



Digital space as a composing element in modern music

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ABSTRACT

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The purpose of this thesis was to gather insight about how digital space shapes the creative and aesthetic choices in music production, and to explore the broader role of culture, space, and technology in musical creation. The traditional view of the artist as a lone figure driven solely by a vague inner urge to create has long been romanticized in popular culture. This thesis seeks to investigate the larger forces that shape musical creation and somewhat challenge the traditional perception.

In contrast to for example medieval church music, which was often designed with specific acoustic properties and cultural contexts in mind, the use of electronic amplification and later on digital tools, hardware and software have enabled artists to experiment with new sounds and textures, leading to the emergence of new genres and styles of music. The use of social media and other online platforms has broken down traditional barriers to entry in the music industry, enabling artists to connect with fans and collaborators from around the world.

While examining the role of digital tools and platforms, it was found that the creation of music is increasingly driven by broader cultural, spatial, and technological contexts. Digital space has emerged as a key force in shaping music production.

This research aims to suggest that the creation of music is a complex process that is driven by a wide range of cultural, spatial, and technological factors. While the inner urge to create remains an important motivating force for all artists, it is shaped and influenced by broader social and technological contexts. By understanding these larger forces, it is possible to gain new insights into the nature of creativity in the digital age and develop new strategies for supporting musical innovation.

Key words: space, music production, composing, media

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GLOSSARY

social media	Online platforms and websites that enable users to create, share, and interact with content, as well as connect with others in a virtual social network
digital space	Virtual environment created by digital technologies, encompassing online platforms, websites, and digital content that people interact with and navigate through.
physical space	Environments where music is created, performed, or experienced, such as concert halls, churches, studios, or informal settings like a street corner or a living room.
composition	An original piece or work of music either vocal or instrumental. People who create new compositions are called composers. Composers of songs are usually called songwriters; with songs, the person who writes lyrics for a song is the lyricist.
acoustics	The science that deals with the production, control, transmission, reception, and effects of sound. In the context of physical music spaces, acoustics refers to how sound behaves in an enclosed space, such as a concert hall or recording studio.
DAW	A computer software application used for recording, editing, and producing audio and music. DAWs are essential in music production within digital spaces.
cultural exchange	The sharing and integrating of music, ideas, and artistic expressions among different cultures, facilitated by both physical and digital platforms.
TikTok	A social media platform known for short-form video content, which has become a significant influence in music discovery, trends, and the viral spread of songs.

1 INTRODUCTION

Composing music is a creative process that can be influenced by various factors, including the space in which it takes place. Different spaces can have a significant impact on the composition process and the resulting musical piece. Composers often adapt to their surroundings and draw from the unique qualities of each space to create music that resonates with both their creative vision and the environment they are in. Plainchant, for example, has a typical sonic character (i.e., music sung in spaces with long reverberation), while traditional African music has a typical rhythmic essence. (Gioia, 2021, 8) Both examples were influenced by reverberation (or the lack of it), and both matured by mutual influences between the music being performed and the space where it was usually performed. (Byrne, 2012, 17.)

Music has always been an art form deeply influenced by the spaces in which it is created and experienced. From the majestic cathedrals of Europe to the intimate jazz clubs of New Orleans, physical spaces have played a critical role in shaping musical expression. (Gioia, 2021, 12.) However, the evolution of music in the digital age has introduced new kinds of spaces: virtual spaces, where music is composed, shared, and experienced. One of the most significant developments in this regard has been the rise of digital platforms like TikTok, which has revolutionized not only how music is distributed but also how it is created.

The advent of TikTok in 2016 introduced a new paradigm for music composition, where artists tailor their work to fit the demands of a fast-paced, content-driven environment. (Berklee, 2023) The platform's emphasis on short-form videos has led to changes in the structure of popular music, with many songs now designed to grab the listener's attention within the first few seconds. In contrast to the traditional verse-chorus-verse structure, TikTok songs often prioritize catchy hooks that can be easily looped and adapted for user-generated content. (Berklee, 2023) This shift represents a fundamental change in the way composers and songwriters approach their craft, as they now consider not only the aesthetics of the music but also its potential for viral success on platforms like TikTok. (Medium, 2024)

Until amplification and microphones came into common use, the instruments written for and played were adapted to fit the situation, thus rooting the music to a place it was meant to be performed in. Stylistic choices followed, for example jazz music solos developed due to a need of keeping the dancing going when the original theme of the song had run its course. (Byrne, 2012, 21.)

The insurgence of commercial recorded music since the 1930's has dramatically affected the original idea of music being tied to a certain space. Since the beginning of the 20th century, most people have heard music primarily through a radio or some sort of machine that could play back recorded music. (Byrne, 2012, 10.) This meant that music was freed from live context, and in contrast the living room or car became a parallel universe in compared to for example a juke joint or a concert hall. In picture 1, Greek composer Vangelis is shown among his recording equipment within his studio 1982. Vangelis heavily utilized digital echoes and reverburation modules to create otherworldly music.



PICTURE 1. Vangelis in his studio (Photo: Michael Putland)

As recording and playback technology have grown more sophisticated composers and musicians have begun to approach writing quite differently than before the technological advancements. (Byrne, 2012, 23.) It is fair to say that today not many songwriters or composers think about the live context first when writing a song. The internet has broken down barriers like never before and made possible musical and cultural resources unlike anything before in history. Social media has brought people from all over the world together from different age groups and ethnicities. These so-called digital spaces have served as new-age arenas for music and musical performances. Once again songwriters and composers are taking note of their surroundings and making their art to fit predetermined spaces and contexts. (Byrne, 2012, 17.)

