

# A CASE STUDY ON KAKAO'S RESILIENCE: BASED ON FIVE LEVERS OF RESILIENCE THEORY

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**Abstract-** The purpose of this study is to prove the Korean Internet company, Kakao's resilience capacity. For it, this paper reviews the previous literatures regarding Kakao's business models and discusses 'resilience' theory. Then, it organizes the research questions based on the theoretical background and explains the research methodology. It investigates the case of Kakao's business and organization. The case analysis shows that five levers of resilience are a good indicator for a successful platform business evolution. The five levers are composed of coordination, cooperation, cloud, capability, and connection: First lever, coordination that makes the company to restructure its silo governance in order to respond to actual business flow starting from the basic asset like game and music content; second lever, cooperation where the firm provides creative people with playground for startups such as KakaoPage; third lever, cloud where the company shares its data by opening its API of AI and chatbot to 3<sup>rd</sup> party developers; fourth lever, capability where the firm establishes AI R&D center, KakaoBrain as the function of multi-domain generalist for developing diverse platforms tackling customer needs; and the last fifth lever, connection where the firm continues to expand its platform business to the peripheries, O2O businesses such as KakaoTaxi, KakaoOrder, KakaoPay, and KakaoBank. In conclusion, this study proposes Internet companies to be a resilient platform utilizing those five levers of resilience in order to form a successful platform. This study contributes to the agile innovation of Internet platform companies with ecological sense.

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**Keywords-** Kakao, resilience theory, business model, agile innovation

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## I. INTRODUCTION

Internet firms are expanding their business domain from PC and mobile applications to Internet of Things (IoT) and Artificial Intelligence (AI). For such firms, overseas expansion is inevitable, given the limited growth potential of the domestic market. In this environment, global players are investing in human resources and mergers and acquisitions (M&As). However, overall the business environments are compressed with the keywords such as complexity, high-tech, agility, openness and slowdown [1].

As the complexity of modern society increases, the information flows easier as information and communication technology (ICT) develops. In addition, changes in laws and regulations, the roles and policies of governments, changes in the competitive structure due to M&As, diversification and globalization of consumer needs, and technology convergence are also increasing the complexity of modern society.

This is an important task in business management. Due to the rapid convergence of ICT-based industry convergence and the creation of new value, companies need to develop products and services that are completely different from the existing ones and they must strive to secure superiority. Corporate innovation is related to the strategies and resources that the firm pursues and the core competencies it has. As a method, the integration of production processes, products, services, technology, and industry can be considered. Companies are in a position to spur on building sustainable competitive advantage and achieving substantial results by establishing strategies and using resources related to the utilization of ICT.

Internet companies confronting those business environments should be resilient and there are two concepts in business and organizational resilience. The first is the physiological significance. In physics, the resilience of matter refers to the force that is transformed by external forces and then returns to its original shape and size. Likewise, the firm's resilience also means the ability to restore the firm's damage from an unexpected change back to its previous state. Resilience in this respect is focused on strategies or competencies that can quickly return to a certain level of performance. The second is the resilience of an extended meaning that develops new competencies beyond the recovery and creates new opportunities. It is the resilience of ecological meaning. Firms with these resiliencies continue to evolve as they have the capacity to transform change or unanticipated challenges into opportunities. A resilient company does not focus solely on solving the difficulties that it faces by using resilience as its core competency, but turning it into an opportunity to build a successful future. From the perspective of corporate resilience, it is necessary to focus more on the development through overcoming the crisis rather than merely restoring the state before the crisis. As a result, firms with high levels of resilience in the ecological sense successfully overcome the risks associated with a complex economic and business environment and effectively achieve the firm's ultimate goals.

With solid growth in its core revenue sources of ads, content, and commerce, Kakao is enjoying the growth of revenue and operating profit thanks to the mobile ad revenue. However, game revenue growth was sluggish, as Kakao platform games were overshadowed by the popularity of mobile MMORPGs. Kakao tries to

develop new businesses like KakaoMobility. It was recently launched and Kakao has a 69% stake in this. KakaoMobility plans to further monetize KakaoTaxi by advancing into B2B taxi services and also launch a parking app called KakaoParking. Recent KakaoBank in which Kakao owns a 10% stake, has displayed impressive growth since its launch. Kakao plans to link KakaoBank to its KakaoPay service.

The purpose of this study is to prove the Korean representative Internet company, Kakao's resilience capacity. For it, this paper will firstly review the previous literatures regarding Kakao's business models and discuss 'resilience' theory. Then, it will organize the research questions based on the theoretical background and explain the research methodology. With this backdrop, it will investigate the case of Kakao's business and organization.

## II. THEORY AND RESEARCH DESIGN

### 2.1 Previous research about Kakao during 2012~2016

The investigation period "2012~2016" is based on the diversification strategy of KakaoTalk from instant messaging (IM) to Social Network Service (SNS). During that time, lots of the academic research paper about Kakao can be found. So, the research about Kakao is firstly introduced in this paper. In terms of the diversification strategy, Chung[2] has dealt with SNS evolution with KakaoTalk. As of 2012, it was evolving into a SNS company based on its IM service, has successfully established various services such as photo-based KakaoStory, game marketing platform, game center, etc. and it was also evolving into a social media platform through news, avatars and app stores through friends.

