

E-procurement platforms in the French public sector

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Abstract

Public e-procurement is the use of electronic means for publishing, processing, exchanging and storing all the information related to institutional purchases in public organizations. It requires complex technological tools which must comply with legal and organizational constraints. We present in this article an analysis of French public purchase procedures and a state of the art concerning available platforms for public e-procurement in France. This analysis is the basis of a critical evaluation of the selected platforms.

1. Introduction

For several years, the development of information and communication technologies (ICT) triggered numerous mutations in all economic sectors. In this very dynamic context, public organizations try to take into account these evolutions and implement e-government applications. E-government is a general term describing the application of e-commerce principles to administrative procedures and the use of the Internet network to interconnect information systems of administrations, local authorities, enterprises and citizen's homes. The main objective is to improve public sector services and to assist in the transformation of governmental structures into fully cooperative and integrated service providers. E-government applications can be classified into several categories depending on the implicated actors: G2C when it is about exchanges between government and citizens; G2B to when it is about exchanges between government and enterprises and G2G to when it is about exchanges between governmental structures. A key feature of e-government G2B applications is moving the public sector's procurement processes to electronic platforms [1]. E-procurement means online purchasing of goods and services through electronic channels [3]. More specifically, it is the use of electronic means for publishing, processing, exchanging and storing all the information related to institutional purchases in public organisations.

Public e-procurement is an important stage in the e-government development, and economic stakes are probably considerable. Public orders in the European Union (EU) - orders of supplies, services and public

works - represented 16% of the European Union's GDP, or 1500 billions of euros in 2002 [5]. Its importance varies meaningfully according to the state member and can be located between 11% and 20% of the national GDP. In France, it represents about 10% of the GDP, or about 180 billions of euros per year [6]. The liberalisation of the EU public markets stimulated the competition, notably by facilitating the presence of candidates from other state members. It pushed lower prices paid by the public sector for their purchases.

Following the general trend of public services modernisation and administrative procedure simplification, public e-procurement has been introduced in France in 2001, and is in application since January 1st, 2005 for all public purchases beyond certain amounts. But the adoption of electronic means for public procurement is also a fundamental organizational stake since it permits the evolution of governmental procedures and a reduction in their length, a higher degree of procedures transparency, and the contribute to the emergence of an European market [5]. E-procurement main advantages for the purchaser (the public person) are multiple: reduced procedures delays and costs, better communication with the bidding candidates, more optimized competition (easier and wider access to bidding enterprises will result in cheaper prices), rationalized procedures and reduced risk of errors. For the seller (the enterprises), main advantages are improved access to information, simplified communication with the public person, reduction in offer costs and payment delays, and an improved security and confidentiality [2,3].

Public e-procurement marketplaces are similar to B2B marketplaces in the private sector; there is a certain gap between theory and practice. An electronic channel cannot easily replace a long term human and organisational relationship. Users are sometimes suspicious about electronic systems, and can not so easily have the same degree of trust as with manual procedures. The objective of this paper is to study public purchase procedures and to analyse and evaluate available public e-procurement systems in France.

In the second section of this paper, we define first the general setting of public procurement. In the third section, we present all types of public purchase procedures. In the fourth section, we review and evaluate the most used public e-procurement platforms in France.

2. Procedures for public e-procurement

In this section, we briefly present notions relative to the public order concept and a classification of all available types.

2. 1 Definition of a public order

A public order is a purchase transaction issued by a public organism. It is an exchange and an agreement contract between two parts; one is public whereas the other is private. It is issued by a public representative and is regulated by the law of public orders. It can be realized by a private institution, individual or corporative.

The notion of public order covers vast panoply of public order types. All economic domains are concerned: computing, telecommunication, restoration, office articles, furniture, car acquisition and renting, constructions, consulting, auditing, etc. There is however an important distinction between three categories of public orders: supply orders, service delivery orders and public work orders.

