

# **The Impact of Computer Music Technology on Music Production**

*By Steven Thornely*

*How has computer technology impacted on the artistic practice of musical composition?*

## **Abstract:**

The composers' capacity to implement computer technology into the music-making processes is explored in this text. A debatable concept is highlighted which explains that technology is *not* influencing composing techniques but instead, composers are appropriately mobilizing technology to their advantage. A philosophical approach is adopted, with the ideas endorsed by relevant examples.

The deployment of computer technology on the music industry has affected almost all facets of modern music. The last fifty years has seen the most primitive uses of computer generated sound evolve into the digital domain that is today's music. Computer technology has led the evolution of format, medium, performance, and distribution of audio over this time. On the other hand, technology has *not* impacted on the artistic practise of musical composition; rather, the modern composer - in concordance with a changing culture, economy, and trend towards popular music - has been given the ability to manipulate computer technology to create a sound that is accepted by themselves and consumers of music. In essence, the computer has become a tool that has the ability to capture, score, manipulate and perform a composer's work (Dodge, 1985, p. 11), while only the composer can manifest an original sound. The development of this idea with reference to a recent chart-topping song, *Fireflies* by Owl City is explored here. First, it is essential to touch on the methods of a composer before the time of computer technology.

To identify why the computer has become an essential tool for the modern composer, the methods of the great composers who lived before the age of computers can be juxtaposed with today's practises. Consider Beethoven, who was composing about 150 years before the dawn of computer orchestration. Beethoven, like any composer of his time, would transcribe the song in his head to a score. Kennedy (2010) notes, "[Beethoven's] sketchbooks show how he laboriously developed an idea from sometimes banal beginnings to the final version," demonstrating the arduous process of scoring by hand. The score would then be interpreted and rehearsed by musicians until the piece was ready for performance in front of a formal audience. Conversely, the example of *Fireflies* was composed, scored, recorded and distributed entirely by the man behind Owl City, Adam Young, in his parent's basement (Sisario, 2009). Young's use of computer technology will later be investigated, but this example forefronts the amalgamation of methods Beethoven had to use, being the capturing, scoring, and performance of the work. To begin this process, a flow chart of the computers role in modern music is useful (See Figure 1.0 and 1.1).

The role of the computer as a capturing tool for composers' ideas is the first of these factors chronologically through the development of a piece of music. It is one that holds possibly the most debate as to who is leading this innovation – the composer or the computer. Figure 1.1 demonstrates how the composer is indeed leading this advance, where the computer is merely *assisting* the composer in capturing original ideas. The 'Song in imagination' segment is alongside the computer such to say that although both the composer and the computer have some input over

how an idea will sound, the composer is still responsible for the underlining musical initiative. David Cope, the inventor of a computer composition programme rejects the idea that composers have the only creative drive in the musical production process. He says, “When I'm composing all day, I'm programming. When I'm programming, I'm composing" (as cited in Cheng, 2009), as if to say that the computer can have the same creative input into a composition as his own imagination does. Douglas disagrees with Cope's perspective by stating, “Science [referring to computer technology] and art do not speak the same language and it would be disastrous if music became completely automated” (1973, p. 6), as in the way Cope describes. In support for Douglas, the influx of computer driven sound – not computer driven composition – can be explained as a logical response by modern composers to the ‘computer culture’ that has arisen over the last 20 years.

To elaborate on the point that the computer has not assumed position of the composer, the influences of the example artist, Owl City, can be identified to understand from where the compositional direction came. One could hypothesize that songs produced with the aid of computers would sound completely different to those captured without the use of computers. This is not the case. To demonstrate: Owl City's *Fireflies* has been criticised for in a sense ‘plagiarising’ the sound of indie-pop band ‘The Postal Service’ (Sisario, 2009). Continuing, Ben Gibbard, singer from The Postal Service proclaims that ‘The Beatles’ are an influence to his compositions (Larkin, 2010). Therefore, the analogue-produced music by The Beatles has indirectly impressed direction upon the music by Owl City. The evolution of musical ideas through time as demonstrated by these composers’ shows that the sounds made in collaboration with computers are not completely new; they are simply an adaption of ideas from the past. This said, the computer does play an important part in the actual implementation of composers’ ideas.

The role of the computer as an ‘idea capturing assistant’ is largely due to the scoring, recording, and editing qualities that technology has brought to music. In terms of Figure 1.0, this refers to the pre-technology method of hand-scoring a piece of music, a process which has become a job for the computer. There is little debate that this feature of the computer can positively contribute to a composer's efficiency as well as capability. Chavez (although before the time of computer technology) encapsulates this with his statement concerning the phonograph, “Surely progress in the physical and mechanical sciences determines a progress in art, since the artist of today has at his command the resources of yesterday plus many more” (1937, p. 19). These so-called ‘resources of today’ in this context are most notably in the form of scoring and digital audio

workstation softwares. Within these programs, creations like the click-track, digital sampling, MIDI, and a realm of digital audio effects have become available (Miranda & Wanderley, 2006, p. 222).

