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Dami technology co. ltd.: A Smart Kitchen ECOSYSTEM

Miao Cui, Mimi Xiao, Yan Liu, Yuying Yang, and Jian Yang wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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In December 2017, during the celebrations of the third anniversary of his company, Jian Yang, the founder and president of Dami Technology Co., Ltd. (Dami), reflected on the success of his entrepreneurship efforts since 2014. Using mobile Internet, Internet of things, and artificial intelligence technologies, Dami implemented a new rice supply chain from farm to table by developing smart kitchenware, such as rice buckets and rice cookers. Dami was the first company to accomplish this goal in the Chinese rice industry. By the end of 2017, Dami had created its own market in more than 30 of China’s major cities, including Beijing and Shanghai.

Having achieved great success, Yang had two main options for the company’s next phase of growth: (1) build a complete smart kitchen ecosystem using all available resources, or (2) partner with a Chinese home appliances giant and join a smart kitchen ecosystem. The first option would allow Dami to continue creating new products by using its available resources, as the company had always done. However, by partnering with an established company, such as Haier Group Corporation (Haier), Midea Group (Midea), or an entrepreneurship incubator, Dami could acquire a wealth of new resources. Yang wondered which option to pursue and how to continue to ensure his company’s success.

**earlier Experiences**

Yang’s Entrepreneurship Dream

In 2000, Yang was admitted to the maritime law department of Dalian Maritime University. It was at this point that Yang began to accumulate capital for entrepreneurial ventures. Rather than enjoying free time on weekends and holidays, Yang took a part-time job in a law firm to understand its operation. When he became interested in computers, he used income from his part-time job to buy one and taught himself website design. In 2002, Yang decided to use his computer skills to pursue business rather than only entertainment, so he set up a website called Kaoyan.com. The website was a portal that offered reference textbooks for postgraduate entrance examinations and that allowed college students to engage in online communication. With continuous investment in upgrades, Yang added content, transparency, and flexibility to the website, making it easier to use and more engaging for students. Less than three months after its debut, Kaoyan.com was drawing approximately 200,000 page views per day.[[1]](#footnote-1)

When Yang graduated in 2004, the university offered him funding to pursue further education. Unexpectedly, however, he rejected the funding in favour of becoming a volunteer teacher in one of the less developed areas of China—Qinghai province. Yang used his knowledge to help students. He became a legal counsellor and computer trainer, which earned him respect from the villagers and appreciation from local governments. Yang’s experience among the grassroots organizations of China helped him to confirm his entrepreneurial dream. “That was when I decided to start my own business and saw myself as an entrepreneur,” he explained.

**The First Entrepreneurial Opportunity**

When the voluntary service in Qinghai ended, Yang returned to Dalian and soon encountered an entrepreneurial opportunity. The local government was holding a competition to encourage college students to start businesses and would provide financial support for selected projects. Yang was excited about the opportunity and prepared a business plan based on the Kaoyan.com website. Yang’s business plan was successful and received ¥4,000[[2]](#footnote-2) in funding, plus various other benefits in terms of preferential policies. In 2015, with the support of the local government, Yang founded his first company: Dalian Sizhou Information Technology Co., Ltd. (Sizhou). The start-up was launched with ¥1 million in registered capital.

However, with several strong competitors emerging throughout China at the time, Sizhou’s profits started to decline, eventually leading the company into a deficit. To lower operational costs including rent, taxes, and salaries, Yang decided to expand the company’s product line to include items unrelated to postgraduate entrance examinations, such as computers, jewellery, and event tickets. However, his attempts failed to reverse the trend of declining sales. Making matters worse, Sizhou’s computer system suffered a major crash that resulted in most of the company’s data being destroyed. Rendered unable to pay rent or worker salaries, Yang lost all but one employee—Zhao Ming.

Despite advice from family and friends to reconsider a career in entrepreneurship, Yang insisted on trying to save the business. He shut down the company’s websites and all business lines except software development. Using his legal knowledge, assistance from Ming, and lessons learned from his business experience, Yang focused his efforts on developing an information management system for law firms. To reduce operational costs, he was able to procure two freeware offices from the university he had attended. Yang’s business strategy proved successful. The market for information management systems was healthy, and Sizhou generated plenty of sales. With revenue of ¥200,000 per week, Yang had resurrected his company from near bankruptcy. His motivational entrepreneurial story became the subject of numerous Chinese media articles, turning Yang into an entrepreneurial celebrity.

**The Second Entrepreneurial Opportunity**

In 2007, Yang decided to move on to new ventures. He shut down Sizhou, which was a successful company, and joined a major Chinese movie production company called Changchun Film Studio Group Co. Ltd. (Changchun Film Studio). As he explained, “I thought my ability and talent were not limited to this domain, and I could create more value.” In the studio, Yang learned cutting-edge technology in new media and met many new colleagues who would become great assets for his future entrepreneurial endeavours.