2. 2 Public procurement principles

According to the public orders regulating law (CMP, *Code des Marchés Publics*), the relationship between the two contracting parts concerned by a public order implies a contract signature and the transfer of a certain financial amount in accordance with certain rules. These rules are: the free access to all information related to public orders, equal processing of all received tenders and procedures transparency. The economically most advantageous offer will be selected. To be able to make the best choice, criteria will be defined according to the nature of the order, notably the technical value of the offer, its innovating characteristics, its cost of use, execution delay, aesthetic and functional qualities, after-sales service and technical support, etc. These selection criteria are weighed and are clearly defined in the constituent part of the public order. They are defined in the public call to participation (AAPC, *Avis d'Appel Public à la Concurrence*), in the file for consultation by the enterprises (DCE, *Dossier de Consultation des Entreprises*), the act of engagement, the specifications of the order, etc. Thus, the best classified offer will be officially selected after production by the concerned enterprise of all documents and justifications necessary to the assignment.

3. Classification of public procurement procedures

To express his need, the public order issuer has two logics of purchase. For orders below the threshold fixed by the CMP, he can opt for an adapted procedure known

as the (MAPA, *Marché A Procédure Adaptée*) procedure. Beyond the threshold, he must resort inevitably to a formalized procedure which is more secured legally. Thus, the choice of the ordering procedure depends on the amount of the purchase and on the nature of the ordered item. Some procedures are for example reserved for software requirement engineering missions while others for the execution of public works, etc.

3. 1 Adapted procedures (MAPA)

The adapted procedure is a procedure in which the person responsible for the order (PRM, *Personne Responsable du Marché*) according to the nature of the purchase and its features has a total liberty in fixing the specificities of the order and the modes of advertisement. It can concern all types of purchase. However, the recourse to this procedure is absolutely forbidden over the threshold.

In an adapted procedure, the purchaser disposes of certain autonomy in fixing of the order modes, but it is by no means a free procedure. Indeed, he must be extremely heedful to respect the constraints imposed by the law, the penal risk is higher in this type of procedure.

3. 2. Formalized procedures

Beyond the quoted threshold, the formalized procedure becomes mandatory for the public purchaser. There are 5 different versions of the formalized procedure:

- **The call for tenders:** According to the law regulating public orders, a call for tenders is "the procedure by which the public person chooses the most economically advantageous offer, without negotiations, on the basis of objective criteria previously brought to the attention of the candidates ". The call for tenders can be open or restricted. A call is considered opened when all candidates can put back an offer. It is called restricted when only selected candidates can put back some offers. In all cases, a call for tenders is systematically preceded by a public call for participation. The final choice will be made by the person responsible for the order, after taking into account opinion of the commission for call for tenders.

- **The negotiated procedure:** According to the public orders regulating law, a negotiated procedure is a "procedure by which the public person chooses the holder of the order after discussing with potential candidates and negotiating the conditions of the order with one or several among them". The negotiated procedure can be passed with or without previous advertisement and with or without call for tenders. The most advantageous offer will be selected on the basis of a proposal made by a specialised commission.

- **The procedure of competitive dialogue:** The public orders regulating law specifies that the public purchaser can resort to this procedure when it is impossible for him to define the technical means which can satisfy the order requirement or when he is not able to define the legal or the financial specification of a project. According to this procedure, the public purchaser specifies a functional program including the desired results or the requirements to satisfy. This specification will then be subject to proposals from the candidate enterprises. Preceded by a public call to participation, this procedure is conducted through a dialogue between the purchaser and the retained candidates. The candidates make proposals based on requirements specification. After ordering the offers, the most advantageous one will be selected by the public purchaser with the help of a specialised commission.

- **The procedure of design & implementation:** According to the public orders regulating law, the public purchaser can resort to this type of procedure only if the order is about the design of a project and on the realisation of public works. Therefore, the only orders passed according to this procedure are public works orders. After selecting a list of potential candidates by a specific jury, the person responsible for the order assigns it to the most advantageous offer.

