

# Development of technology in 1970's

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## Introduction

The history of music and technology are inseparable, both the technologies go hand in hand. From the first ancient percussion instruments, catgut strings, and animal horns, phonograph and the jukebox, listening and creation of music has evolved with the tools of the times.

In 1950s and 1960s, the technological conditions were not much developed for today's popular music. FM radio was the main source of broadcast, later, multi-track recording developments cleared the way for late-'60s studio experiments and recordings. But, 1970s marked the dawn of the modern era in music technology, applying and refining the tools and techniques of earlier recordings while also laying the foundations of the techniques and styles that would follow.

The first half of 1970's was the extension of the '60s, as previously invented gadgets like multi-track and cassette tapes, synths, car stereos and pedals continued to be popular. Eventually, new technological set the stage for CDs, pocket-sized music players, which are still relevant in the 21st century.

The history of sound recording - which has progressed in waves, driven by the invention and commercial introduction of new technologies — can be roughly divided into four main periods:

- ? The Acoustic era (1877–1925)
- ? The Electrical era (1925–1945)
- ? The Magnetic era (1945–1975)
- ? The Digital era (1975–present)

## Recording techniques in 1970's

The current scenario, the "digital" era, has seen the most rapid. In less than 20 years, all the recording technologies

were replaced by digital sound recordings. Sony in the 1970s was instrumental with the first consumer PCM

encoder PCM-1 Audio Unit. Digital recording captured sound by means of a very dense and rapid series of discrete

samples of the sound. When played back through a digital – analogue converter, these audio files are recombined to form a continuous flow of sound. The first all-digittally-recorded popular music album, Ry Coopers's Bop til I Drop, was released in 1979, and from that point, digital sound recording.

Although some small technologies appeared in this period, Sony assured its new digital recording system by

introducing with Philips, the digital compact disc. The compact disc replaced both "album and the "single as

the new standard consumer format.

## 24-Track Recording

Multi-track Recording or tracking, is a way of sound recording which was developed in 1955. It allows for the separate recording of multiple sound sources or of sound sources recorded at different times to create a cohesive whole. Multi-tracking became possible in the mid-1950s when the idea of simultaneously recording different audio sounds to separate individual tracks on the same reel to reel tape was developed. A track was simply a different audio recorded to its own area on the tape whereby their relative sequence of recorded audio events would be preserved, and playback would be simultaneous or synchronized. The first development in multi-tracking was stereo sound, which divided the recording head into two tracks.

Two-track recording was rapidly adopted in 1950s because it enabled signals from two or more microphones to be recorded separately at the same time.

multi-track recording system which offers recording at multiple performances separately and at different times. It reached new levels of complexity in the '70s. In 1966, the Beatles recorded Revolver on a four-track machine and didn't use eight-track recording. By 1970, 16 tracks had started becoming standard, and 24-track machines arrived.

## Cassette Decks

Before 1963, when Philips introduced the compact audio

cassette, almost all tape recordings were done in open reel format. Previous attempts to package the tape in a convenient cassette that required no threading had limited success; the most successful was 8 track cartridge used basically in automobiles for playback only. The Philips Compact audio cassette was way much convenient to the tape recording format and a decade or so later had begun to dominate the consumer market, although the quality was lower than the open reel format. though this format trailed in music sales behind the similarly portable 8-track cartridge deep into the '70s. Audio company Dolby (American company specialized in Noise reduction) developed its Dolby B noise reduction system in 1968, and the first cassette players using the technology—from Advent, Fisher, and Harman Kardon debuted in 1970.

### **Car Tape Decks**

Along with higher reliability on technology, another reason why tapes gradually ascended was the automobile market, which was initially dominated by 8-tracks. In late 1970, Detroit automakers( US Automotive industry) started installing cassette players in some of their new models, taking advantage of new features which included compactness, rewind and fast forward, recording and reverse.

### **Portable Synthesizers**

In 1960's, Robert Moog made the use of synthesized sounds in music with the innovation of his influential Moog synth. In 1970, he introduced Minimoog, which was said to be the size of an electric office typewriter. The production of compact instrument stopped in 1981, but it can be heard on records by Parliament-Funkadelic, Kraftwerk, Gary Numan, Bob Marley, Michael Jackson, Dr. Dre, Devo etc.

### **Mellotron**

Originally it was developed in 1963 in the UK, the Mellotron was a type of sampler keyboard that produced its sounds using prerecorded tape. The most common lighter-weight Model 400, arrived in 1970, and the popularity of instrument spread throughout the decades.

Better technology overtook the Mellotron, but Oasis and Radiohead brought it back into focus in late '90s. Now, there's an app for that.

Karaoke

It's not that karaoke never existed, it always existed. It was invented by Japan's Daisuke Inoue . Inoue used to work in a nightclub, accompanying businessmen who wanted to sing. It was when one executive wanted him to come along on a trip. Inoue couldn't leave his gig, so he made a tape of his instrumental. Later that year, Inoue made his first karaoke.

