Synth History - Ep 02 - Ikutaro Kakehashi and Roland

This episode was written by Danz CM. All references and sources of information can be found at the bottom of this transcript. If you find any information inaccurate or have any questions please e-mail danz@synthhistory.com Musical cues are for podcast editing purposes.

Hi there,

And welcome to episode two of Synth History.

A podcast on synthesizers,

drum machines, and the musicians who use them.

I'm your host, Danz.

In today's episode, we're going to be talking about Roland

and its founder - engineer, inventor and entrepreneur, Ikutaro Kakehashi. (6) I'm sure you're familiar with the Roland Corporation. Their line of musical instruments have had a lasting impact on popular music and culture since the 1970s. Let's just take one instrument, Roland's legendary 808 drum machine.

This was used by Marvin Gaye, Africa Bambataa and by Kanye West who makes a nod to the drum machine in the title of his record, 808s and Heartbreak, and more.
Rolands Juno line of synthesizers have been used by Billy Idol, Eurythmics, Wham!, Cindy Lauper, Daft Punk and more.
And if you're a guitar player, you may have heard of Roland's Space Echo, or used a Boss Effect pedal - Boss, a division of Roland.

This is a short story of Roland the company

but it's also the story of a human being who had a vision,

who would found one of the biggest musical instrument companies ever, despite, as you'll see, multiple bumps in the road.

Without further ado

This is the story of Roland and it's founder,

Ikutaro Kakehashi.

Before we jump into Roland's success,

Let's start at the beginning.

CHAPTER ONE: GROWING UP DURING WARTIME

Ikutaru was born at a unique time in history.

February 7th, 1930 in Osaka, Japan.

He was born at a time when Japan was experiencing a deep economic depression, and nine years before World War II would begin.

Raised by his grandparents, his childhood and country would be in a fragile state of chaos, governed by the reality of war.

It's difficult to imagine what life might be like for a child during a time like this.

But in Ikutaro's memoir, he states there were times when food was scarce,

when air raids were constant,

His childhood home was bombed

His model train collection would disappear into flames.

He couldn't even listen to music on the radio..

The 1941 revision of Japan's National Mobilization Law eliminated

freedom of the press completely, (9)

This allowed the government to control many civilian organizations, including the news media and the radio.

This meant no foreign music at all - only patriotic songs.

[radio static] (10)

But eventually, when the war was over and restrictions were lifted.

Japan was flooded with new music from the occupation army's broadcasts to its GIs,

[1940s music]

The transmissions were difficult to hear.

Japan had no private radio stations yet.

[static]

There were no program schedules - or listings of station frequencies.

You just had to…

turn the dial until you came across a broadcast.

[radio sounds / 1945 music]

This is where Ikutaru's fascination with music and electronics began.

He wanted to figure out how radios worked in order to listen to music.

He'd take them apart and learn their ins and outs (7)

He would eventually turn this hobby into a profit,

And we'll get to that next.

[music fade out]

CHAPTER TWO: A NATURAL INVENTOR, ENGINEER AND ENTREPRENEUR

He graduated from the Nishinoda Technical School in 1946.

He planned to attend a College of Chemical Engineering for higher education.

Although he passed the entrance exam, he failed to pass the health exam - he was deemed malnourished. Times in Japan were still tough.

Higher education was also… expensive.

So even if he did get in, there wasn't really a way for him to pay for it anyway.

[coastal sounds]

The next best thing was to move to Kyushu,

one of Japan's main islands in the southwest.

It was a place much less affected by the war compared with Osaka.

When he got there he searched for a job.

He secured some part time work -

One job as a land surveyor -

this job required him to speak with almost every resident in town.

[talking amongst residents]

Another at a construction site as an errand boy -

Making 15 yen per day -

To put hat into perspective, that is less than one US dollar.

But he knew he had to find a full-time job.

He took up an apprenticeship with a watch repairman.

[tick-tock]

Day in and day out the same routine…

[tick-tock]

After hearing from the Watch Master that it would take him *seven* years to complete his apprenticeship…

[tick-tock]

He immediately left.

[clock stops]

That was just too much time to spend underneath someone.