- **The contest procedure:** According to the public orders regulating law, the contest is the procedure by which the public purchaser chooses a candidate based on a jury's opinion in a prize-winning contest. This type of procedure is generally used in the domain of regional development, urbanism, architecture and engineering or data processing. Concretely, it is about selecting the best technical design offered. The procedure of contest can be open to all candidates or can be restrict to some selected candidates.

3. Electronic platforms for public procurement

Since January 1st 2005, all public sector organizations in France must provide means to accept electronic offers to all their public orders procedures. To implement this dematerialization, the public institution must have resort to an electronic platform (web based in the majority of the cases) supporting the different types publics orders, and automating the different procedures categories. These platforms are similar to e-commerce electronic marketplaces [3]. However, while these systems are transaction-oriented (online ordering, payment and invoicing), public e-procurement platforms are more information-oriented. Their objective is to provide to public institutions secured tools to broadcast public calls for participations and for tenders. And to provide to enterprises secured tools to withdraw orders descriptions (the DCE documents) and to deposit their candidacies and their offers (figure 1). The platform

must also provide the possibility for the public person to store in a secured and controlled manner all the offers together with a sophisticated mechanism to open and study them for the final selection process.

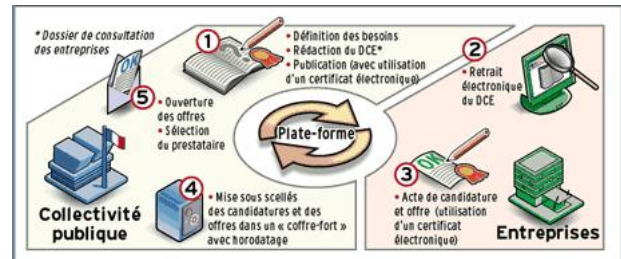


Figure 1: Main steps in an electronic call for tender

As lawmakers did neither define a specific nor a generic solution for supporting this electronic process, there have been various reactions to the legal obligation.

Certain big size public organizations (ministries, regional councils, local authorities, central administrations) federated their effort and deployed sophisticated electronic platforms. Others, like certain town halls, are relying on platforms proposed by internet service providers. We have studied all available electronic platforms which support the public procurement process in France [4]. The study is based on online product documentation, and complementary information available in various websites (zdnet, 01informatique, etc.). We have also gathered some precious data through tests and trials achieved directly on the platform (when it was possible). We present here only five platforms, those that seem to be the most significant.

1. www.ixarm.fr: this platform is specifically designed for the DGA (General Delegation of the Army), and is devoted to the purchase of the weapons, ammunition and weaponries. It was developed by France Télécoms, E-Business and Cape Gemini Ernst & Young using open software technologies (SPIPE, Php/MySQL).



Figure 2: home screen of the ixarm platform

Its main characteristics are the support of all types of public orders (supplies, services and public works) as well as all categories of public order procedures (section 2), an elaborated editorial content, a mechanism for reverse tenders as well as several innovating functionalities (such as the online construction of an enterprise candidacy file valid for a whole year).

2. www.achats.defense.gouv.fr: This platform for all other purchases of the ministry of the defence also developed with open source software (Spice, Apache, Php/MySQL).



Figure 3: home screen of the **achats.defense** platform

Further, its most important characteristics are the support of all types and categories of public orders, an elaborated editorial content, and the integration of a mechanism for reverse tenders together with a complete suppliers' directory.

3. www.achatpublic.com: this platform has been adopted by all ministries.



Figure 4: home screen of the **achatpublic** platform

It has been developed using the J2EE standard (JSP + Servlets) by the UGAP (general union for public

purchases, *Union Générale des Achats Publiques*) in collaboration with the CDC (governmental treasure agency, *Caisse Dépôts et Consignation*), France Telecom, Dexia and the Monitor. Its most important characteristics are the support of all types and categories of public orders, an elaborated editorial content available for free, email support and chat mechanisms on predefined topics.

