VISUAL SOUND

classical concert experience design
for millennials

Shuying Sun
2017

Thesis presented in partial fulfillment of the requirements for the degree of Master of Design at Massey University, Wellington,New Zealand:2017

ACKNOWLEDGEMENTS

My deepest gratitude goes to my supervisors Prof. Brian Lucid and Tim Parkin. I really appreciated their guidance and support.

I would also like to acknowledge the participants who were involved in the validation survey for this research project.

Thanks to Anthony Davies for his valuable assistance with this thesis.

Finally, I express my thanks to my parents and to my partner for their continuous encouragement throughout my years of study.

Undertaking and completing this thesis would not have been possible without all of those acknowledged above. Thank you.

ABSTRCT

This thesis explores ways of engaging millennials in meaningful and relevant experiences which they would not normally engage with. It uses classical music as its case study since the popularity of classical music with millennials is low and declining.

This project carried out exploratory work in experience design, focused on identifying the factors that discourage young people from attending classical music concerts. It then proceeded to design a concert experience which would fulfill millennials' social needs and expectations of what they hope to experience when attending a classical concert.

Visual Sound is a prototype which supports the active engagement of audiences, enabling them to both participate and contribute in a multi-sensory orchestra experience through a mobile interface.

Audience participation and music visualisation were combined to create a designed experience. Through research, development and testing, the thesis demonstrates principles that can be applied to engage millennial audiences.

Keywords: *Experience Design, Audience Engagement, Interaction Design, Active Participation, Passive Participation, Music-visualization, Co-creation, Social and Communication Needs.*

CONTENTS

INTRODUCTION

Millennials, the generation born between the early 80s and the early 2000s *(Claveria, 2017)*, do not appear to be motivated by the things which appeal to older generations. They seek new experiences, which is reflected in their willingness to try new things. This behaviour also determines how they engage with things in their daily life. Because of this, many organisations are facing a major challenge: millennials tend to be disengaged with conventional products or experiences.

In order to create an experience that can be meaningful and relevant to the millennial generation, this project uses classical music to explore how to engage millennials in things they wouldn't normally engage with.

1.1 Problem domain

Data from the National Endowment for the Arts indicates that classical music has gradually become a small minority interest, mainly enjoyed by older viewers or professionals *(National Endowment for the Arts, 2012)*.

The popularity of classical music has been declining over the past two decades *(Netherlands Institute for Social Research, 2009; Australian Bureau of Statistics, 2010)*. This decline is particularly prevalent among millennials.

According to 2003 research by audience engagement researcher Heini Mielonen from Sibelius Academy in Helsinki, Finland, millennials find classical performances passive and unable to offer them an opportunity to actively share their social needs. These factors discourage young people from attending classical music concerts. The traditional concert ritual doesn't engage young people with modes and approaches that resonate with them *(Mielonen, 2003)*. They are therefore unable to connect with the traditional classical music setting, since it fails to satisfy their desires to have an active role in a concert. In addition, the rituals associated with classical music do not support their social needs. Eventually, they lose interest in classical music.

1.2 Research focus

The focus of this study is to explore ways of engaging millennials with things they would not usually engage with, using the case study of classical music. It analyses how millennials engage with their favourite activities, and then discusses their demands and expectations. This research has informed the approach to designing a more engaging classical concert experience. It presents the theoretical foundations and then the proposed solution of designing an interaction system intended to engage millennial audiences to more fully participate and contribute in a multi-sensory orchestra experience providing a more immersive experience.

To create a more engaging experience within a classical concert which supports interaction and makes it a valuable contribution to the concert, the project researches and evaluates a number of design options.

The study first researches the classical music experience and has found disconnects with millennials' expectations. It then integrates principles of how millennials engage with entertainment with the classical music experience. Based on that research, the study then defines and prioritises the core principles that underpin how young people view and interact in an concert in an attempt to understand the audience's relationship with a concert as a designed experience. Next, the research considers the whole journey of attending the concert and investigates which opportunities can be shown to touch the audience and enhance their experience of the concert. It then develops a formula to capture this opportunity.

In conclusion, the project will explore the relationships between emotion, visual experiences and music to create a unique, socially-connected system to trigger collaboration, participation and interaction between millennials and classical music. It aims to prototype a genuine experience for millennials and inspire them to develop a more relevant response to music when they attend live classical concerts.

1.3 Reader's guide

Part one: Introduction.
The introduction includes the problem domain and project focus. This section briefly introduces investigation direction, research problems, countermeasures and research purpose.

Part two: Who are millennials?

This defines the target group and describes the characteristics of the millennial generation. At the same time, this section also summarises the demands and expectations of the millennials as they relate to the concert experience, through case studies and consideration of what they engage with.

Part three: Live classical music.

This documents the current experience offered by live classical concerts for millennials. Statistics which indicate a decline in the worldwide audience for live classical concerts are also cited. It explores problems related to the concert ritual itself to ascertain discover what is behind the poor attendance of young audiences.

Part Four: Analysis framing.

This describes the project's methodology. It builds upon the research analysis in the previous two chapters, focuses on the demands of classical concerts and observes how the experience attracts audiences. This framework confirms the validity and theoretical basis of the project design method.

The study next identifies the challenges faced by millennials' needs, music performance and interactive experience during the project design. The project will consider these challenges, and investigate appropriate solutions.

Part Five: The Design Process.

This documents the design process and analyses the resulting solutions. This chapter builds on the theories and frameworks in previous chapters and systematically describes the project design and the ultimate project

plan in combination with the test results from my investigations. It also includes experiments, general insights from these experiments, final design project and validation.

Part six: Conclusion.

This summarises the research results and research methodology of the study, then suggests guidelines about how to better engage millennials through design experiences. It also makes suggestions for future possible studies to expand upon the themes developed in this project.

WHO ARE MILLENNIALS?

2.1 The “always connected” generation

“Millennials are history’s first ‘always connected’ generation. Steeped in digital technology and social media, they treat their multi-tasking, hand-held gadgets almost like a body part”, notes a Pew Research Center study released in 2010 *(PewResearchCenter, 2010)*. This study found that approximately a quarter of millennials under the age of 30 (24%) say digital devices have affected their lifestyles. This connection to technology makes them distinct from previous generations.

A later, separate study by millennial generation theorist Matthew Haughn states that 90 percent of millennials used smartphones, 93 percent accessed the internet regularly, and 53 percent were tablet owners. They grew up with computers, the Internet and the graphic user interface. *(Haughn, 2015)*. Technology provides a bridge for their social lives and fosters strong needs to stay connected to each other.

2.2 Group-Oriented

Millennials are group-oriented and enjoy collaborating and building friendships with others. They clearly understand the value of a group, which results in a strong preference for cooperation and collaboration. Generational theory research experts William Strauss and Neil Howe state that millennials tend toward group-oriented activities rather than being individualists. They desire to be part of a group, instead of appearing different from their peers *(Howe and Strauss, 2003)*.

2.3 Millennials' social and experience expectations

Research from Millennial Marketing shows that 80% of millennials want events to entertain them and 40% want to participate in the co-creation of products and brands *(Millennial Marketing, 2017)*. They don't like passive roles, but want to play an active part in events so they get a sense of accomplishment and fulfillment from them. They have a higher need for personalised experience than others. Marketing to them needs therefore to be adjusted accordingly, preferably with targeted programme benefits.

2.4 Cases of what millennials are into

The study considered the following examples which millennials engage with as a way to validate the above observations and draw conclusions from them.

2.4.1 Pokemon go

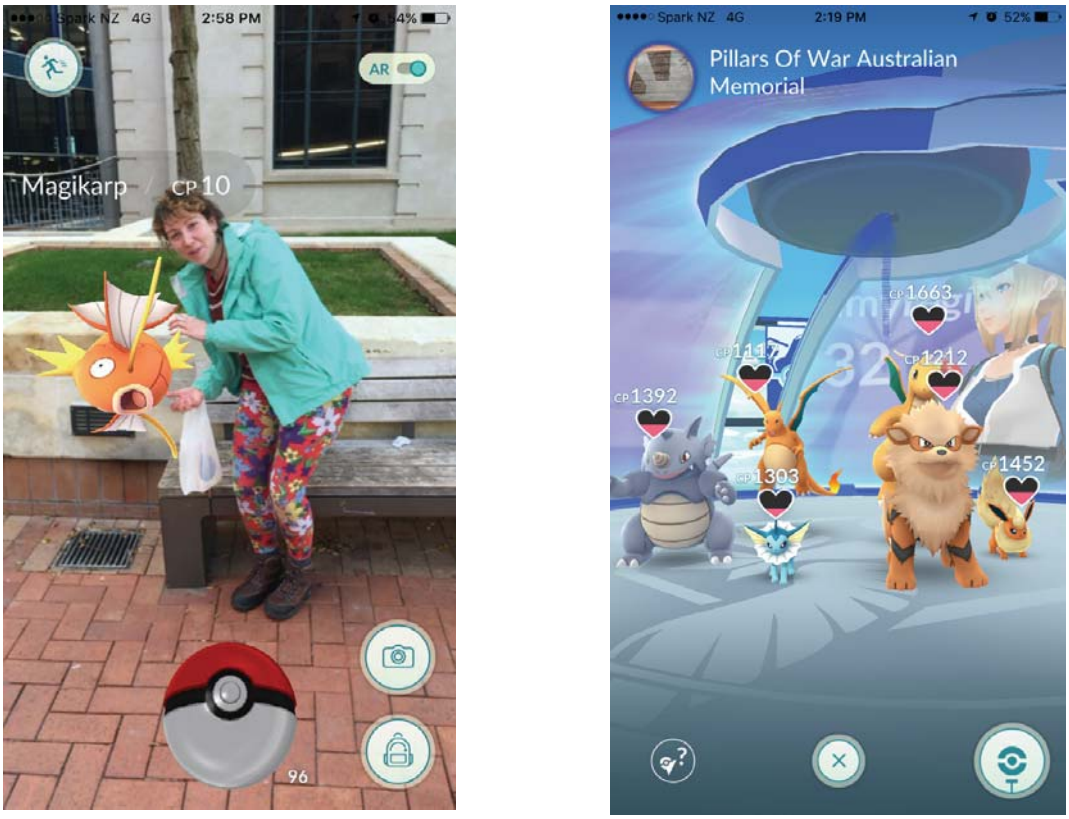


Figure 1: Screen shot of Pokemon Go

Figure 2: Pokémon Go players in Waterfront in Wellington.

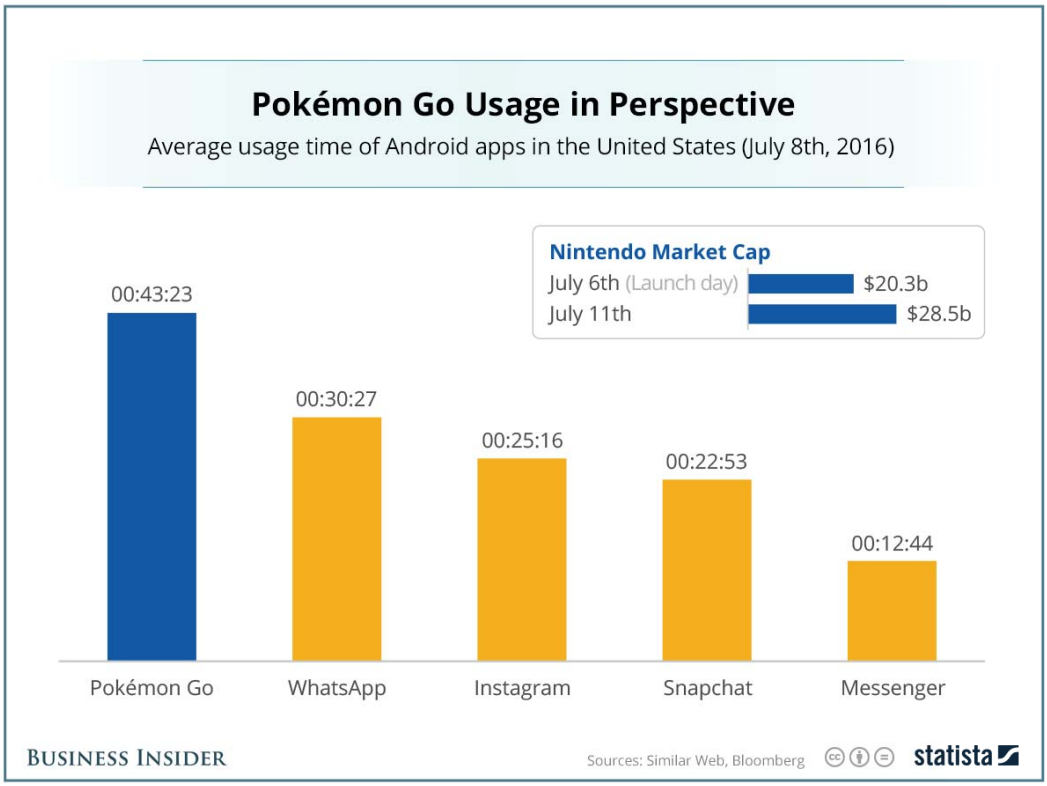


Figure 3: Pokemon GO vs Social Media Apps, US Android App Data

The chart above from Statista shows how obsessed young adults were with Pokemon Go in 2016. Pokemon Go is an augmented reality game that enables players to use their smartphones to capture Pokemon and battle for gyms in real world spaces. It requires players to leave the house, walk long distances, and explore their communities. “Pokemon Go has been a great success, with millions of downloads, avid fans and one of the first great applications using augmented reality, in which digital objects are imposed on the physical world,” Mike Isaac, a reporter for The New York Times, writes about the fun of meeting other fans playing the game *(Hardy, 2016)*.

The key to Pokemon Go’s success lies in the following features.

Social Interaction

Pokemon Go enables millennials to take the initiative during online

communication. Users can either play on their own or with others. The game often puts players in contact with other players searching for the same PokeStops, Pokemon and Gyms. It also provides an opportunity to meet new friends. Users explore new or unfamiliar places and, in the process, also socialise with strangers. This bridges the social gap for individuals, encourages social interaction and also provides a subject of mutual interest with other players.

Achievement from Team Work

Achievement is another prominent feature of Pokemon Go. Achievement has an inseparable relationship with motivation. People gain confidence from gaining a sense of achievement after realising objectives. Pokemon Go promotes teamwork and enables users to collaborate through the game. Users identify as a group at the beginning of the game, and in later games they work together to achieve success for the group. They will gain a sense of achievement whenever they contribute to the group. The success of the Pokemon Go shows that millennials not only place emphasis on interactive experiences, but they also are willing to be entertained through advanced technology and to willingly cooperate with others to share pleasure from experience. In addition, they hope to find a sense of achievement from the experience and gain further motivation to participate in the activity.

2.4.2 Instagram

According to a recent survey by student loan refinancing startup LendEDU, 64% of 3,700 US college students polled between June 2016 and March 2017 use Instagram, making it the most popular social networking app, followed by Snapchat at 15%, Twitter at 11%, and Facebook at 10% *(Brown, 2016)* .

Some reasons why Instagram has become so popular among millennials are listed below.

Sharing and socialisation

Instagram provides a convenient and widely-used platform for interpersonal communication, sharing and socialisation. Millennials usually maintain and expand their social circle through social media. They want to be socialised and satisfy their needs through communicating and interacting with others. Young adults use Instagram to share their daily lives and communicate with other users. Furthermore, they seek social validation to boost their confidence through their posts on this photo-sharing app.

Visually-built platform

Another core feature of Instagram is its visually-built social contact network. Instagram offers millennials a visual platform to gather and interpret information. The entire newsfeed is occupied by the vertical span of images and, since they're all reduced to the same square format, it gives the experience a certain level of uniformity. Pictures and videos have inherent advantages in how they present things with more distinctive and explicit effects.

Young adults have a passion for visual creation. Instagram is a place for visual story telling which also offers them a convenient medium in terms of visual output. It clearly captures and exploits the importance of visual sense for millennials' information communication.

The popularity of Instagram highlights how millennials emphasise social contact, attach importance to new experiences and share them. In addition, they generally prefer looking at visual images to reading texts.

LIVE CLASSICAL MUSIC

This chapter shows how there has been a decline in the worldwide audience for live classical concerts. It also identifies problems inherent in the concert ritual itself.

3.1 Missing audience

Over the last 20 years, the popularity of classical music has been in a long-term downturn. Research by Dutch arts consultant and music theorist Johan Idema in 2012 showed classical music concerts have become a predictable experience because of formulaic programming strategies *(Idema, 2012)*. Music critic Greg Sandow contends classical music has gradually lost its leading role within mainstream contemporary culture *(Sandow, 2017)*.

Data from the National Endowment for the Arts in USA shows the

percentage of adults who attended a classical concert (even one per year) fell from 13% in 1982 to 11.6% in 2002, and then 9.3% in 2008 with a further decline to 8% in 2012 *(National Endowment for the Arts, 2013)*. Similar trends can be observed in other countries. For example, in Holland between 1995 and 2007, audiences for classical music performances fell from 17 percent to 14 percent of the population *(Netherlands Institute for Social Research, 2009).* In Denmark, the Royal Danish Theatre has recently reduced the number of classical concerts it hosts due to falling audience number *(Richards, Marques and Mein, 2014)*. The decline is especially evident for millennials. The chart below, based upon Australian viewership, shows a downward trend in the popularity of classical music among people aged 18-38 from 1992 to 2002.

