

EXPANSION TO INNOVATION DRIVEN MARKETS: CASE OF A MOBILE TECHNOLOGY COMPANY IN THE REPUBLIC OF KOREA

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Abstract. The aim of the present article is to examine parameters of product innovations that could lead to a successful expansion of international companies to the innovation-driven market. The case of the European mobile technology company in the Korean market is analyzed by introducing a market research method and demonstrating what sort of mobile phone could be designed for the South Korean youth. Companies often declare focusing on stronger marketing and sales efforts in one particular business area or geographical region via creating, testing and introducing a new product. The reasons for failures in foreign markets in many cases are related to the lack of knowledge of this region, wrong choice of the product as well as the incapability to choose a right innovation and expansion strategy. It should not be forgotten that a technological product innovation is more readily adopted by the firms that have a market penetration strategy and hope to gain a direct advantage over the competition. The level of technological intensity, user-friendliness, style, cultural aspects, loyalty to native products as well as the level of integration of customers and clients in innovation or marketing processes are important factors while expanding to foreign markets. *The research question: are product innovations necessary for international companies in expansion to innovation-driven markets?* Firstly, there is the country profile presented in the context of transformation to the knowledge-based economy; it is continued by classifications of innovations and product design. These chapters are followed by the presentation of the European mobile company 'X', which is a good sample of companies that could find results of the present market research of significant interest. Finally, there are main preferences regarding mobile phones, collected by the online survey, where Korean citizens from 15 to 40 years old were interrogated, revealed; the answer to the research question is provided and a new product for the European mobile technology companies designed.

Keywords: product innovation, expansion, innovation-driven market.

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1. Introduction

The purpose of the present article is to identify the parameters of product innovations that could lead to successful expansion of the European mobile phone companies to the Korean market via introducing a market research method and showing a concrete example how the mobile phone for South Korean customers could be designed. The object of the present article is the role of innovation while expanding to innovation-driven markets.

The innovative product is designed based on the answers from the online survey. A questionnaire as a centre object of our quantitative survey was built exclusively for the young Korean people to find out their views regarding mobile phones. Taking into consideration that young people are considered as one of main target groups for mobile technology companies, we were targeting c.a. 20 million Koreans of a younger age from 15 to 40 years old (U.S. Census Bureau 2011). 2000 people were interrogated and 1990 responses received which translated to a

solid response ratio of 99.5%.

In total there were 67% of people questioned in the age group from 20 to 30; 10% of respondents were people younger than 20 years old and 23% of respondents were adults older than 30 years old. With the confidence ratio of 99% and the confidence interval of 3, the survey represents the whole market of young Korean people; therefore, the findings of this research are valuable for any company that operates or has an intention to operate in the Korean market. The results of our analysis have led to recommendations for the European mobile phone companies related to expansion in the Korean market and introducing a newly created or modified product.

To identify the desired parameters and features of mobile phones among young Korean people, a full list of parameters, functions, applications, facilities or features were selected for their choice from a vast range of such providers as Samsung, Apple, iPhone, LG, Pantech, Sony, Motorola, Nokia, HTC, BlackBerry, NEC, Ericsson, Sharp and others. To design a 'perfect' phone for the Korean market it was important to find out Koreans' preferences in terms of: design, brand, type (flip phone, slide phone, tough phone, luxury fashion phone, smart phone and others), size, method of interaction (touch screen, keypad, physical button and others), size of the handset, menu presented as a numbered list or with icons; incoming, outgoing and missed calls listed together in the call log or grouped accordingly; functionality (camera, MP3 player, video, Bluetooth, social media applications, email applications, games, calendar/organizer, Google maps, applications store, document reader (PDF, WORD) and etc.), applications store, interoperability, connectivity, pricing, advert, quality, ease to use, functions, phone accessories (shell, hand-free, MP3 plug-in, option of modifying appearance e.g., change of the colour, light and others), mobile facilities (4G, 3G, MMS, Bluetooth, infrared, video call and other facilities). Behind these preferences we find a list of reasons for buying or stop buying a phone of a particular brand; there are main places for purchasing the phone found and advices from friends/relatives or mobile phone shop clerks acknowledged.

More than designing a complete phone to successfully penetrate the Korean market, this article aims to make the market analysis, which could help the European mobile phone companies to rapidly adapt

to the changing mobile technology market in Korea, position the product or service among other competitors and continuously measure the innovativeness and acceptance of the product among the target customers. These targets emerge as crucial while penetrating such a technologically intensive market as the Republic of Korea and help to answer to our research question: are product innovations necessary for international companies in expansion to innovation-driven markets?

