

A Study on Policies of the Ordering and Receiving System for Public e-Learning Project in Korea

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공공 이러닝 프로젝트 수발주시스템 정책에 관한 연구

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Abstract The purpose of this study is to suggest a proper improvement direction of the public ordering and receiving system in related with e-Learning. The research methods for this paper are derived from survey about e-Learning companies and the written materials of the present public e-Learning project. According to the study, in most cases, the public e-Learning projects don't affect positively e-Learning company's businesses. It indicates that the public e-Learning project has three problems or improvement items. And as a solution to the problems, it presented the policy alternatives the policy alternatives as the concept of ordering and receiving system.

Key Words : e-Learning, Smart Learning, Public Project, Ordering and Receiving System, Policy.

요 약 본 연구의 목적은 공공 이러닝 프로젝트의 올바른 개선 방향을 제안하고자 함에 있다. 연구 방법은 이러닝 기업에 대한 통계조사와 문헌연구를 병행하였다. 연구 결과에 따르면, 대부분의 경우에 공공 이러닝 프로젝트는 이러닝 기업의 사업에 긍정적인 영향을 미치지 못하는 것으로 나타났다. 그것은 공공 이러닝 프로젝트가 세가지 문제점을 갖고 있기 때문이며, 본 연구에서는 그 문제점에 대하여 수발주 시스템 관점에서 정책적 해결책을 제시하고자 한다.

주제어 : 이러닝, 스마트러닝, 공공프로젝트, 수발주시스템, 정책

1. Introduction

e-Learning industry has been grown in public market, private market and education market. However, there are heaps of problems such as the irrationality of order management system of e-Learning project and

continuous managerial degradation of e-Learning companies [1,2]. Thus, the government established and published "Standard Contract for Development of e-Learning Contents" in June 2013 in order to improve the irrational order management system and transaction practice which are prevalent in e-Learning

Received 10 December 2013, Revised 10 January 2014

Accepted 20 March 2014

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ISSN: 1738-1916

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industry [8].

The new policy is expected to affect the e-Learning market of public sector preferentially because the focus of significant number of promotion policies is in e-Learning market. However, according to my survey, many people point out that the public e-Learning market has not positively contributed a lot to growing the industry, so some people raise a doubt that such new policy shall be effective. Therefore, an elaborate execution strategy to understand and solve the problems of public e-Learning market is needed in order to maximize the expectation effect. For that, the strategy must be included opinions of main agents - e-Learning company, employee, public e-Learning project owner.

Thus, the purpose of the study is to present a political improvement in order to enhance the effectiveness of public e-Learning projects. For this, the study shall carry the survey for three areas including the performance of public e-Learning order management projects, recognition of order receiver and placer and would like to present an improvement plan and political alternative through analysis of such survey.

2. Background

2.1 Status of Public e-Learning Market

It is difficult to make a definition of e-Learning market while the study on it is not sufficient. However, it shall be possible to make a definition as follows considering the characteristics of e-Learning projects proceeded in public area in the past. That is, the public e-Learning market could be defined as a market where demand and supply are provided by ministries of central government, local governments and their related public institutions, education office in-local and other public institutions [4]. According to survey for state of e-Learning in 2012, the size of domestic e-Learning

market is 2 trillion and 604.3 billion Won. The public e-Learning market takes only 6.7% (175.1 billion Won) of total e-Learning market, which is not a big size and its size is about 1/7 of enterprise e-Learning (private e-Learning) which takes 45.7% and individual e-Learning of total e-Learning market. However, the introduction rate of e-Learning is relatively high comparing to the size of market. The introduction rate of e-Learning of central government agencies, education office in-local and local governments of metropolitan cities is 100% while the same one of basic local governments is 88.2% and the one of local industrial zone is 83.3% [7]. This could be explained that the public accepted the government policy for e-Learning first and the recognition for utilizing the e-Learning was high.