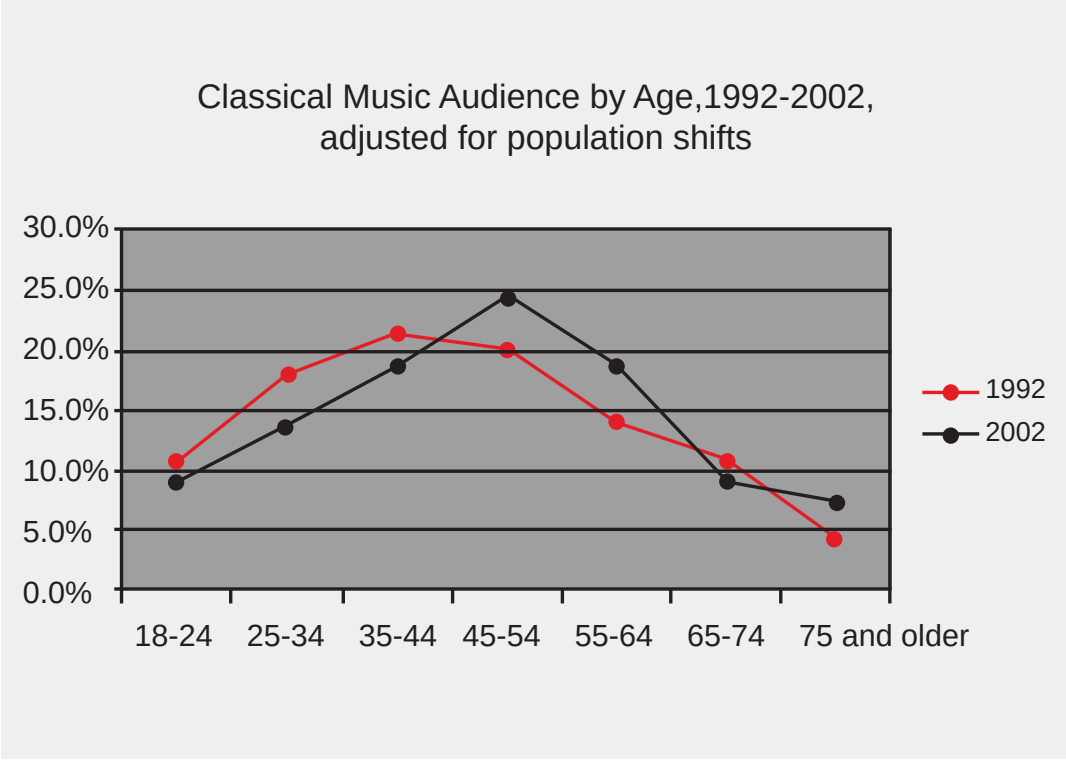


Figure 4: Chart of classical music audience by age

Statistics from the Australian Bureau of Statistics show that only 6.1% of people aged 25-34 attended classical concert in 2009 and 1010, dropping from 7% in 2005 and 2006 *(Australian Bureau of Statistics, 2010)*.

3.2 Classical music offering

The classical concert is bound by rituals and traditions, as noted by arts and music commentators Johan Idema and Christopher Small:

"By following a single formula of virtuosity, tradition and formula, it is almost as if they are holding themselves hostage to a fixed idea around what a performance is." *(Idema, 2012)*.

"It will impose its own conditions on whatever they do; there is no escaping it. There may be a revolution in forms, sounds, techniques, but it remains within the tradition and the set of conventions of gesture and behaviour *(Christopher, 1986)*." In a study into how classical music lost its audience, Anglia University history academic Simon Behrman defines classical music as "serious music" *(Behrman,2009)*.

The chart below summarises my initial analysis of the concert experience. From this analysis it is possible to infer why millennials might feel uncomfortable with the conventional concert experience.

Traditional concert experience

Figure 5: The traditional concert experience map

Classical performances offer a formal and prescribed experience. Traditionally, audiences have been expected to be formally dressed for a performance. For some prestigious concerts, attendees may need to have prior knowledge of the pieces to be performed in advance. During a traditional classical music performance, musicians become immersed in their own performance. Their only communication with the audience is their bow at the end each piece. During the performance, the audience members sit down and do not talk with their friends or the performers. Audiences applaud at the end of each piece to express their appreciation. When the concert finishes, the musicians exit the stage and the audience leaves the venue.

3.3 Mismatch between existing offering and millennials' expectations

"The problems of orchestras stem not from the music they play but from the delivery systems they employ." (Wolf, 2006).

3.3.1 Why millennials are disconnected from classical music

In a US study, Richards, Marques and Mein assert that the main problem of lack of millennial engagement with classical concerts "is the ritual of concerts *(Richards, Marques and Mein, 2014)*."

The authors of this study concluded that experience of the concert didn't meet millennials' expectations. From this it can be inferred that the mismatch between its delivery system and young audiences' needs has significantly contributed to a decline in popularity of classical concerts.

Heini Mielonen and cultural organisations researcher Bonita Kolb have a similar view. The findings of their research show there are two principal reasons why young adults do not engage with classical music concerts:

1." They are unable to identify themselves with the traditional classical music setting."

Some unwritten rules are included in the ritual of the classical concert, so that audience members have to follow in order to become a member of a classical music audience *(Mielonen, 2003)*. Young adults want the whole concert setting to be improved, so they can become engaged with the concert *(Kolb, 2000)*.

2. "The traditional concert ritual doesn't offer the opportunity for young people to actively fulfill their social needs."

During the concert the audience is expected to have a passive role. Millennials are not eager to attend a traditional classical music concert if they would not have opportunities to socialise during the concert *(Mielonen, 2003)*.

Classical music concerts fail to give millennials the experiences that they want from an art event. In particular, they do not feel they will be entertained by attending classical music concerts. These realisations promoted the development of this project's design concepts directed at rethinking concert rituals in order to create new audience experiences.

3.3.2 The expectations of the audience

Because millennials place emphasis on innovative experiences, they

want more ability to participate and socialise in a concert performance. They are willing to entertain themselves through advanced technology, and collaborate to share pleasure gained from experience. Similar conclusions have been drawn from the research assessments and audience interviews about millennials' expectations of classical concerts.

Firstly, they are searching for a unique experience. They want the feeling and the setting of the concert to be improved *(Kolb, 2000)*. Additionally millennial audiences want to identify themselves with the events, thoughts and themes of the concert presentation they are attending *(Kerttula ,1998)*. Lastly, they are looking for more visual stimuli on the stage *(Mielonen,2003)*.

Millennials do not enjoy the lack of intense visual stimuli in a traditional classical concert. Visual information is an influential and important factor in how they react to a space and perceive the overall experience. The design needs to disrupt the traditional experience of classical music, and provide greater visual experience to the audiences. More importantly, the visual effects need to be linked with the music, and interact with the music to make the audience more immersed in the concert.

To conclude, millennials want to communicate and interact with each other in a concert setting because they have strong social needs. They are more likely to attend a concert if there is a social aspect to the concert. For them it is a positive experience to be an active participant in the concert. They want to play an important role in the whole performance, rather than attend the concert as an anonymous attendee. Moreover, they want more visual experience than is currently offered in the traditional classical concert.

3.3.3 Innovations that reshape the concert experience

This study undertook an examination of innovations designed to reshape the concert experience. The examples described below communicate different qualities which are significant and beneficial for engaging millennials in classical music concerts.

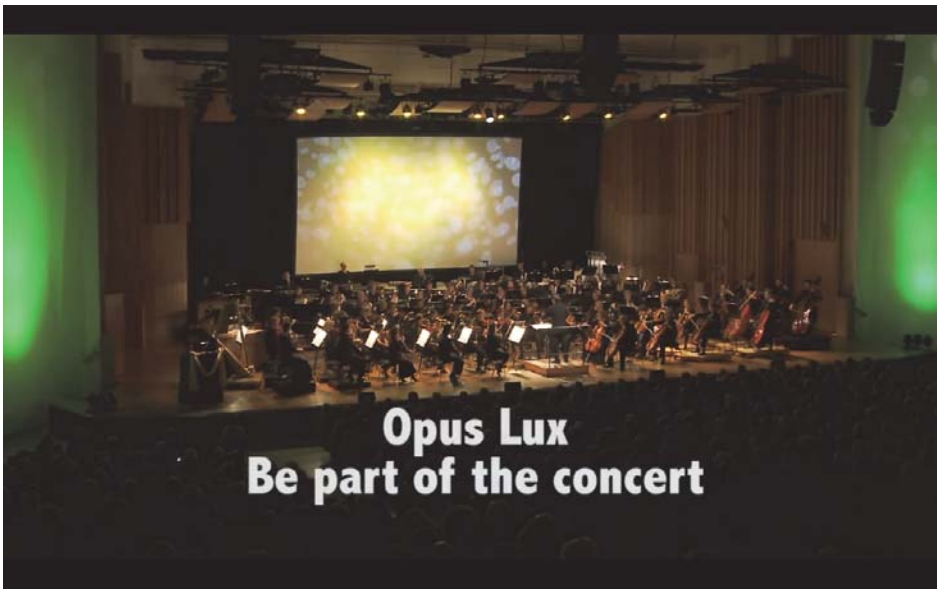
3.3.3.1 Glimmer

Figure 6: Glimmer

Glimmer provides an example of how interaction can be incorporated into a concert setting. A composition system for chamber orchestras, Glimmer premiered in 2005. Each audience member is given a light they can switch on and off to direct a group of musicians. The flickering light is captured and analysed with a computer vision system, translating the light into a score for the musicians. A video animation is simultaneously created in real-time for the audience, creating a loop of the audience reacting to what they see and hear, based on their own activities. The direct activation of the light controls the dynamics of the music based on

the proportion of the audience with their sticks turned on or off. The more lights turned on, the louder the music from the musicians, and the fewer lights turned on, the softer the music *(Freeman, 2005)*.

3.3.3.2 Opus Lux



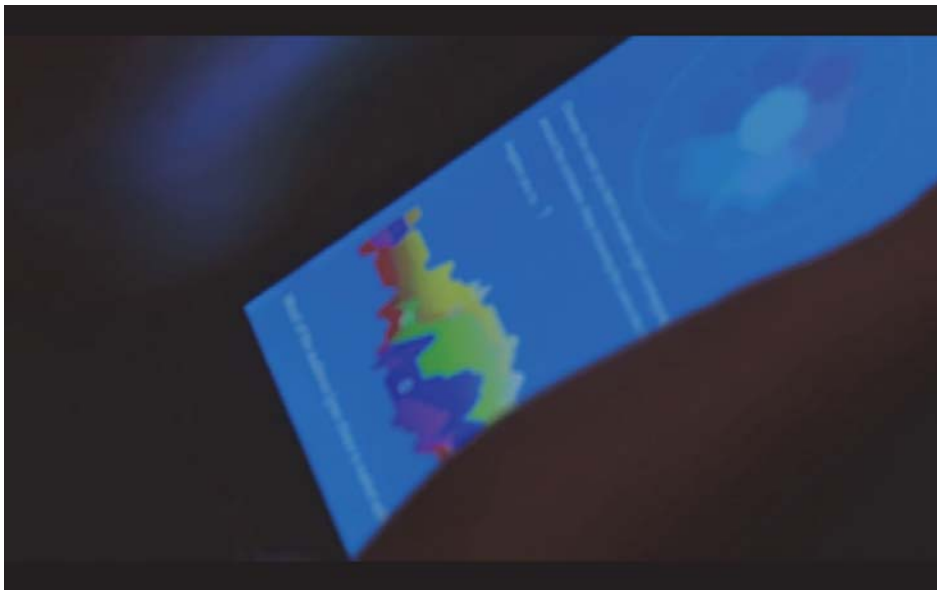


Figure 7: Opus Lux concert

Opus Lux was a classical concert at Malmö Concert Hall in Sweden in 2012 where members of the audience used a “colour compass” on their mobile phones to choose colours which reflected their moods. These colour choices produced real-time lighting variations in the concert hall. By the end of the concert, 700 audience members (59 percent) had participated in the Opus Lux experiment, the live co-creation of a light installation *(Camille, 2015)*.

3.3.3.3 General observations

The high participation rates for these two concert innovations, Glimmer and Opus Lux, suggest that audiences are ready for a new type of classical concert experience. This in turn suggests that interaction and participation can enhance a concert experience.

If a meaningful and emotional experience involving on concert can be established, technology can support the public interaction and make it a valuable supplement to the core music performance. This is particularly relevant for the millennial generation who embrace all things digital. They have strong social needs and want to be engaged and entertained at concerts through active participation. Millennials would perceive being able to play an active part in a classical concert as a positive experience.

However, these examples also have some disadvantages. Glimmer and Opus Lux are both unable to showcase or highlight audience members’ individual creativity. In addition, while audience use the tools or system to actively participate the concert, being occupied with these tools can also distract the audience and may prevent them from being immersed in the music. These are design issues that need to be addressed in my study.

ANALYTICAL FRAME AND STRUCTURE

In this chapter, I will introduce the structure and framework of my analysis, outlining the principal methodological and theoretical considerations used to navigate the design process. A principal consideration is making millennials more engaged with classical concerts. With this consideration in mind, I will illustrate the challenges of addressing millennials' need for a fuller sensory and interactive experience from music performance and interactive experience.

4.1 Audience engagement

"Engaged audiences are a cornerstone in the foundation of a strong arts ecosystem." (Brown and Ratzkin, 2012).

Research from Malmö University has shown that engaging with audiences is a process of mutual learning and can be mutually beneficial to both parties. It is a two-way exchange consisting of collaboration and partnerships to enrich the lives of the audience members. By engaging in

a deeper dialogue with the audience, a cultural institution can understand more about their audience's motivation, dedication, knowledge, and networks. The audience, in turn, can experience the music differently and can influence or, at times, co-create productions *(Björgvinsson, 2012).* In its literal meaning, audience development refers to the relationship-building process between artistic organisations and audiences. Through communicating or engaging with artistic organisations, audiences can enrich their knowledge and learn how to appreciate art better.

4.1.1 Blending participatory engagement with attendance

When millennials currently attend a concert, they receive messages passively from the musicians. However, there is a definite trend for millennials to have greater expectations of active engagement in their leisure activities. Participatory engagement gives them an opportunity to take an active role in the process of making meaning through physical experiences *(Brown and Ratzkin, 2012)*.

Alan Brown, Principal at the University of Chicago's Harris School of Public Policy Studies, and Jennifer Novak-Leonard, Research Manager at the University's Cultural Policy Centre, defined the term "participatory engagement" as referring to events where the audience will simultaneously get involved in the artistic creation and appreciation process by making, doing or creating something, or making contributions to the development of the performance, regardless of their skill level *(Brown. A and Novak-Leonard, 2011)*. It provides the audience with an opportunity to get involved in a concert, so that they can move from being constantly passive to becoming active participants and initiators. The aim of participatory engagement is to bring more enjoyment to millennials by enabling them to create a personal, unique experience.

For millennial audiences to be more engaged in concerts, they need opportunities to participate and play an active role. Christine Winjen, Professor of Media Education at the Salzburg Univerity of Education, has argued that productive and creative participation are central elements in the current media environment *(Christine and Sascha, 2012)*.

In addition, Winjen contends that not only can audiences take an active part in a concert, but they can also understand the performance at a deeper level through active participation. The process of participation makes a performance's emotional impression on the audience deeper, leading to a deeper understanding of the music. This enables the audience to further deepen their emotional experience and gain greater enjoyment from the music.

4.1.2 Using interaction to enhance engagement

Ben Walmsley, Associate Professor in Audience Engagement at the University of Leeds' School of Performance and Cultural Industries, and Anna Franks, a Leeds-based communications and media consultant, defined interaction in a performance context as the "intermediary space where professional artists, producers, venues and content providers join their audiences and consumers to create or experience something new together". *(Walmsley and Franks, 2011)*. They argue that classical concerts generally adopt a music-led, promotional model which offers a passive experience to the audience. However, a more interactive experience would enable the audience to immerse themselves in a concert and have a more active experience by participating in the creative process. Immersion means that audiences could not only listen to the music, but also experience the music-making process visually. This would be a fuller sensory experience focusing on the audience as participants.

The research from the previous chapter shows that, apart from enjoying the concert itself, millennials want to be able to socialize and share in the event. Interaction improves the quality of the overall experience for them, and creates an interactive dialogue and stronger connection between artistic intention and audience experience.

Interaction can help audience to understand classical music in a creative way. There are parallels with the role of interaction in drama. German theatre scholar Wilfried Passow in “Analysis of Theatrical Performance” *(Kattwinkel,2003)*, suggests that five levels of interaction occur in a traditional stage performance:

a) the interaction of fictional characters and objects in the world of the play;

b) the interaction of the audience and stage action within the fictional world;

c) the interaction of the performers to each other within the real world;

d) the interaction of the audience and the performers in the real world;

e) the interaction of audience members with each other in the real world.

The interaction methods discussed in my project focus on the first two levels, and consider the full interaction cycle of playing and listening to music: the musicians, the music, and the audience. This cycle links musical performance with audience experience. Interaction is not a one-way relationship. Systematic interactivity changes audience members from passive observers or listeners to active participants. This enables them to dialogue with the performers and other audience members continuously, and it creates a beneficial means of communication between the musicians and audience.

4.1.3 Meaning making

Helping audiences make meaning from a concert is a necessary focus in the whole engagement process. My initial research, discussed in section two of this exegesis, showed that millennials are known as content creators and users.

They value being able to actively participate in leisure activities, including concerts. However, they are not always content with just participating and interacting, they may also want to make a contribution to the concert performance. Supporting participation and mass interaction makes a valuable addition to the audience and performance, so that a meaningful context and emotional experience can be created in the concert.