2. Markets in transformation

Lim (2008) in his article 'Towards knowledge generation with bipolarized NSI: Korea' considers the transformation process of Korea from being a poor, agricultural country, exploited by the Japanese colonization and devastated by the Korean War, to innovations-driven economy as a successful industrialization experience. Just about 60 years ago South Korea was completely demolished and rebuilt almost from scratch. The transformation experience was marked by a dynamic economic growth led by large firms belonging to conglomerate groups known as chaebols, in addition to exploitation of the international market and technology. Currently South Korea has world's 15th largest economy with GDP over 1 trillion US dollars and is one of the world's fastest growing economies (International Monetary Fund 2011 estimation). With a relatively equal distribution of wealth, the unemployment rate slightly above 3% and a very high human development ranking at the 15th place (United Nations 2011) the majority of South Korean citizens live a comfortable life and have stable and relatively high income.

Learning capabilities in identifying, adapting and operating imported technologies make Korea different from those who simply invest in physical and human capital (Intarakumnerd 2011). The firms in Korea and Taiwan were able to increase the absorptive capacity (of foreign technology) as well as to enhance technological expertise in some sectors (Amsden 1989; Kim 1993).

Based on the Global Entrepreneurship Monitor Report (2011), where over 140 thousand adults (18-64 years of age) in 54 economies were interviewed, the Republic of Korea falls into a category of innovation-driven economies being situated among such countries as Norway, Finland, France, Germany, Sweden, United Kingdom, Japan or United States.

The present Republic of Korea is a modern knowledge-based economy including such large companies as Samsung, Hyundai, LG, Kia Motors, SK Group, POSCO, Korea Electric Power. Within the population of 49 millions, the GDP per capita of 22.961 USD (International Monetary Fund, 2011 estimation) and the unemployment rate of 3.1 % (National Statistic Office of the Republic of Korea 2011) the Republic of Korea reaches the sixth place in terms of the size of exports and the tenth position in terms of the imports size worldwide.

According to Lim (2008), Korea's national system of innovation (NSI) is mid-sized, similar to such countries as Germany or the UK. It could be defined as a catching-up economy shifting from a technology import country to a technology generation and technology use from abroad country. The sectors of electronics and automobiles are the driving industries in Korea, while a heavy investment in the IT infrastructure and R&D as well as a high diffusion rate of IT devices make the development of the Korean national system of innovation smoother and faster. It is interesting to note that the American and European firms commenced manufacturing of auto-motives from the early 20th century, while Japan and Korea were later success stories (Rasiah 2011). Based on Johnson, Edquist and Lundvall (2003), investment in the R&D creates a significant value-added (the largest part of their R&D is carried out by private organizations) in such countries as the USA, Japan, Sweden, Switzerland and South Korea. Rodrik (1994) stated that a great performance of Korea and Taiwan was influenced by government policies to improve the profitability of activities liaised with investment in export-oriented manufacturing.

Among main weaknesses of the Korean NSI Lim (2008) underlines the performance of small firms, insufficient number of local suppliers, relatively low level of competitiveness, innovativeness of the service sector, and a relatively low quality of education. In spite of these weaknesses, based on the Global Entrepreneurship Monitor Report (2011), the Republic of Korea has an outstanding physical infrastructure and internal market dynamics in the entrepreneurial environment, where national policy regulations and governmental programs support entrepreneurial activity relatively well. This is a good sign for investors or new starters in the Korean market because, as Mytelka and Smith (2001) argue, it is easier to

excel in technological innovations via interactions with the policy and business worlds. Intarakumnerd (2011) argues that government policies are one of most important ingredients in developing a strong background for country's intensive technological learning capability. The experiences of Japan and the East Asian economies show that those policies and practices were executed for a long period to produce learning processes in the national innovation system necessary for industrial and technological catching up (Intarakumnerd 2011).

As South Korea does not have vast amounts of natural resources, most of its production is generated through industries that include sophisticated technologies, such as mobile technologies, car industry, shipbuilding, weaponry, computers and domestic equipment. The list of the biggest companies in Korea includes such names as Samsung and LG, that, among other activities, are mobile phone producers and these two companies, together with Apple, hold the biggest share of mobile phone market in South Korea. Given a high sophistication of the South Korean society, a big interest in new technologies, huge technological achievements within the country and a good economical situation, South Korea is almost a perfect market for any mobile phone producer with a clear vision, goals and means to fulfill them.

