

# Dynamic Capabilities at Samsung:

## OPTIMIZING INTERNAL CO-OPETITION

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*This article presents a clinical study, based on a decade of ongoing research at Samsung Group, that describes how the Samsung Group and its mobile phone division competed successfully in smartphones. The ability to manage co-opetition—simultaneous forces of competition and cooperation within the business group—is a particular dimension of dynamic capability that has stood Samsung in excellent stead. Relying on internal exhortations to cooperate often leads to a lack of dynamism, whereas untrammelled competition leaves proverbial synergies entirely untapped and spawns duplicative investments. Samsung, however, has succeeded by its ability to strike a balance between the two. (Keywords: Dynamic Capabilities, Internal Co-opetition, Dual Sourcing, Parallel Development, Competitive Advantage, Business Group, Technological Innovation, Creative Collaboration)*

**W**hen Apple's iPhone became a global sensation in June 2007, Samsung was not a major player in the smartphone industry. The iPhone shock hit Samsung hard because the company was not prepared for the rapid manner in which the smartphone eclipsed feature phones, Samsung's conventional strength. However, in just three years after Samsung launched its first Android-based smartphone, the Galaxy S1, in May 2010, Samsung caught up with Apple and became the leading smartphone maker in the world by recording 32% global market share as opposed to Apple's 15% in 2013 (by units sold). How did Samsung rebound and become a viable competitor so quickly?

This article probes the recent success of Samsung in the global smartphone industry by applying the dynamic capabilities framework. Dynamic capabilities—what we call “DC” hereafter—are “a firm’s ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments.”<sup>1</sup> Teece disaggregated DC into “the capacity (1) to sense and shape opportunities and threats, (2) to seize opportunities, and (3) to maintain competitiveness through enhancing, combining, protecting, and when necessary, reconfiguring the business enterprise’s intangible and tangible assets.”<sup>2</sup> In markets where the competitive landscape is shifting, DC can become a source of sustained competitive advantage.

While the literature on DC has emphasized cooperation among organizational units in developing new products and technologies,<sup>3</sup> we argue that enterprises should utilize not only cooperation but also competition among business units to enhance their DC. Cooperation and competition among subunits of an organization do not automatically work productively, in concert. For example, when cooperation is necessary, subunits instead sometimes pursue more parochial short-term goals, thereby leading to sub-optimization at the enterprise level. When each subunit must negotiate vehemently with other units in terms of quality and price to enhance its own performance, they might instead collude, including the provision of subsidies to one or the other units, thus reducing their competitiveness as a whole. In this article, we explain how Samsung has optimized its internal co-opetition processes to minimize such situations and to embrace new business opportunities in the smartphone industry.

Our research on the Samsung group is based on interviews with more than 80 senior executives over a decade and on data collected from both inside and outside Samsung, as well as on a decade of interactions with Samsung executives in executive education programs.<sup>4</sup>

## Theoretical Basis of Internal Co-opetition and its Relation to Dynamic Capabilities

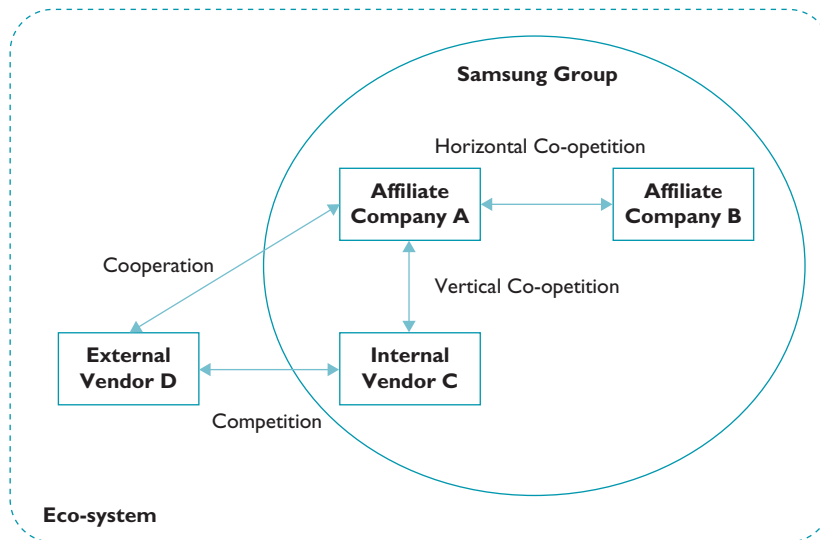
The term “co-opetition,” inspired by game theory, was coined to describe the relationship of two entities that are simultaneously involved in both competition and cooperation.<sup>5</sup> Existing studies focused mostly on inter-firm co-opetition.<sup>6</sup> In a recent review article on co-opetition, Walley noted a lacuna in the majority of the literature, the study of subunits of an organization that are engaged in simultaneous cooperation and competition.<sup>7</sup> We will refer to this intra-firm co-opetition as “internal co-opetition.”

Only a few studies on internal co-opetition exist. For example, drawing on a social network perspective of organizational coordination, Tsai investigated the effectiveness of coordination mechanisms on knowledge sharing in intra-organizational networks that consist of both collaborative and competitive ties among organizational units. Luo presented a conceptual and typological framework that delineates co-opetition within a multinational enterprise.<sup>8</sup> In particular, Luo identified dispatch of expatriates in a multinational enterprise as a practice for promoting both cooperation and competition. On the one hand, rotation of expatriates under the headquarters’ centralized coordination helped subsidiaries cooperate with each other. On the other hand, subsidiaries compete to secure better expatriates and experts from the parent. Despite these studies, though, many questions regarding internal co-opetition remain unaddressed. For example, it is not clear

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**FIGURE 1.** Internal Co-opetition of Samsung

how and by which processes internal co-opetition actually contributes to performance and innovation.<sup>9</sup>

Here we focus on internal co-opetition among affiliate companies within a diversified business group or business divisions within a (multi-business) affiliate company.<sup>10</sup> In other words, internal co-opetition occurs at all levels within a business group. As we describe in Figure 1 using the Samsung case, it can occur horizontally among affiliate companies or vertically between internal buyers and vendors within a business group. It is difficult to attain a good balance between cooperation and competition at any company, and even more so at a large and diversified business group.

