# GOOD GOVERNMENT VIA E-PROCUREMENTSYSTEM
# (CASE STUDY: REGIONAL PLANNING AND DEVELOPMENT OF RIAU PROVINCE)

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## ABSTRACT

*Public procurement in government context involved complicated processes and too budget-consuming. Inadequate and not transparency information are the main factors that cause corruption and data manipulation. However, to avoid such problems, the development of web-based e-procurement system gives priority to integrity, transparency, accountability, fairness, economy, and efficiency is needed. The e-procurement system mentioned involved five main modules such as vendor management system, announcing the acquisition of good and services, electronic access to tender documents, tender submission document, and tender selection. This e-procurement system gives privileges to all of the committee members in calculating marks to determine the winners based on their committee position. Moreover, this e-procurement system can automatically alert important events such as the due date of registration, the marking date, and the date of winner announcement. By using this e-procurement system, three stakeholders can see the benefits. First, in term of government side where reducing procurement cost, transparency, time saving, access to new supplier, and blacklist vendor. Second, in term of vendor's side where reducing cost, accessing to new buyers and increasing sales. Third, in term of public society where adequate information, and public trusts. Hopefully, good governance can be achieved by implementing this e-procurement system.*

*Keyword: e-Procurement, good government*

## 1. INTRODUCTION

Procurement good and services in government of Riau Province is conducted every year. Source of budget procurement goods and services come from National General Revenue and Expenditure Budget (Anggaran Pendapatan Belanja Negara/ APBN) and Regional General Revenue and Expenditure Budget (Anggaran Pendapatan Belanja Daerah/ APBD). Procurement in government involves supplier/vendor of goods and services and must be announced to public by local news paper.

Some regulation and legislation of procurement goods and services have been issued before, but the latest one is Presidential Decree No. 80/2003 (Keputusan Presiden No. 80/2003). This Presidential Decree's focus more on procurement goods and services in government that source budget from National General Revenue and Expenditure Budget (Anggaran Pendapatan Belanja Negara/ APBN) and Regional General Revenue and Expenditure Budget (Anggaran Pendapatan Belanja Daerah/ APBD) and also non budgeter resources. This presidential decree's also encourages globalization and liberalization procurement in Indonesia. The main goal of this presidential decree's is to reduce corruption, collusion and nepotism and make fair competition in procurement.

Nowadays, government try to improve public procurement by using internet media. With internet services, the government hope to get good prices by transparent, open and fair competition. This mean that the public is also involved to control this procurement processes.

## 2. E-PROCUREMENT
### 2.1 Definition of e-Procurement

E-procurement refers to the electronic acquisition of goods and services in a firm (Turban, et al., 2006). By automating the tactical processes and workflows associated with purchasing, the firm expects to increase the productivity of its purchasing agents, lower purchase prices of different types of goods and services, streamline the information flow, business processes, and workflows involved in purchasing, eliminate maverick buying (i.e., buying from unauthorized vendors), reduce order fulfillment and processing times, reduce the number of suppliers the firm is dealing with, streamline invoice reconciliation and dispute resolution, reduce the administrative processing cost per purchase order, integrate budgetary controls into the procurement process, minimize human errors in the buying and shipping processes, and monitoring and regulating buying behavior (Turban, et al., 2006).

### 2.2 Presidential Decree No. 80 of 2003

President Megawati then issued Presidential Decree No. 80 of 2003 on Public Procurement. This decree aims to regulate public procurement procedures, and encourages liberalization and opening up of the public procurement system in Indonesia.

Presidential Decree No. 80/2003 contributed to more efficient state spending. It has also helped reduce the amount of unaccountable funds in the state budget and has significantly lowered costs in some provinces and regencies.

Presidential Decree No. 80/2003 stipulates important rules on corruption prevention:

