

A Strategic Approach for Implementing Enterprise 2.0: South Korea Case**Sungbum Kim***Faculty, Ph.D. (Innovation and Technology Management), Department of IT convergence, Kumoh National Institute of Technology, Gumi, Gyeongbuk, Korea***Received:** 25 November 2014; **Received** 26 December 2014; **Accepted:** 1 January 2015

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ABSTRACT

In order to create innovation through Enterprise 2.0, it is important to find a field that has potential for synergy effect and understand the preexisting system within the organization. The key words for the similar concepts and principles that connect the existing system with Enterprise 2.0 are knowledge, communication, and end user and these words exist in the form of Knowledge management system, enterprise communication system, and product management system. Knowledge management system will contribute to the organization success through adoption of advanced CoP and Q&A platform. Enterprise communication system will contribute likewise by adoption social networking system, which is like twitter for enterprise, while product management system can contribute in incorporating the voice of customer to new product development process through collecting and analyzing opinion to find the needs of the end users. Lastly it is imperative for each system, service and application to assimilate and work in tandem to implement Enterprise 2.0 and, whilst respecting the rules and processes of the existing system, create a culture that supports active participation and diversity. And it is recommended to give power to the end user in view of the user centered innovation approach thereby realizing product innovation directly from the voice of customer.

Keywords: Enterprise 2.0, Knowledge management system, Product management system, Theme Cop, Voice of customer, User centered innovation

INTRODUCTION

There is a definite increase in drive to incorporate social software platforms in contributing to company management and value creation. The social software platform is based on another increasing drive that seeks to utilize the value of the Web2.0, which includes participation of blogs, wiki's, RSS, and the idea of 'opening', into companies. By moving the platform from an individual level to a level that encompasses employees, outside partners, and customers such expectations on value creation and company management are becoming plausible [6]. Enterprise 2.0 can be defined as the creation of value through collaborating to support the company's individual creativity and collective intelligence. It is organically achieved by combining the participation and open culture of Web 2.0 and by the technology to realize this culture with the company's internal and external processes [10, 11]. In order to create company success, it is important to find a field that has potential for synergy effect with Enterprise 2.0 and understand the preexisting system within the organization.

Literature review and objectives:

Prior to the advent of the concept of Enterprise 2.0, there existed the Knowledge management system within the company [11]. It is necessary to completely understand the Knowledge management system (from here on referred to as KMS) before moving on to discuss Enterprise 2.0. We have to establish the relationship between the two concepts as well as understand characteristics and structures of KMS.

Enterprise 2.0 does not replace the existing KMS immediately therefore it is necessary to study, step by step, how to implement Enterprise 2.0 with KMS background. Regarding KMS, we will look into how the Community factors, which existed in KMS, can be developed and evolved, and how the Quora, a Q&A based social system, is being adopted for Enterprise 2.0 by analyzing Opzi and Korea's solution cases. In addition we will look into Yammer, an in-company social network system for enterprise which is being grafted with Enterprise communication portal and Quik service, which is being regarded as Korea's Twitter for enterprise. Lastly, we will be discussing Enterprise 2.0 as a tool for product development and marketing in collecting and analyzing voice of customer with regard to

Korean companies.

We collected data from Korean companies that established and implemented KMS from 1999 to 2011 and conducted open ended and in-depth interviews with recent developers of social network platforms and five company's employees adopting and using Web 2.0 tool for enterprise. The research aims at: First, dwell upon and suggest a direction on what strategy and tactic a company needs to implement Enterprise 2.0 in order to maximize employee new technology adoption rate and whether it is creating real improvements in performance. Secondly, it aims at suggesting ideas on Enterprise 2.0 tool so that the companies can progressively implement by analyzing each module. The analysis

module is, as suggested in the following table, i) existing KMS and Community of practice, ii) Q&A platform of KMS as Enterprise 2.0, iii) existing Enterprise communication portal and Enterprise social network system, iv) Opinion search system for VOC gathering and analyzing in product management system

CoP and Q&A platform are analyzed from the perspective of Knowledge management, forms of Yammer and Quik are suggested as Enterprise communication platform and Opinion search platforms for the collection and analysis of voice of customer are referred to the Enterprise 2.0 in product management system in South Korea.

Table 1: Enterprise2.0 type case in South Korea.

