

hakkai Inc.:

Internationalization of a Japanese Microfabrication SME Pioneer

Introduction

hakkai Inc. (hereafter *hakkai*), a Japanese precision mold manufacturing company located in Niigata Prefecture, derives its name from the sacred mountain Hakkaisan in the Snow Country area¹. As a small enterprise in the business-to-business (B2B) manufacturing industry serving major clients like Panasonic, Casio, and Canon, *hakkai* has navigated the fluctuations of Japan's manufacturing economy. Through continuous innovation, the company has passed its entrepreneurial spirit from one generation to the next. The company has also benefited from depreciation of the Japanese yen since 2022, had positively impacted *hakkai*'s revenue, with which has helped to stimulate an annual growth rate of approximately 10%, particularly in its export volume and thus also improved revenue flows.

In October 2025, as Hakkaisan Mountain blazed with vibrant autumn hues of crimson, gold, and amber, Akihiko Seki, president of *hakkai*, reflected on the organization's global strategic direction for the coming decade. Contemplating the rapidly changing pace of international business, he considered *hakkai*'s future trajectory in competing globally in microfabrication.

Japanese Manufacturing and Microfabrication

The Japanese philosophy of *Monozukuri*² is known for its manufacturing innovations and contributions to

¹ The region where *hakkai* is located is known as "Snow Country" and inspired Yasunari Kawabata's novel, *Snow Country*, for which he was awarded the Nobel Prize in Literature in 1968. The area features a thematic museum in Echigo-Yuzawa dedicated to the novel and its cultural significance.

² *Monozukuri* literally means "making things" or "manufacturing," representing the spirit and philosophy behind Japan's manufacturing practices.

global operational management knowledge, including just-in-time (JIT), *Kaizen*³, and *Kanban*⁴. Manufacturing was the backbone of Japan's economy, playing a significant role in its global rise post-World War II. While Japanese manufacturing has declined in recent decades due to China's rise as a global production powerhouse, this impact has been seen mostly in "products" rather than "materials" or "parts." In Japan's approximately 70 trillion JPY manufacturing export volume, the ratio of these three categories is 2:1:1. Though the prevalence of "Made in Japan" products has decreased, Japan has maintained global competitiveness in manufacturing high quality "materials" and "parts," which constitute half of its export value⁵.

Particularly in precision components "parts" manufacturing, Japan has sustained a strong competitive advantage. Companies like Panasonic and Sony have revitalized their businesses through high-demand automotive parts like image sensors for mobile devices. Increasing demand for the Internet of Things (IoT) and digitalization have further driven the need for high-precision processing, known as microfabrication or micro-additive manufacturing. The majority of these technologies are held by small- and medium-sized enterprises (SMEs)—companies with fewer than 200 employees or capital of 300 million JPY or less. Japan's sustainable development model relies heavily on SMEs, which comprise 99.7% of the country's 4.2 million companies, employ 69% of the workforce, and generate 53% of the added value in the manufacturing sector⁶.

Microfabrication, the process of creating extremely small structures—typically at the micrometer scale or smaller—is widely used in electronics, micro-electro-mechanical systems (MEMS), and nanotechnology. It uses such techniques as photolithography, etching, and deposition to fabricate intricate patterns on materials like silicon. This process allows for the manufacturing of components between 0.001 mm and 1 mm in size, a scale previously considered unachievable. These microscopic parts, invisible to the naked eye, require advanced precision technology to handle and manufacture effectively.

Japanese microfabrication is distinguished by its exceptional precision, driven by cutting-edge technology, meticulous craftsmanship, and rigorous quality control. With continuous improvement (*Kaizen*) and a deep-rooted *Monozukuri* philosophy, Japanese companies maintain global leadership in microfabrication, integrating advanced technology with cultural dedication to quality.

³ *Kaizen* (改善) literally means "continuous improvement." It is a philosophy and practice that focuses on making small, incremental changes over time to enhance processes, products, or services.

⁴ Originating from the Toyota Production System, *Kanban* helps teams visualize their work, limit work-in-progress, and optimize the flow of tasks through a process.

⁵ See Katayama, K. (2017). Why is Japan so strong in "parts"? (in Japanese) Nikkei XTech. May 29th, accessed April 20th 2024, available at <https://xtech.nikkei.com/dm/atcl/column/15/051900112/00001/>. 1 USD = 111.43 JPY at the mid-market price on March 31st, 2017, the fiscal year closing date of the year in which the article was published.

⁶ Ibid.

Hakkai: A Leader in Microfabrication

Headquartered in Minami Uonuma, a rural Niigata region in Japan, *hakkai* has capital of 57 million JPY and 180 employees in Japan. The company is named after the sacred mountain Hakkaisan (八海山, literally meaning “Mountain of Eight Seas”), one of Japan’s renowned “Three Mountains of Echigo”—a landmark that also inspired the name of the famous Japanese sake Hakkaisan. Rooted locally in Japan, *hakkai* operates globally, with three overseas subsidiaries in Suzhou (China), Ayutthaya (Thailand), and Monterrey (Mexico); an additional 320 employees worldwide; and net global sales of 4.7 billion JPY in 2023. The company competes technologically and globally with other Japanese SMEs, such as Sanko Kasei, Jyukun Kogyo, and CAM, though the specific competition varies by product segment.

hakkai is among the globally competitive Japanese SMEs excelling in microfabrication, specializing in micro-molding technology, precision tooling, and in-house-built equipment (see Appendix 1). The company produces components for a variety of industries, including watches, home appliances, automotive parts, cameras, housing equipment, and industrial machinery (see Appendix 2). Its core business activities include: designing and manufacturing precision plastic molds, molding using engineering plastics, winding processing and assembly of various types of coils, and developing automated machinery and precision jigs and tools.

