

How to Raise Products Quality by Establishing Recording Culture

Suck-chul Yoon

College of Business Administration

Seoul National University

1. Introduction

Most Korean businesses have suffered from serious labor-business conflicts since the latter part of the 20th century, and it is an acknowledged fact that such conflicts made quality control difficult, therefore weakening the international competitiveness of Korean products. From such experiences, it has become clear that without solid cooperation between labor and business, and strict quality control, Korean businesses will not survive in the unlimited competition of the world market. The aim of this paper is to put forth the theory that Korean businesses can achieve harmony with labor and carry out strict quality control by reintroducing the "recording culture" used by our ancestors during the Joseon Dynasty, and to provide examples to that effect. The term "recording culture" as used in this paper refers to the practice of recording and storing all major decision-making processes of a nation's political or business organizations, so that they can be accessed and used by all who wish to do so. The period in which recording culture was at its height in Korea was in the late 18th century during the reign of King Jeongjo (正祖大王, 22nd king of Joseon Dynasty, r. 1777-1800), an era, along with the 15th century reign of King Sejong, known for economic progress and harmony between king and subject.¹⁾ Scholars of Korean history claim

1) Han, Yeong-wu. *Jeongjo'eui Hwaseonghaengcha, Keu Paril* [8 Days of

that one of the reasons why the Joseon Dynasty was able to last so long (519 years), a feat rare within world history, is its recording culture.²⁾ If so, let us examine what the recording culture of the Joseon Dynasty was actually like.

2. Recording Culture of the Joseon Dynasty

The recording culture of the Joseon Dynasty started early after the founding of the dynasty, with the compilation of annals on the reign of past kings, henceforth to be referred to as *Sillok*.³⁾ The *Sillok* was put together in the following manner. Throughout the Joseon Dynasty, two scribes or chroniclers were always present where the king and his ministers were discussing matters of state, one of them recording their words, the other their actions. These chroniclers were generally young men who held relatively low positions within the Office of Royal Decrees (Yemunkwan 藝文館), and were known for their integrity. These daily records that they made were called Sach'o (史草), and were personally kept by the chroniclers in their own homes so that neither the king nor powerful officials could see them. When a king died, the complete *Sillok* for his reign would be compiled, based on the Sach'o and other governmental records. This work was done in a separate office founded for the occasion, employing more than 200 officials. Four copies of the completed *Sillok* would be made, and for safety sake, they were stored separately in History Archives located in various parts of the nation.

All copies excepting the one stored in the Jeonju History Archive (Jeonju Sago 全州 史庫) were lost during the Japanese Invasion of Korea in 1592, but the government then made three more copies of the surviving *Sillok* to replace the ones that had been lost. Some of these were again partially destroyed during Japanese Colonial Rule and the Korean War, but the copy of the

Jeongjo's Trip to Hwaseong]. Seoul: Hyoseong, 1998. pg. 80.

2) Han, Yeong-wu. *Dasi Chadneon Uri Yeoksa* [Our History, Rediscovered]. Seoul: Kyeongsewon, 2001.

3) The *Joseon Wangjo Sillok* (*Sillok* for short), alternately translated as either "Annals of the Dynasty of Joseon" or "Veritable Records of the Joseon Dynasty," is a detailed daily record in book form, kept on the doings of the king.

Jeongjoksan History Archive (Jeongjoksan Sago 鼎足山史庫) survived intact, and is now preserved in the Kyujanggak (奎章閣) of Seoul National University. The *Sillok* was added to UNESCO's World Heritage List in 1997 for its cultural properties.

