

JOON NAK CHOI  
MARCELLA HO

## Samsung as a Silicon Valley Company

Samsung Electronics remained one of the largest and most profitable companies in the world, ranking #15 by revenues and #10 by profits in the *Fortune* Global 500. Among technology companies, Samsung Electronics trailed only arch-rival Apple in revenues and profits.<sup>1</sup> Yet, the company was dealing with an existential crisis in its core mobile phone business, as it faced a vigorous challenge from rising Chinese competitors like Huawei, Xiaomi, and Oppo. If Samsung Electronics failed to meet this challenge, it could conceivably end up diminished or even bankrupt, like other firms that had once dominated the mobile phone industry, such as Nokia, Motorola, and Ericsson.

Although Chinese manufacturers had yet to make inroads into Samsung's market share globally, they displaced Samsung in crucial developing markets.<sup>2</sup> Globally, Samsung Electronics retained its market leader position in smartphones [see **Exhibit 1**].

While the numbers in the exhibit indicate that the Chinese manufacturers mainly were taking market share from weaker competitors such as LG, HTC, and Sony, they nevertheless obscure several disturbing trends.

**Losing key markets.** Samsung had been the dominant smartphone brand in mainland China, holding over 20% market share as recently as five years earlier. Samsung now ranked last among major

---

<sup>1</sup> *Fortune Global 500*, 2018, <http://fortune.com/global500/>, accessed 11 July 2018.

<sup>2</sup> Joon Nak Choi, "Introduction," in *Strategic, Policy and Social Innovation for a Post-industrial Korea: Beyond the Miracle*, eds. Joon Nak Choi, Yong Suk Lee, and Gi-Wook Shin (Abingdon, Oxon: Routledge, 2018).

---

*Marcella Ho prepared this case under the supervision of Professor Joon Nak Choi solely as a basis for class discussion. The authors have disguised certain data to protect confidentiality. Cases are written in the past tense; this is not meant to imply that all practices, organizations, people, places or facts mentioned in the case no longer occur, exist or apply. Cases are not intended to serve as endorsements, sources of primary data, or illustration of effective or ineffective handling of a business situation.*

*Inquiry on ordering and permission to reproduce the case and its materials, write to [bmcase@ust.hk](mailto:bmcase@ust.hk) or visit [cbcs.ust.hk](http://cbcs.ust.hk)*

© 2018 by The Hong Kong University of Science and Technology. This publication shall not be digitized, photocopied or otherwise reproduced, posted, or transmitted without the permission of the Hong Kong University of Science and Technology.

*Last edited: 13 March 2019*

brands in that market, with a 2% market share.<sup>3</sup> Samsung also lost market share in India, ceding sales leadership to Xiaomi in the fourth quarter of 2017.<sup>4</sup>

**Margin compression.** Even in developed markets where Samsung retained a dominant position, the phenomenon of Chinese manufacturers operating at low or negative margins had driven the profit margin for Samsung's mobile division down from 15.5% in 2014 to 10.6% in the second quarter of 2015. While this remained higher than the margin for smaller competitors such as LG, which no longer made any significant profits from mobile phones, the rapid expansion of Chinese firms had an undeniable impact on Samsung. From 2013 to 2016, Samsung Electronics' total sales declined from USD182bn to USD162bn [see **Exhibit 2**].

From 2013 to 2015, the company's operating profit decreased from USD30bn to barely over USD20bn.<sup>5</sup>

As a strategic response to this threat, Samsung invested in disruptive new technologies, attempting to differentiate itself from competitors by creating markets for entirely new products. In August 2017, Samsung Electronics revealed that the company was focusing on five core technologies—the Internet of Things (IoT), cloud and data storage, personal information security, smart machines, and smart health care.

To leverage the powerful innovation ecosystem found in Silicon Valley, Samsung increasingly reoriented itself away from its Korean roots toward Silicon Valley-based subsidiaries such as the Samsung Strategic Innovation Center (SSIC).<sup>6</sup> Like many other non-US based technology companies, ranging from Nokia to Huawei, Samsung had long maintained a strong research and development presence in Silicon Valley. Nonetheless, in recent years, Samsung had taken steps further than any other company, aiming to become an authentic Silicon Valley entity. Samsung had aspirations of becoming a top-five employer in the San Francisco Bay Area, building research and development centers in Mountain View and San Jose that were collectively half as large as Apple's gargantuan new headquarters. The question for Samsung Electronics was how to leverage its existing capabilities in Korea and its new capabilities in Silicon Valley to achieve technological breakthroughs to continue to stay ahead of its Chinese competitors.

## The Rise and Fall of Samsung's Fast-Follower Strategy

**Rise of the *chaebol*.** From the 1990s to the early 2000s, Samsung and other large Korean conglomerates (i.e., *chaebols*) rose to market dominance by adopting a fast-follower strategy. The

---

<sup>3</sup> Celia Chen, "How Samsung went from No 1 to also-ran in China's smartphone market—and can it bounce back?," *South China Morning Post*, 2018, <https://www.scmp.com/tech/social-gadgets/article/2134770/how-samsung-went-no-1-also-ran-chinas-smartphone-market-and-can>, accessed 11 July 2018.

<sup>4</sup> Saheli Roy Choudhury, "The top-selling smartphone brand in India isn't Samsung anymore, and it isn't Apple either," CNBC, 2018, <https://www.cnbc.com/2018/01/25/xiaomi-beats-samsung-to-be-indias-top-fourth-quarter-smartphone-seller.html>, accessed 11 July 2018.

<sup>5</sup> Choi, "Introduction."

<sup>6</sup> Michael Herh, "What Techs Does Samsung Electronics Focus on as Future Growth Engine?," *Business Korea*, 3 August 2017, <http://www.businesskorea.co.kr/news/articleView.html?idxno=18873>, accessed 10 July 2018.

firms' ability to quickly imitate innovations by market leaders and improve on them, in combination with quick decision making and execution, enabled the *chaebol* to gain market share quickly. These capabilities also ensured that new product development and introduction to markets were all performed almost instantly, shortening product cycles. Perhaps most importantly, the *chaebol* achieved large-scale economies by making bold investments in gargantuan production facilities.

