

# DIRECTION FOR REFORM OF PUBLIC PROCUREMENT SYSTEM; LESSON FROM PRACTICES

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**ABSTRACT:** The success of country development process requires the integrated support of a good investment products of public works that conducted by the government. As a developing country, Indonesia needs many public works for infrastructure development, which resulted the government tends to be the largest consumers of construction services. Therefore, the government's use of construction procurement in public works could be a significant tool to achieve socio-economic objectives. Observation study indicates that focus on procurement phase could be the first priority to develop improvement strategy for performance enhancement of Indonesia public work project. Therefore, some efforts have been made to improve performance of public works through procurement reform by Indonesian government. Some of the efforts demonstrate a good achievement in encouraging improvement, but the other does not provide a good result. The objective of this paper is to identify the strategies of procurement reform that used by the public clients in order to improve the performance of public works. The evaluation process will be made through observation study in a public university and a local government in Indonesia. In order to verify the observation result, interview method was used. The interview result revealed that the significant risks appearing in Indonesia public work procurement are; administrative/ legal risk, moral/ human resource risk, technical/ procedural risk, political risk, and document risk. Therefore, the study will be focused on performance factors related to the risks. The study indicated that in order to achieve good result in procurement reform, the reform should not only focus on technical or hard-system, but also focus on soft-system. The result of the study could hopefully provide some valuable lessons which can be used as a basis for the development of a new framework for overall performance enhancement of public work.

**KEYWORDS:** country development, public investment, procurement reform, public work, risk

## 1. INTRODUCTION

The procurement process of public works in Indonesia is under the rules of presidential decree of the Republic of Indonesia Number 80/2003. All public work procurements must be in accordance with the rules of the presidential decree. The inspection and evaluation system of public works always refers to the level of compliance with the procedures that are determined in the decree.

The existing condition appears that the main focus of public clients is only to follow the procedure. The public client concern is low towards finishing public work projects with good performance. This situation occurs in many public works that are managed by local governments. As a

result, many public works product have poor performance.

Some efforts are required to find solutions to the poor performance of public works to accelerate the country development process. The problem pattern of project life cycle indicates that many factors cause the problem during the construction of public works. The analysis of the problem pattern and the theories suggest that focus on procurement process should be the first priority to develop improvement strategy of public work project (Larasati and Watanabe, 2009). Reform on the procurement process is an important point in realizing the performance enhancement of public work.

It has been widely accepted by researcher, public

clients (central and local government) and international funding bodies (World Bank, ADB, etc) that the reform of public procurement against corruption is one of key factors of performance improvement, especially for developing countries such as Indonesia. Therefore, Indonesia makes efforts to reform the procurement process of public work in order to improve the performance, since the poor public procurement in Indonesia tends to increase the possibility of corruption. In fact, the result of reform has not generated good results yet. This paper proposes that the premise of public procurement reform against corruption did not clearly work in the realities of Indonesia public procurement reform practice. Hence, Indonesia needs to get lesson learned from the efforts that have good achievement of performance improvement in implementation of public work procurement reform.

According to the literature study, the process approach shows that the reform consists of several stages in order to change the poor performance of public work. But the framework of the reform has not been clearly stated in order to ensure the right direction of the reform. Therefore, this research will develop the framework of the reform process which explains the practical steps in improving the performance of public works. Two case studies illustrate the condition of two public procurement performances. The first case study shows common conditions of public work procurement in Indonesia that tends to generate poor performance. The other case study shows the performance improvement condition. Through a comparative analysis of the process of the two cases studies, an attempt is made to identify the key factors of best practices that hopefully can solve some common problems that arise in the public work procurement in Indonesia local government.

## 2. METHODOLOGY

This study consists of four elements (Fig. 1); 1. a literature study to find the theory of significance of public procurement reform, 2. field observation during in-progress project to obtain the information about construction public work existing condition, 3. comparative analysis to find the key factors of good practices with the aim of performance enhancement 3. framework development based on lessons learned of best practices in improving the public work performance. Observations during project progress and the literature study are focused on the history of development and its impact to the existing condition.

The case studies are two types public client, a local government public work division and a logistic center unit of a public university in western Java. Verification of the observation data of case studies is conducted through discussion processes with other practitioners involved in the public work. Clarification and collection of opinion are carried out during the verification process. The information obtained is expected to provide proper direction of procurement reform in Indonesia public work.

