

CHAPTER V

ANALYSIS AND DISCUSSION

This chapter discusses research analysis and case studies in the four countries. First, each country is discussed separately and then a comprehensive summary and comparison is presented. A general schema of important key in implementing is then presented. This schema shows the critical factor which the government should concern in implementing and practicing online bidding, as well as those which contractors or suppliers should prepare before deciding to join online bidding system. Results from the case study are then used to propose an ideal preparation of online bidding at government side.

5.1 Case Studies

5.1.1 *Indonesia*

Each local government or government agency may have its own system because the local autonomous policy makes possible to each local government to make their own policy as long as in conformance with central government policy. Later, the central government needs to have a system that can cover the whole nation. The advantage of the local system is that the system is easy to manage since it only covers a relatively small area. It is also easy to monitor the bidders since most of them located in the surrounding area. However, there may no eligible bidder in that area. Therefore, the government needs to open the possibility to other bidders from other areas. This adds complexity in managing bidders. The government has a regulation that a company cannot handle projects that exceed its capability, both financial and resources, in order to make sure that the projects can be finished as designed. By using the local system, this capability of bidders from other areas may not be monitored because there is no linked database covering all areas.

Most of processes are electronic, and thus they reduce paperwork and cost for tender preparation. However, the absence of ICT laws in Indonesia makes another

including stamp. Therefore, some documents have to be re-submitted in hard copy to avoid legal problems. Minimizing human decision in selecting the winner by using computer reduces possibility of arrangement between committee and bidders.

Geographic condition of Indonesia is one of the obstacles of full online bidding implementation. Internet and communication technology is not at the same standard because infrastructure development is not at the same level among regions.

Table 5.1 e-bidding processes in Indonesia (using Post-qualification method)

| Process | Method | Advantages | Disadvantages |
|--|----------------------|---|---|
| Bid Announcement | Electronic and paper | -accessed easily -attract more bidders | -redundant works |
| Bidders select project and obtain bid document | Electronic | -no cost -save time -avoid direct contact | |
| Pre-bid Meeting | Direct or electronic | -save time and cost of attending meeting | -clarification is only one on one (bidder to BAC) |
| Bid submission | Electronic | -easy, save time and cost | |
| Opening of financial documents | Manual | | |
| Bid evaluation | Manual | | -need high responsibility |
| Check for bidders eligibility | Manual | | -need high responsibility |
| Opening of technical documents | Manual | | |
| Technical evaluation | Manual | | -need accuracy |
| Winner selection | Electronic | -objective selection | -cannot be revised if there is problem |
| Announcement of winner | Electronic | -easily accessed | |
| Contract award, signing Lol | Manual | | |

Table 5.2 e-bidding processes in Indonesia (using Pre-qualification method)

| Process | Method | Advantages | Disadvantages |
|--|----------------------|---|--|
| Bid Announcement | Electronic and paper | - accessed easily - attract more bidders | - do redundant works |
| Bidders select project and obtain bid document | Electronic | - do not pay fee - save time - avoid direct contact | |
| Submission of Pre-qualification requirements | Electronic | - save time and cost | - cannot verify document directly |
| Pre-qualification | Manual | | - need high responsibility |
| Announcement of Pre-qualification | Electronic | - accessed easily | |
| Pre-bid Meeting | Electronic or direct | - save time and cost | - communicate one to one (bidder to BAC) |
| Bid submission | Electronic | - save time and cost | |
| Opening of technical documents | Manual | | |
| Technical evaluation | Manual | | - need high responsibility |
| Opening of financial documents | Manual | | |
| Bid evaluation | Manual | | - need high responsibility |
| Winner selection | Electronic | - select winner objectively | - cannot be revised if there is problem |
| Announcement of winner | Electronic | - accessed easily | |
| Contract award, signing LoI | Manual | | |
| | | | |

5.1.2 The Philippines

Similar to Indonesia, geographic condition of the Philippines is islands. IT system and infrastructure development is an obstacle of implementing online bidding at whole nation. However, in the PhilGEPS system, electronic submission of bid price is conducted in a place specified by the committee. Therefore, the committee can set a system in the bidding place by sending computer system from capital city to the local area, or asking the bidders to come and bid from capital city.