Alan Brown and Jennifer Novak-Leonard contend audience engagement spans five overlapping stages of an “Audience Involvement Spectrum”, as illustrated below:

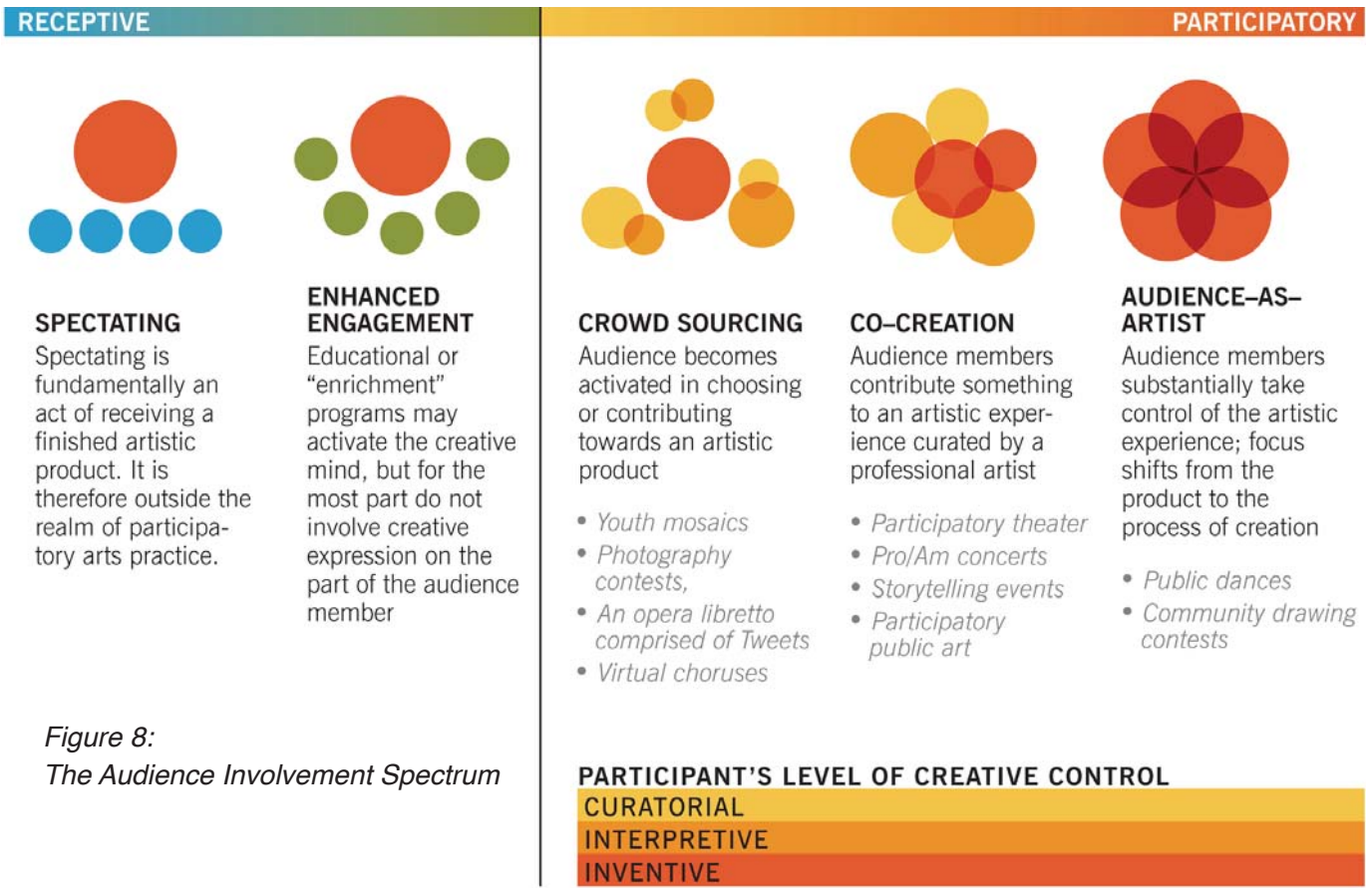


Figure 8:
The Audience Involvement Spectrum

Crowd sourcing, co-creation and audience-as-artist are the three most preferred forms of participation for young adults as they enable them to take a more active role in a performance. The audiences and performance are more closely linked in these three forms of participation. Through all three, millennials can be involved in the contribution of artistic experience. They therefore enable and promote more long-term engagement from millennials.

Being able to make a significant or valued contribution to a concert can make the experience of interacting and participating more complete and enable audiences to have a stronger sense of immersion and enjoyment. Through their meaningful co-creation of a concert, audiences can realize their own value in the performance, and be more intimately connected with it.

In order to encourage young adults to take an interest in and participate in classical music concerts, it is important they are given the opportunity to have a more profound concert experience based on interaction. My practice-based research aims to show how they could contribute to the concert performance and experience.

To summarise, participation and interaction can enhance a concert experience for young audiences. Participation can offer audiences more opportunities to play an active role in the concert. Interaction is the communication between audience and performers without words, which could make the experience more immersive for millennials. Moreover, audiences could realise their own value in the performance, and be able to identify better with the classical concert experience if they had the opportunity to make a meaningful contribution to the concert.

4.2 Design challenges

4.2.1 Creating a multi-sensory experience

Research by Mielonen *(Mielonen, 2003)* shows millennial audiences desire to gain satisfaction from a concert's visual, auditory and psychological aspects, rather than just passively listen to the concert. To engage these audiences successfully, it is necessary to create a multi-sensory experience to replace the traditional way of passively "listening to" a classical concert. Before creating multi-sensory interaction, it is essential to have clearer understanding of sensory interaction and to investigate important and interesting elements in the concert for the audiences.

4.2.1.1 Hear, look, feel

Music is an abstract art with different characteristics from other arts. "It is multi-modal in nature. It is perceived as a series of sound patterns that are auditory, and responded to by reading music (visual), and/or responded to with movement or physical performance (kinesthetic)." defined by music theroist Marty Stover *(Stover,2012)*. My research draws from this premise. The key to creating a multi-sensory experience is to explore how to express emotional touchpoints through the form of visual communication in order to break through the limitations of auditory sense alone.

A multi-sensory experience, specifically designed for millennials, would achieve this by integrating auditory stimuli, visual stimuli and emotional response. The interaction of these elements would produce a unique and more profound concert experience.

4.2.2 Response to time-based music

Real-time interaction can also affect how audiences participate in a concert by enabling them to express and communicate how they experience and respond to the music performance and the changes in the music. This can provide a continuous immersion experience, as opposed to the more traditional, passive concert experience. Furthermore, interaction must be aligned with the direction of the music, so if audiences are to be given a continuous immersion experience, the interaction must accommodate the changes within the performance. At the same time, the design should respect the integrity of music experience and provide an experience which is true to the performance.

To meet the above requirements, the project needs to ensure the continuous functioning of the interactive system throughout the performance and provide effective feedback of real-time interaction between music and audiences. The project needs to sustain interest, and the contents need to respond to the time-based nature of music and changes over time.

4.2.3 Better Interaction

One obvious challenge in mass interaction is reaching all of the audience in a way that supports the concert experience. As the size of the audience increases, it becomes increasingly difficult for the performer to engage in a meaningful dialogue with each member of the audience during a concert.

My research investigated: a) how to achieve a balance between individual and shared concert experience, supported by interaction, b) how attending a concert and listening to music is a personal immersive experience, though inherently in a social setting, and c) whether that affects the personal and shared creative expression in relation to the music.

4.2.3.1 Individual and shared

Attending a concert and listening to music is a personal experience in an inherently social setting, which influences the personal and shared creative expression in relation to the music. A concert experience combines an individual, more immersive listening experience with the reality that many people are seated together at the same social gathering and influencing each other's actions *(Jensen and Ranten,2014)*. The key point of enabling interaction in a concert is considering the competing elements of individual audience members' personal sharing and mass communication – that is, achieving both a balance between the individual and the shared concert experience.

In their model below of the balance between individual and shared, Jensen and Rante, mass interaction researchers based at Malmö University in Sweden, place "Participation" under "Shared" to highlight the importance of the audience having a quality experience through being drawn into the concert via active participation.

Knowing, of course, that this also exists in both ends of the scale they find this the most interesting in relation to collaboration, supporting the audiences feeling of sharing an experience.

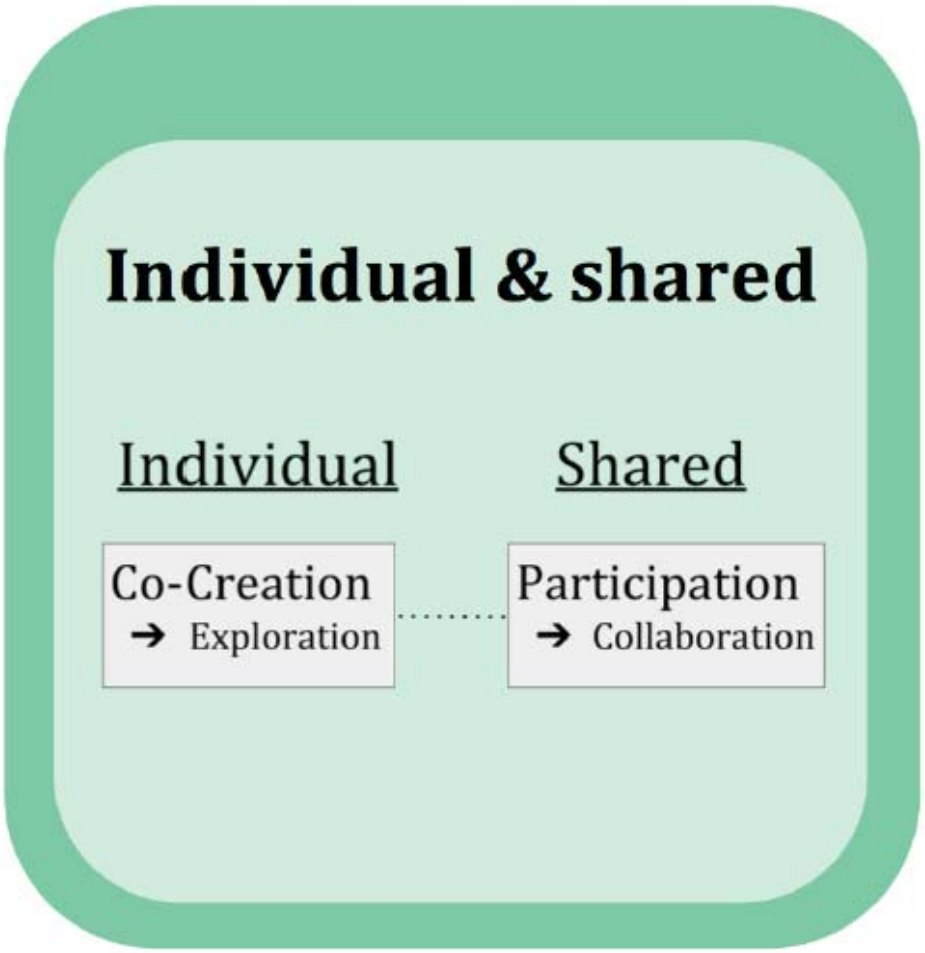


Figure9: Model of the balance between individual and shared

Jensen and Rante explore the relationship between individual and shared experience. One specific consideration in their model is how they view audience interaction in relation to the terms “co-creation” and “participation”.

They place co-creation at the “Individual” end of their Individual-Shared scale to highlight the importance of creative exploration, which they view as something highly individual in relation to mass interaction, although still possible in a shared context. While the listening experience is individual, “Participation” is placed under “Shared” to highlight the importance of the audience experiencing being drawn into the concert

through active participation. Through their experience of interacting via both co-creation and participation, audience members enjoy the concert performance more fully and deeply.

To summarise, according to Jensen and Rante, the purpose of a concert is to attract audiences to actively participate in the social communication process and deepen or broaden their artistic taste. Audience members can also learn to interact with performers and share their experience and appreciation with other audience members.

Physical interaction should support both individual and shared experience. The interaction between individual choice and the collective result needs to be balanced in the structure and design of a concert performance. Thus, it is vital to find a means of meeting the demand of both audience members' individual output and public cooperation. A thorough consideration of public and personal relationships of interaction can help participants develop skills that will support their own individual and the community's recreational and aesthetic goals.

4.2.3.2 Interaction cycle

This project explores how to combine interactivity within classical concerts to create a better concert experience for concert-goers. To create a better concert experience, we need to consider the full cycle of playing and listening to music. The use of interactive audience engagement needs to consider music, professional performance and the role and value of audiences, as well as appropriate ways of balancing and organising their inter-relationships. My intention is to enable audience interaction within the domain of classical concerts and create more satisfying concert experiences, as opposed to enabling interaction simply for its own sake. In order to create a better concert experience, the project needs

to consider the entirety of the concert, including performers, music and audience.

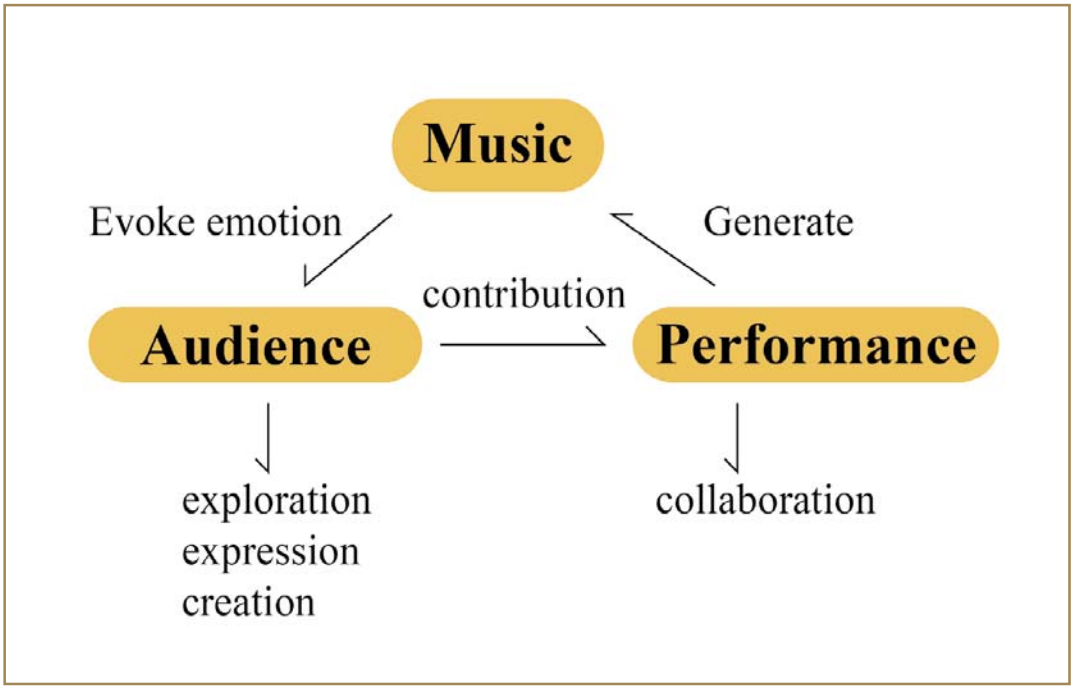


Figure 10: Interaction Cycle in the Concert

The model above illustrates my concept of the interaction cycle among audiences, music and performances. Musicians generate sound in the air through their performance, and create music for audiences to experience. As for listening and playing, the interaction is not only one-way, but also acts as a dialogue where the audience and musicians influence each other. Thus, the system needs to have interactive adaptability and flexibility for users.

A challenge with introducing interaction into the concert experience is how to engage the audience to enable dialogue between the audience and performers. The larger the audience, the more challenging it is likely to be to enable a relationship to develop between the audience and performers.

VALIDATION METHOD

My proposed design solution needs to address the various roles and values of professional musicians, the audiences and the arts, and how they can be woven together. Therefore, before the final project could be designed, my ideas needed to be validated around various aspects of collaboration, scalability and live production.

The validation of this project is divided into two parts.

For the first, I undertook analytical validation of my work, using theory and literature to support my argument and design, by researching and analysing the underlying principles in related work to assess their efficacy.

The second form of validation is through participatory design practices. Millennials were invited to participate in testing a series of iterative paper

and digital prototypes that participants could respond to. The target groups provided feedback across each phase of the project and the project benefited from their input and critique.

5.1 Participants

Fifteen millennials aged 19 – 35 from New Zealand, China, the United States, Japan and the United Kingdom were invited to participate in the testing. One of the participants is a professional bassoon player and member of a university music therapy programme, however the other participants in the study were unfamiliar with classical music performances.

5.2 Data analysis

The tests explored the audience's willingness to participate, and the value added by audience participation within the traditional, classical music experience. Did the proposed design solution better enable users to express their feelings? Would they actually participate? The tests covered three parts: a visual test, an experience test, and overall evaluation of the project's look and feel.

DESIGN PROCESS

This chapter documents the design process and the structure and design of my final project I have used. According to the principles that I established during my research and the validation process, this chapter will explain the iterative optimisations to the project design and the ultimate project plan in combination with the validation results. It will then introduce the final design project

6.1 Interview with musician

In order to ensure the viability of my project design, I needed to ensure it was suitable for a concert performance. To insure the research considered suggestions from professional musicians, I invited a professional bassoon performer to participate in an interview at the beginning of the project. he gave practical advice from the perspective of a performer and invited me to attend one of her concerts to help me better understand the classical music concert experience .

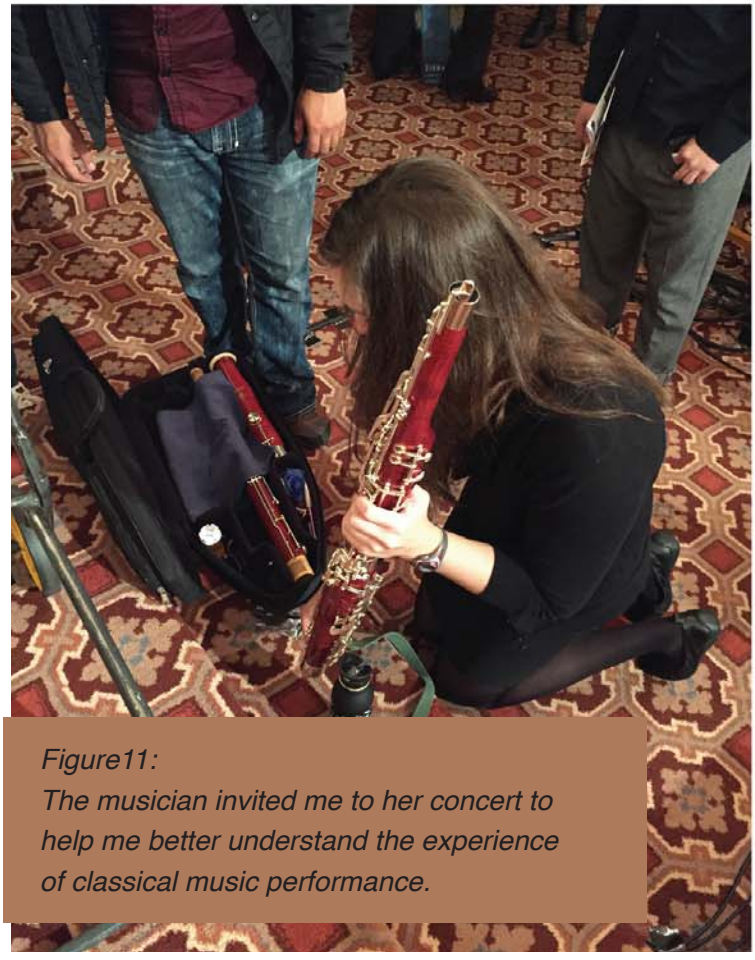


Figure11:
The musician invited me to her concert to help me better understand the experience of classical music performance.