The European mobile companies that have already failed in entering the Korean market should not neglect the structure of a total entrepreneurial activity sector in Korea, where the consumer-oriented services comprise the largest part. This emphasizes the importance of the market research before introducing a new product to the market in addition to acknowledgment of the consumers' behaviour and preferences. The development of the Korean electronic sector is a good example how companies managed to excel in technology and succeed in targeting foreign customers by using institutional mechanisms and acting as manufacturing and designing subcontractors of transnational corporations (Intarakumnerd 2011). The European mobile technology companies that target the Korean market should take into consideration the level of technological intensity of mobile companies that already operate in Korea as well as Korean clients' demanding and sophisticated needs.

3. The role of product innovations and design

The chapter is started from the Schumpeterian trilogy of invention, innovation and diffusion as well as a classification of innovations based on the final result of innovation processes (into product, process and service innovations). It is continued with definitions of such terms as 'design', 'invention', 'discovery', 'innovation', 'novel', and 'original' that should lead the European mobile companies to better understanding of the main success parameters of entering innovations-driven market via the introduction of a product innovation.

The Oslo Manual (1992) describes two possible types of innovation: **technological product innovation** and **technological process innovation**. Though firms generally pursue both innovation types simultaneously, they have different properties. A technological product innovation may enclose the creation of a technologically new or improved product (good or service). Technological process innovation relates to firms that want to increase their competitiveness, and the particular aim of this strategy is to reduce production or delivery costs. Following this strategy, the firm can become more competitive in price than in product novelty or quality (Rosa 2002). Product innovation then can be defined as the development of new products, modification in design of the existing products, utilization of new materials in production. This type of innovation is more readily adopted by firms that have a market penetration strategy and hope to gain a direct advantage over the competition (Choo and Popadiuk 2006; Dudzevičiūtė and Tvaronavičienė 2011). Innovations by its nature can be radical and incremental.

The concepts of 'design', 'invention', 'discovery', 'innovation', 'novel', and 'original' are often used in a different way and context. 'Engineering design is a process which generates the definition of a system capable of performing a desired transformation on an operand' (Redelinghuys 2006). In many scientific literature sources invention is defined as a new idea (not a modification of the existing one), which accords to three criteria: novelty, usefulness and non-obviousness. Such understanding was supported by Hubka and Eder (1996), and (Joenk 1982). Acknowledging invention as a new conception, which does not necessarily lead to technological innovations, makes it a precedent step before design, while innovation is regarded as the production of the first saleable item

(Redelinghuys 2006).

Redelinghuys (2006) uses Dasgupta's (1996, p64-65) argument that 'the hallmark of what I shall call true invention is that it is a structured set of knowledge-level actions [that is, a knowledge level process] the input to which is a goal to produce an artifact that must satisfy a set of requirements, and the output of which is an artifact [or a representation thereof] that is psychologically or [still better] historically original'. Summarising the arguments of such authors as Altshuller, Dasgupta, Hubka and Eder, and Jones, Redelinghuys (2006) makes a conclusive definition, where compulsory and sufficient conditions to classify a design process as an invention are: design is considered as psychologically or historically original; design positively contributes. Compulsory, but not sufficient criterion: design was not deducible from the current state-of-the-art; technical contradictions had to be resolved during the process; there were technological risks present; innovation has taken place when design is converted into value.

Based on Innovation Surveys conducted in Thailand and Korea by Brooker Group Public Company Limited (2003), a large percentage of Korean companies were involved in any kind of innovations. They were executing both product and process innovations, which was not the case in Thailand. The Korean firms transformed from being imitators to innovators.

According to Machikita and Ueki (2011), to succeed in innovation performance the R&D activities should be executed; they, in parallel, end up with the larger variety of product innovations. To continue, the impact of R&D on process innovations, organizational innovations, procurement innovations, and market creating innovations is pervasive. The varieties of internal resources encourage creation of new products, while varieties of linkages with companies raise procurement and market creating innovations. Liaisons with multinational corporations contribute to companies with fewer propensities to produce new products, though such companies have many propensities to find new markets (Machikita and Ueki 2011). Such results underline the importance of R&D in the creation process of a new product, which could be potentially successful in the Korean market.