Ikutaro decided to teach ***himself*** all that he could about watches.

[wind up sound / music]

And after learning as much as he thought he needed to (3)

at the age of 16, he started his very first business venture.

The

Kakehashi Watch Shop.

The other watch shops in the area weren't too happy when Ikutaro's Watch Shop opened.

Of course, they were there for ages, and they felt like he was..

too green.

They were.. offended..actually

for Ikutaro to think he was good enough to be their competitor at such a young age.

But he didn't care what his competitors thought!

His first business was a financial success.

Of course it helped that he had met nearly the whole town through being a land surveyor.

[tinkering sounds - friendly neighbor sounds]

He enjoyed watch repair, but music was his true love.

His repair shop then started handling broken radios in addition to watches and clocks

[Radio transmission]

Even though he had a nice life in Kyushu, building his business and doing what he loved - eventually he outgrew the small town.

He left and moved back to Osaka

as soon as restrictions were lifted for moving to bigger cities in Japan

- there were restrictions because of food supply earlier -

He liquidated his Watch Shop within two weeks and off he went.

He wanted to attend University in Osaka to specialize in Electronics.

After all, he had enough money to do it-

He could pay for four years' worth of tuition and living expenses all from his Watch business- at just twenty years old!

But Ikutaro would face another health-related bump in the road.

He contracted lung Tuberculosis.

Quite common at the time, this disease was exasperated during times of war.

With collapsing lungs, and a weight that shifted from 132 to just 80 lbs -

He spent four years at a sanitarium called Sengokuso.

A sanitarium is a medical facility for long-term illness, most typically associated with the treatment of tuberculosis in the late-nineteenth and early-twentieth century before the discovery of many antibiotics. (46)

His parents would die of tuberculosis, which is why he was raised by his grandparents at the age of two.

But he wouldn't let him dreams and hobbies fizzle out.

With a mind that wouldn't stop churning

He taught fellow patients how to repair watches.

With wartime restrictions lifted, Japan was also about to broadcast its first television signals.

[tv broadcast]

He bought a cathode-ray tube and assembled his own receiver in time to catch the first transmissions—

All whilst recovering from Tuberculosis.

His condition was dire until he was selected to test a new drug, Streptomycin.

Thankfully, it worked, and he was released.

All of the money he saved for University was spent on Sengukuso and living expenses.

He realized going back to school was not an option.

But he jokingly refers to his experience at the hospital as-

a graduate of

"The Electronics Department, Sengokuso University, Specializing in Music".

When he left, no one would hire him without a proper degree.

So in 1954, in true form,

he started his own business in Osaka,

An appliance shop.

Kakehashi Musen, or The Kakehashi Radio Shop.

There, he'd work on watches, televisions, radios and…

the object of which will begin to propel our story the most,

…the electric organ.

[organ music]

He would marry his fiancé,

have his first child.

A husband, father, and business owner at the age of 24 - his appliance shop would go from a small retail business..

to a successful manufacturing business,

eventually partnering with the

Hammond Organ Company.

Next.

[music fades]

CHAPTER THREE: AND SO IT BEGINS, WITH ACE ELECTRONICS

Ikataru states in an interview:

I loved music, but at the time all I did was listen.

One day I got a yearning to play music,

but the instruments I wanted didn't exist yet

So I had to make them on my own. (6)

At the beginning of the 1960s.

Ikutaro would change the name of his shop from

Kakehashi Musen, The Kakehashi Radio Shop.

to *Ace Electronics*

He wanted to fuse his skills in electronics

and his interest in music even more.

Ace began manufacturing guitar amplifiers and effect units.

The next step was to make instruments.

He dabbled with building instruments like the Theremin.

[theremin sound]

The theremin - being an electronic musical instrument controlled without physical contact -

was inherently difficult to play.

He scrapped the idea.

[theremin crash / throw out]

He thought that a keyboard-based instrument was more likely to be successful.

His brother-in-law had a Lowrey Organ church model that required constant repairs.

While Ikurato was fixing it-

like the radios and watches before-

he learned the ins and outs of the construction of the organ.

And he built his first prototype 49-key monophonic organ.

