Electronic biddings for public acquisitions of goods, services and work: Romanian approach

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Abstract: E-Procurement defines the automation of an organization’s procurement processes using web-based applications. E-procurement applications consolidate the paper-based catalogs of multiple vendors by digitizing product information into a single, one-stop shopping source for direct and indirect goods and services. The most common e-procurement model involves a host or intermediary service provider linking buyers and sellers in an interconnected supply chain using a web based e-procurement application. This paper analyzes how the Romanian electronic public acquisition system meets the requirements of the informational society and the European integration.

Keywords: Procurement, buyer, supplier, Internet, Web applications, market.

1 Introduction
Electronic bidding is one of the new forms of activity belonging to the informational society, built on the spectacular development of the internet in the past decades. In the context of the information and communication technology invading all spheres of human activity, we speak about digitization of economic processes, virtualization of activities and changes in the nature of work. We witness methodological parameterization and project development based on the network technologies in every field of activity: economy, technology, culture, education, society etc. Thus, in full blown 21st century we speak more and more about e-learning, e-commerce, e-government, e-business, e-services, e-medicine, ..., e-everything. This is why we have to approach e-biddings and highlight the economical mechanisms behind it, the pros and cons, with exemplification on Romanian solution.

2 Ideal electronic bidding system
Total electronic bidding involves the automation of resource acquisition using web based applications. Unlike resource planning systems (ERP – Enterprise Resource Planning) that automate internal processes, e-Procurement allows different buyers and sellers to meet, interact and execute transactions over the internet.

In an ideal e-Procurement system, fully web-enabled, each step takes place in the electronic world. From creation and posting of offer requests to goods reception and payment, every transaction data is processed by computers, thus reducing the time and cost of procurement, which leads to increased efficiency of the organization. E-Procurement applications use product catalogues from various providers, unified into a single source of offers of both goods and services. Usually e-Procurement applications are transparent for the user. They are incorporated in the business processes and information systems of both the buyers and sellers, which leads to reduced cost of processing and cataloguing and better accessibility for customers. E-Procurement links customers and providers into a dynamic virtual market, based on economic competition principles (figure 1).

2.1. How does e-Procurement work?
The most largely used e-Procurement model involves an intermediary that connects the buyer’s demand and provider’s offer, using a network application. The intermediary manages the transactions, facilitates the communication and aggregates and
updates the catalogue of goods and services, creating the general infrastructure of a virtual market. From this network, the buyers may compare products of different providers, browsing a single electronic catalogue. They may check the price and availability in real time and launch an order. Once the order is approved (by electronic means, too), it is sent to the provider via a web portal. The same portal allows the providers to update the order status in real time. The buyer may check the order status from his own computer. Billing and payment authorization go through the same portal. Beside automating deliveries, the e-Procurement applications improve the flow of commercial operations and increase the number of strategic initiatives. Thus e-Procurement allows access to global providers real time communication between customer and provider and electronic payment of goods and services. Also, e-Procurement has spawned new business models like: provider organized biddings to sell excess merchandise, reverse biddings (where providers compete for a customer request) and commercial exchanges (both providers and customers bid the other party business (see table 1).

<table>
<thead>
<tr>
<th>Service type</th>
<th>Description</th>
<th>Price</th>
<th>Buyer’s advantages</th>
<th>Seller’s advantages</th>
<th>Income source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalogue</td>
<td>Instant purchase. One source of goods and services presented to many customers</td>
<td>Static, predetermined. Allows agreements between buyer and seller</td>
<td>Reduced acquisition costs, increased offer base, simplified comparison of goods and services.</td>
<td>Reduced marketing costs, opens new markets and income sources</td>
<td>Percentage of transaction added value</td>
</tr>
<tr>
<td>Bidding</td>
<td>Centralized market for unique products: discounted products, stock surplus etc.</td>
<td>May favor the buyer or the seller, depending on the bidding type.</td>
<td>Larger selection base for products.</td>
<td>Competitive bidding and a higher price.</td>
<td>Percentage of transaction added value.</td>
</tr>
<tr>
<td>Exchange</td>
<td>-</td>
<td>Dynamic priced, depending on the bidding</td>
<td>Covers immediate needs</td>
<td>Sells overproduction at market price.</td>
<td>Percentage of transaction added value.</td>
</tr>
<tr>
<td>Telecommunity</td>
<td>Special market for sellers and buyers</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Membership taxes, sponsors</td>
</tr>
</tbody>
</table>

2.2. Main components of an e-Procurement system

Every e-Procurement system has some similar components that must be analyzed in order to ensure the functioning of the whole system: goods and services catalogues, e-Procurement processes, user management, establishing relations between buyers and sellers, payment management, price setting, data transmission and system maintenance.

