# BBC

# Is music going back to its roots?

**By Zoe Kleinman** Technology reporter, BBC News
31 August 2010



Technology takes to the stage - technologist and musician Tod Machover has written a robotic opera called Death and the Powers

**Technology has paved the way for almost anyone to hit the right notes are some people pining for a more authentic sound?**

It is almost 30 years since German electropop group Kraftwerk released the single Pocket Calculator.

Its 21st century equivalent is arguably the smartphone and instead of "pressing down a special key" to "play a little melody" you can launch an app to compose an orchestral concerto.

There is no doubt that technology has transformed the world of music makers, but has it taken away the craft?

Tod Machover, a respected musician and technologist at the Massachusetts Institute of Technology (MIT) in Boston, believes a balance has to be struck between accessibility and developing real skill.

His lab designed the computer games Guitar Hero and Rock Band and he himself has developed what he calls "hyperinstruments" - real instruments that can measure and improve your performance.

"All technology has a place, and if it's used for artistry, if the sound is beautiful, I'm all for it," he said. "Very few people do that well."

Accessibility to music creation has been hugely improved by the development of technology such as composition software Garageband, which make it possible for almost anyone to write and record their own melodies.

The Musician's Union is supportive of this sort of digital facilitation, with general secretary John Smith describing it as "a positive development for the promotion of creativity".

But it has not always been universally popular.

"In general, 10-15 years ago when our group started this work, many people looked down on it," said Prof Machover. "It had a lot to do with expertise and paying your dues."

## Music games

Games like Guitar Hero, developed at Professor Machover's lab in MIT, have achieved a similar goal but he admits they have their limits.

"It's measuring your accuracy rather than your personal take, and that's not what music is about," he said.

The problem is that it is difficult for such games to judge flair and originality, he said.

"It's a big frontier - not just how to allow technology to bend to our creativity, we need it to be aware of the differences in us, what we bring individually.

"I would rather hear a performance with true personal feeling than hear something perfectly in tune."

Since the invention of the tape recorder generations of artists in all genres have experimented with gathering different sounds and tweaking the results.

It really took off in the late 60s, said Professor Machover, when bands like The Beatles began generating music that could only be made in a studio because of the complex mixing of different types of sound involved.

Fast forward to today and technology abounds. Auto-Tuning, a technique for digitally correcting off-key vocals, is a favourite of plenty of popstars - and even used by hip hop and rap artists as a sound in itself.

Opera singers are also often magnified to improve the acoustics in large concert venues.

The danger is that people are so surrounded by artificial sounds that live performance is under threat, Tod Machover warns.

"I feel sorry for the younger generation of live artists," he told BBC News. "They are judged by the incredible perfection we hear on recordings. In many ways that's not what music is about."

The Musicians' Union does not share this concern.

"Technological advances will never take the place of the thrill of live music events," said John Smith.

"We believe that the two can happily coexist."

However recent controversy over the use of Auto-Tuning in TV talent show the X Factor highlights that, just like the strong opinions people have about digitally enhanced images, they do not like to be fooled by technology.

Professor Machover cites 1980s band Milli Vanilli, whose two band members turned out to be neither the musicians nor even the singers behind the music, as "a bad extreme" of where technology can take music lovers.

"There has to be a truth in technology, you have to let people know what role it's playing," he said.

## Back to basics

In Professor Machover's view, music tricks with a distinctly artificial feel may have had their day.

"I think there's a movement away from people being satisfied with the sound of technology - they want it to feel more 3D, acoustic, natural."

It's something he himself has moved towards with his current production, an opera called Death and the Powers.

While the cast includes a distinctly high-tech chorus of dancing robots, the centrepiece of Death and the Powers is an ethereal musical chandelier with vibrating, pulsating strings which he calls "sonic animatronics".

"There's a strong movement towards using technology to enhance the delicacy - something more refined, softer, physical," he said of the creation.

"It's getting away from the electronics."