Han and Cho [3] also handled use case of Kakao's Kakaotalk as platform business model in 2015. This study discussed how to create a value proposition and how organizations using the platform can cooperate and the use case indicated, a preparation, spread, evolution (PSE) curve is a successful platform business evolution. This curve is composed of three phases: a preparation phase that establishes the platform and sets the target group, a spread phase where the firm provides killer content, such as KakaoGame, a low pricing strategy, and reinforcement of the platform rules in the early stages of the platform; and an evolution phase where the platform continues to evolve. This study proposes a platform evolution pattern that involves the PSE curve in order to form successful platform. This study contributes to the innovation for social platform businesses.

Kim's study [4] in 2017 is to find out effects of taxi-service employing online to offline(O2O) structure on consumer welfare. KakaoTaxi has a dominant mobile messenger service named KakaoTalk occupying 96% market share in South Korea. After launching in March 2015, KakaoTaxi

secured about 210,000 drivers, which meant that 85% of taxi drivers in South Korea employed it. On March 2016, the first anniversary of launch, calls via KakaoTaxi reached 80 million. The calls broke 310 million in February 2017 and KakaoTaxi has been considered an innovative service to solve a mismatch between supply and demand in the taxi industry, and also regarded as a symbolic model in the O2O business. Based on the conjoint analysis, this study draws three attributes: Convenience, informativeness, and trust. Convenience was defined as a convenience for consuming a product or a service, and informativeness was a feature to help consumers and providers recognize the others' information before selecting them. And, Trust was defined as an attribute to make customers use taxi service without concerning safety. The result of this study reveals that trust is served as the most influential factor, meaning that taxi consumers put a lot of weights on trust compared with the others. Also, informativeness is evaluated as a powerful factor no less than trust. This implies that removing opacity of existing taxi service is regarded as a significant change. Lastly, this study found out that convenience functions as a meaningful factor in estimating customers' welfare resulted from KakaoTaxi.

### 2.2 Theoretical background

"Resilience" is a term with the meaning 'to jump back' or 'to spring back', derived from the Latin word 'resilio'. It means a property that returns to its original state when an impact is applied and deformed. In 1961, the American Psychologist, Norman Garmezy began to study the theory of resilience, which was used academically. In the plenary panel at the 2013 meeting of the International Society for Traumatic Stress Studies, S.M. Southwick et al [5] discussed about the resilience researches and multidisciplinary experts provided insight into several questions, and most of the proposed definitions included a concept of healthy, adaptive, or integrated positive functioning over the passage of time in the aftermath of adversity. The panelists agreed that resilience is a complex construct and it may be defined differently in the context of individuals, families, organizations, societies, and cultures. With regard to the determinants of resilience, there was a consensus that the empirical study of this construct needs to be approached from a multiple level of analysis perspective that includes genetic, epigenetic, developmental, demographic, cultural, economic, and social variables.

In addition to psychology, there is a wide variety of topics such as sociology, social ecology [6], crisis management [7], urban planning, international development, and engineering, as well as psychological research on 'resilience,' which refers to the ability to adapt to the situation. Ranjay Gulati of Harvard Business School in his book "Reorganize for Resilience" [8] said "resilient companies break down internal barriers that impede action, build bridges

across divisions, and create a network of collaborators". He also said, "the secret of corporate survival today is resilience." Resilience is also very important in corporate organizations. Modern society is changing drastically as globalization progresses rapidly. With the rapid development of technology, companies are constantly innovating to keep pace with changing technologies. As a result, resilience is playing an increasingly important role in the sustainable development of individuals, organizations, and society.

In a complex and constantly changing market environment, only flexible, agile, changing companies can survive. In an unstable market environment as well as a stable market, companies are threatened by sudden changes and paradigm shifts. However, companies inherent in the organizational DNA can make adaptations in a variety of changes and produce positive results. In particular, companies that have successfully endured and overcome difficult situations and have overcome them can continue to grow and achieve good results.

In the book, Gulati revealed how resilient companies prosper in both good and bad times. Instead of pushing their own offerings on customers ("inside out"), the resilient firms work from the "outside in." It means to identify current and potential customer problems and then provide seamless, integrated products and services that address them. Based on more than a decade of research in a variety of industries, this implementation focused guide shows how resilient companies break down internal barriers that impede action, build bridges across divisions, and create a network of collaborators.

The book shows, one of the main things companies should do is to break through internal barriers that often impede action, and also ensure that there are no warring divisions within the company, so that they are fighting more against themselves, rather than the competition. The book is based on over ten years of research. It has the usual companies, such as Starbucks, Best Buy, and Cisco, but it is also refreshing to see French companies, like Lafarge, are also quoted as well. Only 60% of companies survive through deep depression or drastic downturns. The ones that do survive have built what the author calls an "outside in" mindset. Rather than making products and then pushing them onto the marketplace, they begin with the consumer and try to decide what they actually really need and what they really want, in terms of products or services.