Catalogue. The core of every e-Procurement system is an electronic catalogue. Similar to the traditional one, the electronic catalogue contains detailed information about products and services offered for sale. Providers personify the aspect and content to address a certain buyer segment (customer oriented marketing). The content is imported into a database which in turn integrated into a web site by the e-Procurement application. Catalogue management is performed though data import or aggregation or contracting a specialized service form a profile management company. Content providers offer the following services: catalogue data conversion in an uniform format and language; aggregation of data from several providers in a single catalogue; publishing and management of the catalogue. Once the catalogue is created, various cataloging strategies are implemented to access the content. Strategies include the centralized catalogue model (where all data is stored in a central location), the distributed catalogue model (where data is distributed in multiple locations – sites) and direct presentation model (where sellers present their offer directly to the buyers). There are three types of catalogues for different needs of the buyers: product catalogues,
that compile data about tangible products (office supplies, pharmacy products, kitchen products etc.); service catalogues, that present information about intangible professional services (cleaning services, replacement personnel, administration etc.); specific catalogues, that present information about chemical, mineral or paper products.

e-Procurement processes. Beside the creation of an electronic catalogue, procurement processes must be adapted to the electronic environment. Processes include: request management, real time tracking, filling online forms, automatic billing, commercial transaction and analyze and reporting instruments. Also, they must offer personalization and customization possibilities in order to fit business partners’ requirements. Usually, a successful e-Procurement application will rely on an open model, made up of customizable modules (see figure 2).

![Fig. 2. Components of an e-Procurement process](image)

Establishment of relations between buyers and seller. This component has two sides: buyer-seller relation management and price management. Buyers and sellers are associated based on their previous experience (if there is any) or present needs of the buyers. They may purchase the products based on existing contracts or select them from a personalized catalogue. Price lists also may be personalized for a buyer or a group of buyers. For example: the price may be computed through a filter that dynamically awards certain discounts. Also, a special filter may be applied for a buyer group.

Payment management. Income from the e-Procurement systems is usually based on a transaction tax. A payment management system will automatically compute taxes and send bills to buyers and/or sellers. Providers may use the payment management system to compute taxes for each order or for the distribution of operating costs between several orders. These functions must be closely connected with the supplier’s financial system in order to generate the invoices automatically.

Price setting. Dynamic price setting allows buyers to negotiate the best deals and providers to eliminate the surplus stock. There are two possibilities to establish the price: dynamic price and fixed price. Dynamic price setting allows buyers and sellers on the virtual market to exchange goods and services using the market price instead of catalogue price. Biddings and exchanges are examples of processes with dynamic prices. Fixed prices start with catalogue prices which are adapted for a certain client or group of clients.

Data transmission. Data transmission over the internet has two sides: carrying the message and security of the message. There are instruments that transmit data or messages between sellers and buyers. Using them, transactions are sent overt the internet as “messages” and they are integrated in the financial system of the user (seller or buyer). The most important feature of message carrying tools is that they allow real time communication between partners. Security is also a big issue. Ensuring the security and integrity of the data in a message is a guarantee that only the legitimate user will see that data, as confidentiality is an important aspect of e-Procurement systems.

System administration. E-procurement system administration involves permanent tracking of its configuration and load, monitoring response times,
transaction sources and the way the system performs. These data must be analyzed in order to fine tune the system and discover the patterns of business evolution. An inappropriate design leads to low performance parameters, lack of scalability, security holes and finally user frustration with the system.

3 Romanian solution for public acquisition electronic bidding
As previously stated in the presentation of an ideal electronic bidding system, it involves a specific component: payment management. Except this one, we can say Romania has a very good electronic bidding system, which will be proven in the following pages.

3.1 Short history
In order to implement the informational society in Romania, on the direction of stimulation of electronic businesses, by the end of the ‘90s a law package was adopted to establish the national policy concerning the new forms of work and activity. The main issues are electronic signature, digital certificates, electronic notary, unique electronic counter and last but not least, electronic bidding. In spite of some hardships caused by the national technological infrastructure, on March 4th 2002 the first version of the electronic bidding system was launched. In order to stimulate its use, lawmakers have forced all government or otherwise national budget funded institutions to use this system to purchase a number of products (paper, printer cartridges, office supplies, detergents, foods etc.). This system had its advantages and drawbacks. The working mechanism was similar to the ideal system previously presented, except the payment management component.