The Kyujanggak collection includes not only the *Sillok* (1893 volumes, approximated at 64 million words), but 3047 volumes of the *Seungjeongweon Ilgi* (承政院日記) a record kept by the Royal Secretariat on proposals made to the government and its financial transactions, 273 volumes of records kept on national defense and financial committee meetings, 2500 volumes of *Euikwe* (annotated colored illustrations recording the major events of the nation), and more than 6000 maps of Korea, its provinces, and surrounding nations. Of the *Euikwe*, the section called "Hwaseongseongyeok Euikwe" (華城城役儀軌) compiled during the reign of King Jeongjo, includes detailed records on the following: Lists of all material and human resources used during the construction of Suwon Fortress, the records of the workers' hours and wages, machines and technology used in the construction, and detailed blueprints of the buildings being built. UNESCO designated "Hwaseongseongyeok Euikwe" as a World Cultural Heritage, being the world's most detailed record of urban construction of the 18th century (1796). The "Weonhaeng'eulmyojeongli Euikwe" (園幸乙卯整理儀軌), a record of the 8-day trip King Jeongjo made in 1795 to Hwaseong (now the city of Suwon), contains not only the types and amount of all cuisine produced everyday for breakfast, dinner, and snacks for the royal party, but that of all raw ingredients used in making the said cuisines, and their costs per capita.

Why do we need such detailed records? Let us take as an example, the necessity of a detailed recording culture to faithfully reproduce the taste of traditional Korean foodstuff such as kimchee, soybean paste, and soy sauce. The methods for making tasty kimchee or traditional condiments can be found through keeping annual records. A document could provide records for a certain year, detailing the amount of beans being fermented by a certain method at a certain temperature, and what the resultant product tasted like. Such records spanning several years can be analyzed to find out how you can make tasty soy sauce in a certain region and under a certain climate. This kind of data is what we term nowadays as "know how." The

science and technology wielded by humanity today has been developed through such record keeping. Let us look at some more specific instances.

3. Record Keeping and Scientific Progress

One of the most important factors in the competitiveness of a business or a nation is scientific progress. Scientific progress is made possible through correcting or building upon the data of the past, using newfound information. The science of astronomy provides us with an example. In 1543, Nicolaus Copernicus (1473-1543) opposed the existing geocentric hypothesis and claimed that all planets revolve around the Sun in a circular path. However, this claim was simply a hypothesis without conclusive scientific evidence. It was Danish astronomer Tycho Brahe (1564-1601) who provided that evidence, using the data and records from his observation compiled over two decades, starting in 1581. As there were no telescopes at that time, Brahe observed the location of 777 stars that could be seen with the naked eye every night for more than twenty years, using only a compass and sextant. When Brahe died, his student Johannes Kepler (1571-1630) inherited his teacher's records. From Brahe's extensive records, Kepler first separated all the data concerning the movements of Mars and started making slight corrections. These corrections were needed because the Earth itself was moving while Brahe was making his records, who failed to compensate for them. Kepler inserted the compensated data into Copernicus' heliocentric hypothesis and found that they did not correspond with the circular orbit. The discouraged Kepler then hypothesized that Mars' orbit was an ellipse with the Sun as one of its two foci. The empirical data corresponded with the hypothesis. Kepler made compensations for the Earth's movements to the data of other planetary movements, and found that all the planetary orbits are not circular but rather elliptical, discovering what we now know as Kepler's First Law.

There are virtually no instances within the history of science and technology that a completely new invention or discovery appears out of the blue. Scientific and technological advances are made from ideas put forth in the past, the accumulation of

experimental results and data on the subject, and the correction or development of that same data by those who walk the path laid down by their predecessors. Such a theory is also proven true by the development of electric technology. In 1819, a Danish school teacher H. Oersted (1777-1851) announced his empirical discovery that the needle of a compass, placed beside a wire through which electric current is flowing, moves. French scientist A. Ampere (1775-1836) who heard of this discovery published a hypothesis in 1820 that a wire carrying an electric current will produce a circular magnetic field around it. This was a hypothesis that Ampere came up with to explain the empirical data that Oersted had found. Englishman M. Faraday, (1791-1867) who was a laboratory assistant at that time, was intrigued by Ampere's hypothesis. He hypothesized that if a moving electrical current produces a magnetic field, then perhaps a moving magnet will produce an electric current. Faraday confirmed his hypothesis through experiments in 1831. With the success of Faraday's experiments, humanity was able to produce generators to produce massive amounts of electricity, opening the current era of electrical civilization. Information compiled by a predecessor is used by successors to cumulatively improve science and technology, and what makes such transmission of information possible through successive generations is recording culture.