While overinvestment sank many of the *chaebol* during the 1997 Asian financial crisis, the survivors became leaner and more efficient, while emphasizing quality over quantity. The postcrisis *chaebol*, in general, and Samsung Electronics, in particular, became renowned for their mastery of high-technology manufacturing techniques, gaining prominent or even dominant market positions in technology-intensive manufacturing industries such as steel, shipbuilding, automobiles, electronics, petrochemicals, liquid crystal displays, and semiconductors.<sup>7</sup> HwY-Chang Moon, professor of international business and strategy at Seoul National University, emphasized that the postcrisis *chaebol* benchmarked market leaders, not only imitating their products but also adding selective improvements. Moon also emphasized that the *chaebol* retained the ability to make large-scale investments and execute top-down commands, while paying closer attention to detail and quality. Through this broad fast-follower strategy, the *chaebol* dethroned incumbents in electronics and shipbuilding, and joined global market leaders in steel and automobiles.<sup>8</sup>

**Coming decline?** *Chaebol* adhering to the fast-follower strategy faced a significant challenge in recent years from Chinese competitors, which explicitly adopted a Korean-style fast-follower approach and combined it with their unique resources to become even better than the Koreans at the fast-follower strategy. Chinese firms had several key advantages versus Korean (and Japanese) competitors. First, Chinese companies had a much larger domestic market, which enabled them to more easily achieve economies of scale. Second, Chinese firms, particularly state-owned enterprises (SOEs), also had access to greater financial resources than even the *chaebols*, which could support rapid and aggressive expansion. Third, the *chaebols*' fast-follower strategy was largely imitative. For this reason, Chinese firms faced few barriers to imitating the Korean firms' products.<sup>9</sup>

The fast-follower strategy simultaneously faced a challenge from nimble Silicon Valley players. The *chaebol* focused on benchmarking market leaders, making incremental improvements, and executing production quickly and efficiently. For this reason, the *chaebol* were often blindsided by disruptive innovations originating from Silicon Valley, which radically changed markets and consumer preferences. For instance, Samsung Electronics and LG gained a dominant position in the market for feature phones by the mid-2000s and were largely caught off guard by Apple's introduction of the iPhone, despite making important components for the iPhone and having investigated smartphones. Their focus on incrementally improving their existing products prevented Samsung Electronics and LG from anticipating the disruption caused by smartphones. While Samsung was able to recover a dominant market position via a fast-follower strategy, LG permanently lost market leadership.<sup>10</sup>

---

<sup>7</sup> Choi, "Introduction."

<sup>8</sup> HwY-Chang, Moon, *The Strategy for Korea's Economic Success* (New York: Oxford University Press, 2016).

<sup>9</sup> Choi, "Introduction."

<sup>10</sup> Choi, "Introduction."

Sandwiched between Chinese behemoths beating the *chaebol* at their own game and Silicon Valley players disrupting Samsung's traditional markets, Samsung Electronics decided to become a disruptive innovator.

## Aspirations for Creating New Markets

In 2017, the SSIC selected five key technologies in three broad categories as future focal points for Samsung. The hope was that these technologies would grow into entirely new markets in which Samsung Electronics would be a market leader, matching Silicon Valley players as first movers and leaving Chinese competitors behind.

**1. Machine intelligence and automobiles.** Like most other technology companies, Samsung viewed machine learning as a foundational technology for the future. Machine learning and artificial intelligence used statistical techniques to enable computers to improve their performance on specified tasks, training themselves on large datasets without explicitly being programmed by a human being. Thus, machine learning was traditionally more closely related to software than hardware engineering. Given Samsung's strengths in the hardware sector, the company largely focused on machine learning's intersection with the IoT and smart machines. Bill Lee, vice president of consumer electronics and home appliance retail at Samsung, likened Samsung's role in an internet of intelligent, interconnected devices to a head chef in a restaurant kitchen: "There's a high level of prepping that needs to happen, much like a chef puts high-quality ingredients together to create a sum greater than its parts," he stated in 2018. "At Samsung, we have a heavy responsibility to provide entertainment, comfort, and safety, and we don't take that responsibility lightly."<sup>11</sup> Artificial intelligence and machine learning, then, would play a key role, integrating disparate machines together into a cohesive experience.

As automobiles transformed into intelligent, self-driving devices, Samsung came to view them as a growth engine. The Samsung Group had previously tried to enter the automotive industry in the 1990s without any prior experience or expertise with motor vehicles. Highly leveraged and struggling to stay afloat during the 1997 Asian financial crisis, the Samsung Group sold a controlling stake in its automobile subsidiary to Renault, although Samsung Car retained a 19.9% share. Samsung's reentry into the automotive technology featured an entirely different focus and approach. Samsung purchased Harman International, known for engineering automotive systems and peripherals, for USD8bn in March 2017. In September 2017, Harman established a new strategic business unit focusing on advanced driver assistance systems (ADAS), reporting to Harman's Connected Car division but also working directly with the smart machines team at SSIC.

Simultaneously, Samsung established the Samsung Automotive Innovation Fund, a USD300mn investment fund focusing exclusively on connected and autonomous automotive technologies including sensors, machine vision, artificial intelligence, high-performance computing, connectivity solutions, automotive-grade safety solutions, security, and privacy. The fund began by making an investment in

---

<sup>11</sup> Mike O'Brien, "A look at Samsung's strategy for streamlining the smart home," *Clickz*, 2018, <https://www.clickz.com/samsung-smart-home/215401/>, accessed 10 August 2018.

Austria-based TTTech, a firm focusing on real-time systems and software integration for ADAS and automated driving platforms.<sup>12</sup>

In May 2017, Samsung received approval from the Korean government to begin testing autonomous systems installed on fellow *chaebol* Hyundai Motors' cars on Korean streets, with the intent of developing "algorithms, sensors and computer modules that will make a self-driving car that is reliable even in the worst weather conditions."<sup>13</sup>

**2. Intelligent health-care solutions.** Another application of IoT was smart medicine, in which Samsung aimed at providing intelligent health-care solutions. Samsung had already enabled behavioral and fitness monitoring for preventative medicine in its existing smartphones and smartwatches, before it began to offer devices and peripherals explicitly for a health-care environment. Samsung's US website highlighted how its IoT-enabled devices could be used to improve the quality of health care in both institutional and home settings. Connected devices were advertised as able to provide senior citizens with in-home monitoring and assistive services to increase their independence and reduce the need for hospital or assisted living services.<sup>14</sup>

One example of IoT-enabled smart medicine was virtual reality-enabled pain management. On its website, Samsung highlighted applied VR, an application running on Samsung's Galaxy Gear VR headset coupled with the firm's Galaxy smartphone, which was designed to help patients manage pain without using opioid medications.<sup>15</sup>

Another example of smart medicine was to use IoT-enabled devices to rethink a hospital stay as a user experience. Patients would be given a smart TV or tablet, from which they could monitor their hospital staff, medical protocols, and upcoming schedules. They would also be granted environmental controls such as the level of lighting, temperature, and choice of entertainment options. Perhaps most importantly, they could contact hospital staff as needed.<sup>16</sup>

**3. Intelligent machines to augment human capabilities.** Samsung also began to develop machines to augment human capabilities. Compared to the other two categories, relatively little had been reported on Samsung's human augmentation endeavors. One notable exception was Samsung's

---

<sup>12</sup> SSIC, "Samsung Electronics Expands Commitment to Autonomous Driving Technology," press release, 2017, <https://www.samsung.com/us/ssic/press/samsung-electronics-300m-automotive-innovation-fund/>, accessed 10 August 2018; Rene Millman, "Samsung commits \$300m to connected automotive fund," *Internet of Business*, 2018, <https://internetofbusiness.com/samsung-commits-300m-connected-car-fund/>, accessed 10 August 2018.

<sup>13</sup> Rene Millman, "Samsung to start testing self-driving cars in South Korea," *Internet of Business*, 2017, <https://internetofbusiness.com/samsung-self-driving-cars-south-korea/>, accessed 10 August 2018.

