

E-TENDERING: A REVIEW OF INTERNET-BASED PROCUREMENT PROCESSES

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ABSTRACT

The basic tendering process is changing very much in the digital age. In light of the popularity and extensive reach that the Internet & IT networks have through electronic means, this mode is being widely used to select a competent vendor efficiently. The purpose of this project is to create a web-based procurement system following international standards so that entities can take their online tenders efficiently and securely. This cutting-edge block chain-enabled global procurement portal will be a major turning point in the tendering space by allowing transparent, accountable & fair practices on one of these long-tiring processes that organizations worldwide have to follow. The core purpose of the project is to build a universal electronic tendering system, which can be used on the national level to reduce delays caused by manual processes and promote competitiveness across some industries.

Keywords: E-tendering, Online bidding, E-procurement, Internet-based tendering, Contract management

1. INTRODUCTION

Tendering is commonly known as a process for awarding contracts, which is intended as a fair and open way of selecting the bidder with a competitive price between pre-qualified bidders [1]. All of its basic concepts, asking for multiple bids and receiving the best bid, are used in many areas outside construction (from procurement to hiring professional services, all competing vendors produce a better offer. The rapid expansion of the internet and information technology (IT) has led to the implementation of electronic tendering [3]. Global adoption of e-tendering and E-procurement the growing importance of an international presence means there is a greater need for universal standards [2]. In this review, the online tendering process, its ingredients, advantages, and disadvantages will be discussed. This article aims to reflect how technology affects these parts of the procurement process, covering all the stages, starting from a request for tender to contract award. It also looks at the importance of standards in bidding, evaluation, and award processes, creating transparency that checks competition. Lastly, it examines the problems and prospects of international e-tendering systems used in cross-border procurement processes, as well as the necessity for global standards to promote cross-border business transactions.

electronic formats. The level of communication between the two has taken a shift towards ICT (Information & Communication Technology), wherein slight slack in terms of stories would be covered by contract management. One of the main features of this digital makeover is electronic tendering, as per (B. Abdullahi) [4]. E-tendering is the process of creating, managing, and submitting tenders online in response to a solicitation from any company or public authority through the Internet [2]. A departure from the regular way paper-based methods are performed to be able to make a much more effective and efficient process for all stakeholders [5].

Although e-tendering has many advantages, there are also some shortcomings. Key among these is the need for GEP to ensure equity and transparency [2], and other issues related to dealing with international e-tendering difficulties. Additionally, successful e-tendering is only possible when all these points are taken into account (i.e. user training and support integration with existing systems for development and use of appropriate standards). This review will explore such facets of e-tendering, focusing on a richer vein of personal and documented evidence to put some more flesh onto the bone that is existing literature in this field. The main themes of the investigation are

- ✓ Adoption of E-tendering: Identification and Analysis of the factors driving more organizations (buyers, suppliers) towards adoption, such as staying competitive in efficiency & saving time, transparent processes by governments, cost savings via e-procurement, etc.

2. LITERATURE REVIEW

General business processes that took advantage of traditional ways have been reshaped under such rapid technological changes and are widely used in

- ✓ Pros and Cons of E-tendering: Explain the benefits and difficulties of e-tendering to buyers as well as suppliers.
- ✓ International E-tendering And Standardization: Analysis of issues related to cross-border E-procurement with the creation of global standards - this includes the challenges faced in extending national systems across borders because different countries have their own sets of procedures, legal requirements, and guidelines which are not always compatible.
- ✓ Future Trends in E-tendering: An overview of new trends like artificial intelligence and blockchain & the impact it would have on procurement.

The questions analyzed and researched in this literature review were grounded deeply to offer insight into e-tendering. It focuses on how it has evolved through various themes, attributing factors behind changes taking place globally within the procurement process. It will also identify areas where further research and development is required to harness this technology.

2.1. PROCUREMENT/TENDERING PROCESS

Tendering is a key part of modern procurement techniques that refers to the process post-release, where competitive bids from potential suppliers or service providers are solicited regarding proposed goods, services, or works. Competitiveness, fairness, accessibility, and transparency are key principles underpinning the tendering process [6]. In many ways, the tendering process can be viewed in several stages, including —

- I. Needs Identification and Definition: The procuring entity clearly states its requirements, including technical specifications, quantity, quality standard, delivery period, etc.
- II. RFT documents: Project scope, evaluation criteria, terms, and conditions; prepared then publicly released through the appropriate routes (to make sure that people see it).
- III. Suppliers create and submit their bids, along with technical proposals (which should follow the requirements as per the described documentation), tender pricing information according to a contract template, if applicable, and other supporting documentation by the specified deadline.
- IV. Bid Evaluation & Selection: An evaluation committee reviews the design and construction proposals submitted by prequalified companies against previously selected criteria, such as

Price, Quality, Technical Capabilities, and Experience.