4. Methodology of Establishing Recording Culture

It is all too human to err. Errors, both practical and ethical, made in politics or business, can result in pain and loss for a large number of people. Therefore, society needs some sort of system by which it can try to prevent potentially fatal human error. Large-scale quality control disasters such as the collapse of Seongsu Bridge or Sampung Department Store could have been prevented through the positive use of recording culture. The problem is figuring out in what way recording culture can be admitted into institutions and organizations, each with its unique needs. Let us consider the method of utilizing recording culture in a business, to strictly control the quality of a product or service. A product (including service) is produced through the

two steps of design and production. If there is a flaw in the product's design, the product will be problematic even if the manufacturers do their best. Therefore, rules need to be established to eliminate human errors, starting from the design stage. Quality management in the design stage should begin with putting together a Quality-Assurance document (henceforth QA document). A QA document should record in detail, not only all the rules that the designers should follow, but also the names of all the designers, their design fields, *why* they designed the product in such a manner, and *what methods* were used while designing, etc. By putting together such a QA document, everyone who is involved in the designing stage comes to feel a responsibility, hence preventing mistakes or errors in that stage. A QA document is the basis on which quality can be maintained after the design stage, in the prototyping or manufacture of a product.

The steps for maintaining quality in the prototyping or manufacturing stage starts with putting together a Quality-Surveillance document (henceforth QS document). The QS document is a record to make sure that the contents of the QA document is being correctly applied. The attentions of manufacturers can easily concentrate on reducing manufacturing costs rather than faithfully maintaining product quality. Quality surveillance is needed at the manufacturing site to prevent errors that may occur precisely when the attentions of manufacturers stray. A QS document contains all the items that each manufacturer must follow to faithfully reproduce the contents of the QA document, the name of all manufacturers and their specialties, and the name of their manager. The advantage of such a document that records the names of all the workers involved, is that an error can be accurately traced to its source. If it becomes possible to accurately trace a problem to the manager of each responsible section, it becomes impossible for anybody to deliberately overlook an error for personal reasons. If traceability is not absolute, it becomes difficult after product completion to find the documentation that contains detailed and accurate information of those responsible for the error, in the case of an accident. In that case, the anonymity of those responsible for unethical behavior is guaranteed, and poor quality becomes inevitable. Information traceability may feel

uncomfortable and inhuman at first, but when time passes and it becomes part of the manufacturing culture, it will be accepted as a necessary step in securing social morality.

A QS document must designate Witness Points (henceforth WP) and Hold Points (henceforth HP) in a product's manufacturing or prototyping stage. A WP is a point in the process of manufacturing where someone should go to the actual manufacturing site to make sure that all the important rules are being followed. For example, on a construction site of a reinforced concrete building, the number and dimensions of the iron reinforcements must be verified before pouring concrete, as they will be buried afterward, impossible to check unless the building itself is dismantled. The HP is a point where the manufacturing process is put on hold to check for any irregularities. The process can only resume after passing the inspection. An HP inspection is imposed to prevent the occurrence of errors even at the price of interrupting the flow of the work. If an error is found that does not conform to the contents of the QA document, the overseer are supposed to issue a Non-Conformance Report (henceforth NCR). Any process that is given an NCR must take the necessary steps to correct the error before continuing. The concept of an NCR is similar to that of a writer proofreading his work. The more corrections you go through, the better the final product. It is also preferable that the contents of all QA and QS documents be permanently filed electronically or on microfilm. You should keep records on discontinued products as well, because if a later product is found to be faulty, you sometimes need to track the error from previous models. With the advancement in document storage technology, it is not that difficult to keep a large amount of records indefinitely.