One year later, Yang recommended that Changchun Film Studio invest further in digital technology. He believed that a new revolution in the animation industry would occur with the advent of Internet Plus, a new phenomenon promoted by the Chinese Government.[[3]](#footnote-3) However, the business proposition was rejected by the film studio in favour of a more cautious approach. Yang was unwilling to give up the opportunity, so he resigned and established his own animation company. Over the next three years in development, the animation company grew to seven branches and gained approximately 5 per cent market share to become one of China’s top 10 companies in the animation industry.

At the end of 2010, Yang was offered a new and very different opportunity. The government of the Huangnan Tibetan Autonomous Prefecture in Qinghai province asked Yang to be an assistant to the mayor for a one-year contract. After much deliberation, Yang decided to leave the animation company he had founded and entered the local government offices to broaden his horizons. “Mayor Assistant was a critical position, which had access to various business domains. At the same time, it was conducive to improving the ability for communication and coordination,” he said. After completing one year in the position with outstanding performance, Yang was reappointed for a further 18-month term.

**entrepreneurial History of Dami**

**Establishment of Dami**

In 2013, Yang’s professional focus changed yet again. He returned to Dalian, where he took a position as executive officer of the Marine Extension and Research Centre at Dalian Maritime University, which eventually led to another position as post-doctoral fellow at Tsinghua University, where he conducted research on business models. Despite the various career changes, his entrepreneurial dream remained intact. Yang also volunteered to mentor students from Tsinghua University, Peking University, Dalian University of Technology, and Dalian Maritime University on entrepreneurship. Yang was also a core member of Liaoning province’s entrepreneurial guidance expert group. [[4]](#footnote-4)

In September 2014, Dalian Maritime University asked Yang to judge an entrepreneurship competition. One entrepreneurship project plan in the competition that caught Yang’s attention, entered by a participant called Shao Deji, was focused on using online commerce to sell Wuchang rice. The rice, which was known globally for its quality, took its name from the city where it was grown—Wuchang city, in Heilongjiang province. Deji’s business plan reminded Yang of his own research on business model innovation using bid data, for which he had recently reached a major stage. “If Wuchang rice was only shifted from rice shops or supermarkets to some online platform, such as Taobao.com, the company would gain a competitive advantage,” he thought.

Drawing from his research findings, Yang designed a new business model for the Wuchang rice entrepreneurship plan using both mobile Internet technology and the Internet of things concept, where everyday household items are linked to a network to receive and provide data. Yang designed a rice bucket that would monitor the household’s rice consumption and send the data to a server. The server would then process the data to provide useful information to the company and messages to the customer, such as reminders to reorder. The technology could help the company accurately determine customer needs and consumption habits.

Yang’s innovative business model design was greatly appreciated by Deji, but he realized that bringing Yang’s vision to reality would prove too difficult. However, Yang agreed to conduct some market research on rice and to pursue the business plan himself. In October 2014, he visited Deji’s hometown, Wuchang city, and learned that the Deji family had fostered a rice-planting tradition spanning several generations. Although the rice was of the best quality, the family’s income remained very low while using traditional operation practices. During the visit, an agreement was reached for Deji to supply Wuchang rice to Yang. Two months later, Yang formed an entrepreneurial team of six members, composed of friends and acquaintances, and incorporated Dami Technology Co., Ltd. in Dalian in December 2014.[[5]](#footnote-5)

**Online Operation**

To implement his innovative business model, Yang’s first task was to develop a smart rice bucket, for which the company desperately needed a technical team. He immediately thought of Ming, the only employee who had remained with him when his first entrepreneurial company was on the brink of bankruptcy. Ming had stayed with Yang until Yang took a position in the mayor’s office. At that point, Ming joined a Fortune 500 company and later established his own software development start-up. When he learned about Yang’s vision for Dami, Ming joined the company and took along his employees to work on the development of Dami’s smart rice buckets.

Considering the time and risk related to the development of smart rice buckets, Yang suggested that Dami should begin by selling the product online to gauge how the quality of the Wuchang rice would be received by the market. Online sales would also help generate customers and capital. With unanimous support from the entrepreneurship team, the company began looking for the right person to take charge of online marketing. Yang recommended his colleague Lu Ning, a skilled online entrepreneur who had established Dalian Qiji Co. Ltd., a well-known third party operating agent, in 2010. A third party operating agent was a company that provided part or all of its online sales services for other companies. Three months after Ning took control of Dami’s online product, the rice was well established in the domestic market among competing products and had a repurchase rate of 70 per cent, which was proof of Wuchang rice’s high quality.