### **Vocoders as Musical Instruments**

It was invented in 1938 by Homer Dudley at Bells lab as a means of synthesizing human speech. This work was used as voice codec for telecommunications for speech coding to conserve bandwidth in transmission.

By encrypting the control signals, voice transmission can be secured against interception. Its primary use is in

securing radio Communications. Vocoder measures how its spectral characteristics change over time. This results in

a series of signals which represent frequencies at any particular time Signal is split into a number of frequency bands

and the level of signal at each frequency gives the instantly represents the spectral energy.

### **Wah pedal**

The musical idea behind the Wah pedal, which changes the tone of an electric guitar's signal, is as old as the trumpet and trombone mutes it was meant to emulate.

Wah pedal is a type of electric guitar effects pedal that alters the tone and frequencies of the guitar signal to create a

distinctive sound, mimicking the human voice saying the onomatopoeic name &quot;wah-wah&quot;.

Chet Atkins and others had experimented with similar devices. The modern Wah pedal arose in 1966 by mistake by the engineer Brad Plunkett and California's Thomas Organ Company. Hendrix's percussive use of the wah effect on 1967's "Little Miss Lover" took it to another level.

**VCR**Musical short films are about as old as movies with sound. In 1976, JVC rolled out the first VHS-based video

cassette recorder, the JVC HR-3300. As music videos gained popularity after the launch of MTV in 1981, viewers

could not only record their favorite music to check out later, but also buy pre-recorded VHS tapes featuring video

stars.

Videocassette recorder or video recorder is an electromechanical device that records audio

and video from television or other source on a

removable, magnetic tape videocassette, and can play back the

recording. Use of a VCR to record a television program to play back at a more convenient time

### Synclavier

In late '70s, new synthesizers were evolving rapidly. Developed at Dartmouth in 1977 by the newly formed New

England Digital Corporation, the Synclavier was an early digital synthesizer that grew increasingly sophisticated

into the '80s, with digital sampling and other features with a purpose of achieving cohesive tapeless studio.

### Commercial Digital Recording

The technology behind digital audio recording, like the Vocoder, dated back to World War II. And as digital

alternatives began developing in other areas of music production, digital recording also arose as a possibility. In

1971, Japanese company Denon was making early digital recordings that saw commercial release. The Sony PCM-

1, considered as the first commercial digital recording system, arrived in 1977, using a home VCR as a storage

medium.

### Sony Walkman

As 70s progressed, listeners wanted to carry their loved music with them, as it seems to be so easy today. Then, in

1979, the original Sony Walkman went on sale in Japan, changing the culture of music listening. After being

replaced by portable CD players, Sony resurrected the Walkman brand last year as a high-end digital audio device.

### Compact Discs

CD's were considered to be the perfect sounds forever. In 1977, Sony and other manufacturers showed off digital

audio discs at the Tokyo Audio Fair. But at that point, they were of an LP size. On March 1979, Philips

demonstrated its smaller, 11.5 cm-diameter compact disc to journalists. A 1979 Newsweek report was prescient:

"The real boom won't begin until total digital systems and components invade the home—probably sometime in the

mid-1980s. Then, a digital playback device will employ a tiny laser to 'read' a digital recording..."

CDs are small, portable and durable, and they could reproduce the entire audible sound spectrum, with a large

dynamic range, perfect clarity and sound quality. CDs were read optically, using a laser beam, so no physical

contact was there between the disc and the playback mechanism, so CD could be played over and over, with

absolutely no degradation or loss in its physical form. CD's are also way much advanced both physically and in size,

and its storage capacity. LPs had the storage of only 20-25 minutes of audio per side because of which they were

physically limited in storage capacity. CD's on the other hand, were less than half the overall size of the old "LP

format, but offered about double the duration of the average LP, with up to 80 minutes of audio.

### iPod

In 1979, a Britisher named Kane Kramer gave the idea for a portable, memory chip-based digital music player that

would be the size of a cigarette packet. His vision was to see recordings on a main server and distributed to record

stores on telephone. His vision cited "immediate delivery," "no physical inventory and no production costs." The

patent lapsed, as Kramer says. But even before the '70s were over, he predicted much of what Apple would unveil,

with great fanfare, in the early 2000s. The future was already looking retro.

### Conclusion

Technology and music will always go hand in hand. The way 1970's has shown a dawn, many more venues and

opportunities have come up. Many more aspects of music have evolved and will keep evolving till the technology is

in constant support of music.

As a result of new inventions and musical instruments Funk, Soul, R&B, Pop, Hard Rock, Soft Rock and Disco all

carved out their place in the music world in the 1970s. The late 70s also witness the birth of another young music

style: hip-hop. Some of the best rock n roll of all time was recorded in the 70s.

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