a. Defines the local government budget user as a goods and service.
b. Requires government (including local governments) to announce and publish an annual public procurement plan at the beginning of the year. Also mentions sanctions or punishment for the off ending public official and vendor.
c. Requires government (including local governments) to assign an officer in charge of procurement in all procurement processes worth over IDR 50 million.
d. Requires procurement user and committee to have necessary skill certificates.
e. Consulting services must be awarded before a tender is called for development of a project.
f. Categorizes vendors on the basis of their size, to make the tender process fairer.
g. Eliminate license requirement for bidder (as previously required under Presidential Decree No. 18 of 1999).
h. Allows the multiplication of auction documents, to maximize disclosure policy.
i. Opens bidding processes and tenders to all parties.
j. Reduces conflicts of interest by forbidding supervisory officials and project officers to be committee members, and forbids public servants/officials from being vendors.
k. Promotes post-qualification rather than pre-qualification.
l. Prevents procurement committee from adding qualification requirements, such as area limitations or association certificates.
m. Require procurement process committee if contract value exceeds IDR 50 million, and committee must consist of at least three members or another odd number of members.
n. Facilitates the pre/post qualification process by encouraging qualification and the use of statement letters to minimize the practice of delivering documents directly. This process aims to deter bribery. Before, the bidder and committee could meet directly before a tender was organized and Require parties to enter into an Integrity Pact

## 3. PROJECT METHODOLOGY

Project methodology is a guideline to ensure that all project activities is well organized. By the implementation of some methodologies, programs, documents, and data can be achieved as a result of activities and task that are included in the methodology.

In order to get some information about the e-Procurement, some observations are carrying out. The required methodology for this project development is began from planning, analysis, design and implementation. Lastly, application testing will be executed.

### 3.1 System Development Methodology

A system development methodology refers to the framework that is used to structure, plan, and control the process of developing an information system. The Unified Process has been chosen as the development strategy or methodology for this project.

### 3.2 The Unified Process

The unified process is specific methodology that maps out when and how to use the various UML techniques for object oriented analysis and design. The UML provides structural support for developing the structure and behavior of an information system, the unified process provides the behavioral support.

The phases of Unified Process support an analyst in developing information system in an iterative and incremental manner. The phase describes how an information system evolves through time.

#### 3.2.1 Inception Phase

Inception phase is very similar to the planning phase of a traditional SDLC approach. In this phase, a business case is made for the proposed system. The project management and environment supporting workflows are very relevant to this phase. The primary deliverables from the inception phase are :

a. A vision document that sets of the scope of the project, identifies the primary requirement and constrains, set up an initial project plan, and describe the feasibility of and risks associated with the project.
b. The adoption of the necessary environment to develop the system.

#### 3.2.2 Elaboration Phase

The analysis and design workflows are the primary focus during this phase. The elaboration phase continues the developing the vision document, including finalizing the business case, revising the risk assessment, an completing a project plan in sufficient detail to allow the stakeholders to be able to agree with constructing the actual final system. The primary deliverables of this phase include ;

a. The UML structure and behavior diagram
b. An executable of a baseline version of the evolving information system.

### 3.2.3 Construction Phase

This phase is heavily focused on programming the evolving information system. As such, it is primarily concerned with the implementation workflow. However, the requirement, analysis, and design workflows also are involved with this phase. The configuration and change management workflow, with its version activities, becomes extremely important during the construction phase. At times, an iteration may have to be roll back. Without good version controls, rolling back to a previous version (incremental implementation) of the system is nearly impossible. The primary deliverable of this phase is an implementation of the system that can be released for beta and acceptance test.

### 3.2.4 Transition Phase

The transition phase addresses aspect typically associated with the implementation phase of a traditional SDLC approach. Its primary focus is on the testing and deployment workflows. From a managerial perspective, the project management, configuration and change management, and environment are involved. The primary deliverable is the actual executable information system. The other deliverables include user manuals, a plan to support the users, and a plan for upgrading the information system in the future.

### 4. USER REQUIREMENTS

System improvements that will be done to the existing system as shown in table 1.

