

Legal Issues in Facilitation & Fair-Use of E-Procurement System - Lessons from Korean Experience -

Dae-in Kim*

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* Professor, Ewha Womans University, School of Law.
Tel: 02-3277-6655, E-mail: daeinkim@ewha.ac.kr.

Abstract

As e-procurement system is gaining the importance for transparency and efficiency of procurement, legal basis of e-procurement is evaluated as critically important for successful implementation of this system. This paper analyzed four legal issues based upon Korean experience: i) the role of law in facilitating or fair-use of e-procurement, ii) the relationship between e-procurement and 'tendering or award mechanism,' iii) the relationship between law and technology, and iv) the scope of outsourcing of e-procurement management functions.

Korea On-Line E-Procurement System (KONEPS), which is managed by Public Procurement Service of Korea (PPS), takes the central figure in e-procurement system of Korea. KONEPS, which covers all procurement process from bidding notice, bidding, award, contracting to payment, is evaluated positively, as this system tremendously enhanced the transparency and efficiency of procurement. However, this system also showed many limitations, and E-Procurement Act was enacted in 2013 to address them. Law and practice of e-procurement system of Korea shows many lessons on the above four legal issues.

Keywords: Electronic Procurement (E-Procurement), Korea Online E-Procurement System (KONEPS), E-Procurement Act of Korea, End-to-End E-Procurement, Law and Technology, Outsourcing

I. Introduction

Electronic procurement (e-procurement), which uses electronic communication in procurement process,¹ has been hailed as an “effective tool for instituting procurement reforms and establishing a fully transparent and open procurement environment.”² However, various challenges such as i) lack of awareness and capacity building programs, ii) procuring agencies’ reluctance to convert to e-procurement, iii) lack of IT infrastructure and internet readiness, iv) lack of cross-governmental coordination, v) ineffective implementation, and vi) obstacles for cross-border e-procurement are indicated.³

To cope with these challenges, a sound legal framework is critically important. It is evident that e-tendering or e-payment should be well integrated to overall public procurement law.⁴ It is needless to say that e-signature and e-document, which are crucial Information Technology (IT) infrastructures for e-procurement, need a legal foundation.⁵ Furthermore, framework agreements or Multiple Award Schedule (MAS) system, which are mostly conducted through e-procurement, also need a legal basis on the cooperation between procuring agency and customer agency.⁶

United Nations Commission on International Trade Law (UNCITRAL)’s efforts to harmonize e-procurement legislation in each State through “Model Law on Procurement of Goods, Construction and Services (Model Law)” confirm the importance of legal aspects of e-procurement.⁷ The UNCITRAL Model Law mentions following three considerations in the implementation of e-procurement.

“First, given the potential benefits of e-procurement, and subject to appropriate safeguards, the Model Law facilitates and where appropriate and to the extent possible, encourages its introduction and use. Secondly, as a consequence of rapid technological advance and of the divergent level of

1) Asian Dev. Bank (ADB), e-Government Procurement Handbook, at 1 (2013), <https://www.adb.org/sites/default/files/institutional-document/34064/files/e-government-procurement-handbook.pdf>.

2) United Nations (UN), E-Procurement: Towards Transparency and Efficiency in Public Service Delivery – Report of the Expert Group Meeting, at 1 (2011).

3) *Id.* at 4.

4) ADB, *supra* note 1, at 27.

5) *Id.* at 29.

6) *Id.* at 88-89.

7) United Nations Commission on International Trade Law (UNCITRAL), Guide to Enactment of the UNCITRAL Model Law on Public Procurement, para. 2 (2011).

technological sophistication in States, the Model Law is technologically neutral (i.e. it is not based on any particular technology). Thirdly, detailed guidance is needed to support enacting States in introducing and operation an e-procurement system effectively.”⁸

With this baseline, the UNCITRAL Model Law deals with various issues on e-procurement such as electronic reverse auction⁹ and framework agreement.¹⁰ During the course of enactment of the Model Law, various countries’ e-procurement law and practices were discussed and compared.¹¹ However, there are some legal issues which need more discussion and clarification.

First, the role of law in facilitation or fair-use of e-procurement should be discussed in more detail. UNCITRAL already touched upon the consensual or mandatory use of electronic communications.¹² However, it seems that the factors which facilitate electronic communications other than mandatory use are not clarified yet. Moreover, not only the law’s role of ‘facilitating e-procurement usage,’ but also that of ‘e-procurement misuse control’ merits attention.

Second, the relationship between ‘e-procurement’ and ‘tendering or award mechanism’ should be clarified. Is there any relationship between the level of facilitation of e-procurement and the level of contracting officer’s discretion in tendering or award mechanism? Is there any specific type of bidding or award criteria which are more compatible with e-procurement system? Although this issue was not dealt in detail in previous literatures,¹³ analyzing this relationship is important because e-procurement’s impact on tendering or award mechanism reform can be assessed through this discussion.

Third, the relationship between law and technology in e-procurement

8) *Id.* para. 90.

9) UNCITRAL Model Law on Public Procurement, arts 53, 54, 55, 56, 57.

10) UNCITRAL Model Law on Public Procurement, arts 58, 59, 60, 61, 63.

11) See Sue Arrowsmith ed., *Reform of the UNCITRAL Model Law on Procurement: Public Procurement Regulation for the 21st Century*, New York: Thomson Reuters/West, 2009. In this volume, UK, EU, Africa, Germany, U.S., France, and Brazil’s experiences were compared.

12) Caroline Nicholas, *The Regulation of Electronic Communications under the UNCITRAL Model Law on Procurement*, (Sue Arrowsmith ed., *Reform of the UNCITRAL Model Law on Procurement: Public Procurement Regulation for the 21st Century*, New York: Thomson Reuters/West, at 272-273.

13) ADB criticizes misconceptions that e-procurement takes away discretionary powers assigned to procurement officials. (ADB, *supra* note 1, at 7) Although this point can be related with the tendering or award mechanism, ADB does not deal with this issue in detail.

legislation needs to be discussed in more detail. The World Bank indicates three models on the relationship between e-procurement related technology and law: i) minimalist approach, ii) technology-specific approach, and iii) two-tiered approach.¹⁴ Although UNCITRAL approached this issue from ‘technologically neutral’ position, namely ‘minimalist approach,’¹⁵ the strength and weakness of other approaches were not dealt in detail.