Electronic invitation to bid, instead of invitation on the newspapers, reduces some cost in the administration. However, paperwork in the bid documents is not reduced by this system. There is possibility of arrangement among bidders because they know each other when obtaining the documents at the bidding committee office.

Table 5.3 e-bidding processes in the Philippines

| Process | Method | Advantages | Disadvantages |
|-------------------------------|----------------------|---|---|
| Pre-procurement conference | Manual | - communicate one to many | - need time and cost for set meeting |
| Advertisement/posting | Electronic and paper | - accessed easily - attract more bidders | - do redundant works |
| Eligibility screening | Manual | - verify documents directly | - need high responsibility |
| Pre-bid conference | Manual | - communicate one to many | - need time and cost for set meeting |
| Submission and receipt of bid | Manual | | - need time and cost |
| Bids evaluation | Manual | | - need high responsibility |
| E-bidding Process | Electronic | - obtain lower price | - need to set place and equipment for e-bidding |
| Post-qualification | Manual | | - need high responsibility |
| Award of Contract | Manual | | |

5.1.3 Singapore

As a small country with high technology, Singapore can manage its online bidding easier. Infrastructures are well developed and linked as a unity. Law enactment is also strict in Singapore which can control the bidding process easier. However, paper-based documents are still preferred than electronic documents.

Table 5.4 e-bidding processes in Singapore

| Process | Method | Advantages | Disadvantages |
|-------------------------------|----------------------|---|---|
| Invitation to Bid | Electronic | - accessed easily - attract more bidders | |
| Obtaining bid documents | Electronic and paper | - verify documents directly | - do redundant works |
| Pre-bid conference | Manual | - communicate one to many | - need time and cost for set meeting |
| Submission and receipt of bid | Manual except price | - maintain competitiveness of price | - need time and cost |
| Bids evaluation | Manual | | - need high responsibility |
| Post-qualification | Manual | | - need high responsibility |
| Winner selection | Manual | - can accommodate if there is problem | - complain may arise if there is non-transparency |
| Winner announcement | Electronic | - accessed easily | |

5.1.4 Thailand

Private service provider is a solution to switch government role to other private sector. The interference between bidders and committee may be reduced by maintain professionalism of the service provider. Computer system and infrastructure can be provided in the remote area by this service by a relatively low fee. Premium fee to the service provider is fair; however, the cost at last will go to the project owner as bidders may include this fee to their bid prices.

Online bidding aims to reduce the possibility of arrangements by reducing bidding time. This makes the bidders not have time to talk among others. However, shorter duration makes bidders estimate in the different way. Consequently, all terms and information in the bid documents shall be clear and accurate in order to avoid problems arise after the bidding period. Reverse auction is an effective method to save government budget; however, monitoring of works is required at higher level in order to maintain the quality of work not lower than what have been stated in the design.

Table 5.5 e-bidding processes in Thailand

| Process | Method | Advantages | Disadvantages |
|--------------------------------------|----------------------|---|---|
| Selection of Service Provider | Manual | - save resources to prepare e-bidding | - need time to negotiate |
| Bid invitation | Electronic and paper | - accessed easily - attract more bidders | - do redundant works |
| Obtaining of bid documents | Manual | | - need time and cost |
| Submission of technical documents | Manual | | - need time and cost |
| Technical evaluation | Manual | | - need high responsibility |
| Announcement of short-listed bidders | Electronic | | |
| Submission of bid price on e-bidding | Electronic and paper | - can obtain lower price | - do redundant works - |
| Winner selection | Manual | - can accommodate if there is problem | - complain may arise if there is non-transparency |
| Winner announcement | Electronic | - accessed easily | |

5.2 Bidding Process Comparison

Table below shows side by side comparison of general uses of online bidding and methods used in each bidding process in four observed countries.