Table 1. System improvements

| *Weaknesses of the existing system* | *System improvements* |
|---|---|
| Procurement notice done manually with announcement board and news paper. | Procurement announcement will be open widely through the internet. |
| Do not have enough data of vendor specially the blacklisted vendor | Have database vendor and blacklist vendor |
| Distribution of tender document done by photocopy. | Distribution of tender document done by uploading at the official website. |
| Winner announced manually from the announcement board with limited access. | Winner will be announcing widely from internet and others can look through it. |
| Expostulation letter or complaint letter send manually with no respond. | Expostulation letter or complaint letter can be send through internet and can be accessed by public. |
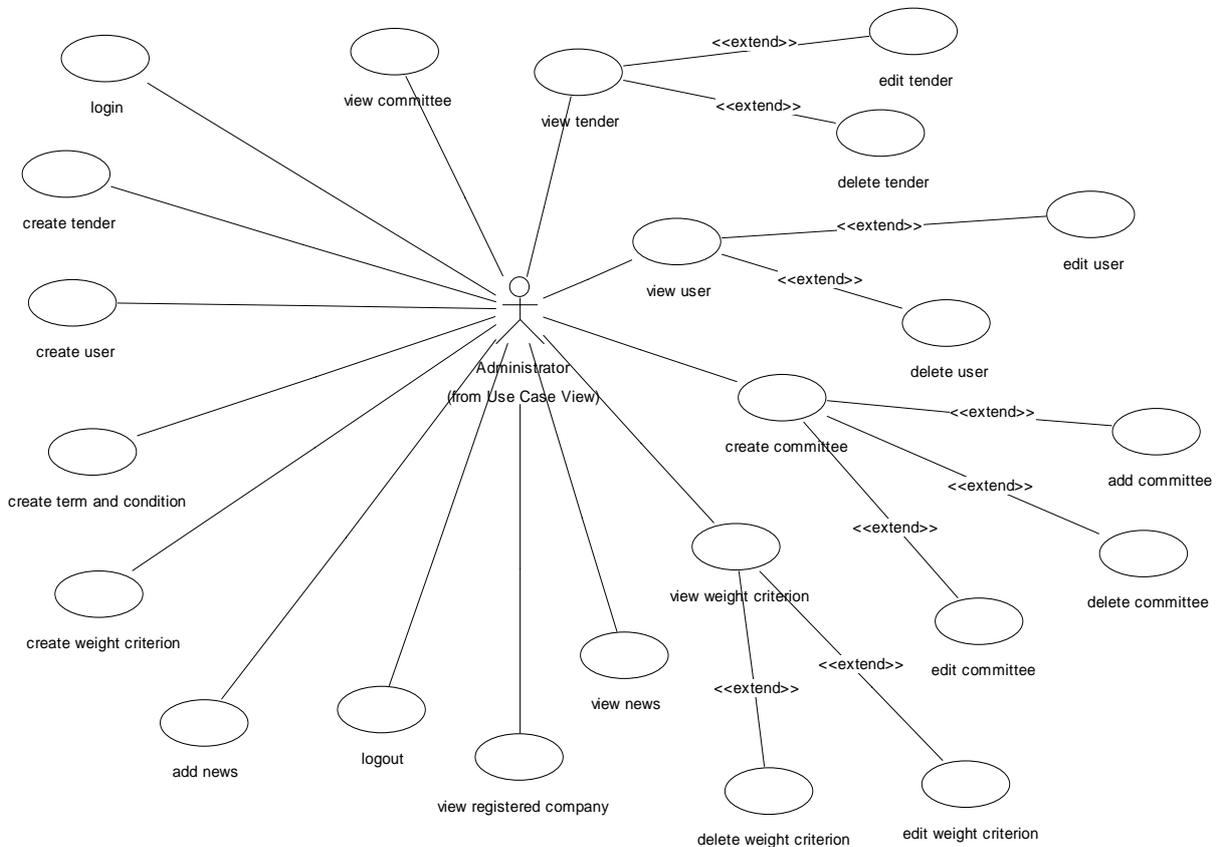


Figure 1. Use Case Diagram for Administrator

### 4.1   Functional Requirement

Functional requirement shows the process of the system or information it needs. Following table shows the functional requirements for project. Functional requirement shown in table 2.

Table 2. Functional requirements for project

| Function | Project Functional Requirement |
|---|---|
| Functions | 1. The system will enable vendor to download and upload tender document (PDF, doc, jpg). <br> 2. The system will enable tender committee to publish tender document and announcement. <br> 3. The system will be able to record vendor data. <br> 4. The system will be able to selection tender member. <br> 5. The system will be able to publish blacklist vendor. <br> 6. The system will be able record complaints from tender member <br> 7. The system will be able to generate report. <br> 8. The system will be able to printing report |

### 5.   TO-BE PROCESS AND DATA MODEL

All the activities and process that are involved in the proposed system have been modeled using Use Case Diagram, Sequence Diagram and Activity Diagram. Data that are involved in each process or activity is illustrated using Class Diagram and Sequence Diagram.

### 5.1   Use Case

There are fifty nine use case and four actor involved in this project. All use case diagram shown in Figure 1 until Figure 4 below.