2.2 Characteristics of Public e-Learning Project

Most of public e-Learning projects are based on ordering and receiving system. So they follow the general procedure of public procurement based on public contract related laws such as "Act on Contracts to Which the State is a Party" and "Government Procurement Act". The procedures could be divided into 5 stages [9]. Most of them are similar to those of general purchase, service and constructions ordered by public sector but contain the characteristics which the e-Learning project owns in some stages. These characteristics of e-Learning projects shall require the political and institutional actions.

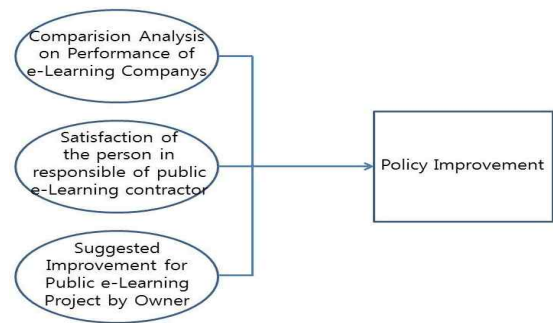
In the 1st stage, a procurement request is made by written proposal request of the project owner. In case of e-Learning project, undetailed task requisition has been pointed out as a problem and frequent change so f such task requisition has aggravated the profitability of the order recipients. In the 2nd stage, the qualification and standards for bidding are determined. The large group companies are limited in bidding by 'Software

Industry Promotion Act' for system industry and by 'Act on Development of e-Learning Industry and Promotion of Utilization of e-Learning' for contents industry. This has a purpose to improve the irrational practice that the large group company wins the tender and subcontracts to small & medium enterprise at lower price. In the 3rd stage, the technical and qualification review for submitted proposals shall be made. In the 4th stage, the contract shall be made but the unfair practice on order management has been problematic. The government recommends the parties to follow the standard contract ("theStandardContract") of e-Learning Contents Development. The 5th stage is a procedure to monitors othat the project could be proceeded as the executed contract. An institutional supplementat ion to check and monitor the execution of contract and performance of the e-Learning contraction in professional way and take an post action is required.

3. Method

3.1 Study Model

The study tried to propose a political alternative to improve the practice of order management of e-Learning projects after understanding how the situation and characteristics of public e-Learning project are reflected on the actual state and problems of order management practice. Thus, the study would like to propose a political alternative after investigating the participation level of companies in public e-Learning bidding or relative comparison with performance of non-participated companies, satisfaction of the person in responsible of public e-Learning contractor and the tasks which the person in responsible of e-Learning project owner considers to be improved. Figure. 1 is the modeling of relations between them.



[Fig. 1] Study Model

3.2 Method of Study

The study investigated and analyzed three data as follows according to the study model. First, the study carried a positive analysis on financial result and technical innovation of e-Learning companies. The target companies included 135 contractors who won the public e-Learning projects in 2012 as searched through procurement information system and 105 companies which declared as e-Learning business in 2012 but overlapped companies and the ones which missed certain value were excluded that the final 109 companies were selected as the target to be analyzed. These companies were divided to non-participation group of public e-Learning project, passive participation group and active participation group by the number of successful bid. The average sales, economic value added (EVA), liquidity rate and R&D rate comparing to sales of each group were investigated and compared each other. The data of Korea Enterprise Data (KED) was utilized for obtaining variables of each group. Second, the satisfaction of employees in responsible of e-Learning companies was investigated with 114 employees and executives engaged in e-Learning companies and 6 questions including the effect on the profitability, technical power and market development by public e-Learning project were given. Third, the result of 4 questions out of survey for actual state of e-Learning industry in 2012 was cited for the tasks to be improved which the

person in responsible of public institutions considers. The study found out the problems considering above 3 investigations and analysis results and would like to propose a political improvement plan.