Fourth, the scope of outsourcing e-procurement functions should be dealt in more detail. UNCITRAL dealt with costs and benefits of outsourcing parts of the procurement system.¹⁶ However, following issues need more clarification. Is there any ‘inherently governmental function’ which should be reserved to the public entities in e-procurement system development or management?¹⁷ What’s the desirable contract mechanism in outsourcing e-procurement system development or management?

This paper aims to approach these issues from Korean law perspective. Korea is evaluated as one of the leaders in e-procurement system worldwide¹⁸ and integrated statute on e-procurement has taken effect in 2013. Korea is also very active in exporting e-procurement system to developing countries.¹⁹ Despite the importance of Korea’s experience in e-procurement comparative research, there are just a few literatures which touched upon the Korean e-procurement system.²⁰ Moreover, these literatures tend to highlight the ‘success’ of Korea’s

14) World Bank, *E-Procurement Reference Guide*, 2011, at 27.

15) UNCITRAL, *supra* note 7, para. 90.

16) *Id.* para. 102.

17) This issue is dealt in the U.S. context. See Tishisa L. Braziel, *Contracting Out Contracting*, 38 Pub. Cont. L. J. 857, 860-861 (2009).

18) European Commission, *A Strategy for E-Procurement*, 2012, at 2; ADB, *supra* note 1, at 2. Korean e-procurement system was awarded ‘Public Service Award’ (PSA) from UN in 2003 and ‘Global IT Excellence Award’ from WITSA (World Information Technology and Services Alliance) in 2006. Public Procurement Service (PPS), *White Book on E-Procurement*, 2008, at 24.

19) PPS, *supra* note 18, at 222-227.

20) Following literatures deal with Korean e-procurement system. Mi-Jung Lee, *An Exploratory Study on the Mature Level Evaluation of E-Procurement Systems*, 10 J. Pub. Procurement 405 (2010); Jae-Young Choi and Hyunseok Kim, *Electronic Government Procurement Reform: Managing Institutional Reform – Lessons from the Korean Model*, 3 P.P.L.R. 116-134 (2013); Dae-in Kim et al., *Enhancing Efficiency of National Budget Execution through Advanced Public Procurement System, in Policy Consultation to Strengthen Indonesian Economy's Capacity*, Korea Development Institute (KDI), 2013; Tae-Hee Choi and Dae-Sik Kim, *2012 Modularization of Korea's Development Experience: Korean*

experience only, and do not give enough explanations on ‘trials and errors’ which Korea had experienced. Previous literatures also have limitations because these did not explicitly approach Korean e-procurement system from the legal point of view. This paper, through showing balanced picture (achievement and limitation) of Korean e-procurement system from the legal point of view, aims to fill this gap on Korean e-procurement research.²¹

To assess the Korea’s experience objectively, it is necessary to compare the Korea’s experience with that of other jurisdictions. As both the United States (U.S.) and the European Union (EU) retain one of the largest procurement markets in the world, it is also useful to see e-procurement law and practice in these jurisdictions. The U.S. manages many e-procurement related legislations which are actively implemented,²² and the EU is making many efforts of facilitating the e-procurement use by harmonizing member states’ e-procurement legislation through Public Procurement Directive.²³ As it will be too broad to compare all the specifics of law and practice in these three jurisdictions, this paper will focus on Korea’s experience and the experiences of the U.S. or the EU will be compared within the relevant scope.

This paper is organized as follows. Part 2 generally overviews E-Procurement System in Korea with its history, achievements, and limitations in its implementation. Part 3 sees E-Procurement related laws of Korea with much focus on E-Procurement Act of 2013. Part 4 shows the lessons of Korea’s experience in global context. Part 5 will summarize the findings from this analysis as a conclusion.

Government Procurement Experience, Korea Development Institute (KDI), 2013; Chan Young Baek, *Building a Successful E-Procurement System in the United States: Lessons from the South Korean System*, 44 Pub. Cont. L. J. 755 (2015).

21) Electronic process of choosing concessionaire in Public-Private Partnership (PPP) might be a related topic. In Korea, PPP contracting process is regulated by a different statute (Act on the Public-Private Partnerships in Infrastructure) other than public procurement process (Act on the Contracts in which the State is the Party), and PPP contracting process is not conducted through KONEPS. Other jurisdictions also focus on e-procurement only excluding e-process of PPP. In this context, this paper will focus on e-procurement only and will not deal with e-process of PPP in detail.

22) L. Elaine Halchin, *Transforming Government Acquisition Systems: Overview and Selected Issues*. Congressional Research Service, 2013, at 18, 21.

23) Roger Bickerstaff, *E-Procurement under the New EU Procurement Directives*, 3 P.P.L.R. 134,147 (2014).

II. Overview of E-Procurement System in Korea

A. History

Since the 1990s, the digitalized procurement administration has been viewed as one of the most important tasks for reforming the public sector in Korea.²⁴ In order to improve efficiency and transparency through the digitalization of procurement administration, the Korean government implemented the Procurement Electronic Data Interchange (EDI) system in 1999, e-bidding system in 2000, and e-payment system in 2001.²⁵ In 2002, it established a comprehensive national e-procurement system called “Korea Online E-Procurement System (KONEPS),” as one of the 11 key projects for e-Government. “Public Procurement Service of Korea (PPS),”²⁶ the centralized procurement agency of Korea which is affiliated to Ministry of Strategy and Finance (MOSF), took the central role in KONEPS management.²⁷

To support the implementation of KONEPS, the related regulations were revised in 2002.²⁸ ‘Presidential Decree of Act on the Contracts in which the State is the Party’ made public agencies mandatorily use KONEPS when they post notice of bidding.²⁹ In addition, the status of e-bidding was enhanced as each public agency may allow e-bidding only in its procurement process and can exclude off-line bidding.³⁰ The names of debarred or disqualified enterprises should be posted on KONEPS.³¹ Each public agency should report the overall contracting performance on KONEPS.³² The legal basis for outsourcing of KONEPS management and maintenance was also introduced.³³

‘Presidential Decree of Act on Government Procurement’ was also revised to facilitate the use of KONEPS. This Decree adopted the Multiple Award Schedule (MAS) system from 2004.³⁴ MAS system was introduced after referencing the framework agreement in the EU and General Service Agency

24) PPS, *supra* note 18, at 23.

