

Takehashi And Smith Join The Pantheon Of Great Innovators

The National Academy of Arts and Sciences has presented a Technical Grammy to Ikutaro Kakehashi, founder of Roland Corporation, and Dave Smith, founder of Sequential Circuits, for their pioneering work in developing the Musical Instrument Digital Interface standard, known today as MIDI. We take this opportunity to join with the Academy in offering well-deserved congratulations to the duo for authoring one of the single most important technical advances in industry history. In terms of changing the creative musical landscape, the MIDI standard ranks up there with Cristofori's invention of the piano, the Stradivarius violin, and the electric guitar.

Like AC current or the internal combustion engine, MIDI is so prevalent today, it's hard to imagine a time when it didn't exist. MIDI capability can be found on millions of keyboards and nearly every piece of music-related software. Even digital player pianos make use of the MIDI standard. While some would assert that this type of technical advance is the "inevitable" outcome of human progress, we would politely disagree. Just as there was nothing inevitable about Shakespeare's writings, Brahms, or the Beatles, MIDI was not the product of some unseen, impersonal, evolutionary force. It was the result of two highly creative individuals who envisioned the benefits of a standard that would link different instruments, and had the technical skills and persistence to make their vision a reality.

As synthesizers became more common in the '70s and musicians began performing with several keyboards simultaneously, it became apparent that a universal interface was needed. In the early '70s, Moog had devised a voltage-controlled system that made it possible to link up two Moog synths; however, it was inadequate for the emerging generation of programmable, polyphonic synthesizers. Enter Dave Smith.

After receiving an electrical engineering degree from the University of California at Berkeley, Smith took a job in nearby Silicon Valley, where he became conversant in one of the breakthrough technologies of the day: the microprocessor. As a hobby, he began designing microprocessor controllers to program the voices of his Moog synthesizer. The hobby culminated in the formation of Sequential Circuits, which vaulted to prominence in 1978 with the introduction of the first programmable, polyphonic synth, the Prophet 5.

At the 1981 Audio Engineering Society Convention, Smith presented a technical paper that laid out the principles of a Universal Synthesizer Interface that would allow electronic

musical instruments to speak with one another, as well as computers. Simultaneously in Japan, Kakehashi had also been sketching out an interface standard. Upon reading the AES paper, he immediately reached out to Smith, and the two began the hard work of formalizing what would become MIDI.

The fruits of their labors were first unveiled to the public at the 1983 NAMM show when a five-pin cable was plugged into a Sequential Circuits Prophet 600 and a Roland Jupiter-6, and depressing a key on one of the instruments succeeded in activating the other. Despite the historic nature of MIDI's debut, the event was modest in scale. Only a select few were invited to the demonstration, held at a small conference room in the Anaheim Convention Center, because representatives from Roland and Sequential were worried about being embarrassed by a technical glitch. Once the first test was passed, Kakehashi and Smith immediately made the protocol public, and by August 1983 had persuaded all the other major manufacturers to adopt it.

Last year, products that incorporated MIDI in one way or another accounted for close to \$1.0 billion in retail revenues, or about 15% of the total music products market. Aside from its natural application in keyboard synths and software, MIDI also found its way into guitars, percussion instruments, and even a few wind instruments. However, MIDI's significance transcends sales dollars. The protocol ushered in the concept of compatibility between products from different manufacturers. It also opened new creative horizons for musicians everywhere. It's hard to think of a single piece of popular music in the past three decades that hasn't made

use of MIDI in one way or another.

The evolution of musical styles and genres has been driven in part by the unique relationship between musician and instrument maker. The improved damper pedal on Joseph Broadwood's pianos offered new levels of sustain, and had a profound impact on Beethoven's piano compositions. With his pickups and amplifiers, Leo Fender not only made the guitar louder, he made it a solo instrument, and ushered in an entirely new style of music. With MIDI, Kakehashi and Smith take their rightful place in the pantheon of inspired innovators who gave musicians new tools of expression. The industry, the community of musicians, and the listening public owe them a debt of gratitude. And on a small note, it has been gratifying for us to have been firsthand witnesses to history being made.

Brian T. Majeski
Editor
 brian@musictrades.com



Ikutaro Kakehashi and Dave Smith with their well earned Grammys.