### 5.2   Class Diagram

Class diagram represent the classes that are involved in the system. There are eleven classes that have been identified in this system. They are tender, tender_doc, weight_criterion, question, complaint, user, committee, vendor, tender_selection, blacklist_vendor, and register_ to_tender. Class diagram shown in figure 5 below.
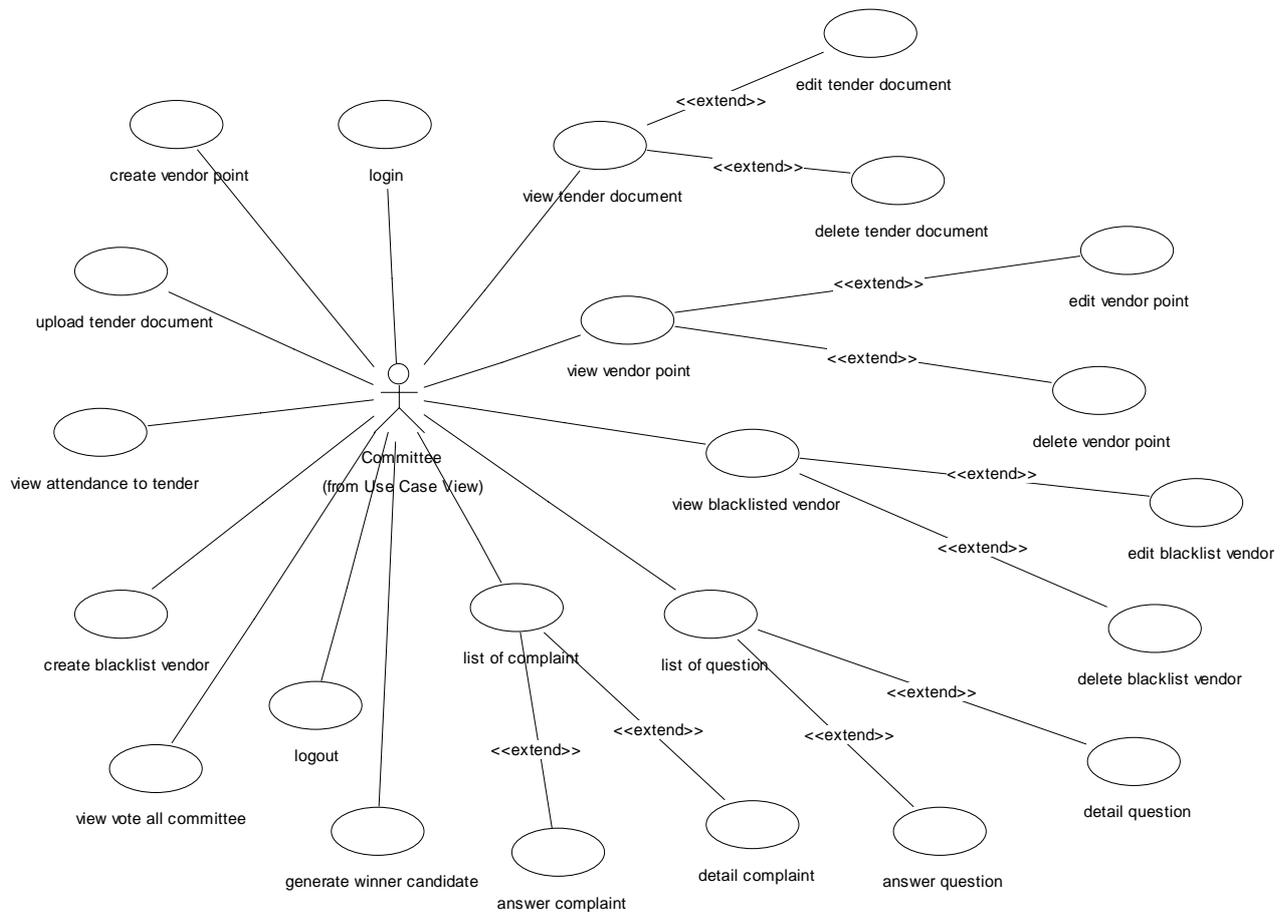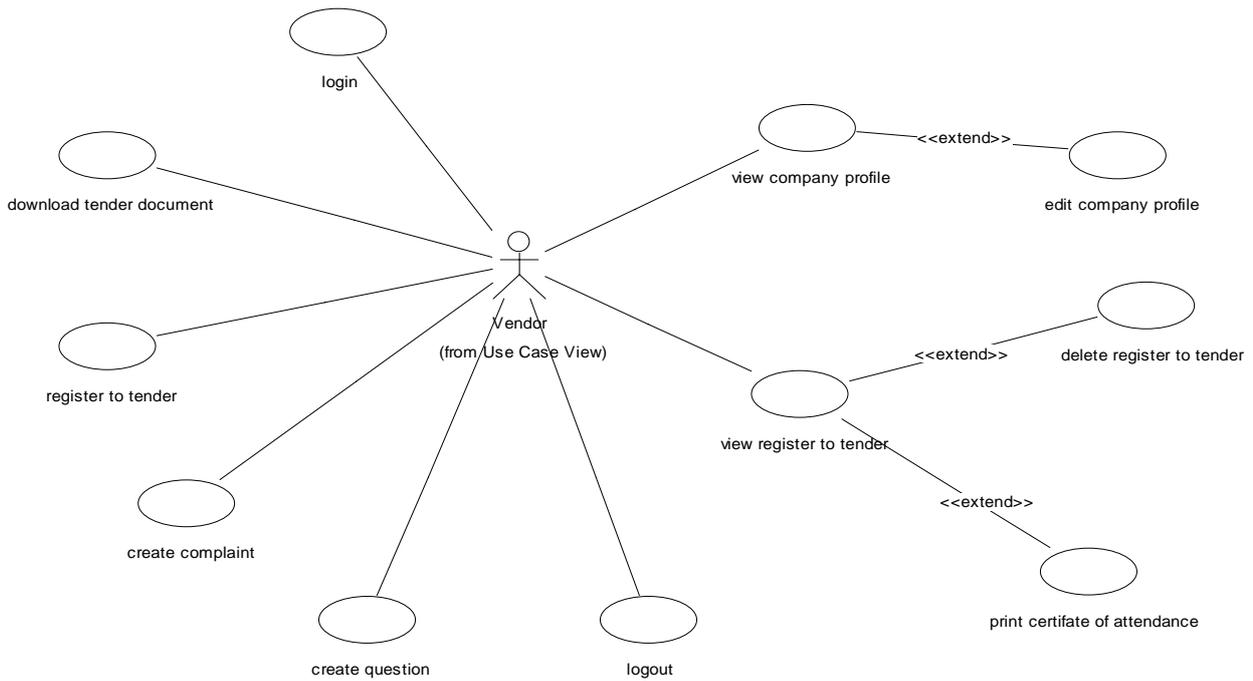