With four-octaves using…

telephone parts

parts from a reed organ,

[crank / building sound]

and simple transistor oscillators.

Ikutaro and his team tinkered away.

They created the world's first fully transistorized,

non-automatic percussion instrument in 1964, dubbed

The Rhythm Ace R-1.

What does transistorized mean?

Found in radios, TVs and more, transistors are one of the most important inventions of the 20th century. (15)

[electronics sound]

Transistors are the basic building blocks for modern electronics.

Computers contain billions of miniature transistors, made from silicon, a chemical element commonly found in sand.

In short, they are used to

amplify

[loud]

or switch electronic signals and electrical power.

Before transistors, most electronics used vacuum tubes.

Despite this cool new instrument

The Rhythm Ace R-1.

Was..

unsuccessful..

[womp womp]

Even after taking it to the NAMM convention

in Chicago in the US, it found no distributors.

No one was excited.

And the reason.. was simple.

It produced sounds when you pressed buttons-

Like a drum pad.

[button triggered sounds example]

but it offered no pre-programmed pattern -

essentially, it wasn't able to play by itself.

But organists, who would be the main customer, needed something to accompany them while they were playing.

An invisible drummer, if you will.(11)

Ikutaro and Ace wouldn't give up..

To meet the market's desire for an automatic rhythm machine,

he developed a circuit named a

diode matrix. (48)

[matrixy sound]

This produced rows of pulses

[pulses]

that would determine the sound-making position of each instrument.

Kick Drum

[pulse - kick drum]

snare

[pulse - snare]

and so on.

With the diode matrix now in hand, the

drum machine would get even better!

The next version hosted 16 preset patterns.

This meant, with the click of a button you had

Waltz

Western

Rock n Roll

and more.

[examples]

Now this, could definitely accompany an organist.

[rhythm sound and organ]

Now this is where Hammond comes in.

Over in the USA, they got wind of this.

Hammond wanted to incorporate the new Rhythm Ace FR-1 within its latest line of organs. (13)

And so began a partnership between Ace and Hammond.

Ace soon became the Japanese importer and distributor for Hammond organs.

And the two companies would form a joint venture called

Hammond International Japan.

Ikutaro needed more space for his growing business.

He was able to buy up a defunct piano and organ manufacturer.

The factory would become a major source of Hammond organs and the sole source of Ace Tone organs.

[music]

Ace and Hammond made the world's first automatic chording instrument with automatic rhythm together, dubbed the Piper Autochord.

Things were looking great..

But business is business.

And with a growing company, you need growing capital.

[cha-ching / money sound]

As Ace grew, it became more and more attractive to investors.

One of them was Kazuo Sakata of Sakata Shokaim,

Kazuo also shared an interest in organs.

He purchased a whole bunch of Ace shares,

and eventually, his company, Sakata, became the main shareholders of Ace.

This meant that Ikutaro had become a minority shareholder within his own company.

But this was OK because they got along well Ikutaro was learning from his new investors.

Before, he had focused solely on the Japanese domestic market - and on improving the technology of his instruments.

Now with Sakata's help, he would learn the intricacies of the overseas market.

But eventually, problems would arise.

Another company would purchase Sakata.

Sumitomo Chemical. This meant that *they* inadvertently became the main shareholders of Ace.

Sumitomo Chemical specialized in fertilizer and and in developing raw materials had (27) money, but they didn't care about music at all.

After twenty years of developing his small storefront,

Kakehashi Radio Shop into Ace Electronics,

With an annual turnover of $40 million dollars-

Ikutaro Kakehashi left Ace behind.

He didn't fancy his main shareholder - Sumitomo Chemical's - disinterest in music.

it was time to move on to bigger and better things.

CHAPTER FOUR: THE BEGINNING OF ROLAND

[upbeat music]

It was time to take the next step as an entrepreneur.

He had spent his entire life in electronics.

Ace was his learning experience.

Now, in his early 40s, he knew it only made sense to continue his work in the

electronic music world.

With his gained experience and wisdom.

It was time to start a new company.

And from technology, to marketing, to forming business partnerships,

Ikutaro was ready.

But.. he needed a new name.