4. Results

4.1 Effect on growth and innovation of companies by public e-Learning project

The average sales of non-participation group was 3.953 billion Won and the average economic value added (EVA) of the same group was -260.66. In addition, its average liquidity rate was 173.64% while the average R&D cost rate was 9.49%. The average sales of passive participation group which participated in only 1 public e-Learning project was 13.667 billion Won and its average EVA was -278.49. In addition, its average liquidity rate 183.93% while its average R&D cost rate was 8.64%. The average sales of active participation group which won multiple bids was 17.119 billion Won and its average EVA was -544.3. In addition, its average liquidity rate was 182.47% while the average R&D cost rate was 5.52%.

In aggregation, the average sales of active participation group was high but its average EVA, average liquidity rate and average R&D cost rate were investigated to be lower than those of other 2 groups. On the other hand, the average EVA and average R&D cost rate of non-participation group were investigated to be high while the average liquidity rate of passive participation group was investigated to be comparatively high. Considering such analysis result, it is interpreted that the public e-Learning project has contributed more or less to short term sales increase but has not contributed much to improvement of profitability for securing the sustainable resources of the company and technical innovation for enhancing the future oriented competitiveness.

<Table 1> Comparison between groups

	No.	Average Sales	Average EVA	Average Liquidity	Average R&D
Non Participation Group	35	3.953 billion Won	-260.7	173.6%	9.5%
Passive Participation Group	41	13.667 billion Won	-278.5	183.9%	8.6%
Active Participation Group	33	17.119 billion Won	-544.3	182.5%	5.5%

4.2 Satisfaction of employees in responsible of e-Learning companies on public e-Learning project

The survey result of satisfaction of employees of e-Learning companies on public e-Learning projects is as follows: First, the satisfaction on profitability was appeared to be a little unsatisfactory showing middle by 45.3% and low by 30.5%. Second, the effect on securing the technology was investigated not to be helpful for technology showing middle by 36.5%, low by 25.0% and high by 22.9%. Third, the effect on financial growth was investigated not to be helpful showing middle by 33.7%, low by 27.6% and high by 25.5%. Fourth, the effect on cash flow was investigated to be helpful showing high by 42.7% and middle by 24.0%. Fifth, the effect on developing the domestic market was appeared to be positively helpful showing middle by 33.0% and high by 29.9%. Sixth, the effect on overall e-Learning industry was investigated to be positively helpful showing positive high by 38.1% and middle by 27.6%.

When aggregate above results, the respondents recognize that the public e-Learning projects are not so helpful for securing the sustainable competitiveness of the company including the profitability, securing the technology and financial growth while they are more or less helpful in terms of securing the short term cash liquidity. This is similar to result of Table 1 and shows the necessity to improve the public e-Learning

projects.

<Table 2> Satisfaction of e-Learning company's employees in responsible of public e-Learning project

	Very High	High	Middle	Low	Very Low
Profitability	1.1%	6.3%	45.3%	30.5%	16.8%
Technology	5.2%	22.9%	36.5%	25%	10.4%
Financial Growth	6.1%	25.5%	33.7%	27.6%	7.1%
Cash Flow	8.3%	42.7%	24%	19.8%	5.2%
Developing Market	8.2%	29.9%	33%	21.6%	7.2%
Effect on Industry	11.4%	38.1%	27.6%	19%	3.8%

4.3 Tasks considered to be improved by the person in responsible of public e-Learning

As for the method to operate the public e-learning, 'Outsourcing to e-Learning Service institutions' took the biggest occupation by 77.2% and the next one was 'Supporting the education cost' by 28.6%, 'Self establishment' by 8.7% and 'External lease' by 3.8%. The tasks to be improved in operation of public e-Learning included 'No existence of necessary contents' by 59.3%, 'No existence of tools to measure the education effect' by 49.4%, 'Low effect comparing to cost' by 25.3% and 'No existence of manpower dedicated for operation' by 23.8%. As for key contents to promote the expansion of e-Learning utilization in future, 'Diversification of e-learning curriculum' took the biggest occupation by 85.9% and the next one was 'Expanding the outsourcing' by 39.9%, 'Securing the budget and management manpower' by 39.1%, 'Expanding the target of e-Learning education' by 19.6% and 'Establishing the system' by 12.3%. As for 'Needs of Government Policy for introducing/utilizing the e-Learning', 'e-learning contents support system' took the biggest occupation by 65.8%, and the next one was 'Supporting the education cost and tax' by 58.5%, 'Expanding the e-Learning related infrastructure' by