Type	Details	Company
Knowledge management system with Enterprise 2.0	Knowledge management system principle	Global mobile communication companies
	CoP(Community of practice)	Global mobile communication companies
	Quora for Enterprise (Q&A platform)	-
Enterprise Communication portal with Enterprise 2.0	Opzi	SME in south Korea
	South Korea SME KMS project	SME in south Korea
	Yammer	Daum Communication
Product management system with Enterprise 2.0	Quik (in south Korea service)	Woongjin Coway POSCO, Ahngook Pharm
	Opinion search	SKT NHN

Case study for Enterprise 2.0:

Changing knowledge management system rules and Enterprise 2.0:

KMS refers to a system that secures and nurture core competence and supports the capitalization of knowledge and its efficient use. KMS is classified as the backbone for a typical information/knowledge in the scope of the entire IT system. Normally companies formulate E-mail, electronic payment, bulletin board, scheduling, and etc. through groupware and individual portal. They realized knowledge map, team room, yellow page, and CoP through the KMS. There are several issues in construct a KMS: first issue is Authority management, second issue is related to knowledge classification and has to with the setting of knowledge classification unit and the implementing automatic sorting, and the third issue is defining the knowledge life cycle.

First, the issue with Authority is the critical point in implementing KMS construction and has to do with the integrated authority management problem in the Knowledge management system. The management of overall authority is necessary to allow active sharing of knowledge whilst minimizing information infringement by implementing an appropriate integrated access control of the various sources of knowledge (KMS Application, integrated rolling system, etc.). Without the establishment and implementation of an integrated authority management policy, inappropriate users have access

to knowledge and may result in information/copyright infringement. In addition there is the possibility of increasing cost by taking action in response to the infringement, and the concern that granting inappropriate access may hamper knowledge usability and increase user discomfort. Therefore, in order to manage integrated authority, it becomes necessary to implement systematic classification of knowledge level according to relevance to task, user affiliation to various groups/levels.

Second, denoting the knowledge classification unit has issues regarding registration of knowledge and its classification. Knowledge classification is necessary to consider the preciseness of classification, effective and efficient management, and end user's usability and to suggest a direction on which path and classification method will be used to store/utilize knowledge.

Third, the knowledge life cycle refers to the creation, accumulation, utilization, evaluation, and termination of knowledge. Without a standardized procedure, problems may occur regarding supply of service and system performance. In order to remedy this issue, it is important to establish a standardized management procedure that encompasses knowledge itself to allow for the active knowledge procurement/utilization between users and the stable management of KMS.

When a company using KMS partially implements Enterprise 2.0, the three issues,

integrated authority, setting knowledge classification unit, and change in knowledge life cycle, will come to surface in the Enterprise 2.0 implemented modules. In addition it is necessary, from a strategic standpoint, for the company to decide whether to accept the changes in the three issues mentioned above. In essence the conclusion makes it imperative for the company's principle to change partially or wholly with the implementation of Enterprise 2.0.

1) Decentralizing Authority: the ability for an individual to create and accumulate information through blogs or wikis will cause to destruction of integrated authority of knowledge. In such a case it is necessary to define the boundaries between the knowledge managed with KMS and new knowledge created by Enterprise 2.0. In reality the members of companies will approach both systems' sets of knowledge. KMS is a centralized and regulated system, while Enterprise 2.0 will proceed by decentralizing authority. The implementation of Enterprise 2.0 is acknowledgment of knowledge decentralization.

2) Setting Knowledge Classification unit: it is expected that the use of the 'Tag' will change the existing classification methods and change securing and using information to be more effective. Through Participatory Tag or Automated Tag, the knowledge classification method will change into more detailed and real time classification. Individual oriented key words, 'hot issue' words, trend, recommended words will be dynamically suggested and grouped. The implementation of Enterprise 2.0 may be challenged with whether or not it is possible to classify knowledge in a systematic manner. However this is a technological issue and we place our hopes with the development of search and classification technology.

3) Change in Knowledge Life cycle: in the case of knowledge created by Enterprise 2.0, it is most likely that the final user of the knowledge will be the decider of the knowledge life cycle. Knowledge that users no longer search for and knowledge that no longer spread will welcome its end of life and knowledge that is extended by critical users, and knowledge spread through links will itself increase its life cycle. Therefore it is important to determine the areas where Enterprise 2.0 and existing system can coexist and where a complete overhaul is needed prior to implementing Enterprise 2.0 to companies.