- V. Contract Awarding and Negotiating: The contract is awarded to the successful bidder. It is then placed under negotiation, and a mutual accord is likely to be reached on some terms and coefficients of contracts as specified.
- VI. Contract management and performance monitoring: After awarding the contract, it must be monitored, as well as how a supplier is carrying out its tasks.

Several nuances to this general framework differ based on the procurement context, rules within particular industries, and an organization's practices. In addition, e-tendering platforms have increased uptake, which has made several steps more efficient and transparent [3].

2.2. TENDERING METHODS

Procurement approaches are the systems companies use to shop for items, offerings, or works from an outdoor supply. There are two broad categories of these methods: competitive and non-competitive. Competitive strategies are preferred as they reduce bias and lead to economy, efficiency, and transparency.

Different procuring methods may be used, and the terminology can change from field to field. Procuring methods promote competition, reduce corruption, and minimize costs by enhancing resource utilization better than any other form, particularly in public works. Each is selected according to the design of a particular project and other factors.

Some of the common tendering systems are:

- ✓ Open Tenders: Also referred to as open bidding, this method allows anyone to submit a tender through the qualification procedure, which will most likely result in competitive offers [4].
- ✓ Single Quotation: Asking for an informal price quotation as used in procurement of lower-value goods and services. Negotiated Tendering is when buyers carry out a direct negotiation with one or more suppliers. It is popularly used in high-value strategic procurement where open competition is inappropriate.
- ✓ Two-Stage Tendering: This is an offered process that has a first stage for technical proposals and only allows price bids in the second phase. It could be a valuable method while closing cost quoting can breed the nakedness of fuller examination among complex tasks.

E-tendering, an online activity for publishing, communicating, accessing, receiving, and submitting information related to tenders, makes tenders easier to access.

The tendering method is used in different situations, depending on the nature of procurement, market competition, complexity level, and availability of resources. Choosing the right approach is essential to enabling a fair, transparent, and efficient procurement process.

2.2.1. WEB-BASED SYSTEM

Any system that is accessed through web browsers on a network. They are easy to set up for the end user, as they mainly need deployment onto a server [7]. The server-side deployment also cuts down on system updates and maintenance. Given that there are web browsers for multiple operating systems, this means, in general, a greater cross-platform compatibility compared to traditional installed software [8]. This has led to a thriving development in online solutions for management over the last few years.

These are a few of the benefits and features of web-based systems.

- ✓ Accessibility: The system can be accessed by a user anywhere there is an internet connection and a web browser, enabling remote work [8].
- ✓ User Friendly: Little to no client-side setup and maintenance results in less user-IT friction.

- ✓ Cross-Platform Compatibility: Web Browsers are available on several different operating systems, allowing for accessibility across multiple devices [8].
- ✓ Centralized Updates and Maintenance: The application's server-side deployment makes it easier for everyone to stay on the latest version.
- ✓ Cost-Effectiveness: Less expensive user support costs and better integration with other web-based tools can mean full savings [9].
- ✓ Scalability: Web-based systems require scale and growth with the number of users and business logic about how these needs change.
- ✓ Integration: Web-based services can easily be integrated with other web-based applications and tools, using enhanced functionality that extends to sharing data [9].

E-commerce platforms, Online learning management systems, Web-based email clients, and Collaborative project management tools are just a few examples of web-based systems [10]

Web applications are used in almost everything, from digital marketing and fintech to real estate and healthcare sectors worldwide, as they offer various benefits over traditional software applications. They are accessible, easy to use, and cost-effective, which has made them common among corporations and businesses of all sizes.