25) *Id.*

26) Hereinafter, PPS means “Public Procurement Service of Korea.”

27) *Id.* at 23-24.

28) Tae-Hee Choi and Dae-Sik Kim, *supra* note 20, at 74.

29) Presidential Decree of Act on the Contracts in which the State is the Party, art. 33.

30) *Id.* art. 39.

31) *Id.* art. 76.

32) *Id.* art. 94.

33) *Id.* art. 96.

34) *Id.* art. 7-2.

(GSA) Schedule contracts in the U.S.³⁵ The introduction of MAS system contributed to the wider use of KONEPS, as the majority of supplies' procurement began to be conducted through MAS, a sub-part of KONEPS.

KONEPS processes the entire procurement procedures online, including tender notice, awarding, contracting, and payment.³⁶ The registration at KONEPS gives full access to all procurement process in this system.³⁷ Thanks to the data exchange linkage with the Ministry of Public Administration and Security (MOPAS), KONEPS eliminated the need for the submission of paper documents such as business registration certificates and tax payment certificates.³⁸ Through the linkage with each industry associations, KONEPS also automatically collects information on the bidder for qualification assessment such as past performance, and subsequently rendering paper submissions obsolete.³⁹

From 2007, management and maintenance of KONEPS were totally contracted out to private enterprises and contracting officers of PPS which were only in charge of management of this outsourcing contract and PPS internal information system.⁴⁰ To support this outsourcing, new type of IT service contract, namely "Service Level Agreement (SLA)" was introduced.⁴¹ The period of the contract was extended from one year to three years and the calculation of service quantity was changed from man-month approach to performance-based approach.⁴²

However, the contracting-out was criticized for lack of service stability, as KONEPS' maintenance on private companies can be interrupted by the laborer's strike, and in this case, major national projects can be delayed.⁴³ In addition, large enterprises became to be limited in participating government software service project based on the 'Software Industry Promotion Act' from 2015.⁴⁴ This law was adopted to enhance software Small and Medium-Sized Enterprises (SME)' participation in e-government project. Therefore, large

35) Tae-Hee Choi and Dae-Sik Kim, *supra* note 20, at 103.

36) *Id.* at 118.

37) *Id.*

38) PPS, *supra* note 18, at 79-80.

39) *Id.*

40) PPS, *supra* note 18, at 121,122.

41) *Id.* at 122.

42) *Id.* at 123-124.

43) PPS, Audit Report on Digitalization of Public Procurement, 2014, at 10.

44) Act on the Strengthening Software Industry, art. 24-2.

enterprises became virtually no longer able to participate in management and maintenance/repair of KONEPS.⁴⁵ However, PPS has the position that SME, which has limited capability in KONEPS management, can aggravate the problem. In this context, PPS decided to adopt in-house management of KONEPS in 2015. In this system, staff members in PPS directly deal with critical activities such as bidding, evaluation, cyber-security, and only non-critical activities are contracted out to non-profit organization (E-Procurement Support Center).⁴⁶

In 2017, e-transactions in KONEPS reached KRW 87.7 Trillion, and 52,395 procuring agencies and 378,833 vendors are using this system.⁴⁷ As Korea is a densely populated country, the majority of Korean people are living in apartments. In this context, apartment management offices are procuring the enormous amount of supplies or services nationwide. However, this procurement process was heavily criticized by lack of transparency.⁴⁸ The bidding procedure through KONEPS is expected to address this problem. This shows ongoing trend of blurring the line between public procurement and private procurement.⁴⁹

B. Achievements and Limitations

In 2017, e-transactions in KONEPS reached KRW 87.7 Trillion, and 52,395 procuring agencies and 378,833 vendors are using this system.⁵⁰ With active implementation of KONEPS, there were many achievements. First, e-procurement promoted transparency by i) real time disclosure of award results

45) There is a certain threshold (KRW 8 Billion or 4 Billion) above which large enterprises can participate in software service project through public procurement. (Ministry of Science and ICT Guideline on the Threshold of Large Enterprises' Participation on Government Software Serve Project) KONEPS software service projects normally do not meet these criteria.

46) E-Procurement Act, art. 23.

47) *Id.* art. 15.

48) Young-Hee Chang et al, *Development of Evaluation Model for Apartment Complex Management*, Seoul Development Institute, 2001, at 32-36.

49) It is not mandatory to use KONEPS when apartment management offices conclude contracts. However, a large number of private institutions, including apartment management offices and private schools, are using KONEPS as 'customer (procuring) agencies.' The number of 'private' customer agencies which use KONEPS totaled 28,541 (51.9% of all procuring agencies) in 2018. (PPS, Overview of Procurement Data in the year 2018, at 12)

50) PPS, 2017 Annual Report of PPS, 2018, at 155-156.

and contract details on-line, ii) bid evaluation based on the validated data, and iii) informed decision through the traceable prices and specification.⁵¹

Second, e-procurement strengthened efficiency by cost and time savings. It is reported that KRW 8.05 Trillion were saved annually due to the reduction of paper usage and vender's visiting to procuring agencies.⁵² "Receiving bids, validating related documents, and selecting the winning bids" took thirty hours previously, but this time it was reduced to less than two hours in KONEPS.⁵³

Despite these achievements, e-procurement system in Korea also revealed some limitations. First, the Board of Audit and Inspection of Korea (BAI), in its report in 2009, indicated that e-procurement system can be vulnerable to distortion of competition or bid-rigging, as this system allows each vendor to make bidding without meeting with contracting officers.⁵⁴ For example, one vendor can make multiple bidding in the name of other vendors with the consent of others, as if many enterprises participated in competitive bidding.⁵⁵ After this audit report was published, PPS adopted the finger-print authentication system in 2010 to cope with this kind of distortion of competition.⁵⁶