<sup>14</sup> Samsung United States website, "The health-care industry," <https://www.samsung.com/us/business/solutions/industries/healthcare/>, accessed 10 August 2018.

<sup>15</sup> Natalie Zfat, "How Virtual Reality in Healthcare Can Help With Pain Management," *Samsung Insights*, 2018, <https://insights.samsung.com/2018/04/23/how-virtual-reality-in-healthcare-can-help-with-pain-management/>, accessed 11 August 2018.

<sup>16</sup> Ronda Swaney, "Improving the Patient Experience Through Hospital Room Technology," *Samsung Insights*, <https://insights.samsung.com/2017/07/12/improving-the-patient-experience-through-hospital-room-technology/>, accessed 11 August 2018.

patent of a design for a smart contact lens, becoming the second firm worldwide (after Google) to do so [see **Exhibit 3**].

While Google focused on medical uses for its contact lenses, such as monitoring blood sugar levels from the concentration of sugar in tears, Samsung clearly had a more general approach in mind. Users would be able to control the lenses by blinking, or perhaps through their smartphones.<sup>17</sup> Little was reported about a product based on this patent, however.

Although Samsung's aspirations were lofty, Samsung only achieved limited success in developing these technologies and generating new markets. Indeed, the company continued to face substantial hurdles in executing this new strategy.

## Hurdles in Samsung's Way to Innovation

Like the other *chaebol*, Samsung Electronics developed an organizational structure and culture to support a fast-follower strategy. Hwy-Chang Moon and others credited this structure and culture for enabling Samsung to rapidly and reliably execute top-down directives to benchmark and leapfrog market leaders. While these organizational characteristics helped Samsung Electronics achieve its position, they had long hindered its move into disruptive innovation.

**1. Founder-centric organizational structure.** In the past, founders of Korean *chaebols* controlled their organizations single-handedly. The founders and, later, their families retained strong control rights in the companies, which, on the positive side, enabled rapid deployment of resources to support individual projects that might not yet have had the support from the market. This rapid and decisive approach toward decision making was critical for the fast-follower strategy and largely enabled the success of the *chaebols* in the past. Nonetheless, on the negative side, the ability to move swiftly was not particularly conducive to disruptive innovations outside well-established markets. Since the *chaebols* traditionally relied on following market leaders—in an attempt to eventually overtake their positions—they had relatively little experience in navigating markets for new products.

**2. Lack of external cooperation.** Since the founders of Korean *chaebols* tightly controlled their organizations, their organizational structures tended to rely heavily on vertical integration. The senior management of these firms tended to be conservative and, hence, reluctant to collaborate with external parties. This made it difficult for the *chaebols* to leverage external expertise, especially in technology and emerging markets, and to develop new strategies. One example of this flaw was the failure of SK Telecom in recognizing the market potential of KakaoTalk. As telecom *chaebols* had a heavy focus on capital-intensive access lines, they were essentially excluded from the platform businesses that were increasingly crucial, which relied on horizontal collaborations with external partners.

**3. Supply chain competition.** Supply chains were at the core of the competition, because effective supply chain management could encourage suppliers to innovate. These relied on internal and

---

<sup>17</sup> Miguel Santos, "Samsung Patents Smart Contact Lenses With a Built-in Camera," *Futurism*, 2016, <https://futurism.com/samsung-patents-smart-contact-lenses-built-camera/>, accessed 11 August 2018.

external coordination, trust, and information exchange in an innovative network. Yet, in Korea, the supply chain was still not deemed a key factor in driving value and differentiation and, hence, not incorporated into company strategies. This, compounded with the *chaebols*' reluctance to outsource beyond first-tier suppliers, restricted the companies from acquiring new technologies and ideas.

**4. Organizational culture.** An important side effect of a founder-centric structure was an excessive reliance on informal culture and interpersonal ties. The centralization of decision-making capabilities around the chairman (only rarely a chairwoman) and the so-called "control towers" reporting directly to the chairman created a culture where informal processes took precedence over formal controls. What was important was that the commands issued by the chairman were implemented, not how. In such situations, the individual capabilities and interpersonal relationships of generalist workers became important in intracompany cooperation. In the past, the human resources practices of Korean firms were conducive to building such linkages, as they largely relied on internal staffing, seniority-based rewards and promotions, as well as lifetime employment for sustaining employee commitment and loyalty. The nexus between vertical founder-centric structures and horizontal informal ties created an environment where processes were not documented, which remained opaque to outsiders. This tendency was exacerbated by the *chaebols*' historical reliance on internal labor markets, which discouraged employees from switching between companies and made it natural for employees to develop firm-specific skills and rigid practices.

Overall, the hierarchical structure of the *chaebol* and their lack of openness to external inputs historically hindered their disruptive innovation capabilities. While the *chaebol* proved more than adept at incremental innovations improving existing products, they had yet to demonstrate a capability to create entirely new markets based on new technologies and products.

Samsung Electronics might have been better positioned than the other *chaebol* to generate more disruptive innovations, because it adopted process-oriented work systems to enhance productivity since the financial crises of 1998 and 2008. While some aspects of the traditional human resources system remained in place, Samsung Electronics also adopted some Western-style market-oriented human resources practices. Thus, its approach toward human resources might be best described as a hybrid, with some high-level positions being filled by experienced external workers and most entry-level positions filled by new graduates who progress upward through a traditional, internally oriented system. Yet, a hierarchical structure and centralized coordination remained core to Samsung's organizational practices in its Korean headquarters, along with the uniformity and solidarity that they generated.<sup>18</sup>

These characteristics historically limited Samsung's ability to innovate. In 2013, Samsung spent the most on research and development of any company in the world. Yet, it continued to lag Apple and Google on a list of innovative companies compiled by Booz & Co.<sup>19</sup>

---

<sup>18</sup> Cho et al., "Competitive Strategy and Challenges for the Chaebol," in *Strategic, Policy and Social Innovation for a Post-industrial Korea: Beyond the Miracle*.

<sup>19</sup> Eugene Kim, "Samsung Plans to Hire 'Like Crazy' In Silicon Valley To Find The 'Next Big Thing,'" *Business Insider Australia*, 27 July 2014, <https://www.businessinsider.com.au/samsung-silicon-valley-rd-center-2014-7>, accessed 10 July 2018.

