D image technology which creates three dimensional image in binocular disparity method, this technique can minimize an inconvenience which is felt from existing 3D image because it simultaneously records all information possessed by light and replay the information. This technique is also evaluated as the most ideal display technique.

The 4D performance started as a 4D Art piece <Norman> in 2009, introducing holography. In <Norman>, there is an interview with dances who are on the stage and characters who appear through a hologram. During the interview, performance, like an animation in which form of Norman and works throw dancers down and like a movement in which dancers seem to be in one space, appear. In South Korea, <Digilogue Samulnori> was presented in 2010 where holography dancers and Kim Deok-su’s Samulnori performance co-existed, which presented fantastic stage by fluttering holography cherry blossom. <VR breakout> which applies holography to commercial performance stage succeeds by adding holography technology to contents, which are recognized in international stage, including Edinburgh, etc. In Japan, achieved in 2010 was that a virtual singer ‘Hatsune Miku’ presented a live concert with holography image, where tickets were sold out in 2 weeks.

Figure 1. 4D performance <Norman>
3. Research question and method

Three research questions are as follows.
RQ1. What are advantages and disadvantages of K-POP and overseas success factors of it?
RQ2. How are general 4D performances evaluated?
RQ3. When 4D performance is applied to K-POP, how are the effect of it and how does it influence to the Korean Wave?

To find out these, in-depth interviews were conducted on 15 experts involved in performance and broadcasting for two weeks in November, 2011. A survey was conducted through e-mails or face-to-face interviews, which lasted for about one hour to one hour and a half per session. All the interviewees were experts in the cultural and visual related industries, who were well aware of the synergic effects of the Korean Wave K-POP brought about and the success stories of K-POP concert overseas. The details of the participants are on the following table.

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<th>Gen</th>
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<td>Deputy Team Head</td>
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<td>P8</td>
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4. Research finding

First, as for a success factor of overseas K-POP concert, the increased status of K-POP was selected by all the interviewees. The advantages of K-POP concert include idols in a complete form, easy-to-follow group dance and music, superior outer appearance, well-mixed foreign music into Korean music. As idol singers do not have capabilities that can solely conduct 2-hour performance in terms of individual skills and recognition, their performance was presented as a joint concert, drawing attention on K-POP, which can be positively evaluated.

“K-POP is characterized by unconventional performance based on refined music. It has a merit that many people easily understand and sing along through its easy-to-learn melodies and repetitive sound. Its performances are movements ordinary people, too, can easily follow, which have persuasive power.” (P3)

“K-POP's own distinctive rhythm and dance are competitiveness.” (P2)

“The expansion of K-POP awareness mostly follow the success of PR and marketing. PR strategies using various Internet media definitely worked well: e.g. YouTube, which had never been imagined in Europe with conservative cultural environments.” (P4)

“Joint concerts of several teams have a merit that fans can enjoy various contents all at once like a kind of an assorted gift. Moreover, as these are opportunities through which they can naturally encounter the teams they had not known well, they might support a new team. This seems to have a great impact on the spread of the Korean Wave.” (P5)

The disadvantages of K-POP concert include a lack of investment for performance stage, a lack of freshness in stage, imitation rather than original planning in performance from musical factors to concert equipment, and not creative, similar stage manners as idol singers are cultivated by entertainment companies. Although concerts have basically show entertainment structures, artistry is a prerequisite due to live culture characteristics. Unless they find ways to enhance variety and quality, K-POP cannot but be stultified.

“It is necessary to design and show a more unusual type of concert. For example, holding concerts creating unique spaces like ‘the experimental theater’ of play not common forms in which the stage and the auditorium are separated.” (P5)

“K-POP succeeded in the niche strategy of the concert of handsome boy/beautiful girl groups, which is a genre forgotten in advanced countries, but to secure sustainable competitiveness, it is necessary to foster superstars who can work in the developed markets.” (P1)

“It seems that the development of music world rather has stopped due to the impacts of idols. I think that there should be more skilled and pure musicians and in-depth music coming out.” (P7)

Second, most of the experts assumed that performance stages can implement more fantastic stages than before, by applying various technologies to stages. In particular, holography technology is very positive in that it can enact a dead person on stages or busy stars can meet fans without going to meet them. Although holography was not used, a Japanese idol group ‘Arasi’ was widely accepted by fans
by presenting a member on stage with a large LED image, who was not there on the stage. Further, in a recent K-POP TV show, Dongbangsinki presented more powerful show stages than before, by performing their dance with a large stage image.