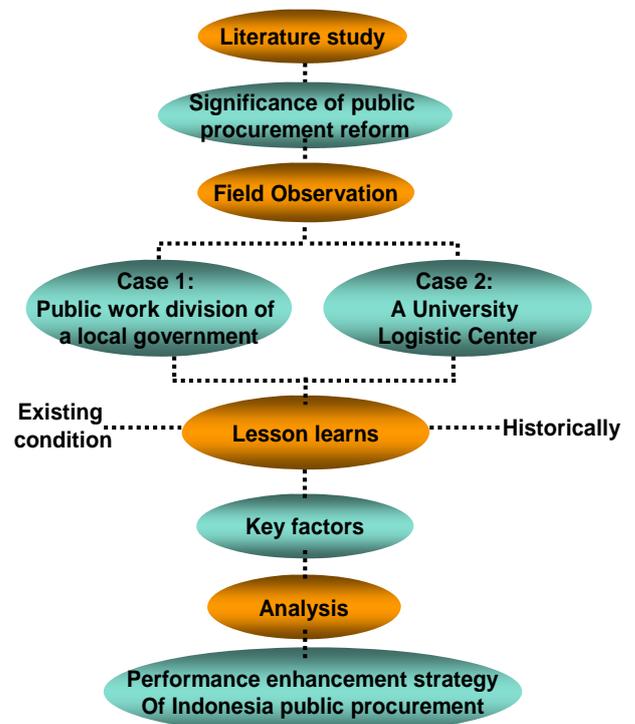


Fig. 1. Research methodology

In order to do comparative study, Rawlinson (1999) indicates that comparison of performance of different organizational forms is fraught with difficulty and the opinion expressed cannot be relied upon all circumstances. Therefore, the comparison will be done related to the process to enhance the performance of public procurement, not focus on level of performance.

### 3. THE SIGNIFICANT OF PUBLIC PROCUREMENT REFORM

According to the World Bank (2001), public procurement is one of central pillars in the government's ongoing efforts to improve governance. Therefore, an effective public procurement system is essential for good governance. A poor procurement process contributed to poor performance of public work product, such as over budget, time delays and quality of product is lower than the minimum requirement. The poor public procurement also tends to increase the possibility of corruption, generate more complaints and raise concerns about the integrity of the procurement process. In poor procurement condition, a high performer firm could be discouraged from participating in public work bidding; therefore, the country can not receive works and services of high quality.

In order to support country development, a large volume of annual public investment is made in Indonesia. This condition causes the potential economic and the social benefits of public work procurement become high for the country. Since the public work budget in Indonesia is approximately 35% of national budget or approximately US\$ 35 billion for FY 2010, improvement of a few percentage points in public procurement by the Government probably will save hundreds of millions dollars of value for money.

According to McDermott (1999), procurement is

a social science that implies the history, sociology, economic, and psychology disciplines. In a country where life sectors is dependent, the procurement mainstream provides not only direct impact to the public work performance but also impact to economic, social, and environmental sector.

The position of procurement phase is also very significant in the project life cycle. The problems on the procurement (P) process will directly impact the Design/Engineering (D/E) process and then Construction (C) process of the public work (Fig. 2).

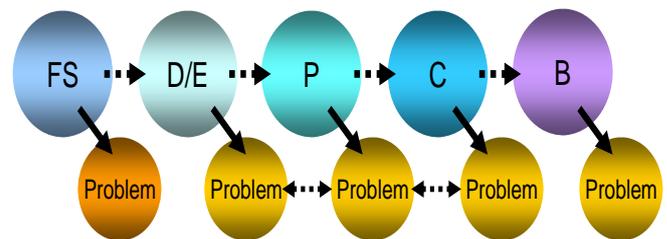


Fig. 2. Position of procurement process in public work life cycle

Improvement of the procurement (P) process is expected to reduce some of problems that arise in the previous (Design/Engineering) phase and anticipate the risks that will appear in the next (Construction) phase of project life cycle (Larasati, Watanabe, 2009).

Since the procurement process is a crucial point in achieving the high performance of public work, the intensive efforts should be made to increase existing performance through a reform procurement process. Hence, many countries have been doing the reform of public work procurement to improve efficiency and value for money of public investment.

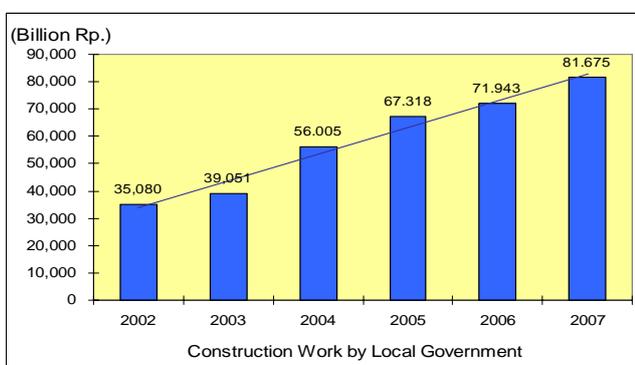
According to public service reform that conducted by some countries and funding bodies (Australia Public Service Commission, 2003; UK Government, Improvement Network, 2006; South Australia Public Sector, A program for reform, 2007; World Bank, IEG Evaluation of World Bank Support, 2008; Franco-British Council, Public Service Reform in France and the UK, 2008), here are some key words related to the reform process:

- The reform process consist of several stages
- Reviewing the existing condition is the first step of framework development of reform process
- The historical approach is one of method to review existing condition
- Developing capacity building is a very important stage of reform process
- Creating tools that can be implemented is also necessary in an effort to improve performance
- The objective of reform process is to improve the value of public investment.

Based on the key factor that explained above, the analysis of the study was conducted, and it will be described as following explanation.