The book looks at nine companies: Three in B2C (Business to customer), Harley-Davidson, Starbucks, and Target; three in B2C and B2B (Business to business), Tribune, Best Buy, and Cisco, and last three in B2B, Jones Lang LaSalle (JLL), Lafarge, and GE Healthcare (GEH). This gives a broader, overall perspective on different types of businesses. The research deals with one particular aspect of company and it seems more complex in the real business world,

but the author is quite clear about some of the difficulties. "Outside in" thinking does not blindly mean following what the customer tells you to do. Even the customers don't know what they really want, until the firm actually give it to them, as Steve Jobs said.

Gulati describes the five key levers that together help create a resilient company: Coordination, cooperation, clout, capability, and connection. Lever 1, coordination means aligning activities, process, and information around the customer axis across units with a company. The coordination means to connect, eradicate, or restructure silos to enable swift responses. It is moving from intra-product-unit coordination to cross-enterprise coordination. There are three kinds of coordination effort, informal, semiformal, and formal mechanisms. In case of last kind of coordination mechanisms, silo swapping around a customer axis is an option and in the book, JLL's business unit structure change after the restructuring is introduced.

Lever 2, cooperation means the alignment of goals, attitudes, and behaviors across units with a company. It can foster a culture that aligns all employees around the shared goals of customers solutions. The cooperation is to move from incentive-based to value-based and the enablers for it are redefining corporate values, reaffirming the importance of cooperation and attracting right people, giving meaning to the importance of cooperation. The research gives good examples of how the company, by working with its customers, totally changes its business model. Best Buy, an electronics store, realized that in fact they had different types of customers. Until they started working with them, they thought that most purchases were made by men. In fact, they found, women purchased 55% of all consumer electronics, and also influenced approximately 75% of all purchases. Best Buy changed its policy, towards talking to its customers. Having worked with the customer, the company also needs to develop cooperation. Cisco is also seen as being a good example of this, in that it has broken down all the barriers and silos that exist within the company. Employees, when they are hired, are expected to embrace the no-technology religion approach and be agnostic to all forms of platforms and standards, and keep an open mindset. Annual bonuses are then based on the level of customer satisfaction, revealed in one question: "What is your overall satisfaction with Cisco?" Cisco reorganized the three units of R&D, sales, and marketing in each silo of enterprise, service provider, and small and medium business market to reform to manage R&D and marketing integrated and only sales unit is as usual.

The third lever is clout. It means assignment of power and decision rights to customer-facing individuals as well as those responsible for integration of activities across units with a company.

It means to redistribute power to “bridge builder” and customer champions. It is to move from product leader's decision making to customer-owner's coordination. The author suggests five key tactics for redistributing clout: Redistributing formal authority, strengthening the influence of boundary spanners, raising visibility and recognition of silo busters, stipulating ownership of the customer, and maximizing access to information. One of the key enablers is to foster greater sharing of customer information. Examples in the book are JLL and GEH.

Lever 4 is capabilities, development of customer-facing generalists along with product specialists, it emphasizes developing the skills to cope with changing customer needs. It is to move from product innovation to customer solution innovation. Enablers are cultivating and developing multi-domain, boundary-spanning generalists with clear roles, career pathways, and incentives and activating informal social networks across silos. In resilient company, the generalist's role is more important than specialist. The firm should create new types of competencies focusing on generalist, integrative behavior and set out clear career pathways for people within the new organization. Companies should raise the visibility in recognition of people who work across boundaries, and in different departments, and it should strengthen their influence. From there, greater capabilities will be made, through coordination and a stronger corporate culture. Building a powerful set of capabilities can be a critical aspect of an “outside-in” company model. Since they are not going to arise spontaneously, they must be developed in a systematic fashion.

Once this has been done, a company must actively seek to create connections, both inside and outside the company. So, fifth lever is connection. The author gives the example of Apple, which offers only a small number of applications for itself, simply because its partners can offer thousands more. Lever 5, connections are forging external links to stay focused and agile. It means to expend the source of inputs and also complementary offering beyond internal production units to external strategic partners. It is to move from protecting the core to shrinking the core and expanding the periphery. Indeed, an Industry Week survey of manufacturers showed that 80% of companies say they have made significant progress towards world-class operations, and thereby operate with a significant number of partners. So, connection means blending partners' offerings with the resilient firms to provide unique customer solutions. The book gives one excellent example of Bharti Airtel, in his leading wireless phone company, that did reverse outsourcing by signing off its telecommunications network to Ericson, Siemens, and Nokia. It was a difficult process, but was a very successful one in the end for the Indian company.

This resilience theory in the book emphasizes the

need to create a journey towards the integration of different best practices that will help a company create an “outside in” mindset. Since markets, competition, and technologies will change, customer needs will change as well and, to stay in business, companies will need to reinvent themselves and the way they organize within. The bottom line is the road to greater customer centricity and mapping the journey to greater resilience.