He wanted one that was easy to pronounce for worldwide markets.

He picked up a telephone directory and flipped through it.

[book flipping papers]

And there was one name that stood out.

[finger stopping on page]

Roland

This simple and unique two-syllable word

with its soft consonants

Ro

[va]

Land

Perfect.

As an added bonus, the letter "R" would stand out at trade shows.

There weren't many instrument manufacturers whose name began with the letter "R".

And on April 18th, 1972

in Osaka, Japan,

Roland was officially born.

Right away, Ikutaro's friends the Hammond Organ Company put in an offer for a 60% shareholding stake.

But the awkward shareholding experience with Ace, Sakata and Sumitomo Chemical was still fresh.

He would use his own money

to fund this business.

With $100k and seven employees from Ace, Ikutaro's new company started out in a shed.

There was only thing Roland needed now

and that was products.

His years of networking had garnered him many important relationships.

And that rang true for *part suppliers.*

He managed to convince part suppliers to offer him 90-day payment terms.

He planned to design a new Rhythm Box, manufacture and sell enough units to pay off the part suppliers before 90 days were up.

Basically like a credit card for instrument parts.

He knew the current Japanese market was completely saturated by Yamaha products.

There was just no way for him to establish Roland in Japan.

But somehow he knew the West would eat this stuff up.

Before Roland's first Rhythm Box ever existed

Ikutaro flew to Canada

[flight]

Then to New York

[flight]

and then to Europe.

He talked with importers and distributors he had met in his days with Ace .

And eventually he got enough purchase orders to begin the process of building Roland's first product.

The Rhythm TR-77.

The TR - stands for for transistor rhythm.

It was basically an updated version of one of the earlier Ace Tone Rhythm Boxes.

It allowed users to merge patterns

and had independent volume controls for each instrument,.

It had a fade out feature,

[TR77 sound fade]

and 2-beat and 4-beat pattern variations.

Sales offices opened in Tokyo and Osaka

and in their first year the company made $300k.

Lets just type that into an inflation calculator, shall we..

That's roughly $2,017,808.61 in 2022!

After the TR-77 came the TR-33, TR-55 and TR-700 Rhythm boxes.

In 1973,

Roland's very first compact synthesizer would hit the market.

The SH-1000.

[chime] [ohhh ahhh]

Not only was it the company's first keyboard synth, but it was the first

compact synthesizer produced in Japan!

[wow sounds VA]

it offered one oscillator and 10 preset tones for the user.

[example]

Japan's exchange rate at the time made the SH-1000 only $800,

That was pretty affordable, compared with the Minimoog, which retailed at $1595

or the Moog Sonic Six which retailed at

$1395. *(31)*

At the time in the US, synthesizer companies like Moog and ARP targeted professional musicians and academics.

But Ikutaro thought their products seemed too…

expensive for the average musician.

He wanted Roland to appeal to amateurs and hobbyists, like himself.

Roland would focus on

affordability, simplicity and

miniaturization.

[chime]

After all, Japan became a hub of miniaturization in the 1970s. (30)

[music]

Roland was doing well, but there were more bumps to be faced.

And the first was with Ace.

A company Ikutaro knew all too well.

When he stepped away he retained all of his connections in distribution and sales.

And this wasn't something Ace liked very much, being Roland's competitor.

They threatened and bullied any dealership that wanted to carry Roland products.

But Ikutaro was smart, and retained his business relationships by presenting himself professionally.

Ace was unsuccessful in blocking Roland's business.

[music break]

Before we jump into Roland's next synth,

There is something you should know about synths In the early 1970s.

Robert Moog and his synthesizer company had developed something everybody wanted.

And that was their patented

Voltage-controlled filter or VCF.

[example]

This filter created a certain amount of characteristic distortion, giving Moog synths a recognizable sound.

[example]

The Moog VCF sound was just… so desirable

that other companies tried to develop circuits that would behave in the same way, but get around Moog's patent.