#### 4. CASE STUDY 1: REVIEW OF PUBLIC PROCUREMENT IN INDONESIA LOCAL GOVERNMENT EXISTING CONDITION

As a developing country Indonesia needs strong support from the investment of public works. Thus, the performance of public procurement is very significant to determine the success of infrastructure development. Since the majority of public works are managed by the local government, the support of the good performance of public work is very significant for the local government. Following data shows the investment value of public work that is managed by local governments in Indonesia during fiscal year (FY) 2002 to 2007 (Fig. 3).



**Fig. 3.** Construction work value by Indonesia local government during FY 2002 to 2007 (source: Indonesia Statistic Bureau, 2009<sup>5</sup>)

The data indicated that Indonesia construction

value of public work that conducted by local government tend to increase steadily during the five FY period. This condition can give an advantage for encourage development of industry related to the public work. Lesson learned from Japan experience indicated that during the high economic growth the mechanized construction technologies and construction management capabilities of the private sector in Japan public work project improved significantly (Watanabe, 2005, Nishimaki 2006).

On the other hand, a large amount of investment in public work is also resulting in the tendency of the corruption in public procurement. The act of corruption can reduce the value for money in public investments, inhibit the realization of strong government institutions, and obstruct the growth of supporting industries. In order to support the increasing of public work efficiency, Indonesia has reformed the rule of public procurement procedure several times. Nowadays, the central government through the Institute of Policy Procurement of Goods/ Services (IPPGS) is drafting new regulations on public procurement enactment. The effort to improve efficiency of public procurement is expected in increasing value for money of public work investment.

Historically, the rule of public procurement in Indonesia has been through several changes since it was first formally issued in 1979 (Fig. 4). However, these changes did not reach the core of public procurement issues, and tended to focus only on the legal aspects. The rule changed that include a detail explanation of the procurement procedure and contract just made at 2000, but this rule does not provide clear guidelines. As a result in the rule implementation process, the differences of the rule interpretation can be occurred. The different interpretation of the rule is often used by the parties involved in public procurement to take advantages for their personal interests, especially in the

procurement process which is managed by the local government.

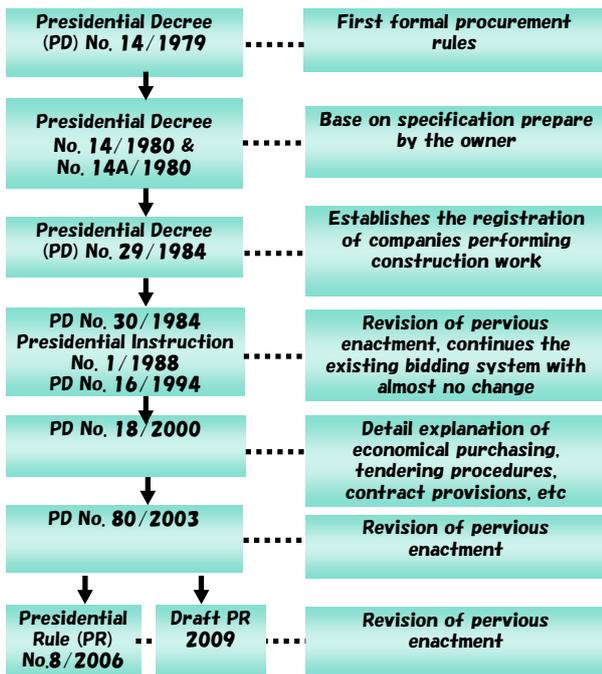


Fig. 4. Changing of public work procurement rule in Indonesia

Additionally, the pattern of relationship between parties that related to the public procurement process in Indonesia may be affected by the change of government system. After experiencing 350 years of colonization, Indonesia became a democratic-republic and the government reformed were occurred in 1997. The change of government system has resulted Indonesia under excessive democracy euphoria condition (Fig. 5).

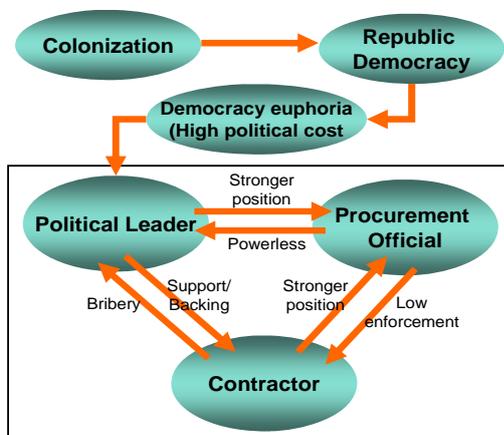


Fig. 5. Public work procurement relationship in Indonesia

The democracy in Indonesia requires a high cost for the perpetrators in order to buy the people votes to win the election. As a result, a portion of public investment budget is distributed to several certain parties for political purposes. Current practice indicated that almost in all procurement processes are conducted by local government, the undocumented sharing money between parties involved exist, which is used as transaction costs. Consequently, the cost of public work is much higher than the real needs in the field. Observation result of a project in case study demonstrates that the construction cost of a public work increased to 140% of initial budget because of transaction cost (Larasati and Watanabe, 2009). The sharing process might result in reducing the value for money of public work investment, and also result the poor performance of public work because of insufficient budget for the project operational cost.