5.2.1 Purposes

All countries have similar purposes in using online bidding. The common purposes are to increase transparency in bidding processes and also to save government budget as results from lower bid prices. Online bidding practices is also advantageous to bidders since it may save cost and time in travelling from their bases to office of the project owner or bidding committee to obtain or submit bid documents. Cost saving also exists as the results of using electronic format documents instead of paperwork. In order to get more benefit, bid documents shall be also estimated and evaluated in electronic file format instead of printing them into hardcopy which means extra expenses.

5.2.2 Registration

Registration process is another difference among countries. Life time registration applies in Indonesia and the registration will be invalid after the account has been inactive for one year. This system automatically updates its databases. However, the registration system is simple and easy, where bidders can go to the e-Procurement website and fill in the form. No verification of documents is performed in the registration phase but verification will be done only to the winner. The disadvantage of this method is that there is a risk to conduct bidding again when the winner is found not eligible based on the verification of its registration. Singaporeans have their own citizen numbers that are used as the ID in registration. This government system makes easy in monitoring the bidders since this ID is containing all information required. Differently, Thailand requires no special registration in advance and uses one registration per project, instead. Each qualified bidder is given user ID and password to enter the online bidding processes. This system is useful in avoiding outsiders to hack into the system to disturb bidding processes. One time ID will be changed every time the bidder join bid processes, and thus confidentiality of this ID is only known by a person authorized by the company.

Table 5.6 Process comparison of general uses of online bidding

| Items | Countries | | |
|------------------------------|--|---|---|
| | Indonesia | The Philippines | Singapore |
| Bidding purpose | <ul style="list-style-type: none"> - obtain lower price - reduce project cost - increase transparency - decrease delay in bidding process | <ul style="list-style-type: none"> - increase transparency - obtain better price | <ul style="list-style-type: none"> - provide e-market - manage purchasing and bidding activities |
| Bidding registration | <ul style="list-style-type: none"> - register one time - do not have registration fee - invalid if inactive for 1 year | <ul style="list-style-type: none"> - register annually - pay registration fee 500 Peso (approx \$8) | <ul style="list-style-type: none"> - register annually - pay registration fee 320 SGD (approx \$160) |
| Bidding Service Provider | <ul style="list-style-type: none"> - operated by government agency - do not take any profit - use close bid only | <ul style="list-style-type: none"> - operated by government agency - do not take any profit - use close bid only | <ul style="list-style-type: none"> - operated by private company - take premium, based on percentage of winner's price - use close bid and reverse auction |
| Bidding system | <ul style="list-style-type: none"> - use close bid only | <ul style="list-style-type: none"> - do not take any profit - use close bid only - give bidders two chances to submit bid price | <ul style="list-style-type: none"> - use close bid only |
| Invitation to bid | <ul style="list-style-type: none"> - announced electronically - announced by newspapers - announced on public announcement board - obtained electronically | <ul style="list-style-type: none"> - announced electronically - announced by newspapers - announced on public announcement board - buy paper from committee | <ul style="list-style-type: none"> - announced electronically - announced by newspapers - announced on public announcement board - buy paper from committee |
| Bid document | <ul style="list-style-type: none"> - bidders do not have to attend the meeting - send clarification by e-mail - distribute minutes by e-mail | <ul style="list-style-type: none"> - held in a specific place - bidders do not have to attend the meeting - send clarification by letter | <ul style="list-style-type: none"> - held in a specific place |
| Pre-bid meeting | <ul style="list-style-type: none"> - bidders do not have to attend the meeting - send clarification by e-mail - distribute minutes by e-mail | <ul style="list-style-type: none"> - held in a specific place - bidders do not have to attend the meeting - send clarification by letter | <ul style="list-style-type: none"> - held in a specific place |
| Bid submission | <ul style="list-style-type: none"> - submit electronically - submit hard copy of price quotation | <ul style="list-style-type: none"> - submit all documents in paperwork | <ul style="list-style-type: none"> - submit all documents except price in paperwork - submit price electronically |
| e-Bidding | <ul style="list-style-type: none"> - conducted at the same time as technical document | <ul style="list-style-type: none"> - conducted after announcement of qualified bidders from technical evaluation | <ul style="list-style-type: none"> - conducted after announcement of qualified bidders from document evaluation |
| Criteria of winner selection | <ul style="list-style-type: none"> - select lowest bidder | <ul style="list-style-type: none"> - select lowest bidder | <ul style="list-style-type: none"> - not always select lowest bidder |