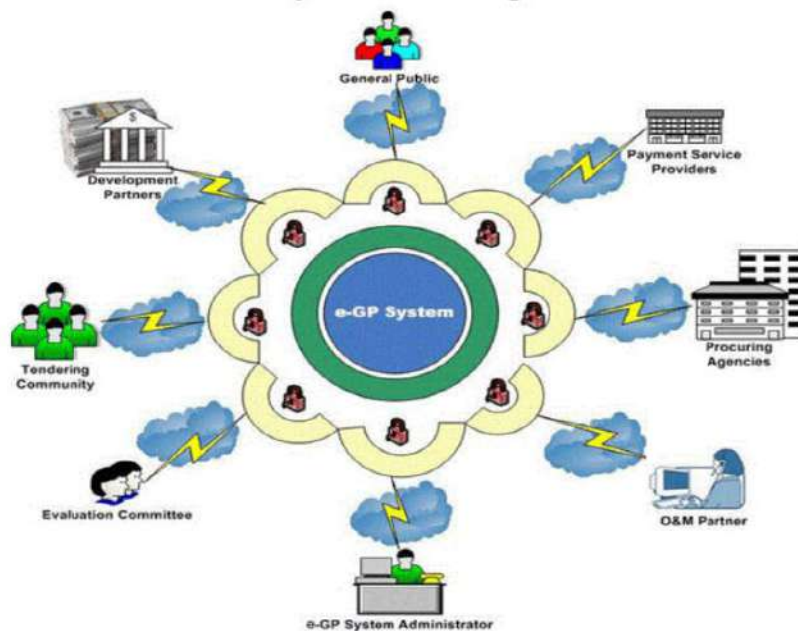


Figure 1: Schematic representation of e-tendering system [14]

2.2.2. E-TENDERING SYSTEM

A wider view of systems development also underpins e-business, and new talent is needed to assist organizations

in utilizing these tools to forge a competitive advantage. E-commerce is a subset of E-Business, but this time, the focus is on buying goods or services through the Internet as a mode of payment along with using electronic applications like e-mails via Information communication technology equipment. Developed from e-business are the concepts and features of electronic procurement, which is becoming more common in government. Electronic purchasing, e-procurement, and online offering are the purchasing processes. Create A view solution for both public and organizational corporate tenders. It integrates an automatic tender procedure programmer. These can be anything from simple order tools to managing the tendering process more effectively or combining and analyzing orders. This solution helps disrupt the public procurement processes and rules whilst keeping a push-open buying environment that is available through any web browser. The objectives of e-tendering systems are to increase efficiency, transparency, and access in public procurement; they can also march a range of types, including the usual competitive tender that helps ensure impartiality and reduces frivolous draggable efforts.

Some of the core component as follows in E-tendering systems:

- ✓ **Functionality:** E-tender systems will support several tendering stages, e.g., Notice Publication, Bid submission, Proposal Evaluation, and Contract Award.
- ✓ **Benefits of E-tendering vs. Traditional Tender:** E-tendering systems have many advantages over traditional paper-based tender processes, such as high efficiency, less cost and time, and better transparency and accessibility.
- ✓ **Security:** E-tendering systems have level security configurations to secure confidential data and maintain the authenticity of tenders.
- ✓ **Integration:** E-tendering can be integrated with other e-procurement systems and tools (e.g., electronic payment gateways and e-auction platforms).
- ✓ **Blockchain Integration:** Integrating blockchain technology into e-tendering systems can also increase the level of security, transparency, and audibility.

E-tendering systems modernize public procurement processes, ensuring efficiency, transparency, and fairness in contract awards. They are an important

step forward from traditional practices and are increasingly being used in both the developed world and developing countries.

2.3. ETHICAL PRACTICES AND THEIR INFLUENCE ON THE TENDERING PROCESS

If nations are poorly managed, corruption can significantly inhibit development, and ethical behavior is necessary for progress to happen. Corruption is less common in all contexts and may be particularly problematic, for example, in terms of funds procurement or tendering [11].

Value losses in the tendering process went to a great extent back to several unethical practices like —

- ✓ **Bid rigging and collusive bidding:** Bidders orchestrate pricing, which effectively reduces competition so that a pre-chosen winner wins. It distorts fair competition, raises prices, and risks diminishing quality.
- ✓ **Bribery and corruption:** Bribery undermines the selection on merit (bidders), so incompetent bidders are awarded work, subsequently lacking resources, resulting in project failure [11].
- ✓ **Conflicts of interest:** Undisclosed personal or financial interests can lead to biased decisions that result in unfair outcomes.
- ✓ **Confidentiality breach:** The leak of confidential information provides an edge to a few bidders, thus impairing the sanctity of the auction.
- ✓ **Fraud and Misrepresentation:** False information could make it more likely that inexperienced or otherwise unqualified bidders are chosen, leading to project failure

Key to a fair and effective tendering process is setting and maintaining ethical standards:

- ✓ **Openness:** Transparent policies and a transparent review process keep people honest [7].
- ✓ **Accountability:** Transparency and clear lines of accountability encourage responsible behavior.
- ✓ **Fairness and impartiality:** Impartial evaluation of bids based on predetermined criteria ensures merit-based awards.

- ✓ Confidentiality: It helps in the protection of sensitive information, thus protecting it from bias or influence.
- ✓ Ethical guidelines and codes of conduct: A commitment to supporting ethical behavior should be made in the form of a set of rules and codes.
- ✓ Tracking and enforcement: Effective tracking of trust standards via all the class conservation channels averts unethical performance and abides by order management often through contract data to constitute compliance.