hakkai is particularly known for its expertise in ultra-compact, precise resin molding. The company manufactures resin snowflake molds smaller than a grain of rice using wire electrical discharge machining (EDM)⁷ with a wire diameter of 0.02 mm—significantly finer than the standard 0.1 to 0.3 mm. This ultra-fine precision places *hakkai* among the few suppliers capable of achieving such accuracy in microfabrication, as the majority of processing suppliers who sell fine wire EDM offer products sized 0.03 mm and larger.⁸

Early-Stage Evolution of *hakkai*

The success of *hakkai*’s ultra-compact and precise resin molding technology was not assured from the outset. Over its history, the company’s entrepreneurial journey faced multiple crises (see Appendix 3). Founded in 1957 by Junji Seki as Seki Seisakusho (Manufacturing Company in Japanese), *hakkai*’s origins trace back to a small plastic compression molding factory in Shinagawa, Tokyo. By the 1960s, the company had expanded its production line for audio and communication equipment parts and ventured into engineering plastics and injection molding (see a historical timeline in Appendix 4). In 1967, to reduce hiring costs and combat high

⁷ Wire EDM is a manufacturing process that uses a thin wire as an electrode to cut conductive materials with high precision.

⁸ See Katayama, K. (2018). Molds made in-house with 0.02 mm wire and 0.03 mm end mill (in Japanese). Nikkei XTech. July 17th, accessed April 20th 2024, available at <https://xtech.nikkei.com/dm/atcl/column/15/051900112/00057/>

land prices in Tokyo, *hakkai* relocated to MinamiUonuma City, Niigata, where it was renamed Hakkai Resin Industry.

With a mere 2 million JPY⁹, the company embraced a philosophy of resilience and precision (see Appendix 5). Throughout the 1970s, *hakkai* continued investing in plastic part modeling, achieving significant market penetration. In 1972, it advanced into the ultra-precision electronic parts market. However, the oil crisis soon placed the company at risk of bankruptcy due to soaring electricity and material costs. In response, foreseeing the rise of electronic equipment, Junji Seki strategically specialized in small item manufacturing in 1974.

In 1980, *hakkai* entered the steel molding business by founding Hakkai Mold Industry, focusing on superior precision in mold manufacturing. A new factory was constructed in 1984 to meet growing demand. In the same year, *hakkai* undertook a novel attempt to design and implement automated machines for in-house production units, following the emerging trend of product miniaturization in the global market. Despite the 1985 Plaza Accord, which impacted Japanese exports due to yen appreciation, *hakkai* sustained growth by focusing on high-value, high-quality products. In 1988, the company directed significant resources toward producing compact precision products¹⁰.

hakkai's reputation continued to rise. In 1990, it built an additional mold processing plant, and in 1992, it merged its divisions into Hakkai Creates Co. Ltd. Despite the economic stagnation of the 1990s, *hakkai* implemented productivity-enhancing strategies, including cost reductions, quality improvements, and a computerized production management system in 1997. By 2000, its revenue had reached about 2 billion JPY, with such customers as Sony, Sanyo, Matsushita, Canon, Seiko, and Casio recognizing its excellence in quality and reliability¹¹.

***hakkai* in the Early 21st Century**

In 1998, Akihiko Seki, son of founder Junji Seki, graduated from the Master of Business Administration (MBA) program at the International University of Japan—Japan's first English-only graduate university—and joined Hakkai Inc. to support his father's work. In 2001, after dedicating 45 years to the family business, Junji decided to retire, passing the leadership baton to Akihiko. Prior to this transition, Akihiko had gained experience working in Japanese multinationals, specifically at a Mitsui company in the marketing sector, where he also received manufacturing training.

⁹ The exchange rate in 1967 was 1 USD = 360 JPY, according to the Pacific Exchange Rate Service (<https://fx.sauder.ubc.ca/etc/USDpages.pdf>).

¹⁰ See Chandra, P. and Rajasekera, J. (2019). Hakkai creates China (A). Indian Institute of Management and International University of Japan Case.

¹¹ Ibid.

To begin, Akihiko oversaw *hakkai*'s construction of a fully automated factory capable of producing over 6,000 precision plastic parts per hour. One of Akihiko's key strategic decisions upon assuming leadership was to restructure the company by separating the manufacturing division, establishing it as Atex Co. This allowed *hakkai* to focus on its core competencies—*bisai* (microfabrication) and mold production—areas he identified as future competitive advantages. Akihiko was also concerned about *hakkai*'s heavy reliance on a small number of large customers.

Traditional Japanese management practices, particularly the *keiretsu* structure¹², often result in SMEs forming strong dependencies on single large clients, such as Mitsui, Mitsubishi, or Sumitomo. While this model reduces marketing costs, it also poses a significant risk due to over-reliance on one client. Leveraging his marketing experience and MBA education, Akihiko implemented a diversification strategy, ensuring that no single customer accounted for more than 25% of *hakkai*'s revenue. This policy allowed *hakkai* to develop an independent management structure free from the financial interlocking and shareholding constraints of the *keiretsu* system.

Another strategic movement under Akihiko's leadership involved achieving International Organization for Standardization (ISO) certifications. In 2003, *hakkai* obtained ISO9001 certification, demonstrating its adherence to international quality standards and reinforcing its reputation for reliability. In 2007, the company further secured ISO14001 certification for environmental management systems (EMSs), reflecting its commitment to sustainability and preserving the natural beauty of the Hakkaisan region. In recognition of these efforts, *hakkai* was honored by Japan's Small and Medium Enterprise Agency in 2008 as one of "300 vibrant small and medium-sized manufacturing companies."