Enterprise 2.0 and CoP (Community of Practice):

Our research's second task is to consider CoP (Community of Practice) in linking KMS and Enterprise 2.0. CoP is a module being implemented in KMS and has many similarities to the principle of Enterprise 2.0 and is useful for company adoption

and deals with the same topics as best practice. Cyber CoP is an area for encouraging knowledge transfer, between individuals who share similar fields of interests, their personal know-how and tacit knowledge [15]. Through these, it becomes possible to create knowledge based personal network, create culture of cooperation, distribute knowledge, and share explicit knowledge of various fields. CoP in KMS was registered and operated strictly adhering to a set of existing rules, while CoP in Enterprise 2.0 is more about finding a topic and forming teams on its own. In addition by connecting it with personal blogs within the company, it maximizes employee's potential and exhibits collective intelligence.(Boimabeau 2009)

As Enterprise 2.0 grafted onto CoP, CoP was vitalized and self-created CoP began to develop. A product development team in South Korea Electronics Company has established "Theme CoP", composed of multi-functional volunteer staffs, to enhance members' capability and support building and executing feasible theme strategy in the long-term. The theme CoP was spontaneously formed with product development team and expanded naturally to other teams. Theme CoP started to operate in both offline and online sites, compared to its only online past, and through periodic meetings theme CoP members shared information of customer, competitor, and discussed internal progress status and suggested strategic direction. In addition tools in Enterprise 2.0 were used to make preliminary adjustments that allow the organization to go forward with a common goal by filtering topics. The Web 2.0 tool that contributed greatly for Theme CoP is team blog as it allowed the announcement and sharing of work progress status of theme projects. The reason why Theme CoP is especially important is that the official topics were moving in the form of unofficial type of CoP in order to solve the major issues of product management. Theme strategy is a language established with consensus in order to establish product strategy in global mobile communication industry between 2005 and 2010. All of mobile network operators and mobile device vendors all shared its strategy and segmented customers through product themes. Therefore theme strategy is critical for finding out key driving forces, setting up product portfolio management, and for alignment with technology roadmap and product roadmap. CoPs that showed short term success from the table above are Game, Music, User interface, Message. These CoPs expanded from a web based CoP activity to offline activity which leads to realistic and tangible achievements [12].

Table 2: Theme CoPs and members.

Themes		Camera	Music	LBS	User Interface	Message	Mobile Game	Mobile Internet
Leader		1	1	1	1	1	1	1
Product	GSM	2	3	3	1	2	1	3

Planning Division	CDMA	Overseas	2	3	1	1	2	2	1
		Domestic	4	2	1	2	2	2	3
	Product Strategy Team		2	2	1	1	3	3	1
	New product process Team		2	2	1	1	2	2	1
Related organizations	Tech Strategy Team		3	4	6	11	5	7	17
	R&D		6	8	8	10	10	10	16
	Marketing Strategy		6	9	9	8	10	17	13
	New Biz		3	4	10	5	8	15	15
Total members			31	38	41	41	45	40	71

The major principles of CoP in Enterprise 2.0 are: to be freely formulated, have freedom of activity, be based in the spirit of Web 2.0, and be open and have active participation. However some modification and alteration is necessary for an organization to perform the set target and achieve some tangible success in the short term. In other words the creation of CoP specifically for solving the strategy of the organization is required. Although CoP is created with the interests of the members as its primary focus, but it is important that a CoP that

can serve as a common theme that will take on a corresponding role to the strategy. It is only when the spirit and activities of Enterprise 2.0 is carried on to offline situations that achievement within the company finally becomes output. If the formulation of CoP, data collection, and effort to bring issues to attention is considered as the first step in Enterprise 2.0, then the second step in Enterprise 2.0 would be to fusing it together with the actual intra-corporate processes and suggest a strategy, and then actually executing those strategies in Offline situation