It's common legend that at one point both Roland and ARP copied the Moog circuit.
Even EMS, another synthesizer company, pioneered a variation of the Moog VCF known as the diode ladder. (23)
Roland's SH-3 synthesizer came out in 1974. (33)
The first version of Roland's SH-3 has an "EMS" style diode ladder filter,
and the second version,
the SH-3A
uses a transistor ladder-filter and as a result can generate Moog-like sounds. (23)
[SH-3A sounds]

The SH-3A synthesizer would go on to be used by Greek synth mastermind Vangelis.
Composer of the Blade Runner and Chariots of Fire score.
A Google image search reveals him at Nemo Studios,
surrounded by a plethora of studio equipment,
including a Roland SH-3A. (25)

Roland continued to grow like crazy in the '70s.
A sales office was opened in Nagoya,
Sales partners were established in Australia and in the USA.
A representative office opened in the Netherlands as a base for expansion in the European market.

In this decade, Roland released the JC Series Guitar Amps, which were a major success.

They'd release the SH-2000 and the SH-5, Rolands first synth to have pitch bender levers.

The Roland System 100 would come out in 1976.

This system included a synthesizer, expander, mixer, analog sequencer, and a pair of speakers.

You could purchase each unit separately if you wanted!

Then came Japan's first large-scale modular synthesizer system;

The Roland System-700.

In the latter half of the decade,

Roland would release the world's first guitar synthesizer, the GR-500, (32)

The ProMars and Jupiter 4 would be released, the company's first true polysynth,

It would eventually be used by Nick Rhodes of Duran Duran.

A number of Roland String Machines hit the market, too.

And Roland came out with its first microprocessor based music sequencer, the MC8,

then what could be described as the drum machine that started it all for Roland,

the CR-78 CompuRhythm.

Box-like in design, surrounded by wood, it was similar-looking to Ace and Roland's earlier rhythm units.

But this one was different.

As, like the MC-8, it contained…

a Microprocessor.

This allowed the user to devise, store, and replay programmed patterns.

When it first came out - it wasn't too popular, but it would be a few years later.

Thanks to a man named Phil Collins with a song called “In The Air Tonight”.

Blondie would also use it on “Heart of Glass”.

[fade]

CHAPTER FIVE: THE SPACE ECHO, EFFECTS UNITS THE AND CREATION OF BOSS

Well, I can’t just gloss over two important aspects of Roland in the 1970s!

Whether you’re a musician or a music fan,

The Roland effects unit dubbed

The Roland RE-201

or

Space Echo,

is an important piece of gear to know about.

Lets talk about Tape Echo in general for a second.

[guitar delay music starts]

The effect is something you’ve definitely heard before -

used by guitar icons like

Jimmy Page,

Robert Fripp,

Buddy Holly,

Brian May

and Bob Marley,

the sound has a distinct warmth and saturation. (26)

But how does tape echo work.. the analog way?

Well.. think of tape like a roll of photography film.

In photography, when you snap a photo,

light passes through the camera

[whoosh]

to create a copy on film to print as a replica image.

[Polaroid sound]

Audio tape works in a similar manner.

Instead of light, audio signals pass through a magnetic field at the Record head to create a copy on tape.

[tape sound]

The magnetic field rearranges the particles on tape to create a version of the waveform, re-converted to an audio signal at the Playback head.

[tape sound repeating, repeating, repeating]

Roland didn't invent the tape echo *unit* with their Space Echo.

Effects boxes were produced as early as 1953 by Ray Butts who developed the Echosonic.

Built into a guitar amp, it was used by 50s icons like Chet Atkins, Carl Perkins and Elvis Presley's guitarist Scotty Moore.

[example]

And the 1960s saw the Echoplex.

Hugely successful,

Korg, Multivox and Roland, started creating effects units of their own.

Ikutaru started developing Echo Chamber units over at Ace in the 1960s.

But it wasn't until he brought these designs over to Roland where he would create a slam dunk Space Echo.

If you're a gear head, you might pondert

[Which is better, an Echoplex or Roland Space Echo?]

Some feel the Roland units were better built

and quieter;

but that's something you'll need to take up on an internet forum.

Roland had a hefty Space Echo lineup, with each unit adding more features like chorus and balanced inputs. (28)

The Space Echo would remain in Roland's catalog for a long time .

Nowadays of course, everything is digital.