## Samsung's Shift toward Silicon Valley

Recognizing these limitations, Samsung executives increasingly turned toward Silicon Valley and its rich research and innovation ecosystem to provide the disruptive innovation capabilities that its Korean headquarters location historically lacked. Samsung's aggressive expansion in Silicon Valley was propelled by the challenges it faced in the maturing smartphone market and the increasingly fierce competition it faced.<sup>20</sup>

Silicon Valley remained the unquestioned leader in global technology innovation, producing multiple waves of high-technology market leaders from Intel and Hewlett-Packard in the 1980s to Google and Facebook in the 2010s. Observers noted that Silicon Valley represented a "habitat" or ecosystem for corporate innovation and new venture creation. While their rationales were sometimes focused simply on the availability of venture capital and other support services for innovators and entrepreneurs, Silicon Valley insiders highlighted three deep-rooted reasons for the region's long-term success. Silicon Valley continued to be a magnet for managerial, scientific, and especially engineering talent, as well as homegrown firms like Apple and foreign firms like Samsung that sought to hire such talent. Being an "agglomeration" or "industry cluster" with a critical mass of technologically focused individuals and firms, Silicon Valley gave both individuals and firms the opportunity to specialize and gain deeper expertise. Just as importantly, Silicon Valley embodied a culture where people and firms were encouraged to take risks. It was often said that "if you fail in Silicon Valley, you are considered experienced," whereas you would simply be seen as a failure elsewhere. Furthermore, many Silicon Valley corporations, including Google, encouraged their engineering teams to found startups, often rewarding them by acquiring the ones that succeed. The final element of the Silicon Valley ecosystem was the social networks that bound Silicon Valley tech workers into something greater than themselves. Unlike workers elsewhere, for instance, a Korea where "Samsung men" often avoided speaking with "LG men," Silicon Valley tech workers often maintained friendships with former coworkers at their competitors. Not only did these friendships spread innovations and information about new opportunities, but they also created opportunities to synthesize ideas into something new, spinning off innovations. Regardless whether someone was working in a corporate research laboratory or a startup of their own, there was simply no substitute for being tied into these social networks to keep abreast of new ideas and innovations in various technology sectors. Thus, Silicon Valley continued to dominate sectors considered at the cutting edge of technological innovation. While non-Silicon Valley players in technology, like Alibaba and Tencent in China and Naver in Korea, rose to prominence and even local dominance, few built the global reach of the major Silicon Valley players.<sup>21</sup>

In recent years, Samsung's Silicon Valley subsidiaries went beyond simply research and development, increasingly dictating strategy not only for Samsung Electronics, but also Samsung's other technology-oriented subsidiaries. This shift posed profound implications for Samsung's potential to achieve its ambitions.

---

<sup>20</sup> Ibid.

<sup>21</sup> Anna Lee Saxenian, *Regional Advantage: Culture and Competition in Silicon Valley and Route 128* (Cambridge, MA: Harvard University Press, 1994).



**Rapid expansion in Silicon Valley.** As recently as 2014, Samsung was still viewed as a “mystery” by Silicon Valley companies. Media reports described Samsung as lacking a definitive leader like Steve Jobs or Mark Zuckerberg, and also being absent in the spontaneous meetings and random encounters critical in deal making in Silicon Valley. Samsung’s high-level executives recognized this as a problem and aggressively built a stronger presence in Silicon Valley.<sup>22</sup>

Samsung’s rapid expansion in Silicon Valley was led by Young Sohn, who joined the company in August 2012 and later became co-president and chief strategy officer of Samsung Electronics. Previously, Sohn had founded Intel’s PC chipset business, ran its joint venture with Samsung in the 1980s, and led several successful Silicon Valley semiconductor and storage startups. In an interview with *MIT Technology Review*, Sohn explained that he is “responsible for driving strategy and innovation globally,” which includes working with teams in the US and Korea “to identify new technologies and markets around the world.” Sohn calls this “an important priority,” and he emphasized that it is “unique” for a founder-centric company like Samsung to have a president-level executive based in Silicon Valley. “The [San Francisco] Bay Area will remain the center of Samsung’s innovative tech development and ecosystem efforts,” Sohn said.

Sohn outlined Samsung’s agenda in Silicon Valley and then took steps to implement it. In 2012, Sohn described Samsung’s products as a “device-centric” experience. He identified “ecosystems” such as Apple’s iCloud as a major area for development in the future. Early on, Sohn identified “cloud technologies, big-data technologies, mobile-ecosystem technologies, and enterprise infrastructure” as items that Samsung would focus on. Sohn also said that Samsung will “continue the push for innovation and talent that can put [them] in a new place. And [they] will continue into new businesses,” with health care being named as a prime example. These aligned with the five key technologies that Samsung announced in 2017.

Sohn’s first move to achieve this agenda was to convince the company’s CEO and vice chairman to start a USD\$100mn fund for investing in early-stage startups in the US in early 2013. During the first year of the Samsung Catalyst Fund, it invested in 24 companies. In addition to starting a fund to support startups, Samsung also organized a developers’ conference in San Francisco, which was attended by 1,300 people in 2013. The partners were eager to showcase their work with Samsung, highlighting their new hardware developments and the rapid increase in the number of users.<sup>23</sup>

Samsung built on this foundation by starting four businesses to leverage the Silicon Valley innovation ecosystem. The list included not only SSIC but also Samsung Design America (SDA), the Open Innovation Center (OIC), and the Media Solutions Center America (MSCA). These businesses expanded aggressively by recruiting locally.<sup>24</sup> As of 2014, Samsung affiliates employed about 4,000 in Silicon Valley, which at the time exceeded the global head count for Airbnb, Dropbox, Pinterest, and

---

<sup>22</sup> Shara Tibken, “Samsung’s next Big Thing: Gaining Street Cred in Silicon Valley,” CNET, 10 November 2014, <https://www.cnet.com/news/samsungs-next-big-thing-gaining-street-cred-in-silicon-valley/>, accessed 10 July 2018.

<sup>23</sup> Jessica Leber, “Why Samsung’s Man in Silicon Valley Uses Apple Devices,” *MIT Technology Review*, 14 December 2012, <https://www.technologyreview.com/s/508306/why-samsungs-man-in-silicon-valley-uses-apple-devices/>, accessed 10 July 2018.

<sup>24</sup> Dara Kerr, “Samsung Breaks Ground on Futuristic Silicon Valley Campus,” CNET, 9 July 2013, <https://www.cnet.com/news/samsung-breaks-ground-on-futuristic-silicon-valley-campus/>, accessed 10 July 2018.

Uber combined. Sohn stated at the time that Samsung might become “one of the largest 10—or even five—employers in Silicon Valley within the next five years.” That would bring Samsung to the level of Apple, Cisco, Google, Oracle, and Lockheed Martin.<sup>25</sup> Growth continued as Samsung announced that the company “selected Silicon Valley as a much larger home base for housing some of the best minds in the country.” To support this growth, Samsung Electronics built landmark facilities in the region. Samsung built a 1.1-million-square-foot headquarters in north San Jose, near Apple’s headquarters, to house not only research and development but also sales. Samsung Research America, a software-focused facility, also launched a new office in Mountain View, near Google’s headquarters.<sup>26</sup>

**Relocation of the control tower.** Samsung’s Silicon Valley subsidiaries increasingly assumed strategic planning roles more traditionally associated with the company’s Korea-based headquarters.