2 PHYSICAL SPACES IN MUSIC HISTORY

According to David Byrne (2012), the influence of physical spaces on music creation is big, stretching across centuries and cultures. In many early cultures, music was deeply tied to the environment where it was performed. For example, in traditional African societies, communal drumming and dance were often performed in open, public spaces. The resonant quality of the drums, enhanced by open spaces, played a key role in the social and communicative functions of music. (Byrne, 2012, 10.)

In European traditions, physical space was particularly significant in religious settings. Gothic cathedrals, such as Notre-Dame in Paris, were specifically designed with acoustics in mind, using their massive, reverberant spaces to amplify the choral music performed during liturgical services. The acoustics of these vast stone structures would stretch the voices of choirs, producing a rich, echoing sound that contributed to the spiritual experience. (Byrne, 2012, 10.)

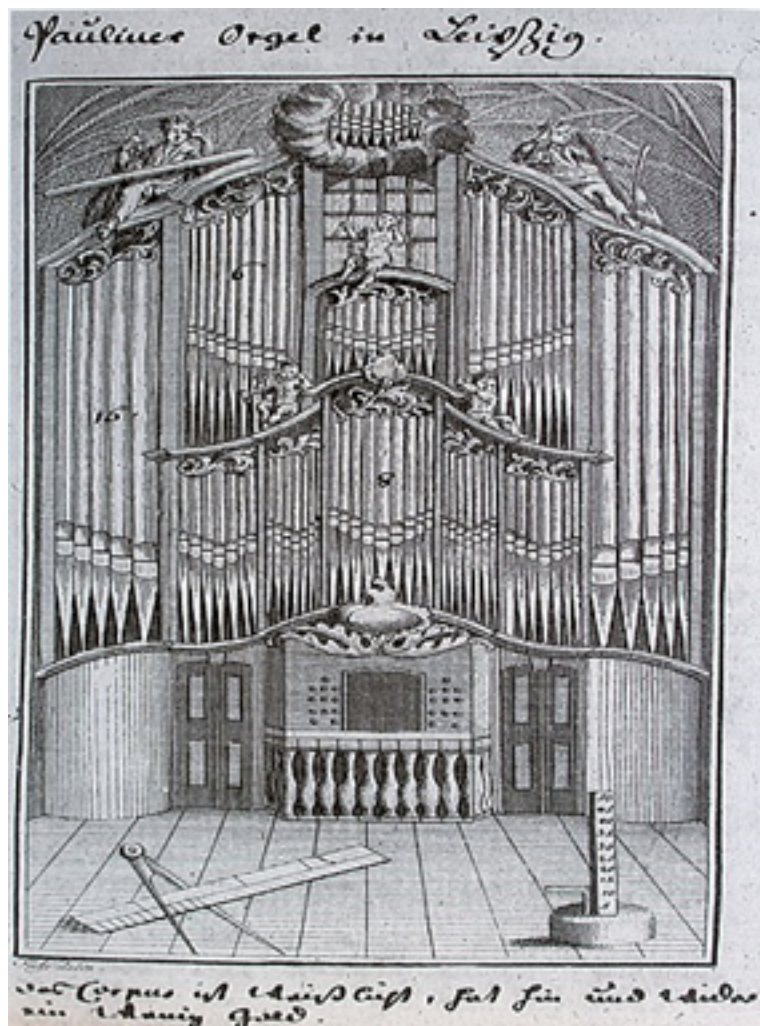
However, the role of physical spaces has not been limited to grandiose settings. In the 20th century, jazz musicians, particularly in New Orleans, used small, intimate venues to engage audiences. In these environments, the improvisational nature of jazz thrived, with musicians able to interact directly with their listeners in a way that would not have been possible in larger venues. (Gioia, 2021, 42.)

Additionally, modern concert venues like the Sydney Opera House and Berlin Philharmonic exemplify how architecture and acoustic design have evolved to serve both traditional and contemporary music. Each venue is meticulously constructed to deliver an optimal sound experience, demonstrating the ongoing relationship between architecture and music. (Byrne, 2012, 13.)

2.1 The influence of acoustic on music composition

According to David Byrne (2012), the environment in which music is performed plays a crucial role in its perception. Concert halls, churches, open-air venues,

and even intimate living rooms each offer unique acoustic qualities that can dramatically affect the sound of music. Factors such as reverberation, echo, and sound diffusion can enhance or detract from the clarity, warmth, and spatial perception of musical sounds. Composers aware of these factors may tailor their compositions to specific venues, ensuring that the acoustical properties of the space serve to amplify the expressive qualities of their music.



PICTURE 2. Grand organ of Paulinerkirche (Wikipedia)

Johann Sebastian Bach wrote much of his early music in a church that was relatively smaller than most gothic churches of the 1700's (picture 2). The space was echoey but allowed Bach to develop his distinct style of writing pieces with multiple key modulations. Composers previously opted to stay in the same key when playing or writing in these spaces, since the reverberation of the room meant that they would have more sonic and emotional options within the music. Modulation

was risky, since it could create unwanted harmonics or dissonance. (Byrne, 2012, 15-16.)