With the acceleration of digitalization and increasing dynamism in technology-intensive industries, Akihiko replaced the traditional Plan-Do-Check-Act (PDCA) management cycle with a more agile Analyze-Decide-Act (ADA) model. This shift enabled *hakkai* to respond more swiftly to market demands. As an entrepreneur and second-generation leader, Akihiko emphasized the importance of rapid analysis, decision-making, and execution in today's volatile, uncertain, complex, and ambiguous (VUCA) environment.

Hakkai's International Adventures

A landmark strategic move under Akihiko Seki's leadership was the global expansion of *hakkai* in the 21st century. The company had remained largely focused on the domestic market until 2004. At that time, *hakkai*

¹² The *keiretsu* is a unique and influential business structure in Japan, referring to a network of interlinked companies, including manufacturers, suppliers, distributors, and sometimes financiers, that work closely together and often hold small equity stakes in one another. For more about the evolution of Japanese management and practices, see Zhang-Zhang, Y. and Kikkawa, T. (2023). *People-centric innovation ecosystem: Japanese management and practices*. Cambridge: Cambridge University Press.

was still a Japan-based operation, with sales of 2.2 billion JPY, a compound annual growth rate (CAGR) of 6.2%, and 120 employees. Twenty years later, *hakkai* had more than doubled its sales to 4.7 billion JPY, with a CAGR of 8.3% and 500 employees. This growth was significantly driven by the company's globalization efforts, including establishing manufacturing bases in Thailand (2004~), China (2011~), the Philippines (2014~2020), and Mexico (2015~; see Appendix 6).

With the Japanese manufacturing boom of the 1980s and its subsequent stabilization in the 1990s, *hakkai* experienced an average CAGR of 11.2% from 1967 to 2004. Growth, however, slowed to 6.4% in the latter part of this period, reflecting Japan's economic stagnation. The 2004 Niigata earthquake was a pivotal event that accelerated *hakkai*'s internationalization, as it underscored the risk of relying on a single domestic manufacturing base. Officially termed 'The Mid Niigata Prefecture Earthquake in 2004' by the Japan Meteorological Agency, the 6.6-magnitude quake struck on October 23, severely disrupting *hakkai*'s production due to its manufacturing plant's location in the Muikamachi Fault Zone, close to where the first quake hit (see Appendix 7).

Recognizing the need for diversification, *hakkai* established its first overseas manufacturing facility in Hi-Tech Industrial Estate, Ayutthaya, Thailand, in 2004 (operational in 2005) with capital of 215 million Thai Baht¹³. At the time, 40% to 50% of foreign investments in Thailand were from Japanese corporations, and Thailand offered attractive fiscal conditions, including tax exemptions (e.g., up to eight years of corporate tax exemption and exemption from import duties on machinery, depending on the zone)¹⁴. Additionally, the local mold-making industry was underdeveloped, presenting *hakkai* with a strong competitive advantage. While the Thai subsidiary became well-established, a 2011 flood in the local area reinforced the importance of geographic diversification for risk mitigation. Though the business focus of *hakkai* Thailand is on precision plastic mold design and manufacturing, engineering plastic injection molding, and component production for industrial goods, the Thai subsidiary also plays a key role in *hakkai*'s global operations, especially in the role of Southeast Asia operations as an export base.

hakkai's second international expansion took place in China in 2011. Although China had become the world's second-largest economy, the macro environment was challenging for Japanese investors due to heightened anti-Japanese sentiment. Unlike in Thailand, where Japanese corporate networks facilitated investment, Akihiko had no pre-existing clients in China, although key Japanese clients had set up manufacturing in China and sought reliable local Japanese-quality suppliers. Identifying this as a significant opportunity due to the

¹³ The exchange rate on July 1st, 2004, was: 1 USD = 40.87 THB, according to www.exchangerates.org.

¹⁴ See JETRO (2006). East Asia economic integration and the roles of JETRO, MOFA. Available at <https://www.mofa.go.jp/region/asia-paci/cambodia/workshop0609/attach5.pdf>, and JETRO (2000). Comparison of investment-related costs in major cities and regions of Asia (in Japanese). Available at https://www.jetro.go.jp/ext_images/jfile/report/07000674/11-15_asia_toushikanrenn_costohikaku.pdf?utm_source=chatgpt.com

operation of approximately 11,000 Japanese companies in China in 2010¹⁵, *hakkai* considered a strategic investment in Suzhou Industrial Park. In response to declining Japanese investments, local Chinese governments offered favorable conditions, including lower setup costs and financial incentives. *hakkai* established its subsidiary in Suzhou, a city near Shanghai, benefitting from its close proximity to Tokyo (1,800 km) and strong industrial infrastructure.

In 2014, *hakkai* expanded into the Philippines. With annual Gross Domestic Product (GDP) growth rates of 6% to 7% and a total fertility rate of approximately 3.0, the Philippines presented a stable economic outlook. Moreover, the 2010 Financial Rehabilitation and Insolvency Act (FRIA) facilitated corporate restructuring, enabling *hakkai* to acquire El Sol Electronics Device Philippines Inc. from Taiyo Koki Ltd., a client of *hakkai*. The firm specialized in small electronic components for PCs, DVDs, and Blue-ray players. However, managing the Philippine subsidiary and integrating it into *hakkai*'s core operations proved challenging. Though the subsidiary contributed to sales growth in the short term, revenue declined as the digital disruption dramatically reduced target electronic product demands, leading to the factory's closure in 2020.

