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Industry Briefing Paper

Electronic Tendering

Guidelines and Recommendations for Successful Implementation and Uptake

“The successful implementation and uptake of e-tendering systems and processes requires careful attention to the needs of the system and the concerns and requirements of the various stakeholders.”

This publication, summarising outcomes of an investigation into eTendering as a part of a CRC Construction Innovation research project, presents guidelines and recommendations to be considered when implementing eTendering systems, procedures and policies.

BACKGROUND

Decades of international construction industry reports reinforce poor communication, information transmission; coordination; and teamwork issues are the cause of countless performance problems in the construction industry. Failure to achieve significant improvements in what are well-identified issues can be linked to the hitherto limited capacity to conceptualise and manage the very complex dynamics in project processes throughout the project's life cycle. Debatably, today's industries, businesses and personal worlds are dominated by a wide range of technologies and e-activities.

Yet, the success of any profession is described as going beyond simply exchanging electronic information. Successful implementation of information and communication technology and innovative e-solutions, such as electronic tendering (eTender) requires careful consideration.

There is a considerable exchange of information between various parties during a tendering process, where accuracy and efficiency of documentation is critical. Traditionally this process is either paper-based (involving large volumes of supporting tender documentation), or via a number of stand-alone, non-compatible computer systems, usually costly to both the client and contractor. As such, having a standard electronic exchange format that allows all parties involved in an electronic tender process to access one system only via the Internet, saves both time and money, eliminates transcription errors and increases speed of bid analysis (The Construction Confederation 2001).

e-Tendering, in its simplest form, is described as the electronic publishing, communicating, accessing, receiving and submitting of all tender related information and documentation via the internet, thereby replacing the traditional paper-based tender processes, and achieving a more efficient and effective business process for all parties involved. Although most of the e-Tender websites maintain their tendering processes and capabilities are “electronic”, most systems vary from being reasonably advanced to more basic electronic tender notification and archiving services for various industry sectors.

Research indicates the efficiency of an e-Tender process is well supported nationally and internationally. Government and industry participants generally agree that the implementation of an automated eTendering system enhances the overall quality, timeliness and cost-effectiveness of a tender process, and provides a more streamlined method of receiving, managing, and submitting tender documents than the traditional paper-based process.

SUMMARY OF RECOMMENDATIONS

The following tables provide recommendations and guidelines to the development, implementation and operation of successful eTendering systems and are based on industry-led research into eTendering together with an examination of numerous government and commercial eTender systems.

Specifically, recommendations relating to the following areas of concern are provided:

1. Core Requirements
2. User-Specific Requirements
3. Security
4. Legal
5. eTender System Network
6. Document Management
7. Information and eTender Risks
8. Implementation
9. Education and Training

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Core Requirements & Considerations

1. Distribute all tender documentation via a secure web-based tender system – a paperless system.
2. Clients should be able to upload a notice and/or invitation to tender onto the system.
3. Notifications should be sent out electronically (usually via email) for suppliers to download and respond to electronically.
4. Updates and queries should be exchanged through the same eTender system during the tender period.
5. The client should only be able to access the tenders after tender close.
6. All tender related information should be held in a central database, which should be easily searchable and fully audited, with all activities recorded.
7. It is essential that tender documents can be read or submitted only by authorised parties.
8. Users of the eTender system are to be properly identified and registered via controlled access.
 - Each tenderer is to be an eTender system member - registered in a central database.
 - Data is to be encrypted and users authenticated by means such as digital signatures, electronic certificates or smartcards.
 - Users are to have a unique username and password to confirm their eligibility to participate in the eTender system
9. The eTender system should ensure that only “monitored” or “authorised” alterations can be made to any tender.
10. The tenderer should be able to amend the bid online at any stage up to tender close.
11. The eTender system may also include features such as a database of service providers with spreadsheet-based pricing schedules, which can make it easier for a potential tenderer to electronically prepare and analyse a tender.
12. Back-up procedures for eTender documents are essential. Routine archiving should take place at appropriate intervals.
13. Consider the possibility of allowing tenderers the option of submitting a hard copy tender.