Internal cooperation between business units in a business group, especially a vertically integrated one, can promote relationship-specific investments. Internal cooperation can also foster knowledge sharing and learning between different organizational parts and thus improve innovation capabilities. However, internal cooperation can reduce organizational flexibility when there is an obligation to transact internally, and (effectively) compel all to compromise on sub-optimal internal technologies that preserve the status quo.<sup>11</sup> In other words, a business group that emphasizes cooperation between business units risks having weaker units becoming dependent on stronger ones.<sup>12</sup>

In contrast, internal competition between business units can enhance organizational flexibility, encourage challenges to the status quo, and motivate greater efforts from employees.<sup>13</sup> Internal competition can also push business units for the best performance by keeping them on their toes. However, internal competition can also inadvertently induce duplicate investment, strategic incoherence, and in-fighting among business units, and it can jeopardize the attainment of full-scale

economies. Additionally, internal competition can devastate team spirit, waste resources, and cannibalize existing products and businesses.<sup>14</sup>

In a business group, managing relationships among diverse units is very important for the group to be more than the sum of its parts. A business group usually resorts to division-based management by treating each business unit as a profit center. Although it has advantages in realizing accountability at a division level, it does not do enough to create synergies. To address these shortcomings, a business group needs a headquarters organization that can promote internal cooperation among divisions and resolve possible conflicts.<sup>15</sup> Therefore, as we elaborate later, it is crucial for a business group to develop an organizational infrastructure or mechanism that bolsters both efficiency and synergy arising from co-opetition among business units. In the absence of this infrastructure, the co-opetition process may result in disarray, which either increases costs of system coordination or reduces gains of inter-unit sharing in a competitive climate.

We believe that our internal co-opetition perspective can extend the existing theory of DC as follows. First, the internal co-opetition perspective can advance the DC perspective by considering both internal collaboration and competition simultaneously as sources of DC, whereas the conventional DC perspective appears to us to neglect the importance of internal competition as a source of DC. By fostering internal co-opetition through practices such as dual sourcing and parallel development, Samsung amplified its sensing capacity, seized new business opportunities faster and captured values with co-specialized assets, and promoted asset orchestration and corporate renewal to adapt to rapidly changing environments.

Second, the internal co-opetition perspective makes it possible for us to extend our academic inquiry on DC into the setting of business groups (in contrast to the extant literature on DC, which is primarily at the level of the individual firm). Conventional studies on business groups emphasized the importance of collaboration among affiliate companies to generate synergies. However, our internal co-opetition perspective suggests that not only collaboration, but also competition among affiliates can contribute to DC of a business group by enhancing market-based efficiency and learning.

Overall, just as organizational forms that are a hybrid between markets and hierarchies (such as alliances) enable the coexistence of competition and cooperation between transacting parties, we describe an attempt to balance these forces of co-opetition in the Samsung group's pursuit of DC.

### **Internal Co-opetition in Samsung as a Basis of its Dynamic Capabilities in Smartphones<sup>16</sup>**

The majority of Samsung executives the authors have interviewed over the last 10 years point to synergy from inter-affiliate cooperation as the key factor in differentiating Samsung from its competitors. The initial focus on pure cooperation at Samsung, over time, accommodated competition to create the blend we refer to as co-opetition.

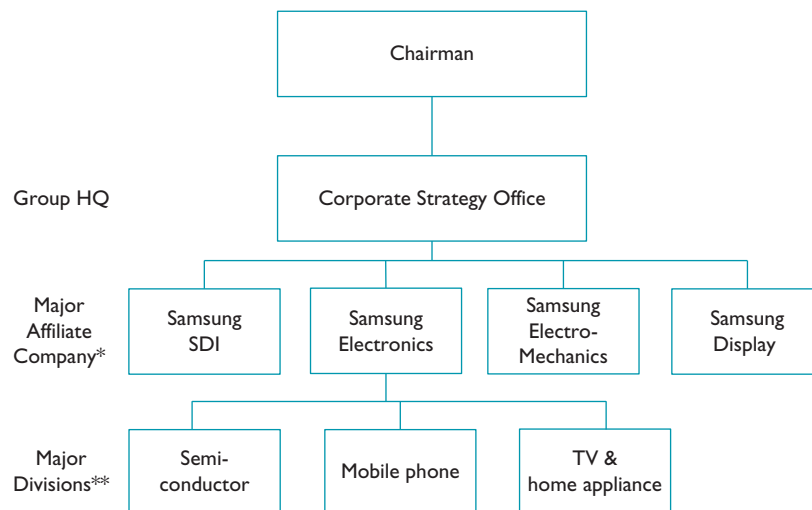
Chairman Kun-Hee Lee, the second chairman of the Samsung group (succeeding father and founder Byung-chul Lee in 1987), held that the synergy Samsung creates through its diversified business structure is its main source of competitive advantage by saying:

“Samsung Electronics is one of the few companies in the world that handles components, digital products, home electronics, and communications businesses under one roof. These divisions cooperate with and support each other.”<sup>17</sup>

Samsung as a business group has developed relevant complementary assets that are useful for the development and manufacturing of smartphones. It has internally produced major components of smartphones. As shown in Figure 2, which describes the smartphone business-related organizational structure of the Samsung Group, the mobile phone division of Samsung Electronics procures memory chips and mobile application processors from its semiconductor counterpart within Samsung Electronics. At the same time, it purchases its display panels, rechargeable batteries, and printed circuit boards from other Samsung affiliates such as Samsung Display, Samsung SDI, and Samsung Electro-Mechanics.

When Samsung rapidly caught up in the smartphone war with its first smartphone Galaxy S1, intensive internal cooperation among its vertically integrated

**FIGURE 2.** Organizational Structure of the Samsung Group



\* As of December 2013, the Samsung Group had 75 domestic affiliates. Each Samsung affiliate is a legally independent unit, with 17 of them being publicly traded and the remainder unlisted. Samsung Display is a wholly owned subsidiary of Samsung Electronics. We list major affiliate companies that are closely related to the smartphone business only.

\*\* Samsung Electronics has 3 major divisions. The official name of the mobile phone division is IT and Mobile Communications. The official name of the semiconductor division is Device Solutions. The official name of TV and home appliance divisions is Consumer Electronics.

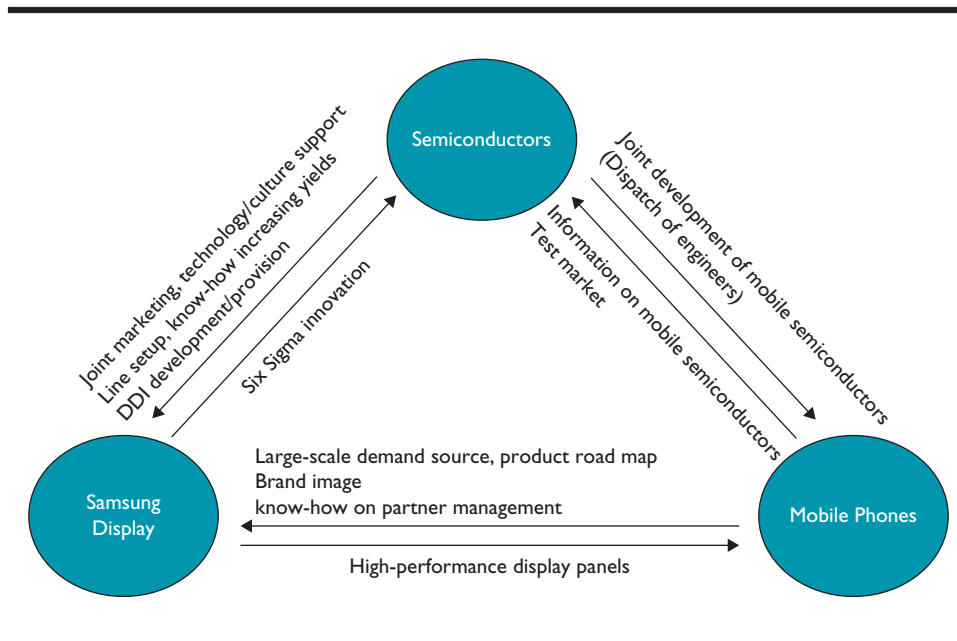
business units helped the company enhance its speedy development of competitive products and become a market leader in the smartphone market. Samsung established a task force team that was composed of people from Samsung Electronics's business divisions and other affiliates producing components of smartphones. As R&D personnel from diverse business units of Samsung Electronics and affiliate companies cooperated intensively to develop the Galaxy S1, Samsung succeeded in launching the phone about six months after the company began to develop it.