In the other case, since the contractor that awarded has political patronage, this condition causes the procurement official has a low of law enforcement to ask the contractor to take their work responsibility with high performance. It is typically observed that the contractor often replaces specification lower than the specification stated in the contract agreement. The procurement official is forced to accept this situation because their position is in under-pressure condition, or some of them take opportunity for their personal interest by involved in this poor condition.

The risk structure that indicated the Indonesia existing public procurement process which is influenced by the existing relationship condition is described in Fig. 6. The figure shows that almost in every stage of public procurement has specific problem that related to legal/ procedural, moral/ human resource, technical, political, and document factors.

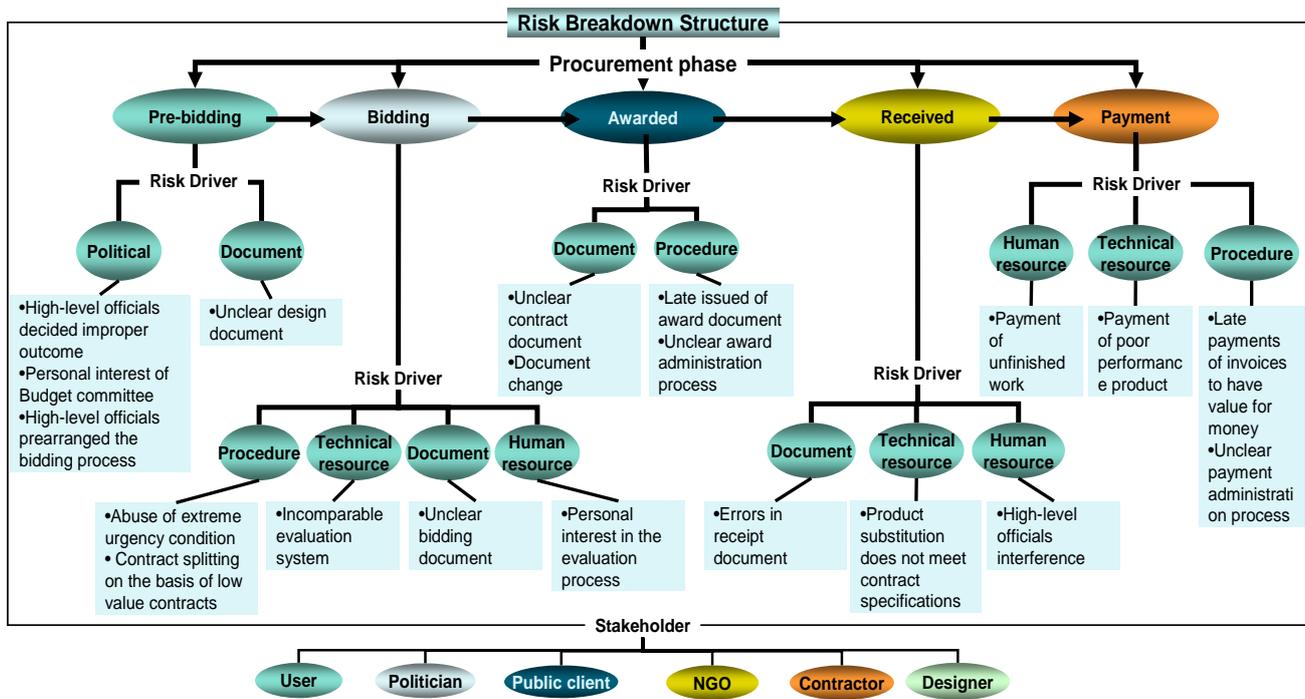


Fig. 6. Risk breakdown structure of public work procurement in Indonesia

Interview result of practitioners during the field observation also revealed that the poor performance of design document is a significant problem. The problems pattern that appear in the Fig. 6 can be grouped based on the risks drivers that cause the problem, as can be seen in table 1. These various risks drivers should be identified, controlled and reduced in the process of the performance improvement of public works.

Table 1. Risk drivers in Indonesia public procurement

Driver	Risk
Procedure	• Multi interpretation rule
	• Unclear procedure in every stage of process
	• Lack of technical support
	• Abuse of unclear procedure
Technical Resource (TR)	• Insufficient evaluation method
	• Unclear procurement guideline
	• Limitation resource for TR development
Human Resource (HR)	• Poor HR development
	• Bad ethic and moral problem
	• Strong influence on thinking and behavioral of insufficient existing patterns
	• Unqualified resource problem
Political	• High political transaction
	• High political leader interference
	• Low law enforcement
Document	• Inappropriate design document
	• Unclear bidding document
	• Unclear contract document

The intensive efforts should be made to manage the risks with the purpose of change the existing condition. However, the change would bring difficulty and even resistance in the implementation, because the existing conditions have a strong influence on thinking and behavioral patterns of each party. Therefore, lesson learned from the good practices of procurement strategies implementation may be an approach to identify the change direction that can be implemented to reduce risks that appear in Indonesia public work.

## 5. CASE STUDY 2: LESSON LEARNED FROM PRACTICE OF INDONESIA PROCUREMENT REFORM

In order to change the existing condition, observation result of a procurement division of a public university shows the effort which successfully reduces some risks in Indonesia procurement process.