2.4. TRAINING OF EMPLOYEES INVOLVED IN THE TENDERING PROCESS

A public procurement team is essential for delivering the highest level of service most efficiently and effectively possible through training. Good training allows individuals to be self-reliant and confident. Although some regulations specify the required training levels for legislation management and contract handling as a standard, neither of these goes into detail. Enforcing any particular type or category of supporting tender procedures.

2.4.1. IMPORTANT TRAINING COMPONENTS:

- ✓ Legal and Regulatory Framework: Well-versed with the law, rules, regulations, and policies governing public procurement (including methods of tendering, the norms for Qualification criteria or eligibility conditions, Evaluation methodology, Contract management principles, Transactional documentation, etc.)
- ✓ Ethical concerns: Training must stress ethical behavior, transparency, and accountability at all phases of the tendering process—from addressing conflicts of interest to confidentiality—and ensure the prevention of corrupt practices.
- ✓ Technical skills: Training to write tender documents, assess bids, and negotiate contracts in public procurement systems, especially web-based tendering systems.
- ✓ Soft skills: Strong communication, negotiation, and interpersonal capabilities to interact with bidders and stakeholders
- ✓ Practical application: Training should be coupled with exercises, case studies, and simulations to reinforce learning in a real-life scenario.

2.4.2. BENEFITS OF TRAINING INCLUDE:

- ✓ Greater efficiencies and effectiveness in managing the tendering process improved transparency and accountability with ethical practices.
- ✓ Regulatory compliance reduced risks and costs through issue identification & mitigation improved value for money through better procurement results increased confidence and competency of employees.

2.5. THE USE OF ICT IN THE TENDERING PROCESS

Take the rising popularity of internet-based tendering, which highlights its critical role in purchasing today. Competitive tendering ensures that contracts are awarded transparently and equitably, allowing for prudent bid comparisons before the decision. One of the business functions is heavily used in commercial procurement, professional services, and resource allocation, especially in construction companies.

The internet and information technology largely drive the new e-tendering. This move to digital systems comes with numerous benefits, including improved speed and transparency in communication. E-tendering automates the process, saves costs involved in manual tender processing, and reduces error rates that may occur during data transferring [8].

It is widely recognized that ICT successfully enables the tendering of works in all sectors, with construction being no exception. In broad strokes, the construction industry faces similar adoption opportunities and challenges as other sectors in e-procurement – but its specific stationery products or mobile production nature with a very high level of complexity might lead to different consequences for factors that promote or hinder e-procurement. The transparency, efficiency, and accessibility of the tender process have become better due to the adoption of ICT through the e-tendering system, which benefits all stakeholders.

Apart from this, blockchain technologies can also be integrated to strengthen security and audibility in e-tendering. In the public sector, several initiatives have been undertaken to find out how procurement strategies and processes can be improved due to recognizing that many parties are involved as well as unpredictable factors that could impact the costs of a project. Risk influences not only contract type but also evaluation and the resulting

contracting outcomes. Electronic procurement systems have to be customized according to the demands of industries such as construction, which include multiple variables and unique challenges.

In summary, ICT can greatly improve efficiency, accountability, and openness in tendering with full collaboration or an e-tender system. Further research and collaboration are required to establish international e-tendering standards for a harmonized, cross-border approach towards an open, level playing field in public procurement.

2.6. RECORDS RE-ARRANGEMENT IN THE TENDERING PROCESS

Good governance in public bodies and the tendering process specifically requires effective document management. This is why poor record management can result in loss of money, lawsuits, or even governance failures. Electronic Record File Management is an area that many organizations continue to struggle with, and we reference both email archiving and filing electronic records.

In the tendering process, records re-arrangement involves systematically arranging and structuring all types of recordings, especially traditional paper-based systems, into digital form. Provision Zero ensures that procurement processes are streamlined, easily auditable, and compliant.

2.6.1. BASIC OF RECORDS RE-ARRANGEMENT

Digitization means converting physical records into electronic formats that can be stored, analyzed, and retrieved in a sometimes less time-consuming way.

- ✓ **Standardization:** Consistent file formats, naming conventions, and metadata tagging to help make research more discoverable and interoperable.
- ✓ **Centralization:** Centralizing records from multiple sources into a common repository for ease of access and manageability.
- ✓ **Security and access control:** Measures to protect sensitive information and set adequate permission.
- ✓ **Retention and destruction policies:** Establishing protocols for the retention and proper disposal of records under legal requirements (retention schedules).