Members of the task force team played a liaison role by linking the development team to each of their own business units. Through the team, all related business units shared the goal of successfully launching the Galaxy S1, worked together to troubleshoot problems, and tested the overall performance of prototypes. This close-knit cooperation helped component producing divisions expedite the development of components that fit well to the final product, the Galaxy S1, and helped the mobile phone division optimize the performance of the systemic product. The cooperation also allowed the mobile phone division to tap the most recent developments in component technologies, as task force team members provided information on nascent technological developments from component-making divisions. The cross-affiliate and division task force team has been used since the development of the Galaxy S1 and has helped the mobile phone division speed up the development of smartphones customized to diverse telecom carriers. This internal cooperation is often more effective than cooperation with outside vendors, since Samsung's business units shared the common speed-oriented culture and language as well as geographical proximity.

As shown in Figure 3, cooperation between Samsung Electronics's mobile phone division and semiconductor division has often played a central role in enhancing the competitiveness of Samsung's mobile phone business. This is because semiconductors are a critical component of mobile phones, and are likewise critical to creating product differentiation and competitiveness. For example, in collaboration with the mobile phone division, the semiconductor division designed and produced system semiconductors for mobile phone display control chips and also audio chips that could produce 40 polyphonic ringtones in the early 2000s. The semiconductor division also collaborated with the mobile phone division to jointly develop a modem chip. More recently, Samsung's semiconductor division has developed the world's most powerful mobile application processors for use in Samsung's smartphones. In the process, the semiconductor division dispatched key engineers to the mobile phone division to help the division accumulate semiconductor-related capacities, while the mobile phone division in return provided the semiconductor division with information on mobile semiconductors and became a test market for new prototypes of mobile semiconductors, receiving speedy feedback and allowing them to make prompt fixes and upgrades to components. The cooperation made the semiconductor division a powerhouse of mobile semiconductors and eventually enhanced the performance of Samsung's smartphone.

Cooperation with Samsung Display also contributed to competitiveness of Samsung's smartphone business when it became the first company in the world to develop and produce smartphones equipped with organic light-emitting diode

**FIGURE 3.** Cooperation among the Mobile Phone, Semiconductor, and Display Panel Businesses



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(OLED) display panels. Samsung Display closely collaborated with Samsung Electronics’s mobile phone division to develop OLED display panels that could fit in the smartphone. Since there was only one supplier of the panels in the world at the time, the demand for panels vastly exceeded supply. Samsung Display was able to provide almost 90 percent of its output to Samsung Electronics’s mobile phone division, allowing Samsung smartphones to secure a competitive advantage in image quality. Likewise, Samsung’s mobile phone division also helped Samsung Display develop key technologies to reduce air gaps between liquid-crystal display (LCD) and touch screen panels (TSP) so that it could make its smartphone thinner and optimize battery life. Additionally, the mobile phone division shared its product roadmap with Samsung Display so that Samsung Display could develop panels for the division faster than outside vendors could. Most importantly, Samsung Electronics’s mobile phone division, the world’s top producer of smartphones, provided Samsung’s semiconductor division and Samsung Display with a stable source of demand.

To promote this kind of voluntary cooperation among business units, Samsung held in-house technology forums and conferences to share and disseminate technological information throughout the group. Research and development personnel, affiliates’ CEOs, and core technology talent at the Samsung Group attended these forums and conferences. Samsung Group’s wide scope of products along multiple value chains provided Samsung with unprecedented access to industrial and technological data about the electronics industry on a worldwide scale. Such data,



moreover, were closely shared among affiliates, allowing each to more accurately assess the evolution of product and technology roadmaps, and then to optimize against these. While such information sharing is also feasible with outside partners through strategic alliances and outsourcing, Samsung's common language, culture, and management systems gave its affiliates an advantage in reducing transaction costs and saving time.

### ***Genesis of Samsung's Internal Co-opetition***

These examples of cooperation were not the full story, however. Over time, competition too came to be emphasized. Jong-Kyun Shin, President and CEO of Samsung Electronics, emphasized the point as follows.

"Samsung Electronics's mobile phone division's strategic strength lies in creating synergy through co-opetition with the world's best supplier of memory, application processors, display panels, and batteries, while pursuing continuous innovation. Samsung wants to be number one, and once it determines what direction it needs to go in, it can execute faster than anyone." [from our interview in 2012]

The internal co-opetition that Mr. Shin mentioned was the most symbolic innovation that was introduced in Samsung's transformation of the New Management initiative directed by the chairman from 1993. Chairman Lee introduced this innovation to transform Samsung into a genuine global top-tier business group. He emphasized that Samsung cannot become a global top-tier business group without globally competitive affiliate companies, and that dependence of uncompetitive affiliates on competitive ones, a side effect of internal cooperation, would make affiliate companies mediocre, a situation that students of Japanese keiretsu have sometimes referred to as a "quiet life equilibrium."<sup>18</sup>

Before 1993, Samsung largely favored cooperation between divisions and affiliates, rather than competition, in realizing synergies. This emphasis arose from the strong cohesion and group identity emerging between employees with the same organizational culture and values, centered on the owner-manager, Chairman Lee. At the same time, however, such close relationships between affiliates invited a situation where some affiliates were able to survive by depending on their stronger peers, even if they did little to secure their own competitiveness. This raised concerns over a downward spiral of competitiveness across all affiliates.

Such concerns proved justified with the arrival of the 1997 Asian financial crisis. Suddenly confronted by massive losses and impending failures, and believing that complacency contributed to the distress, Samsung rapidly shifted its focus from fostering cooperation within the group to facilitating internal competition. Samsung introduced dual sourcing, parallel development, and constant restructuring based on a "self-supporting, self-viable" criterion to its affiliates and business divisions since the crisis. Samsung replaced its seniority-based compensation and promotion policies with strong performance-based ones in 1998 and introduced a very strong collective profit-sharing performance incentive system in 2000, adapted to the contextual environment within the group. As a result, Samsung's unique structure for internal co-opetition emerged. This internal co-opetition system led to the development of Samsung's DC in the smart-phone business.