32.3%, 'Promoting the professional manpower for e-Learning operation' by 20.0% and 'Window role of education information' by 15.9% [7].

<Table 3> Tasks considered to be improved by the person in responsible of public e-Learning

Inquiries	Answers
Method to operate the public e-learning	Outsourcing to e-Learning Service institutions(77.2%), Supporting the education cost(28.6%), Self establishment(8.7%), External lease(3.8%)
Tasks to be improved	No existence of necessary contents(59.3%), No existence of tools to measure the education effect(49.4%), Low effect comparing to cost(25.3%), No existence of manpower dedicated for operation(23.8%)
Expansion of e-Learning utilization in future	Diversification of e-learning curriculum(85.9%), Expanding the outsourcing(39.9%), Securing the budget and management manpower(39.1%), Expanding the target of e-Learning education(19.6%), Establishing the system(12.3%)
Needs of Government Policy for utilizing the e-Learning	e-learning contents support system(65.8%), Supporting the education cost and tax(58.5%), Expanding the e-Learning related infrastructure(32.3%), Promoting the professional manpower for e-Learning operation(20.0%), Window role of education information(15.9%)

5. Problems and Improvements

5.1 Institutional Innovation

The public e-Learning project is not much helpful in securing the stable profit for enhancing the economic value of company either in middle or long term base and does not function as a driving factor of technical innovation. Thus, the public institutions shall recognize the e-learning contractors as their partners in a level of win-win cooperation and also the institutional improvement to support foregoing is needed. In stage of request for bid, not only the basic contents and budget of task but also the incentive system for performance of technical innovation shall be specified

in the written request for bid so that the e-Learning contractor could make an effort to improve the technical competitiveness. The use of standard contract and acknowledging the intellectual property for the contents developed by the contractor shall be compulsory in contract stage. Granting the incentive for bidding to the contractor which supplied the excellent quality for future projects shall be considered so as to make a culture where technical innovative companies could survive.

5.2 Price

Since the public e-Learning project is appeared to be helpful in short term cash flow, it has a positive aspect to function as the sales source of small sized e-Learning contractors. However, it induces the excessive competition because most of public e-Learning projects are likely to be implemented in a level of budget saving. Therefore, they have to ensure the bidders not to make such a severe price competition presenting the detailed task contents and clear criteria of unit price in stage of request for procurement [3]. In addition, the winner shall not be selected by low price reflecting the technical evaluation point by more than 90% in review stage as well. For this, a monitoring system on executing the unreasonable price policy such as win by lowest price and pushing the unit price down shall be operated.

5.3 Quality of Contents

Notwithstanding most of public institutions outsource the e-Learning to professional companies, the education effect of e-Learning was investigated to be low because the satisfactory contents were not provided due to lack of budget etc. This creates the vicious circle of fixing the low unit price at ordering stage of the project, aggregation of profitability of the contractor and quality degradation of contents developed. Therefore, the institutional prevention system not to reach the price down and quality

degradation of contents is required as well as the self-saving effort of the person in responsible of public institution to prepare the appropriate budget. Above all, a proper budget shall be assigned in stage of request for procurement. The provisions such as prevention of reducing the contract price in contract stage and securing the literary works required for development shall be specified in the contract in order not to give disadvantage to the contractor. A reliable assessment tool which may properly assess the education effect shall be developed and distributed in government level in order to prepare the base to expand the e-learning project in stage of post contract management.