Improving the records re-arrangement saves time, cost, and money, as well as enhancing general efficiency in record systems, transparency of operations, and thus accountability to clients. Afterward, decision-making continues using a

consistent methodology, evidencing proper trial and mitigating legal risk.

E-tendering systems can enhance the process of tendering systems in terms of efficiency, transparency, and accessibility. Maximize the utility of these systems by incorporating them into comprehensive record management strategies. The sources quoted above also reflect some of the other benefits that fall under this theme and their connection to the ultimate records re-arrangement outcomes efficiency in managing information as a key factor for obtaining an advantage such that simplified processes, elimination/minimization of errors related to information transfer correspond with goals when transitioning into electronic systems.

3. THE OBJECTIVE OF THE STUDY

In response, this study takes a panoramic view of the internet-based tendering process over evolutionary history and adoption worldwide, followed by defining benefits and challenges that have been developed to assess performance in terms of concept features. The study aims to achieve the following;

- I. Evolution of Tendering traditional to e-tender system
- II. Assess the pros and cons of e-tendering
- III. Analyze how information and communication technology contribute to e-tendering
- IV. Critically examine the legal and regulatory structure of the e-tendering Platform
- V. Future trends and direction in e-tendering
- VI. Select best practices and guidelines for successful e-tendering roll-out

4. RESEARCH METHODOLOGY

This study uses an explorative research method to explore the e-tendering process through the internet Driven by the research background, through objective setting and problem formulation, the chosen methodology seeks clarification in this respect to insights required to gather better data so that an improved exacting of future related segments can be accomplished. The paper includes three main research design techniques: literature review, active involvement in public procurement processes, and questionnaires.

5. ANALYSIS OF DATA

Figure 1: Schematic representation of e-tendering system.

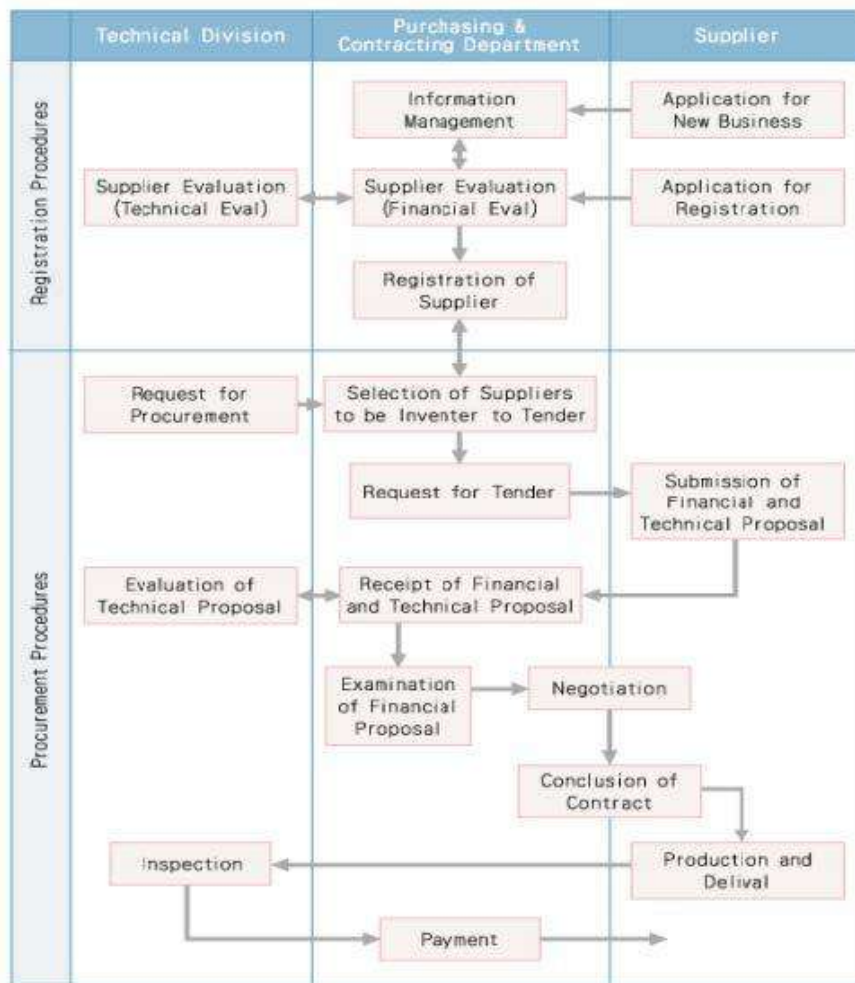


Figure 2: steps of e-tendering system [15].