### ***Introduction of Market Principles and Dual Sourcing***

Since the late-1990s, Samsung encouraged its components divisions and affiliates to raise productivity and product quality and cut costs by applying market principles to internal transactions while reducing the side effects of vertical integration due to the inadvertent but nonetheless excessive dependence of sometimes uncompetitive affiliates on competent ones. Chairman Lee emphasized this point by saying:

“Whether we provide or purchase a service or product, we must create a level playing field of competition for affiliates and outside businesses. In this way, only capable firms can partner with us, enhancing our own competitiveness. This will truly create synergy for the group as a whole.”

Samsung thus built a dual sourcing system where it would purchase components both externally and internally and strongly encouraged component-making affiliates to sell their products outside the group simultaneously. This dual sourcing policy allowed it to sense and adopt new technologies constantly, to ensure stable supply by securing second sources and to maintain low costs by letting internal and external vendors compete fiercely. Chairman Lee encouraged Samsung to adopt such a policy by recommending that the company should source from three to four vendors including an internal vendor if possible.

For example, Samsung’s mobile phone division had procured printed circuit boards (PCBs) from Samsung Electro-Mechanics and other external vendors such as Daeduck Electronics. In 2004, it sourced 70% from Samsung Electro-Mechanics as an internal vendor; but these days, it procures more than 50% of PCBs from external vendors. In another example, Samsung Electronics purchases display panels from Sharp and other external suppliers in addition to those from its affiliate, Samsung Display. When Sharp almost went bankrupt in early 2013, Samsung decided to make an equity investment in Sharp to bail it out, although Sharp had been a fierce rival against Samsung Display. A primary reason for Samsung to do so was to save its dual sourcing partner so that Samsung Display could not become complacent. This example illustrates not only that Samsung is putting in place conditions to encourage co-opetition among its existing subsidiaries, but also that it is actively shaping context to raise the odds that co-opetition happens in longer term.

Under the dual sourcing policy, Samsung affiliates do not receive special treatment when making deals with other Samsung affiliates, and they must be prepared to lose out to external suppliers if they are not competitive in quality, price, and time to delivery. Samsung Electronics, for example, eliminated Samsung Electro-Mechanics from bidding for supply of electrolytic condensers in 2001. Shocked by the result, Samsung Electro-Mechanics used this setback as an opportunity to improve the quality of its high-value-added product such as multi-layer ceramic condensers (MLCC) to world-class levels.

Recently, Samsung Electronics’s mobile phone division has procured mobile application processors for its premium Galaxy S5 smartphones for LTE networks solely from Qualcomm, although Samsung Electronics’s System LSI division also produces the processors. Up until 2012, System LSI division of Samsung Electronics was a dominant provider of premium mobile application processors to Samsung

Electronics's mobile phone division. However, the mobile phone division drastically reduced procurement of the processors from the System LSI Division as the latter had difficulty in developing high-end mobile application processors for LTE. Even Samsung Electronics's world's best memory chip division once failed to supply mobile NAND flash memories to its sister mobile phone division as the former failed to meet quality standards set by the latter.

In some cases, Samsung intentionally nurtures an internal vendor to check and balance a monopolistic external vendor. For example, recently, as Google's Android OS platform became dominant and Samsung's reliance on Android becomes too high, Samsung has developed the Tizen OS platform in collaboration with Intel in an attempt, over time, to dual source OS platforms from both internal and external vendors.

As a result, some executives of component-making affiliates have complained about their treatment at the hands of their dominant buyer. In our interviews, one internal vendor expressed this by saying that "Samsung Electronics can feel more like a whip than an umbrella," and others described this source of internal demand as "more demanding than external clients." This principle motivates affiliates that depend on Samsung Electronics for a significant portion of their revenue to avoid complacency due to the stable captive demand, and to vigorously pursue external markets. To satisfy the very demanding mobile phone division and increase the external sales ratio, Samsung affiliates had no other choice but to develop world-class competitiveness under this dual sourcing policy, thereby rising as the global number one or two in their main business areas.

This dual sourcing policy fostered not only fierce competition between vertically integrated internal vendors and outside suppliers, but also tight cooperation between components-buying affiliates and internal and external suppliers, as these suppliers were eager to maintain long-term relations with the buying affiliates. As elaborated above, in order not to lose its internal buyers to external rivals, Samsung's component-making affiliates/divisions have provided full cooperation with its internal buyers for synergy in the process of speedy development of new, competitive products.

The dual sourcing policy contributed substantially to the development of Samsung's DC. The sensing and seizing part of the dynamic capabilities trio has, over the years and especially after the New Management paradigm, been dramatically improved by injecting an element of competitive intensity into the decision calculus of rank-and-file Samsung managers. Perhaps more significantly, the reconfiguration of existing capabilities, the third aspect of the dynamic capabilities trio, is of a broader nature than has traditionally been emphasized by the DC literature, as it includes seeding the ecosystem appropriately to permit a more expansive set of possibilities for future imagined reconfigurations, not just current ones.

### ***Parallel Development for Emerging Technologies***

To hasten the development of a new technology, Samsung often encourages internal competition, with different affiliates, divisions, or teams trying to develop the same product/technology, especially when it is uncertain which technology is best suited to a particular project.<sup>19</sup> Parallel development occurs most

frequently at the team level within a division or an affiliate. For example, when new technologies—especially software technologies, where Samsung’s capabilities have been historically weaker—are needed for the next generation smartphones, Samsung’s mobile phone division often asks multiple labs or teams to propose or develop technologies and then chooses the most competitive proposal or technology. It makes sure that useful knowledge from labs or teams whose proposals/technologies were not chosen can be also secured and transferred to the internal winner.

A good recent example of internal competition is provided by Samsung’s parallel development strategy of an emerging OLED display technology that eventually became a source of a major component of Samsung’s smartphone. From 2004 to 2008, the LCD division of Samsung Electronics and Samsung SDI, two major Samsung affiliates, competed vigorously to develop the OLED technology quicker and better than each other. Consequently, the two affiliates alternately grabbed “world’s first” titles for technology development and market release. Between 2001 and 2010, the OLED R&D team at Samsung Electronics’s LCD division registered 776 U.S. patents on the OLED technology, while its counterpart at Samsung SDI registered 755 U.S. patents in the technology. Samsung Electronics and Samsung SDI searched for different technologies by choosing different technological components in terms of thin-film-transistor (TFT)-backplane process technologies.

Such intense internal competition through parallel development can cause discord among competing units, redundant effort, and a waste of resources. Properly managed, however, parallel development more than compensates for this “waste” by fostering faster development and increased knowledge diversity.<sup>20</sup> Parallel development also allows Samsung to secure real options for nascent technologies that have undefined paths for development. Another positive effect of parallel development is motivation to break from past practices and make changes through “survival of the fittest” competition. In other words, parallel development functioned as an internal Darwinian selection mechanism that led to superior technologies. Samsung’s “winner-takes-all” culture of providing extraordinary compensation to high-performing divisions means that internal competition is always a serious contest.