### 2.3 Research design

In a business context, the resilience is about being tough on outmoded ways of thinking and definitely not about being tough on people in the sense of seeking to control them. That means, the resilience theory by Gulati is related to the customer centric approach to the business. The business needs to be designed in a way that leverages the customer centric principles [9]. As mentioned above, Gulati discusses five key levers for creating resilience with customer centric approach to business.

In the cross-enterprise coordination, businesses want to be customer centric. Customers are the revenue streams, not the products or services. Kakao's silo swapping activity will be investigated. In the values-based cooperation, business activities are customer focused. Kakao's collaborative activities will be investigated. In the clout driven by customer-owner, empowering customer champions is the key. The value from these customers determines the sustainability of the business. Value is the combination of fees for service and product, plus their level of advocacy. Kakao's sharing of customer data will be investigated. For the customer solution innovation capacity, the skills to cope with changing customer needs are more important than product knowledge. Everything within the business like the systems, people, functions, processes, products and services work as a collective capacity that delivers value. This is perceived by the customer and this perception of value is the predictor of future customer needs. Based on these collective needs, the business will survive. Kakao's efforts to cultivate future customer needs will be investigated. In the connections expanding the periphery where is the need for progressive improvement. Kakao's business philosophy to enable coordination and cooperation in external partnerships will be investigated.

By using the levers to drive how the business is designed and structured will support business resilience and success. This study focuses on the Korean representative Internet company, Kakao and research questions related to the 5 levers of resilience approach are as follows:

Question 1. In the cross-enterprise coordination, what is Kakao's silo swapping activity?

Question 2. In the values-based cooperation, what is Kakao's behaviours attracting right people and providing incentives?

Question 3. In the clout driven by customer-owner,

empowering customer champions, what is Kakao's sharing of customer information?

Question 4. In the customer solution innovation capability, what is Kakao's effort to cultivate multi-domain generalists with clear roles and incentives?

Question 5. In the connections expanding the periphery, what is Kakao's business philosophy to enable coordination and cooperation in partnerships?

The main work of this study is to find successful resilience practices by analysing Kakao as a representative example. Kakao has created the dominant platform in Korea, and it has tremendous influence on start-ups in the mobile app ecosystem. So, there are some field meetings for obtaining company data. This method is quite effective and appropriate for the qualitative research. It is also necessary to scrutinize the details of data released by secondary sources, such as turnover, brief history, and CEO's creed and former achievements. In particular, the information released by newspaper and press release was thoroughly examined and academic journals, periodicals, and financial report from stock market were also analysed. In order to effectively implement the case analysis, the data was collected from Kakao's information, various data released in newspapers, in-person interviews with related specialists, and several in-depth discussions with relevant parties.

### III. RESULTS AND DISCUSSION

#### 3.1 Restructuring silos to enable swift responses in the cross-enterprise coordination

Daum Communications was established in 1995 and Kakao launched KakaoTalk in March 2010. Kakao expanded its footing in mobile services with KakaoTalk Gift Shop in December 2010, KakaoStory and KakaoGame in 2012, and KakaoMusic in 2013. The two companies merged in October 2014 and in September 2015, the company changed its name to Kakao. KakaoPay and BankWalletKakao were launched in 2014 and Internet-only bank, KakaoBank initiated services in August 2017. Kakao also launched KakaoTaxi and acquired Loc&All, a startup navigation app, Kingisa, in 2015, and launched KakaoDriver in 2016.

The basic asset of the cross-enterprise coordination for the business related to the content business. Kakao's three major businesses are media (including advertising), content, and online to offline (O2O). The media business is improving by the rise of user traffic, and increase of advertisers. The content business is expanding on the basis of Kakao's messaging platform, KakaoTalk and Loen's music platform, Melon offering interlinked services for KakaoTalk users and content market platform, KakaoPage as well. For the O2O business, Kakao is limiting directly-managed operations to mobility services such as KakaoTaxi, KakaoDriver (driver-for-hire service), and KakaoParking, and focusing on its role as a platform for other indirect services in a strategic shift toward selection and concentration on key businesses. So, the O2O business is just external connection with other industries. Figure 1 shows, as of 2016, Kakao's business is composed of media, content and O2O. Media business composes of KakaoTalk, KakaoStory, and Daum. Content business composes of KakaoGame, Melon, and KakaoPage. O2O business composes of KakaoTaxi, KakaoNavi, and KakaoDriver. As of 2017, Kakao is still putting a greater focus on platforms, but it starts to expand its content investment, because Kakao knows, even if the three top monthly unique viewer (MUV)s on Kakao's major mobile apps are media business, the content is the important asset to maintain the media platform sustainable. Kakao already restructured and rebranded its video services. It integrated Daum's tvPot into KakaoTV and it also introduced live TV and adopted the vertical format for video content. Kakao is providing KakaoTV's video content and its subsidiary, Loen's music content (provided by the Melon streaming platform) via KakaoTalk platform.