5.1. PUBLICATION OF E-TENDER

After obtaining the required purchase approval from the supply chain/procurement of purchases, you move to post an e-tender. This means that goods or services are electronically announced to let suppliers know what is needed, and they have a chance of applying. This process will allow for a competitive bidder pool and will adhere to the goal of transparent procurement [2].

5.1.1. THE PROCEDURE OF E-TENDER PUBLICATION INVOLVES THE FOLLOWING:

- ✓ Select the E-Procurement Platform: Find a perfect online portal or government e-procurement site. The tender management system helps the contractors get centralized and efficient service, with automated

notifications, secure document exchange, and online bid submissions available. Due to platform support and security features, it could be integrated with the existing system.

- ✓ E-Tender Notice Creation: Create the professional notice, including basic purchase info.
- ✓ Description of Goods/Services: Clearly and directly describe the things needed.
- ✓ Delivery information (width, height & border by): Managing all delivery details such as width, respectively buying time.
- ✓ Eligibility Criteria: Describe what suppliers must do to tender for this framework.
- ✓ E-Tender Calendar: This will contain bid dates and deadlines.

- ✓ Instructions to E-Tenderers: Provide clear instructions on how bidders should prepare their bids and the formats for submitting them.
- ✓ Contact Information: Provide the contact details of those who should be contacted for further inquiries.
- ✓ Digital Signature Mandate: Make it compulsory to use a digital signature on the deposits and bids to give added confidentiality and genuineness.
- ✓ E-Tender Publish: Select the Platform and Post the notice well in time for as many bidders to see it.
- ✓ Access to E-Tender Documents: access to all the documents related to the tender; these are generally accessed after payment of fees.

5.1.1.1 SOME OF THIS SUPPORTING DOCUMENTATION INCLUDES:

- ✓ Terms and Conditions: This sets out the legal terms on which an agreement is agreed or nurtured.
- ✓ Photos and Video: Official Images & Promo videos of the requested goods or services.
- ✓ Specifications: Detailed specs of the goods and services.
- ✓ Evaluation Criteria: Describe the evaluation criteria for the bid.
- ✓ E-Bid Submission Forms: Provide standardized e-forms for submitting bids.

These steps promote accessible e-tenders as the method is open and transparent, benefiting both suppliers in terms of visibility. This results in companies competing, with the procuring entity having the advantage of getting the best value for money. The implementation of e-tendering systems contributes to enhancing efficiency and transparency in public procurement [3,14].

5.2. DOCUMENTATION PROCESS E-TENDER

Here are some steps to give you an idea of what the documentation process inside the e-tender:

- ✓ Soft Copy document collection: Collect all required documents digitally from the vendor. This will bypass the benefit of e-tendering systems and allow for fast and secure document exchange.
- ✓ Marine Policy: Request a marine policy to protect the goods during transit, especially if you are shipping internationally or by ocean freight.

- ✓ Document Printing and Verification: Print the document copy after checking whether all fields are filled out or not. This helps validate the completeness and correctness before hanging your document to dry up completely.
- ✓ Finding Gap Identification and Communication: If any findings/checkpoints have a gap, the responsible party should highlight this pain, quickly take action, and communicate with the supplier. Clear communication is a direct result of efficient and timely issue resolution [12].
- ✓ Archive: Once the main documents have been received and thoroughly checked, archive them. Proper record management must, therefore, be implemented to include all the procuring activities during the elected timeline [4].

So, all these steps are interconnected with each other, providing completeness in the e-tendering documentation process and the procurement process.

5.3. RECEIVED BIDS EVALUATION IN E-TENDER PROCESS

Any bid received at the place designated for receipt of bids by the time outlined in Instructions to Bidders will be fairly evaluated by a Cross-Functional Team or authorized technical and procurement personnel. For instance, impartiality is extremely important, and every bid should be treated the same way. Evaluation is against predetermined technical and commercial criteria as set out in the RFQ Strategy & Planning Document (or relevant documents if the RFQ document does not apply). This means that the structured approach is transparent and fair when running e-tenders [4] and suggests transparent, objective evaluation during public sector tendering.

After Bids are opened, a bid-opening log is made to verify that the process took place. Technical and firm-up evaluations may be done concurrently or by separate members of the Call for Tender (CFT) as appropriate. Assessment information is kept confidential until the final assessment phase, at which time it will be shared with the entire FCT. That anonymity ensures the process remains pure. When applicable, Total Cost of Ownership (TCO), Life Cycle Costs (LCC), and cost management models or similar methodologies are used during commercial offer evaluation. Offer a more complete picture of cost, well beyond the lowest price bid, and thereby, informed decision-making.