This parallel development policy fostered vigorous competition between the development teams during the development race. However, when the race ends, close-knit cooperation between the teams follows as Samsung integrates the people involved into a pool to diversify its knowledge base and to turn any failures into assets. To continue the aforementioned example of OLED, it is also possible to see how Samsung shifts its focus from competition to cooperation in the parallel development over time. As the need for large-scale production grew in 2008, Samsung decided to merge Samsung SDI’s and Samsung Electronics’s OLED teams to form Samsung Mobile Display.<sup>21</sup> The new company dominated the OLED market thanks to product technologies from Samsung SDI and manufacturing expertise from Samsung Electronics’s LCD division. Under the coordination scheme of group headquarters, the two Samsung affiliates have cooperated with each other by moving their key engineers to Samsung Mobile Display.

As with dual sourcing leading to DC, via the channel of co-opetition, we suggest that parallel development also affects primarily the sensing and seizing of new approaches relevant to Samsung's businesses. To the extent that the opening-up of technological options is followed through upon, even beyond the reasons for initial exploration, parallel development might also influence the future reconfiguration of capabilities.

### ***Organizational Arrangements for Internal Co-opetition***

Chairman Lee and the Corporate Strategy Office—at Samsung, this office is the *de facto*, if not the *de jure*, group headquarters—designed diverse organizational arrangements to foster internal co-opetition. Business units in Samsung were encouraged to compete to attain limited parent resources, to seize new business opportunities, or to earn larger monetary incentives.

Ironically, this competition fosters vigorous voluntary cooperation among otherwise-competing units when the cooperation is mutually beneficial. It is important to appreciate the flux in such relationships that are simultaneously competitive and cooperative, or might well switch from competition to cooperation, or vice versa. Indeed, the flux is the source of internal dynamism.

### ***Organizing Business Units as Profit Centers and Constant Restructuring***

Samsung is a horizontally and vertically integrated business group and organizes its businesses as legally independent entities. An affiliate with multiple businesses uses a multidivisional structure, treating each business unit as a profit center. As Samsung adopted very strong performance-based policies, each business unit has been strongly motivated to improve its financial performance and competitiveness, and demotivated to sacrifice its performance for that of other business units. Introduction of market principles in internal transaction and dual sourcing policy reinforced this motivation.

Moreover, Samsung has applied a “self-supporting, self-viable” criterion to its affiliates and business divisions, meaning that any business that incurred losses for three straight years (excluding new businesses) should be sold or liquidated. Business restructuring in Samsung puts most executives and managers of the business unit at a high risk of losing their jobs. The risk motivates those people to enhance the competitiveness of their own business units and demotivates them to offer special treatment to other business units if the treatment is not mutually beneficial.

### ***Performance-Based Reward and Promotion Systems***

Reward and promotion systems are the most important drivers of inter-business unit co-opetition at Samsung. Samsung designed its evaluation and reward systems to encourage vigorous competition at every organizational level. Performance evaluation is done at all levels—affiliates, divisions, teams, and individuals. Both absolute evaluation (which looks at the achievement of goals) and relative evaluation (which compares affiliates, divisions, teams, and individuals with their corresponding counterparts) are used. These evaluations have a significant impact on determining salaries, performance incentives, and promotions.

The annual base salary of Samsung employees depends on the performance of the business units they belong to and the results of their relative performance appraisal. As a result, the annual base salary of executives of high-performing business units is much higher than that of low-performing business units. Even at Samsung Electronics, the annual salary of executives of the high-performing mobile phone divisions is about 1.5 times as large as that of executives of the low-performing home appliance division. This salary decision system motivates not only vehement negotiation in internal transactions, but also tight voluntary cooperation among business units when the cooperation is mutually beneficial.

The most important monetary reward at Samsung is a collective performance incentive, which is called "profit sharing." Absolute evaluation is applied here, as the basis for the incentive is the economic-value-added of each business unit. About 20 percent of the economic-value-added created by an affiliate or a division funds the payment of the incentive. As an individual employee can get as much as 50 percent of his/her annual base salary as bonus, the differential is very large across business units. For instance, while Samsung's mobile phone division has paid this maximum to all employees for several years (at the time of this writing), Samsung SDI and Samsung Electro-Mechanics have paid only a small amount of performance incentive during the same period.

To make these large differentials palatable within a societal ethos of Confucian egalitarianism requires some creativity. Samsung has, in effect, adopted a socialist form of profit sharing.<sup>22</sup> The so-called "socialist" outcome takes the form that all employees, including rank-and-filers within the business unit, receive the same percentage of his/her annual base salary as bonus.

In promotion and dismissal decisions, relative evaluation is applied. At Samsung, there exists a huge differential in the probability of managers' promotion to upper-level positions between high-performing business units and low-performing ones. Executive managers of low-performing business units are very likely to be dismissed and those positions are filled with internally promoted managers and managers from high-performing business units. Executive managers of high-performing business units are more likely to be promoted internally or transferred to higher-level positions of low-performing business units.

On the one hand, those reward and promotion systems strongly motivate Samsung employees to maximize the performance and competitiveness of the business units they work for. Because of the systems, Samsung affiliates and divisions compete intensely with rivals externally, while internally, Samsung's rigorous relative evaluation standards spur affiliates and divisions to continuously compete with one another. In certain respects, executives and managers at affiliates are more conscious of internal competitors, who they will be compared against, than they are of external rivals. Affiliates thus negotiate intensely with other affiliates during inter-affiliate transactions, as the results of relative evaluation directly determine their salary, their continuing appointment, and their promotion. The same applies for business divisions.

On the other hand, the performance-based reward and promotion system also facilitates active voluntary cooperation among business units when the cooperation is

mutually beneficial, as the development process of Galaxy S1 illustrates. This is because the most important driving force of internal co-opetition in Samsung is the financial performance of each business unit. For example, internal vendors in Samsung are motivated to cooperate with internal buyers to satisfy the buyers' demands. Otherwise internal buyers may procure the products or services from outside complementors, thereby lowering the performance of internal vendors. Internal buyers are also motivated to collaborate with internal vendors for securing stable procurement of critical components, expediting product development processes, or lowering costs so that they can improve their competitiveness. The process results in an increased motivation to understand vertically integrated transaction counterparts inside Samsung.