Second, the inefficiency of system linkages can also be mentioned. PPS developed the "Bid-Rigging Indicator Analysis System (BRIAS)" in cooperation with Fair Trade Commission of Korea (KFTC) in 2009. This system connects KONEPS and KFTC, and it renders bidding information, which is sent from KONEPS. Then, it is calculated automatically by KFTC.⁵⁷ Although this system was praised as an innovative solution to collusion problem,⁵⁸ the performance of this system was very weak. It was reported that only three cases were investigated by KFTC out of 10,036 cases which were detected as big-rigging suspicious by this system during 2006-2017.⁵⁹

Third, the limited protection to KONEPS users' bidding information can be

51) Chan Young Baek, *supra* note 20, at 761.

52) PPS, *supra* note 50, at 153.

53) Chan Young Baek, *supra* note 20, at 761.

54) Board of Audit and Inspection of Korea (BAI), Audit Report on Electronic Procurement System Management in Korea, at 9 (2009).

55) *Id.*

56) PPS, *supra* note 50, at 151.

57) *Id.* at 150.

58) Lauren Brinker, *Introducing New Weapons in the Fight Against Bid Rigging to Achieve a More Competitive U.S. Procurement Market*, 43 Pub. Cont. L. J. 547 (2014), at 560-562.

59) Woon-yeol Choi (Member of National Assembly), *KFTC Is Using Bid-Rigging Indicator Analysis System (BRIAS) as a Mere Data-Collection System!*, at 1-2, Oct. 18, 2017.

indicated. In 2012, it was revealed that some of KONEPS users' tendering information was illegally leaked by the hackers, and this information was transferred to other KONEPS users who eventually awarded the contract.⁶⁰ Although PPS made great efforts to strengthen the security level of KONEPS system, this problem was not addressed enough.

Fourth, the fragmented e-procurement system is criticized. In Korea, there are 23 e-procurement systems other than KONEPS.⁶¹ These non-KONEPS e-procurement systems are criticized, as these fragmented systems give additional burden to vendors⁶² causing the inefficiency in the e-procurement system of small institutions.⁶³

Fifth, Public Key Infrastructure (PKI) authentication system is criticized by its inefficiency in recent years. KONEPS adopted PKI system for the authentication of users⁶⁴ and thanks to this system, private authentication market was created⁶⁵ and its related technology was advanced. However, PKI system is heavily criticized in recent years, as it is inconvenient and there are many other advanced authentication technologies.⁶⁶

III. E-Procurement Act in Korea

A. Overview

The basic statute which regulates e-procurement in Korea is 'Electronic Procurement Utilization and Facilitation Act (E-Procurement Act),' which was enacted on March 22, 2013 and took effect from September 23, 2013. Although

60) Seoul Central Prosecutor's Office, *Detecting Illegal Award of Contract through the Hacking*, at 1-2, Apr. 4, 2013.

61) Public Enterprises, such as Incheon International Airport Corporation, Korea Electronic Power Corporation (KEPCO), and K-Water are using their own e-procurement system. National Assembly Research Service (NARS), *Current Status of Public Institution's Own E-Procurement System and the Way to Integration of E-Procurement*, 2016, at 3.

62) Vendors should register each institution's separate e-procurement system and submit bidding document which is different according to each institution. (*Id.* at 19-22).

63) Procuring agencies should pay on maintaining its own e-procurement system which tends to overlapping payment with KONEPS. (*Id.* at 22-25).

64) PPS, *supra* note 18, at 97.

65) Use of e-certificates was increased from 1.1. million in 2001 to 24.4 million in 2010. Chan Young Baek, *supra* note 20, at 761.

66) Ji-Hwan Park, *PKI 20 Years, PKI will soon be abolished*, Huffington Post (Oct. 25, 2018).

E-Procurement Act has integrated many provisions relating to e-procurement, some aspects of e-procurement are still regulated by other laws.

‘Presidential Decree of Act on the Contracts in which the State is the Party’ provides that procuring agencies must open their pre-qualification criteria to the public, and this disclosure obligation is fulfilled when this information is noticed through KONEPS.⁶⁷ ‘Presidential Decree of Act on Government Procurement’ regulates Multiple Award Schedule (MAS) and procurement data collection through KONEPS.⁶⁸

‘E-Signature Act’ may also apply to e-procurement. This Act provides that the Minister of Science and ICT (MSIT) may designate authentication institutions.⁶⁹ Based on this Statute, authentication system which is based on ‘Public Key Infrastructure (PKI)’ is solely adopted.⁷⁰ However, as PKI system is heavily criticized as already mentioned, the revised draft of E-Signature Act, which eliminated the mandatory use of PKI system, was submitted to National Assembly by Government in September 14, 2018.⁷¹

E-Procurement Act consists of seven chapters: general provisions (Chapter 1), digitalization of procurement services (Chapter 2), operation and management of e-procurement system (Chapter 3), management and protection of information of e-procurement users (Chapter 4), facilitation and support for e-procurement services (Chapter 5), supplementary provisions (Chapter 6), and penalty provisions (Chapter 7). In the following part, we will see this Act in detail.

B. Purpose and Scope of the E-Procurement Act

The principal purpose of this Act is explained as two-fold: i) it is to guarantee security, reliability, and fairness of procurement services and ii) it is to facilitate the use of e-procurement itself.⁷² It is interesting that Article 1 of E-Procurement Act mentions only three objectives of e-procurement: i)

67) Presidential Decree of Act on the Contracts in which the State is the Party, art. 13 para. 4. After enactment of E-Procurement Act, most of the e-procurement related articles in ‘Presidential Decree of Act on the Contracts in which the State is the Party’ were abolished.

68) Presidential Decree of Act on Government Procurement, art. 7-2.

69) E-Signature Act, art. 4.

70) *Id.* art. 18.