hakkai's decision to enter Mexico in 2015 was both strategic and opportunistic. With demand for digital cameras and laptops declining, *hakkai* sought to expand its presence in the auto parts sector, which at the time represented less than 10% of its sales. Mexico ranked as the seventh-largest automobile producer globally and had a strong automotive manufacturing cluster comprising Japanese, U.S., European, and Korean firms, with approximately 760 Japanese companies operating within the country. During a client visit, Akihiko was informed that *hakkai* could not secure orders due to an oversaturated supplier market. The client, however, suggested that opportunities existed to supply its Mexican subsidiaries—provided *hakkai* established local manufacturing capabilities. While other Japanese suppliers hesitated due to high initial investment costs and prolonged feasibility studies, Akihiko's entrepreneurial mindset enabled him to make a swift decision to enter the Mexican market. This led to the establishment in 2016 of Hakkai Mexico S.A. de C.V., the company's fourth international subsidiary.

hakkai's international manufacturing bases serve distinct functions, although all supply automotive parts alongside the expansion of this segment. Thailand focuses on electronics, automotive, and appliances, while China produces automotive components and electronics. The Mexican facility specializes most in automotive parts and serves as a potential gateway to the U.S. market. Hakkai Precision (Thailand) has provided stable revenue and has recently expanded into auto parts and winding processing. Hakkai Precision (Suzhou) has grown rapidly, benefitting from close collaboration with the Japanese headquarters. With increasing automation efforts, the number of employees in Japan has decreased; simultaneously, camera inspection

¹⁵ See Nippon.com (2019). China appeal fading for Japanese companies. July 4, accessed November 18 2025, available at <https://www.nippon.com/en/japan-data/h00483/china-appeal-fading-for-japanese-companies.html>

technology has been implemented in China. Furthermore, *hakkai*'s Mexico subsidiary represents a pioneering move for a Niigata-based enterprise, positioning the company within a key automotive manufacturing hub (see Appendix 8 for a comparison of the three international subsidiaries).

Internationalization Strategy and Opportunities

hakkai's entrance into Mexico is a striking example of an opportunistic entrepreneurial approach. The decision occurred during a business meeting when a client inquired whether *hakkai* could invest in Mexico to support their regional growth. Without the luxury of returning to the office for extensive analysis and planning, Akihiko made an immediate yet well-calculated decision to seize the opportunity. His decades of industrial experience and deep market knowledge allowed him to balance speed with strategic foresight. This decision underscored the paradox of entrepreneurship—making bold yet prudent choices, blending intuition with analytical reasoning, and navigating between flexibility and a clear strategic direction toward micro-molding and a complete manufacturing process rather than prototyping. It also reflects the benefits of Akihiko's Analyze-Decide-Act (ADA) model, compared to the traditional, planning-oriented PDCA model.

While the strategy of international expansion became a clear direction for *hakkai*'s growth and sustainable development, its internationalization and globalization journey encountered multiple challenges and varied paths. Language barriers and resistance among Japanese employees to overseas assignments initially slowed progress. As is common among Japanese SME manufacturers, the majority of *hakkai* employees were senior high school graduates who acquired specialized skills through on-the-job training. Foreign language skills were not considered required expertise. Thus, identifying appropriate staff and managers to expatriate to international subsidiaries or carry out international assignments was a challenging task.

When *hakkai* initially established its subsidiary in Suzhou, China, the facility was under strong Japanese direction, including frequent trips by Akihiko between Japan and China to monitor production quality and the business and ensure they mirrored the parent company's values of precision, discipline, and quality. Over time, however, the subsidiary underwent a significant shift toward localization. Local managers were trained and cultivated with *hakkai*'s corporate values, eventually leading to the appointment of a Chinese woman, Zhang Hua, as general manager in *hakkai* China in 2020. This localization transformation nurtured a multicultural team and greater managerial autonomy while maintaining *hakkai*'s core "3C" principles of creation, challenge, and communication. The Suzhou subsidiary not only served such Japanese manufacturers as Nidec, Omron, and Panasonic but also played a critical role in adapting Japanese craftsmanship to China's fast-changing industrial environment.

The Suzhou plant's management transition from Japanese expatriates to a fully localized Chinese team symbolized a broader organizational transformation from Japanese-centered coordination to glocalized management that aligned with local markets while maintaining the company's craftsmanship and quality

ethos. This hybrid management model balanced Japanese process discipline and Chinese market responsiveness. Zhang Hua, drawing on long experience in Japanese corporations, embodies cross-cultural competence and inclusive leadership. Under her direction, the subsidiary has deepened local supplier partnerships, improved automation, and navigated such post-pandemic challenges as disrupted supply chains and competitive pricing pressures in China's manufacturing sector.

Overall, *hakkai*'s internationalization process reflects the evolution of a Japanese SME into a global, multi-site organization that learns from its host environments while preserving its founding values of creation, challenge, and communication. Through its subsidiaries, *hakkai* demonstrates how deep localization and trust-based management can sustain competitiveness in a complex global manufacturing landscape. To continuously address globalization challenges, *hakkai* has introduced an overseas training program, increasing English proficiency and facilitating overseas posts with stays of three to five years. Over time, the company has also developed global human resources capable of working across Japan and its international subsidiaries. As a next step, *hakkai* aims to further localize management, transitioning leadership responsibility to local executives not only at the subsidiary level but also within the headquarter's decision-making framework. In this context, Zhang Hua's competitive performance in China and proficiency in the Japanese language led Akihiko to appoint her as an executive director in Japan's headquarters (see Appendix 9 for the evolution of the organizational structure from 2001 to 2025). She also actively participated and presented in the 2025 Osaka-Kansai Expo Women's Pavilion.