4. Description of the international mobile technology company ‘X’

To illustrate how the European companies struggle in expansion to innovation-driven markets with a product innovation, the mobile technology company ‘X’ was chosen. Let us suppose that the company ‘X’ is one of the largest and most popular mobile phone producers worldwide with a relatively modest market share in the Republic of Korea compared to its position in other global markets.

Our chosen company ‘X’ is being ranked as one of the strongest brands in Europe and Asia. The mobile technology company ‘X’ exceeded the revenue of 40 bn € in 2010 and had c.a. one third out of nearly 133 thousand employees involved in R&D. However, the company of such scale has not reached its best results in the Republic of Korea yet. Other producers, such as Apple, Samsung and LG are by far more popular in Korea. Having a set of all the necessary resources for expansion to an innovation-driven market, such large companies often stumble on the inefficient combination of various strategies or wrong decisions, while the performance of relatively smaller companies in expansion to such foreign markets as the Republic of Korea is often jeopardized by the lack of resources and a relatively undeveloped organizational structure, that are crucial in strengthening the commercialization process of innovative ideas.

The present description of the company ‘X’ possesses an important message for analysts of any company in expansion to the Korean market: the company, which has a large organizational structure, a set of solid financial resources and approximately one third of employees involved in the R&D, has a huge potential to increase the share in the Republic of Korea via appropriate product innovations and marketing strategies as well as human resources within R&D used in designing potentially attractive mobile phone for targeted young Korean customers. This would serve as a perfect tip for peers: international mobile technology companies having a similar profile.

Many large companies exploring new possibilities of growing revenues and profits in innovation-driven markets face the urgency to adapt the innovation, R&D, marketing and sales strategies to target markets. The expansion in such a technologically developed market as the Republic of Korea should differ from the expansion to technologically less intensive

countries. Each expansion function (marketing, sales, R&D, innovations and etc.) needs to be liaised to the uniqueness of the target market in a similar way as the combination of these functions or the innovation process as the whole.

5. The recommended mobile phone for the Korean market

Commencement of creating an incremental mobile phone for the Korean market should be marked by identification of currently most popular mobile phone brands and mobile phone brands in use among target customers. The leading position was occupied by Samsung (30% of respondents use this mobile phone, LG with 20% of interrogated Korean citizen, and iPhone was selected by 25% of customers). Another factor which is important for the European companies targeting the Korean market is information sources for purchasing a particular brand: ‘nearly one third of customers are eager to stick to the same brand if the consumption experience is positive’. The number of respondents that select the experience as the main source of information is exceeded only by the role of Internet sources (Fig.1).

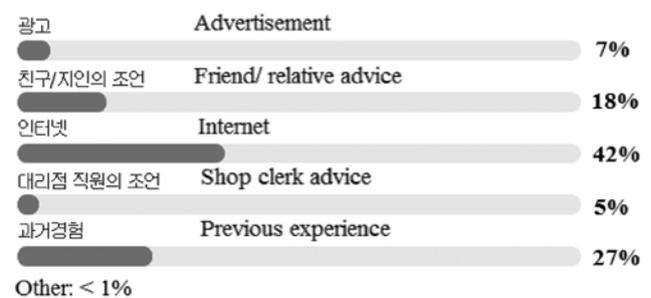


Fig. 1. Information sources for purchasing phone of a particular brand

Source: authors’ calculation.

Valuating the importance of the design or style (‘Look and Feel’ parameters) from ‘not important’ to ‘extremely important’ 62% of respondents admitted that nowadays the ‘Look and Feel’ qualities are of significant importance for young consumers. Such parts of the ‘Look and Feel’ as the screen size, colour, touch screen are the most important while choosing the mobile phone. The importance of ‘Look and Feel’ parameters was in parallel to the functionality aspects. Apart from the preference to have the mobile phone with its main menu presented as icons (63% of answers) or a combination of icons and a

numbered list (28% of respondents), the majority of respondents (73%) prefer having all their incoming, outgoing, and missed calls listed together in the call log or grouped accordingly. Among the most important functionality features there should be included such aspects as camera, MP3 player, the ability to send/receive calls, SMS, video, Bluetooth, social media applications, games, calendar/organizer, Google maps, application store and document reader.