Figure 2. Use Case Diagram for Committee
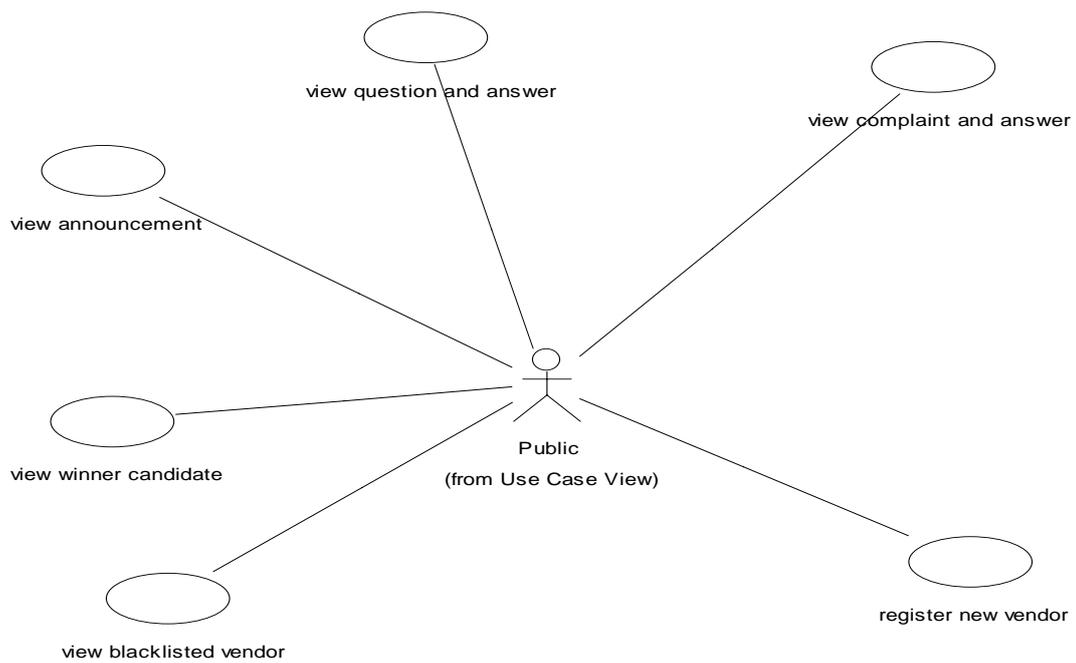
Figure 3. Use Case Diagram for Vendor