Challenges Remaining

Akihiko, *hakkai*'s president and chief executive officer, attributes much of *hakkai*'s innovation and international success to diversity, communication, and people-centered management. He emphasizes that innovation arises not from rigid systems but from cross-cultural interactions and open collaboration. *hakkai*'s local teams are encouraged to engage externally with other firms and universities to learn, experiment, and drive bottom-up digital transformation initiatives. The Suzhou experience represents *hakkai*'s broader organizational evolution from a Japan-centric family business to a globally connected enterprise that balances tradition with adaptive learning and inclusive innovation. Under Akihiko's leadership, *hakkai* has continued to evolve, solidifying its position as a leader in microfabrication while embracing both innovation and social responsibility. As the company looks to the future, a key challenge remains: How can *hakkai* sustain its competitive edge in an increasingly digital and globalized manufacturing landscape?

Similarly, *hakkai*'s global expansion underscores its commitment to adaptability, innovation, and risk diversification. However, as the company continues to navigate an increasingly interconnected world, it faces two key questions: How can *hakkai* optimize its international operations while maintaining its core values? What strategies should it adopt to sustain long-term success in a rapidly evolving global market?

Beyond corporate competitiveness, Akihiko is deeply aware of *hakkai*'s social responsibility. He believes a company's purpose extends beyond profit—it must contribute to society by creating jobs, paying taxes, and delivering high-quality products and services. This philosophy is encapsulated in *hakkai*'s motto: “We Make Good ‘ ’.” The blank space is intentionally left open, symbolizing the company's commitment to making something meaningful: good people, good products, or positive contributions to society. How can the value of *hakkai* be further sustained amid future development and global expansion?

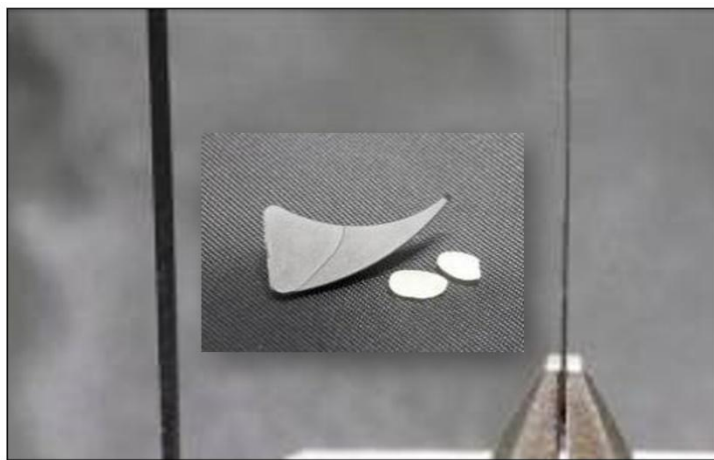
Akihiko, who has devoted 25 years to leading *hakkai*, now faces a pivotal question: of succession, wondering who will carry the torch forward when he eventually embarks on a new personal and professional journey?

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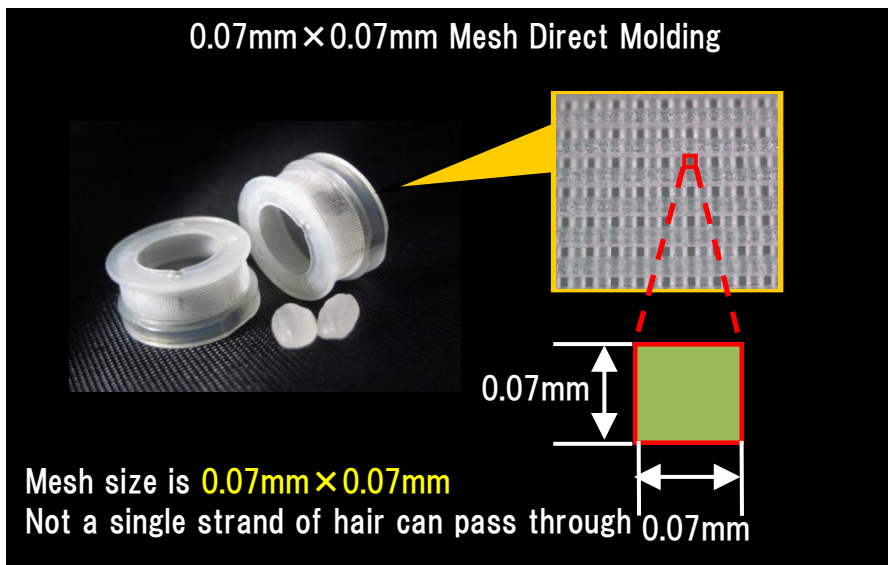
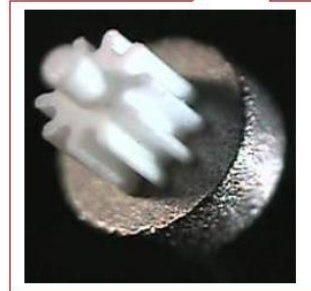
Reference: International University of Japan. 2026. “hakkai Inc.: Internationalization of a Japanese Microfabrication SME Pioneer.” JICA-IUJ case material series. Tokyo.