The improvement process in the division started with the establishment of logistic units at 2003 that manage the integrated procurement process of the

university. This unit is a new procurement division that supported the existing division and reformed the process of the existing condition. Since the university uses public funds to carry out the procurement process, the procurement should comply with the Presidential Decree 80/2003, as a procurement rule in Indonesia. There are indications that the problem patterns occurred in local government public works also occurred in the existing division of the university.

The leader of the division realized that the poor performance of the existing condition caused by the risk appeared in the procurement process. Therefore to make improvement in the procurement process performance, the leader formed the new procurement team to manage procurement through behavior organizational and institutional culture changes under the strong leadership and good intention. The new team consists of new personnel who have different behavior from the previous existing team. They are endorsed to keep the strength of good ethics and professionalism as spirit and culture of institution. While the new division becomes established and proficient to apply the principles of open and transparent procurement process, then the previous division was merged with the new division at 2005.

After the merger process, the procurement division developed new systems and technical tools to support the procurement process. Network-based computer is employed in the new system to make the job descriptions clearer for all division members. As a result, the process becomes easier to be traced. If some problems appear in procurement process such as time delay or under specification of public work product, the new system can recognize the source of the problem and the responsible subdivision. The new system is also successful in reducing the transaction cost, since the computer-based system minimizes the transaction process. The reducing of

transaction cost improves the whole budget efficiency significantly.

The significance of budget efficiency by reducing the transaction cost also proven in Japan public work. A research by Watanabe et. al (2008) calculated that the total cost for public work delivery process in Japan local government become lower when the transaction cost was reduced.

The success of procurement reform in the public university indicated that the performance improvement in public procurement significantly related to organizational behavior and institutional culture such as good intention, strong leadership and good ethics.

Additionally, in developing new procurement system, the procurement division received funding support from World Bank at FY 2006. The provision of funds is granted for a couple of years, since the development process indicated a significant result in increasing performance.

The development strategy is continued with the developing support system of the public procurement system that consists of technical tools and human resource development, as follows (Fig. 9):

- Procurement guideline that involves the development of management system, procurement method, and transaction administration procedure.
- Logistic Information System (LIS) development consists of computer based purchasing system and performance measurement evaluation system.
- Certification system for public procurement official supported by lecturer, simulation, internship, and examination program.
- Relation system development, such as user complaint mechanism, code of ethic system, professionalism improvement, open-mind relationship, and communication mechanism.

Furthermore, this new strategy is also supported by early risk assessment mechanism which exists at

the each stage of procurement process that consists of:

1. ‘Clarification meeting’ between public clients, users, and designers during the bidding preparation, which aims to avoid the risks that rise in the design documents.
2. ‘Description meeting’ at bidding process, where public client, user, and all of the bidders evaluate the bidding document.
3. ‘Bidding clarification meeting’ between client and prospective contractor to clarify the contractor bidding document, and to ensure the contractor commitment.
4. ‘Kick off (preconstruction) meeting’ in the beginning of construction process, between all parties involved to clarify the project scope and declare the responsibility of each party, and also to ensure that all risk already distributed to the party who most able to control the risk.
5. Regularly meeting among all stakeholders as a part of construction management process.
6. Stakeholders check list process to re-ensure that construction result meets the user requirement.

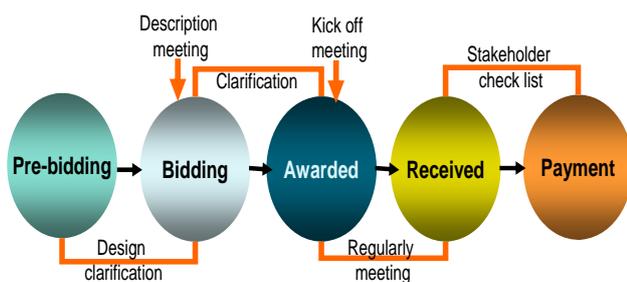


Fig. 7. The risk assessment during procurement process

Fig. 7 shows the pattern of risk assessment mechanism in the procurement division that was developed based on “communication system” approach. The communication system is believed playing significant role in improving performance of public work. This system provides a continuum of possibilities for all party, especially user to have participation in procurement process. It has been

widely accepted by the practitioners that the involvement of community is one of the key factors to enhance the performance of public construction product (Davidson, C. H., et al, 2006).

According to Japan experience (Watanabe, 2005), in the rapid country development process, where the volume of public work is relatively high, the procurement system that based on communication approach is considered more efficient in carrying out the public procurement. The communication is also expected to place the owner and the contractor to share the same objectives of achieving optimum benefit in project delivery process. Therefore, the procurement system will ensure that the best contractor who provides high performance with reasonable cost will be awarded, and the risks that appeared in the process are responsibility of the most competent party.