71) Draft of E-Signature Act which abolishes PKI system is pending on National Assembly as of Apr. 2019.

72) E-Procurement Act, art. 1.

security, ii) reliability, and iii) fairness, although there are many other objectives of public procurement, such as value for money, competition, customer satisfaction, transparency, efficiency, to name a few.⁷³ This article clearly shows the focus of this Act. As it was already mentioned, there were vendors who illegally borrowed other vendor's PKI certification, and hacking of KONEPS was also a problem. In this context, enhancing security, reliability, and fairness of e-procurement were priorities of this Act. Furthermore, the facilitation of e-procurement is also another important purpose.

KONEPS is defined as "an information system which is established and operated by the administrator of Public Procurement Service (PPS) in order to electronically process procurement services," and "e-procurement" is defined as "electronic processing of procurement services by using or utilizing KONEPS."⁷⁴ These definitions show that this Act focuses only on PPS e-procurement system (KONEPS), although there are other 23 e-procurement systems in Korea which are not operated by PPS. This shows that PPS plays the critical role as the centralized procurement agency in Korea.⁷⁵

C. Digitalization of Procurement

The head of customer (procuring) agencies⁷⁶ should make efforts to use KONEPS when he/she conduct procurements.⁷⁷ This article shows that the use of KONEPS is not mandatory in principle. 'Act on Government Procurement' provides that central government agencies are obliged to use PPS in procurement above certain threshold,⁷⁸ and KONEPS should be used in these cases.⁷⁹ When Multiple Award Schedule (MAS) is used, local government agencies should also buy through PPS, namely KONEPS operated by PPS.⁸⁰

73) Steven L. Schooner, *Desiderata: Objectives for a System of Government Contract Law*, 11 P.P.L.R. 103-110 (2012).

74) E-Procurement Act, art. 2.

75) Dae-in Kim et al., *supra* note 20, at 115-116.

76) These customer agencies include not only central government agencies but also sub-central government agencies (local government agency) and other institutions such as public enterprise or private school.

77) Act on the Government Procurement, art. 5-2; Presidential Decree of E-Procurement Act, art. 9-3.

78) KRW 100 Million for goods and services, and KRW 600 Million for construction as in the year 2019. (Act on the Government Procurement, art. 9-3).

79) E-Procurement Act, art. 13.

80) Presidential Decree of E-Procurement Act, art. 9-3.

Even when this obligation does not exist, customer agencies use KONEPS very actively. This shows that the existence of centralized procurement agency (PPS) and the efficiency of e-procurement itself, rather than the mandatory use imposed by law, are motivators of e-procurement implementation in Korea.

Solicitation and submission of bid should be conducted electronically when competitive bidding is implemented through KONEPS.⁸¹ Bid-bond, contract-bond, and performance-bond can also be submitted through KONEPS.⁸² As KONEPS is connected with private bond company's system, this electronic bond submission is widely used.⁸³ E-contract document should be made when contracting officer wishes to conclude contract with contractors through KONEPS.⁸⁴ The contract takes effect when following three stages are all complete: i) contracting officer shall transmit e-contract document through KONEPS, ii) contractor shall transmit assent to the terms and conditions of e-contract document through KONEPS, iii) contracting officer shall transmit confirmation letter to contractor through KONEPS.⁸⁵ Among these, the second stage can be evaluated as an 'offer,' and the third stage can be evaluated as an 'acceptance' from the legal point of view.

In these e-documents, such as bid submission, offer, and acceptance, there should be e-signature.⁸⁶ The e-document shall be deemed transmitted or received at the time it is entered into the KONEPS.⁸⁷ There is no receipt of e-document when that document entered into other computer systems than KONEPS,⁸⁸ and an e-document entered into the KONEPS shall be deemed transmitted, regardless of the transmitter's actual intention.⁸⁹ On the top of that, a person who transmitted the e-document cannot attach conditions upon which effect of that document is dependent.⁹⁰ 'Framework Act on the E-Document and E-Commerce' does not apply to the matters of transmission and receipt of e-document through KONEPS.⁹¹ This shows that security and reliability in transaction is enhanced in e-procurement in comparison to the general e-commerce.

81) E-Procurement Act, art. 7.

82) *Id.* art.10.

83) PPS, *supra* note 18, at 249.

84) E-Procurement Act, art. 9 para. 1.

85) *Id.* art. 9 para. 2.

86) *Id.* art. 11 para. 1.

87) *Id.* art. 11 para. 2.

88) *Id.* art. 11 para. 3.

89) *Id.* art. 11 para. 4.

90) *Id.* art. 11 para. 5.

91) *Id.* art. 11 paras. 3, 4, 5.

D. Operation and Management of E-procurement System

In principle, the head of customer agency should use KONEPS when he/she requests procurement contract conclusion to PPS.⁹² However, when the head of customer agency deems it necessary, he/she can establish and operate its own (independent) e-procurement system which is connected to KONEPS.⁹³ To establish and operate its own e-procurement system, the head of customer agency should hold prior-consultation with the Minister of Strategy and Finance (MOSF).⁹⁴ This consultation requirement was introduced to control the overlapping investment to e-procurement system by each agency.⁹⁵ In December 31, 2018, E-Procurement Act was revised to strengthen the control of adopting each agency's own e-procurement system. According to this revised provision, only customer agencies who meet certain criteria for establishing e-procurement system, which is provided Presidential Decree of E-Procurement Act, can adopt their own e-procurement system.⁹⁶

Private institutions which are not public customer agencies can also conduct bidding and develop new services through KONEPS with the approval of administrator of PPS.⁹⁷ This provision expands the scope of customer of KONEPS from public institutions (central or sub-central governmental agencies and public enterprises) to private institutions (private schools, apartment management offices, or hospitals).

E. Management and Protection of Information of E-Procurement Users

The administrator of PPS should manage bidding information, contract related information, or commodity information list systematically through KONEPS.⁹⁸ If the e-procurement users need to register or revise the commodity information list, they should make request to the administrator of PPS.⁹⁹ If the head of

92) *Id.* art. 13.