In February 2017, Samsung announced the dissolution of its Corporate Strategy Office—commonly known as the Samsung Group’s “control tower”—after five senior executives, including Samsung Electronics vice chairman and heir-apparent Lee Jae-yong, were prosecuted for bribing now-impeached president Park Geun-hye. In addition to closing the Future Strategy Group, Samsung Group’s chief vice chairman, president, and around 60 executives also resigned at the same time. This change had great importance because the Future Strategy Group had been in place in Samsung since 1959 and established a top-down relationship between the group and its affiliates. Before its disbanding, the office had around 200 members recruited from different units, all of whom were responsible for uniting the group’s strategy. The Future Strategy Office also led weekly meetings of the CEOs of all Samsung subsidiaries. These meetings were abandoned, so that each subsidiary had more autonomy and was fully operated by its board of directors. The annual recruitment system, which was led by the Future Strategy Office, was also abolished and its duties returned to individual affiliates.<sup>27</sup> Despite public criticism of the Future Strategy Office, some industry sources were concerned that the lack of a control tower could “make a dent in the competitiveness of not only Samsung but also South Korea.”<sup>28</sup> Yet, an official at Samsung told Yonhap News Agency that “the conglomerate is unlikely to revive a control-tower entity considering the public’s negative sentiment.”<sup>29</sup> [See **Exhibit 4** for details on the reorganization of the Samsung Group following the abolishment of the control tower.]

In late 2017, industry sources noted that the SSIC in Silicon Valley was gaining more responsibility in Samsung Group, even to the extent of replacing the disbanded Future Strategy Office. There had been a “prolonged leadership vacuum” in Samsung since the imprisonment of Lee Jae-yong and the dissolution of the control tower. During this period, major strategic decisions such as executive appointments and M&A negotiations were put on hold. The SSIC was tasked with filling this void, leading business strategy and development for three divisions: the chip business division, smartphone,

---

<sup>25</sup> Tibken, “Samsung’s next Big Thing.”

<sup>26</sup> Kerr, “Samsung Breaks Ground on Futuristic Silicon Valley Campus.”

<sup>27</sup> “Samsung Disbands Scandal-hit Control Tower,” *Korea Herald*, 28 February 2017, <http://www.koreaherald.com/view.php?ud=20170228000806>, accessed 10 July 2018.

<sup>28</sup> “Samsung Strengthens Autonomous Management of Units,” *Korea Bizwire*, 27 February 2018, <http://koreabizwire.com/samsung-strengthens-autonomous-management-of-units/112286>, accessed 10 July 2018.

<sup>29</sup> “Samsung May Consider Revival of Control Tower: Sources,” Yonhap News Agency, 16 October 2017, <http://english.yonhapnews.co.kr/news/2017/10/16/0200000000AEN20171016005800320.html>, accessed 10 July 2018.

and appliance businesses.<sup>30</sup> Samsung Electronics also announced the set-up of an artificial intelligence (AI) center under Samsung Research to enhance the SSIC.<sup>31</sup> In regards to the expanded responsibilities of the SSIC over various technology-related initiatives, sources noted that “the US office will make strategic decisions, the Seoul headquarters will focus on executing the decisions.”<sup>32</sup>

Simultaneously, the company also announced that the role of Young Sohn, head of the SSIC and chief strategy officer, would be reorganized as “responsible for R&D activities of Samsung Electronics as a whole and continue to work as the chairman of the board of Harman International.” The group explained, “[T]his is to respond timely to today’s fast-changing business environments and better ensure future growth opportunities.”<sup>33</sup> The new status of Young Sohn was visible when he met with French president Emmanuel Macron on a trip to France in 2018.<sup>34</sup> It was unusual for Young Sohn to meet a foreign head of state, which was typically the chairman’s responsibility.

The influence shift from Samsung Electronics’ Seoul headquarters to its Silicon Valley subsidiaries reflected a long-term increase in the importance of Korean-Americans. The first Korean-American to have major authority within Samsung Electronics was Eric Kim, who was given full autonomy to manage a USD\$3bn advertising budget when he joined Samsung in Korea after a long Silicon Valley career. Kim proved to be “phenomenally successful” at increasing Samsung’s brand in the early 2000s. Yet, he faced “icy hostility from the executives,” and “was able to succeed only because the then-President of Samsung Electronics actively protected him and his endeavors.” The president told his subordinates that “if you touch him [Eric Kim], you are dead.”<sup>35</sup> The position of Korean-Americans improved dramatically after that era, with many young Korean-American executives placed in important positions throughout the company.

**Power struggle: Seoul vs. Silicon Valley.** Although the SSIC assumed a role similar to that of the disbanded control tower, Samsung announced in November 2017 that executives formerly in the Future Strategy Office would reassemble in a “business support task force.” This team was led by another Samsung co-president, Jung Hyun-oh, who was a member of the Future Strategy Office. To justify this new task force, Samsung executives admitted that decision making was difficult without an overarching governing body, and key businesses decisions were delayed since the disbanding of the control tower.<sup>36</sup> Such revelations sparked speculation that Samsung’s Seoul headquarters and its Silicon Valley subsidiaries were engaged in a tug-of-war against older executives who “rose through the ranks [in Samsung’s historically Korea-oriented system] under [Chairman] Lee Kun-hee” and younger

<sup>30</sup> “Samsung’s Silicon Valley Office Likely to Play Control Tower Role,” *The Investor*, 23 November 2017, <http://www.theinvestor.co.kr/view.php?ud=20171123000714>, accessed 10 July 2018.

<sup>31</sup> Jin-young Cho, “Samsung Electronics Carried Out Reorganization Targeting New Businesses,” *Business Korea*, 22 November 2017, <http://www.businesskorea.co.kr/news/articleView.html?idxno=19914>, accessed 10 July 2018.

<sup>32</sup> “Samsung’s Silicon Valley Office Likely to Play Control Tower Role,” *The Investor*.

<sup>33</sup> Jin-young Cho, “Samsung Electronics Carried Out Reorganization Targeting New Businesses,” *Business Korea*, 22 November 2017, accessed 10 July 2018, <http://www.businesskorea.co.kr/news/articleView.html?idxno=19914>.

<sup>34</sup> Yoo-chul, Kim, “Samsung’s Jay Y. Lee Seeks Better Access to Trump,” *The Korea Times*, 20 April 2018, [https://www.koreatimes.co.kr/www/tech/2018/04/133\\_247602.html](https://www.koreatimes.co.kr/www/tech/2018/04/133_247602.html), accessed 10 July 2018.

<sup>35</sup> Gi-Wook Shin and Joon Nak Choi, *Global Talent: Skilled Labor as Social Capital in Korea* (Palo Alto, CA: Stanford University Press, 2015).

<sup>36</sup> Young-won Kim, “Samsung to Run New Control Tower to Fill Leadership Vacuum,” *The Investor*, 3 November 2017, <http://www.theinvestor.co.kr/view.php?ud=20171103000586>, accessed 10 July 2018.

counterparts with global or Korea-based backgrounds who joined midcareer under heir-apparent Jay Lee were engaged in considerable conflict.

One example of this conflict was changes in long-standing organizational practices. Traditionally, Samsung had been notoriously careful in avoiding M&As.<sup>37</sup> As the *chaebol* founders focused on control rights over their company, there was little room for M&A possibilities or partnership with external parties. Instead, the founders strongly preferred in-house development, which helped them to maintain equity control over the company. Yet, Samsung's recent strategic decisions deviated from this tradition. For example, Samsung purchased automotive parts manufacturer Harman-Kardon in December 2017, with Sohn becoming chairman after the acquisition.<sup>38</sup> Furthermore, Samsung also became more active in corporate venture capital (CVC) in the Silicon Valley, providing finance support for startups. Despite these moves bringing Samsung closer to the business models of Silicon Valley companies such as Hewlett-Packard, the moves, however, faced stiff resistance from Samsung's headquarters-based executives.