Appendix 1: *hakkai*'s Microfabrication Molding and Size Comparisons



Pencil Lead
0.5mm

hakkai Product
0.08mm



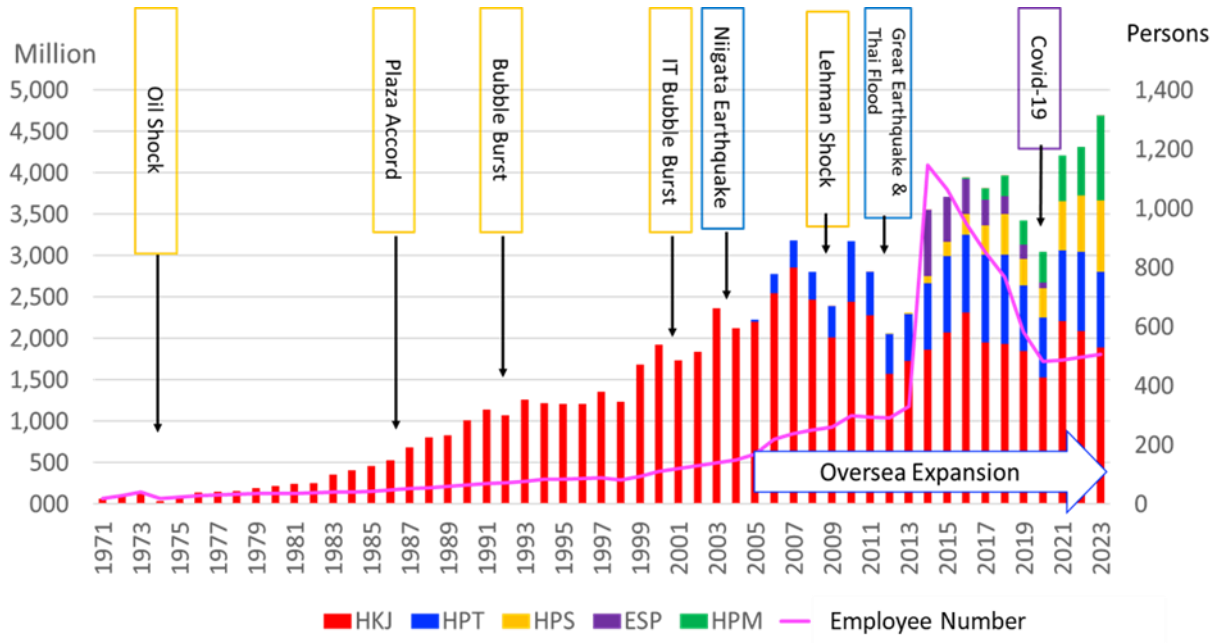
Source: Company documents

Appendix 2: *hakkai*'s Products and Logo



Source: Company documents

Appendix 3: Historical Sales Evolution Alongside Critical Crises



Source: Company documents

Note: HKJ: *hakkai* Japan; HPT: Hakkai Precision Thailand; HPS: Hakkai Precision Suzhou (China); ESP: El Sol Electronics Device Philippines; HPM: *hakkai* Mexico.

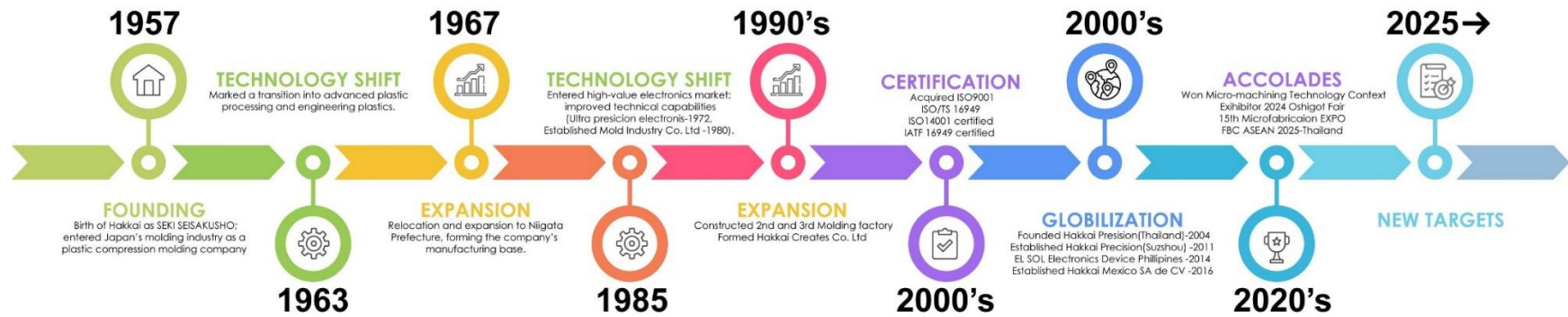
Appendix 4(a): Timeline of *hakkai's* Historical Evolution

Year	Major Event
1957	Founded as Seki Seisakusho: birth of Hakkai; entry into Japan's molding industry
1958	Began producing audio parts
1959	Entered communication equipment parts manufacturing—expanded into electronics
1963	Started injection molding
1967	Established Hakkai Resin Industry; relocated to Niigata
1971	Reorganized as Hakkai Resin Industry Co., Ltd.
1972	Entered the ultra-precision electronic parts field
1980	Established Hakkai Mold Industry Co., Ltd; added a dedicated manufacturing arm
1983	Built a new molding factory
1984	Designed and built automated machines
1984	Constructed a new mold factory at Hakkai Mold Co., Ltd., boosting mold production capacity
1988	Expanded the administration building
1990	Constructed a model molding factory
1992	Formed Hakkai Creates Co., Ltd., which unified resin and mold manufacturing processes
1995	Expanded mold and molding factories
1997	Introduced an integrated production and cost management system
1999	Constructed a second precision molding factory
2001	Built a third precision molding factory
2002	Established Atex Co., Ltd.; opened Tokyo Sales Office
2003	Acquired ISO9001 certification
2004	Founded Hakkai Precision (Thailand) Co., Ltd.
2007	Acquired ISO14001 certification (Tokyo excluded)
2008	Selected to be one of '300 Vibrant SMEs in Japan'
2011	Established Hakkai Precision (Suzhou) Co., Ltd.
2011	Merged with Atex Co., Ltd. And renamed as Hakkai Co., Ltd.
2014	Welcomed EL SOL Electronics Device Philippines Inc. to the group
2015	Acquired ISO/TS 16949 certification; established Hakkai Mexico SA de CV
2016	Start of production at Hakkai Mexico SA de CV
2018	Acquired IATF 16949 certification
2019– 2023	Expanded automation and mold precision research and development (R&D)
2023	Won the Micro-machining Technology Contest for the second time (First in 2021)
2024	Participated as an exhibitor in the 2024 Oshigoto Fair (Job Fair) and Matching HUB Nagaoka 2024
2025	Exhibited at the 15th Microfabrication EXPO; presented at the Osaka-Kansai Expo Women's Pavilion