4. www.e-bourgogne.com: "E-Bourgogne Marchés Publics" is an electronic platform specifically developed for the region of Bourgogne using the Php/MySQL tools. Its most important characteristics are the support of all types and categories of public orders, an elaborated editorial content (news, newsletter, and events), a simple and intuitive interface, together with some elementary collaborative functionalities (email, document base, forum).



Figure 5: home screen of the **e-bourgogne** platform

5. www.adema-mp.com: "Adema Public Orders" is a customizable platform developed by the Adesium/Comètris society.



Figure 6: home screen of the **Adesium** platform

The Adesium platform is actually used by some local authorities (Val d'Orge, Ville d'Orsay) and regional councils (Essone, Bretagne). Its most important characteristics are the support all types and categories of public orders, a simple and intuitive graphic interface as well as an online help and a hotline. It is developed using the J2EE standard (JSP + Servlets)

5. Evaluation

Table 1 presents a critical assessment of the presented platforms:

Table 1: comparison of e-procurement platforms

	Criteria									
	Support for all types of public orders	Support the whole public order procedure	Support for reverse bidding	Editorial content (news, FAQ, ...)	Ergonomics and simplicity of the graphic interface	Security (digital certificate and digital signature)	Collaborative tools available (chat, e-mail, shared agenda, ...)	Online help	Possibility to use for downloading call for participations and call for tenders	Possibility to use for sending proposals and replies to call for tenders
1	++	++	++	++	++	++		++	++	+
2	++	++	++	++	+	++		++	++	+
3	++	++	++	++	+	++	+	++	++	+
4	++	++		++	++	++	+	++	++	+
5	++	++			++	++		++	?	?

On the basis of this comparative study, the following can be concluded:

- Even if there are many different types of public orders (depending on the nature of the ordered product and on the total amount of the order), they seem to be supported by most of the studied platforms.

- Interfaces are not always adequate and seem to not have been designed in collaboration with the users (buyer and seller side).

- Reverse bidding is not always supported, whereas getting the lowest price is often an important issue for public institutions.

- Main web technologies are present, but open source software seem to prevail.

- All studied platforms have been developed by external software providers.

- From the seller side point of view (companies trying to bid for an offer), it is very fastidious to use many different platforms (depending on the offering institution) as there is no general pattern or model for the e-procurement processes.

- Most studied platforms do not provide collaborative tools (chat, shared agenda, electronic mail, forum, etc.).

6. Conclusion

Public e-procurement is a strategic goal in the development of e-government applications in France and in the European Community [5,6]. We have studied in this paper public procurement procedures in France and evaluated electronic platform actually deployed to support the dematerialisation of the associated processes. The study shows that many solutions have been developed, but for the moment, there seem to be no technological standard and no general pattern for the supported processes. We are actually studying the usage perspective of public e-procurement through an online survey. Like some other authors [7], we tend to believe that the collaborative dimension is fundamental in an e-procurement process. Our future work will investigate the integration of electronic collaboration facilities into public e-procurement platforms.

5. References

- [1] Ch. Tonkin: "e-Procurement in the Public Sector: Story, Myth and Legend" working paper, Trinity College - University of Dublin, Ireland, 2003.
- [2] Canada Review Agency "What is e-procurement" (<http://www.cra-arc.gc.ca/agency/procurement/eprocurement-e.html>).
- [3] U. Parida, V. Parida: "E-Procurement: an Indian and Swedish perspective" Master thesis, Luleå University of Technology, Sweden, January 2005.
- [4] M.A. Sandi, "Etude des plateformes de dématérialisation des marchés publics en France" Research report, Département Systèmes d'Information, INT, December 2005.
- [5] European directives for public procurement.
- [6] F. Jubert, E. Montfort, R. Stakowski, *La e-administration, levier de la réforme de l'Etat*. Editions Dunod, 2005.
- [7] V. Wietrzyk, I. Wietrzyk, B. Grosky, "Web Based Electronic Marketplaces: Trading through Collaboration" 5th International Workshop on Web Based Collaboration, Proceedings 16th DEXA Conference (DEXA'05), pp. 616-620, IEEE Computer Society, 2005.