**Cultural mismatches.** Despite Samsung's reorientation toward Silicon Valley, the Korean firm's partners expressed concerns in intercultural communication and business decision-making processes, perhaps reflecting the continuing tug-of-war between Silicon Valley and Seoul. Several partners told the media that "they're still confused about who they should be working with at Samsung." Also, since Samsung's businesses in Silicon Valley went through several reorganizations, the partners noticed that final decision making "always return[s] to Korea." Hence, both Samsung employees in the US and their partners found the situation "frustrating." In anonymous interviews with CNET News, several Samsung partners voiced complaints about "cultural misunderstandings, unreasonable expectations on the part of Samsung's Korean project managers, and, at times, a lack of results when it comes to Samsung helping their businesses." At least one developer even went as far as saying that his company "won't work with Samsung at all anymore." The anonymous developer said, "[I]n their development process, once you get turned over to Korea, with the lack of support, lack of understanding, and arrogance, we don't need them." Two other partners, MSCA and OIC, also mentioned that they found it hard to "break down the company's traditional silos." According to observers, Samsung's internal TV business "still doesn't work well with mobile." Marc Shedroff, OIC vice president of partnerships, mentioned that getting different Samsung divisions to work together is "a complex problem to solve."<sup>39</sup>

## Strategic Choices: Alternative Modes of Entry

Samsung's expansion into Silicon Valley, and the growing strategic importance of its subsidiaries there, had relevance to Samsung's development of disruptive technologies and entirely new markets. How Samsung developed its target markets in machine intelligence and automobiles, intelligent health-care solutions, and intelligent machines to augment human capabilities had paramount strategic importance if Samsung was to hold off Chinese competitors. For each of these categories,

---

<sup>37</sup> Cho et al., "Competitive Strategy and Challenges for the Chaebol."

<sup>38</sup> "Samsung Is Eyeing Big Acquisitions," *Fortune*, 1 December 2017, <http://fortune.com/2017/12/01/samsung-is-eyeing-big-acquisitions/>, accessed 10 July 2018.

<sup>39</sup> Tibken, "Samsung's next Big Thing."

Samsung faced two possible modes of entry to the new technologies' markets. On one hand, Samsung, as a large Korean conglomerate (*chaebol*), possessed world-leading capabilities for benchmarking new innovations and improving on them. This edge was particularly outstanding in the development of hardware that involved precise engineering and advanced technology, such as smartphones and automobiles. Nonetheless, it was notable that the essence of this strategy was to improve existing technology invented by competitors, instead of leading the innovation process. On the other hand, Samsung could leverage an open systems model, common for ventures in Silicon Valley. This approach differed starkly from the fast-follower strategy that Samsung traditionally relied on. Instead of leaving the risks of pioneering a new industry to Silicon Valley startups, Samsung could help pioneer the markets for new technologies.

How was Samsung going to enter or expand its presence in each of these markets?

**Option 1: Traditional Korean model.** Many of the target technologies were examples of the type of high-technology hardware that Korean manufacturers long excelled in designing, manufacturing, and improving. The strong affinities between the next-generation hardware technologies that Samsung was targeting and its traditional strengths in high-technology hardware suggested that a traditional fast-follower approach might not be inappropriate after all. If Samsung could succeed in mobile phones and semiconductors, which were leading-edge technologies when Samsung entered these markets, what was to say that Samsung could not succeed in next-generation hardware technologies in the same way by benchmarking first movers and then applying product and process improvements?

One notable example of the Korean innovation ecosystem's potential to handle next-generation hardware technologies was Korea's strength in robotics. Korean universities such as the Korean Advanced Institute of Science and Technology (KAIST) had a strong foundation in robotics, with significant achievements in the DARPA Robotics Challenge (DRC) and other worldwide robotics competitions.<sup>40</sup> In particular, the DRC-HUBO robot, which won the DARPA competition, had features like wheels on knees and rotating torsos. Samsung could very well leverage this Korea-based infrastructure. For instance, Hyundai—another Korean *chaebol*—developed robotic wearable exoskeletons for human augmentation at Hyundai Motors' Central Advanced Research and Engineering Institute in Namyang, South Korea, with 11,000 researchers.<sup>41</sup> Lim Tae-won, the head of the institute, noted that “[f]rom a business perspective, there's a strong alignment between making a mobility robot and automobile.” Also, Lim mentioned that the exoskeleton devices would hopefully “form the basis . . . to provide more mobility platforms for the well-being of our customers.”<sup>42</sup> Samsung Electronics could presumably pursue similar paths when entering the markets for smart machines and

---

<sup>40</sup> Erico Guizzo and Evan Ackerman, “How South Korea's DRC-HUBO Robot Won the DARPA Robotics Challenge,” *IEEE Spectrum: Technology, Engineering, and Science News*, 9 June 2015, <https://spectrum.ieee.org/autoton/robotics/humanoids/how-kaist-drc-hubo-won-darpa-robotics-challenge>, accessed 10 July 2018.

<sup>41</sup> Hyundai Motors, “Hyundai Global Networks,” <http://www.hyundai.com/worldwide/en/about-hyundai/corporate/networks/global>, accessed 10 July 2018.

<sup>42</sup> Tae Won Lim, “Hyundai Motor Leads Personal Mobility Revolution with Advanced Robots,” *Hyundai Media Newsroom*, 7 March 2017, <https://www.hyundai.news/eu/technology/hyundai-motor-leads-personal-mobility-revolution-with-advanced-robots/>, 10 July 2018.

smart health care, especially as it had already been collaborating with Hyundai Motors on autonomous automobiles.

**Option 2: Silicon Valley's research lab model.** Alternatively, Samsung could build an in-house research lab in Silicon Valley, staffed by mainly local talent. For instance, Samsung recruited local Silicon Valley engineers and executives to build graphical processing units (GPUs), chips that were becoming increasingly crucial not only for rendering graphics on computers and mobile devices, but also for running machine learning algorithms. This unit, housed largely in the San Jose building, was staffed and managed nearly entirely by local hires.<sup>43</sup> This approach aligned closely with Samsung's history of using Silicon Valley as a research and development center.

Silicon Valley hosted many legendary research labs. Xerox PARC, founded in 1970 as a division of Connecticut-based photocopier manufacturer Xerox Corporation, was credited with inventing and/or developing some of the most iconic technologies of the internet era, including laser printing, graphical user interfaces, object-oriented programming, and very large-scale integration (VLSI) for semiconductors. While Xerox failed to monetize many of the most important innovations, other players in the Silicon Valley ecosystem certainly did. For instance, Apple licensed graphical user interfaces and the computer mouse for the Macintosh personal computer from Xerox PARC. In recent years, companies such as Google explicitly sought to learn from this experience by organizing their labs like startups, with the goal of bringing specific projects from inception to market.