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User-Specific Requirements & Considerations

1. eTender systems must suit their intended audience.
 - Does the system just suit large companies or are SME's catered for?
 - Smaller projects (for example, minor works, refurbishing and alterations) are usually undertaken by smaller contractors with limited ICT infrastructure.
2. The eTender system must be flexible enough to account for project-to-project and region-to-region specifics.
3. An eTender system that requires tenderers to submit a tender electronically should address timing and accuracy issues that allow tenderers to "hold out" for subcontractors to submit last minute prices/quotes.
4. An eTender system must allow tenderers to receive all tender documents electronically – then "seamlessly" have the capability to forward relevant documents to printers, suppliers and subcontractors as appropriate.
5. An eTender system must convincingly reduce the need, cost and time spent in having to print, bind, and courier tender documents.
6. An eTender system must effortlessly, professionally and securely manage and record all tender documents within the system.
7. An eTender system must "encourage" trades / subcontractors to upgrade their existing and/or invest in new hardware and software to take advantage of the eTender process.
8. eTender portals should:
 - Be professionally developed and displayed.
 - Be presented in a logical, clear and user-friendly format.
 - Have an effective yet easy to use security access protocol in place.
 - Retain familiarity by ensuring that portals essentially unchanged – limit changing the setup / format of the portal.
 - Have the ability to review all tender documents on the system before actually submitting them.
9. Users must have appropriate access to professional assistance:
 - On-line "help files", "tutorials" and "start-up guides".
 - "Help Desk" style of support available by phone and/or online chat.
 - An administrator may be made available (by e-mail or telephone) to assist users with specific queries regarding the tender.

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Security Related Requirements & Considerations

1. There is to be a nominated, continuing, primary email contact within each tendering firm on the central database – to which other e-mail contacts can be added or specified by the firm.
2. The eTender system should routinely notify the primary email contact whenever a secondary user is detected accessing eTender information.
3. Each eTender system username and password is to be specific for that Tender and a "one-off" for an individual firm.
4. For audit trail purposes, logging of all user access to an eTender system must be available for perusal for audit purposes.

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Legal Requirements & Considerations

1. The successful implementation of an eTendering process must be compatible with the current legal status regarding electronic transmissions, use of electronic signatures, etc.
2. Authenticity – what is the source of the communication and does it come from the apparent author?
3. Integrity – was the communication received the same as that sent or has it been altered either in transmission, receipt or storage?
4. Confidentiality – is the disclosure of and access to the information contained in the communication confidential?
5. Matters of evidence – does the communication meet current evidentiary requirements for courts of law?
6. Matters of jurisdiction – the electronic environment has no physical boundaries, unlike the physical or geographical boundaries of an individual state or country. Which State's or countries laws will govern legal disputes?
7. Ensure appropriate legal policies and processes are developed to deal with extenuating circumstances pertaining to the electronic submission of final tenders.
 - Policies and procedures should be established to allow the extension of the tender close period should the eTender system become unavailable for some reason at a key period in the Tender process.
 - Preventative and/or responsive actions that will be taken, for example, when an end user's own Internet Server fails, preventing a tender being submitted on time.

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eTender System Network
Requirements & Considerations

1. eTender systems can utilise commercialised ICT service providers as their Internet service and network provider – an in-house or propriety system is not essential.
2. eTender system administrators are to ensure tenders released and received via an eTender system do not cause any upload or download transmission bottlenecks at peak times.
 - Tenderers may lodge documents in supporting or in addition to the Tender and that the size of these accompanying attachments is likely to have some influence on the speed of transmission.
3. To ensure minimal downtime should one server fail for any reason, the eTender system should be housed on “dual, mirrored server” hardware.