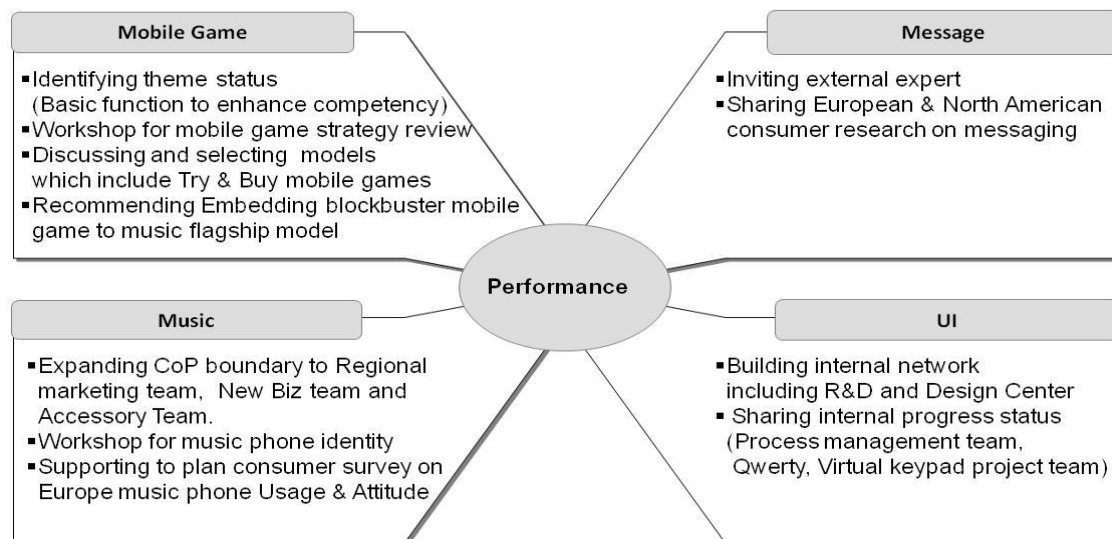


Fig. 1: Tangible Success CoPs : the Mobile Game, Message, Music, and UI

Quora for Enterprise (Opzi and South Korea):

The third point the research in KMS with Enterprise2.0 will focus on is adopting Quora to the existing KMS of a company. Quora has the potential to integrate with the existing KMS as it is one of social computing programs based on Q&A platform. Opzi is an example of Quora for enterprise that is spreading in the United States however it is hard to find a commercialized Korean brand's solution. Both the United States and Korea have high understanding of Web 2.0 [2] but in the case of Korea it is difficult to adopt into the company due to cultural differences and hierarchal nature of the organization's culture. The research aims to simply introduce Korea R&D project which has been introduced as a Q&A platform for Korean small and medium-sized businesses. The project is a government funded project as a 2011 promising knowledge service item and is being pushed as Enterprise 2.0 platform for

small and medium sized businesses centered on experiment clusters.

1) *Opzi:*

Opzi is a Q&A based collaboration platform and can be understood as Quora for business. Opzi can be regarded as an appropriate choice of enterprise 2.0 version of knowledge management system. Opzi has a Q&A base which allows for various applications depending on the department and member interests. Opzi takes on a wiki type format and offers a crowd-sourced FAQ.

2) *Q&A platform for enterprise in south Korea:*

This project has been developed in Korea and is a Korean version of Opzi, and is a corporate B2B Q&A platform aimed at small and medium enterprise in the DaeDuk region. The project is focusing on the fact that knowledge based social service is

domestically almost non-existent in Korea and therefore requires government support and the project is an attempt to discover domestic success models. Government support is significant especially as it will result in small and medium enterprises becoming more competitive. In addition the project aims at implementing Q&A platforms to small and medium enterprises to make realizing achievement easier by implementing a subdivided form of professional technology. This project's strategy involves publishing the API, and allowing it to be integrated with the KMS of various companies thereby increasing its potential to expand. As part of effort to incorporate this project system into companies, the sale and distribution of flexible API to closed communities like companies and organizations is being planned and readied. A group's ability to collaborate is an important factor for innovative success [13]. It is expected that Q&A based social network platform will be most realistic complement to supplement KMS as it increases the organization's collaborative ability.

Enterprise Communication portal with Enterprise 2.0:

Twitter for enterprise: Yammer:

Yammer is essentially Twitter for the workplace where communication between employees on tasks in progress is possible through this private channel. The twitter like communication method fills in the gaps company communication media, like company bulletin board, company email and messenger, failed to fill. Through Yammer, company email members gain the ability to communicate with each other more effectively and register a 'line' to give reports on tasks. In the case of Daum communications, only 25 members were registered in the beginning, which expanded to 374 members in ten days, and then further expanded to 540 members in the matter of a month. Over half of the entire staff was using Yammer as a means of communication. What is important to take note is that Yammer became a discussion center on company project planning of company mobile services as well as personal interests, and clubs between all the 48 in-company groups. Fast exchange of information, real time multilateral discussion, and information documentation improve work efficiency as the company becomes an informal place of communication. However the primary role of Yammer is to provide a demonstrative service that determines whether the company culture and strategy can adopt company SNS platform prior to the full scale implementation of Enterprise 2.0.