The objective of implementation of the new strategy and the communication mechanism in developing support system of public work procurement is to reduce all the risks that appear such as procedure risk, technical risk, human resource and political risk, and document risk (Fig. 8)

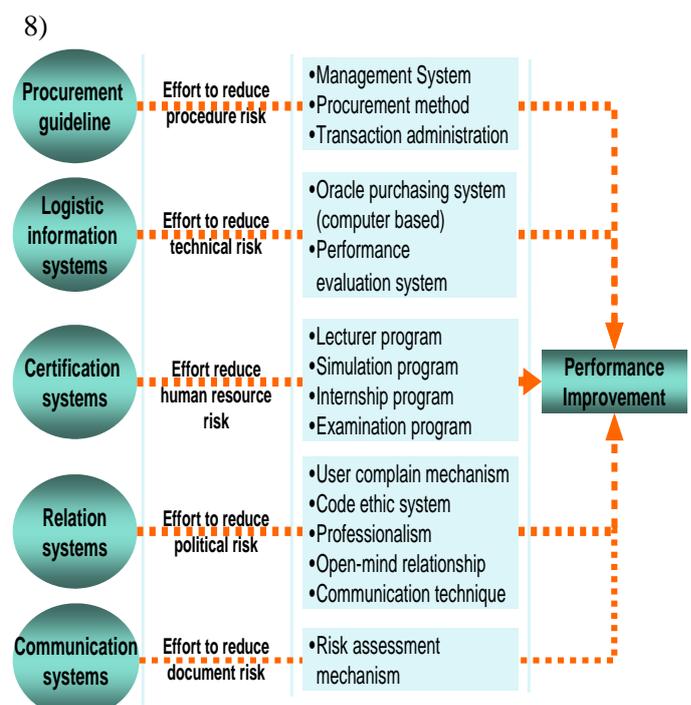


Fig. 8. Reducing risks as objective of procurement reform

In order to evaluate the user satisfaction of the logistic center performance, internal evaluation was conducted which used questionnaire mechanism. The user who sends back the questionnaires is 53 units of total 66 unit under the university organization that are provided service by the logistic center. Fig. 11 shows the percentage of user number that satisfies to the performance of the University procurement process at FY 2006, 2007 and 2008 for some performance criteria.

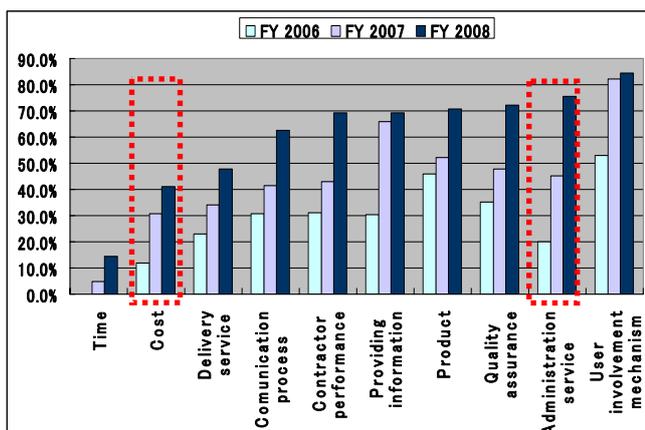


Fig. 9. Percentage of user that satisfied with several performance indicator of the university logistic center (Source: The logistic center internal evaluation result)

The data shows the user that satisfied with the performance of procurement increased steadily during the three FY periods, especially in cost and administration service criteria that increase more than 3 times since FY 2006 to FY 2008. The data also indicated the users that satisfy with the information availability increase more than 2 times during one year. Although there are many factors that still need to be improved, the success of some performance indicator enhancement of procurement reform in the public university indicates that the good achievement of reform can also happen in hard circumstance condition such as in Indonesia by strong support of soft system and hard system.

Table.2 demonstrates the comparative study of public work performance in the university logistic center and local government. The table indicated that the performance improvement in the university logistic center especially occurs in cost efficiency, but the other performance criteria still need a lot of effort to improve.

Tabel.2. The comparative performance achievement in the cases study.

Performance indicator	Case study 1: Public procurement division of the local government	Case study 2: Logistic center of the public university
<b>1. Construction cost</b>		
<i>Transaction cost</i>	Transaction cost approximately 40% of initial budget	Almost no transaction cost
<i>Unit Price</i>	The transaction cost causes the unit price becomes higher than cost in the public university. i.e., the unit of per m <sup>2</sup> of public building in a local government that meet user requirement is approximately 40% higher	No added cost to construction budget to meet user requirement.
<b>2. Volume of work</b>		
<i>Work addendum/ change order</i>	Work addendum most likely exists in every public work project, and in some cases more than that allowed by the rule (less than 10%). In a case observed the change order was more than 25% of initial budget that the budget state in the award statement (contract)	The risk assessment system reduce work addendum, nevertheless some works that carry out by the university still have work addendum, i.e. at FY 2005 the changed order of a project is more 50% than contract agreement, since 2006 the change order are always less than 10%, and only exist on less than 10% of the project carried out
<b>3. Construction time</b>		
<i>Time addendum/ delay</i>	Informal time addendum occurs in order to extend the construction time, delay also occur several time, since the significant change order occurred several times	More than 90% of the works that carried out can be finished on time, but the time addendum still exist in less than 10% of public work
<b>4. Quality of work</b>		
<i>Minimum requirement achievement</i>	Public work product do not meet user requirement/ under specification, i.e., in a case that observed a contractor change the material under the specification for lift, floor finishing, air conditioning, etc.	Contractor try to achieve minimum requirement state in contract document, but still have defect in some cases
<b>4. Value for money</b>		
<i>Value for user</i>	During the procurement process, the user involvement is very little, user satisfaction of public work is low, such as poor performance of road construction resulted in obstructions of public transportation lines	The risk communication mechanism during the procurement process that involved the user, most likely ensure the value of investment for user
<i>Value of investment</i>	Since the cost of construction project consist of transaction cost, the earned value for investment is lower than the cost expensed	The earned value of investment represent the value of investment

Nowadays, the procurement reform process in this university is still continued, and it is supported by the high level policy of university. ! The observation result indicates that the policy is very important in order to strengthen the leadership of the organization and to encourage law enforcement in carry out the procurement.