In contrast to symphonic and classical music, jazz has developed in a totally different kind of sonic circumstances. (Byrne, 2012, 21.) Originally developed in New Orleans, USA as a blend of blues, creole, ragtime, vaudeville and African spiritual music, it is a more rhythmically diverse genre when compared to traditional western classical music. Venues and dance halls in the Storyville district played a pivotal role in jazz's development. (Gioia, 2021, 41.) These spaces provided environments where musicians could experiment freely and interact closely with their audiences. The intimate settings allowed for a level of interaction that shaped the musicians' styles and repertoires, as they adapted their music to suit the preferences and responses of the crowd. (Gioia, 2021, 11.)

Due to the more percussive and rhythmic nature of the genre jazz has been usually performed in small jook joints, taverns, bars, even outside. Smaller spaces and surroundings have allowed composers to utilize faster tempos and bring in more percussive instruments. In contrast to traditional European music settings, which typically feature a clear distinction between performers and audiences, early jazz blurred these boundaries. In places like Congo Square, the line between performers and spectators was often blurred and audience was encouraged to participate in the performances by clapping and dancing. (Gioia, 2021, 12.) It can also be argued that this kind of music would not have been possible to make in a similar space as Bach made his classical compositions. The large and long reverb of a church would have made up-tempo music very hard to listen to, since the percussive elements would easily turn into a chaotic mush. (Byrne, 2012, 18.) It would not be until recording and electronic amplification of music was popularized that genre's would be taken out of their normal performance spaces into something completely different. Today it is completely normal to hear jazz in large concert halls. (Byrne, 2012, 23.)

2.2 Iconic music spaces

The Bayreuth Festspielhaus (picture 3) or Bayreuth Festival Theater is an opera house north of Bayreuth, Germany, built by the 19th-century German composer Richard Wagner and dedicated solely to the performance of his stage works. (Byrne, 2012, 18.) The building is one of the largest timber structures ever built and has a reverberation time of 1.55 seconds. Unlike traditional concert halls, for example Milano's *La Scala*, the Festspielhaus has continental seating, meaning the audience is seated in a steep, single wedge instead of a horseshoe shaped auditorium with several tiers.



PICTURE 3. Bayreuth Festspielhaus (Photo E. Nawrath)

The most sonically important feature of the Festspielhaus is the orchestra pit. It is recessed under the stage and covered by a hood, making the orchestra invisible to the audience. This feature was key for Wagner since it made the audience concentrate on the drama onstage rather than the musicians and/or the conductor. The design corrected the balance of volume between singers and orchestra, creating ideal acoustics for Wagner's operas. However, this arrangement has

also made Festspielhaus a very challenging place for conductors. The pit is totally dark and the acoustic reverberation makes it difficult to synchronize the orchestra with the singers. This means that the conductor must ignore cues from the singers, since due to the reverberation and the orchestra being in the dark the cues could be potentially very off. (Bayreuth Tourismus)

The orchestra layout is also different from the standard layout. The first violins are positioned on the right-hand side of the conductor instead of their usual place on the left side. This is because of the way the sound is intended to be directed towards the stage rather than directly on the audience. This way the sound has a more direct line from the first violins to the back of the stage, where from it reflects back to the audience. Double basses, cellos and harps are split into groups and placed on either side of the pit. The rest of the orchestra is located directly under the stage. This makes communication with the conductor vital as most of the players are unable to see or hear the singers. (Wikipedia, 2024.)

CBGS's (picture 4) was a small concert venue located in New York City, USA. The club ran from 1973 to 2005. Originally meant for folk artists (CBGB's is short for country, bluegrass, blues), it soon began attracting punk rock and rock n' roll crowds after punk act Television started first playing there. (BBC, 2024.) A totally different venue compared to for example Wagner's Festspielhaus, it would attract alternative crowds from all over the city to a intimate, packed, dense and somewhat murky space. Hilly Kristal, founder of the place, insisted that only original music should be played at the venue. Usually, upcoming artists played there week after week, sometimes many times in a row. This proved to be essential for many pioneering acts such as Blondie, Ramones, Patti Smith, Talking Heads and so on. (BBC, 2024.) An opportunity to use the space as a sort of a rehearse space, but in front of an audience, allowed the acts to develop their music and playing style. Because of the clutter and junk stored inside the venue the sound was remarkably good and affected the style of music the bands created when playing there. (Byrne, 2012, 16.)



PICTURE 4. CBGB's stage (Photo: Tabea Huth, 2005)

2.3 Compositions crafted for specific physical spaces

2.3.1 Handel's "Water Music" for the River Thames

George Frideric Handel composed his renowned "Water Music" specifically for a royal water party on the River Thames (picture 5), hosted by King George I in 1717. This suite of short pieces, primarily intended for outdoor performance, exemplifies Handel's mastery of creating music that aligns with the characteristics of the performance space. (Wikipedia, 2024.) According to a 2024 article posted in Britannica, Handel carefully crafted the composition to suit the acoustics of an open river environment, ensuring the music could be heard clearly across the water and contribute to the festive atmosphere of the royal event. The music was performed by a large ensemble of about 50 musicians aboard a barge, comprising a variety of instruments including flutes, recorders, oboes, bassoons, trumpets, horns, violins, and basses. This ensemble, and the music they performed, were chosen to resonate with the outdoor setting, blending seamlessly with the

natural sounds and providing a splendid auditory backdrop to the royal procession along the Thames. (Britannica, 2022.)