The interview with the bassoon player confirmed that this project's design is a welcome means of addressing the trend of declining audience numbers. However, she expressed a number of caveats. She was concerned that an immersive experience could compromise the professionalism of the performance. In some large musical performances, the audience can be invited to participate by making sounds, such as by using whistles or ringing handheld bells. She contended that creating music at classical concerts should be left only to the professional musicians. She also advised that the project should preserve and even highlight the professionalism of the stage performance on the basis of a unique, creative experience.

She felt the project needed to maintain the professionalism and integrity of the classical concert while incorporating a new designed experience into it that does not undermine the audiences' concentration.

The project endeavoured to take account of this feedback in its framework construction. While building the project framework, I shared my ideas with the other 14 participants through interviews. They put forward many constructive suggestions. Their feedback – both positive and negative – was taken into account in designing the project framework.

6.2 Experiment

6.2.1 Practice 1: Draw the music

The earlier research for the thesis showed that a multi-sensory, interactive orchestra experience could make classical concerts more appealing to millennials. Based on this, the first experiment was an app that enables audiences to creatively participate in and contribute to the concert experience – through "draw the music". The app includes a drawing

page. After being inspired by music, the audience could use the app to create paintings. Then, the paintings would be randomly selected and projected onto the background of the stage. However, this proposal was quickly vetoed by the test subjects, as the system could not prevent any inappropriate or unsuitable creations from being shown during the concert.

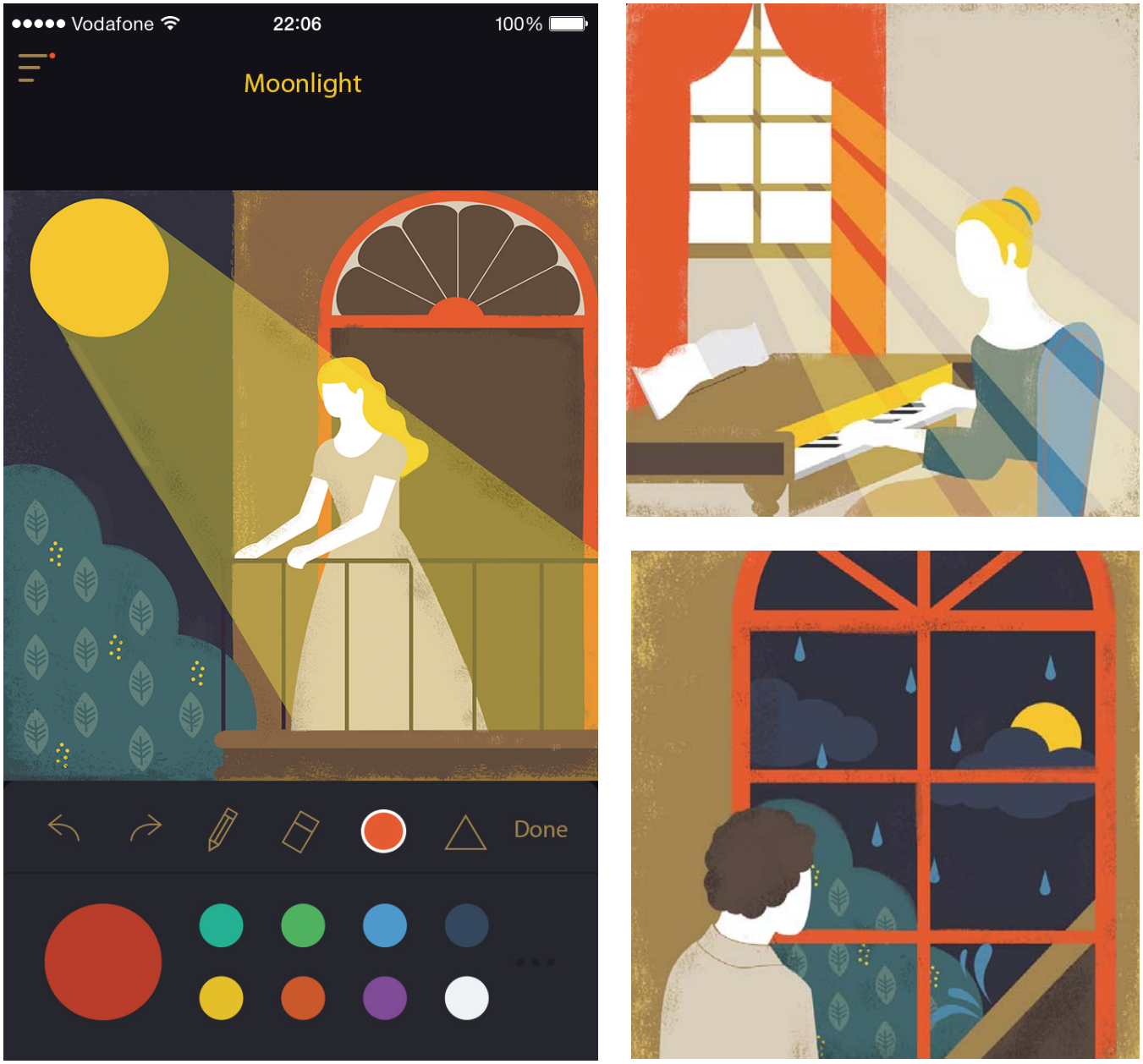
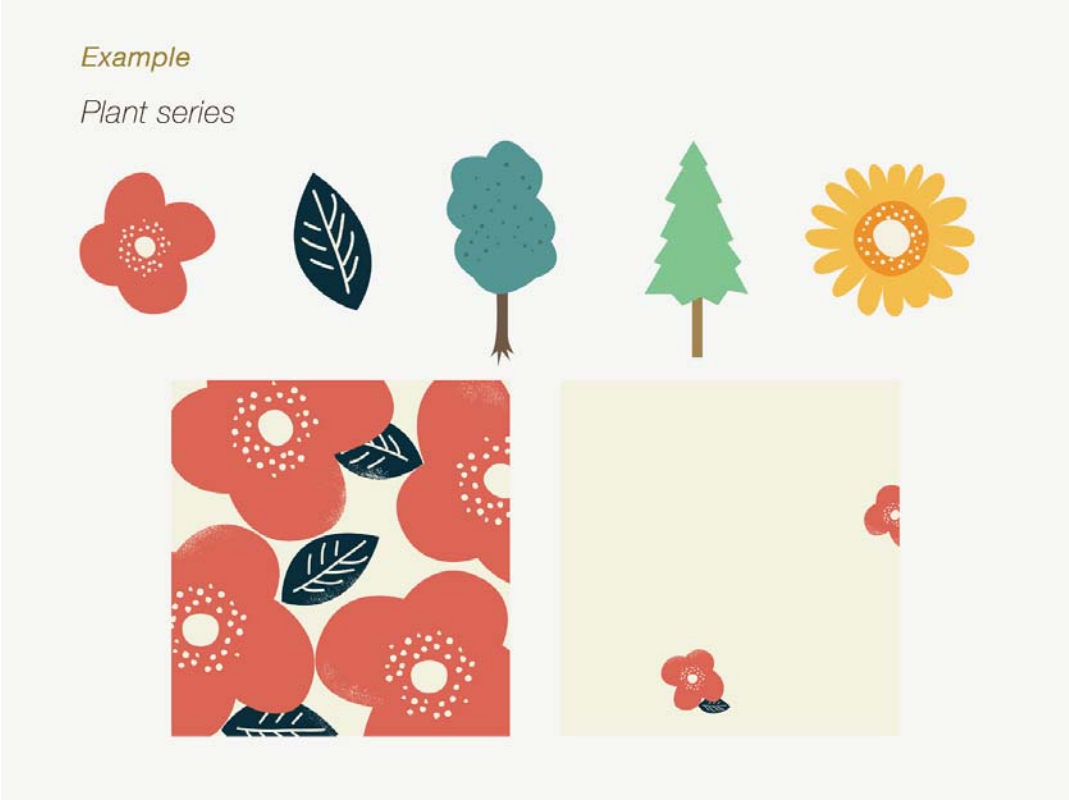


Figure12: The sample painting I designed for 'Moonlight', 'Canon' and 'Raindrop'.

Therefore, the app was upgraded to provide different painting elements for audiences, as seen below. The music could evoke a range of responses from audience members who could then use the system's elements to create paintings. The upgraded system solved the potential problem of inappropriate creations being screened. However, this revised approach would require too much time and engagement and would therefore disrupt audiences' immersion in the performance. The test subjects didn't want to be distracted by elements which would detract from their appreciation of the music. This proposed system could not guarantee a continuous, interactive experience.



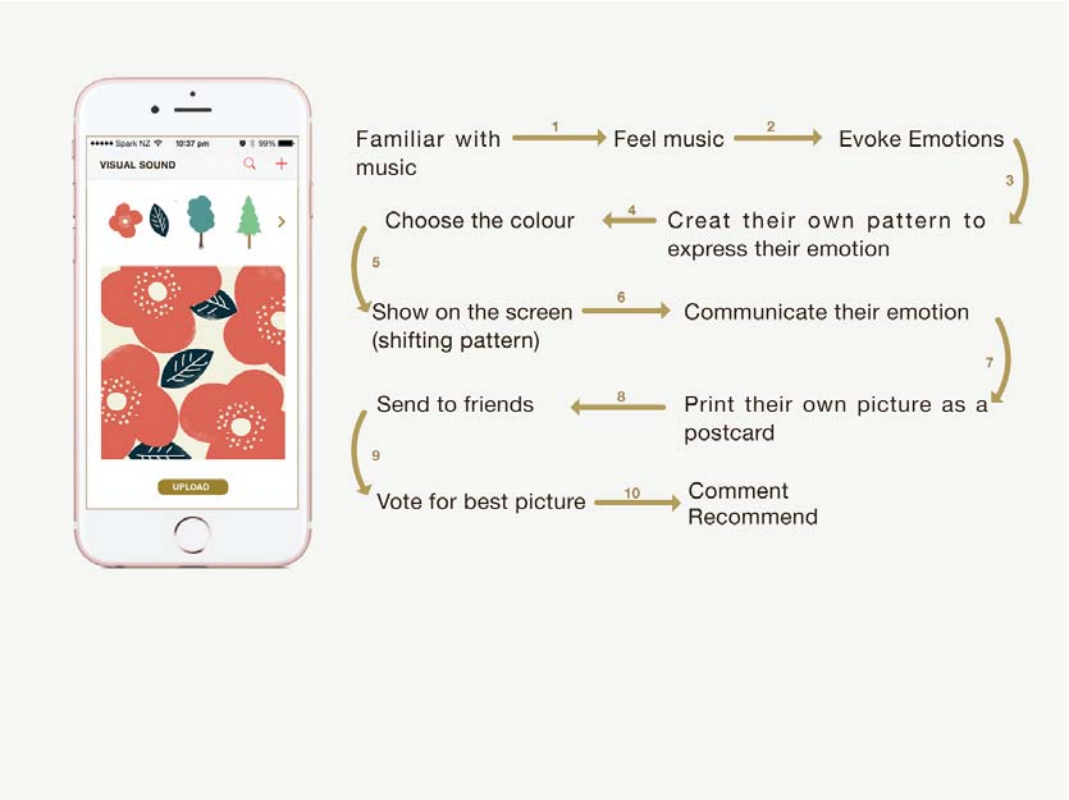


Figure13: Design of the "Draw the Music" system

6.2.2 Practice 2: Sign of instruments

After considering the test subjects' feedback, I conducted a second experiment: letting audiences express their feelings during the concert through a colour system via mobile phones.

I designed visual images for each instrument reflecting upon their unique sound characteristics. As the concert evoked the audiences' emotions, users could fill colours into the visual images based upon their feelings. The participants argued this experiment lacked visual stimuli. The repeated display of the same graphics with only the colours changing felt boring. Furthermore, they had no opportunity to be uniquely creative so they felt the prototype lacked a sense of involvement.

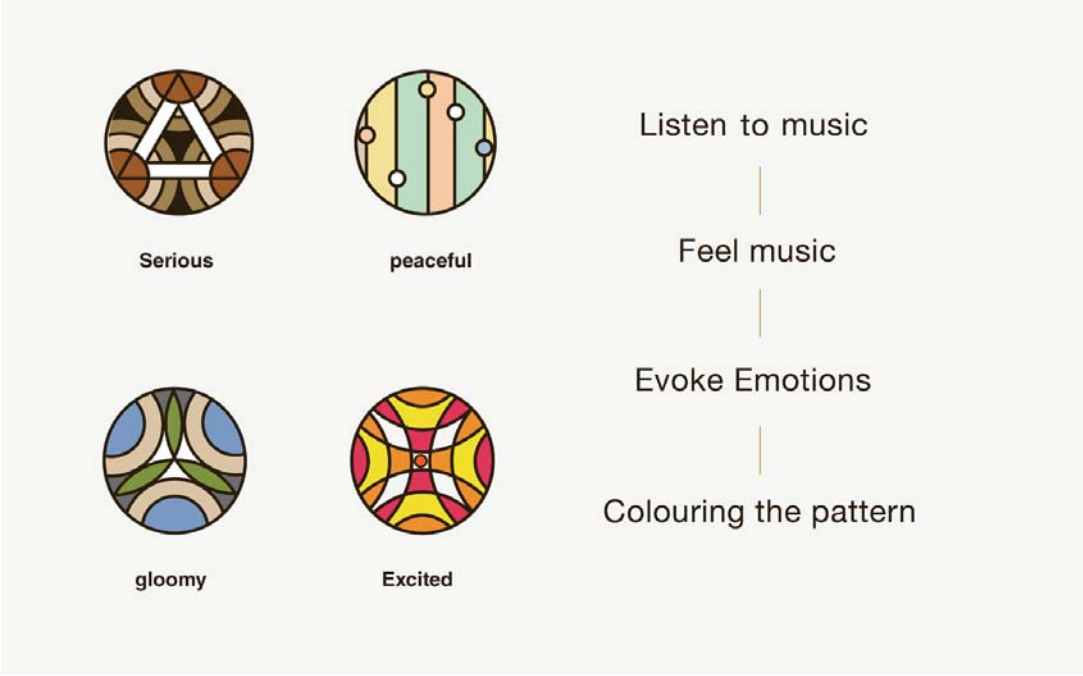


Figure14: Design of the Sign of the instruments system

From these tests, I concluded that when enabling millennials to more fully participate in a multi-sensory orchestra experience. The study needs to consider the concordance of design and concerts in order to prevent the appearance of improper situations and visual effects. In addition, we need to pay attention to the audience's experience and ensure they are not distracted from enjoying the concert.

With regard to visual effects, millennials prefer variety rather than a single image. Therefore, when designing the visual aspects of concerts, it may be preferable to use video instead of still pictures. The nine millennial test subjects hoped that after interactively participating in concerts, they could have their creations preserved to enhance their sense of achievement.

To summarise, the opinions put forward by the interviewees were that they wanted more visual stimulation on the stage. They were willing to participate if it would help create a unique, immersive concert experience. However, they didn't want to spend too much time on the creation process because they did not want to be distracted from enjoying the music.

6.3 Final project

The final design is an interactive concert experience utilising a mobile platform. It combines classical music visualisation design with a participatory classical concert experience interaction in an app prototype. This system enables audiences to participate in the concert and share their opinions and co-creations with others.

This project creates an opportunity for audiences to become active participants and positive contributors in classical concert experiences. In addition, it encourages audiences to have more meaningful engagement with a performance. The next sections will document this project from

several perspectives.

6.3.1 Visual system

Research has shown that one of the reasons why millennials are not willing to participate in classical music is because they think classical concerts are monotonous and lack visual stimuli (Mielonen, 2003). To create a multi-sensory experience for this target audience, my research indicated it is necessary to optimise the visual effect of the classical concert and ensure the visual effect is attuned to the classical music. The visual effect needs to be responsive to the music to create a unified, synaesthetic sensory experience where the auditory and visual stimuli are in harmony.

6.3.1.1 History of music visualisation

Throughout history, many artists have tried to create synaesthetic works that unite the senses of sight and hearing – that is, where listening to the music evokes an experience or perception of colour or form.

Oskar Fischinger, who was active in the 1930s and 1940s, is a notable example of a music visualisation artist. His Motion Paintings is an experimental film of abstract paintings set to J.S. Bach's Brandenburg Concerto no.3. It uses simple shapes and colours to synchronise with the music. His works visually reflect the performance qualities of music through form, dynamics and pattern. Kerry Brougher, director of the Academy Museum of Motion Pictures in Los Angeles, described Fischinger's work as striving "to create a synthesis of visual art and music that could be consumed by large numbers of people *(Brougher, 2005)*."

Figure15:Oskar Fischinger's work

Stephen Malinowski's Music Animation Machine is an example of a contemporary music visualisation. His work is designed to enable people without significant musical training to easily understand a musical score and bridge the gap between sheet music and the time-based movement of music.