Quality maintenance by QS documents may become the target of complaints and accusations from both the workers on site (for being too strict), and the upper management (for being too nosy). Therefore, it is difficult to assure high quality without the strong will of the company's CEO. He must have faith in the philosophy that strict quality control will prevent large scale disasters, saving more money in the long run than cutting corners. Quality control through using recording culture will eliminate unethical behavior and prevent quality accidents to realize a low-cost,

high-efficiency society. Also, all parties involved will no longer expect personal favors, relieving misunderstandings and stress between them. If personal favors disappear, the overseers will be helpers rather than superiors, and will provide their specialized skills and know-how according to need, constituting a culture where people are respected for their abilities. In the following section, we will take a look at the case of the Korea Electric Power Corporation, which used recording culture to finally reach the substantial achievement of building a Korea Standard nuclear power plant.

5. The Case of KEPCO

The Korea Electric Power Corporation (henceforth KEPCO) started out in the 1970s without any previous experience or knowledge about nuclear power, to building in the 1990s a "Korea Standard Nuclear Power Plant" with 95% domestic technology. Let us examine the recording culture that KEPCO adopted in this process. From the time when they started construction on Kori NPP Unit 1, the first nuclear power plant built on Korean soil (1972), KEPCO sent elite employees in their twenties to their main contractor Westinghouse to learn quality control (henceforth QC) techniques related to building nuclear reactors. KEPCO developed their own unique QC system based on the QC methods brought back by these employees. KEPCO's QC system developed with the two stages of Quality Assurance (QA) and Quality Surveillance (QS) as its core. KEPCO's QA system assures quality by documenting all stages of a product (anything needed for the nuclear power plant)'s design, manufacture, testing, and management. QS is the process by which actual work is checked to see if it accurately follows the procedures listed in the QA document.

When work began in 1971-72 on Kori NPP Units 1 and 2, KEPCO chose the "turn key" method where all technical services depended on a particular foreign corporation. With the building of the first two units, KEPCO quickly learned what were the main technical services needed for building a nuclear power plant and which corporations had the necessary special skills, and chose appropriate foreign corporations for their specialties

in each area when Kori NPP Units 3 and 4 started construction in 1978-79. When planning for Youngkwang NPP Units 3 and 4, KEPCO selected Korea Heavy Industries and Construction, Inc. (henceforth KHI), as its main contractor, and employed the American corporation Combustion Engineering (henceforth CE) as a consulting firm. From this point on, parts for the nuclear power plant started to be produced domestically with KHI at the center. Also, Korea Atomic Energy Research Institute (henceforth KAERI) which was in charge of system design, started a bold investment by sending young scientists and engineers to technically affiliated foreign corporations for learning and training. KHI had the necessary production equipment that they had imported, but it was unknown whether or not it had the ability to use them correctly. The consulting firm of CE was against the domestic production of main parts for the reason of uncertain quality. In fact, the domestic manufacture of the key elements of a nuclear power plant, namely the atomic reactor, steam generator, and the compressor, was a near-impossible task. At that time, these three parts could only be produced by the G7 nations. However, KEPCO took up the challenge with the historical goal of complete Korean independence in the matter of atomic energy, and started work on Youngkwang NPP Units 3 and 4. KHI and the QA team sent by KEPCO worked together to assure quality.