Source: Own elaboration based on company documents

Appendix 4(b): Timeline of *hakkai*'s Historical Evolution

HAKKAI INC TIMELINE



Source: Own elaboration

Appendix 5: Two Generations of Entrepreneurs



Junji Seki, *hakkai* founder, with the initial manufacturing equipment

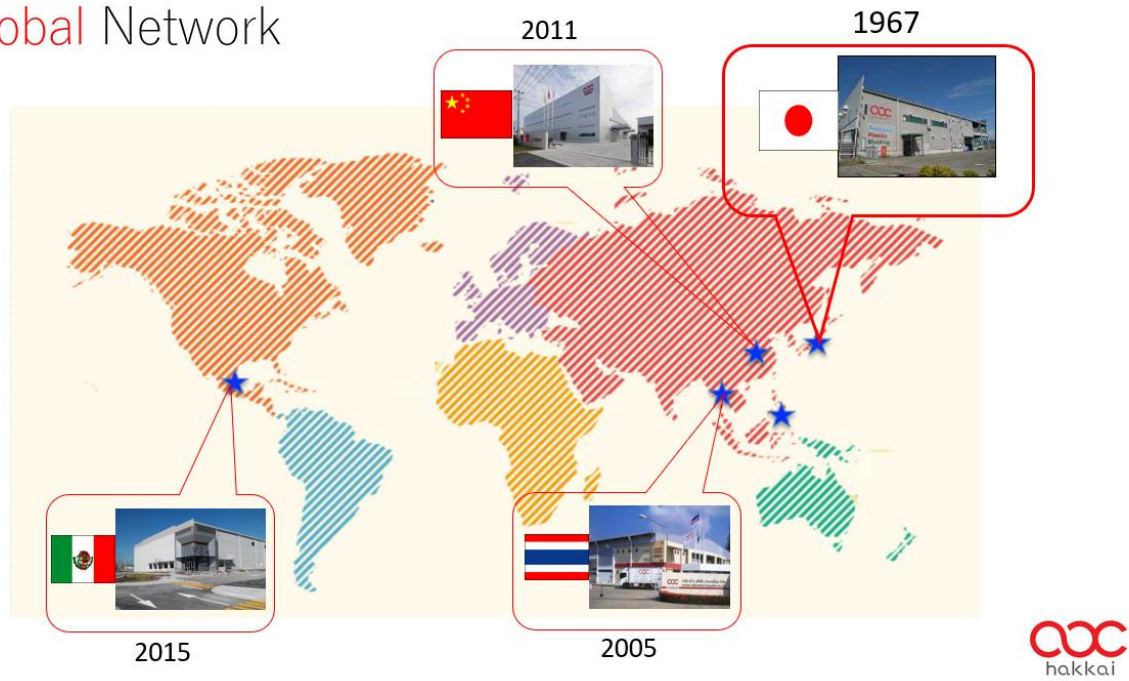
Source: Company documents



Akihiko Seki, *hakkai* president, with the snow-covered Hakkai-san in the background

Appendix 6: *hakkai*'s Global Manufacturing Bases

Global Network



Source: Company documents

Appendix 7: Muikamachi Fault Zone and Earthquake Damages

Image C Location
Image B Location



Image A



Image B



Image C

Source: Image A—Muikamachi fault zone and the location of *hakkai*, based on https://www.jishin.go.jp/regional_seismicity/rs_katsudanso/fl103_muikamachi/; Image B—Uplifted buried structures following the 2004 Niigata earthquake, adopted from Kang, G. & Iai, S. (2012). Liquefaction-induced uplift of geotechnical buried structures: Centrifuge modeling and seismic performance-based design. Journal of the Korean Geotechnical Society, DOI:10.7843/kgs.2012.28.10.5; Image C—Joetsu Shinkansen train derailed by the 2004 earthquake, from Aircraft and Railway Accidents Investigation Commission, Ministry of Land, Infrastructure, Transport and Tourism of Japan. (2007). Report on the investigation of railway accidents RA2007-8-1: p. 38 (in Japanese). Available at <https://jtsb.mlit.go.jp/railway/rep-acci/RA2007-8-1.pdf#page=45>

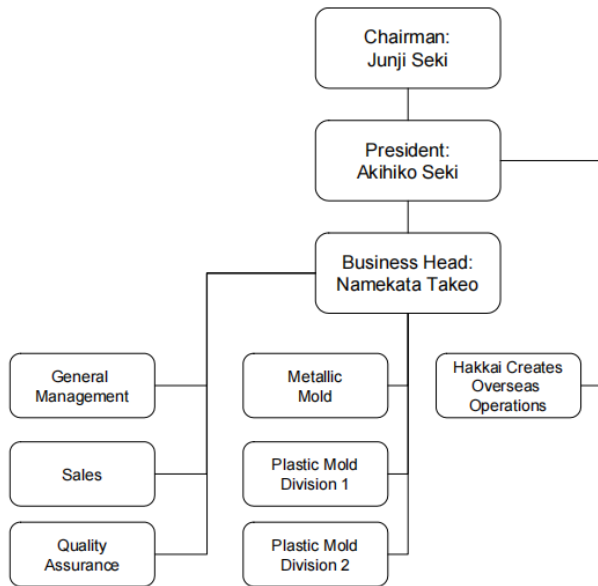
Note: The location indications in Images B and C are approximate and intended for illustrative purposes. Dashed lines are used due to the non-uniform scale applied.