PICTURE 5. The River Thames (Photo: Zoltan Gabor)

2.3.2 John Cage's "4'33" and the Maverick Concert Hall

4'33 is a composition by American experimental composer John Cage. The piece instructs performers not to play their instruments during the three written movements. Cage conceived the idea when visiting an anechoic chamber in Harvard in 1951 (picture 6). He originally thought that he would hear no sound in the room, but to his surprise he was wrong. Cage discovered that absolute silence does not exist: what he heard was two sounds, a high pitched one and a low pitched one. The engineer present explained to him that the high-pitched sound was his nervous system and the low one was his blood flow. This revelation inspired Cage to conceive 4'33, since whether music is played or not one can never experience true silence in our world. Cage's inspiration was largely affected by the space that he was in. (Wikipedia, 2024)



PICTURE 6. John Cage sitting in an anechoic chamber in Harvard. (Photo: Alberto Lecaza, 1951)

4'33 was first performed by David Tudor at the Maverick Concert Hall in Woodstock, New York in 1952 (picture 7). The Maverick Hall is a barn like semi open-air structure. It has a gambrel roof and a ceiling of wood shingles and a frame of heavy timber. Most of the audience can be seated outside, which is essentially a woodland environment as seen in the picture above. (NPR, 2000)

When *4'33* was first performed, it emphasised the ambient sounds present in and outside the Maverick concert hall: birds chirping, wind moving the trees, audience talking amongst themselves, chairs creaking and people walking out. Tudor's performance initially turned the environment itself into music and challenged traditional notions of composition and performance. This makes space an essential composing element, or even the main factor, whenever *4'33* is performed. (NPR, 2000)



PICTURE 7. Maverick Concert Hall. (Photo: Dion August)

Because of the numerous possibilities in places where it can be heard, *4'33* is a perfect example of how the space where music is performed affects how it is perceived. It is unknown if Cage composed *4'33* from this perspective, but when experienced, the impact of space to the composition is undeniable. (Classical Music, 2024)

In this case, the impact of space on the music is dualistic: Not only did Cage get inspired by a certain space so much that it directly affected the music that he composed, but wherever the composition is performed it is always bonded to the space, therefore making the space an instrument in the music, too. The punk rockers as CBGB's would frequent the bar and envision their pieces to be played at the same location. Wagner composed his music for the concert hall that he had built to suit his style of music. Cage did not perform at the anechoic chamber, but it is clear that without his visit, there would be no *4'33*. (Classical Music, 2024.)

3 FROM SHEET MUSIC TO SOUND RECORDING

The evolution of music production from traditional to electronic methods marks a significant transformation in how music is created, performed, and consumed. Previously mentioned composers like George Handel and Johann Sebastian Bach represented the quintessential music creation process of their time, using quill and ink to transcribe musical ideas onto sheet paper (picture 8). This method of music notation was the standard for centuries, requiring each composition to be performed live for it to be heard. The labor-intensive nature of this process meant that the replication of music was inherently limited to live performance contexts, preserving the ephemerality of musical experience.



PICTURE 8. Notes on a sheet of music. (Photo: Unknown/Creative commons)

The transformative era of sound recording began in the late 19th and early 20th centuries, introducing a groundbreaking shift in music consumption and production. For the first time, music could be captured, preserved, replayed, and distributed to a mass audience. This innovation profoundly affected the music industry, allowing performances to be standardized and enjoyed repeatedly without the need for live rendition. Composers and musicians began to explore the potentials

of recording to reach wider audiences, and the notion of music as a reproducible and distributable commodity took root.

3.1 Analog recording

Analog recording technology, which began with Thomas Edison's phonograph in 1877, enabled sounds to be captured on mechanical devices and later on the German-invented magnetic tape. This innovation not only preserved performances but also allowed music to be mass-produced and distributed to a wide audience, fundamentally altering how music was consumed. Before recording technology, fundamentally the only way to listen to music was to hear someone, - a person, group or orchestra - perform. (Byrne, 2012, 75.)

This capability of recording to capture and replay sound changed not only how music was distributed but also how it was composed. (Byrne, 2012, 54.) Composers could now vision their works reaching audiences far beyond those who could attend live performances, and the permanence of these recordings allowed their music to be experienced repeatedly across different contexts.

The introduction of electrical amplification and microphones further transformed music by enhancing the volume and clarity of sound, which was particularly revolutionary for concerts and live performances. Amplification allowed performances in larger venues and helped give rise to new genres, such as rock and roll, which capitalized on the loud, electric sounds of guitars and drums that could fill vast spaces. The recording studio became a creative haven where composers and musicians experimented with multitrack recording and innovative sound effects, expanding the creative possibilities of music. The great innovators of late 20th century pop music were usually the one's that had almost unlimited access to studio's and recording technology, such as James Brown, David Bowie or Bruce Springsteen for example. (Byrne, 2012, 99.)