KEPCO founded a residential office within KHI and started on-site work on quality assurance. The particularly important parts were delineated as first class, while the other parts were divided into second, third, and fourth, according to their importance. The quality of the first class parts required QA and QS documents to follow them everywhere in all of its 18 stages, starting from design, continuing on to manufacture, transport, installation, operation, maintenance, and repairs. KEPCO called this procedure by which a product's quality is maintained, PDCA (Plan-Do-Check-Analysis). The acronym means that all steps are taken by "plan," "done" by a qualified person, and "checked" and "analyzed" by a third person. KEPCO had to choose many different subcontractors apart from KHI, and it demanded PDCA from all of them. For a subcontractor that did not already have a department on quality control, KEPCO sent its own QA employees to create one. The main steps for checking the quality

of important parts were "checking before manufacture," "checking during manufacture," and "transport check." When a supply contract with a subcontractor was signed, KEPCO's QA department received a QA document from them, and started "checking before manufacture." KEPCO first visited the subcontractor to check its equipment, to assure that the corporation has the necessary capability to achieve the quality specified in the QA document. When the subcontractor passed the "checking before manufacture" test, it continued to the "checking during manufacture" stage. A WP (Witness Point) and HP (Hold Point) must be designated during "checking during manufacture." If there was an inconsistency with the QA document in the "checking during manufacture" stage, the supervisor filed an NCR (Non-Conformance Report). It is said that when building one NPP unit, KEPCO produced about 5 thousand NCRs. The reason for such a profuse amount of NCRs is their philosophy that the oftener you look, the closer to perfection it will become.

When manufacture is completed and the product is ready to be transported, the "transport check" is carried out. This includes testing the product itself, its painting, plating or gilding, and packaging. For instance, a diesel generator goes through more than 300 starting tests, and if it stops more than three times, an NCR is issued. A product that is given an NCR is corrected, then put through the same tests again. If it fails again, it is scrapped altogether. All products that pass the "transport check" are accompanied by documents that record not only the names of the manufacturers, but all the people involved in the testing as well. When the products that go through such rigorous testing is transported to the power plant and installed on location, they go through a function test of all major parts, then the trial run of the plant itself. The trial run of a nuclear power plant involves inserting the nuclear fuel, then raising the energy output of the generator by levels up to 100%, as a final test of each major part. It takes about two years to go through the all the tests. People from the various organizations associated with such quality assurance testing are sent to the site for the quality tests. For example, KHI that manufactured the main parts is responsible for the manufacturer's test. KEPCO, as the orderer of the finished product, is responsible for

the owner's test. The ANI, following the international requirements, is responsible for a third party test. The Korea Institute of Nuclear Safety is responsible for the governmental test. All these parties conduct their testing simultaneously to identify the TGW (things gone wrong) and to prevent possible malfunctions in the future, working under the philosophy that "to err is human." If all systems are "go" after such tests, the generator is finally able to start its operations in earnest. With such strict quality control, KEPCO was able to construct a Korea Standard nuclear power plant using 95% Korean-made parts, raising the percentage of atomic energy use in Korea to that of a leading nation. The feat was accomplished through the efforts of each and everyone involved, but would have been difficult had not a system based on recording culture had been introduced.

6. Recording Culture and Social Capital

As we have examined so far, recording culture makes possible the strict management of the quality of a product or service, thus raising a business' competitiveness. Now let us put forth the theory that recording culture can go one step further, strengthening the social capital to raise the competitiveness of a business or even a nation. Let us first examine the meaning of the term, "social capital." Historically, humans started using tools to raise the efficiency of their production activity, and those tools led to various machines, equipment and factories of today. Economists call intermediary products that man develops to raise the efficiency of consumer-goods production "physical capital." As the scale of economic activity increased, social infrastructure such as roads, harbors, communication equipment, electricity (energy) and waterworks appeared as ways to raise production efficiency. These infrastructures were called the "social overhead capital" (henceforth SOC). In the late 20th century with the rapid development of information technology and the increased need for networking and strategic alliances, the concept of social capital came to be emphasized. Social capital refers to the social milieu that is conducive to building business relationships among organizations in the society. Economists include the following as the elements of social

capital: ① trust, ② integrity, ③ solidarity, and ④ transparency.

