

From semiconductors to life sciences – building a global business out of Japan

Interview

The President and CEO of JSR Corporation discusses the company's plans to grow a global healthcare franchise building from his learnings in the semiconductor industry.

JSR Corporation is a global research-oriented company built on about 60 years of performance materials expertise. It began research in the life sciences field more than 30 years ago and provides materials that contribute to the manufacturing process of biopharmaceuticals, life science research applications, in vitro diagnostics, and medical devices. Recently the company has taken another step forward with its life sciences business: it has made several

acquisitions, notably in the biotech field, to combine process development and high-quality manufacturing capabilities with mammalian cell-line generation technologies.

Well known in the semiconductor industry, the company is in many ways a pioneer in Japan and is being closely observed by other would-be entrants looking to break into the biopharma sector.

As part of our series on the evolving healthcare landscape in Japan, JSR President and CEO Nobu Koshiba talks to McKinsey's Michele Ravicioni and Ryosuke Yamamoto about strategy, opportunities and plans for expansion in healthcare.

McKinsey: *JSR is a perfect example of diversification to life sciences by a high performing and innovative industrial company. What is JSR doing in healthcare, and why healthcare specifically?*

Nobu Koshiba: We have made a series of acquisitions. One is a company called MBL. MBL develops, manufactures, and markets a broad portfolio of antigens, antibodies, genomic analyses, and diagnostic reagents for in-vitro research and diagnosis applications in autoimmune, oncology, immunology, and neuroscience. Then we bought KBI Biopharma, a well-known biopharma contract development and manufacturing organization (CDMO) based in North Carolina, and recently we acquired Selexis, a global leader in mammalian cell-line development.

It may appear that we are going in two different directions: on the one hand, *in vitro* diagnostic and research; on the other hand, the biopharma value chain. Right now our main driver is biopharma. For us to be successful with a consumable business in biopharma, we needed a place to validate the technology. We decided not to host the validation internally because

this would take a long time and we don't have the right talent—so, we were looking for a small company that uses the process. We really liked KBI, which is the difference in approach from the semiconductor business of ours.

When I look at the biopharma industry, I see many similarities with the semiconductor industry: they're both long term (semiconductor needs six years but the biopharma business something like nine years); they're both quality conscious; and they really look for alternative suppliers so customers are welcoming to new companies. That's why we bought KBI instead of having our own validation.

So, thanks to KBI, we are launching this consumable business quite successfully. We have a really good position right now: mainly in the United States and Europe; our scope is always global. Wherever we have an opportunity we just go. Then we needed good cell-line technology to make KBI's business itself successful in the biopharma market. Therefore, after we bought KBI, we were looking for an opportunity to acquire cell-line technology. This we found in Selexis in Switzerland.

Our business model is consumables and the CDMO business. The difference between the life science business and the semiconductor business is our validation facility—for semiconductor it's a cost center. But with KBI plus Selexis, they not only validate your technology and product, but also generate revenue, so I like the business. In FY 2016, we became cash-flow positive, and that's a great fact.

McKinsey: *There are two ways to building your business: one is to set out with a clear master plan and execute; the other is to stay close to the market and find the right opportunities at the right time. One is more strategy driven and the other more opportunity driven. What is your mind-set and what is your attitude toward building the business?*

Nobu Koshiba: Coming back to our competencies, why are we going into life sciences? Number one, I see similarities, and number two, we can use our polymer technology. Antibodies are large molecules; we know how to handle large molecules, so we can really make use of that technology. Also, our soft core competence is quality. We already deal with Intel, Samsung, and TSMC. Our quality system is managed to satisfy the most stringent quality criteria. And we know how to run a lean operation better than the average life sciences company out there.

Hence, we are opportunity driven in a way, but are clear on which criteria to apply when we assess new opportunities, organic or inorganic.

McKinsey: *One thing that many new entrants in healthcare struggle with is the long product development cycle with its cash-flow and risk. Did you face some of this and how do you deal with your investors and CFO?*

Nobu Koshiba: Fortunately, when we started, the market was not yet heated. So KBI's EBITDA multiple was reasonable. At that time, bio/small bio companies were very expensive; whereas in CDMO, business was not that expensive. So, therefore, whether we were going to grow internally or we would simply buy talent, technology, and the business, it was very important

for us to overcome that nine-year lead time—acquisitions did make sense to us.

McKinsey: *You mentioned you are building a global business. That's an added complexity for new entrants in Japan. What is your point of view?*

Nobu Koshiba: Well, healthcare and life sciences are a global market and the United States and Europe really are the market, especially for biopharma. Yes, of course, Korea, Taiwan, even China—they're all in the market but the technology leaders are the United States and Europe. That's another similarity with the semiconductors industry and it gives us a very good opportunity. I myself was in the US for 12 years.