These are the currently cited functionality features that within the technological progress might be incrementally modified or created as absolutely new features in the nearest future. Thus, the investment

in R&D and innovations in functionality, design and style should be considered as crucial while selecting a product or service for the Korean market. Having ‘Look and Feel’ parameters (82% of people rated it at the mark of 4 or 5; valuations varied from 1 – ‘not important’ to 5 – ‘extremely important’) and functionality (93% of respondents considered it as the most important reason) already identified as the most important motives for choosing a mobile phone the classical element of marketing ‘pricing’ should not be forgotten either (74% of respondents rated this motive at the level of 4 or 5), connectivity (75% respectively) and interoperability (72% respectively) (Fig.2).

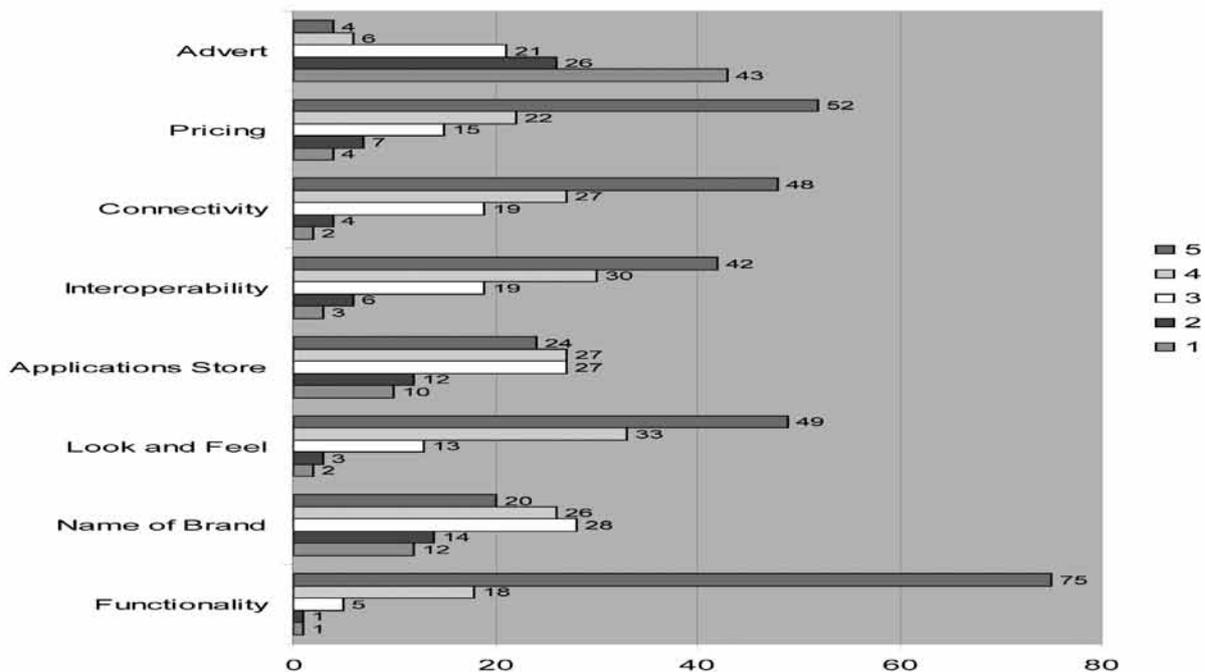


Fig. 2. Importance of specifications

Source: authors' calculation.

Though nearly 40% of respondents are loyal to their brand and are not buying a mobile phone of another brand, it is important to identify what are the main reasons for switching from one to another mobile phone provider. This could help to either maintain the existing pipeline for the companies that already operate in the Korean market or to penetrate this market for the European mobile phone companies. Functions (mentioned by 52% of respondents) was the leading reason for stop using the mobile phone of the same brand, which was followed by quality (31% respectively) and design (15%). Among other reasons respondents have mentioned services, willingness to use other brand, price, language problems and size.

These reasons were more related to the weakness of the current provider (Fig.3).

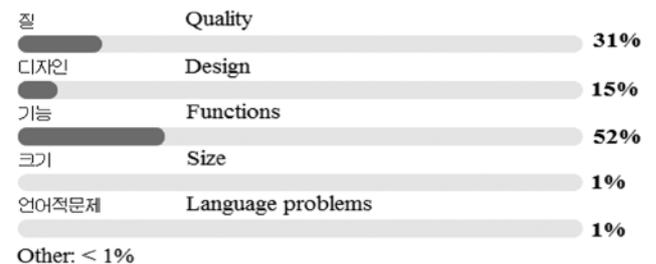


Fig. 3. Most important reasons for stop buying mobile phone of the same brand

Source: authors' calculation.