Figure 4. Use Case Diagram for Public

**Tender**
- tender_id
- tender_name
- description
- start_date
- end_date
- end_registration_date
- doc_submission_date
- opening_doc_date
- candidate_announcement_date
- complaint_date_start
- complaint_date_end
- method

- insert( )
- delete( )
- update( )
- view()

**tender_selection**
- tender_id
- npwp_number
- nip
- document
- price
- methodology
- expertise_staff
- experience

- generate( )
- insert( )
- view( )
- update( )
- delete( )

**user**
- NIP
- nama
- user_name
- password
- kode_hak_akses
- date_created

- insert( )
- delete( )
- update( )
- login( )
- view()

**register_to_tender**
- tender_id
- npwp_number
- code_register
- date_register

- register( )
- delete( )
- print( )
- view()

**committee**
- nip
- tender_id
- position
- sk_number
- weight_vote

- insert( )
- delete( )
- update( )

**vendor**
- npwp_number
- company_name
- user_id
- password
- address
- director_name
- director_IC
- pkp_number
- type_of_company
- email
- telp
- no_akta_pendirian
- tanggal_
- pengesahan
- no_akta_perubahan
- tanggal_perubahan
- tdp_number
- siup_number
- situ_number
- name : type = initval

- register( )
- update( )

**tender_doc**
- tender_id
- tender_document

- insert( )
- delete( )
- update( )
- download( )

**weight_criterion**
- tender_id
- bobot_doc
- bobot_price
- bobot_methodology
- bobor_experience
- bobot_staff

- insert( )
- delete( )
- update( )
- calculate( )

**question**
- tender_id
- npwp_number
- question
- date_question
- answer
- date_answer

- insert( )
- update( )
- answer( )

**complaint**
- tender_id
- npwp_number
- complaint
- date_complaint
- answer
- date_answer

- Insert( )
- update( )
- answer( )

**blacklist_vendor**
- npwp_number
- description
- date_of_banned
- end_of_banned

- insert( )
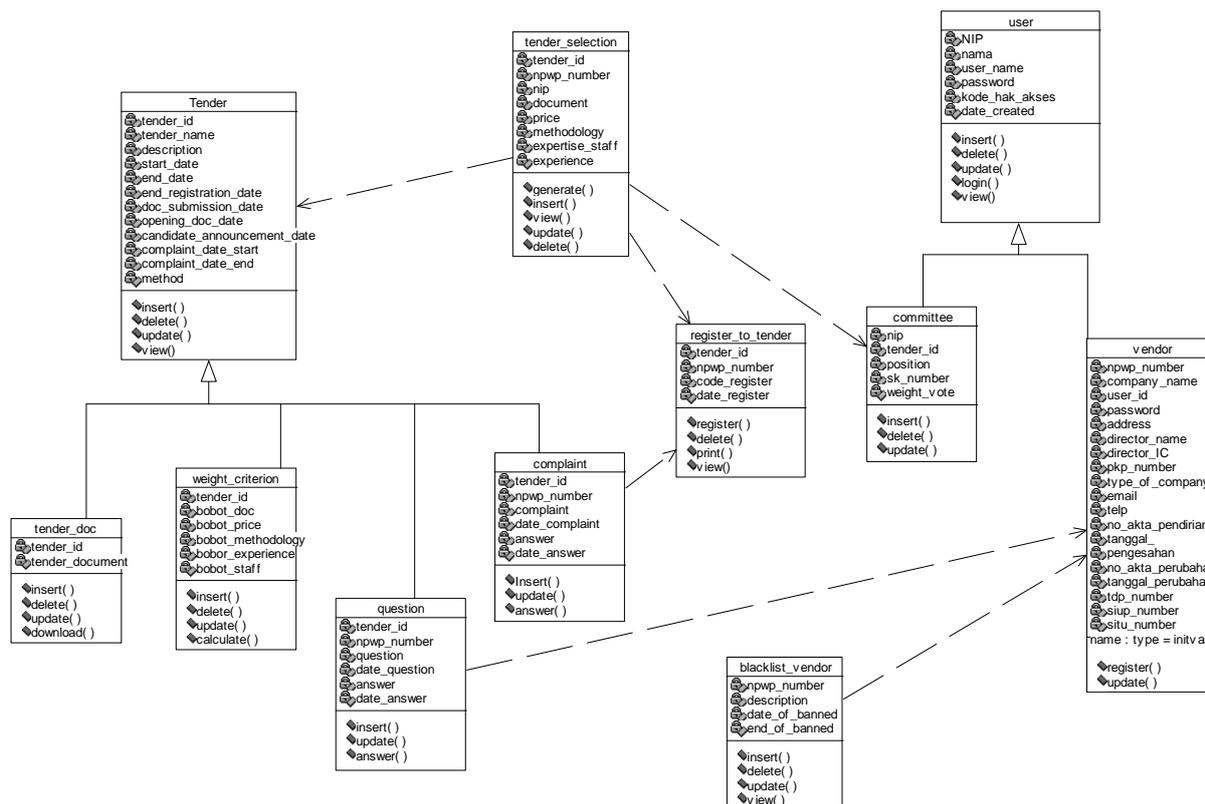- delete( )
- update( )
- view( )