By connecting KakaoTalk's account to Melon, KakaoTalk users can add music to their profiles. Melon has also launched a joint marketing campaign with KakaoFriends. Kakao is planning to expand the portfolio of Loen to include the provision of video content based on its artist line-up and content production staff. It is providing content, such as music videos and concert footage. Podotree is a consolidated subsidiary for content business.

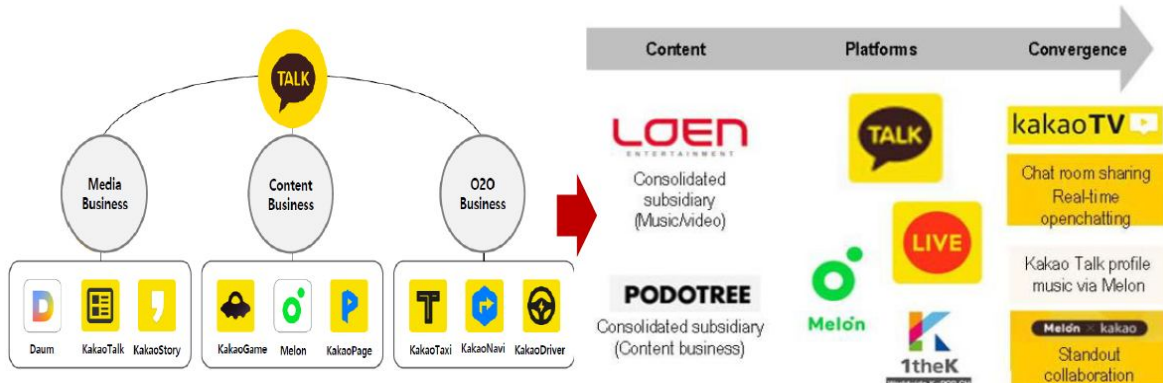


Figure 1. Kakao's business portfolio (2016)[10] vs. actual business flow (2017)[11]

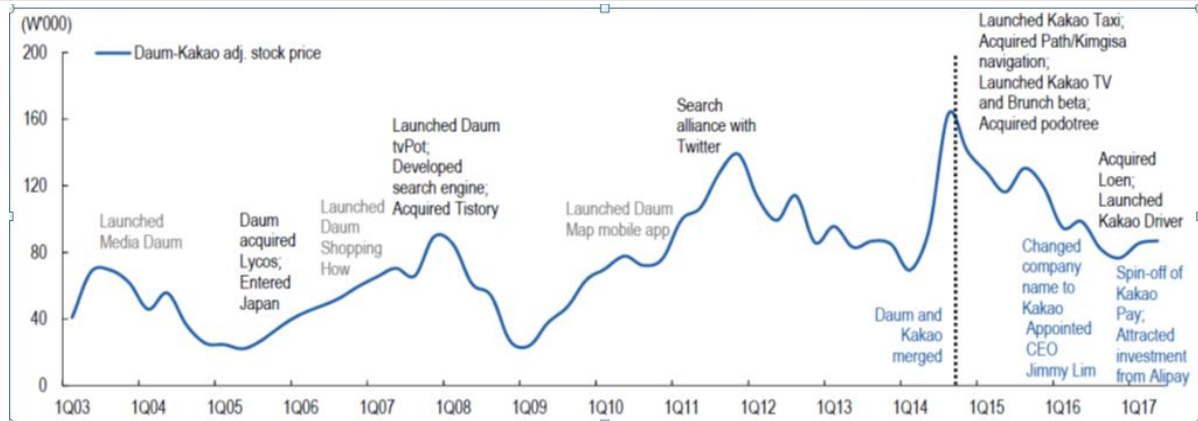


Figure 2. Kakao business history and stock price trend [12]

Figure 2 is Kakao business history and stock price trend. Kakao has been restructured in 1<sup>st</sup> quarter of 2017. Among content business, KakaoGame and Loen is the current key assets for platform business. Figure3 is Kakao's restructured corporate governance as of August 2017.

Loen Entertainment (Loen) has recorded high profitability and cemented its market leadership aided by a strong brand, high switching costs, and reinforced network effect. Revenue sharing ratios are determined by Korean government guidelines and Loen controlling more than half the market has strong bargaining power as the key player that dictates the

commercial success of music content. In Korea, the vast majority of subscribers are price insensitive. This means price competition is not effective in gaining market share. With a few things to differentiate services, strong brand power helps Loen to attract subscribers more easily. So, Loen's content is Kakao's key asset. Kakao's media businesses can retain their customer with killer content like music, and game library. Kakao generated revenues of \$42m in 2012, largely from its popular social gaming platform, so it clearly has the credentials to successfully monetize game content.



Figure 3. Kakao's corporate structure [13]

Kakao also starts spin-off strategy. Spin-offs entail significant benefits, in terms of both operations and (cross-)enterprise value. From an operational perspective, spin-offs enable companies to implement independent management to fit each business, to speed up decision making, and to minimize conflicts of interest with headquarters, thus increasing business opportunities. In terms of enterprise value (share prices), spin-offs should allow companies to carry out separate assessment of individual spun-off entities, which could potentially lead to improvement in the total (cross-)enterprise value. In addition, spun-off companies can raise capital on their own through

either the securing of investments or IPOs, thus easing their financial burden on headquarters.