Appendix 8: *hakkai*'s International Subsidiaries' Facility Comparison

Feature	Mexico – HAKKAI MEXICO S.A. de C.V.	China – HAKKAI PRECISION (SUZHOU) CO., LTD.	Thailand – HAKKAI PRECISION (THAILAND) CO., LTD.
Established	May 2016	November 2011	July 2004
Location	Apodaca, Nuevo León	Suzhou Industrial Park, Jiangsu	Hi-Tech Industrial Estate, Ayutthaya
Capital	USD 1,500,000	USD 11,200,000	THB 215,000,000
Employees (2025)	103 (2 Japanese staff)	69 (no Japanese staff)	134 (one Japanese staff)
Certifications	IATF16949	ISO 9001, ISO 14001, IATF16949	ISO 9001, ISO 14001, IATF16949
Key Equipment	Fanuc, Sumitomo, Nissei injection machines	Fanuc, Toyo injection machines, CCD inspection systems	Fanuc, Toyo, Sodick mold machines, CCD inspection systems
Business Focus	Automotive plastic parts	Precision molding for electronics and automotive	Precision molding for electronics, automotive, appliances
CAD/CAM Systems	SolidWorks, Sodick DiproSOLID	SolidWorks, DiproSOLID	SolidWorks, DiproSOLID
Strategic Role	North American supply chain	East Asia manufacturing hub	Southeast Asia operations and export base

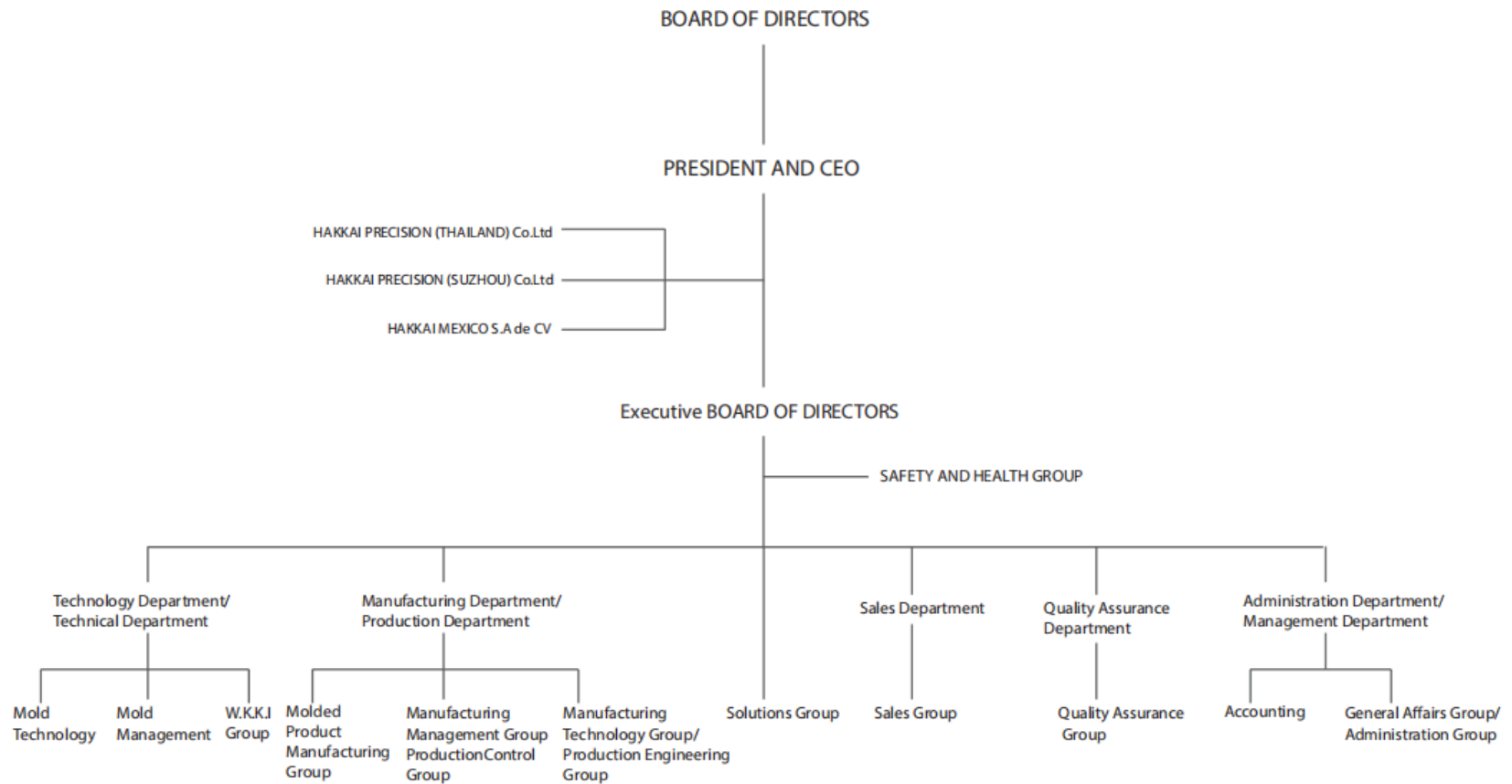
Source: Created by CoPilot AI tool and adjusted on November 3, 2025

Appendix 9: Evolution of *hakkai* Organizational Structure from 2001 to 2025



(a) Organizational Structure in 2001

(b) Organizational Structure in 2025



Source: Company documents