*Job Transfers across Group Headquarters and Business Units*<sup>23</sup>

Samsung has used job transfers across the Corporate Strategy Office and business units very frequently. Samsung dismisses most executives of low-performing business units and fills the positions by transferring people from high-performing business units. Recently, for instance, Samsung Electronics's mobile phone division has been the best performing division at the Samsung Group. As a result, a lot of executives and managers of the division were promoted to higher-level positions and some of them were transferred to other divisions of Samsung Electronics, other affiliate companies, or group headquarters. Many executives at Samsung Techwin, Samsung Display, Samsung Engineering, and Cheil Industries, which were relatively low-performing in recent years, were dismissed, and those positions were filled with people transferred from Samsung Electronics. This system of promotion, lateral transfer and dismissal, fosters vehement competition among business units, as executive managers' career success is largely dependent on the performance of their own business units. At the same time, the system helps to promote voluntary cooperation across the Samsung Group by inculcating those managers' sense of belonging to the Samsung Group, as opposed to identifying primarily with individual affiliates, and by creating cross-cutting ties in the informal network across business units.

Samsung uses job transfers between the Corporate Strategy Office and business units to facilitate internal co-opetition as well. Competent managers from affiliate companies were transferred to the headquarters and then re-transferred to the affiliates after several years. As the performance of business units influences the likelihood of their managers' transfer to the headquarters, the transfer practice encourages competition among business units. The practice facilitates cooperation among business units as well. A large portion of key executives of business units has experience working in the Corporate Strategy Office for several years. As experience at group headquarters is highly regarded in Samsung and those with such experience have a higher chance of being promoted to upper-level positions, they consider themselves the chosen people and think of themselves as members of the Samsung group rather than as members of affiliate companies. As Akerlof and Kranton have suggested, this superordinate identity changes the utility function of these executives and induces them to sidestep parochial concerns in the interest of the group.



### ***Reconciling Contradictions Inherent in Internal Co-opetition***

Although the aforementioned practices and arrangements interactively influence the competition vs. cooperation decisions of executives of business units, the most important one is the practice of monetary reward, promotion, and dismissal of those executives. As Samsung has used very strong performance-based policies on those personnel decisions, each business unit is highly motivated to enhance its financial performance and long-term competitiveness. This motivation encourages active cooperation among business units in value creation processes as the development story of Galaxy S1 illustrates. However, the same motivation facilitates strong competition among business units in value appropriation processes as each business unit negotiates vehemently to get better terms in internal cross-business unit transactions. Sometimes, business units refuse internal transactions even when there are internal transaction counterparts.

Sometimes, the benefit of a particular decision at the Samsung Group level is substantially greater than the loss it might cause an individual business unit. Then executives' belongingness and loyalty to the Samsung Group, cross-cutting interpersonal ties, and consideration of the loyalty to the Group in personnel decisions made by the Corporate Strategy Office facilitate voluntary cooperation from executives of sacrificing business units; this curbs potentially counterproductive inter-unit competition. The Corporate Strategy Office makes personnel decisions of senior executives of affiliates and considers their contribution to both affiliates and the Samsung group as the most important factors in those decisions. Therefore, senior executives of business units are reluctant to sacrifice group-level performance for the sake of the performance of their own business units. Additionally, senior managers in the finance and human resource management departments of affiliates check counterproductive competitive behavior of senior executives. Most of those managers have work experience at the Corporate Strategy Office and maintain strong ties to the Office. Those managers directly report the counterproductive competitive behaviors of their senior executives to the Office. Especially human resource management departments of affiliates send annual reports on the loyalty of each executive to the Corporate Strategy Office, and the Office considers the report very seriously in the personnel decisions of each executive.

When the voluntary cooperation proves infeasible but the stakes are huge, Chairman Lee and the Corporate Strategy Office are directly involved in major decisions and decide whether those business units should compete against one another or cooperate with others. Equipped with the final decision authority of business restructuring, massive investments, and appointment of senior executives of affiliates, the Corporate Strategy Office can promote cooperation among affiliates to maximize the Samsung Group's overall profits. For example, when Samsung SDI and Samsung Electronics's LCD division insisted that they should operate the OLED business by acquiring assets and people from another unit, the Corporate Strategy Office helped the two companies reach an agreement to found a joint venture. Another example is the production of camera modules for smartphones. Although both Samsung Techwin and Samsung Electro-Mechanics produced the modules for smartphones, Samsung Techwin did not have the core technologies. The Corporate Strategy Office persuaded Samsung Techwin to stop producing the modules and



transfer its key personnel to Samsung Electro-Mechanics. In this way, the Corporate Strategy Office has discouraged counterproductive competition among business units and reduced duplicate investments.

## Relationship between Internal Co-opetition and Dynamic Capabilities of Samsung

Samsung's internal co-opetition has contributed substantially to its evolution of DC over time. Drawing from Teece's DC framework, we explain how Samsung has evolved its DC through its unique ability to manage internal co-opetition. Teece defined DC as the foundation of enterprise-level competitive advantage in regimes of rapid technological change. As Samsung's core electronics businesses are subject to regimes of rapid technological change (e.g., Apple-led smartphone shock in the mobile phone industry), Samsung nurtured its dynamic capabilities through evolving from outright cooperation to internal co-opetition in order to "integrate, build, and reconfigure internal and external competencies to address rapidly changing environments."<sup>24</sup> This resulted in new value-enhancing combinations inside the business group and among its affiliates and divisions. The internal co-opetition is a higher-order process to "sense and then seize opportunities, navigate threats, and combine and reconfigure specialized and co-specialized assets to meet changing customer needs, and to sustain and amplify evolutionary fitness."<sup>25</sup> Table 1 summarizes the relationship between dual sourcing and parallel development as key internal co-opetition practices and DC.

### *Internal Co-opetition and Sensing for DC*

Samsung's internal co-opetition is designed to enhance its sensing capabilities as a key ingredient of DC. Fierce internal competition among business units through parallel development and dual sourcing helps Samsung sense new opportunities faster and more accurately. Samsung introduced parallel development as an approach to stimulate scanning for emerging technologies. Competing business units explore alternative ways of using new emerging technologies and identifying changing customer needs independently. This competition helps Samsung avoid excessive local search by promoting the search for diverse internal knowledge, as more decentralized organizations with greater local autonomy are less likely to be blindsided by market and technological developments.

By dual sourcing, Samsung involves internal vendors and outside complementors in the new product development processes of smartphones. As those vendors have different information and perspectives due to their different historical backgrounds, capabilities, and interacting counterparts, their sensing and interpretation of changing market and technological realities are very likely to be different and thus the technological paths they pursue are likely to be different. As internal vendors and outside complementors compete to provide the mobile phone division with better ways of composing a new product, they have the incentives to sense developments in exogenous science and technology faster and more accurately and to present those developments to the mobile phone division. By using this, Samsung can utilize sensing capabilities from diverse vendors,