In September 2016, Webtoons were spun off into Podotree (previous KakaoPage) which is a content subsidiary of Kakao. After it, Kakao is more speeding up the spin-off activities. In February 2017, the AI research subsidiary, KakaoBrain has been established. In March 2017, new subsidiary, KakaoMakers has been transferred the order production platform business of Kakao headquarters. In April, KakaoPay was also spun off into a separate subsidiary. In May, Kakao has launched a business related to mobility such as taxi, driver agency, navigation, etc., on

August 1 with KakaoMobility. These activities are for the O2O business.

### **3.2 Attracting right people & providing incentives in the values-based Cooperation**

It is about the corporate culture to be willing to solve the customers' inconvenience. The customer can be consumer, solution developer, and content provider as well. Kakao's key behaviours are attracting content creators to the Kakao's content market platform such as KakaoPage, Webtoon services of Internet portal. Firstly, KakaoPage belonging to Podotree now is a content marketplace for smartphones. Launched initially only in South Korea, the application offers a wide range of mobile content, all of which is provided by content creators. Kakao avoids competing with its content creator partners by not creating any content itself.

KakaoPage is likely to take some time for South Korean consumers to be accustomed to paying for content that has traditionally been free. One risk facing KakaoPage is the potential for future changes to leading app stores' policies on in-app purchases. KakaoPage relies heavily on Apple and Google's app stores for its distribution, and any changes in their policies relating to content purchases made within individual applications could have a very significant impact on its revenue-generating potential. KakaoPage's first innovation is the integration of a mobile content market with a leading mobile messaging application. Messaging players have launched several kinds of complementary services in the past, including narrowly defined content offerings such as social gaming platforms and premium emoticon stores.

Unlike these previous efforts, KakaoPage offers a wide range of content types, and virtually anyone (including any amateur individuals) can submit their content for distribution via the market. KakaoPage is the first player to move into the mobile content market space and it is followed by Line and WeChat who launched similar services in the near future. KakaoPage is a mobile content market application for smart devices. The content types it supports include anything like text, images, music, and video. For a nominal annual membership fee, virtually anyone can upload content to the market using the page editor tool within the application. All content is reviewed by Kakao before being added to the market.

The content offered via KakaoPage is divided into two categories: Page is an individual piece of content and series page is a collection of content, a TV series, for example offered as a single product for a single price. KakaoPage is initially available only in South Korea for Android devices and iPhone version has been followed. It is a standalone application (a Kakao ID is required), and accessible through KakaoTalk. The service was launched in April 2013, with

8,000 items of content and downloaded 100,000 times in the first month of service. Kakao aims to capitalize on the large-scale social graph and high engagement levels of its existing services, including KakaoTalk, to gain exposure and sales for its KakaoPage content partners. It plans to utilize its social graph in three key ways as follows: 1) Viewing together: A user who purchases content through KakaoPage is given the option of sharing the content with one KakaoTalk friend. 2) Free if you recommend: Some Pages give users the option of receiving the content for free if the user recommends it to between two and eight KakaoTalk friends. The friends also receive the content for free. 3) Social posting: Users can post information about KakaoPage contents on the KakaoStory social networking service.

Kakao's well-known Korean content partners include the media company CJ E&M, the comic author Heo Yeong-man, the singer Yoon Jong-shin, the author Jeong Ee-hyeon, and the hair designer Cha Hong. KakaoPage offers paid content, which doesn't conform to the prevailing global trend toward freemium model. Kakao continues to pursue this model within its separate social gaming platform because it is ideally suited to digital games. However, providers of other types of content, video and music, for example, have generally found it much more difficult to monetize their services. KakaoPage users pay for the content they purchase using Kakao's virtual currency, Choco. One Choco costs \$0.09, and the minimum price for content is five Chocos per item. Revenue is split three ways between the content partner, Kakao, and the relevant app store operator. The content partner receives a 50% share, Kakao receives 20%, and the app store operator 30%. Kakao charges its content partners yearly membership fees: \$46 for individuals and \$92 for companies.

Next one is the webtoon services of Daum portal. It is initially based on an ad-based business model, as it generated ad revenue based on the inflow of traffic arising from webtoon content. The revenue sources from Webtoon have been diversified through online communities and business partnerships. In addition, Freemium models like KakaoPage's service model have been introduced to Webtoon services, basically offering each episode free of charge, but charging for the three most recent episodes. Portal's Webtoon businesses will likely go increasingly global in 2017. Now, Kakao operates KakaoPage and Daum Webtoon via its subsidiary, Podotree. In early 2017, Kakao signed a contract to offer 20 webtoons to Chinese users via Tencent.