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Information and eTender
Risks

1. Information posted on the eTender system as “pure information”, although exposed to minimum levels of risk, sufficient attention must be given to its contents – that is, truth, accuracy, not misleading or defamatory, etc.
2. Where the eTender system claims to have tender related information that tenderers need to rely on and perhaps download, it is essential that the completeness and accuracy of the information is verified.
 - The inclusion of a ‘non-reliance’ exclusion clause may also be necessary.
3. A fully interactive eTender system, where tenderers both receive an invitation to tender, and reply with a tender bid electronically represents maximum risk in relation to the veracity of information supplied and received.
 - Security of information and integrity of the eTender system is of paramount importance. Here, legally binding and enforceable contracts may be formed electronically, leaving little room for error in receiving, sending, or storing the information.

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Implementation
Recommendations and Considerations

1. An eTender system must be robust and secure.
 - Instigate an enhanced security policy and perform regular security and system “health checks”.
2. Ensure confidential information remains confidential.
 - Instil heightened security awareness within individuals – no email account sharing, no username or password sharing, etc.
3. Clarify certain ‘grey areas’ regarding timing of electronic tender documents by allowing the eTender system to automatically generate and archive dispatch and receipt times of electronically distributed/submitted documents.
4. Provide access to advanced capabilities within the system, for example:
 - Allowing one to compare data from project to project in order to view relative prices and timely decision-making.
 - Allowing the reuse of standard information of regular tenderers, such as pre-qualification documents and information of a regular pool of tenderers.
5. Tender terms, conditions, application forms, and software installation procedures (if applicable) should be “user-friendly”.
6. Develop policy and procedure to deal with the liability for lost or corrupted data.
7. Ensure servers are well protected and that fallback procedures are in place should the eTender service become unavailable.
8. Ensure that firewalls and other security-related features do not restrict the usability of the eTender system.
9. An eTender system's levels of security and availability/reliability are to be in line with commercial expectations.
 - The development of, for example, a whole-of-government electronic marketplace system (based largely on an eTender ‘engine’) should also ensure that sufficient IT resources are made available to promote rapid on-going development and deployment.

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Training and Education

Requirements & Considerations

- As an eTender system becomes more widely used and its accessibility permeates through to the smaller firms, administrators need to:
 - Be confident in dealing with issues relating to the education and training of potential eTender users.
 - Provide technical assistance.
 - Where deemed necessary, let commercial entrepreneurs take up the training and assistance opportunity.
- Individual – due to the increasing ‘electronic integration’ of construction processes, industry participants have no choice but to re-skill with an emphasis on electronic and internet-enabled technologies.
- Corporate – organisations must become “learning” organisations to assist the re-skilling of its workforce and to capitalise on the rapidly emerging technologies.
- Education sector – there is a significant role for tertiary education to develop and support the understanding of how to accept, evaluate and implement technological change and innovation.

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Document Management

Requirements & Considerations

- Architectural drawings and detailed Computer Aided Drafting (CAD) plans necessary to supplement the textual information for a Tender should be converted to suitable formats recognizing the need for interoperability, appropriate upload/download speeds, and security of document content.
- Administrators should operate under the principle that the information held on an eTender system is the definitive set of documentation for each Tender – security, accuracy and non-corruptibility of information content is paramount.
- If alterations to the Tender are found necessary, then the original eTender document version is not to be amended.
 - An addendum or full (amended) document is to be reissued, users are to be formally notified of the issue of such an Addendum, and are asked to acknowledge the receipt of any such Addendum.

Further Information:

Further detail on the recommendations and guidelines can be found in report 2001-008-C-07 “Electronic Tendering: An Industry Perspective” and 2001-008-C-09 “Recommendations and Guidelines: To help Improve ICT Integration within Today’s AEC Industry” from the CRC Construction Innovation Project 2001-008-C “Project Team Integration: Communication, Coordination and Decision Support”

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