

## Japan

**High performance multifunctional surface treatment that protects an exciting future.**

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Yasutaka Hasegawa, President of MC Systems Co., Ltd

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As a leading company in surface treatment, MC Systems has all the necessary facilities for in-house production, including utilizing chemicals, the development of industrial science technologies like process and equipment design, and testing and evaluation of those technologies. We talked with president Yasutaka Hasegawa to learn more about how they're adapting to the new materials being used in the automotive industry, their contribution to the switch to EV, as well as the other fields their products are being applied to, including aerospace.

**In recent years, Japan has seen the rise of regional competitors who have replicated the Japanese *monozukuri* philosophy. Yet, we still see that Japanese companies maintain a high global market shares in certain niche high technological fields. What do you believe are some of the competitive advantages of Japanese firms which allow them to maintain this market share in such fields?**

Chinese and Korean manufacturers have grown in terms of their technical capability and, looking back, electrical appliances are a great example of how Japanese were replaced by those emerging countries, especially for home appliances. The global society is aware of the Japanese 'defeat' in the home appliance field, like washing machines. Before, Toshiba, Sony and Panasonic were focusing on those mass-produced items, but it became apparent that competing with those Chinese and Korean companies in terms of pricing, was going to be difficult. As a result, Japanese companies attempted to move into other areas, such as LCD panels and plasma TVs, but that has not been successful anymore.

The strength of Japanese companies is in innovation – the parts that make up the iPhone is full of Japanese innovations. In terms of the automotive industry, it takes about 4,000 parts and components to assemble a car and high quality is required for each part, which Japanese companies excel at. Quality is what is required, as there are more quality conscious consumers, even in China; people are more concerned about the standards provided by Japanese companies.

**In the next 15 years, one out of three Japanese people will be over the age of 65, which has serious repercussions for the manufacturing sector. The first is a labour shortage and the second is a shrinking of the domestic market. What has and will be the impact of this demographic shift at MC Systems?**

To cater to the shortage of manpower, the answer would be digital transformation. Due to COVID, we experienced the risk of having many workers assembled in one place. We have about 3,000 employees across the whole group, and roughly 100 of them contracted the disease. It's important to mitigate the risk of having multiple people in the same location and to do this, digital transformation would be a great option.

Our focus is on the global market. The domestic market may shrink, but we have the global market, and we have many locations across the world. Our products are mainly used in infrastructure and mobility, and there is an increase in demand within both fields, so it's important for us to meet these needs and cater to them by developing new products.

**There is a big change in the automotive industry with lighter materials being utilised. As a surface treatment firm, how are you being impacted by the change in materials and how are you responding to this new demand?**

There is a trend for lightweight materials, such as plastic, however there is a strength issue – our focus is metal surface treatment. There is more of a need for hybrid plastic and metal materials, and we are expecting a growth in demand for our products.

There is a need for aluminium and other similar metals, like super hard alloys, but the combination between new and already existing metals means there is more rust, increasing the demand for surface treatment. Hot stamps, which are a thin metal alloy sheet, break when rusted, so we are trying to replace it with Geomet.

With the electrification of cars, lithium-ion batteries are being used. Before, waterproofness was not a major issue, however with lithium-ion, you need to ensure water does not leak through the bolt. To solve this issue, we are currently working with one of car companies, who are using our surface treatment technology to make the bolt more tight-fitting to prevent water from entering. There are many other opportunities arising due to the electrification of cars. Electricity also causes damage to the metal itself, through surface treatment this can be avoided.

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**In your president's message, you mention new surface treatment opportunities in other fields, such as chemicals and medicine. What changes do you expect in these fields and how do you plan on capitalising on them?**

We are diversifying into new fields, for example, medical devices, and companies are now contemplating on using our products to avert rusting and prevent electricity from running through the device. The space project are making lunar cruisers for moon operations, which requires heat and radiation resistance, so they are utilising our surface treatment. Our major focus is on transportation, especially with the high-speed train – Maglev - where our products are already being utilised, specifically the electricity insulation for the vehicle.

**How do you guarantee the durability of your coatings despite varied and difficult operational environments?**

Our philosophy is based on total quality management, and this is done through continuous and incessive improvement of the manufacturing. We find an issue and we improve it during the next production cycle, with the idea being we “make better things tomorrow than today”. This is not difficult, but it is very important and that is the key to maintaining our quality – I feel Chinese and Korean companies are unable to do this.

There are two approaches to maintaining good quality: one is conducting the incessive improvement that I just discussed onsite and in the manufacturing process itself; the other is the development and designing of the chemicals, regardless of location, in a simple manner that can be done by anyone within the company.

**Former Prime Minister Suga mandated that by 2050, Japan would become a carbon-neutral society. What focus are you putting on environmentally friendly coatings and products?**

In European countries, the regulation for chemical substances has a list of chemicals which are either banned or could potentially be banned in the future. Once we know if a chemical will be banned, we can make compounds without it, while maintaining the same quality and working together with our partners to comply with the regulations.

We have been focusing on this issue through the last year – we are replacing some of the substances in our e-Torquer product – explaining to our customers both domestic and abroad about the changes that we are making.

**What role does co-creation and collaboration play in your business model? Are currently looking for new partners in Japan or overseas?**

We have been working with our overseas competitors in markets like the US and Germany. We are actively finding new opportunities to collaborate, even if we have similar products with a potential partner.

**Are there any key objectives that you like to achieve as President?**

As a mid-term goal, our sales target is to hit 20 billion yen globally by 2025, improving on the 12.5 billion yen we currently achieve annually.

Furthermore, our major focus is on the US and Chinese markets. In the US, our market share is still low, so we are looking to actively promote and increase our sales channels.

**Imagine we come back on the last day of your Presidency: what dreams would you have like to achieve during your tenure?**

I want to make MC Systems the world's best surface treatment company. In this industry, we want to be number one.

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The advertisement features a collection of industrial jewelry components. On the left, there are several circular rings and washers of various sizes, some with holes. On the right, there are several cylindrical rods and pins, some with threaded ends. The components are arranged on a light-colored surface against a white background.