**Option 3: Mergers and acquisitions.** Another alternative for Samsung was to buy and grow startups based mainly in Silicon Valley. While Samsung historically was averse to mergers and acquisitions, SSIC and other Silicon Valley units conducted many acquisitions of Silicon Valley startups. Young Sohn also repeatedly mentioned M&A as an approach that Samsung would adopt in the future.

Purchasing promising ideas and startups to build a next-generation portfolio was a model that continued to be viable in the pharmaceutical industry, where large firms more often purchased biotechnology startups than developed technology in-house. In sectors such as electronics and the internet that were closer to Samsung's historical strengths, Japan-based Softbank built a portfolio that included major stakes in Alibaba, Sprint, Yahoo! Japan, Uber, Didi Chuxing, Slack, and WeWork. Samsung, however, was likely to follow the pharmaceutical model more closely than the Softbank model, seeking to develop new acquisitions into core Samsung-branded products rather than simply maintaining a portfolio of unrelated firms.

Samsung already proved itself more willing to conduct M&A activities in its purchase of Harman International for USD8bn. This acquisition not only was significant as the largest acquisition by Samsung in its history, but also broke a long-standing pattern. In the late 1990s, Samsung invested USD377.5mn in AST Research, which had been among the six-largest personal computer makers before having strategic and operational problems. After taking control of AST Research, Samsung installed Korea-based executive Y. S. Kim as CEO but failed to reverse AST Research's downward

---

<sup>43</sup> Fuad Abazovic, "Samsung Is Building a GPU," *Fudzilla*, 13 September 2014, <https://www.fudzilla.com/35744-samsung-is-building-a-gpu>, accessed 10 July 2018.

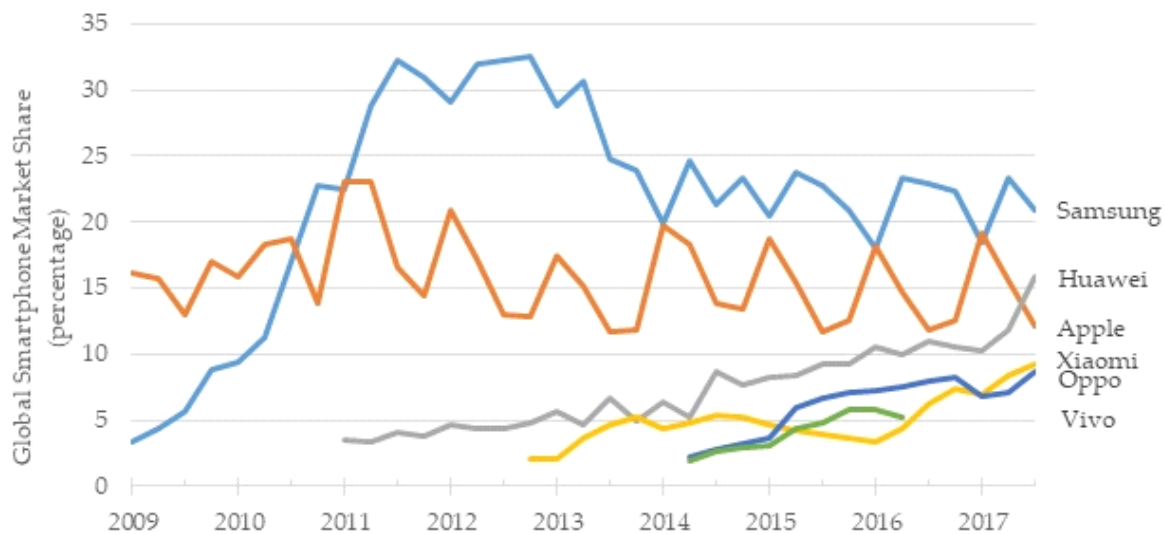
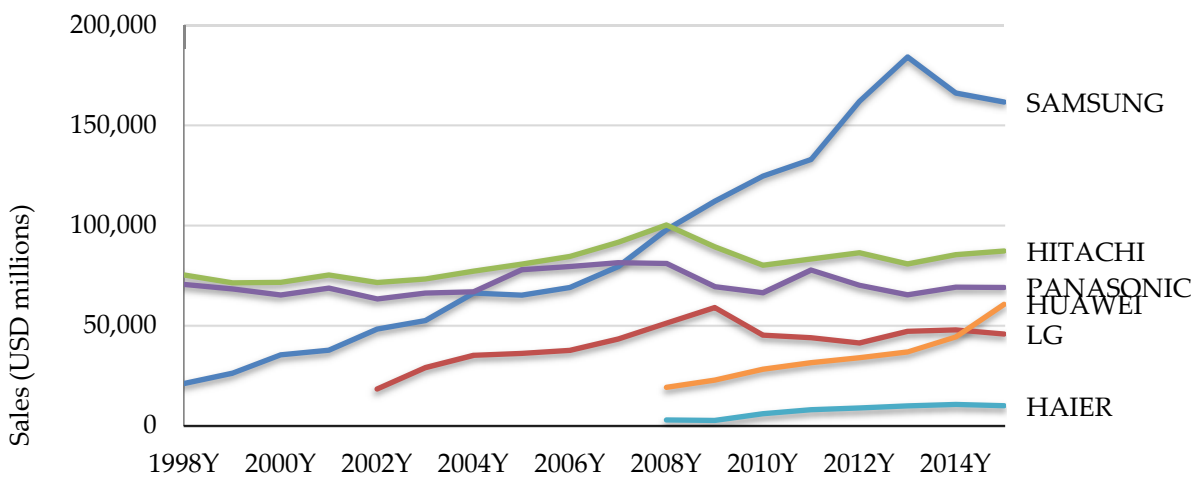
spiral. Eventually, AST Research became a major cash drain for Samsung, which it could ill afford during the 1997 Asian financial crisis, and Samsung ended up selling most of its stake in AST Research for about half the amount it had initially invested.<sup>44</sup> The experience traumatized Samsung executives to such a degree that they did not conduct another major acquisition until buying Harman twenty years later. Samsung left Harman CEO Dinesh Paliwal in place, with Sohn becoming board chairman.<sup>45</sup>

---

<sup>44</sup> Linda Harrison, "Troubled AST finds new owner, *The Register*, 1999, [https://www.theregister.co.uk/1999/01/11/troubled\\_ast\\_finds\\_new\\_owner/](https://www.theregister.co.uk/1999/01/11/troubled_ast_finds_new_owner/), accessed 11 November 2018.

<sup>45</sup> Steven Dent, "Samsung buying auto and audio giant Harman for \$8 billion," *Engadget*, 2016, <https://www.engadget.com/2016/11/14/samsung-buys-harmon-auto-audio/>, accessed 11 November 2018.