Based on the explanation of reform process in the procurement division of the university above, Fig. 10 identified the reform process in the university procurement division that consist several stages.

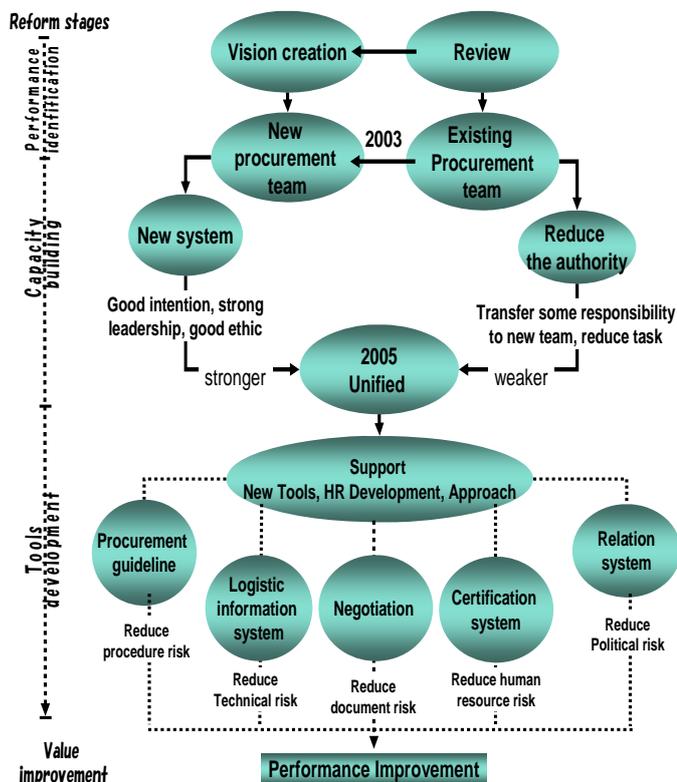


Fig. 10. The process of procurement reform in a Indonesia public university

According to Fig 10, the reform can be divided by three stages in order to reach value improvement as the objectives of the reform. The first stage is performance identification process that needs the leader attention to the existing problem and innovation in order to create vision for change. Since the user or community participation is one of key factors to enhance the performance, viewing to the perspective of the user is a very crucial step to find the root causes of the problem. The second stage is

capacity building that need strong support of soft system development than hard system development. The other stage is tools development that needs strong support of hard system development beside the soft system. Fig 11 describes the framework of reform that consists of capacity building and tools development.

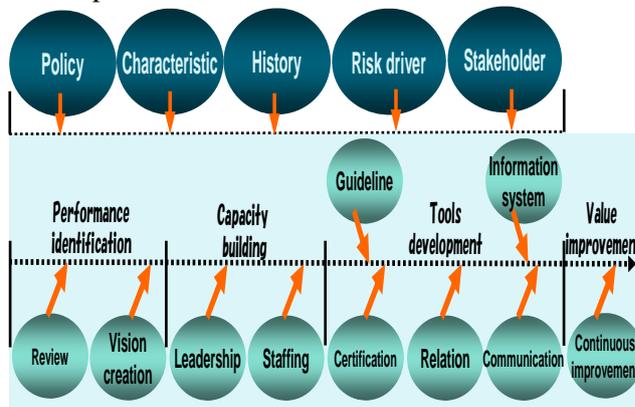


Fig. 11. The framework of public work performance improvement based on lesson learned

## 6. PROCUREMENT REFORM STRATEGY BASED ON LESSON LEARNED

Based on previous descriptions, there are some important points that could be the lessons learned from the good practices of public procurement reform in Indonesia. The lesson learned hopefully can support the direction of reform in public work procurement in Indonesia, particularly for the local government. Some of critical points that related to improving performance of public work can be grouped into two issues, the issue of technical or hard systems and soft system (Fig. 12).

In the process of procurement reform, the issue on hard systems that relate to procedures and tools such as evaluation method or technology improvement requires innovation process. In the case of the public university the innovation is used to create vision of change, and to reduce transaction costs through development of procurement system which is computer-based. The computer-based procurement system reduces the interaction between parties that impact in reducing the transaction costs.