5.2.3 Service Provider

In terms of electronic service providers, three countries use government agency while Thailand prefers using private company. There are trend that using government agency is cheaper to contractors since there are no registration fee. All operations and maintenance cost of the electronic service providers are at the government cost. However, Singapore applies registration fee as much as SGD 320 to the bidder while the Philippines charges the bidders at 500 Peso, annually. Thailand employs private companies as the electronic service providers and the winner shall pay premium as a percentage of winning price to the company. Thailand tries to outsource the owner's or bidding committee's job to the company to increase effectiveness of processes by reducing workload of the bidding committee. However, the owner shall spend sometime to select the prospective electronic service providers and propose the result to the head of procuring entity. This makes the bidding duration longer.

5.2.4 Bidding system

As in conventional bidding method, all countries use sealed bid method. This method is easy to conduct and confidentiality is absolutely maintained. Bidder cannot know his opponents or their bid prices. If the bidders know each other, an arrangement may be agreed among them. Sealed bid method can be performed in either first bid or second bid type. Indonesia, Singapore, and Thailand are practicing first bid type where bidders only submit their bid once. In addition, the Philippines is also practicing second bid method where bidders are given second chance to revise their bids and submit at the second chance. Lowest bid in the first round is announced as ceiling price for the second round. Thus, bidders can only submit the same or lower bid at second round. This method increases budget saving of the government since the bid price may be lower than using first bid type.

Reverse auction is also an effective method to save more government budget. Bidders are given chance to change their bids downward frequently within a specific period. The result may be much lower than the fair price. Thailand is practicing this method in construction bidding while other countries are not using it for construction projects since the project value is relatively high. There is quality issue following the

result of reverse auction bidding. Since the price may go very low compared to fair price, the quality may be reduced or compromised.

5.2.5 Invitation to bid

Newspaper is still an effective media to publish invitation to bid because of its wide range of uses. However, advertising fee may be an additional cost to the government. As the Philippines converting to advertise invitation to bid only twice in the newspaper instead of 4 times; an 8% cost saving was claimed. Thailand also publishes the invitation to bid on the newspaper in addition to putting it in the owner's website. Since City Government of Surabaya, Indonesia, is using scheduled bid invitation, posting invitation to bid in the portal website may be sufficient. However, if they change to invite for bid out of schedule, an invitation to bid is also published in newspaper. When the availability of internet is sufficient and public illiteracy of computer and internet is sufficient, an electronic invitation to bid is effective to attract more bidders even from outside areas.

5.2.6 Bid documents distribution

When bid documents are in the form of paper, bidders shall stop by at the owner's or bidding committee's office to obtain such document. Normally, some amounts of fee are charged to compensate the producing cost of the documents. Since bid documents for construction projects normally include drawings and specifications, all files are too big to be transferred via internet. Thus, the committee prints and distributes them to interested bidders. Singapore, the Philippines and Thailand are practicing manual obtaining of documents even though small sizes of files and information may be downloaded directly from owner's website. This method opens possibility of bidders to meet their prospective opponents. Later, an arrangement may be agreed among them to submit their price in a particular way to get benefit from this condition. This arrangement is usually not in favor of the owner.

Indonesia tries to avoid this direct contact among bidders by providing all information including drawings and specifications available in the website. All documents are converted into PDF files so that the size is smaller. Moreover, there is no additional fee in obtaining these documents since the committee does not have to produce a hardcopy of all documents.