**TABLE I.** Summary of Relationship between Internal Co-competition Practices and Dynamic Capabilities

<b>Internal Co-competition Practices</b>		<b>Dimensions of Dynamic Capabilities</b>
<b>Sensing</b>	Parallel Development	scanning and searching for diverse alternatives of new technologies
	Dual Sourcing	motivating competing vendors to sense technological developments and customer demands faster and more accurately and utilizing the sensing capabilities of those vendors
		faster and more accurate interpretation of changes in technologies and customer demands enabled by effective communication between internal buyers and internal vendors
		staying flexible until a dominant design emerges and investing heavily after the emergence of the dominant design with the full knowledge gained from the multiple paths pursued in the development stage
<b>Seizing</b>	Parallel Development	developing very competitive internal vendors which produce competitive bottleneck components and capturing larger profits from new products
	Dual Sourcing	speedy development of new products based on effective collaboration between internal buyers and internal vendors having co-specialized assets
		achieving decentralized learning and decision structure, and retaining diverse technological options inside which enables rapid reconfiguration
		promoting loosely coupled structures and semi-continuous asset orchestration and corporate renewal, which enables rapid reconfiguration
<b>Reconfiguring</b>	Parallel Development	facilitating effective knowledge transfer and know-how integration between internal buyers and internal vendors which assist the development of new co-specialized assets
	Dual Sourcing	competition among development organizations
		competition between internal vendors and outside complementors
		cooperation between internal buyers and internal vendors strengthened by the competition between the internal vendors and external complementors
<b>Sensing</b>	Parallel Development	competition among development organizations and merger of development teams after the end of the development race
	Dual Sourcing	competition between internal buyers and vendors, and competition between internal vendors and outside complementors
		cooperation between internal buyers and internal vendors, strengthened by the competition between the internal vendors and external complementors
		competition among development organizations and merger of development teams after the end of the development race
<b>Seizing</b>	Parallel Development	competition between internal buyers and vendors, and competition between internal vendors and outside complementors
	Dual Sourcing	cooperation between internal buyers and internal vendors, strengthened by the competition between the internal vendors and external complementors
		competition among development organizations and merger of development teams after the end of the development race
		competition between internal buyers and vendors, and competition between internal vendors and outside complementors
<b>Reconfiguring</b>	Parallel Development	cooperation between internal buyers and internal vendors, strengthened by the competition between the internal vendors and external complementors
	Dual Sourcing	competition between internal buyers and vendors, and competition between internal vendors and outside complementors
		cooperation between internal buyers and internal vendors, strengthened by the competition between the internal vendors and external complementors
		competition among development organizations and merger of development teams after the end of the development race

overcome its narrow search horizon, and tap both internal vendors' innovation and outside complementors' innovation.

Intense cooperation between the mobile phone division and its inside vendors promoted by the dual sourcing also helps Samsung sense new opportunities faster and more accurately. Ambiguous and often contradictory perspectives about the changing market and technological realities developed by the mobile phone division and its inside vendors can be assembled and integrated to develop a common understanding to inform the design of a new smartphone. Since cooperation with internal vendors is often more effective than cooperation with outside vendors, the assembling and integrating process is more likely to be faster and more accurate. This faster and more accurate sensing of new opportunities results in a competitive new smartphone.

### ***Internal Co-opetition and Seizing for DC***

Once a new technological opportunity is sensed, it must be addressed through new products in the seizing stage of DC. Parallel development helps Samsung seize new technological opportunities by selecting a more promising technology based on the internal innovation race. At least early on, Samsung can stay flexible until a dominant design emerges and then invest heavily once a design looks like it can become the winner. When the race ends, Samsung merges development teams and heavily invests in winning technologies. As explained above in the cases of OLED display panels, Samsung used parallel development when multiple, competing investments paths are possible until the dominant design emerges. Parallel development was a more viable option when technological uncertainty was high and the costs of duplication were not so high, such as during the research stage.

Competition between Samsung's mobile phone division with internal vendors—as well as competition between internal vendors and outside complementors created by dual sourcing—helps Samsung develop very competitive internal vendors. In implementing the dual sourcing policy, Samsung heavily invested in the “bottleneck components” that could have substantially decreased Samsung's value capturing capabilities if they were outsourced. The fierce internal and external competition enhances the competitiveness of those divisions with the bottleneck components and thus helps Samsung capture most of profits available from new smartphones. The mobile phone division internally procured such bottleneck components as application processors, mobile DRAM, display panels, and camera modules. In 2013, for instance, internally purchased components and materials for Samsung's Galaxy S4 smartphone had reached 63 percent according to the bill-of-materials estimate that IHS made.<sup>26</sup> With the internal sourcing of critical components, Samsung could be the second most-profitable major smartphone maker next to Apple in 2013.

Ironically, such intense competition due to the dual sourcing policy gave added incentives for internal vendors to develop assets co-specialized with the mobile phone division, since internal vendors had to compete for internal buyers' attention. As a result, cooperation among highly competitive business units fostered by dual sourcing helps Samsung seize new opportunities faster and more

profitably than can its competitors relying on either internal cooperation or outside vendors. By having superior positioning in complementary assets created by fierce internal competition, Samsung could wait until after Apple explored the smartphone market, invest later once risk had diminished, and thereby occupy the market through fast execution made possible by the intense inter-unit cooperation, as the case of Galaxy S1 illustrates. Hark-Kyu Park, Chief Operating Officer of Samsung's mobile phone division, emphasized the point as follows.

"Since we procured OLED display panels and mobile application processors internally, we were able to catch up with Apple by launching Galaxy S1. At that time, the OLED display panels Samsung manufactured were most innovative, and competitive display panels and application processors provided by Samsung Electronics's System LSI division were much better than those adopted in iPhone." [from our interview in 2014]

The intense cooperation helps Samsung develop co-specialized assets internally and develop new smartphone models faster than its competitors can. Internal cooperation can be more effective for seizing new opportunities than cooperation among independent companies, as knowledge transfer and the sharing and developing of co-specialized assets is often more effective within organizational boundaries than across boundaries. For instance, concurrent engineering within an organizational boundary is usually more effective than concurrent engineering across organizational boundaries. A business unit of Samsung can ask earlier involvement of other affiliate business units than outside complementors and expedite product development processes and retain an exclusive purchasing right of the co-developed components for the first six months. For instance, Samsung's mobile phone division could enhance the competitiveness of Galaxy S1 since the division could have retained an exclusive right to procure OLED display panels from Samsung Display and application processors from the System LSI division. Those components were developed by intense cooperation between the mobile phone division and the respective component-making affiliate or division.

### ***Internal Co-opetition and Managing Threats and Reconfiguration for DC***

Teece argued that reconfiguration is needed to maintain evolutionary fitness and, if necessary, to escape from unfavorable path dependencies. In Samsung, internal co-opetition serves as a means of recombining and reconfiguring assets and organizational boundaries as the company grows, and as markets and technologies change.

Parallel development serves as a decentralized learning mechanism. In implementing parallel development, Samsung establishes competing development organizations to allow different managers to explore different paths for the development of critical components and technologies. Through parallel development, Samsung intensified its search for new technology in the research stage. However, after a winning technology is decided upon, Samsung makes sure that knowledge developed by losing teams will be transferred and integrated into the winning team, and it heavily invests in the winning technology. Additionally, the decentralized decision structure helps Samsung not only be more responsive to customers and new technologies, but also avoid the internal complacency and shirking that

successful enterprises often encounter, as each development organization strives to win the race. The parallel development process also facilitates the development of co-specialized assets as Samsung heavily invested in the winning technologies that could be specialized to new consumer products. For example, Samsung made huge investments in small size OLED display panels for Samsung's smartphones, and the superior quality of these panels helped Samsung catch up with Apple rapidly.