Apart from such reasons as design, quality, fair price and size, led by functions (41%), respondents also mentioned the ease to use, advice from friends/relatives and mobile phone shop clerk. Taking into consideration that 88% of respondents change their mobile phone once in 12-24 months and more than one third (34%) do not clearly know what brand to choose, the early identification of customers' preferences is necessary for any company which enters the market or strengthens its position in the target market.

The importance of the orientation to the target group in terms of innovations and R&D is illustrated by assessing the necessity of the mobile phone with a special design and functions for the Korean youth, which was admitted by 56% of respondents. Having the data regarding preferences of the Korean youth collected, the article is continued by designing the mobile phone, which could be potentially successful product in the Korean market (Fig. 4).



Fig. 4. Assessment of the mobile phone with a special design and functions for the Korean youth

Source: authors' calculation.

In 2011, the penetration rate in the Korean mobile phone market passed 100%, which means that there were more mobile phones in the country than there were people, as a lot of Koreans possessed two or even more phones (The Korea Communications Commission 2011). South Koreans like having mobile phones that are modern, multifunctional and advanced, and this is one of the reasons why a product lifecycle in this industry is so short.

64% of interrogated people have their current phones for less than one year and overwhelming 88% have their phones for less than two years. Moreover, 74% prefer smart phones over simple mobile phones, as other censuses showed that about four fifths of all consumers use phones not only for calling or texting but also for paying for services, using the Internet, listening to music and various other features that phones are nowadays able to offer.

Based on the results of our survey, a new mobile phone should first of all be a 3.6-4.4 inches screen large smart

phone including such advanced parameters as a touch screen, medium handset (with function of changing language), main menu presented in icons (with possible choice of changing it to list) and 4G features included. Additional functions should include: camera, MP3, video, social media applications, email applications, games, maps, PDF files, hand free function, MP3 plug in, watching TV. Another important factor the survey tended to analyze is the price. Most of people who were interrogated would rather like to pay up to 175 USD and sign a long-term contract with a telecommunications company, which will offer a list of available mobile phones, than spending a lot of time for searching for mobile phones themselves on the Internet; a sufficient information about the company and its phones should be delivered in a Korean language on various Internet sites as much as possible. People are quite sensitive about the image and advertisement; therefore, a strong advertising campaign, where the uniqueness of products could be emphasized, should be launched. The answers of our respondents helped to illustrate how the potentially successful mobile phone in the Korean market should look like (see the image below Fig. 5).



Fig. 5. Potentially successful mobile phone in the Korean market

Source: authors'.

6. Conclusions

International mobile technology companies often declare focusing on stronger marketing and sales efforts in one particular business area/segment or geographical region via creating, testing and introducing a new product, process or service; however, many important aspects related to international marketing, research of the targeted foreign market or parameters of product

innovations are left aside. The reasons for failures in foreign markets are related to the lack of knowledge of this region, incapability to choose the right marketing, innovation or human resource strategies as well as a weak capability to establish the linkage of these strategies with companies' business models.

The South Koreans like having mobile phones that are modern, multifunctional and advanced, and this is one of the reasons why a product lifecycle in this industry is so short. Apart from such reasons of buying a mobile phone of another brand as the design, quality, fair price, size and functions, there were the ease of use, advice from friends/relatives or mobile phone shop clerks mentioned. The early identification of customers' preferences is crucial for any company which enters the market or strengthens its position in the target market.

Answering to the question **are product innovations necessary for international company in expansion to innovation-driven markets, it is stated that the choice of product innovation parameters is important for international mobile technology companies that target the innovation-driven market.** Though a new product is designed for a particular company 'X', the main results of the survey led to understating how sophisticated and demanding customers' needs are in such innovation-driven market as Korea. The European mobile technology companies that target the Korean market should take into consideration the level of technological intensity of mobile technology companies that already operate in Korea as well as the Korean clients' sophisticated taste and propensities. **Product innovations, particularly incremental ones, could be the key ingredient to adapt to rapidly changing customers' needs and a success factor of any mobile technology company,** which fails or aims to enter the Korean market.

The formalized process of commercializing innovative ideas with its organizational structure and the choice of parameters within product innovations could be the best solution for the native market but needs major improvements or changes while expanding to innovation-driven markets, where the level of technological intensity, user-friendliness, style, cultural aspects, and loyalty to native products are important factors.

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