British band The Beatles' use of the studio as a compositional tool in their 1967 album "*Sgt. Pepper's Lonely Hearts Club Band*" is a prime example of how the studio environment became integral to the music creation process, influencing

not just the recording but the composition of music itself. The band would spend countless of hours with engineer George Martin to record sounds, edit them and then listen to the results, only to repeat these processes multiple times until a final result was achieved. This way the Beatles took freedom from traditional songwriting. They would come up with whole new parts or even songs based on what they recorded and then manipulated using the studio equipment available. (Forbes, 2017.) What became was a pioneering album not only in technological terms, but also in terms of how composing music was perceived. Indeed, it can be argued that *Sgt. Pepper's Lonely Hearts Club* was the advent of a brand-new way of making music: electronic. (Byrne, 2012, 102.)

3.2 Analog to digital

The shift from analog to digital recording technologies marked a further evolution, enhancing the precision and flexibility of recording. Digital audio workstations (DAWs) and computer-based editing software revolutionized music production by democratizing access to sophisticated music-creation tools. This digital revolution made it possible for anyone with a computer to create, edit, and produce music, challenging traditional barriers to entry in the music industry, where as some of these kinds of methods were previously only accessible to major artists, such as the Beatles. (Byrne, 2012, 127.)

Digital technologies allowed for an unprecedented level of manipulation of sounds, enabling composers to tweak, overlay, and refine tracks post-performance to achieve the desired artistic effects. Similarly, the advent of electronic music was catalyzed by technological advancements such as the invention synthesizers. Synthesizer's allowed composers to explore new, previously unheard sonic territories, opening up possibilities for creating sounds that were previously unimaginable, expanding the musical palette available to composers and songwriters. (Deutsch, 1976, 56.)

The rise of portable digital playback devices, such as Walkmans, MP3 players and smartphones transformed the listener's experience from collective live listening to personalized, individual encounters with music. (Byrne, 2012, 134.) This

shift inspired composers to make music to these personal listening environments, considering how compositions would sound through headphones or small digital speakers. (Byrne, 2012, 157.) This not only affected the dynamics and structure of compositions but also encouraged a more intimate connection between the music and its listeners.

Each technological advance has equipped composers with new tools and mediums to express their musical ideas, leading to shifts in styles, methods, and the possibilities of music. In Real World Studios, located in Box, England and owned by Peter Gabriel (picture 9), these kinds of technological advancements have been implemented to the musicians, producers and engineer's workflow. Gabriel's vision was that by setting all of the people participating in the creative process in the same space with no technological limitations, a new way of making music can be achieved. These transformations reflect broader cultural and technological shifts, showcasing the adaptability and innovation of musicians as they navigate and shape these new realms of music production. (Byrne, 2012, 209.)



PICTURE 9. Real World Studios. (Photo: Mike Banks)

3.3 Digital vs. physical spaces: Analysis

According to Roger Clarke, digital space is defined through a lens of "cyberspace" as explained by William Gibson. Digital space is a "shared hallucination" of a non-physical location where activities occur. In this digital space, activities that were traditionally bound by physical constraints can occur without such limitations, offering new modes of interaction and transaction. (Clarke, 2024.)

The distinction between physical and digital spaces, as articulated by Roger Clarke, underscores a shift in the environment where human activities, including music composition, take place. This transition has implications for the fundamental nature of human interactions, as well as the creation and consumption of music.

According to Byrne (2012), historically music composition and performance were activities firmly rooted in physical spaces, whether in the acoustically resonant halls of a church or the intimate setting of a punk rock club. For composers, the physical space not only influences the acoustic quality of the music but also impacts the privacy and the intimacy of creative expression. As mentioned in the second chapter, the natural acoustics of a place can inspire specific compositional choices, and the privacy afforded by a space like a home studio enables creators to experiment freely without the intrusion of external surveillance. (Byrne, 2012, 12.)

With the birth of the internet and advent of digital technologies, the concept of space has expanded beyond the physical boundaries to include digital spaces, where interactions occur within a "non-physical location" facilitated by networks and computers. (Clarke, 2024.) This digital realm also offers a new platform for music distribution. Various social media platforms allow composers to reach audiences in ways that were previously unimaginable, enabling a level of creativity and experimentation that transcends traditional physical limitations. (Business Insider, 2024.)

The virtualization of musical space has significant implications. As Clarke discusses, digital spaces alter the dynamics of how an audience inhabits it. While physical spaces provide a degree of privacy from external observation, digital spaces are more susceptible to surveillance and data. (Clarke, 2024.) For musicians and composers, this means that the process of releasing and performing music can be multilayered in terms of sound, performance and audience feedback.

Digital spaces also allow for a global distribution of music that challenges geographic and cultural boundaries. Composers can share their work instantly across the globe, collaborate remotely with other musicians and reach audiences far beyond those accessible through physical venues. (Business Insider, 2021.)

Comparing physical and digital spaces reveals a trade-off between the acoustic and privacy advantages of physical spaces and the accessibility and collaborative potential of digital spaces. Clarke's analysis highlights that each type of space offers distinct benefits and challenges, necessitating careful consideration by composers depending on their specific needs and the nature of the music they produce. Decision making can be, and usually is, passive. The time and space where Johann Sebastian Bach lived and composed in provided few alternatives to music creation

The evolution from physical to digital spaces as outlined by Roger Clarke not only redefines the environment for music production but also reshapes the regulatory and privacy-related challenges faced by composers and musicians. As digital spaces continue to evolve, understanding and navigating these challenges becomes increasingly crucial for safeguarding the artistic and privacy interests of creators in the modern digital age.