5.2.7 Pre-bid meeting

Pre-bid meeting is also a moment when the prospective bidders may meet each other. An electronic pre-bid meeting shall be applied in order to avoid this condition. This method also saves time and cost of traveling and attending pre-bid meeting. In Indonesia and the Philippines, it is known that the absence of bidders from pre-bid meeting cannot justify disqualification of joining bid. An electronic pre-bid meeting can then be performed. In this method, bidders may send inquiries by e-mail or via web conference, if the technology is available evenly. Therefore, communication is only between bidding committee or owner and bidders. No other bidder knows what is being clarified. However, information shall be distributed evenly to all bidders. Thus, minutes of meeting including all questions and answers shall be distributed to all bidders after pre-bid meeting is closed to maintain even and similar information among bidders. In case the presence of bidders in pre-bid meeting is absolute, a conventional pre-bid meeting then shall be held. In this kind of meeting, inquiries asked by a bidder and the answers from committee are directly known by other bidders.

5.2.8 Bid submission

Similar to bid obtaining, preparation of paperwork for bid submission is an additional cost. The possibility of direct contact is also larger when the bidders have to submit their bids directly to the owner's or bidding committee's office. Time and place obstacles are some other factors bidders should consider. So far, Singapore, the Philippines, and Thailand are practicing this method. Technical documents are submitted in form of hardcopy. Meanwhile, Indonesia is practicing electronic submission for all bid documents. All documents are converted into PDF file format and uploaded to the server. However, because of the absence of ICT laws in Indonesia, a hardcopy of documents shall also be submitted to support the digital format ones because the existing laws have not covered the use of digital format as legal evidence. Currently, ICT laws are discussed in Senate to address this redundant work.

5.2.9 e-bidding

In Thailand and the Philippines, only bidders qualified in technical document evaluation are eligible to proceed to submit their bid price by e-bidding. This method

ensures that the prospective winner is always eligible. In contrast, Singapore and Indonesia allow all bidders to submit technical document and bid price at the same time. The lowest bidder may not be always eligible to be awarded the contract. Therefore, post-qualification method is applied in this case. e-Bidding process can be held in a specific place, so called bidding office, or can be accessible from any internet connection. Thailand and the Philippines set their e-bidding at bidding offices. This requires bidders to come to bidding office at specific time. Thus, time and place may become obstacles of bidders joining e-bidding. Singapore and Indonesia allow bidders to submit their bid from any internet connection. Monitoring process in the latter system is more difficult than the former. Therefore, the software shall have log system to monitor all events during bidding period.

Table 5.7 Summary of online bidding practices in four countries

| Item | Common Practices | Different Practices |
|------------------------|--|--|
| Service Provider | Government Agency (INA, PHI, and SIN) | Private Company (THAI) |
| Registration | Electronic (All) | One time (INA) Annually (SIN and PHI) Per project (THAI) |
| Bidding system | Sealed bid (All) | Reverse Auction (THAI) |
| Invitation to bid | Newspaper and Websites (All) | - |
| Obtaining bid document | Electronic file format if file size is quite small (All) | Buy paperwork from the committee (SIN, PHI, and THAI) |
| Pre-bid meeting | Electronic, via e-mail or web conference (INA) | Manually (SIN, PHI, and THAI) |
| Bid submission | Electronic file format (All) | Paperwork for technical document (SIN, PHI, and THAI) |
| e-Bidding | From any internet connection (INA and SIN) | From bidding office (PHI and THAI) |

5.2.10 Conclusions

From the comparison above, conclusions may be drawn about the best practices in each item as shown in Table 5.7. Service Provider shall be under government instead of a private company. The government can monitor the

performances of a Service Provider easier. It can be a company specially hired by the government to operate online bidding. Consequently, since the Service Provider is under the government, there must be no registration fee since all operating expenses are at cost of government. This method is practice in Indonesia.

The registration shall also record the historical performance of contractors and suppliers; therefore one time registration is the best application. Having long record of contractors' performance, the owner can easily pre-qualify the bidders. This registration shall also be linked to other entities such as Tax Department or Contractor Association so that companies' profiles can be cross-checked and updated frequently.