Figure16: Stephen Malinowski's Music Animation Machine

Stephen Malinowski's Music Animation Machine is an example of a contemporary music visualisation. His work is designed to enable people without significant musical training to easily understand a musical score and bridge the gap between sheet music and the time-based movement of music.

In addition to Fischinger's and Malinowski's, many other projects have contributed to music visualisation — such as Thomas Wilfred's "organic" and ethereal Lumia works, and Wayne Lytle's Animusic.

6.3.1.2 Timbre, hearing level, and frequency

These historical music visualisations strongly influenced my initial thinking and decision making for the conceptual development and format of my design. This project analyses the relationship between classical music visual images and designs, and creates an animation system that changes dynamically over time in response to classical music in a concert. It explores how music in a concert could affect the appearance of visual patterns – that is, their size, shape and colour change in response to the music.

In order to explore how to create visual images which reflect orchestral music, it is first necessary to analyse to the properties of sound and, in particular, the sounds produced by the instruments in an orchestra.

Every sound is comprised of three sonic properties: timbre, loudness and frequency. An orchestra is comprised of four groups of instruments, namely; strings, brass, woodwinds and percussion.

I have chosen different shapes to represent the timbre of different groups

or sections of instruments: four horizontal lines for strings; single vertical lines for woodwinds; circles for brass and squares for percussion.

”Timbre” is represented through different shapes which were chosen because they are similar to the physical properties of the different groups of instruments.

The sound of strings is melodious and wide-ranging in pitch. Because there are four string instruments – violin, viola, cello and double bass – and each has four strings, I have used four horizontal lines to represent the sounds of strings. This should make it easier for audiences to associate these images with string sounds.

Compared with strings, the sound of woodwinds is purer, simpler and calmer. So I needed to find a relatively simple shape to represent their timbre. Also, as with the image for strings, the image for woodwinds needed to reflect the physical appearance of woodwinds, namely, a rod or tube. I therefore chose single vertical lines to represent woodwinds.

The gamut of brass instruments is gentle and wide, and their timbre is vigorous, forceful and full of emotion. I have chosen circles to represent brass instruments because the front end of the various horns, which produces the instruments’ sounds, is round.

The percussion section is comprised of several different instruments. Their common characteristics are distinguishing and very recognisable sound features. So I chose an angular, square shape to represent their sounds. One reason is that the four angles show the different features of the sound of percussion, while the equal length of a square’s sides shows the stability of harmony and unity.

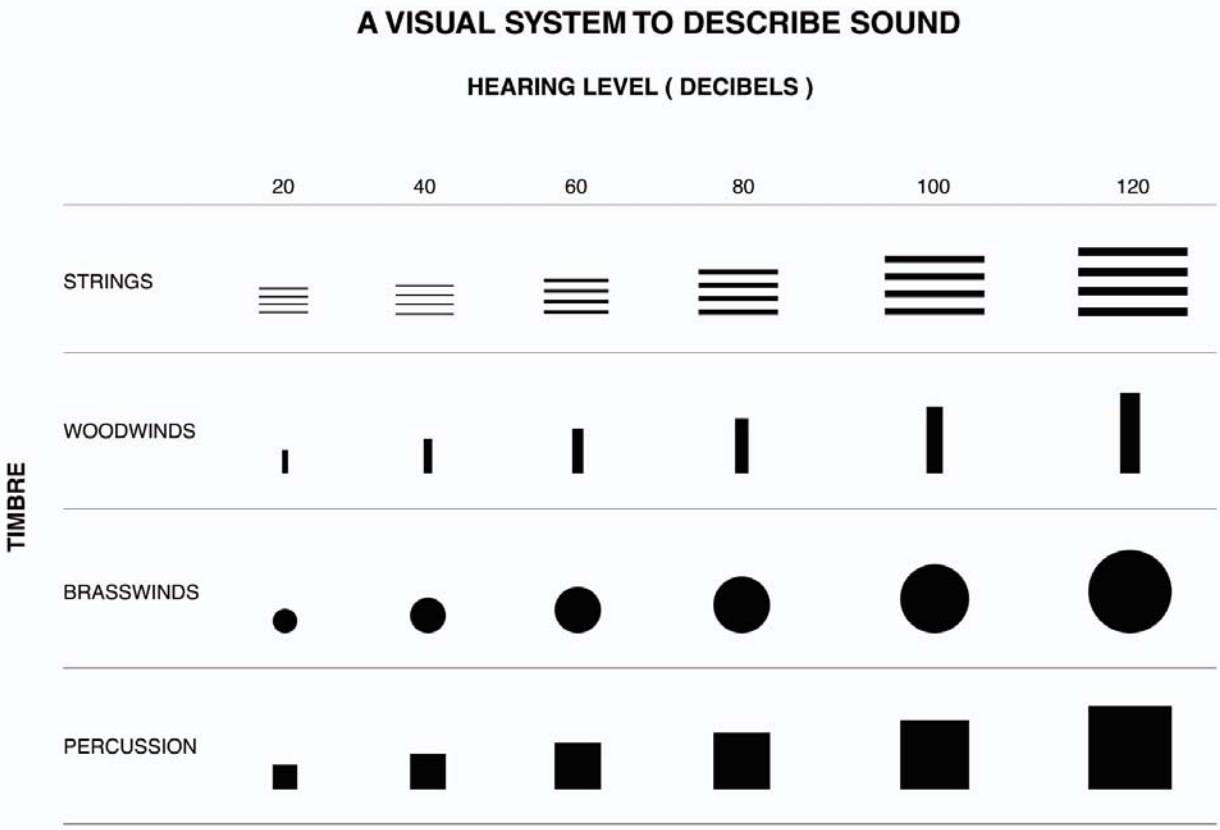


Figure17: Visual system1 (timbre and hearing level)

Loudness refers to the perceived strength of a sound *(European Broadcasting Union, 2009)*. I represented this property by changing the size of the shapes, as shown in the table above.

For frequency, I selected the general frequency range of all the instruments in an orchestra and then showed the specific frequency of each instrument in the line graph below.

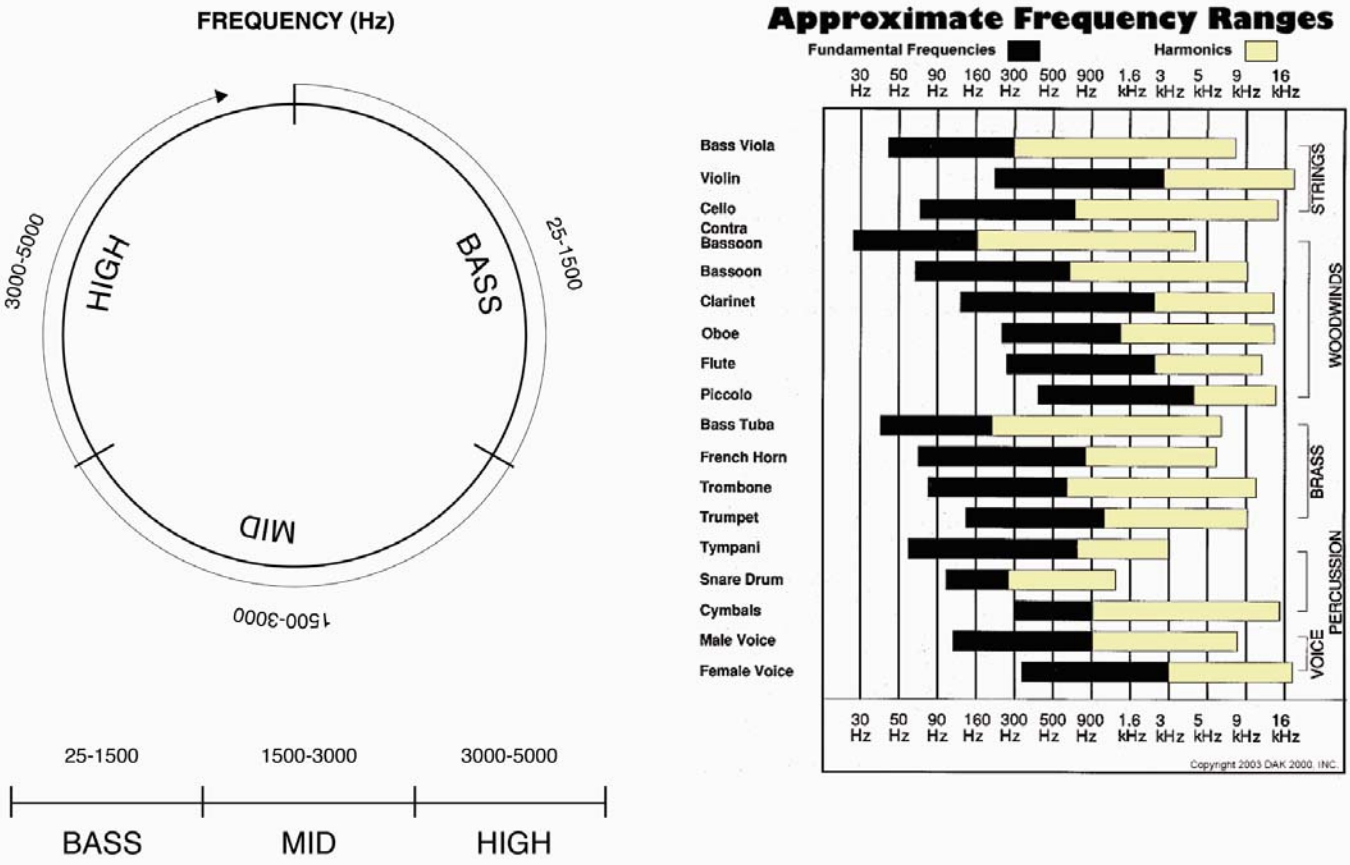


Figure 18: Visual system 2 (Frequency)

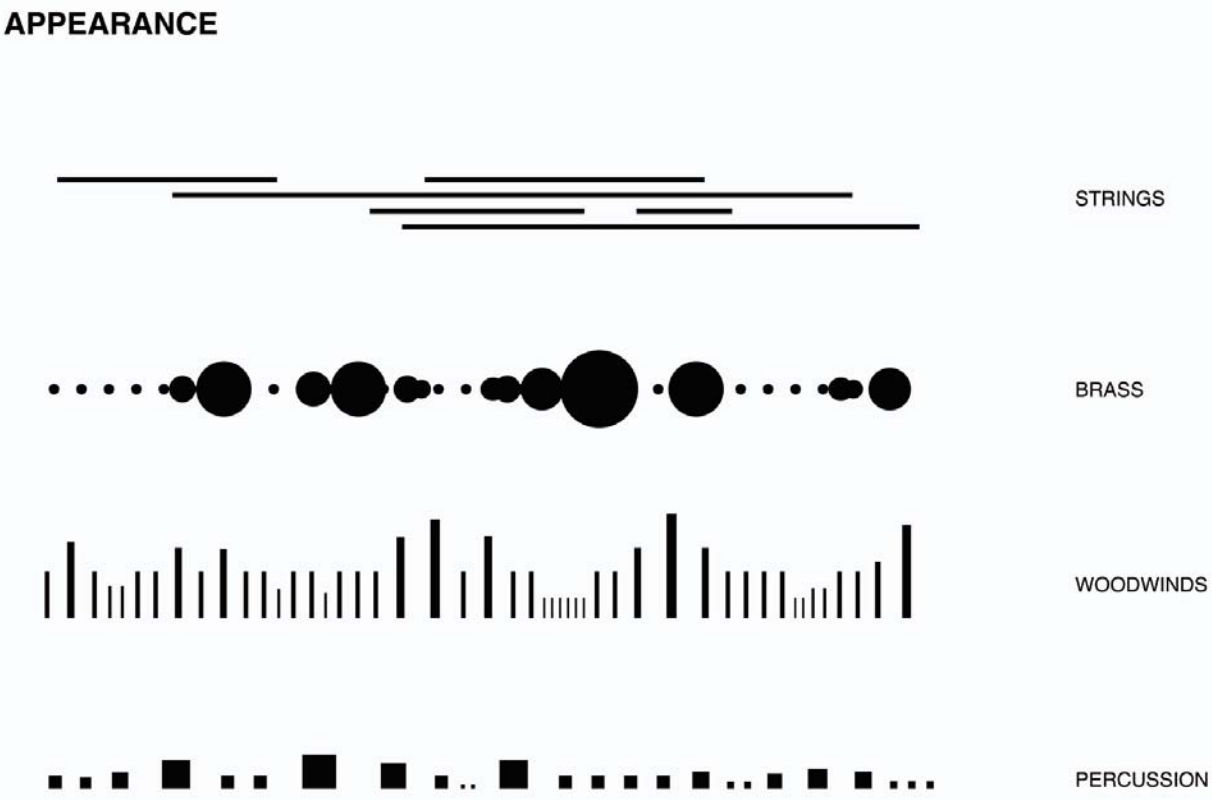


Figure 19: Visual system 3 (Appearance)

6.3.2. Gesture

Body movement plays an important role in classical performances. Conductors use their body language to guide the whole performance. Conductors thus enable audiences to see the rhythm of the music through their body movements *(Wang, 2005)*. For audiences, body movement is also a direct response when people are engaged in music activities. When audiences listen to music, they readily keep a beat in time with the music. When listening to a classical concert, it is also very common for audiences to tap out the rhythm, as also shown by the conductor's gestures. European early childhood music education expert Émile Jaques-Dalcroze believes that understanding music is based on the body's rhythm with music *(Manifol, 2008)*.

I therefore introduced the element of movement into the design of my visual system. Instead of sitting passively, the audience can follow the music by playing the beat with their hands as they become more deeply immersed in the concert. The visual system utilized this project shows the visualized music on the stage, but also links in the users' gestures. The drawings below outline the patterns of some of these gestures. Audiences use gestures to express their feelings when enjoying music, and create a series of different visual effects to engage with the performance. Conductors guide the musicians through their gestures, and audiences reflect the performance on the stage through their gestures, and they together form a more unified performance.

Figure 20: Conductor's gestures

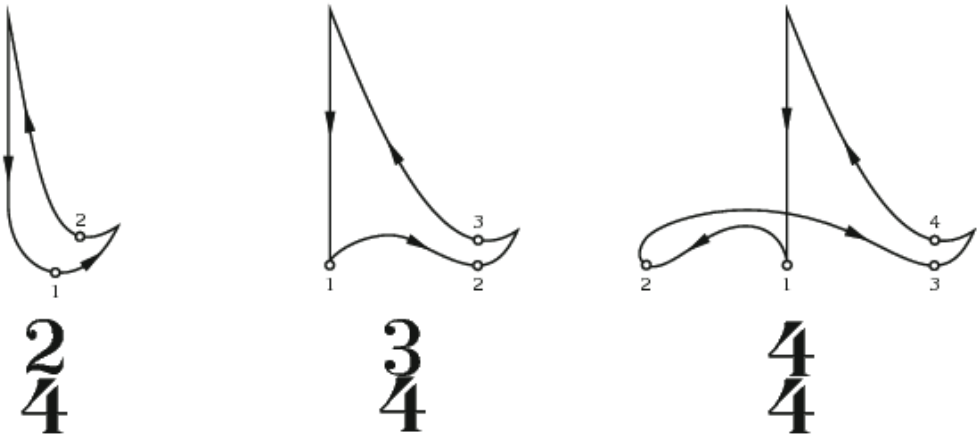


Figure 21: Conducting patterns

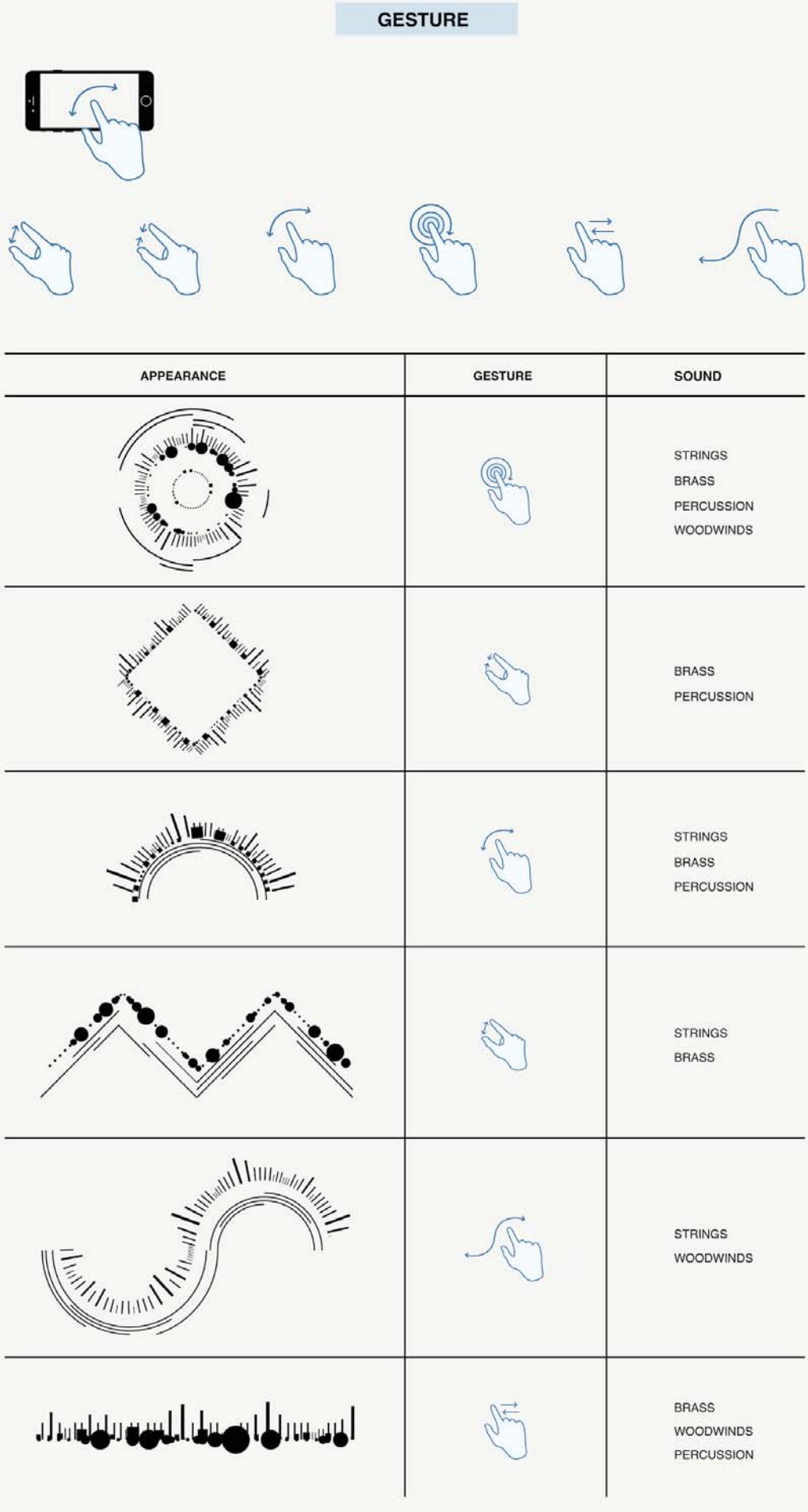


Figure 22: Visual system 4 (Gesture)

In my visual system, gesture determines the form of visualisation and influences the colour of visualisation. The colour of music visualisation is determined by the changing frequency of users' gestures. The faster the frequency of gestures changes, the warmer the colour of the visualisation, and, conversely, the slower the frequency changes, the cooler the colour.