Let us examine how recording culture can strengthen these four elements of social capital. If you record all the words that are passed back and forth when a political or economic decision is being made, as was done in the government in the Joseon Dynasty, the *transparency* of the decision making process is heightened, discouraging private arrangements for personal gain and illicit connections, also raising the level of *integrity*. Recording who made what proposal, who agreed, and who opposed, makes it possible for people to take responsibility for their actions. When leaders take responsibility for their words and actions, the *trust* their followers have in them is raised. In turn, the raised *trust* improves *solidarity* among the members of the organization, and thus all four elements of social capital are strengthened by the use of recording culture. Within each molecule, there are particles called protons and neutrons within a nucleus, which are strongly linked without resisting each other. The reason for the strong link is the existence of a particle called meson. What is the power that acts as the meson within human society? The first thing that comes to mind is blood. The bloodline that parents, children, siblings, and relatives have in common, links them in a mysteriously strong manner. However, the range of human relations that solely depend on blood is too narrow for larger enterprises such as the running of a business or a nation. Another source of power that links humans apart from blood is trust. Marriage between man and woman is based on trust, and we know from experience that you cannot join in a common enterprise with someone, be it business or politics, without trust.

Analects of Confucius (孔子, 551-479 B.C.) tells us the ancient Chinese philosopher's theories on politics. The three bases upon which successful politics can be built are, keeping the people fed, having a military to defend the nation, and keeping trust between the people. Confucius tells us that if you must necessarily discard one of these three bases, you must first give up national defense, then food, never giving up trust. It was his belief that a nation cannot survive without trust between the people. The Oriental theorists who believed in the five primary virtues of Wisdom, Justice, Manners, Benevolence and Trust, put the most weight on the last element of trust. Accordingly,

when the city of Seoul was being planned more than six centuries ago following the theory of the five elements, the Bosin'gak, the shrine symbolizing Trust, was built in the center of the city, while the four gates to the city, symbolizing the other four elements, were set around it to guard the city. Trust is surely the most basic element that allows for the existence of cooperative organizations such as a business or a nation.

7. Solidarity and the Organizational Competitiveness

The chain of logic in this paper so far has been that recording culture raises the transparency, integrity, and trust within an organization, and that trust leads to solidarity. Let us now look at the theory that solidarity raises the organizational competitiveness. Many leaders of the East and West have used the slogan "united we stand, divided we fall." This opinion that solidarity is a key factor for the existence of a nation or organization can be found in an Eastern classic, penned some 23 centuries ago. *Mencius*, the book that records the words of the Chinese philosopher of the same name (孟子, 370-289 B.C.), includes a passage to the following effect on the success of a country. "Heavenly chance is not as good as geographic advantage, and geographic advantage is not as good as harmony within the country." From a modern perspective, this passage can be interpreted as follows. For an organization to continue to be successful, it should take advantage of ① opportunity, ② comparative advantage, ③ and harmony between the members of the organization. If we list the three elements in the order of increasing importance, it would be

Opportunity < Comparative Advantage < Harmony.

Harmony can be understood as a synonym to the term solidarity that we have been using so far.

Now let us raise a question: Was the time when recording culture within Korean history was at its apex, a time of utmost solidarity between the king, aristocrats, and the people? An answer can be found within the "Weonhaeng'eulmyojeongli Euikwe" (園幸乙卯整理儀軌), which is a report on the 8-day trip taken by King Jeongjo in 1795 to the city of Suwon. If you study the colored illustration of the passage of the king and his

entourage, you will see that the relationship between the common people and the monarch is surprisingly harmonious. The people by the road witnessing the king's passage are not bowing down in homage, but rather drinking, dancing, singing, and thoroughly enjoying themselves. Such acts are substantially different from the behavior represented in the historical dramas shown on television nowadays. What made such a familial and harmonious relationship possible between the king and his people was the recording culture of the times. The just and transparent rule that left everything in permanent records to be judged by the succeeding generations, and the integrity that allowed for all the workers involved in national building projects to be accurately paid for each half-day's work, contributed to the people's trust in their monarch, and the harmony between them.