5.4. SELECTION PROCESS OF BIDDERS THROUGH E-TENDER

Bidders who comply with the evaluation criteria specified in this RFQ Strategy & Planning Document or other applicable documents, if any, will be shortlisted. This highlights the need for an evaluation framework that is defined and clear enough to ensure a non-debatable shortlist process of candidates. This also accords with conceptions of transparency and fairness found in, e.g., [6], which highlights the benefits of competitive bidding for promoting greater transparency and lower corruption levels compared to other public-private partnerships.

A debriefing shall be conducted at the request of bidders not awarded and signed by Supply Chain Management or the User Department. This important element allows unsuccessful bidders to understand and gain insights into why their submission was not successful, which in turn can be used as constructive feedback for future bidding processes.

5.5. ON-LINE E-TENDER PROCESS (CONTRACT SIGNING)

PRINT and SEND contract to the supplier for SIGN. The representative or head of the vendor organization signs contracts with two witnesses with the attendant in support of request trips to local Procurement duties. The contract is signed and then sent back to the buyer for their signature. The form, with two columns and three rows, including a column for each party (the supplier on the left, the buyer), is such that everyone has translated everything into writing. The buyer receives the contract and also goes through it internally for sign-off, as is done by the supplier. A systematized methodology sets the tone for a well-defined and legal contract signing phase.

Although the documents provided did not spell out this particular sign-up process, they do touch on another characteristic of e-tendering. Public-private partnerships (e.g., contract design and execution) are also being mentioned with an emphasis on a clear agreement and documented procedure [6]. Regarding the evolution of contracts, the perspective also thinks that a lot more transparency comes from having digital contracts, which makes everything easier to understand.

5.6. HOW THE PURCHASE ORDER IS GENERATED IN E-TENDER PROCESS

A Purchase Order is a legal offer by the buyer that she wants to purchase from his website, and this document will be shared with the seller for approval

or rejection. A PO is a legally binding offer, which acceptance results in a contract form between buyer and seller. This covers steps that can be compared with standard procurement practices [14], which describes the process flow of a normal procurement. The PO is a formalization of the buyer order and defines the terms, including details on returns or replacement discrepancies/defective materials.

5.7. L/C OPERATION IN E-TENDERING PROCESS

For the bank to finance, the L/C must be issued by request of a company that follows the given requirements. It is pertinent to strive for timely L/C acquisition, and the same should be monitored through a monthly KPI summary. This implies that the L/C operations are an important part of the e-tender process when we look at it from financial procedures, indicating the financial status of the project.

5.8. FACTORY TESTS WITNESS IN E-TENDER PROCESS

The purchaser or his/her representative shall have the right to inspect, examine, and test as agreed upon by both parties before the material commences manufacturing for conformity with specifications at reasonable times during the provision of materials at the manufacturer's premises. This includes studying the purchase/import/shipping documents of raw materials and ensuring they conform with technical parameters. FAT will be done at the manufacturer's site with the buyer's inspection agency. These tests meet the standards and satisfy technological specifics and guarantees specified by the contract. The tenderer will bear the cost of these tests. Every phase of our process must pass an extensive inspection and test procedure, which complies with all laws as well. It focuses on the necessity of a post-delivery inspection. Also, it addresses problems associated with inexperienced Inspection Boards that show why you must have skilled personnel in scrutinizing processes.

5.9. E-TENDER PROCESS FACTORY INSPECTION RESULT

The purchaser or the purchaser's representative may inspect and test the material to confirm its conformity with specifications at any reasonable time during manufacture. This consists of checking the purchase/import/shipping documents for raw materials based on technical needs. In addition, the buyer-selected team of inspectors will observe factory acceptance tests to be performed at the manufacturer's plant. These are also standardized tests that comply with all technical requirements and guarantees of the customer.

The cost of these tests is on a chargeable basis, wherein all expenses are to be borne willfully by the tenderer. This thorough inspection and testing process ensures that the final product meets quality specifications for contract compliance.

5.10. E-TENDER PROCESS DELIVERY OF GOODS

The merchandise will need to be delivered to a warehouse of the buyer's choice, which is not located in the country where it was purchased (it may also be exported), etc. The supplier is on the hook for safe transportation and condition until they make it to the warehouse. In case of damage during transportation, the supplier is responsible. The supplier no longer has the liability for the product once it has been delivered. The purchaser utilizes warehouses that are built to retain perfect storage conditions, protected with humidity and temperature control while filling them with shelving so as not to damage or spoil the products. This is the key focal point to keep the integrity of goods and order after sending them out.