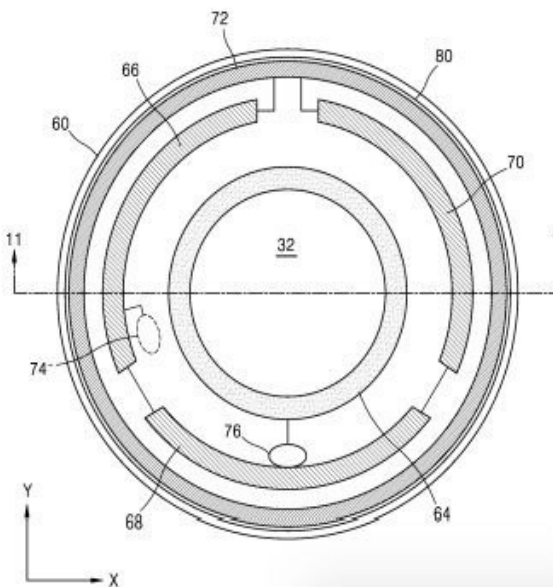
**Exhibit 1: Global Market Share of Selected Smartphone Vendors****Exhibit 2: Revenues of Selected Asian Electronics Manufacturers, 1998–2016<sup>46</sup>**

<sup>46</sup> Hyung Oh Lee and Hyung-Deok Shin, "Corporate strategy and the competitiveness of Korean electronics firms versus their Japanese and Chinese Counterparts," in *Strategic, Policy and Social Innovation for a Post-industrial Korea: Beyond the Miracle*, eds. Choi, Joon Nak, Yong Suk Lee, and Gi-Wook Shin. (Abingdon, Oxon: Routledge, 2018).

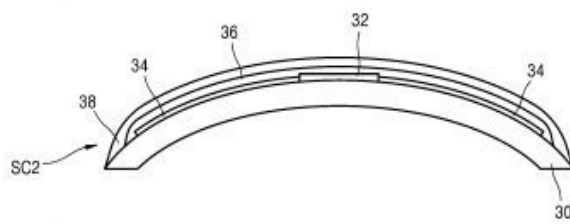


**Exhibit 3: Patent diagrams for Samsung's smart contact lenses**

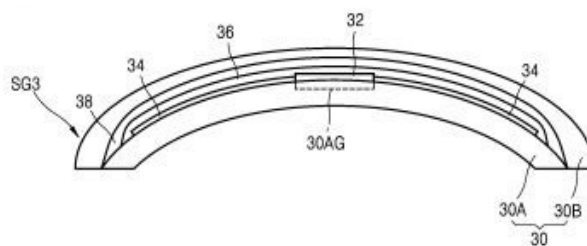
도면9



도면7

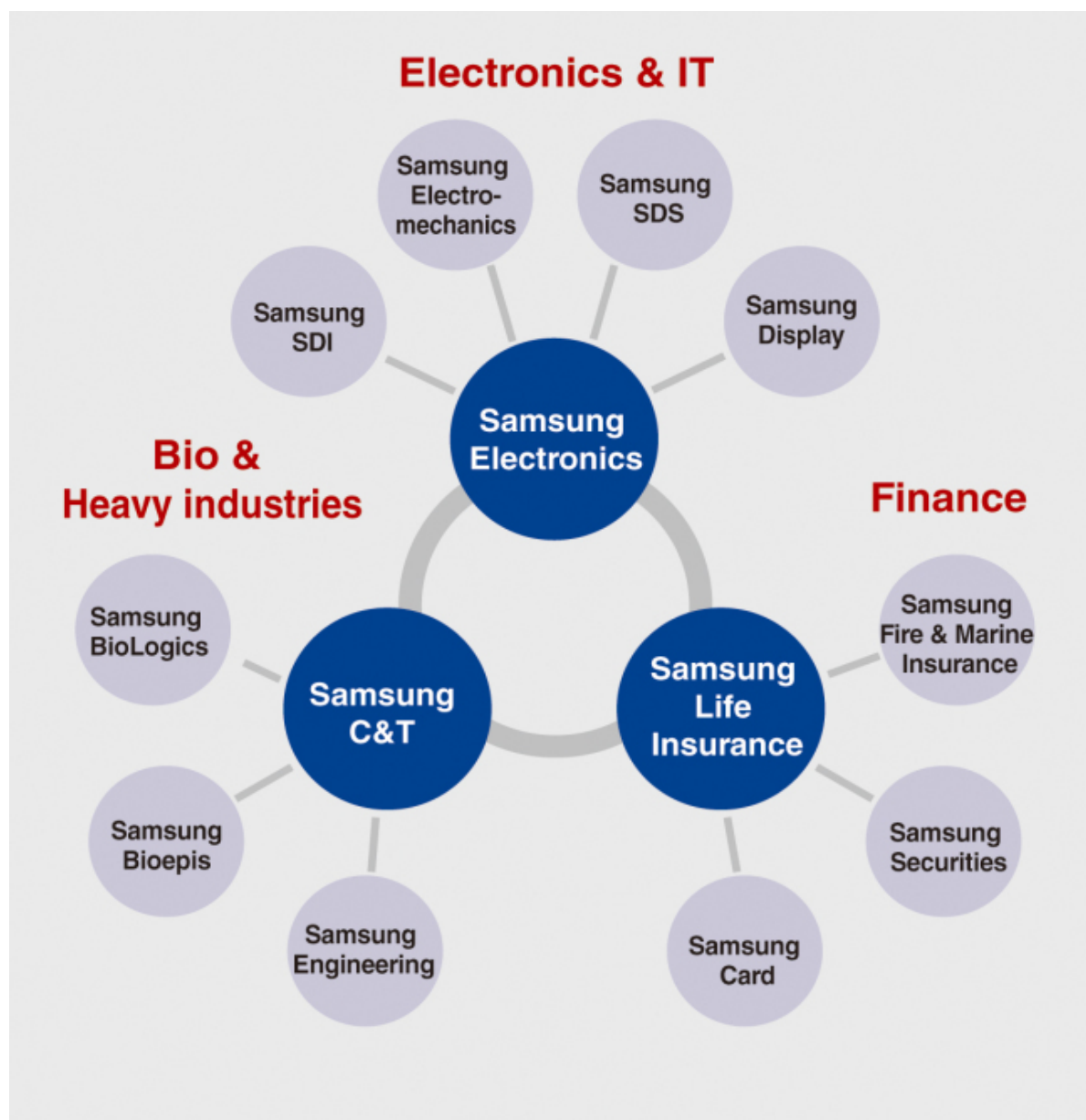


도면8



Source: Samsung/Korea Intellectual Property Right Service, as reported by Santos, 2016.<sup>47</sup>

<sup>47</sup>Miguel Santos, "Samsung Patents Smart Contact Lenses With a Built-in Camera: Meet the contact lenses that can project images straight into your eyes." *Futurism*, 6 April 2016, <https://futurism.com/samsung-patents-smart-contact-lenses-built-camera>, accessed 13 March 2019.

**Exhibit 4: “Samsung affiliates scramble to adapt to new structure”<sup>48</sup>**

<sup>48</sup> Reproduced from *Korea Herald*, “Samsung affiliates scramble to adapt to new structure,” 1 March 2017, <http://www.koreaherald.com/view.php?ud=20170301000227> accessed 13 July 2018.