Such harmony reproduced in a business will lead to trust between the employers and employees, making stricter quality control possible, and finally increasing the competitiveness of its products and services. Furthermore, recording culture will provide accurate records that can help solve conflicts between the employer and employees with ease. Let us take a look at the following example.

<The Case of the Samseong Slide Fastener Co.>

Samseong Slide Fastener Co. (CEO: Yu, Han-gi) is a medium-sized enterprise located in Seoul that produces slide fasteners, parts used for opening and closing various bags. This corporation that produces up to 2 million meters of fasteners annually, became involved in a conflict with its employees like many other businesses in the late 1980s. Difficulties in managing personnel, resulting in soaring labor costs, and difficulties in maintaining product quality, led the CEO to consider splitting off divisions of the company and subcontracting manufacturing processes to the divisions at lump-sum prices. Mr. Yu's decided to maintain only the R&D team and minimum personnel in the main office, and separate other teams in charge of tape production, dyeing, assembly, and sales into split-off divisions, making them profit-centers. When Mr. Yu presented this idea to the labor union, it strongly opposed the idea believing that the new system would threaten their job stability and income. However, there was a way to overcome this opposition: the recording culture that this

corporation had been maintaining. From its very founding, Samseong Slide Fastener Co. had made and kept detailed records on every aspect of its finances, including purchases of raw materials, labor costs, depreciation allowances for fixed assets, etc. The employees who had kept these records were those who belonged to the labor union, so they could not challenge the authenticity of the records. With the records in front of them, the employer and employees set the transfer prices to insure an appropriate margin for each split-off division.

In the process of splitting off, all the workers who were moved to a split-off division were given their pension for leaving the company. However, each split-off division was allowed to use the same tax-payer's ID number as the main company for the sake of cutting costs. After the splitting was completed, each split-off division was able to make the profits that had been forecasted on the basis of the records. The amount of the profits became larger, as each split-off division worked harder. However, as time passed, a trouble arose. Some workers of split-off divisions came to leave their divisions for personal reasons, and they demanded the pension for leaving the company from the main company. Samseong claimed that as it had already paid all the employees' pension at the time of splitting, any pension accumulated after that point should be paid from the division. But as other split-off divisions' employees joined the new demand, a new conflict arose between the employer and employees, finally leading to a lawsuit. The lawsuit ended favorably for the main company: All records and receipts for the payment of pensions at the time of splitting had been kept, and were presented as crucial evidence. Since the main company successfully dealt with the labor problems, the company was able to put all its attention to developing new technology to enhance the quality of products, and as of now, six years since the split-off of divisions, it is still seeing a rise in its sales without rise in cost.

8. Conclusion

During the 1970s when Korea, one of the poorest nations in the world, surprised the world with its economic growth dubbed "the miracle of Han River," scholars of various nations visited

Korea and asked the secret behind the success. After they heard the economic policies the Korean government had taken, they doubted that those policies would not be enough for the amazing success. However, when they happened to visit the Kyujanggak as tourists and saw the historical records dating back centuries, they exclaimed that this was the source of the Korean economic miracle. Unfortunately, however, the tradition of recording culture was damaged and lost during the dark ages of the Japanese colonial occupation and the Korean War. Despite such losses, some Korean businesses have successfully reconstructed the tradition of a recording culture to produce stunning economic results. In this paper, I have identified and analyzed such cases to come up with a methodology to update the recording culture of the Joseon Dynasty to fit present needs.

If we establish recording culture to a business' site of manufacturing, the quality of products will be enhanced. If we establish the recording culture the decision making process of organizations, it will improve the social capital of the organizations in general, and improve the organizational competitiveness. Information stored within human memory may be lost with the movement or death of the person. The succession of information without recording culture will be impossible, with crucial information lost. The establishment of recording culture will also improve the accumulation and sharing of information, making knowledge management easier to do.

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- 3) Interview with the employees of KEPCO
- 4) QA Documents of KEPCO (Provided by KEPCO)
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