Collusion is another issue in bidding processes. The main idea of using online bidding is to avoid direct contact among bidders that opens possibility to make arrangement among them. Thus, electronic method is better for obtaining bid documents, pre-bid meeting, as well as bid submission. This method should also be supported by regulations and laws ruling about the interchangeability of paper documents and electronic documents in terms of their reliability and validity as evidences.

The proposed method of online bidding can be seen on table below. This method has been validated by sending the proposed method to Mr. Eri, bidding experts at City Government of Surabaya and asking for comments to improve its contents, if any.

ศูนย์วิทยพัทยากร
จุฬาลงกรณ์มหาวิทยาลัย

Table 5.8 Proposed method of online bidding

| Item | Best Practice | Advantages/Disadvantages | Modification |
|------------------------|--|--|---|
| Service Provider | Independent body works for government | - work independently - can be monitored easily | N/A |
| Registration | One time registration | - can track back historical performance of contractors - easy to be updated - can be linked to other entities | terminate the registration if bidder is inactive for specific period |
| Bidding system | Reverse auction | - save government budget - may be risky in terms of compromising quality | N/A |
| Invitation to bid | Newspaper and websites | - used in wide range - attract more participants | N/A |
| Obtaining bid document | Electronic file format | - reduce cost for paperwork - eliminate time and place obstacles - avoid direct contact - depend on availability of bandwidth | convert all document into smaller file format (e.g., PDF) |
| Pre-bid meeting | Electronic, via e-mail or web conference | - address time and place barriers - avoid direct contact - communicate one to one | distribute minutes of meeting evenly to all bidders |
| Bid submission | Electronic file format | - reduce cost for paperwork - eliminate time and place obstacles - avoid direct contact - depend on availability of bandwidth - must rely on digital format document | - convert all document into smaller file format (e.g., PDF) - create related laws supporting the use of digital document |
| e-Bidding | From any internet connection, only qualified bidders | - no need to prepare specific place and facilities - avoid direct contact - obtain qualified and eligible winner | N/A |

5.3 Scheme of Critical Issues in Online Bidding

From facts presented in previous chapter and side-by-side comparison presented previously, general schemes can be drawn to illustrate important issues in the online bidding practices both at government side and contractor side. These schemes are divided into two parts according to the time: implementation session and application session. In the implementation session, government has absolute role to set the online bidding system that will be used for the country. After the system has set, contractors and suppliers are invited to join the system. At this stage, contractors and suppliers start to prepare technical requirements to join online bidding. However, it is necessary to get contractors' or suppliers' constructive ideas in the

implementation stage so that application stage can be started more smoothly. The figures below show the general schemes at the government side.