The advantages include: free access for every company (that asks for access), the possibility to establish limit prices for biddings, the possibility to dynamically ask for the next winner, higher transparency during the acquisition of those products, fixed periods for biddings and the use of bank execution guarantee letters.

The main drawback was the lack of quality check and no way to enforce the obligations assumed when bidding. Also, there were problems with the infrastructure that made the system unavailable at times. Even more, since the range of products was limited, the goal of public acquisition transparency was far from reach.

3.2 Present day system
In 2006 a new version was launched: www.elicitatie.ro (see figure 3). This was based on the new laws and allows all types of public acquisition procedures, according to Romanian law, aligned with EU regulations. Thus, an institution may launch acquisition procedures like open bidding, offer requests or direct purchases. All there may only take place on-line (bidding since April 15th 2008) or as combination of on-line and off-line procedures. The institution that regulates and monitors the national the national policy on public acquisitions is The National Authority Regulating and Monitoring Public Procurement – NARMPP.

The National Authority for Regulating and Monitoring Public Procurement (NARMPP) is a public institution, subordinated to the Government and was founded by the Government’s Emergency Ordinance no. 74/2005 approved with modifications by Law no. 111/2006, in the context of complying with the engagements assumed by Romania in the process of the accession to the European Union. The NARMPP has as fundamental role the conception, promotion and implementation of the public procurement policy and fulfils the following functions: Drafting the strategy in the field of public procurement, according to the requirements of the acquis; Regulation of the procedures on awarding the public procurement contracts; Monitoring, analysis, evaluation and supervision of awarding process of public procurement contracts; Representation of Romania within the consultative committees, working parties and communication networks, organized by the European institutions; Methodological counseling of the contracting authorities  in the awarding process of public procurement contracts, with supportive role in the correct application of the legislation in this field; Initiation/sustainment of projects or training actions of the personnel involved in the specific activities of public procurement, with supportive role in developing the administrative capacity for the implementation of the legislation at the level of the contracting authorities (www.anrmap.ro).
Participants to the electronic bidding process may be contracting authorities and companies as offerers. The Electronic System for Public Acquisition (SEAP) is charged with the management of the transactions through electronic biddings. The Electronic System for Public Acquisitions (SEAP) is a Romanian governmental system used for conducting public procurement by electronic means. [www.e-licitatie.ro](http://www.e-licitatie.ro) (including all its subdomains) is the official Internet site of the Electronic System for Public Acquisitions operated by General Inspectorate for Communications and Information Technology (IGCTI). SEAP is governed by the applicable Romanian and international laws and regulations. IGCTI, as the operator of the electronic system, is a juridical entity of public law which, in compliance with the legislation in force, is mandated to assure the technical support for the electronic public procurement procedures. IGCTI establishes the specific operational framework. This system ensures the transparency of the public acquisition processes and free access for the public to information about this kind of acquisition, whether they are registered users or not (see figure 4).
The success of this system is visible in the official statistics. Thus, in March 2008 SEAP had over 9700 registered contracting authorities and over 9900 offered companies. The value of electronic transactions is above 40 million Euros (see table 2).

<table>
<thead>
<tr>
<th>Table 2. Statistics of the Romanian public acquisition electronic system</th>
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</thead>
<tbody>
<tr>
<td>Registered Contracting Authorities/Suppliers:</td>
</tr>
<tr>
<td>Published Notices/Request For Quotation Invitations:</td>
</tr>
<tr>
<td>Notices Sent To OJEU:</td>
</tr>
<tr>
<td>Published Catalog Products:</td>
</tr>
<tr>
<td>Published Requests For Quotation/Direct Acquisitions:</td>
</tr>
<tr>
<td>Awarded Acquisitions Total:</td>
</tr>
</tbody>
</table>

4 Conclusions

Starting with the model of an ideal electronic bidding system and comparing with the components of the Romanian implementation, without going into technical details, we may say that Romanian SEAP is a strong system that allows all kind of acquisition procedures, according to European laws. The link with Europe is made through the Official Journal of the European Union, where SEAP automatically publishes the acquisition procedures above a certain value. This brings the transparency of the procedures to a higher level, allowing companies from other countries to participate in the biddings.

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