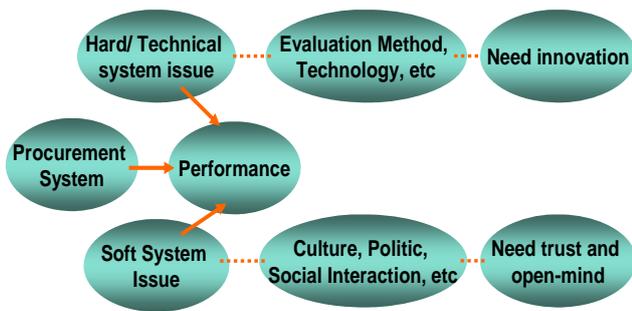


Fig. 12. The issues in procurement reform

The soft system issue also plays an important role in the process of public procurement reform which is relate to culture, politics, and social interaction. In the case study of the public university these issues embrace a very significant point in determining the success of reform through strong leadership, good intention, good ethic and professionalism. Other soft system-based issues are trust culture and professional liability which ensures quality assurance in public procurement. The organizational behavior and cultural institution change through a trust and open-mind approach already proven as a success factor in enhancement of public work performance.

Other important point as a good practice in performance improvement in public work is communication mechanism in order to encourage the stakeholder participation. Early risk assessment process through the communication mechanism is also expected to reduce the risk under uncertainty in public work. Because the characteristic of the public work is subject to change, hence reducing the risk on early stage is expected to avoid the delays and change orders in public work construction.

There are also some efforts could be the strong point that support the reform implementation process, such as the strong desire to change of some practitioners, procurement specialist license program acceleration that encouraged by central government, intensive procurement training to persuade license program, good policy and funding support from international organization such as World Bank and

Asian Development Bank.

Fig.13 demonstrates the detail of strategy support system in public procurement reform based on the lesson learned from current practices that are explained.

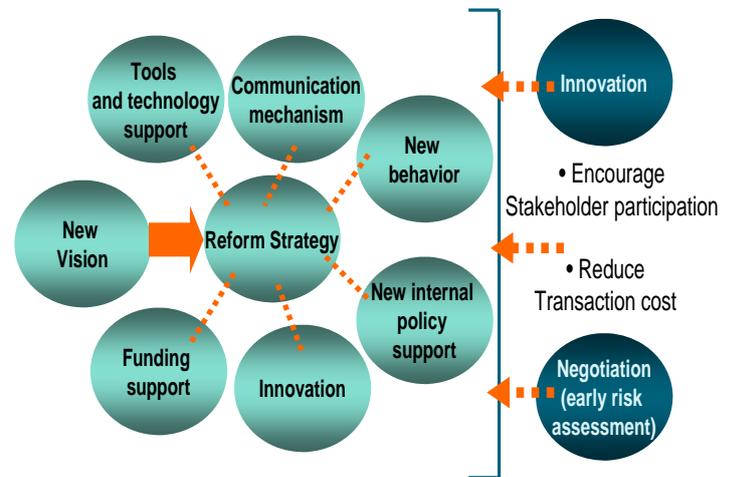


Fig. 13. Detail of strategy support system in procurement reform

The lesson learn also indicates that procurement reform process must be done continuously, consists of best practices that deal with development and maintenance activities that cover the project lifecycle from conception through delivery and maintenance process of the system.

## REFERENCES

- Davidson, C. H., et al, 2006. Truths and myths about community participation in post-disaster housing projects. Habitat International, doi:10.1016/j.habitatint.2006.08.003
- Indonesia Central Bureau of Statistic, 2009. Statistical Book Year of Indonesia 2009. URL: [http://www.bps.go.id/aboutus.php?tabel=1&id\\_subyek=04](http://www.bps.go.id/aboutus.php?tabel=1&id_subyek=04), (last date accessed: January 1<sup>st</sup>, 2010) (Website References)
- Kashiwagi, D, et a, 2005. Source of Construction Industry Instability and Performance Problems, Construction Research Congress: Broadening Perspectives, ASCE, San Diego, California, (April 5-7, 2005), p. 419-423.
- Larasati, Dewi and Watanabe, Tsunemi, 2009. Current state of construction industry performance in Indonesia, - Can it be improved, JSCE Construction Management, Vol. 16, p. 399-410 (Journal)

McDermott, Peter, 1999. Strategic and emergent issues in construction procurement, Procurement systems; A guide to Best Practice in construction, International Council for Building Research Studies p. 3-26 (Book).

Nishimaki, Hitoshi, 2006. Changing Public Works Procurement and Future Prospects, Special Features 2: Changing Public Works Procurement, NILIM Annual Report, Japan.

Rawlinson, Steve, 1999. A definition of procurement system, Procurement systems; A guide to Best Practice in construction, International Council for Building Research Studies p. 3-26 (Book).

Watanabe, T, 2005, Beyond “Dango” and Dumping Bidding in Japanese Public Works, Proceedings of CIB-W92, February 2005, Vol.1, p. 225-233, Las Vegas, USA.

Watanabe, Tsunemi, Ninomiya, Hitoshi, Aoyama, Kiyoshi, Nonaka, Masaaki, 2008. A study on Technical Procurement for Local Public Work in Japan. JSCE Construction Management, Vol. 15, p. 355-370 (Journal in Japanese).

World Bank, 2001. Legal, Regulatory and Institutional Framework for Public Procurement Policy, Indonesia Country Procurement Assessment Report, reforming the Public Procurement System. East Asia and Pacific Region, World Bank Office, Jakarta, p. 17-23 (Report)