### **3.3 Sharing customer information in the cloud empowering customer champions**

Empowering customer champions means redistributing power to customer owners. Sharing of customer information must be fostered. So, open application programming interface (API) is very

important. AI and chatbot are good examples, because it is based on the shared data. The AI is the simulation of human intelligence processes by machines, especially computer systems. Based on intelligence, humans can infer, decide, and act in given circumstances. Machine learning is the science of getting computers to learn without being explicitly programmed. The most prevalent types of machine learning are supervised learning, deep learning, and reinforcement learning. Supervised learning always has a specific preset outcome that is determined by a human before the machine begins to learn. As for unsupervised learning, however, the algorithm doesn't receive clear determination on input data.

The technology is mainly used for clustering. In reinforcement learning, a machine's actions and the rewards they produce affect the subsequent data it receives. Therefore, it continues to complete the task in a way that maximizes rewards. Deep learning is a subfield of machine learning that is concerned with algorithms inspired by the structure and function of the brain, called artificial neural networks. The technology refers to the formation of multiple layers of neural networks for more successful learning and prediction, or a machine's in-depth learning to find a pattern of input data. AI has already reached or even exceeded human intelligence.

Among cognitive activities, AI has reached human levels in speech and visual recognition. For complex calculation and strategic inference, AI surpassed human intelligence. Going forward, the development of the technology is expected to give rise to the emergence of super-intelligence. Through the adoption of this AI technology, Kakao can improve the quality of existing platform services. Higher quality services should lead to an increase in customer's service usage and growth in revenue, resulting from greater satisfaction for advertisers, as well as a reduction in processing time and costs.

As a core area of cognitive science, various subfields of AI, encompassing machine learning, deep learning, voice recognition/synthesis, translation, and multimedia recognition/processing technologies, are being applied to a wide array of existing services, namely search and news services. Since June 2015, Kakao has applied Rubics, a real-time user behavior-based interactive content recommendation system, to its Daum service. The AI system analyzes users' social trends and personal interests in real time, and places customized news content for them. Rubics developers account for around 70% of the Daum staff. Daum news traffic appears to have increased since the introduction of Rubics. Kakao's Rubics platform customizes news recommendations by age, gender, and interests. After the application of Rubics to Daum, the number of news articles on Daum app's front page increased 3.5 times, while news impressions grew up to 5.5 times.

Chatbot is a mixture of AI and messaging service. It

offers convenience to users, as it allows users to gain information via chatting without the need to open a mobile app. Companies providing services including order placement and customer response via chatbots can enjoy benefits, such as increased platform utilization, higher purchase volume, and labor cost reduction. Kakao has made the API for KakaoTalk's chatbot program available for developers to create the relevant ecosystems, with the aim of developing personal assistant to implement concierge services. Based on it, Kakao apps can continue to transform into a platform integrating a wide variety of apps (e.g. news, maps, search, shopping, payment). If chatbot evolves into a one-stop service platform, Kakao can gain dominant positions in the mobile service market.

### 3.4 Developing multi-domain generalists in the capability of tackling customer needs

In order to move from simple product innovation to customer solution innovation, skills for tackling customer needs should be developed. Critical capabilities in resilient company are new type of competencies focusing on integrative behavior. These are usually related to marketing skill. In addition to customized content recommendation skill, Kakao also plans to launch KakaoMoment in September 2017, a targeted ad marketing platform utilizing and analyzing user data from KakaoTaxi, KakaoPage, KakaoMap, KakaoGift, KakaoGame, and other Kakao services. The target ads are set to be applied to all the ads carried by Kakao and Daum.

Kakao's multi-domain generalists are diverse AI and data analysis skills. Mobile content services are adopting personalized recommendation platform such as Rubics. By applying targeting technologies to mobile services, Kakao can boost per-user content and service consumption. In fact, after applying AI, Rubics, per-user consumption of mobile news content increased by 20% for Daum. That means, user interest reflected in news content. It is related to the target marketing and advertising. Another platform example is KakaoMoment that will offer targeted advertising based on diverse platform data such as KakaoTaxi, Gift Shop, and Daum.

For developing platforms tackling customer needs, AI R&D subsidiary, KakaoBrain is the capability itself. It allows Kakao to renew its focus on expanding services on its platforms by enabling on-demand services through AI. KakaoBrain intends to leverage bots and AI to grow on-demand services on Kakao's platforms. It leads a clear evolution of chat apps toward AI. In order for chat apps to succeed, (콤마넣으세요) they need to add media and services to their platform. They will look to launch bots and AI on their platform as this is a quick way to expand to other services and become a platform for media and services rather than purely for communications.



### 3.5 Blending partners' offerings together in the connections expanding the periphery

In order to move to shrinking the core and expanding the periphery, a collaborative mind-set is important. It means enabling coordination and cooperation in partnerships. The appropriate business sector for Kakao is O2O business. Kakao provides a wide range of services such as KakaoHairshop, KakaoOrder, and KakaoTaxi. Kakao's success in the market can encourage a range of smaller local players to enter the bots and AI space in their own unique way and KakaoBrain is main capability of Kakao, as mentioned above. Partners can use bots to find a niche in the ecosystem just as KakaoTalk has. KakaoTalk's growth gives smaller partner players a fair impression of the market for bots and how they can make the most of it. Partnering with Kakao makes sense if partners such as content providers are looking to target a particular regional demographic of users.