Good products also required good publicity, but advertising was considered a luxury by most entrepreneurial firms. Having once worked with film directors at Changchun Film Studio, Yang thought he might be able to make use of his previous employment experience. In the spring of 2015, Zhang Meng, a famous Chinese director that Yang had met in the film studio, was preparing production for the film *Everybody’s Fine*. When Yang heard about the upcoming movie, he contacted Meng for sponsorship and product placement of the Dami product at a relatively low cost. Yang even appeared in the film briefly as a rice shop owner. During production of the film, Dami’s rice was provided to all cast members, who generally loved the product. After the film’s release, Dami’s logo appeared on the screen among other famous brands, including Cadillac and Mengniu, promoting the slogan “Good Rice Makes Everybody Fine.”[[6]](#footnote-6)

**Running Experience Centres**

By March 2016, the smart rice bucket was developed and ready to launch. The product could manage various problems, such as ensuring that the rice was free of moisture and mildew, as well as continuously monitoring rice consumption levels to accurately predict when the customer should place another order. The customer was alerted on a mobile phone three days before the rice was expected to run out; clicking “Yes” would dispatch a new delivery to the customer’s door.

The next issue was how to quickly get the smart rice bucket into the customer’s kitchen. Some team members suggested online sales, as the Wuchang rice was being sold. However, Yang disagreed with this idea. One reason was the increasing cost of online commerce, which was approaching the cost of traditional retail rent. Another reason was the limitations of online retail, including few display options, limited user experience, and expensive logistics. To overcome these problems, Yang planned to open traditional retail outlets called “experience centres” in each city. Customers could sample cooked rice and receive a free smart rice bucket with a rice purchase, under the promotion “Buy rice, get rice bucket free.”[[7]](#footnote-7) However, Yang needed someone to manage the cooking of rice. He recalled having met an executive with a wealth of experience in the restaurant business during a previous session on entrepreneurship that Yang had attended. Yang contacted his friend and invited him to run Dami’s experience centres.

Dami opened its first experience centre in Dalian in April 2016. Within a month, over 100 rice buckets had been sold with rice purchases, so Yang decided to open another seven experience centres in cities including Shenyang, Changchun, and Yantai. To manage the high cost of the experience centres and increase market share, Yang decided to adopt a franchise system for the stores. Based on Yang’s reputation, the product’s high quality, and Yang’s numerous contacts, Dami attracted many franchisees throughout more than 30 cities across China.

**Adding Counter Meal Business**

In 2016, the first year of China’s 13th Five-Year Plan, Li Keqiang, the Premier of the State Council of the People’s Republic of China, proposed an increase to the development of smart homes in two different sessions. Smart homes had ushered a new development opportunity that led experts to label 2016 “The First Year of the Smart Home,” predicting that smart kitchens would be the next “explosion point.”[[8]](#footnote-8) Some giant companies in the home industry accelerated the pace of their smart technology products to enter or expand their businesses lines for smart kitchen products. Having already been successful in this field, Dami seized the opportunity to become a Chinese smart kitchen system integrator. The company was poised to construct integral smart kitchen ecosystems to meet growing consumer demands, with its smart rice cookers as the preferred product to develop and promote. Five months later, Dami successfully linked remote cooking controls to a mobile phone application. The complete process of cooking rice, including pouring, washing, and adding water, was accomplished with just one click.

In August 2016, the smart rice cooker was placed in mass production, which not only greatly increased market coverage but also reduced customer traffic at the experience centres. Dami’s customers were more interested in receiving smart rice buckets than buying rice in the experience centres. Therefore, changes were planned to convert the experience centres into low-cost distribution centres for pre-ordered rice to customers. However, the director of retail store operations suggested that the experience centres should be kept to attract more customers and deliver the rice by adding a new business line of rice-based meals available in the stores. The meals provided by Dami became very popular, with over 400 orders received each day.

However, Yang soon stopped the meal business line when he realized that Dami had missed its goal of becoming a Chinese smart kitchen system integrator. “When it came to Dami, it got lumped in with some Chinese catering company, such as chicken and rice and auspicious wontons,” Yang explained. In April 2017, Dami closed the experience centres and refocused its business strategy.

**Innovating the Customer Experience Model**

Relying on notifications via mobile phones proved to be an ineffective marketing plan, so the company started to conduct in-store promotions to enhance the customer’s experience. Dami began offering cooked rice and rice-based snacks through vending machines. Customers who enjoyed the Dami products they purchased via the vending machines could then simply use their mobile devices to buy more products. This new strategy helped increase customer experience at a much lower cost than through experience centres.