The effect is easy to achieve within most digital workstations, like Ableton or Pro Tools.

Repairing tape echo units or replacing the tape inside is a bit of a burden, but you'll still find these around.

Roland was growing so much that they needed to establish another company.

A division.

And it was named…

MEG!

[Meg? VA]

Short for the Music Electronics Group.

The name… didn't last very long.

[womp womp]

Somebody realized that Meg was a common girl's name in the West.

Ikutaro wanted something that had little bit more.. oomph.

How about…

BOSS!

No offense to any megs out there.

And so a new division of Roland entered the world,

The guitar-oriented Boss division would become legendary for their pedals.

The first BOSS-branded effect processor was released in the late 1970s.

The CE-1 Chorus Ensemble.

And history would continue for Boss, up until this very day.

They expanded their product range later by including digital studios, rhythm machines, samplers and other equipment like solid-state amplifiers and speaker heads.

Any type of audio effect you can think of, there's more than likely a Boss pedal for it.

Flangers

Limiters

Overdrive

Chorus

Phasers

Tuners

Tremolo

Sustainers

Compressors

Delays

Reverb

Distortion

Vibrato

[different voices, fade out]

CHAPTER 6 : The 1980s

In the beginning of the 1980s, the Japanese Yen rose in value.

Which meant Japanese goods became more expensive to import.

One of Roland's biggest European distributors would end up going bankrupt at the start of the decade.

[crash]

But Ikutaro solved this crisis - he was quick to solve problems.

He bought up all the liquidated Roland products from the bankrupt distributor and opened up even more new companies…

like Roland UK, Roland Germany and Roland Scandinavia.

[808 fade in]

This next Roland product hit the shelves in 1980.

Can you guess what it is?

[music]

I'm sure you can.

Why it's, the TR-808, of course!

[music]

There was a move to make rhythm machines that could be used in the professional market.

Musicians wanted to break away from presets..

from boxes you put on top of organs to play along in time with. (35)

The 808

was one of the first drum machines to allow users to program rhythms instead of using preset patterns.

The initial aim of the 808 was to emulate real drum sounds.

Samples of real drums were all the rage-

Roger Linn's LM-1 drum machine,

and Tom Oberheim's DMX drum machine

[DMX, LINN examples]

used pre-recorded samples of real a acoustic drums.

But back then, memory and the ability to sample

was expensive,

the technology wasn't there yet to make these things affordable.

So Roland turned to sound-generating hardware.

This meant that the 808 used analog synthesis instead of samples-

[808 sounds]

Being completely analog made it sound extremely unique.

It stood out amongst the others.

Engineer Don Lewis would aide in the development of the 808.

He also worked on the CR- 78 drum machine a few years prior.

Don Recalls in an article with The Verge working with engineer Tadao Kikumoto in the 1970s.

[VA]

"That day he had a bread board of an 808 and was showing me what was going on inside — he sort of bumped up against the breadboard and spilled some tea in there and all of a sudden he

turned it on and got this pssh sound — it took them months to figure out how to reproduce it, but that ended up being the crash cymbal in the 808. There was nothing else like it. Nobody could touch it."

Apparently, Ikutaro deliberately purchased faulty transistors that created the machine's distinctive "sizzling" sound.

[example crash symbol]

The 808 was launched before electronic music became mainstream,

and it received mixed reviews for its unrealistic drum sounds.

And to put it quite bluntly.. at the time of its release it was a commercial failure.

Obviously ahead of its time.

[music]

Over the course of the 1980s it would garner a cult following though,

becoming a cornerstone of electronic, dance, and hip hop.

In 1983 came another revolutionary drum machine…

[909 example]

the TR-909!

Although this drum machine incorporated samples for… some sounds

Like its crash, ride and hi-hat

[example]

Its other sounds were analog.

And musicians still preferred the more realistic sampled sounds of competing products.

Roland ceased production after only one year.

There were only 10,000 909 units built, and approximately 12,000 808 units built.

And like the 808, the 909 was also ahead of its time.

It wasn't until the late 80s and early 90s that the 909 would become popular,

with genres like techno, acid and house.

Roland continued with their Jupiter series synths in the 80s.