93) *Id.* art. 14 para. 1.

94) *Id.* art. 14 para. 2.

95) NARS, *supra* note 61, at 14.

96) E-Procurement Act (Revised on Dec. 31, 2018; Effective from Jul. 1, 2019) art. 14 para. 1.

97) *Id.* art. 15.

98) *Id.* art. 16 para. 1.

99) *Id.* art. 16 para. 2.

customer agency requests bidding information, contract related information, or commodity information list, the administrator of PPS should provide the information according to the 'Personal Information Protection Act.'¹⁰⁰

Private enterprises who would like to be a contractor in procurement should register in the KONEPS.¹⁰¹ The head of customer agency or contracting officer should neither provide nor distribute the confidential business information of the contractor without its approval.¹⁰² The person who manages or managed the KONEPS should neither distribute nor use e-document or other information for other purposes than performing his/her duties.¹⁰³ No person shall obstruct the e-procurement through the input of false information or corrupted order.¹⁰⁴ No person shall counterfeit or falsify e-document or other information in KONEPS.¹⁰⁵ No person shall lend or transfer the e-certificate to other person to let her use in bidding through KONEPS.¹⁰⁶ All violations of these obligations make one under criminal penalty.¹⁰⁷ Person who discloses violations of this sort can receive a reward from the administrator of PPS.¹⁰⁸

F. Facilitation and Support for E-Procurement Services

The administrator of PPS can operate a training program of e-procurement management for public officers, personnel of customer agencies, or users.¹⁰⁹ Based on this article, PPS training center offers various training courses on e-procurement. This shows that the training of contracting officers is not contracted out, but conducted by PPS itself.¹¹⁰

The administrator of PPS can manage following services to promote international development cooperation and export of e-procurement system: i) promotion of e-procurement, ii) exchange of technology and personnel, iii) joint

100) *Id.* art. 16 para. 3.

101) *Id.* art. 17.

102) *Id.* art. 18 para. 2.

103) *Id.* art. 18 para. 3.

104) *Id.* art. 19 para. 1.

105) *Id.* art. 19 para. 2.

106) *Id.* art. 20.

107) *Id.* arts. 27, 28, 29.

108) *Id.* art. 26.

109) *Id.* art. 21.

110) Korean experience of in-house training is contrasted with the outsourcing of training activities in the U.S. (Federal Procurement Institute). *See also* <https://www.naepnet.org/page/FedProcInstitute>.

investigation and research, technical cooperation, iv) international standardization, v) support and cooperation in domestic enterprises' access to foreign e-procurement market, and vi) other services that the administrator of PPS deems necessary.¹¹¹ This article shows the strong 'developmental state' tradition in Korea, in which central government takes a critical role in economic development through its export-promotion policy. Along the same line, PPS has conducted international cooperation with many countries such as Costa Rica, Mongolia, Tunisia, and name a few.¹¹²

The administrator of PPS can designate the 'E-Procurement Support Center' to development and stable management of KONEPS. This center shall perform following activities: i) support of management and operation of KONEPS, ii) support of technology and education for stable operation of KONEPS, iii) support of access to foreign e-procurement development market and export of KONEPS, iv) Research and Development (R&D) on facilitating the digitalization of procurement services, v) support of international cooperation and promotion of procurement tasks, vi) support of domestic enterprise's access to foreign e-procurement market, vii) other tasks that are delegated from the administrator of PPS. This center can conduct profit-making activities to cover the costs necessary for performing above tasks.¹¹³ This article provides that only 'support' function of KONEPS management can be outsourced. According to this article, Daejeon University was adopted as a new 'E-Procurement Support Center' in 2017.¹¹⁴

The administrator of PPS can receive fee from following institutions or people: i) customer agencies who directly conduct e-bidding, ii) bidders who wish to conclude contracts with customer agencies or private institutions, iii) agencies who use KONEPS to operate its own e-procurement system, iv) private institutions who use KONEPS to conduct e-bidding, v) private institutions who use KONEPS to develop new services, and vi) e-procurement users who request registering or revising of the commodities catalogue information.¹¹⁵

111) E-Procurement Act, art. 22.

112) PPS, *supra* Note 18, at 210.

113) E-Procurement Act, art. 23.

114) The outsourcing contract amount was KRW 310 Million in 2018, and additional amount of KRW 120 Million for procurement information projects will be added in 2019. (PPS, *supra* note 50, at 168)

115) E-Procurement Act, art. 25.

IV. Lessons from Korean Experience

A. Role of Law in E-Procurement Facilitation & Fair-Use

Even though the scope of mandatory use of e-procurement is limited in law itself, e-procurement is widely used in practice.¹¹⁶ In the author's view, following points can explain the Korean situation. First, 'Act on Government Procurement' provides that central government agencies should procure through PPS above certain threshold.¹¹⁷ This highly centralized procurement system in Korea contributed to the active use of e-procurement system. Second, the efficiency of e-procurement itself contributed to the wide use of e-procurement. For example, shopping mall system in KONEPS which is similar to that of private sector was convenient to KONEPS' users and this convenience facilitated use of KONEPS.¹¹⁸

In the same context, the U.S.'s wide use of e-procurement seems also related to the centralized procurement agency, General Services Administration (GSA).¹¹⁹ EU's emphasis on the link between the central procurement agency and facilitation of e-procurement¹²⁰ can, in principle, be evaluated to be positively considering the experience of Korea and the U.S.

However, the existence of centralized procurement itself does not guarantee the success of e-procurement system. The weakness of "Bid-Rigging Indicator Analysis System (BRIAS)" in Korea shows that the cooperation between centralized procurement and other agencies are critical factors for the success of e-procurement system.

In Korea, not only 'facilitation' but also 'fair-use' of e-procurement was also emphasized. In comparison, EU seems to pay relatively not much attention to the latter aspect.¹²¹ This difference might be explained by the difference of

116) The number of registered users in KONEPS was 431,228 in 2017 (7.7% larger than 2016). And the number of bidding notices in KONEPS reached 405, 669 in 2017 (10.7% larger than 2016). PPS, *supra* note 50, at 156.