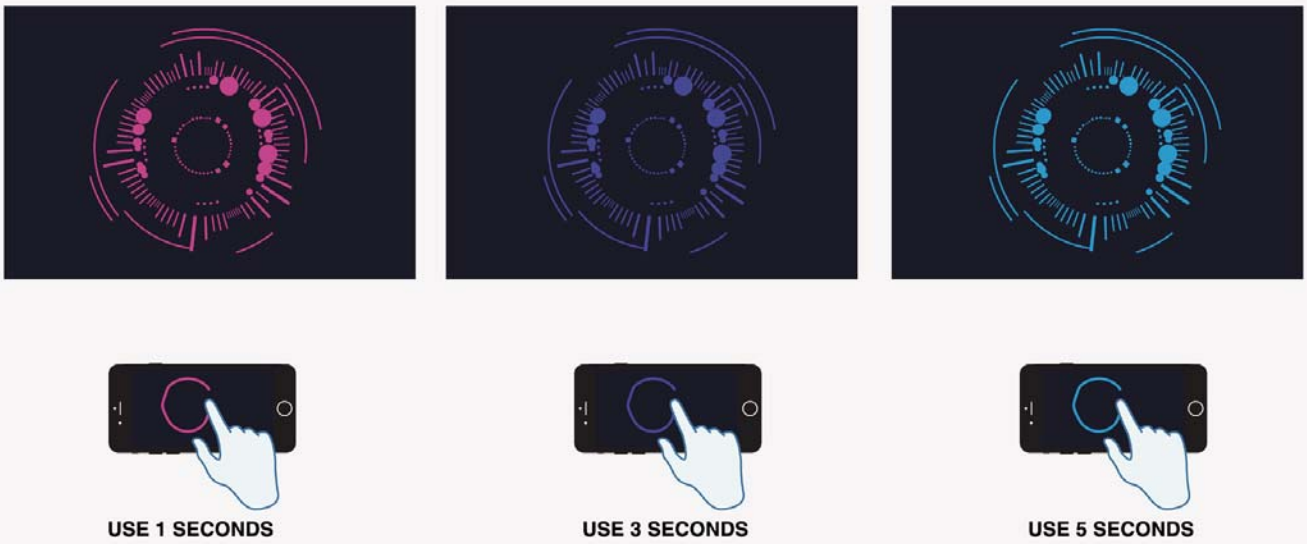


Figure 23:Visual system 5 (Colour)

Music visualisation and gesture form part of a complete visual system. In order to encourage the audience's continuous participation and interaction in a concert, visual sense can be converted into different types of animation, depending on the style or genre of the music. The image below shows examples of different visual effects.

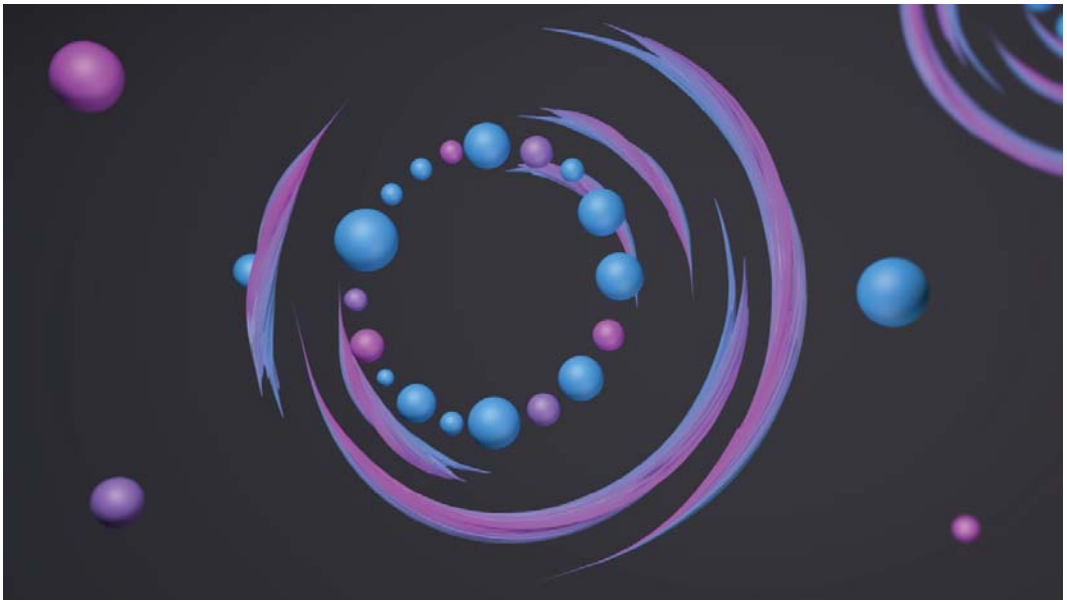


Figure 24: the second piece of the "Nutcracker Suite"

"The Land of Sweet" is the second piece of the "Nutcracker Suite" by Pyotr Tchaikovsky. It is about a child who goes to a wonderland called Sweets. This iteration of the design system uses vibrant colours and candy textures to represent the great delight he experiences there.

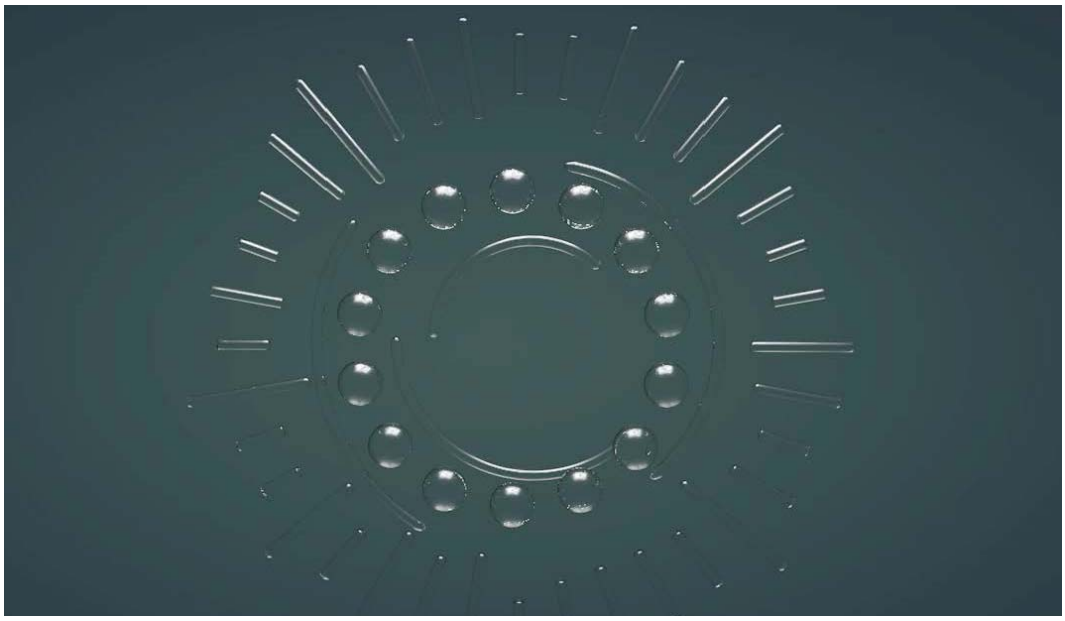


Figure 25: the sonata "Undine"

In the sonata "Undine", composed by Carl Reinecke, Undine, a water spirit, marries a knight named Huldebrand in order to gain a soul. So in design chosen to describe "Udine", the water spirit is represented by the clear water texture, and the brave knight by dark green.

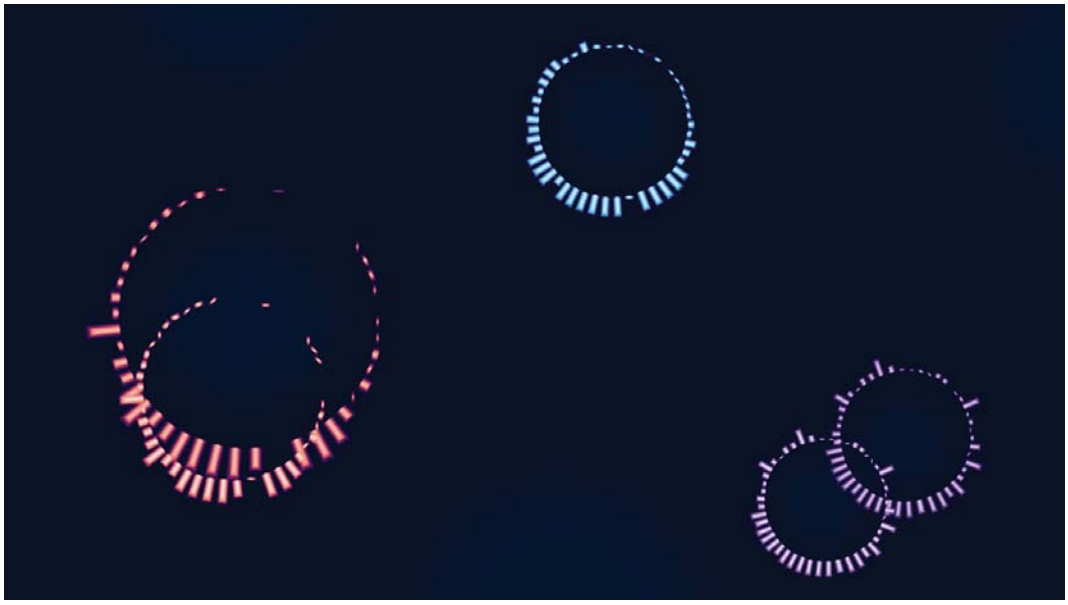


Figure 26: The Blue Danube

"The Blue Danube", composed by Johann Strauss II, the seventh part of it praises at the quiet night, the Danube river flows to bring people happiness and hope. The design uses dark blue to describe the Danube river at night. The happiness and hope expressed in the music are represented by rich colours and shining effect.

Figure 27: Visual effects for concerts

6.3.3 Interaction system

A visual system cannot demonstrate its value in a concert unless it is supported by an interaction system. The interaction system I have chosen is an app called Visual Sound. This app offers a warm-up experience before the concert. It then enables users to participate the concert actively while contributing to the concert with images on the background over the stage. Then, after the concert, it gives users an opportunity to share and review their works.

The following section describes the experience produced by the app.

6.3.3.1 Concert experience

"The most successful audience development campaigns are focused on the potential audience member's total experience." (Frantz, 2015)

Music experiences can be extended by running activities that take place before, during, and after a concert or event. This builds momentum and anticipation, and it is a means of maintaining relationships with audiences over longer time periods *(Rosenqvist & Steijn et al, 2005)*. This project was designed to encompass the total classical concert experience. The following image is the journey map of the visual sound system which was tested with 14 millennials. The system comprises three parts: before, during and after the concert.

Before the concert, the system will help users download and become familiar with the program, and thus provide a warm-up experience. During the concert, a participatory, interactive feature of the system will enable the audience to actively participate and contribute to the concert. After the concert, the system will provide the user with a review and sharing opportunity.

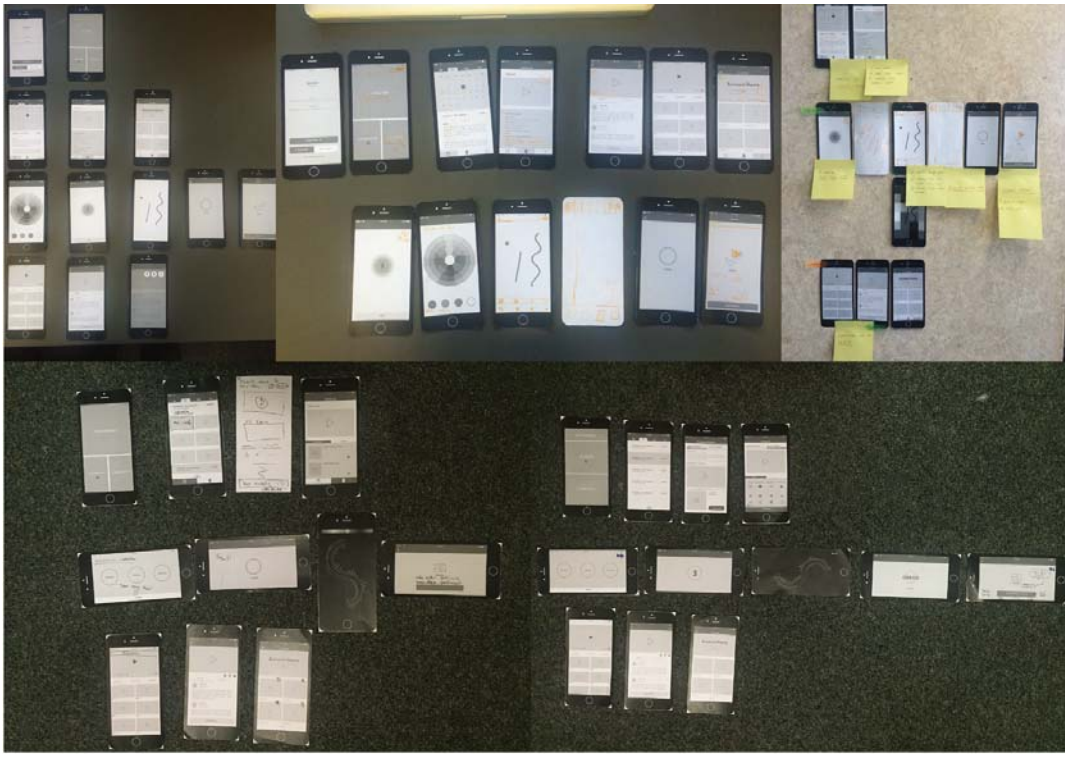


Figure 28: Prototypes of Visual Sound

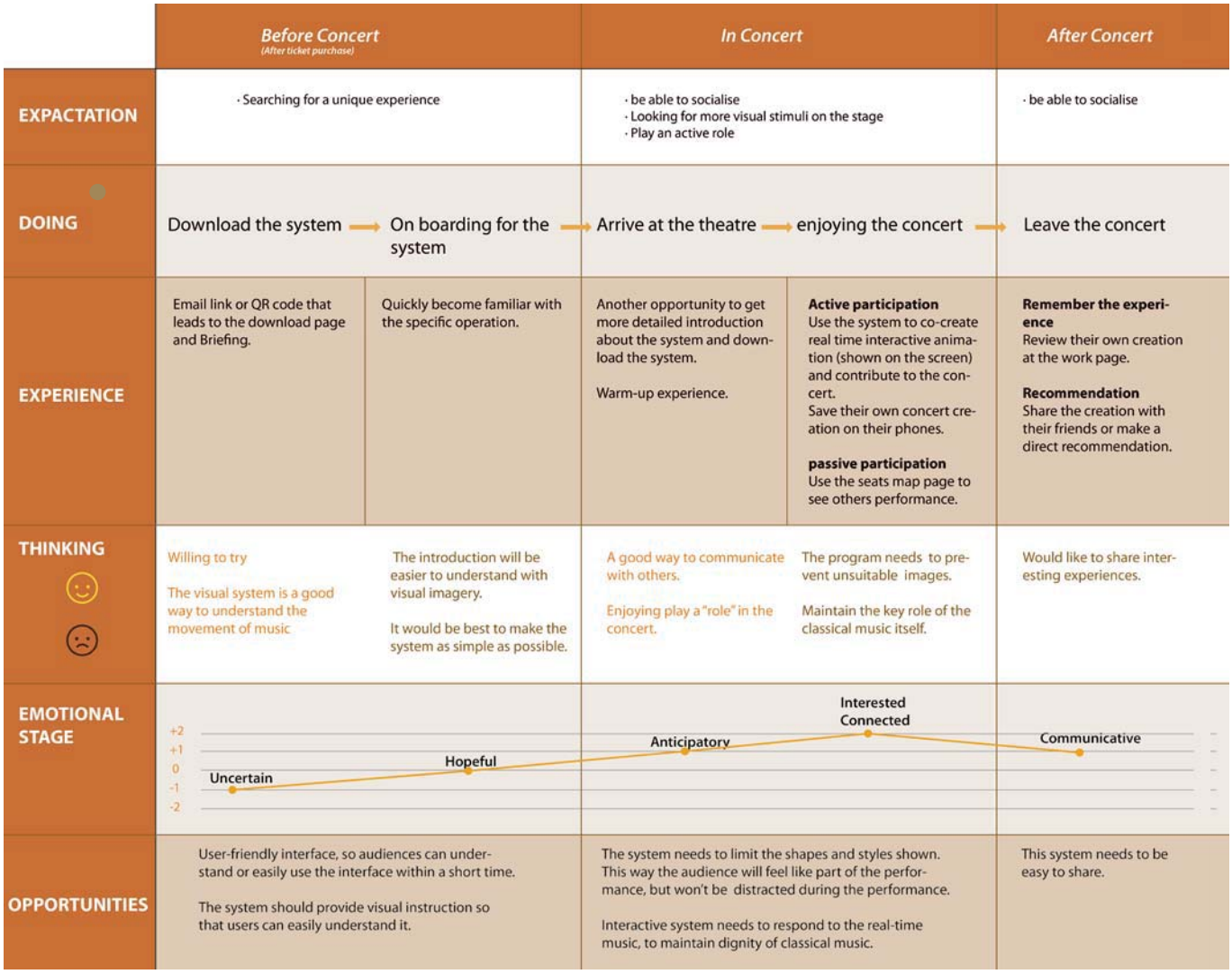


Figure 29: Journey map of the visual sound system base on the test result

Before the concert

The experience before the concert was about enabling audience members to explore the themes around the music and system, and showing them how they could interact during the concert.