5.11. POST-DELIVERY INSPECTION AND TESTING OF THE E-TENDER PROCESS

Post-delivery inspection is an inspection by the store inspectorate team to be conducted in the presence of a supplier's representative at purchaser-designated Stores after receipt. The supplier schedules this inspection. The supplier should bear all costs of repairing or replacing any defects/damages discovered during the inspection. It is a way of ensuring accountability and preventing the person purchasing goods from having sub-standard or damaged ones.

6. FINDINGS OF THE STUDY

6.1. RESULTS

Almost all post-contract award and delivery E-procurement stages experienced significant glitches that resulted in abnormal delays, revenue losses, and a bad reputation.

6.2. DESIGN APPROVAL PROCESS

Suppliers often provide full specification sets and drawings for approval earlier. If the inexpert approval committee approves those. Sometimes these documents become invalid and that occurs either after production has started or potentially even delivered.

6.3. DETECTION COMMITTEE BY THE INEXPERIENCED

Inspection committees need more experience during production inspections. Lack of experience can lead to unnoticed defects or deviations from standards, which affect the final product manufacturing and delivery process. This suggests the importance of having qualified and experienced inspection personnel.

6.4. CHALLENGES OF LONG-DISTANCE COMMUNICATION

Sourcing overseas significantly checks their ability to remedy problems that turn up in post-delivery inspections. It could delay discovering solutions and fixing things.

6.5. LAGGING EFFECTS AND PROJECT LAGS

Late discovery of defects during post-delivery inspection leads to delays that ultimately affect other phases and timelines in the overall project, leading to its complete itinerary.

6.6. FINANCIAL LOSSES

The longer it takes to address the problems that come up after the goods are despatched, the harder that could be for suppliers because of the extra financial loss on production loans through higher bank interest.

6.7. LIQUIDITY DAMAGE, PENALTIES

Buyer penalties for late delivery hit the bottom line of producers harder than anywhere else. It goes to show the importance of maintaining delivery schedules and managing any potential delays in advance.

7. RECOMMENDATIONS

Following the analysis of the procurement process, several recommendations are discussed for improving organizational performance and efficiency;

7.1. DESIGNATION OF SUBCOMMITTEES

The creation of special committees for specific short-term technology procurements is essential. The technical specifications of these committees should be finalized before an RFT/RFQ source that allows for high expert checking of technical requirements, which in turn reduces any errors or left-field requirements.

7.2. A STANDARDIZED TECHNICAL ASSESSMENT

Purchasers should have a uniform template for technical specification evaluation so that they can analyze every small piece of tech in the same way possible. Good pre-bid meetings are critical to defining needs and minimizing misinterpretation leading to wrong technical proposals.

7.3. SIMPLIFICATION OF VALIDATION IN PROCUREMENT

A phase should be implemented to reduce the delays and improve efficiency while completely removing this procurement approval process. Suppose a system cannot be fully installed (e.g. due to the special requirements for approval points). In that case, an approval-related process at the system level must be ensured, causing the revocation of any unnecessarily obsolete items in the Approved State only via own-making.

7.4. REAL-TIME MATERIAL/SERVICE MASTER DATA UPDATE

It is always advisable to update the material master data in real-time, especially if it happens before Purchase Requisition creation or conversion to Purchase Order which ensures data quality and minimizes conflicts. Prompt Goods Receipt data upload to the system is also essential for real-time inventory management.

7.5. PRE-NEGOTIATION MEETINGS

This process allows them to create individual, pre-negotiation agendas that guide and steer the conversation (and therefore focus attention) towards a successful resolution in which both sides are winners.

The aim is to streamline, improve transparency, and increase effectiveness in the e-tendering process to create better procurement scenarios.

8. CONCLUSIONS

This review of the online tendering process illustrated its growing importance in modern-day procurement. Tendering allows a "level playing field" in the awarding of contracts so that no supplier has a preferential advantage and all bidders have equal opportunity to compare their bids before decisions are made. The Fit-for-Works applications include procurement, professional services hiring, and resource allocation with an emphasis on the construction industry.

The proliferation of the internet and information technology has accelerated the utilization of e-procurement, thereby leading to more transactions being processed online. Advantages of Shifting to Digital Modes This transformation into the electronic method comes with many benefits, like improved efficacy and transparency. In any case, in a world where e-tendering has increasingly become the norm internationally, it is crucial to have international standards that ensure interoperability and uniformity. Additional work and cooperation are required to establish, plan for, and enforce these norms. This will promote equity among enterprises, reduce uncertainty, and provide for the seamless awarding of contracts across borders. It shall further help in the effective implementation of transparency and integrity in the e-tendering process by bringing standardized procedures for bid submission, evaluation, and award.

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