117) Act on the Government Procurement, art. 5-2; Presidential Decree of E-Procurement Act, art. 9-3.

118) PPS, *supra* note 50, at 158.

119) System for Award Management (SAM) is managed by GSA. *See also* <https://www.sam.gov>.

120) 2014 EU Public Procurement Directive indicates that "Electronic means of communication are particularly well suited to supporting centralised purchasing practices and tools because of the possibility they offer to re-use and automatically process data and to minimise information and transaction costs." (2014 EU Public Procurement Directive Recital 72).

121) Major European Commission's e-procurement related documents (European Commission,

procurement market condition and culture.¹²² Korea's experience of coping with various distortion of competition activities of private enterprises based on E-procurement Act can give many lessons to other countries which have similar procurement market condition and culture.

Korean E-Procurement Act has relatively detailed rules in comparison to the U.S. or the EU, and this Korean legislation model is slightly contrary to ADB's recommendation that "governing law for e-procurement should not deal with the working details of e-procurement."¹²³ This feature of Korean e-procurement law can be explained by this Act's priority: 'controlling misuse of e-procurement.' Korean experience shows that the level of details of governing law for e-procurement should be determined according to the balance between 'facilitation of e-procurement' and 'fair-use of e-procurement.'

B. Relationship between E-Procurement and Tendering or Award Mechanism

"End-to-end e-procurement," namely digitalization overall procurement process, from tender notice to payment, is emphasized not only in Korea but also in other countries.¹²⁴ However, it should be noted that digitalization of each procedure in procurement cannot be implemented separated from tendering type or award criteria and associated discretion of contracting officers. This has been already indicated by Professor Son who pointed out that procurement type which needs negotiation tends not to be compatible with full e-procurement.¹²⁵

Korea can be evaluated to achieve higher level of "end-to-end

Action Plan for the Implementation of the New Legal Framework for Electronic Public Procurement, 2004; European Commission, A Strategy for E-Procurement, 2012; European Commission, End-to-end e-procurement to modernize public administration, 2013) focuses principally on facilitation of e-procurement system.

122) In Korea, there tends to be many competitors in the same procurement market, and companies try to deviate this fierce competition even in an illegal way. Prevalent bid rigging is a typical symptom of this tendency. During 2009-2017, total 327 bid-rigging cases were detected by KFTC, which comprise 27.9% of overall cartel cases. Fair Trade Commission of Korea (KFTC), 2017 Annual Report of KFTC, 2018, at 208.

123) ADB, *supra* note 1, at 20.

124) For instance, European Commission, End-to-end e-procurement to modernize public administration, 2013.

125) Seungwoo Son, UNCITRAL Government Procurement Model Act, Central and South American Public Procurement Workshop, Public Procurement Service of Korea, 2014.

e-procurement” in comparison to the U.S. or the EU.¹²⁶ But, this full digitalization of procurement in Korea is facilitated by its tendering and awarding systems which focus only on price factors or other quantifiable factors. Even when the “economically most advantageous tender” is applied, high emphasis is put on price factor which can be easily numerically quantifiable in Korea.¹²⁷ To guarantee the performance of contract, Korean procurement law provides “contract performance capability evaluation” which includes past performance, financial capability, etc. But in evaluation of this capability, all the elements have certain points and added without the discretion of contracting officer. Therefore, Korean system can be evaluated to focus on eliminating the contracting officer’s discretion and avoid corruption, and this system is closely related with “end-to-end e-procurement.”

But the U.S. and the EU have somewhat different tendering and awarding system compared to Korea. It seems that negotiation procedures and “economically most advantageous tender,” which focus not only price factor but also non-price factor, are more actively implemented in the U.S. and the EU than Korea.¹²⁸ Some Scholars argue that e-procurement can help construct and communicate the model to apply “Most Economically Advantageous Tender (MEAT),” because data for evaluating MEAT can be more easily accessed in e-procurement.¹²⁹ However, Korean experience shows that the full digitalization does not automatically lead to the strengthening MEAT in award stage.

Recently, Korean public procurement law is moving toward the best value approach. In this process, emphasis is put on negotiation and economically advantageous tender which focus not only on price factor but also on non-price factor.¹³⁰ And many efforts are made to accommodate this new tendering and award procedure into e-procurement. This case, namely, the shift to best-value approach and accommodation to e-procurement system shows that tendering and award mechanism in procurement and its impact to e-procurement should be more carefully examined.

126) European Commission, *supra* note 18, at 1.

127) PPS Guidelines on Best Value Award Criteria, art. 14.

128) For instance, 2014 EU Public Procurement Directive deals with Competitive procedure with negotiation (Article 29) and Competitive dialogue (Article 30) as important contracting types.

129) Luis Valadares Tavares, “Why e-public procurement?”, in Luis Valadares Tavares ed.,

Proceedings of the 1st European Conference on e-Public Procurement (ECPP), 2013, at 25.

130) PPS, *supra* note 50, at 71.

C. Relationship between Law and Technology in E-Procurement

The World Bank indicates three models on the relationship between e-procurement related technology and law: i) minimalist approach, ii) technology-specific approach, and iii) two-tiered approach.¹³¹ The minimalist approach is a model in which all technologies for electronic signature are allowed, following a policy of technological neutrality, while in technology specific approach, the regulations mandate specific technology to fulfill the legal requirements for the validity of an electronic signature.¹³² In two-tiered approach, the legislation sets a low threshold of requirements for electronic authentication methods to receive a certain minimum legal status and assigns the greater legal effect to certain electronic authentication methods.¹³³

The U.S. and the EU can be classified into minimalist approach. The U.S. took the “technological neutral” position to enhance the competition in federal procurement market, and the EU adopted this model to harmonize rules among its Member States.¹³⁴ Korea, on the contrary, is akin to technology-specific approach because it adopted the PKI-based authentication system.¹³⁵ Korea, however, is now moving toward the minimalist model, and there many debates on the future authentication system (block chain or biometric system) after abolishing the PKI system.¹³⁶

Based on each jurisdiction’s experience, the strengths and weaknesses of each model can be mentioned as follows. First, the minimalist approach has a strength in flexible technological development, facilitating cross-border procurement, but it has weaknesses, as it allows various authentication systems which tend to lead to inefficiency in procurement. Second, the technology-specific approach has strength in that uniform authentication system can enhance the overall uniformity of procurement and it can reduce the risks of vendors to choose various authentication methods according to the different procurement chances. However, PKI in technology-specific approach can be circumvented, and it tends to hinder adapting to the fast technological

131) World Bank, *supra* note 14, at 27.