Internal competition fostered by dual sourcing helps Samsung achieve the decentralization and the near decomposability that Teece emphasized as a micro-foundation of DC. Dual sourcing promoted loosely coupled structures through the devolution of decision rights to quasi-independent affiliate firms or divisions. For example, Samsung encouraged the mobile phone division to employ dual sourcing and also encouraged component-making divisions to sell their components to outsiders so that the external sales ratio can be high. As a result, sometimes, Samsung's mobile phone division has difficulties in sourcing components from internal vendors as they also sell these components to outside clients that often offer better terms. Such market-based transactions promoted by dual sourcing led to a high level of decomposability or loosely coupled structures, even if Samsung has a high degree of vertical integration for key components. As Teece elaborated, the decentralized decision structure helps Samsung adapt to market and technological changes.

When coupled with constant restructuring, internal competition fostered by dual sourcing helps Samsung pursue semi-continuous asset orchestration and corporate renewal. Facing fierce internal competition, a business unit does not have any incentive to protect uncompetitive cohorts and thus is not affected by the dying assets of its cohorts in its decision making. As a result, uncompetitive business units strive to develop new businesses when their incumbent business area can no longer create profit. Otherwise they are destined to be dissolved. In this way, dual sourcing serves as a mechanism to avoid the negative effects of lock-in due to co-specialization and tight coupling in the vertically integrated structure.

Intense cooperation promoted by dual sourcing facilitates knowledge transfer and know-how integration in the new product development process, which is required for a firm to adapt to rapidly changing environments. Samsung's mobile phone division and internal vendors share their technology road maps and the mobile phone division provides feedback in near real time when internal vendors supply a sample of components reflecting new technological development. Samsung's common language, culture, and management systems, coupled with cross-cutting interpersonal ties, promote effective and efficient knowledge transfer and know-how integration within Samsung. This process in turn helps Samsung create new co-specialized assets and thus enhance the competitiveness of Samsung's vertically integrated businesses as a whole.

## Conclusion and Discussion

Samsung's unique internal co-opetition processes helped the company enhance its DC. In internal co-opetition processes, Samsung's affiliates and divisions are in the paradoxical position of simultaneously being each other's foremost partners and fiercest competitors. Affiliates and divisions compete fiercely when

market-based efficiency is necessary to outcompete its internal rivals. They do so because their performance is evaluated against each other when deciding compensation and promotions. Thus, affiliates and divisions negotiate aggressively with each other on pricing when transacting internally. However, when confronted with a strong outside competitor or a project that can bring significant benefits for every participant, affiliates and divisions join forces and cooperate across the group in order to create synergies, as Samsung's smartphone business illustrates.

Samsung's internal co-opetition also influences Samsung's business portfolio. When only competition is emphasized, individual affiliates may be reluctant to contribute to projects that are helpful to the group but not beneficial to themselves. Moreover, if they already handle a similar project or business, an affiliate may even find itself subject to restructuring. From the group perspective, however, Samsung can optimize its business portfolio if affiliates jointly invest in such projects, or pursue them even at the cost of short-term losses. On the other hand, emphasizing only cooperation can impair the process of restructuring and weaken competitiveness in all business areas. Internal co-opetition resolves this problem by enabling Samsung to repeatedly realign the resources of its affiliates and adjust its business portfolio as needed, as the DC perspective emphasized.

In Samsung's internal co-opetition, parallel development was designed for internal co-opetition among business units within Samsung, whereas dual sourcing was aimed at co-opetition between vertically integrated internal vendors and buyers by introducing competition from external vendors in the ecosystem. Moreover, specific organizational arrangements for Samsung's internal co-opetition show how and by which processes Samsung's internal co-opetition contributes to its development of DC in terms of the sensing, seizing, and transforming that Teece proposed.

Samsung's internal co-opetition helped the company develop the DC to allow it to catch up with Apple, which, in contrast, relies on external vendors for most components. In 2013, in close collaboration with both internal and external vendors, Samsung was able to respond to divergent customer needs by launching 50 different smartphone models, as opposed to two from Apple.

Of course, as befits the word "dynamic" in DC, Samsung's evolution is always a work-in-progress. For example, unlike Apple, which boasts world-class software capabilities and the tightly integrated iOS platform, Samsung has not proven yet that it can produce the great software needed to stay ahead in the smartphone business. To improve its DC in software urgently, Samsung has quadrupled its software engineers to more than 40,000 worldwide in five years.

As Samsung's reliance on Google's Android platform becomes too high, Samsung has developed the Tizen OS platform in collaboration with Intel. By developing Tizen, Samsung attempts to extend its dual sourcing policy to software. When Samsung launched the "Galaxy Gear 2," the second model of the world's first commercially available smart watch, Samsung employed the Tizen OS platform instead of Android. Samsung has an ambition to connect all electronic devices such as smartphones, TVs, computers, home appliances, and emerging mobile health devices seamlessly using its Tizen OS platform. However, Samsung will inherit its conventional dual sourcing policy by using Google's Android OS platform



and Microsoft's Windows Phone OS platform for their smart devices as well as its newly developed Tizen OS platform. Given that Google's Android OS platform became dominant in the "winner-takes-all" nature of the OS business, it remains to be seen whether Samsung's dream will come true.

## Notes

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11. J. Birkinshaw, "Strategies for Managing Internal Competition," *California Management Review*, 44/1 (Fall 2001): 21-38.
12. The literature on business groups documents this copiously. See E. Berglof and E. Perotti, "The Governance Structure of the Japanese Keiretsu," *Journal of Financial Economics*, 36/2 (October 1994): 259-284 and the sociologists' effort J. Lincoln, M. Gerlach, and C. Ahmadjian, "Keiretsu Networks and Corporate Performance in Japan," *American Sociological Review*, 61/1 (February, 1996): 67-88, for example. The former refers to this suboptimal situation as a quiet life equilibrium, where everyone agrees not to rock the proverbial boat. For a more recent cross-country investigation, see T. Khanna and Y. Yafeh, "Business Groups and Risk Sharing around the World," *Journal of Business*, 78/1 (January 2005): 301-340.
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16. Factual information about Samsung in this section was partially drawn from the first two authors' recent book. J. Song and K. Lee, *The Samsung Way* (New York, NY: McGraw-Hill, 2014).
17. Chairman Kun-Hee Lee in an interview with *Korea Economic Daily* in 2002.
18. Berglof and Perotti, op. cit. Here, the "quiet life" refers to a situation where the different parts of the Japanese keiretsu mutually agree, often implicitly if not explicitly, to not police each other, and settle into mediocrity.
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