“Stage is good because it can diversely use stage which is a restricted space. Since the visual effect will be plentiful, there will be more impression felt by the audience, and impression will be more diverse. From the standpoint of a person who plans the stage, it is desirable because the range of selecting stage becomes wide and the number of applicable conditions increases.” (P9)

“I think that it is positive in that it can bring about the maximization of the music when you watch Broadway concerts of famous singers in other countries in 4D. The 4D concerts in which the audience can see the feel of the music beyond that to which they listen will get settled as a new concert cultural form in the digital age.” (P3)

“The formation of consensus of music is more maximized than in existing concerts.” (P10)

“For example, despite Music Station 4D Stage in Japan is a live program, its camera work or the 3D objects decorated going around the space were incredibly sophisticated. This is a result of the investments of a lot of time and money through thoroughly calculated screen effects and action shots. Yet, it felt a little distracting to enjoy the music itself.” (P5)

“Much more fantastic new stage implementation came to be possible than ever. In particular, a stage that revives the deceased with a holographic technology seems to be enormously valuable.” (P2)

“If a superstar is not in the site, it can be used as the function of covering the character and the background of a concert using augmented reality.” (P15)

As such, the 4D performance allows a performance beyond a temporal, spatial limitation, and will reduce cost compared to existing stages if incomplete new technology is not applied to the stage. In the meantime, there was a concern that the 4D performance stage can cause adverse effect if it too much focuses on technology, rather than contents, and there was an opinion that the stage to which new technology was applied can be awkward for the present.

“Its effects of the characteristics of the 4D concert would differ depending on what kind of the concert it is, what genre it belongs to and what story and context it uses the technology.” (P14)

“There would be long-term effects if 4D technology should develop focusing on a bit more artistic elements rather than technical aspects.” (P12)

“By fat, it is not naturally harmonizes with real performance and image. There can be an effect which can temporarily draw an attention. However, if audience did not come to only see the effect, then, first of all, (producer) should pay more attention to harmony in performance and level of quality.” (P1)

Third, the 4D performance has already been attempted in advanced countries under positive evaluation, and many singers performing in Broadway show their own unique show stages to which new technology is applied. Most of the experts expected that performance to which 4D technology is applied will be worth it, and it will serve as a crucial role in all concerts. To continue the Korean Wave and present Korean live culture on the world stage in a more powerful manner, there was an opinion that a new technology is a must, not an option for K-POP concerts.
“A simple type of concert which is based on a singer disappears, and 4D performance which enables people to watch performance in three dimensions will develop more than simple type of concert. This type of work will bring development in quality of K-Pop performance and play a big role in introducing Korea’s performance culture to foreign country.” (P3)

“Applying 4D to K-POP concerts is positive in that it diversifies stage effects. Yet, since 4D is just one genre of expression, emphasis should be placed on developing more creative expressions instead of stopping there. For the present, I think K-POP 4D concert is worth applying for a short time.” (P5)

“Modern concerts are a fusion art form in which theatre, film, laser beams, hologram, and sometimes, 3D and 4D characters appear. However, what is most important is that everything should be converged around the 'concept' of the concerts. Thus, musicians and actors/actresses should understand the concept of these concerts accurately and it is important for them to study and contemplate what stories they want to empathize with their audiences.” (P15)

“Including 4D technology, innovative stage technologies are attempted at various concert stages internationally. The development of new stage technologies surely will greatly contribute to the Korea's concert cultural industry. To use 4D technology in the overall concert cultural industry including K-POP, the government's care and support should expand.” (P6)

On the other hand, the experts involved in creation took a serious position that the newly applied stage is worth it, but needs to be watched, saying ‘artists’ individual change and development is more important’. Further, to present more developed Korean Wave concerts, consistent consideration and investment are required on what degree technology can overcome the limitation of stage arts.

“Contents are more important than technologies. What technologies to introduce is not important, but what contents to show with the technologies is. Accordingly, the usability of the technologies will be evaluated. Before applying 4D technologies, increasing K-POP's own competitivenss is the most important task.” (P1)

“For new technologies to be applied to the art of stage, the effects of the new technologies should not ruin the characteristics of arts of stage – aura of live, most of all and should go beyond the limits of the arts of stage in a new way. In other words, the technologies should be used well without disturbing the basic structure of the arts. Often the application of new technologies interrupt the core of the concerts, which brings about an effect of degrading the fun and meaning of the concerts. Thus, in the application of the technologies, an aesthetic analysis harmonized with the contents of the concerts is important.” (P4)

5. Conclusion

It is expected that K-POP 4D concerts will contribute to consistent, more developed next generation Korean Wave by upgrading attractiveness of K-POP that currently draws world-wide attention. The introduction of 4D technologies brings about the qualitative improvements of K-POP concerts and will contribute the spread of the Korean Wave centered around K-POP. The K-POP 4D concerts enable dance stages to be more dynamic and idol singers to look more attractive, and also can complement a problem when a member of a group cannot be on stage.

And yet, predicting the future of K-POP focusing too much on its visual representation might bring about negative consequences. In the future, 4D technology, too, may be replaced by another technology. The establishment of ingenious contents and the development of clear concepts are important for K-POP concerts to have continuous interest and competitiveness. K-POP 4D concerts will be able to expand the communications between the musicians and the audience on the stage. If that
process can be carried out successfully, K-POP 4D concerts will be competitive cultural contents that can let the Korea's concert cultural arts globally.

To achieve this, a prerequisite is to resolve tasks such as appropriate infusion of technology and contents, and profitability resulting from costly technology together.

6. References