Twitter for enterprise: Quik:

Quik is essentially a Korean version of twitter for enterprise service and is being used by Woongjin Coway, POSCO, and Ahngook Pharm. Quik is a communication service with micro blogs as its basis

and has a closed structure with a strengthened security system and caters for intra company needs. Just like twitter, Quik has a follow, following system as its base and by following another employee, one gains access to messages he/she posts. Through Quik, companies can: First, be able to share messages in the fastest and broadest manner possible by simply allowing a simple message registration to be checked by anyone who is a follower. Second, introduce creativity and innovation into corporate culture as horizontal communication becomes possible and as the members are not in a supervisor-supervisee relationship but in an equal position. Third, create a strong tie network by forming personal relationships within the company [3, 4]. Forth, use a mobile version and android specific application, and make it Twitter compatible thereby allowing Twitter available on Quik.

Merging of product management system and Enterprise 2.0:

The strategic directionality in adopting Enterprise 2.0 to product management system (from here on referred to as PMS) is that Enterprise 2.0 needs to be operated in the existing product management framework. PMS can be categorized into product development management and product portfolio management and both processes are a formal process within the organization.

It is not easy and may cause many sources of risk from constructing a separate framework for Enterprise 2.0 and changing existing processes to fit into the new framework and tools. And it is equally unlikely that Enterprise 2.0 will integrate the existing rules. In merging PMS and Enterprise 2.0, the core task is to find the area in PMS that will have its performance increase greatly due to the introduction of Enterprise 2.0

The parts that Enterprise 2.0 is easy to integrate and show synergetic results, and make possible user centered innovation are collecting and analyzing the voice of customer. Collecting and analyzing the voice of customer relies on Enterprise 2.0's tools and rules and then reflect that results in the formal process of product management system

Voice of customer(VOC) and Enterprise 2.0:

With the expansion of the influence of internet, the comprehensive collection of Blog, café, comments, homepage, and other opinions of the end user and applying it to the company's product strategy is becoming imperative. In response to this need, companies are searching for methodology for VOC collection and analysis. There are two methods in carrying out VOC collection and analysis in accordance to Web 2.0 concepts and tools. First method is for the enterprise to establish a virtual community and through it, gather the voice of customer according to the tools of Web 2.0. VOC collection by the company by interacting with various blogs is under this first method. The second

method is using the opinion search engine to actively collect and analyze the voice of various customers. The first method can be evaluated as being easy to achieve the intended objective but there is a risk of a biased result due to the intentions within an organization. Therefore the more suitable of the two methods in collection and analysis of the VOC's of Enterprise 2.0 is the second method where the opinion search system gathers and analyzes opinions of hidden groups.

The opinion search engine system is used by Korea's Mobile network operator, internet portal service company. The system automatically collects opinions through real time information monitoring, through crawling web pages, and automatically classifies opinions by content. The collected and classified information extracted into positive or negative opinions and the various opinions are statistically analyzed. The use of positive opinions of the user will bring about maximization of sales opportunities and the negative opinions can be used in early response to negative issues thereby increasing crisis management ability. The system that crawls, collects, and analyzes user opinions is in keeping with the user centered innovation of Enterprise 2.0 and therefore is not information stuck in a mold. It deals with honest and 'live' opinion from blogs and bulletins and it has the potential to become company system-compatible and thus its development into Enterprise 2.0 is highly likely. In order to achieve the mentioned outcome, search engines much utilize opinion mining technology and conduct automatic crawling and statistical analysis. The most important step upon gathering and analyzing opinions is the integration of information and knowledge into the company's product management system. Up till the collection of detailed VOC, classification into significant units, and then its prioritization is helped by aforementioned opinion search of opinions from blogs, café's. And drawing up a product road map with technology, the missing blanks are filled in with the rest of the processes.

The integration to the company system can be represented in in the Figure below (Figure 2).

It shows that opinion search contributes up till the collection of detailed VOC, its categorization, and prioritization. This figure employed the idea of Markham [9].

Under Levi's classification of Enterprise 2.0 segments, the application of Enterprise 2.0 in collecting and analyzing VOC is classified under marketing [8]. However, the collection and analysis of VOC can also be roughly defined as being under the front end of innovation where VOC is expressed for product development [7].