Among O2O businesses, the financial technology (fintech) industry has been gaining attention, with an increasing number of Internet companies separating their payment service divisions. In February 2017, Kakao announced a strategic partnership with Alibaba affiliate Ant Financial Services Group, which will invest US\$200mn in KakaoPay, the company's spun-off digital payment system subsidiary. Ant Financial is the operator of China's leading digital payment service Alipay. The fintech revolution is leading non-financial companies such as Kakao to carry out tasks of conventional financial institutions, accelerating the unbundling of the financial industry. KakaoPay is well positioned to offer an extensive network of related services, given the partnership with and investment from Ant Financial, its ties with KakaoBank (Kakao's Internet-only bank), and the digital content subsidiaries Loen and Podotree. Internet-only bank, KakaoBank operates primarily through non-face-to-face channels, and boast price competitiveness by reducing fixed costs such as office rent and labor expenses and offering high deposit rates, low lending rates, and fee waivers. The drivers behind the establishment of Internet-only

banks are declining yields on financial service products and deregulation. Some characteristics of Internet-only bank can be watched: Its potential proliferation among young "millennial" consumers, who are heavy mobile users and prefer non-face-to-face transactions, the development of distinctive services capitalizing on the characteristics of non-banking shareholders, convenient around-the-clock customer service using chatbots, and highly efficient marketing.

The mobility business has been also spun off and KakaoTaxi aims to expand into the B2B taxi business in near future as mentioned above. With chatbot program, KakaoTalkOrder can allow users to order food from local food franchise brands by clicking a button within each brand's "Plus Friends" chat room.

### 4. Conclusion

The purpose of this study is to prove the Korean Internet company, Kakao's resilience capacity. For it, this study investigated Kakao's business activities to find how resilient this company is based on the 5 levers of resilience. Table 1 shows the key summary of the result. The case analysis indicates that a resilience is a good indicator for a successful platform in ecological sense. There are five levers are 5C such as coordination, cooperation, clout, capability, and connection. The cross-enterprise coordination allows Kakao to restructure its existing silo governance into starting from the basic asset like game and music content. In terms of value-based cooperation, this firm provides right content creators with market place like KakaoPage. In the clout, customer owner, Kakao can drive collaboration where the company shares its data by opening its API of AI and chatbot to 3rd party developers. The fourth lever, capability is customer solution innovation for which the firm establishes AI R&D center, KakaoBrain as the function of multi-domain generalist for developing diverse platforms tackling customer needs. The last fifth lever, connection means to expand the periphery where the firm continues to create ecosystem by shrinking the core. The O2O businesses like KakaoTaxi, KakaoOrder, KakaoPay, and KakaoBank are redefining boundaries between ICT and traditional industries.

**Table 1. Key summary of the result**

5 Levers	Key point of enablers making resilient company	Kakao's activities related to key enabler
Coordination	Restructuring formally by silo swapping	Content business focused governance
Cooperation	Attracting right people & providing incentives	B2B ecosystem with content creators
Clout	Fostering greater sharing of customer information	Open API for developers & data sharing
Capability	Cultivating multi-domain generalists with clear roles	Data analysis and AI technology R&D
Connection	Enabling coordination & cooperation in partnership	Partnerships with traditional industries

Currently, Kakao tries to redefine its business not only as a simple mobile messaging service but also as a distribution and O2O platform, starts to provide a wider range of content from text to video, and actively engages in open innovation. Kakao is now turning their eyes to unclaimed areas from retail O2O to home, car, and retail market. In order to make forays into

these areas, it is also developing voice-recognition speakers and car infotainment based on AI technology. It is expected to eventually bring about the era of the connected platform.

It is found that the successful path of platform business model is to leverage 5C of resilience and it is suggested to build the business ecosystem. In

conclusion, keeping up with ever-changing environment is a decisive factor in the firm's success and survival depends on rapid adaptation. Therefore, agility in business is an important concept that includes business-strategic resilience to actively pursue business activities in an unstable situation where the market infrastructure is collapsed and rebuilt. It is also another important concept that includes organizational resilience to resolve the discrepancy between the current governance approach to the market and the ever-changing business models. The boundaries between industries have been broken down by the characteristics of openness. Competition and cooperation among heterogeneous sectors are actively going beyond the same type of industry so that the word "frenemy", which is a compound word of friend and enemy, is not awkward. In addition, the convergence between ICT and traditional industries has also become prominent. Boundaries are broken down in many industries, and the combination and coordination of business models is prominent to create new synergies. The results of this study are subject to some limitations that have a qualitative analysis and analyze only one company, but they also offer significant findings where they provide the basics of a benchmark analysis of the resilient capacity of the companies. Further study is suggested to compare the resilience between two companies in competition and this research would contribute to the long-term platform strategies in ecosystem.

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