132) *Id.*

133) *Id.*

134) ADB, *supra* note 1, 2013, at 108.

135) *Id.*

136) Lee, Ji-Young, “Which system will replace PKI system? - Block Chain and Biometrics are Gaining Attention,” Mael Business News (Jan. 24, 2018).

development.¹³⁷

Korean model shows that the technology-specific approach can be a facilitator of e-procurement in the initial stage. It means that each country, especially developing country which is in the process of establishing e-procurement system, should not be forced to adopt minimalist approach. However, as the procurement market grows and new technologies emerge, specific technology can show its limitations.

D. Outsourcing of E-Procurement Functions

KONEPS management experience gives many implications for outsourcing of e-procurement development or management. First, it should be emphasized that the outsourcing of development or the management of e-procurement itself is an IT procurement. Sound IT procurement contract mechanism should be implemented to avoid cost overruns or system inefficiencies.¹³⁸

Second, a strong IT industry which supports e-procurement development or management is a critical success factor but it still has limitations. Korea's strong e-procurement system is much indebted to the strong IT industry. However, SAM case in the U.S. shows that a strong IT industry itself do not guarantee the success of e-procurement system.¹³⁹ Government's ability of coordinating various e-procurement projects is important.

Third, the appropriate level of outsourcing is crucial for the successful e-procurement implementation. EU Public Procurement Directive does not explicitly mention this point. This position is related that the procurement

137) ADB indicated the weaknesses of PKI as follows: i) identity theft, ii) insecurity of the verifying server, iii) lack of warranties by certificate authorities, iv) insecure key management, v) no way to measure risk, vi) no way to assign accountability, and therefore no way to handle liability, vii) unlimited liability means that the process is uninsurable, and viii) non-repudiation is unachievable. ADB, *supra* note 1. at 31.

138) GSA developed "Systems for Award Management (SAM)" to integrate various federal procurement systems into one new system from 2008. However, SAM has resulted in significant cost overruns due to errors in the program design which was occurred from GSA's mistake of "omitting hardware and other key components in acquiring a hosting infrastructure for SAM." [Government Accountability Office (GAO). *Federal Contracting: Effort to Consolidate Governmentwide Acquisition Data Systems Should be Reassessed*, 2012, at 12].

139) Daina G. Richard, Neil S. Whiteman, Sarah. B. Gleich, Briefing Papers, *Contractor Reporting Requirements in the Wake of the System for Award Management*, at 3-4 (New York: Thomson Reuters/West, May 2013).

organization is diverse according to various member states within the EU. However, it can be said that the appropriate level of outsourcing is also important in other countries. Based on Korea's experience, two points are important on this issue.

First, it is necessary to define critical governmental activities which should not be outsourced to private enterprises. E-Procurement Act in Korea provides that only 'support' function by "E-Procurement Support Center" is contracted out to the private sector.¹⁴⁰ This position is in the same line with an argument in the U.S., which is emphasizing the limitation of outsourcing in the context of 'inherently governmental function.'¹⁴¹

Second, it is also critically important to whom the e-procurement function is contracted out. As 'Presidential Decree of E-Procurement Act' provides that a non-profit organization can be designated as "E-Procurement Support Center,"¹⁴² a university which is geographically close to PPS was designated as "E-Procurement Support Center." This shows that Korean law is keen to guarantee the public interest even in outsourcing part of e-procurement functions.

Third, the level of capability of e-procurement staff within procuring agency is critical. In turning into in-house management system from 2014, PPS made many efforts to enhance capabilities of PPS staff who manage this system.¹⁴³ This shows that the in-house management without appropriate capabilities within government can hinder the efficient management of e-procurement.

V. Conclusion

The law and practice of e-procurement system in Korea shows following lessons. First, the mandatory use of e-procurement is not the very answer to the wide use of e-procurement system. The centralized procurement agency which has a strong e-procurement capability can be more important. And the

140) E-Procurement Act, art. 23.

141) Office of Management and Budget (OMB) Circular A-76 provides that 'inherently governmental function' should not be contracted out. Tishisa L. Brazier, *supra* note 17, at 860-861.

142) Presidential Decree of E-Procurement Act, art. 13.

143) PPS, *supra* note 50, at 255-256.

efficiency of e-procurement itself is more important for the facilitation of e-procurement use. Not only 'facilitation of e-procurement' but also 'control its misuse' should also be a critical role of the law. The level of detail of governing law should consider these two aspects in balance.

Second, it can be modestly said that the full digitalization of procurement is more compatible with tendering and awarding systems which focus on quantifiable factors such as price because automatic quantification or scoring is made easier in this system. Therefore, the adaptability of e-procurement to competitive negotiation and economically most advantageous tender, which focuses more on non-quantifiable factors should be carefully designed.

Third, it is important to balance between the security of the system and the facilitation of e-procurement when choosing among the three approaches on the relationship between law and technology: i) minimalist approach, ii) technology-specific approach, and iii) two-tiered approach. Although the technology-specific approach contributed to the facilitation of e-procurement of Korea in its initial stage, it is also heavily criticized by many reasons recently. This shows that the strength and weakness of technology-specific approach should be considered altogether.

Fourth, it is crucial to find the appropriate level of outsourcing in e-procurement system development or management. This point is related with three issues; i) the extent of critical government activities within each country's legal system, ii) guaranteeing the public interest in contracting-out, and iii) e-procurement management capabilities within government.

The success of Korean e-procurement system should be demystified, and trials and errors which Korea has experienced will give a true insight to other countries who are struggling with procurement reform through e-procurement.

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