Dami reached customers in two major purchasing scenarios: fine dining restaurants and schools. Fine dining restaurants usually served ordinary cooked rice, which was more affordable than higher-quality rice. However, in the schools, parents wanted their children to eat healthy foods. For these customers, Dami introduced Wuchang rice, which had high nutritional value, and instructed parents on how to cook the rice to make it tasty for their children.[[9]](#footnote-9)

To effectively reach both of these customer segments, Dami needed to find the ideal rice cooker for each situation. After conducting market research to determine how to cook the best-tasting rice, Dami discovered that traditional Chinese cast iron pans cooked rice with the best taste. However, cast iron pans had been out of production for over 10 years because they tended to rust easily. Yang was curious: “Why did the rice cooked by cast iron pans taste better? How could we produce such pans with good rust resistance?” Yang decided to consult some university researchers to find out. The researchers were willing to help because Yang was often generous with his own time, attending entrepreneurial events and delivering free lectures to their students. Within two months, with the help of several university researchers, Yang was able to develop a cooking pan that retained the superior taste characteristics of traditional Chinese cast iron pans but did not rust easily. The new pan, which was called a Wuxing pan, was also suitable for on-site use in restaurants. Dami’s research went further to include the development of a rice milk machine that produced a beverage made from rice.

Dami’s next step was to find business partners to launch its new on-site rice cooking promotions and products. However, the company found it difficult to interest any unrelated businesses in the new untested venture. Therefore, Yang asked a friend who operated a restaurant to join the partnership. Within only one month, Dami had brought great profits to the restaurant and increased its clientele with new customers who loved the tasty cooked rice. Eventually, other partners who were monitoring the new venture agreed to work with Dami.

Dami’s strategy to improve customer experience was successful in Dalian. The next step was to extend the practice across the country. With limited capital, market information, and human resources, Yang again opted for the franchise system. However, the company set high standards for approval of new franchisees. In addition to sufficient capital, applicants required familiarity with local standards of consumption, established social influences and networks, and the ability to expand sales channels. These requirements made the search for ideal franchisees very difficult, so Yang relied on personal references from reliable friends and attended key conferences to become acquainted with prospective franchisees. By the end of December 2017, Dami had built a network of more than 50 high-quality franchises covering approximately 30 major cities.

**The Future of Dami**

In 2017, Dami successfully developed an ecological supply chain for rice with Wuchang rice, smart rice buckets, and smart rice cookers and was rapidly expanding across China’s market. However, becoming a Chinese smart kitchen system integrator would require more work. Technical resource constraints, in particular, threatened to prevent Dami’s further development. A smart kitchen system normally comprised various types of kitchen machines with distinct differences in technology, but Dami focused specifically on rice, ignoring other opportunities such as sterilization cabinets, ovens, dishwashers, and other appliances. Although Dami had accumulated key technologies by developing smart rice buckets and rice cookers, it became obvious that the company’s efforts were not sufficient for it to fully become a smart kitchen system integrator. Yang realized at that point that the company had two main options to consider for its future: build a smart kitchen ecosystem on its own or by partnering with an established home appliances giant.

Option 1: Construct a Smart Kitchen Ecosystem on Its Own

Dami was started from scratch only three years earlier. In the process, Yang had learned how to make use of the company’s resources and capabilities to complete a series of seemingly impossible challenges. Dami had also accumulated a wealth of experience in developing new smart kitchen products and expanding market share. Therefore, it could still choose to continue developing smart products internally to construct its own ecosystem and expand market share through the franchise system—that is, Yang could use the resources at hand (i.e., bricolage) instead of external resources to develop Dami.

Option 2: Partner with an Appliances Giant to Enter the Smart Kitchen Ecosystem Industry

Smart kitchenware had already become a business focus for major Chinese home appliance companies such as Haier, Midea, and others. Using the Internet of things, Haier had built a platform that could connect its kitchenware to the Internet and was obtaining vast amounts of customer data. Haier was able to use the data to customize product solutions to each customer’s demands.[[10]](#footnote-10) Midea also planned to establish a smart kitchen ecosystem using its technical and brand advantages. The company had already struck a series of alliances with companies that specialized in kitchen machines.[[11]](#footnote-11) These two and other industry giants were already attracting high-quality entrepreneurial firms with smart kitchenware expertise into their ecosystems. Entrepreneurs were eager to join these companies because of the opportunity to acquire rich resources. For example, an entrepreneurial firm called Xiao Chufang successfully created some smart cookers for dietary regimens by leveraging Haier’s resources. Could Dami follow Xiao Chufang’s example and join a Chinese home appliance giant’s ecosystem?Which option would be best for Dami to pursue? Yang had to consider his next steps very carefully.

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