

# Narration Script of Concept Video

## **【1. Introduction】**

Tono-machi...

In Kawasaki City...

King SkyFront.

“TONO” is a Japanese word, for a Samurai Lord. Machi means “town”. So Tono-machi is the town of the King or Lord.

This particular township maintains age-old traditions, especially monozukuri -- the Japanese art of craftsmanship.

With Haneda Airport so close, “SkyFront” makes sense.

Of course, no samurai rules Tono-machi anymore. Today Innovation rules.

*Kawasaki, in-novation* and a *gateway* to the world. *King SkyFront*.

## **【2. Kawasaki?】**

The history of Kawasaki, as it has developed over the last 100 years is the history of Japanese manufacturing.

Kawasaki is the focal point of the Keihin Industrial Zone.

Starting in the early 20th Century, Japan’s heavy industry developed here particularly in the area of chemicals manufacturing.

Once known for its heavy pollution, Kawasaki was proactive in responding to the problem, and succeeded in dealing with this issue, ahead of other regions in Japan.

Now, using its knowhow in overcoming pollution problems, Kawasaki is pioneering advanced environmental technologies with applications worldwide.

It is also fostering basic research for advanced medical technologies and products.

Kawasaki is a leader in 21st Century *innovation*.

What’s behind Kawasaki’s never-ending ability to create new things?

Kawasaki is a huge city with 1.4 million people. It’s a hub for goods and information.

It’s also in the heart of the greater Tokyo metropolitan area with 37 million people.

In this relatively small area, you will find universities, advanced research institutions and manufacturing centers for chemicals, metals, machinery, electronics, and food.

It’s hi-tech -- but it still draws on traditional *monozukuri*.

Kawasaki also features superb logistics. It’s a hub for land-based transport locally

-- and sea and air transport internationally.

Kawasaki is a technological “melting pot”.

Social needs generate technological seeds.

The energy comes from the community.

The result is innovation.

King SkyFront is where it all comes together.

Here we have *synergy*, with local people, and their governments, companies and R&D people all generating the creativity from which come new ideas and products.

### **[3. King SkyFront: initiatives and the future]**

Kawasaki is pioneering a new era of research in the all-important life sciences.

In 2011, one of the earliest research facilities to set up operation in King SkyFront was the Central Institute for Experimental Animals -- or CIEA. Its work is crucial to the development of new pharmaceuticals and regenerative medicine.

<Ryuta Nomura Chairman of the board Chief Executive Officer

Central Institute for Experimental Animals (CIEA)>

“CIEA is part of an extensive scientific network, attracting a lot of visitors. For example, we were the first in the world to develop an immune deficient, humanized NOG mouse. This allows us to use animals to improve the safety of medical technologies developed for humans – something very important in individualizing medicine. One day, I may be able to get a tailor-made medical treatment using a NOG mouse – incorporating my own DNA – in a facility next to the hospital”.

This researcher is working with the CIEA to establish a treatment model for spinal cord injuries using iPS cells.

<Hideyuki Okano, MD, Ph.D.

Professor Dean, Keio University School of Medicine>

“We were first in the world to develop genetically modified marmosets. We hope this developmental technology will find widespread use. This provides a big opportunity for innovation. If we all work together, we can achieve great things. All the input accumulates and fuses together – generating energy, as in nuclear fusion”.

In 2013, Kawasaki Life Science and Environment Research Center -- LiSE was established right next door to the CIEA.

<Nobuhiko Okabe, MD, Ph.D.

Director General Kawasaki City Institute for Public Health>

“There are a lot of researchers here at LiSE, from different places, all rubbing shoulders and communicating – getting ideas, giving ideas. Just being here stimulates innovation. Of course, this kind of thing may not be directly relevant to specific research – but indirectly it can be source of creativity. Think of a balloon, expanding, floating – science draws on imagination, on our dreams. And scientists need communication and interaction. All these things inflate the balloon”.

King SkyFront features a number of other life sciences facilities.

Johnson & Johnson's Tokyo Science Center provides training for healthcare professionals inside and outside of Japan in advanced medical technologies. It offers a safe environment equivalent to a real clinical setting, with state of the art medical devices.

A new comer, the National Institute of Health Sciences -- collaborates with the CIEA and LiSE and other facilities. It aims at development of a system of safety assessments that can contribute to regulatory science and the establishment of international standards -- in addition to contributing to the development of new drugs and medical technologies.

The Innovation Center of NanoMedicine works with universities, research institutions and companies, helping coordinate their efforts and communication in the promising field of nanomedicine.