6. Means of Policy Improvement

6.1 Prevention of disadvantage to participating enterprise in order management process.

The objective management indexes such as credit rating and financial state of the company and technology for the task shall be strictly separated to be assessed so that the small company whose financial index is weak shall not have disadvantage in bidding and review stage. For this, the objective management indexes shall not be disclosed in technical review. The assessment criteria of IT tasks of Public Procurement Service could be applied for this purpose. In addition, it is urgent to compensate the rejection fee for the companies which were rejected from bidding competition. The Public Procurement Service already compensates a certain amount for participating the bid to the companies which obtained a certain level of technical assessment point in other fields such as software [1].

6.2 Strengthening the Execution of Standard Contract

The standard contract established and published in

this year contains lots of positive contents in several aspects. However, establishing the monitoring system seems to be necessary so that the standard contract could be properly executed in order to make the creative competence and professional skill of contents developing professional enterprises fully acknowledged reflecting the contents of the contract actually. It needs to establish a system where the experts in industry, academy and institute control the project from beginning to the end in the central monitoring center as a basis. Especially, an institutional base to expand the gradual application of standard contract and make it compulsory is required so that the system could settled in early time. In addition, a guideline where the project owner has to describe the RFP(Request for Proposal) in detail shall be presented and reflected on standard contract related regulations [1,3].

6.3 Preparation of criteria for making Development Price

It is urgent to prepare the criteria for making development price which may secure the minimal profit of the contractor. According to research of Han Taein (2013), the unit price of e-Learning projects which the public institutions presently place stays at 76% level in view of criteria of development price of software that it is pointed out as the major cause of aggravation of profitability [5]. In addition, this is a serious problem because it reaches the quality degradation of contents. Of-course, fixing the market price by government intervention could be accepted as a kind of restriction and distorting the market function but the government intervention for market failure plays an important role in correcting the market order. Thus, such a poor situation that the companies whose annual sales are less than 1 billion Won takes 78.2% of total e-Learning companies shall be released, and the minimal unit price criteria shall be prepared.

6.4 Preparation of Implementation Criteria in Stage of Performing the Service

An institutional ground where the contract report is prepared and all participants (especially the project owner) sign on it in content development meeting shall be prepared. This shall become the criteria of task progress and function as the ground of cost compensation when change the task. Further, this shall enable the clearing the responsibility, respecting the creativity of developer, significant decrease of simple and repeating works and cost compensation for additional works when change the task [1].

6.5 Improvement of Assessment System of Public Sectors

It needs to improve various assessment systems so that the public sectors could contribute to financial result and technical innovation of e-Learning companies. Above all, it needs to include the assessment item for fairness of public order management in order to prevent the reduction of contract price in management assessment list of public institutions. It needs to expand the target to be assessed to educational public institutions such as the education offices in local as well as the public institutions where the foregoing is already scheduled to be enforced. In addition, it needs to expand and include the item of technical contribution level in the assessment item list of mutual growth in order that the public institutions could contribute to technical innovation of e-Learning companies. Presently, the foregoing is carried with suppliers of public corporations such as KEPCO and Korea Water Resources Corporation but the improvement of technical level of general e-Learning companies which received the private order not from such suppliers shall be included in the list so that they could actively contribute to technical innovation [6].

7. Conclusion

The study investigated the situation and problems of e-Learning projects of public institutions and presented a political proposal for them. It may have a significance to have prepared a corner stone which brings a middle and long term meaning and significance that the e-Learning of public institutions shall not be terminated as one time project but lead the improvement of industrial competitiveness through the political proposal presented. In addition, the study may have also a big significance in that the effectiveness of the study result is enhanced by reflecting the objective statistics and voices from the sites exactly carrying the positive research and questionnaire survey in parallel. However, there were limits on the scope of targets which could be investigated, therefore, more diversified analyses shall be carried by securing the sufficient targets to be investigated and data, comparison of annual situation in the same industry and comparison with other industries in subsequent study.

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