4 TIKTOK AS A SONGWRITING TOOL

TikTok, since its global launch as a rebranded version of the Chinese app Douyin in 2018, has revolutionized the digital music space by merging short-form video content with music creation and sharing. TikTok is a social media platform that excels at personalizing content delivery. When a person creates an account to TikTok, the platform quickly determines the user's preferences to suggest relevant content. Such capabilities have made TikTok a significant platform for music promotion and cultural dissemination within the digital realm. (Big3, 2020.)

TikTok has emerged as one of the most influential platforms for music creation as well as promotion in recent years, reshaping the way artists approach songwriting. The application's unique combination of short video content and user engagement has led to the rise of viral music trends that have significantly impacted the structure and style of modern pop songwriting. TikTok emphasizes has caused many artists to focus on crafting songs that catch the listener's attention in the first few seconds. As a result the traditional song structures that once dominated the music industry have been replaced by formulas that prioritize hooks and catchy segments, designed for the platform's 15- to 30-second videos, instead of presenting the song more linearly in an ABAB- format. (American Songwriter, 2022.)

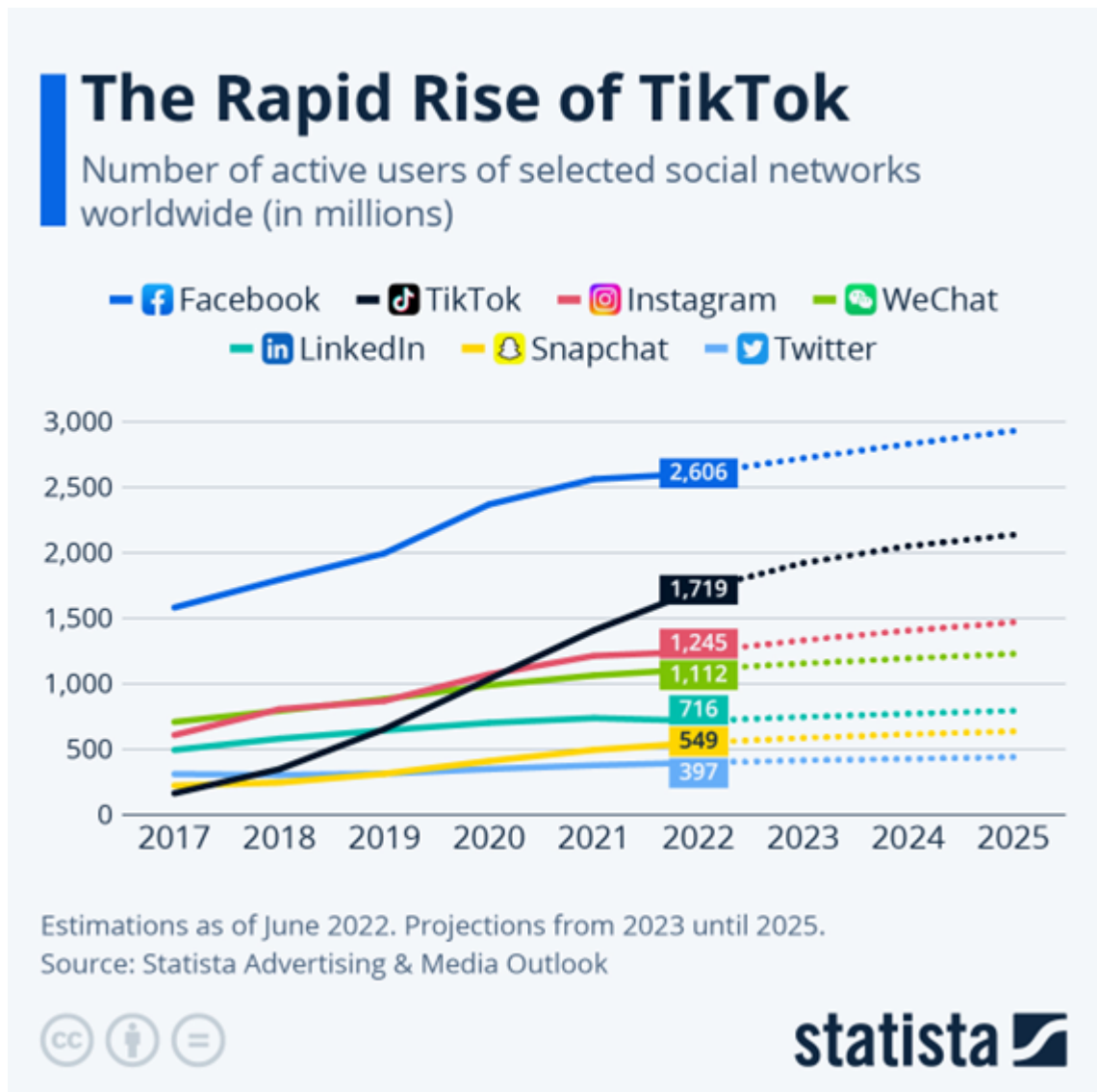


FIGURE 1. Active users of TikTok 2017-2025. (Statista)

4.1 TikTok as an example of digital music spaces

TikTok embodies a new paradigm in digital music spaces, characterized by its ability to fuse entertainment with user-generated content creation seamlessly. The first-generation social media platform's such as MySpace or Facebook were designed for web browsers. Only after the global popularization of smartphones have developers turned their priorities to be phones first and webpages second. Whereas both MySpace and Facebook were relevant in music distribution, neither of the platform's media browser were designed to be anything more than a way to post one's favorite songs online. TikTok's algorithm is

made to promote content based on user engagement and so is much more powerful in promoting user made content than any other social media platform. (Maryville, 2020.)