Figure 5. Class Diagram

## 6. EXPECTED ORGANIZATIONAL BENEFITS

The e-Procurement system is developed to give integrity, transparency, accountability, fairness, economy, and efficiency. Hopefully, this system has good impact to organization and vendor.

### 6.1 Impact Towards Organization

By implementing e-Procurement System, hopefully it will ensure the government conducting procurement processes become more efficient and improve public trust. There are impact for organizational :

a. Reduce paper for tender document. Because all tender document can be downloaded in e-Procurement system.
b. Winner candidate automatically generated by e-procurement system without interrupted by committee or administrator.
c. System automatically block each activity depend on date procurement activity.
d. Committee member has authorization to assess each vendor.
e. System automatically block for editing point or weight criterion if today's date is greater than equal opening document date.
f. Blacklisted vendor automatically blocked by system.

### 6.2 Impact Towards Vendor

By implementing e-procurement system, there are few impacts toward vendor:

a. Tender document can be downloaded via e-procurement system.
b. Vendor will be competitive and more professional.
c. All vendor data recorded into database.
d. Vendor can access all tender information.
e. Registration to attend the tender directly via e-procurement system.

### 6.3 Impact Towards Public

By implementing e-procurement system, there are few impacts toward public :

a. Public can monitoring all tender processes via e-procurement system.
b. Achieving public trust to the government.

## 7. ACHIEVEMENT

After going through processes such as finding information from internet, refer books or journal and etc., a basic concept and theory of the research has been identified. Below are some main findings of the project:

a. Make fully transparent the processing cycle of procurement transactions. All invitations, timetables, qualification conditions, questions & answers, bidding documents, and the event logs of transactions can be made publicly available through the Internet.
b. Using digital technology for government procurement may raise issues around security, privacy, authentication, confidentiality, and data integrity.

c. Moving public e-procurement requires the re-engineering of the traditional procurement process which includes a lot of manual and paper-based work. The process of writing a procurement notice and posting it on the web by hitting one button replaces the traditional processes of writing the notice, sending it to a newspaper, and printing it.

## 7.1 Constraints and Challenges

There were some constrains and challenges that had been faced during the early phase of this system development especially when conducting the research process for the analysis phase. The identified constraint and challenges as below:

a. It is hard to meet expertise in government procurement. Because there is no procurement department in the government. The procurement is conducted by tender committee and it will be changes every procurement.

b. Traditional laws, regulations, and guidelines may hamper innovative e-procurement approaches in government agencies. If the procurement law requires signed papers as part of the procurement process, it will not be possible to develop a fully integrated e-procurement system until a legal framework is being developed which validates the digital signature.

## 7.2 Future Work for the System

This system could be upgraded to enhance its capability to obtain much more fulfillment of the user. The enhancements should be:
a. Make fully digital e-procurement system.
b. Integration with Regional General Revenue and Expenditure Budget Information System to identify planning and development that should be conduct by tender.
c. Integration with Human Resource Information System to make connection user of e-procurement system.

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