



The RIMS Strategic and Enterprise Risk Center presents:

JongKi Ryu

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In Pursuit of Strategic Gains: ERM in South Korea

By Russ Banham



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As a business development executive for more than 20 years at IBM Korea, JongKi Ryu assists clients like automotive giant Hyundai Motor Group, semiconductor chip supplier SK Hynix and the large petroleum and refinery company S-OIL to implement efficient risk management systems. Ryu is also an adjunct professor at the Department of Civil and Environmental Engineering at the Ulsan National Institute of Science and Technology (UNIST). He also has the distinction of being the first in Korea to earn the RIMS-CRMP designation.

In addition to selling IBM computer hardware, middleware, and software, IBM Korea provides consulting services to clients. Ryu, who works in the consulting services organization, describes his role and the services he has provided to one of his major clients, S-OIL, founded in 1976 as the Korea-Iran Petroleum Company. The publicly traded company, a producer of petroleum, petrochemical, and lubricant products, is primarily owned by oil & gas giant Saudi Aramco, one of the world's largest businesses by revenue.

Ryu requested that the interview be conducted via a series of emails. His responses have been edited for clarity and concision.

RIMS: Let's begin with IBM's approach to risk management, insofar as when the ERM program was launched and how it has evolved through the years.

Ryu: IBM has been managing risk since its founding in 1911. In 2006, we created an ERM function to help employees become more "risk aware." Our philosophy is that risk management should be centered in the businesses, which need to understand risk and make trade-offs in pursuit of strategic gains. Risk management is the responsibility of every IBM employee. We have risk leaders throughout the company; it's not as if we brought a lot of people together in a new department. Their role is to support senior

managers, and risk leaders—and really all employees—with risk management resources, education, and training. We have about 30 online risk management courses available to all employees.

RIMS: That's remarkable. Can you provide an example of one of those programs?

Ryu: The one that comes to mind first is our gamification program, probably because people find it fun and engaging. It's basically a simulation game, in which, say, you're a business leader who's developing a customer proposal and you need to consider different risks. The game teaches you how to account for them, mitigate them, and control them.

RIMS: That does sound like fun and proactive, too, since risk management historically has been more about defense than offense. Is it fair to say that risk management is becoming more of a strategically-driven offensive play at both IBM Korea and its client companies?

Ryu: Some companies still focus on value protection, and that's critical. I don't want to downplay the importance of strong internal procedures, audit teams, and compliance officers. But at the enterprise level we're spending more time on the strategic side, engaging with risk leaders and ensuring they're thinking about things like technology shifts, industry disruptions, climate change, and the risks of mergers and acquisitions. The more fun part of our job is value creation. We want risk management to be ingrained in the fabric of the business, not a separate check-the-box process.

RIMS: What's wrong with a 'check-the-box' process?

Ryu: It's a recipe for failure. Many companies compile this long list of risks and try to solve them all at once – 'boiling the ocean,' if you will. Like a well-prepared meal at a fine restaurant, ERM is best taken one course at a time, not mixed up together on a single, giant plate.

RIMS: Let's discuss your work on behalf of S-OIL's ERM program. IBM Korea has advised the petroleum and refinery company since its beginnings and continues to provide advice, in your case on ERM. How has its risk management practices and systems evolved over the years?

Ryu: S-OIL has been utilizing highly advanced risk management systems since 2008 to respond to all risk factors. In addition to an ERM program governing company-wide risk management, the company has implemented an Emergency Control Program to ensure a swift and efficient response to any emergencies, an Early Warning System for enhanced risk monitoring and prevention, and an Internal Accounting Management System to ensure effective internal controls. An ERM Committee composed of top management leaders, including the CEO, also is in place. The committee sets the general directions for risk management and supervises the status of ERM on a regular basis.

RIMS: You mentioned earlier your belief that every employee is a risk owner. Is this philosophy in place at S-OIL?

Ryu: Yes. We've worked with them to develop an integrated risk management governance system, in which employees are tasked with specific risk management responsibilities. The process of identifying, evaluating, monitoring, and responding risks through designating risk owners is managed on a systematic basis. The ERM Committee reviews their activities and provides instructions on the proper response.

RIMS: Excellent. What other activities is the ERM committee engaged in?

Ryu: The committee also selects the major risk issues on an annual basis and tracks their status. For example, a serious mid-to-long-term risk currently under analysis is the aging and retirement of highly experienced employees. The percentage of employees 50 years of age and older doubled from 12% in 2014 to 24% in 2019. Since the start of the COVID-19 pandemic in early 2020, other veteran employees have retired.

RIMS: How is the company reducing or acting on this risk?

Ryu: Several tactics have been pursued. For example, a new HR infrastructure was formed to manage job proficiency levels. The required knowledge needed to perform each role at different organizational levels is now specified. A fast-track training process for high performers also has been developed, in addition to a career development program. Employees assess the competencies they need to advance to the next job grade. The company offers training in these regards. Another program was introduced to rehire high-performing employees after they reach the mandatory retirement age to pass on their tacit knowledge to younger employees.

RIMS: Let's also discuss a topic that is on the risk radars of all large companies—climate change. In 2019, South Korea was hit by seven typhoons, the most in a 60-year period. If global warming persists, studies suggest a higher likelihood of super-strong typhoons occurring, due to a continuing rise in sea surface temperatures. What is S-OIL doing to combat or prepare for climate risk?

Ryu: It's a great question. Several strategies have been put forth in the risk response manual to prepare for future typhoons and heavy rain events. For example, new facilities have been designed to continue the production at the refinery in Ulsan on an uninterrupted basis. The refinery's sewage discharge system also has been overhauled to accommodate this possibility. And an additional mooring facility for crude oil tankers is being built to reduce (shipment) delays caused by a typhoon or other heavy precipitation event. The facility will come online later in 2021.

RIMS: You mentioned S-OIL's sole refinery in Ulsan, an industrial city frankly blanketed in fine dust particulate. According to the 2019 World Air Quality Report released by IQAir, the concentration of ultra-fine dust in South Korea was the highest among member countries of the OECD (Organization for Economic Cooperation and Development). What is being done to reduce fine dust levels?

Ryu: Ultra-fine dust is a national issue lowering the quality of life in Korea, but more recent statistics by IQAir suggest improvements in air quality. Fine dust levels are down 19% across South Korean cities in 2020, compared to the previous year. This is due in part to government-mandated targets to reduce fine dust emissions by 36% in 2022 from 2014 levels and 40% in Ulsan alone. S-OIL takes this risk very seriously and emits fine dust at levels lower than legally required.

RIMS: How is the company mitigating this environmental hazard?

Ryu: For one thing, S-OIL has signed a voluntary agreement with Ulsan City and the Ministry of Environment to reduce fine dust, part of its commitment to local community expectations and to preemptively respond to a tightening of regulations in the future. In this regard, the company is installing a second Ultra-Low NOx Burner at the refinery. (Burners are used in refineries to provide energy through combustion.) The problem with burners is their NOx (nitrogen oxide) emissions, the main culprit in fine dust. An Ultra-Low NOx Burner significantly reduces these emissions.

RIMS: Thank you for collaborating with us in providing readers with such fascinating insights into your work on behalf of IBM Korea and especially for your client, S-OIL.

Ryu: Thank you for giving me this opportunity. ■

Learn more about JongKi Ryu's recent achievement as the first RIMS-CRMP holder in Korea on [RIMS-CRMP Stories](#).

Russ Banham is a Pulitzer-nominated financial journalist and best-selling author.