TikTok's design encourages users to interact, remix, and respond to music tracks. This can often lead to viral music trends. The interactivity is enhanced by TikTok's algorithm, which pushes videos to a vast audience based on engagement metrics rather than following, allowing songs to achieve rapid popularity and reach. The unique format of TikTok, supporting brief, engaging clips, not only caters to the short attention spans prevalent today but also offers artists a potent tool for reaching audiences globally and instantaneously. (Business Insider, 2024.)

4.2 The effect on TikTok on music trends and composition

TikTok has notably influenced music trends and the structure of song composition since it was first launched in 2016. The platform's preference for concise, catchy content has led to what some describe as the 'Tiktokification' of music. Popular music artists have embraced the platform more than any other digital media in the last 20 years.

TikTok's music trend sees songs crafted with hooks and choruses that are immediately engaging, capable of capturing the listener's attention within a few seconds. Hooks and catchphrases are of course nothing new when it comes to pop music, but the TikTok's core emphasis on fast-paced content means that in order for a song to survive and Traditional song structures are often modified to fit this format, prioritizing parts of the track that are most likely to generate user interaction, such as challenges or memes (Miami Student). Moreover, TikTok has also emerged as a crucible for testing song popularity and potential hits, with record labels and producers closely monitoring the app's trending content to identify and sign new talents based on their viral potential on the platform (Business Insider, 2024).

Compared to traditional distribution and marketing methods, TikTok merges both and gives record companies and artists and almost perfect tool for both testing

new material, engaging audiences, distributing music and promoting. Previously, if an artist wanted to reach new audiences with new material, it would have to be almost exclusively through a live show or a TV appearance.

4.3 Case study: Tiagz & TikTok

Tiago Garcia-Arenas, known professionally as *Tiagz* (picture 10), is a 22-year-old Canadian born rapper. He is an example of a modern composer who has tailored his music specifically for the digital space of TikTok.



PICTURE 10. Tiago Garcia-Arenas aka Tiagz (Photo: Unknown)

Tiagz's approach to composing music involves sampling viral sounds and memes from TikTok, transforming them into catchy tunes that resonate with the platform's

user base. His strategy centers on using the content already popular among TikTok users, ensuring that his music aligns closely with current trends and user interests. For example, his song "My Heart Went Oops" capitalized on a popular sound clip from the platform, which he then remixed and set to original lyrics, effectively turning a meme into a full-length track. This method not only ensured the song's viral success but also demonstrated an innovative way of engaging with digital culture directly through music composition (Business Insider, 2020).

Tiagz's utilization of TikTok as a digital space for composing and promoting his music is an example of how artists interact with audiences and craft music in the modern era. Unlike traditional compositions of Handel, Wagner or Bach, that often reflect the acoustics and ambiance of physical venues, Tiagz's approach is distinctly meant for the virtual realm of TikTok, where brief catchy snippets can spark widespread user engagement and viral trends. Tiagz's music is primarily designed to generate instant appeal. This is essential, since trends on TikTok die as quick as they are born. (Business Insider, 2020.) Capturing the attention of digital audiences requires knowledge of the space you are working in.

5 COMPOSER AND SONGWRITERS: ADAPTING TO SPACE

Throughout history, composers and songwriters have continuously adapted their creative processes to the spaces in which their music is performed and shared. In traditional physical spaces, such as concert halls, churches, and outdoor venues, the acoustics of the environment often dictated how music was composed and arranged. (Byrne, 2012, 14.) For example, Handel composed "Water Music" specifically for an open-air performance on the River Thames, where the expansive outdoor setting influenced the structure and dynamics of the composition. In jazz, the intimate spaces of clubs like those in New Orleans played a crucial role in shaping the improvisational style of the genre. (Gioia, 2021, 14.)

5.1 Environmental opportunism in music creation

Composers and songwriters exploit the unique characteristics of both physical and digital environments to inspire and shape their musical creations. For example, composers like Johann Sebastian Bach were known to tailor compositions to the acoustics of specific venues such as churches, which enhanced the organ and choral sounds characteristic of his music. (Byrne, 2012, 17.) Jazz players benefited and were limited by their surroundings, resulting in the birth of a completely new and musically revolutionizing genre. Sometimes composers, such as Wagner, would even build spaces to tailor their specific acoustic and compositional needs.

According to Sheldon Rocha Leal, the mark of a brilliant musician is their willingness to listen to various types of music, experiment and assimilate into their own creations what they feel best resonates with their brand and/or audio paradigm. Additionally, an artist is a social commentator and as such their job is to tap into the prevailing zeitgeist and sometimes into concepts before the mass population has "cotton on" to them." (Medium, 2020.)

David Byrne (2012) argues in his book "How Music Works" that in essence musicians and artists work backwards: they create their music to fit a certain environment. (Byrne, 2012, 13.)