McKinsey: *One of the things companies struggle with is post-merger integration and performance management. What's your approach?*

Nobu Koshiba: We send the young engineers with greater motivation and modern expertise from Japan. The management of our acquired entities remains US management. We found that management with semiconductor experience work very well in biopharma. Our semiconductor senior management in the US took the lead effectively to get the new entities aligned with our global strategy. This is working quite well.

We do thorough periodic reviews for life sciences. I listen to them, ask what they are doing and what they would like to develop. I think they are happy we have a clear vision for the business and are happy to have resources to invest for the future. We are expanding in North Carolina and Boulder, Colorado, and also we are expanding in Europe.

McKinsey: *JSR is following an inorganic approach to growing in life sciences. How do you make a decision when it comes to acquisitions?*

Nobu Koshiba: We do have a blueprint and we assess how the particular target helps us further our plans. And we spend time upfront to understand the people and culture. Our experience is that as a buyer we can bring managerial discipline, governance, a more disciplined approach to resource allocation but we cannot change the culture overnight. It is important to have a base level of compatibility from the start.

McKinsey: *How do you ensure knowledge transfer with the companies you acquire?*

Nobu Koshiba: This is very important but it takes time and it is important to collaborate and build trust first, and then it happens. We need to contribute before we can “extract.” So we send our best engineers to collaborate on joint projects, we build joint project teams, and the exchange happens naturally.

McKinsey: *What is your vision for the future? Where do you want to take it?*

Nobu Koshiba: Our services business has the potential to be a \$500-600 million business in 2020 or 2022. For a \$4 billion revenue company like JSR it must achieve the scale of \$1-1.5 billion to be a meaningful pillar. So we continue to invest in new opportunities. We just built a joint research lab with Keio University School of Medicine and Keio Univer-

sity Hospital. They have wonderful technologies for precision medicine, microbiome, regenerative medicine and many others. So the next step is to provide some specialized services to pharma companies, perhaps in drug discovery or therapy.

McKinsey: *There is a lot of interest from many Japanese companies to enter healthcare. What is your perspective on the ability of the Japanese industrial sector to really become globally competitive and make a difference in health care?*

Nobu Koshiba: Back then in the early 1990s we transformed our company from petrochemicals to fine chemicals. At that time, every other company was also looking for the same market. Not everybody was successful. We shifted from mass production to customization in chemicals. Also, not only did we diversify the business but we globalized simultaneously. Many of the Japanese went after the Asian market; we went after the US and European market. Now in healthcare, and with the digital revolution happening in parallel, we need to think in a new way. I do not have a clear answer to your question, but I believe there are learnings from our history that apply.

For example, this is the era of personalization in healthcare. This industry is really taking a trajectory from mass to customized and now personalized. On the one hand, we definitely are going after the customization market, but on the other hand, we also have to understand how we can really monetize technology in this era of personalization—meaning that it's not only materials but data, algorithms.

McKinsey: *Let's talk about data.*

Nobu Koshiba: This is a priority and a challenge for us. We have access to companies with lots of data but don't have data scientists yet. We are growing them in house, in part by seeding several high risk projects with the purpose of learning, and we are also pursuing acquisitions. We recently invested into a machine learning company in Austin, Texas, and are sending our engineers there on six months rotations to collaborate and learn.

McKinsey: *Partnering is more and more a core capability of leading companies, especially in healthcare. Many Japanese companies with aspirations in this market still consider themselves manufacturers at heart. What is your perspective?*

Nobu Koshiba: I am still new to life sciences but I see opportunities to combine materials or chemicals with data in microbiome, or digital and materials in devices. For example, we are evaluating digital patches to monitor various functions and parameters to learn how to combine smart materials technology with data. We are partnering with several companies in 3D printing to learn the technology but also think about new business models. We bought one company in Japan called Lexi. They have approved 3D software to support doctors' operations and we would like to combine a 3D printer within a Lexi context to support back surgery and disk replacements. We are practising, trying out a few different approaches to learn in an agile way.

McKinsey: *In this learning process, how do you manage success versus failure?*

Nobu Koshiba: We are not a large company and we have a simple system to monitor all new projects. The CEO office is directly involved, and so is corporate planning. Once every three years they have a big job of mid-term strategic planning to do and for the rest of the time they are really focused on driving us forward through all the projects I mentioned.

McKinsey: *You were on the West Coast for many years. How does that influence your approach?*

Nobu Koshiba: We plant many seeds, fund many small projects at risk, fail quickly and reward for risk taking. Some companies agonize over a \$1 million investment even though it is a tiny fraction of their budget. We do not hesitate and do it frequently. We then select and scale only the more promising projects and we do not hesitate to stop what does not yield results.

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