One company that is part of this initiative is NanoCarrier.

<Ichiro Nakatomi, Ph.D. President and CEO NanoCarrier Co., Ltd.>

“The main thing was how to use nano-engineering for medical purposes. And here solutions are being generated right in front of your eyes”.

A new venture capital startup, NanoCarrier now manufactures the Micelle nanocapsule -- used for drug delivery.

Nanocapsules can get where they are needed inside the body -- for application to say, a cancer or tumor, with reduced chance of side effects.

<Ichiro Nakatomi, Ph.D. President and CEO NanoCarrier Co., Ltd.>

“Very effective medicines may have very strong side effects, with consequent limitations on usage. However, this Micelle nanocapsule offers more effective delivery expanding therapeutic possibilities”.

<Kazunori Kataoka, Ph.D. Professor

Graduate School of Engineering, and Graduate School of Medicine

The University of Tokyo>

“NanoCarrier is another example of a technological melting pot. They have pharmaceutical people and macromolecular, polymer people. It is nonsense to differentiate people who do basic or pure science from people who do applied science. Basic research often yields ideas that can be developed usefully as applications. And sometimes, applications yield insight into basic science. That’s part of the idea of the technological melting pot. Synergy. Openness. Innovation. People in pure science interacting with people in applied science, exchanging ideas, and creating breakthroughs in R&D”.

Fujifilm, with its long history and extensive technology, meeting emerging medical needs is also involved with the Innovation Center of NanoMedicine.

<Yuzo Toda Director FUJIFILM Holdings Corporation

Director Senior Vice President FUJIFILM Corporation>

“Tono-machi is the place for us to show our achievements. We are never satisfied. We keep on developing our technologies and products. And we want to show these things to the world. Tono-machi also showcases the melting pot concept, the idea of what you might call “alloying” technology to create something better. In a real melting pot you get an alloy that you can then use to make jewelry. We take our “alloyed” technologies and make new applications.

When I think of Tono-machi, I think of Dejima, which is the island where Dutch people came to trade in the Edo period.

It became a center for cultural exchange and new technologies, which were the

“seeds” from which modern Japan germinated”.

Here in Kawasaki, Ajinomoto is applying its core amino acid analysis technology to medical care.

Ajinomoto has developed its AminoIndex® diagnostic technology which detects cancer through unbalanced blood amino acid levels.

< Kazuya Onomichi, MBA, Ph.D. Corporate Vice President

General Manager R&D Planning Dept. AJINOMOTO CO., INC.>

“Our amino acid analysis technology is a core technology. We collaborated with a company that is part of our Kawasaki network to develop the CubeCooler® which keeps samples of amino acids at relatively low temperatures stably for long hours. (That’s how the CubeCooler® works.) Thanks to this, we were able to develop our AminoIndex®.

One company, by itself, can do little.

As part of a *community* – bringing a lot of different people together, however -- we really contribute to the world”.

Kawasaki has all the resources needed to support an advanced R&D community, including a state of the art power grid.

Companies here can work together, taking advantage of their different fields of expertise, to create innovative solutions and sharing surplus resources.

At the leading edge of environmental technology with a hydrogen network in the works,

King SkyFront is a very “smart” industrial zone, offering a virtuous circle of resources, processes and products.

It is 100 years since JFE Steel, Japan’s leading steel company set up operations in Kawasaki.

< Yasutsugu Ogura President and representative director

JFE Galvanizing & Coating Co., Ltd.>

(At the time this video was filmed, Mr. Ogura was Executive Vice President of JFE Steel Corporation)

“For example, when we think about recycling resources, we have to take in account blast furnace slag from our production process.

This slag goes to DC – a cement company. Waste gas goes to a chemical company. In this way, we recycle resources using local companies.

So we recycle directly – we don't need to use recycling companies, which is obviously different from usual. Kawasaki Eco Town is very, very different. Of course, the city does have recycling companies. Other cities don't offer the advantage of direct recycling”.

Each company and facility is a melting pot. Each generates innovation, which is added to the whole.

So the entire city becomes a giant melting pot of technological creativity.

This synergy drives progress.

The innovation generated in Kawasaki benefits the entire world.

*Monozukuri....*

And people power....

That is the key to Kawasaki's ascendancy.

#### **【4. Ending】**

Drawing on the best of the past to create a shining future.....

Knowhow created here flies worldwide.

At King SkyFront, exciting research is underway that will change people's lives.

Join us at King SkyFront.