The period before the live concert would provide the attending audiences with an opportunity to download the interactive app, then scan the ticket to login the system and get to know the function and operation.

I introduced the important link – onboarding. Onboarding is an important process within the app's experience because it shows how to use the app. The design principle of onboarding is to give users some help when using the system for the first time so that they can quickly and easily understand its functions and operating modes. For the survey, some of the 14 subjects said the presentation on the vision might make it easier for them to understand and accept the system. The app aims to be user-friendly, and its Guide pages show how to use the system. In addition, it combines the list of contents with a real interface, and has a brief set of user instructions for its functions. This guide could enable users to easily become familiar with the app and all its functions when using it for the first time.

Figure 30: Front page

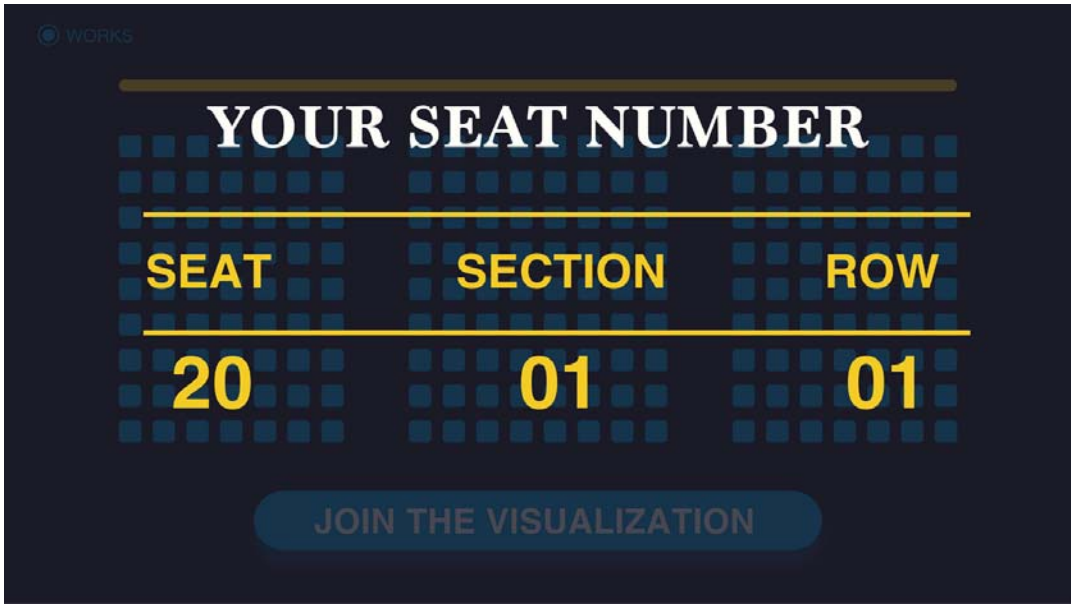


Figure 31: Seating plan page

When audiences arrive at the concert, the system will offer them a warm-up experience. If they want to find their seats through the system, the location of their seats will light up in the seating plan.

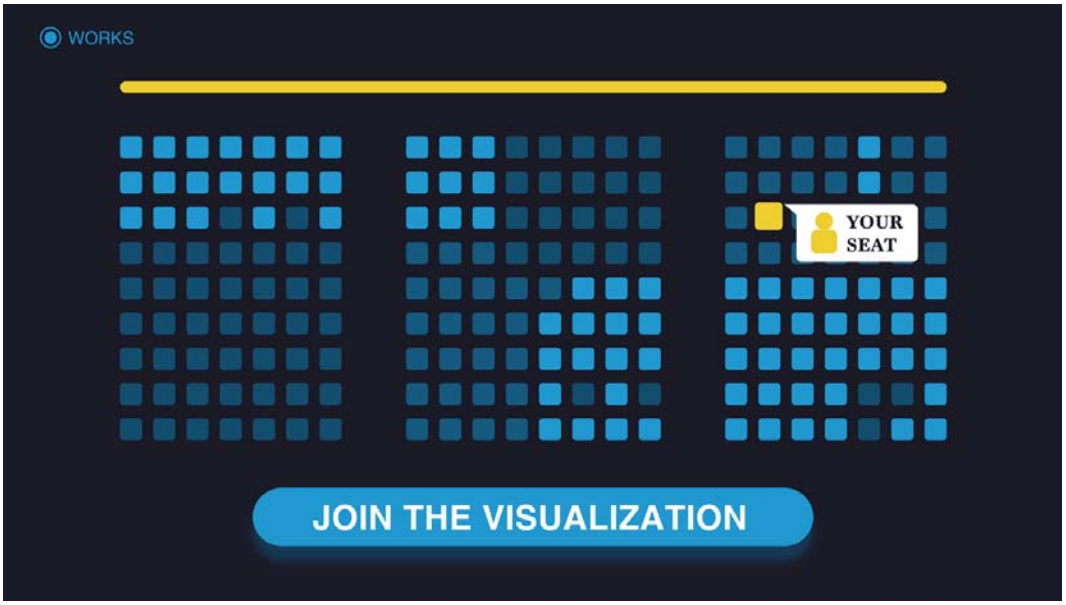


Figure 32: Finding the seating plan

In addition, the seating plan is showing other participants are using the app. When other audience members login the system, the colour of their

seats will change the dark blue into the bright one. As a consequence, the sense of participation for young audiences is gradually established before the concert.

In the concert

The previous chapters showed how participatory interaction can engage millennials, providing them with a unique and meaningful concert experience.

During the concert, the mutual-sensory interaction experience would be further displayed. Audiences could use Visual Sound system to interact. The app's functionality and interface for audience members to participate in performances is transparent and user-friendly, so audiences could quickly understand the app and learn to use it competently.
The system's features need to address several aspects, as discussed below.

Active vs passive participation

With audience involvement, we need to distinguish between active and passive participation. Active participants are those who want to try out or join in arts activities themselves. Passive participants are audience members who may be highly engaged and dedicated, but they prefer to just watch or listen rather than actively take part *(Walmsley and Anna Franks, 2010)*.

The system divides concert-goers into two groups: the people who are willing to actively participate, and those who want to participate passively. Audience members who want to actively participate can click the "performance" button on the front page, and then become directly involved in the interaction. Those who prefer to participate passively can choose

to watch the interactive performance of any participant from the seating plan on the home page - they can click on a seat in the seating plan page to see that person's real-time interaction through the app. This enables millennials to communicate with each other silently during a concert. This feature not only enables audience members to communicate, it also enables them to choose different levels of participation.

Co-creation interaction experience

Larger audience participation involves particular complexity. It is a challenge to find a suitable means of enabling mass audience interaction to be expressed, for example on a screen, when many people interact differently at the same time.

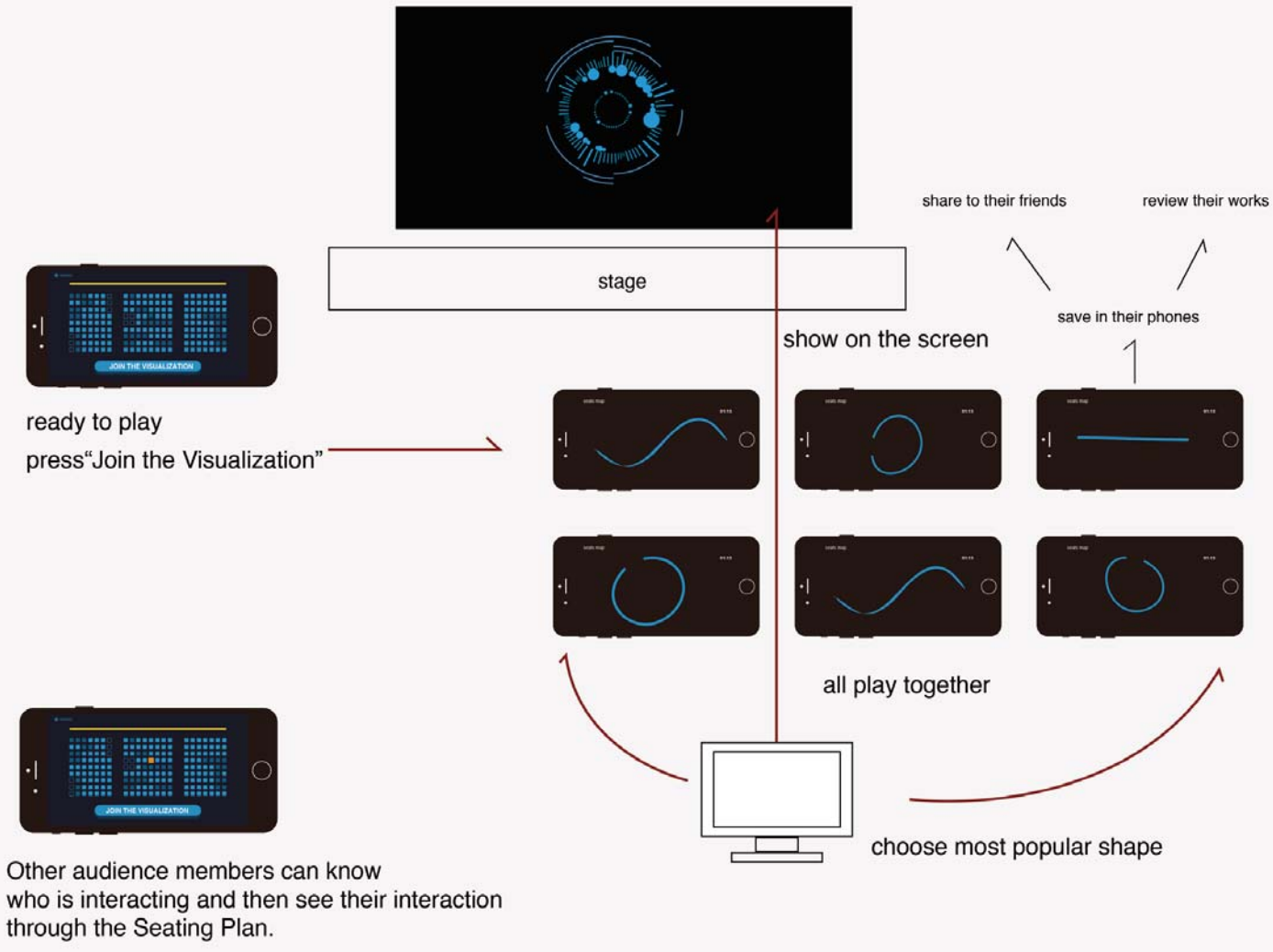


Figure 33: The operation system

The system uses co-creation way to address this. As seen from the diagram above, participants who want to participate actively can click on the “Join the Visualisation” button to start to interact. They enjoy the music, and at the same time — depending on how the music affects them — create their own gestures and beat time on the screen of mobile.

During the design phase of the concert experience, the project employed two interactive approaches, which both satisfied the requirement of ensuring the audience are not too distracted and that their creations could be preserved and shared.

One approach is ‘individual output’.It was to let audiences use the system to conduct the interaction. Their creations could be selected at random and then displayed on the screen over the stage.

The other approach is ‘co-creation’. Audience members work together to create images, and the most popular image are displayed to the public. Research shows millennials are group-oriented rather than being individualists. They do not want to stand out among their peers, but they want to be seen as part of a group *(Howe and Strauss, 2003)* .

Because of their group-oriented inclination, I chose co-creation as the means for them to engage with music, express their response and contribute to the music. In addition, 75% of the test subjects chose co-creation for concert interaction and thought it would result in preventing unexpected and inappropriate visual images being shown during a concert. Some participants also believed they could be unduly pressured if they had to be individually responsible for creating some of the visual images themselves, which would make it less enjoyable and harder for them to participate in the performance.

The co-creation approach enables the system could identify the most popular pattern or shape based on the audience's gestures. For example if 100 audience members participate, and 10% of them choose the round gesture, 30% choose the straight line gesture, but nearly 60% use the half cycle gesture, then the final image on the screen over the stage would be half-cycle gestures. Also in order to maintain professionalism and avoid any inappropriate or unsuitable visual images being publicly screened, the system limits the presentation form of shapes and the animation styles shown on the screen during the concert. However, every audience member could have their own response automatically saved in the Visual Sound system. This method was established by mutual co-creation, which could help construct the concert through interaction, and include the experience of personal input.

Figure 34: Intracetion in the concert

After the concert

The period after the concert could be dedicated to sharing (recommendations) and reviewing the concert. I hope that audiences' engagement will continue and grow even after leaving the theatre. In the design of the system, therefore, millennials could review their own creation at the work page after leaving the theatre, and then directly share with their friends. In addition to giving them an experience which meets their needs for participation and interaction, it would also help promote classical music concerts as a worthwhile experience for millennials.

Review their creations

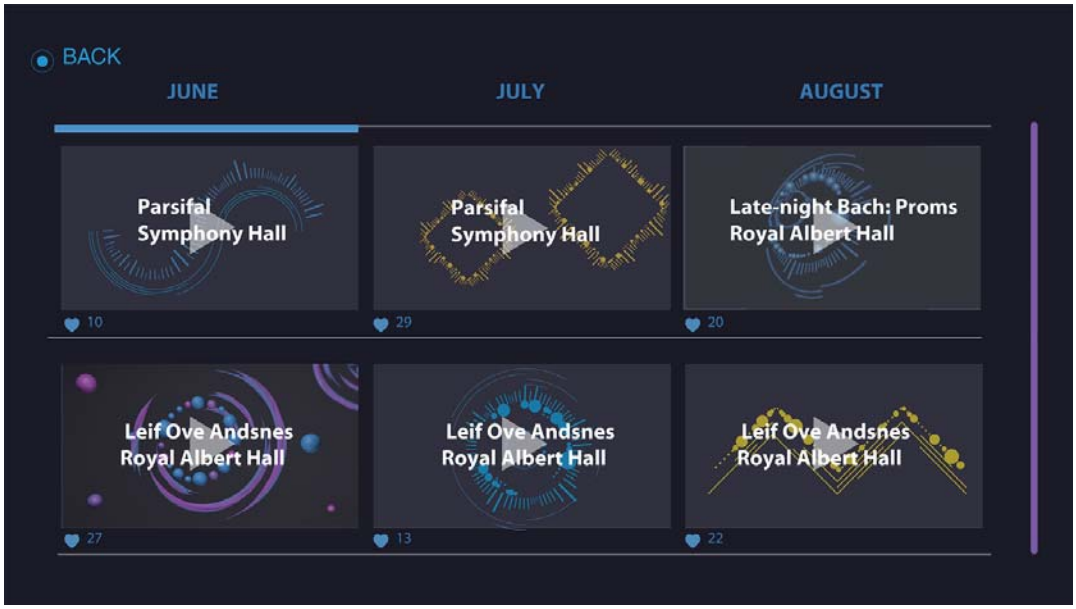


Figure 35:"review my work "page

Audience members could see the co-creation results on the screen during the concert, and they could review their own creation through the app. The app's "My Work" page enables audience members to review after the concert the patterns and colour created by their own gestures during the concert. On the same page, users could also see how many times they contributed to the concert. These app features would heighten audience members' engagement during the concert and also maintain their sense of engagement after the concert.

Share (recommendations)

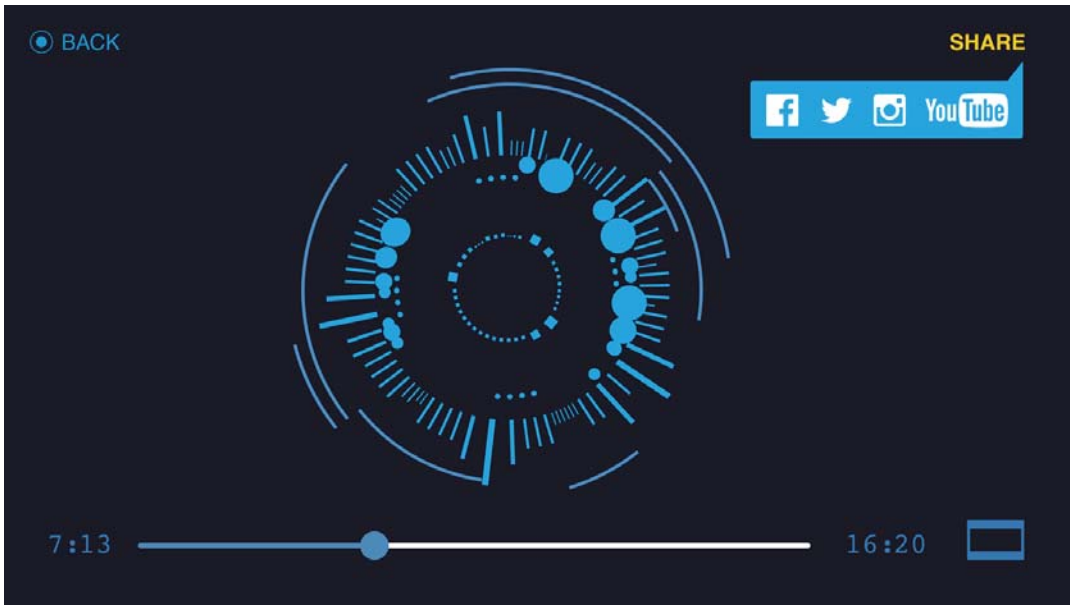


Figure36:share page

Research has shown that millennials have a strong social need for and value shared experience. (Wolf, 2006 and Mielonen, 2003). In addition, friends' recommendations influence them more than advertisements do. Because millennials have strong social and sharing needs, and classical concerts need more promotion to attract audiences, my system supports sharing their experience of the concert on social media or with their friends directly. Through sharing, millennials choose to promote experiences which reflect their own personality and preferences. The experience of sharing not only helps to build and maintain millennials' enthusiasm for concerts, but also serves as an effective promotional tool.