The existing method of companies for responding to VOC is first collecting VOC's via

offline methods like customer gang surveys and focus group interviews and then having individual employees manage them or form a data base in teams for use. The process of computationally processing into data bases for sharing or form into a knowledge base has been a difficult process. When the Web 2.0 concept and tools takes root within a company, the voice of customer will be collected naturally into data bases. As techniques for search, collection, and analysis improves, the quantity of data in data bases will increase simultaneously improving its quality. The members and end users will use user-driven tag system and will result in an even greater amount of VOC being collected and analyzed in real time. The value of the offline VOC's, which were collected mainly through individual members, will be realized when it becomes integrated into the collected data base system with time.

According to Gresham's law, forced sharing results in the creation of useless information but the tools and processes of Web 2.0 is expected to organically change organizational culture into that of sharing and open participation.

Discussion and conclusion:

Enterprise 2.0 has strong correlation with existing Groupware and KMS. Therefore it is necessary to supplement existing KMS to create a synergetic effect and important to find factors of KMS that needs to be replaced or supplemented by Web 2.0's principles based on participation and openness. The assimilation and combination of each service and applications are being required and the ability to combine and apply point solutions is also required. The conventional groupware system was in a top-down mold and made participation and sharing of information compulsory and/or forced. In stark contrast Enterprise 2.0 supports the users in companies to voluntarily participate and encourages diversity via public communication system and formation of relationships. In addition the use of Enterprise 2.0 as a method for collecting and anticipating the voice of customer will become one of the most suitable methodologies of user centered innovation [14]. This implies that an organizational culture which instills end users the power for innovation is required [5]. The simple adoption of web 2.0 technology and functions in organizations or cultures does not guarantee success. It therefore is necessary to formulate an incremental and selective approach that finds and expands areas that Enterprise 2.0 can be applied to and it goes without saying that a deep understanding of the concept involved. The coming together of the objective of the organization and the participation and openness, modified with the existing processes in mind, will lead to the establishment of realistic and tangible Enterprise2.0

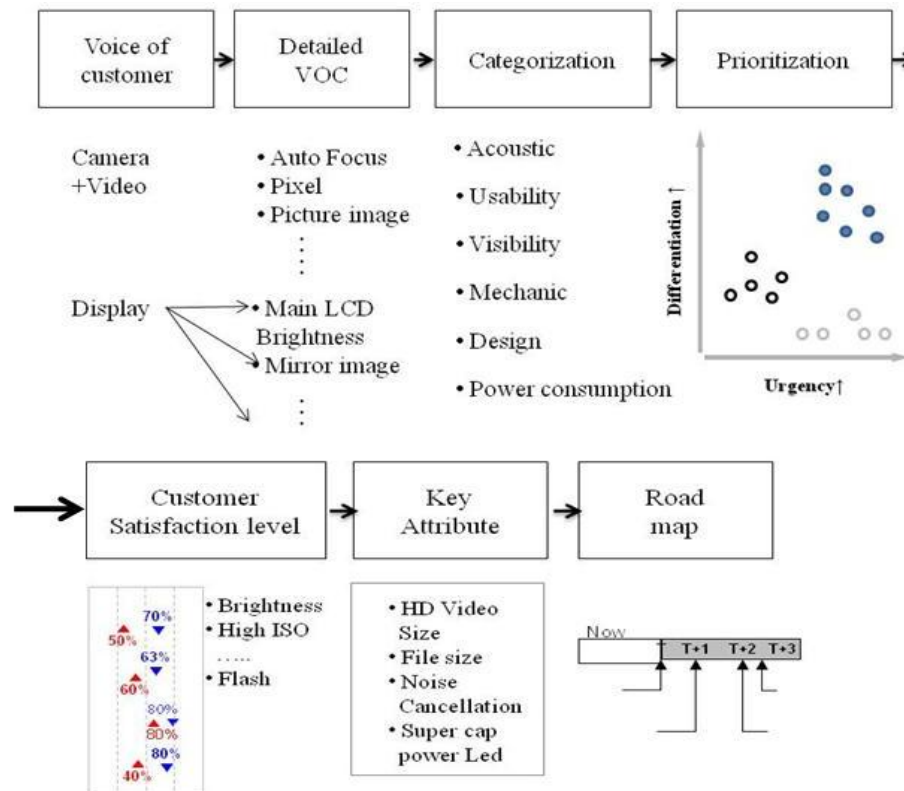


Fig. 2: The process from VOC collection to Product realization.

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Authors' Contribution:

Dr. Sungbum, Kim conceived research framework, analyzed the data and wrote the paper.

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