Environmental opportunism can work in active and passive ways: as those who had the power would exploit it to build lavish concert houses, in contrast those who didn't have the resources would exploit and habit the surroundings around them. (Byrne, 2012, 16.) In both cases, the results can be comparative. Jazz was a genre born in a specific country, city and neighborhood. (Gioia, 2021, 15.) The physical limitations and technology meant that it was bound to one place for a longer time than it would be today. The distribution of music also plays a major part in how music is or is not limited to a space. Jazz has been a global phenom long before the digital age or internet and is practiced, listened to and celebrated around the world. (Byrne, 2012, 117.)

In the digital realm, creators often design sounds that are optimized for playback on digital devices, incorporating elements that suit compressed audio formats and small speakers, a trend increasingly evident in modern music production. As David Byrne (2012) explores the idea that music is not just an expression of the artist's intent or emotional state, but is also profoundly influenced by external factors including the environment in which it is performed and heard. (Byrne, 2012, 105.)

5.2 Adapting to physical and digital spaces

The adaptation strategies employed by composers vary significantly between physical and digital spaces. As Roger Clarke defines,

a digital space is an environment existing only in the digital or virtual realm, rather than the physical one. This includes areas on the internet known as cyberspace, which is where various forms of digital communication, expression, and activities take place. Such spaces can include digital mapping, online communities, social media platforms, and even the realms created by digital installation art which are designed to create immersive environments. (Clarke 2024.)

Digital spaces like TikTok or Instagram offer content that can quickly capture the user's attention and so is conducive to the platform's algorithm. (Clarke, 2024.) In order for artists and musicians to survive in these kinds of environments, the music has to adapt to the platform, or in this case space, too. The algorithm of TikTok prioritizes fast and immediate engagement. (Business Insider, 2024.)

In the physical realm, the Bayreuth Festspielhaus was specially designed with unique acoustic innovations to suit the specific needs of Wagner's operas, creating an immersive sound that is celebrated to this day. CBGB was originally created for country music purposes, but was in contrast inhabited and embraced by the New York punk rock and alternative scene. The River Thames was hardly designed for music, but served as an inspiration for King George to commission Handel for writing music specifically suited to be performed on and around the river. (Byrne, 2012, 16-17.)

5.3 Historical and modern examples of space adaption

The evolution of musical environments from traditional venues like CBGB's to modern digital platforms like TikTok highlights significant shifts in how music is created and experienced. CBGB's, known for its gritty ambiance and compact size, played a crucial role in the development of punk music. The venue's intimate setting and unrefined acoustics fostered a direct interaction between artists and their audience, contributing to the raw and energetic style characteristic of punk rock. (Byrne, 2012, 16.)

In contrast, platforms like TikTok have revolutionised music engagement by prioritizing visual and auditory snippets that are crafted for rapid consumption and viral dissemination. (Miami Student) Unlike the immersive and communal experiences offered by venues like CBGB's or Bayern Festspielhaus, TikTok and similar digital platforms facilitate a new form of audience interaction where engagement is measured by likes, shares, and quick comments. This marks a departure from the deep, acoustic-driven engagement of past music scenes to a contemporary framework where success is often measured by digital metrics and immediate viewer response. (NPR, 2022.)

As Byrne (2012) defines, this transformation illustrates how each type of musical space - whether physical or digital - distinctly shapes not only the music itself but also the ways in which audiences interact with and influence that music.

Traditional venues supported a kind of collective live experience that is somewhat different in digital spaces. In a digital space such as TikTok, audience engagement is at first more personal, but in a communal sense has far more reach instantly than in a traditional physical music space. If you enjoyed a show at CBGB's and wanted to tell a friend, you would usually have to wait for the show to end, get home and call your friend to tell about it. More so, you couldn't share the material directly with your friend, but would have to invite them to listen to the same band again at a different time, or encourage them to go and buy their material from a record store.

Digital spaces and social media platforms have all but abolished this kind of peer-to-peer promotion. If you hear a good song on TikTok, all you have to do is share the video to your friend inside the application (or through a 3rd party application) and - assuming they own a pair of headphones - they can listen to the song instantly. (Byrne, 2012, 137.)

6 DISCUSSION

In this thesis, we have explored the influence of both physical and digital spaces on musical composition and the broader cultural and technological contexts that drive musical innovation. It is evident that the environment in which music is created and experienced significantly shapes both the music itself and the audience's interaction with it.

The evolution from physical to digital spaces has introduced new opportunities and challenges for musicians and composers. Through examples like Tiagz and the use of TikTok how digital platforms have transformed the way music is composed, distributed, and consumed. Unlike composers such as Handel, who meticulously crafted "Water Music" to resonate across the River Thames, modern composers like Tiagz craft music specifically for digital consumption, focusing on audience engagement over acoustic properties.

The transformation of music from a live, ephemeral experience to a digitally mediated one highlights a shift in how artists interact with their audience. The digital space allows for a broader, more immediate reach, breaking down geographical and cultural barriers and enabling a new form of cultural exchange. However, it also poses challenges such as the need for constant engagement and adaptation to rapidly changing online trends.

While technology and digital platforms have democratized music production and distribution, they have also influenced the artistic process. Composers today must consider not only the acoustic and aesthetic qualities of their work but also how it will be perceived in a digital landscape.

The role of space in music production, whether physical or digital, continues to be a crucial element that composers must navigate. This dynamic landscape offers endless possibilities for innovation and creativity while demanding a keen understanding of both the technological tools at one's disposal and the cultural context in which music is produced and consumed. Understanding these complex

interactions will continue to be essential for supporting musical innovation in the digital age.

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