Each of these innovations has allowed modern composers to accurately write down, develop and sculpt their ideas in a medium that composers such as Beethoven did not have available. Owl City's *Fireflies* holds evidence as to the use of these resources in modern music. Young, the composer and producer of the piece, proclaims himself that, "All of it is done in the box, so to speak" (as cited in Bosso, 2010). He elaborates by confirming his use of the popular digital audio workstation 'Pro Tools' and within this, utilizing sequencing, sampling and auto-tune, along with other digital devices. Without doubt, this ability of the computer to effectively score and edit a song is one of the most important elements in the composer's ability to employ computer technology in present age of music.

The performance of music is the final purpose of the computer in aiding the composer in the production process (See Figure 1.0 and 1.1). The ability of the computer to assume the role of performers by playing a sound or piece of music at the operators' discretion has become a revolutionary addition to the composer's 'box of tools'. Hence, the computer has become the musician (figuratively) by means of playback. While performance through playback devices such as record and tape players has been available for some time, the implementation of the Compact Disc, MP3 and portable music players - thanks to the computer - have made performance of original work more affordable for composers (Manning, 2010). This has expanded the horizons of composers, and catalysed the industry so much so that, "In the modern world, where context can depend on the mere flip of an on-off switch and a portable MP3 player, it is hard to imagine the days when all music came from face-to-face performances" (Titon, 2009, p. 20). These 'virtual performances' became even more pliable with the introduction of the internet to the music industry.

The internet has become the largest disseminator of music in recent times, and has been especially useful for low-budget composers to distribute original music. It has helped in the composition field because of its ability to deregulate long-standing presumptions concerning which types of music should be released to the public, and therefore be composed by songwriters. It has meant that composers can write what they want to write, and "It is easier, quicker, and more flexible for consumers to find and acquire the music they want" (Styvén, 2007). Young from Owl City

perfectly embodies this scenario with his utilization of the internet. He has been described as a “MySpace phenomenon” (Edgar, 2010) - MySpace being a popular social networking website - and rose to success initially through internet distribution. It is thus clear that the internet has the capacity to disseminate and in a sense, perform composers’ works, and is undoubtedly an important component of technology’s role in facilitating the job of a composer.

In conclusion, computer technology has provided a means of capturing composers’ ideas, scoring and editing them, and distributing and performing the works. The development of recording technology, software applications, the internet and portable music have created a world where a song can go from a composer’s head, to being available to an audience of millions within hours. Composers have led - and will continue to lead - the evolution of modern music with the assistance of computer technology as a tool and resource for further musical exploration. In essence, the composer has not become an instrument for the computer; rather, the computer has become an instrument for the composer.

## Resources:

- Bosso, J. (2010). *Owl city reveals live and studio setup: "I use auto-tune"*. Retrieved March 28, 2010, from <http://www.musicradar.com/news/guitars/qa-owl-city-reveals-live-and-studio-setup-i-use-auto-tune-238845>.
- Chavez, C. (1937). *Toward a new music: Music and electricity*. New York: Da Capo Press.
- Cheng, J. (2009). *Virtual composer makes beautiful music—and stirs controversy*. Retrieved March 20, 2010, from <http://arstechnica.com/science/news/2009/09/virtual-composer-makes-beautiful-musicand-stirs-controversy.ars>.
- Dodge, C. (1985). *Computer music*. New York: Schirmer Books.
- Douglas, A. (1973). *Electronic music production*. London: Pitman Publishing.
- Edgar, M. (2010). *Owl city takes new york by storm*. Retrieved May 30, 2010, from [http://www.huffingtonpost.com/michelle-edgar/owl-city-takes-new-york-b\\_b\\_552461.html](http://www.huffingtonpost.com/michelle-edgar/owl-city-takes-new-york-b_b_552461.html).
- Kennedy, M. (2010). Beethoven, Ludwig van. *The Oxford Dictionary of Music*. Retrieved May 28, 2010, from Oxford Music Online database, <http://www.oxfordmusiconline.com/subscriber/article/opr/t237/e1035>.
- Larkin, C. (2010). Death Cab For Cutie. *Encyclopaedia of Popular Music*. Retrieved May 28, 2010, from Oxford Music Online database, <http://www.oxfordmusiconline.com/subscriber/article/epm/73134>.
- Manning, P. (2010). Computers and Music. *Grove Music Online*. Retrieved May 30, 2010, from Oxford Music Online database, <http://www.oxfordmusiconline.com/subscriber/article/grove/music/40583>.
- Miranda, E., & Wanderley, M. (2006). *New digital musical instruments: Control and interaction beyond the keyboard*. Middleton, WI: A-R Editions, Inc.
- Sisario, B. (2009). *From mom's basement to the top of the chart*. Retrieved March 28, 2010, from [http://www.nytimes.com/2009/11/21/arts/music/21owl.html?\\_r=2](http://www.nytimes.com/2009/11/21/arts/music/21owl.html?_r=2).
- Styvén, M. (2007). The Intangibility of Music in the Internet Age. *Popular Music and Society*. Retrieved May 30, 2010, from ProQuest database, (Document ID: 1305618211).
- Titon, J. T. (2009). *Worlds of music: An introduction to the music of the world's peoples* (5<sup>th</sup> ed.). Belmont, CA: Schirmer/Thompson Learning.

## Appendix:

Figure 1.0

*Before computer technology:*

Composer → Song in imagination → Score → Performers → Audience

Figure 1.1

*Use of computer technology:*

Composer ↗ Song in imagination  
          ↓  
Composer ↘ Computer → Audience