Feedback and testing with millennials played an important role in informing the construction of the final project.

With regards to the concert systems visual design, the system can produce real-time animation using the system elements and the audience's operation. Fourteen test subjects endorsed the system and said they could understand the music's visual symbols.

The following are the general insights from the final framework testing which help me to design the final project.

1. Interviewees were willing to try to use the system when they went to a concert.

2. Interviewees thought the user interface was user-friendly, and they could quickly become familiar with how it worked.

3. For the visual effects, interviewees appreciated that the system would limit the appearance and type of the graphics to prevent unsuitable images appearing on the screen during the concert, and maintain the proper atmosphere of the concert, However, they still hoped to find a suitable way to retain their own original creations.

4. For the interaction system, they tended to show their creation in cooperative rather than an individual way.

Figure 37: Some of the participants doing the test

Visual Sound

Feedback

1. Yes! I think it is an interesting interaction for people who doesn't like classic music concert.
2. The system will be easier to understand with some visual. For example, a video or a series of photo.
3. Individual Input & Output
4. Compare to the co-creation mode. Individual Output has a better feedback experience in terms of interaction. Individual Output also promote a competition among the app users.

Visual Sound

Feedback

1. I would love to try this APP as a person not really into classical music. This APP will certainly help the user to get more involved in the concert.
2. The whole system is quite easy to understand. Also, I think it would be better to make the system as simple as possible. As the main purpose is to focus on the music.
3. I prefer individual output. Because it will perform the best interactive experience. As this the whole purpose of this APP. But the system need to provide an instruction or educate users before using it. Also it need to be more organised, in case of out of control during the concert.

Visual Sound

Feedback

- really good visually to understand the movement of the music
- program to prevent dick pics and other bad images.
- not so much the Autotune controlling on the screen.
- colour vibes, mood.
- good for death people to see and understand the mood and tone of the music and also enjoy it.
- reminds me of the Itunes visualiser
- multiple interaction can be glitchy and [illegible]

Visual Sound

Feedback

I wish to participate this test because it sounds interesting. I quite like this idea as it might encourage more young people to pay attention to classic music and be a part in the concert. Personally speaking, I prefer project two one, because it will show every individual's work on the big screen. This may attract more people to take part in the concert and get excited to show their own ideas about the music. However, project two is more common for a large population. It's easier to implement than project one.

Visual Sound

Feedback

I was impressed by this project which I think it is really practical and eye-catching.

For those who are not interested in classical music, especially young people, this is attractive and can help to enhance the experience of enjoying classical music as it is kind of visual stimuli and interaction.

Another advantage needed to mention is that this design system is flexible for users to control by providing easier access.

Visual Sound

Feedback

I would like to participate this project. About the appearance of the shape output, the best way to deal with is to choose the most popular shape, so it won't influence the main purpose of the concert, and also added guest pleasure to the young audience who are not interested in classical music.

Figure38: Participants' test feedback sheets

Visual Sound

Feedback

This is the perfect combined between vison and audio, Also is the combined between music and Design.

I think all the audience will be exciting because he/she is one of the team player !

And I personally like the radom choose, because that can make the concer more interesting and ~~exci~~ exciting.

this is the stage for everyone ^^

Visual Sound

Feedback

Visual Sound is a interesting and unique project to me. We all really appreciated to see how much efforts that Nicole has put into the reasearching.

My personal favorite is the simple graphic shapes which represents the different instruments. they are the universal language and can be easily understand by people from different cultural background. Just like the "music" itself.

Such a creative idea to visually representing the classic music in a interactive way. I was enjoying to play "the role" in the concert and interact with

Visual Sound

Feedback

1. Willing to use the system
2. Could limit the type of the graphics to prevent unsuitable shape
3. Co-creation is the better way to interate
4. ~~Int~~ Interface should be easier to use

Visual Sound

Feedback

Soun- This idea is awesome!
More shapes.

People Providing their own design would make ~~get to~~ them feel more participated in the concert.

Visual Sound

Feedback

Yes. I definitely would like to participate in this mutual visual system.

I'm impressed by the 3D visual outlook. I imagine what would be very vivid and active when people get involved in, and make the concert much entertainment. When the screen shows the beat and ~~flow~~ flow of the melody it makes every audience the impresario.

Additionally. I prefer the second interaction method due to its maneuverability, and get everyone part of the shows, while not usurps the host's role of the classic music itself.

Visual Sound

Feedback

Maybe make it easier for user to get involved and the pate & idea of Co-Create is good.

Visual Sound

Feedback

I like this system.

1. It's very cool Can (Co-creation) sch. Contribute to the concert. (2 don't like the "random way".
2. It can be used by active and passive participatory audience, which is good.
3. I can easily understand the visual system.
4. I will recommend to my friend if the system be used in concert

1. before concert part should be more user friendly.
2. should limit the shapes shown.

Visual Sound

Feedback

Have a voting system ~~be~~ 20 minutes before concerts that can be a mobile app or something at the ticket booth where they can draw thier own shapes, that way someone can screen the shapes and put together the visual performance before hand. This way the audience feels like a part of the performance but isn't distracted during the performance.

CONCLUSION

The fundamental starting point of this study was questioning how to motivate millennials to engage with experiences in which they are not familiar. classical music was used as the case study for investigation. The research explores the demands that millennials have for their concert experiences, and sets out principles that are applicable for designing experiences suitable for young adults.

The project not only considered what makes millennials unique, but also ascertained what discourages young adults from attending classical music concerts. It then sought to understand their needs when they attend a classical concert.

The reason why millennials don't attend classical concerts is not so much the music itself, but the delivery system of concerts. The current system provides passive experiences. while millennials prefer to actively participate in concerts. They value communication, and seek appropriate and engaging user experiences which fulfill their social needs. A key point

is that they hope to contribute to a performance in order to gain a sense of achievement.

In attempting to design an experience that is appealing for millennials, I analysed the characteristics of millennials and how their characteristics play out. I found they are steeped in digital technology, so I have proposed a solution which has mobile technology at its core. Millennials are a group-oriented generation, so I have shaped my system to enable an audience to work together to participate at a concert. Millennials are “always connected” via technology, they pay more attention to communication and hope that their social requirements can be satisfied in the concert. I therefore decided to design an experience which will enable them to socialise and communicate in a classical music concert through an app.

After understanding what millennials’ required from classical concerts, I explored how to design a means of enabling ways them to engage with classical music. These explorations highlighted that interaction and participation could provide a more immersive experience for millennials and also enable them to contribute in a multi-sensory orchestra experience.

7.1 App / process

The project created prototypes of an app that supports the participation of active audiences and enables audiences to be expressive while shaping real-time performance through its interface. It combines a classical music visualisation system with the opportunity for audiences to play an active part, while visualising their contribution.

It encourages audience communication and helps the audiences experience the performance. At the same time, it ensures that the interface by which audience members participate in performances is transparent and user-friendly.

During the course of my research, two evaluation methods were employed.

The first was in the evaluation phase, whose purpose was to identify millennials' needs and requirements through interviewing test subjects. This provided feedback and suggestions from young adults which helped optimise the research results.

The second validation method was a participatory test for the project prototype, which validated my design decisions. After the creation of the prototype, the study tested the vision, applicability and stability through the evaluation. The test result showed that audiences appreciate the opportunity to experience the music differently by interacting and contributing in a classical concert.

7.2 Lessons learned

Through this process, the following guidelines emerged for how to best engage millennials through design experiences.

1 Break up traditional formats

Introducing a visual aspect to music can help millennials become more immersed in a performance. Interactivity not only changes young audiences' behaviour, but it also stimulates their interests. Breaking up or

challenging the traditional formats of social rituals and accepted mores, with restraint, helps to meet millennials' demands and expectations and can create innovative recreational possibilities.

2 Make it social

The core of the millennial perspective on society is a desire to build connections and they want their social demands to be met when they attend an event. To create a more engaging experience for millennials, I worked to find an appealing solution to support their social and communication needs.

3.Make non-visual things visual

Millennials are searching for more visual stimuli, visual content is a very powerful tool for engaging them. When targeting millennials, visual content is a direct pathway to their hearts. It is not only more appealing, but also more effective than a non-visual one.

4. Consider all phases of the experience

In order to create a more immersive experience for millennials, the whole user journey must be considered then explore which touchpoint could be utilised best.

5. Making things collaborative

As a group-oriented generation, millennials strongly prefer a sense of unity and collaboration, and believe that a group can help them to accomplish more and co-create a better end result. My experience design process therefore involved opportunities for collaboration and group projects. Also, enabling the audience to work as a group and be creative collaborators, helped build mutually beneficial relationships.

7.3 Future Work

There is scope for further projects exploring the issues I have addressed and the concert design system I have proposed. Although this visual system is only one part of a whole classical concert experience, other visual systems using the design principles outlined in this exegesis could be developed to achieve further synaesthetic classical music experiences.

Because of time and technology limitations, only the prototype of the interactive system I have proposed has been completed. The system would need to be deployed in actual concerts situations in order to refine its operation. The project could begin with small classical concerts for testing in order to optimise the format of classical concerts to become an occasion where millennials could experience the performance and interaction as parts of a whole, with music and interaction being represented in a shared sensory space.

REFERENCE

Australian Bureau of Statistics. (2010). Arts and Culture in Australia: A Statistical Overview. Australia. Australian Bureau of Statistics.

Brown, M.(2016). Millennials: Instagram the Most Narcissistic Social Media Platform.LendEDU. Retrieved 29 March 2017, from https://lendedu.com/blog/millennials-instagram-narcissistic-social-media-platform/

BROWN, A,S,.RATZKIN, R .(2012) MAKING SENSE of AUDIENCE ENGAGEMENT. The San Francisco Foundation.USA.p35, P73
Brown. A and Novak-Leonard. J (2011). Getting on The Act. James Irvine Foundation.USA. P6

Behrman,S. (2009,January 2). From revolution to irrelevance: how classical music lost its audience. Retrieved from http://isj.org.uk/from-revolution-to-irrelevance-how-classical-music-lost-its-audience/

Björgvinsson, E. (2012). Weaving Audience Engagement: Classical Music, Design ,and Democracy school of arts and communication. Malmö University. Sweden. P21

Brougher, K.(2005). Visual Music: Synaesthesia in Art and Music since 1900. Thames & Hudson. London. P91

Christine, W. Sascha, T.(2012). Participatory Design as an innovative approach to research on young audience. Audience research methodologies. P74

Claveria, K. (2016). How to engage millennials in customer insight and marketing. Vision Critical. Retrieved 12 August 2016, from https://www.visioncritical.com/how-engage-millennials-customer-insight-and-marketing/

Christopher, S. (1986). Performance as ritual: sketch for an enquiry into the true nature of a symphony concert. New Zealand.P6
European Broadcasting Union,(2009). Retrieved from https://www.tcelectronic.com/media/1013196/ebu-10things-loudness.pdf

Frantz, E. (2015) Is Technology the Way Forward for Classical Music? Exploring Audience Engagement in the Digital Era. The Ohio State University. USA. P78

Freeman, J.(2005). Large audience participation, technology and orchestral performance. Georgia Institute of Technology.USA. P1

Jensen. H and Ranten, M. (2014).Interaction at a classical concert. Malmö University. Sweden. P31

Haughn, Matthew (2015). What is Millennials (Millennial generation)? WhatIs.com. Retrieved on May 2, 2016 from http://whatis.techtarget.com/definition/millennials-millennial-generation.

Hobye, M. (2014). Designing for Homo Explorers: open social play in performative frames. Malmö University. Sweden.

Howe, N and Strauss, W(2003) Characteristics of Millennials. Lifecourse Associates.P1

Hardy, Q. (2016). Pokémon Go, Millennials' First Nostalgia Blast. Nytimes.com. Retrieved 4 July 2016, from https://www.nytimes.com/2016/07/14/technology/pokemon-go-millennials-first-nostalgia-blast.html?_r=0

Kolb, B. (2000) You call this fun? Reactions of young first-time attenders to a classical. Long Island University. P8

Kerttula, R (1988). Teatteriesitys kommunikaatio tapahtumana. Helsingin kauppakorkeakoulun julkaisuja D-107, Helsinki. P13-14

Kattwinkel, S. (2003). Audience participation. Audience participation – Essays on inclusion in performance", Dawn Lewcock. P121.

Idema, J. (2012). Present!: Rethinking Live Classical Music . Music Center the Netherlands. P41

Manifol, L. (2008). Applying Jaques-Dalcroze's method to teaching musical instruments and its effect on the learning process. Australia. P4

Millennial Marketing. (2017). Who Are Millennials. Millennial Marketing. Retrieved 2 January 2017, from http://www.millennialmarketing.com/who-are-millennials/

Mielonen, H.(2003) Attracting new audiences: Attitudes and experiences in attending classical music concert of students in their twenties. Department of Music Education Sibelius Academy. P2, 75-76,79

National Endowment for the Arts (2013). National Endowment for the Arts Presents Highlights from the 2012 Survey of Public Participation in the Arts | NEA. Arts.gov. Retrieved 20 September 2013, from https://www.arts.gov/news/2013/national-endowment-arts-presents-highlights-2012-survey-public-participation-arts

PewResearchCenter. (2010, February). Millennials: Confident. Connected. Open to Change. Retrieved from http://www.pewsocialtrends.org/files/2010/10/millennials-confident-connected-open-to-change.pdf

Pernelet C. (2015).European overview of the use of digital media for opera, music and dance education. European network for opera and dance education, Belgium. P25

Richards, G. MarquesL.& Mein, K. (2014). Event Design: Social Perspectives and Practices. Routledge. LONDON. P138

Rosenqvist, K & Steijn et al. (2005). How the Lion Learned to Moonwalk Designing Classical Music Experience . Malmö University. Sweden. P10

Sandow, G. (2017). Rebirth: The Future of Classical Music. Arts Journal. Retrieved 10 April 2017, from https://www.artsjournal.com/sandow/greg-sandow

Stover,M.(2012). From Multisensory Activities to Musical Knowledge. Song works educators association.USA. P2.

Wang, JC. (2005). Learning Music through Visuals. National Taiwan arts education center. China. P5

Wolf, T. 2006. The Search for Shining Eyes: Audiences, Leadership and Change in the Symphony Orchestra Field. John S. and James L. Knight Foundation.P6

Walmsley. B and Franks. A. (2011). The audience experience: changing roles and relationships. White Rose University Consortium, University of Leeds. UK. P1

Walmsley.B and Franks.A. (2010). The audience experience: changing roles and relationships. University of Leeds.UK.P4

BIBLIOGRAPHY

Crow, D. (2010). Visible signs: an introduction to semiotics in the visual arts. AVA Publishing SA.

Hobye, M. (2014). Designing for Homo Explorens: open social play in performative frames. Sweden.

Ian Noble,Russell Bestley.Visual research:an introduction to research methodologies in graphic design .Bloomsbury Publishing.UK.

Johnson,J.(2002).Who needs classical music:cultural choices and musical values.Oxford university press.UK.

Kim, C.(2008) Interactive Music Systems for the Web.New York University. USA.

Kolb.B,(2005).Marketing for Cultural Organisations: New Strategies for Attracting Audiences to Classical Music, Dance, Museums, Theatre & Opera. Oak Tree Press, Dublin.

Lund,C and Lund,H.(2009).Audio visual:on visual music and related media. Germany

Luser,C.(2008).Sound of art:Musik in der bildenden Kunst:les grands spectacles iii. Germany

Strauss,W and How,N.(2006),Millennials and the pop culture.Life Course associates.USA.

Tseng, Y. C., Huang, Y. C., Wu, K. Y., & Chin, C. P. (2012). Dinner of Luciérnaga: an interactive play with iPhone app in theater. China.

IMAGE LIST

Appendix

Ethics Notification

MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

Date: 10 February 2017

Dear Shuying Sun

Re: Ethics Notification - **4000017212** - **VISUAL SOUND**

Thank you for your notification which you have assessed as Low Risk.

Your project has been recorded in our system which is reported in the Annual Report of the Massey University Human Ethics Committee.

The low risk notification for this project is valid for a maximum of three years.

If situations subsequently occur which cause you to reconsider your ethical analysis, please go to http://rims.massey.ac.nz and register the changes in order that they be assessed as safe to proceed.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University's Insurance Officer.

A reminder to include the following statement on all public documents:
"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named in this document are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you want to raise with someone other than the researcher(s), please contact Dr Brian Finch, Director - Ethics, telephone 06 3569099 ext 86015, email humanethics@massey.ac.nz. "

Please note, if a sponsoring organisation, funding authority or a journal in which you wish to publish requires evidence of committee approval (with an approval number), you will have to complete the application form again, answering "yes" to the publication question to provide more information for one of the University's Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

Yours sincerely

BFinch

Research Ethics Office, Research and Enterprise
Massey University, Private Bag 11 222, Palmerston North, 4442, New Zealand **T** 06 350 5573; 06 350 5575 **F** 06 355 7973
E humanethics@massey.ac.nz **W** http://humanethics.massey.ac.nz

Figure39: Illustration of Intracetion in the concert