And when the Jupiter 8 was released,

it was a touchstone for future synthesizer development.

An 8-voice polyphonic analog synthesizer with 64-sound memory,

it had a bunch of impressive features, including key split, patch preset, and auto arpeggio.

[examples]

It would be used by Queen on Radio Ga Ga, Abba and more.

[examples]

A successor, the Jupiter 6 was released 2 years later, and was an attempt at more affordable version of the synth.

Roland's Juno series also hit the shelves in the 80s.

The Juno-60 in 1982 to be exact.

This synth introduced Rolands newly developed DCOs.

What is a DCO? [VA]

Well, a digitally controlled oscillator, of course!

Before *digitally*-controlled-oscillators - there were *voltage*-controlled oscillators.

I'll do another more intensive episode on Oscillators for those who are unfamiliar.

To put it simply for this episode,

VCO stands for

V - *voltage*

C - *controlled*

O - *oscillators*

VCOs were… temperature-dependent.

Meaning, while at a gig, you might have to adjust your synthesizer a bunch just to maintain a stable sound.

DCOs were indeed, an improvement.

Instead of voltage controlling the analog oscillator, they were controlled by a digital circuit that ensured greater tuning stability.

The 1980s would see the birth of the SH-101, the JX-3P, JX-8P..

[example]

Originally the 606 and 303 these two machines were designed to be used together.

A drum machine and analog bass synth, these were to provide a simple drum and bass accompaniment to guitarists without backing bands.

Similarly to the fate of the 808 and 909- (47)

While they didn't sell well at first, the 606 and 303 eventually became an integral part of dance music.

Not only dance music, but musician and producer Steve Albini - who has worked with The Pixies, Nirvana, The Breeders, more used the 606 with his band Big Black.

Roland would aid in the development of something else that would impact the music world forever in this decade.

CHAPTER 7: THE INVENTION OF MIDI

MIDI is an acronym for

Musical

Instrument

Digital

Interface

To put it in as simple of terms possible, MIDI is a way for electronic musical instruments to interact with each other. (37).

[robots talking]

In the early 1980s, there were no standardized means of synchronizing electronic musical instruments manufactured by different companies.

Some individual companies instruments were able to talk with each-other-
like Tom Oberheim's Oberheim system, as an example. Meaning, Oberheim's could talk with other Oberheims.

But there was no standard language.

Ikutaro felt that the lack of standardization was limiting the growth of the electronic music industry.

He felt that standardization was necessary for the industry grow.
And with a global market that could be unified by a digital standard,
a company of any size could develop and sell its products successfully. (39)

In June 1981, Ikutaro Kakehashi proposed the idea of standardization to Tom Oberheim.
It is said that Tom then talked it over with Dave Smith, founder of Sequential Circuits.
In October of the same year,
Ikutaro Kakehashi, Tom Oberheim, Dave Smith, along with repr esentatives from Yamaha, Korg, and Kawai met to discuss the idea. (38)
One year later, they defined the first technical specification of what came to be known as MIDI.
At the January 1983 NAMM show,
a Roland Jupiter-6 was connected to a Sequential Circuits Prophet 600 via MIDI to demonstrate what it could do.

This was- and still is

a big deal!

A language for musical instruments.

[bleep bloop]

Today, MIDI is used everywhere in recording music . And it’s maintained by the MIDI Manufacturers Association.

MIDI's introduction coincided with the dawn of the personal computer era, and the creative possibilities brought about by MIDI technology are credited for helping revive the music industry in the 1980s.

[music fade out]

CHAPTER EIGHT : ROLAND SOLIDIFIES ITS PRESENCE

Roland would establish sales parters in Italy, Spain, Brazil, Portugal Poland and Hungary in the 90s and 2000s.

A distribution center was completed in Hamamatsu in the 90s and a production company was later established in China.

Roland would be listed on the first sections of the Tokyo and Osaka Stock Exchange

And it was a digital era.

The 90s saw the rise of digital recording technology.

Digital implementation and music workstations were getting cheaper and easier to afford.

You could pack more into your machine-

and you could make records basically at home.