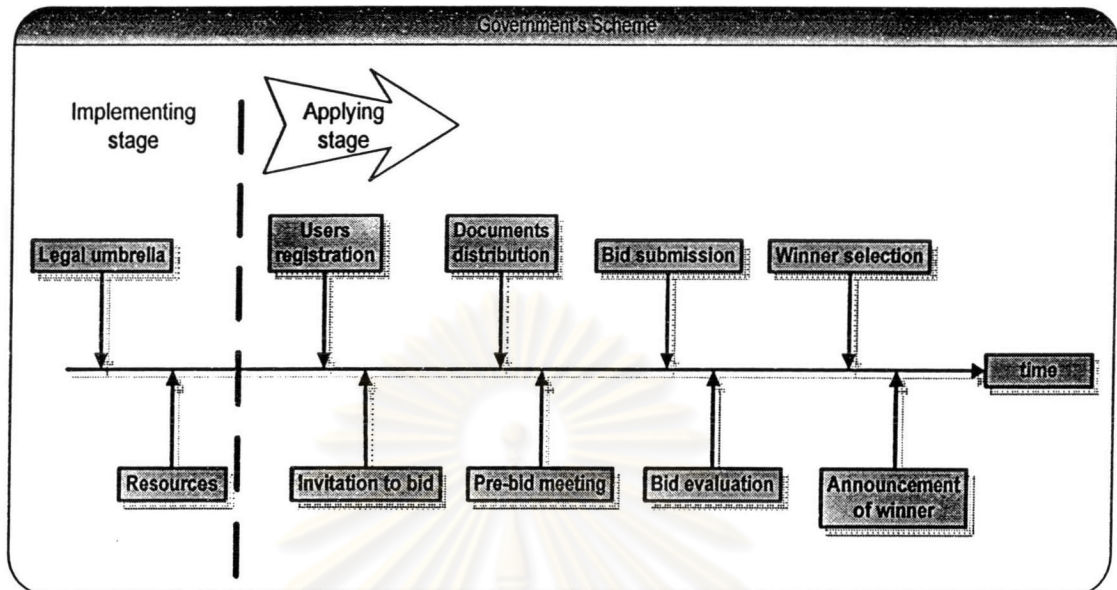


Figure 5.1 Scheme of online bidding at government side

5.3.1 Implementation stage

Government takes an important role in the implementation stage because it is the one who sets the regulations regarding uses of electronic media in bidding processes. The government as the regulator also prepares related laws and policies in order to prevent problems and disputes related to online bidding practices.

Several laws and regulations can be then issued to support online bidding implementation, such as: procedures in bidding processes or even more, procedures of online bidding. When the existing laws do not definitely cover the practice of online bidding, additional regulations then shall be issued as the basis of online bidding practices. In case the online bidding practiced by local government, a local decree should be sufficient as the umbrella of its implementation.

The absence of ICT laws is a common problem found from the fact finding. ICT laws shall regulate that an electronic format document is valid, reliable, and sufficient as alternative evidence apart from paper-based documents. These laws are important since for fully practicing online bidding, all documents shall be in the electronic file formats. Otherwise, paper documents shall be issued in some processes to support the electronic ones, and thus repeats the works. Cyber law is also strictly enacted to prevent crimes to the system and data transferred because the data

transferred in the internet is subject to be hacked and sabotaged. Cyber law makes possible to bring the criminal to the court.

At implementation stage, the government shall estimate its resources to run the online bidding system. Three resources are considered in this discussion: infrastructure, software, and manpower. The government shall make sure that the infrastructures are sufficient to support online bidding implementation. Infrastructures are related to availability of internet connection, whereby the bidders are connected to the owner. When the internet connection availability is not sufficient or the sufficiency is not even among areas in the country, the government may select to hold the online bidding processes in a bidding office. Bidding office may be set at the owner's office or any other places that are easy to be reached and reasonable to maintain competitiveness of the bidders.

In terms of software for running online bidding, the government may have two alternatives: develop its own software or hire an outsource company to prepare the software. Government may develop the software by its own employees, if any of them are capable, or hire a consultant to develop the software and also as the operator of the system. The latter alternative is preferred because the software may be more sustainable. Government employees may be assigned to other offices so that the knowledge of the software may be lost and cannot be transferred to the new officers. By hiring consultant, the system can even be developed more by the consultant because the consultant is mastering the software. Moreover, because the consultant also works as the operator (i.e., work for government), the confidential issue is not a matter. Another alternative is to switch the responsibility to the outsource company. This company is hired per bidding activity. This alternative is applicable if there are more than one company providing a software at the relatively same cost. The company is hired for a short period and premium applies as the payment. Confidential issues may arise in this alternative since the government shall select the credible company to avoid interference of bidders to the company.

Manpower is another issue in preparing online bidding implementation. The government shall make sure that the officers running online bidding are capable and credible. The capability includes understanding of bidding processes according to the existing laws or regulations. Capability in IT is also required including troubleshooting of the system. The officers shall be credible so that the confidentiality

of information and the fairness of bidding process can be maintained. Strict regulations shall apply in this case. Otherwise, confidential information may leak to outsiders where competitiveness and fairness of the bidding processes may be reduced. The readiness of contractors' manpower is also government responsibility. Therefore, introduction and trainings shall be held for contractors joining bidding so that the problems in operating online bidding can be avoided.