The VS-880 Digital Studio Workstation became the first affordable integrated digital recorder, digital mixer, digital editor and effects processor in the world. (40)

In 1992 came Roland's JV-80 synth

It helped lay the foundation for the later JV and XP-series synths.

The XP series synths in the mid-90s and early 2000's included (41)

affordable versions of musical workstations.

Roland would coin the term "Groovebox" in 96 with the release of the MC-303.

Targeted towards house DJs and home musicians.

[beats]

The introduction of Roland's V-Drums came in 97.

A revolutionary product, the V-Drums included mesh-head triggers that resemble acoustic drums in both appearance and feel.

The striking surface is a two-layer taut woven mesh of fibers,

[fabric sound]

fitted with several electronic sensors.

[hit drum pad sounds - electronic sound]

This allowed the mesh-head trigger to respond to the play of a drumstick in a manner that feels like real drums, (43)

How did this come to be?

One day, Roland's mechanical designer visited a do-it-yourself shop — a supermarket for carpentry and gardening goods — and coincidentally found a small trampoline, which used a mesh-type material for the bouncing mat.

And there, he had an inspiration:

Roland could use a mesh surface for the drum pad.

Ikutaro asked the Founder of Remo, to produce a mesh head for Roland, and he agreed.

Lots of roommates and flatmates have probably convinced their musician friends at home to switch from acoustic drums, to quiet electronic V drums, which you could listen to with head phones.

[turn it down!]

[drums playing out / music]

Roland would continue to grow for the next thirty years -
to this very day as I record this podcast, they're one of the biggest musical instrument companies in the world.

[va]

Pianos,

effect pedals,

synthesizers,

drum machines,

grooveboxes,

amps,

guitar synths,

mixing systems and consoles,

digital harpsichords,

organs,

[fade out]

CHAPTER 9: IN CONCLUSION

Ikutaro Kakehashi and Roland developed some of the most forward thinking,

inspirational and acclaimed electronic musical instruments ever.

These products help shape music history - and continue to do so.

Mr. Kakehashi passed away in 2017.

His legacy of innovation in the field of electronic musical instrument design would garner him an honorary doctorate from Berklee College of Music,

Handprints at Hollywood's RockWalk,

and a Technical Grammy Award, shared with Dave Smith of Sequential Circuits for the invention of MIDI. (45)

[music fade out]

This episode is about a company.

But it’s also the story of someone who turned a fascination with electronics and music into one of the biggest musical instrument companies in the world.

OUTRO

And that’s a wrap on episode two of Synth History!

Ikutaro Kakehashi and Roland

This episode was written, recorded, produced, engineered and edited by your’s truly, Danz.

I started writing it in 2020 after the Wendy Carlos episode came out, but life got in the way a bit.

I released a musical album of my own called The Absurdity of Human Existence under the moniker of Danz CM in 2021, then I moved coasts from New York to California, then I faced

some health related issues with my dad - whose OK now. Anyway, I'm happy to finally get this episode out.

A transcript of this episode with references is available Synth History. com, where you'll also find links to some Synth History playlists and recent interviews with Ela Minus, Chromeo, James Murphy of LCD Soundsystem, Flying Lotus and more.

You can pick up a physical zine which features some of the interviews and there's also some other merch.

If you'd like to support the podcast you can use the tip section when you check out.

This podcast was scored by yours' truly, with additional examples of synthesizers from the public domain for educational purposes.

I'd like to thank my voice actors for this one-

Taiju Nakane

And Matthew James Reilly.

Roland has so many products and so much history - I apologize if I didn't mention a specific instrument.

Learning about Ikutaro was truly inspiring, and I highly recommend his memoir "I Believe in Music". It was published in 2002 to coincide with the 30th anniversary of the Roland Corporation.

In 2022, Roland has celebrated it's 50th anniversary.

There's a great documentary on the 808 by Alex Dunn that I highly suggest and a great in depth article via Sound on Sound.

One of my favorite stories about Ikutaro's life is when he opens his own watch shop, despite being looked down upon by the watch experts,

he didn't care at all.

He taught himself and made it happen.

Turning his humble beginning into something larger than life.

Thanks for listening..

I'm Danz and that's Synth History.

[outro]

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