5.3.2 Application stage

In the application stage, the government shall introduce a registration system that is fair and easy to be accessed. Registration information shall be cross-checked with other entities, such as Tax Department or Contractor Association, to avoid fake companies. The registration may be conducted in several alternatives. One time registration may be selected if the condition of the contractors and suppliers may not change for a relatively long period. This condition avoids misclassification of contractors or suppliers due to out of date information. However, this alternative may prevent the black-listed bidders to come and join with bidding process since the database still has the records. Periodic registration may also be selected. However, this alternative may be subject to black-listed bidders to change their information and register again as a credible company. Periodic registration is useful when the companies' conditions are dynamic and need to be updated frequently. Both these alternatives give a long period for a user to use a particular user ID and password which is confidential. If the user ID and password are known by outsiders, the outsiders may use it for improper purposes. The third alternative, that is temporary registration, gives the solution. In this alternative, the registration is conducted each time project is bid. The user ID and password are only valid for a particular bidding activity. Thus, the confidentiality is higher as it is known by an authorized person within a short period.

Invitation to bid shall be published as broad as possible to increase the possible number of interested bidders. With more number of bidders, the competitiveness is expected to be more and the owner then may select the best among bidders. In e-bidding practices, invitation to bid may be published in the website, on the newspapers, on the public announcement boards, and the combination of them. Invitation on the website is effective if the level of IT of the bidders is sufficient; i.e.,

one company at least has one internet connection. With this level of internet, the possibility of companies recognizing the invitation is similar. To get more responses from bidders not having internet connection, newspapers may be an effective media to publish invitation to bid. However, the cost involved in the publication may be high, depending on the size and number of publications. Another alternative is announcing invitation to bid on the public or office's announcement boards. This alternative requires bidders to come to specific places but it takes time.

Documents distribution is preferred in electronic file format than in paper-based. Electronic documents distribution is cheaper and reduces time to obtain compare to paperwork. Moreover, electronic distribution avoids direct contact between bidding committee and bidders and direct contact among bidders. This contact may increase the possibility of collusion since bidders know their prospective opponents and make arrangement in the way they prefer.

Some countries like Indonesia and the Philippines do not disqualify bidders who do not attend pre-bid meeting. In this condition, the electronic pre-bid meeting may apply. The bidders may ask for clarification by sending e-mail to the committee. The committee then replies this e-mail only to the sender and clarifies the items asked. Finally, bidding committee shall make minutes of pre-bid meeting and send it to every bidder to give exactly the same information of the project to other bidders. Electronic pre-bid meeting also avoids direct contact between committee and bidders or among bidders and reduces the possibility of making arrangements.

Electronic bid submission has similar advantage to the electronic bid distribution, i.e., avoid direct contact among bidders and between bidders and bid committee. Furthermore, the bid committee shall prepare a reliable database to save and restore documents submitted by bidders in order to make it confidential. Only authorized person can access the documents within bid opening period. In case price submission is performed electronically, the procedure shall comply with the local laws, as discussed earlier in the implementation stage. If the availability of internet connection is not sufficient, the bidding committee shall provide a bidding office where the bidders can sit in one office separated from each other and conduct their bids at the same time. The environment of bidding office shall be set to maintain fairness and confidentiality of bidders and their bids. In terms of submission procedures, one time submission or two time submission may apply. Technical and

qualification documents may be submitted first. The committee then evaluates these documents and decides the qualified bidders. These bidders then can proceed to submit their prices or their price submission can be opened by the committee. By this procedure, the winner has been qualified.

Evaluation cannot be changed by electronic device so that manual evaluation shall be performed. However, the evaluation shall apply non-discrete criteria, “pass” or “not pass”. The results then shall be keyed in to the software and let the software decide who is the winner. This procedure reduces human judgments in the winner selection. The problem is that the bidding committee cannot easily make correction after all data are keyed in. The correction shall get approval from the highest authority in order to prevent changing resulted from the arrangements.

Winner announcement shall be open and as broad as possible to increase transparency. There shall be also announcement to the public regarding the result of the bidding processes. Electronic format and newspapers are effective for this objective because they are easy to be accessed.



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