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An exploratory analysis of public procurement practices in Europe

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An exploratory analysis of public procurement practices in Europe

Gustavo Piga (Consip S.p.A.,
University of Rome "Tor Vergata")
and Matteo Zanza (Consip S.p.A.)

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Dear Reader,

by starting the publication of "Quaderni", Consip wishes to start spreading its experience and knowledge acquired in the field of e-procurement, of conduction of complex ICT organisational projects and of project management.
In carrying out these activities, our Company is constantly engaged in research, innovation and experimentation of new solutions that help to satisfy the needs of our customers, the Ministry of Economics and Finance (MEF) and the Public Administrations in general. Consip has become a cutting edge centre of competence in the national and international scenario on various topics, and in particular on auction theory and on technological innovation in the sector of public procurement.
To this end the activity of Consip's Research and Study Unit is fundamental, being constantly committed to the research and diffusion of knowledge, through a continuous series of meetings, workshops and seminars. The goal of these initiatives is to illustrate the results of the research, the theoretical and practical innovations in auction and e-procurement matters, thus combining the results of the Company activity.
The "Quaderni Consip" represents a new channel which contributes to the activities of our Research and Study Unit. This instrument is aimed at a vast, heterogeneous public, ranging from trade associations to the university world, from institutions in the media world, that is, all the entities that Consip deals with day by day.
Our company has the privilege and motivation to work for the Country, and for this very reason it means to give a contribution which, we trust our partners will confirm, goes well beyond carrying out the important activities it is called upon to perform on behalf of its sole shareholder, the MEF.
Consip wishes to provide a boost to the growth of knowledge and understanding for its stakeholders on all relevant issues, and in so doing to draw further knowledge and value from the debates and the discussions arising from this activity.
We had this idea in our mind when we conceived the "Quaderni", that represents a collection of documents, essays and academic works with a precise aim: to share with a wide audience the capital of studies which represent the synthesis of our daily activity - often innovative and always pragmatic - in the purchasing sector, in information technology activities and in the legal field.

Gentile Lettore,

con l'avvio della pubblicazione dei "Quaderni", Consip intende iniziare un percorso utile per diffondere le proprie esperienze e le conoscenze acquisite nell'ambito dell'e-procurement, della conduzione di complessi progetti organizzativi ICT e del project management.
Nell'espletamento delle sue attività, la nostra azienda è costantemente impegnata sul fronte della ricerca, dell'innovazione, della sperimentazione di nuove soluzioni utili a soddisfare le esigenze del suo cliente, il Ministero dell'Economia e delle Finanza (MEF) e della Pubblica Amministrazione in generale. In diversi ambiti Consip è divenuta un centro di competenze all'avanguardia nel panorama nazionale e anche internazionale, in particolar modo, per la teoria delle aste e l'innovazione tecnologica nel settore degli acquisti pubblici.
Fondamentale, in questo senso, è il lavoro dell'Ufficio Studi Consip, che è costantemente impegnato nell'attività di ricerca e nella diffusione delle conoscenze, anche attraverso una fitta serie di incontri, workshop, seminari. Lo scopo di tali iniziative è quello di illustrare i risultati delle ricerche, le novità teoriche e pratiche in materia di aste ed e-procurement, sintetizzando così i risultati dell'attività di tutta l'azienda.
I "Quaderni Consip" rappresentano un nuovo tassello che si aggiunge all'attività del nostro Ufficio Studi. Tale strumento si rivolge a un pubblico ampio ed eterogeneo che va dalle Associazioni Imprenditoriali al Mondo Universitario, dalle Istituzioni al Mondo dei Media, ovvero tutti i soggetti con i quali Consip quotidianamente si rapporta e collabora.
La nostra è un'azienda che ha il privilegio e lo stimolo di lavorare per il Paese e proprio per questo intende dare un contributo che, nelle intenzioni – saranno i nostri interlocutori, ci auguriamo, a confermarlo - vada anche oltre l'esecuzione delle pur importanti attività che è chiamata a svolgere per conto del proprio azionista unico, il MEF.
Consip vuole fornire uno stimolo alla crescita della conoscenza e alla sensibilizzazione degli interlocutori sulle tematiche di propria competenza, traendo ulteriore conoscenza e valore dai dibattiti e dai confronti che sarà capace di stimolare. Partendo da questa volontà è nata l'idea dei "Quaderni", che rappresentano una raccolta di documenti, saggi, lavori accademici con un preciso obiettivo: condividere con una platea più ampia quel patrimonio di studi che rappresenta la sintesi della propria attività quotidiana - spesso innovativa e sempre pragma-

We believe that greater diffusion of information can contribute to the understanding, among all the actors that interact everyday with Consip - the supply market, public administrations, the university world, etc.-, of the commitment, study and awareness of the problems that inspire every our initiative and allow for a better understanding of the objective of our activities.
In other words, through this initiative Consip, as a recognised Italian "centre of competence", wants to make available in the fields of its activity (e-procurement, project management of complex ICT projects) the wealth of knowledge it creates daily, through an approach aiming at a continuous improvement.
From the point of view of Corporate Social Responsibility , which Consip has adopted, this also means aiming at increasing the social repercussion of the effect of our activities and hence contributing to the distribution of an added value to the country in terms of knowledge.
Aware that knowledge is built "together" with open debates and ongoing dialogue, our ambition is to transform "Quaderni" into a significant occasion for discussion, becoming a reference point for the publication of contributions in these important sectors, where we are often the first to tackle - along with our partners, both customers and suppliers - new topics and new organisational models

Best Regards

Dott. Ferruccio Ferranti
CEO
Consip S.p.A.

Prof. Gustavo Piga
President
Consip S.p.A.

tica - nel settore degli Acquisti, nelle Attività informatiche e nell'ambito Legale. Crediamo che una maggiore diffusione delle informazioni possa contribuire a far comprendere ai soggetti che con Consip si rapportano quotidianamente - il Mercato della Fornitura, le Pubbliche Amministrazioni, il Mondo Universitario, etc. - l'impegno, lo studio e la consapevolezza dei problemi che animano ogni nostra iniziativa e a far capire meglio lo scopo della nostra attività.
In altre parole, anche grazie a questa iniziativa, Consip vuole mettere a disposizione, quale riconosciuto "centro di competenze" italiano, negli ambiti della propria attività - e-procurement, Project management di complessi progetti di ICT - il patrimonio di conoscenza che crea quotidianamente, attraverso un approccio che tende al miglioramento continuo.
In un'ottica di Responsabilità sociale d'impresa, che Consip ha fatto propria, questo significa anche tendere ad incrementare la ricaduta sociale dell'effetto delle nostre attività e quindi contribuire a distribuire un valore aggiunto al Paese sotto forma di conoscenza.
Consapevoli che la conoscenza si costruisce"insieme" con dibattiti aperti e confronti continui la nostra ambizione è quella di trasformare questi "Quaderni" in una significativa occasione di discussione, divenendo un punto di riferimento per la pubblicazione di contributi in questi importanti settori, ove talvolta affrontiamo per primi - insieme ai nostri Partner, sia clienti sia fornitori - nuove tematiche e nuovi modelli organizzativi.

Cordiali saluti

Dott. Ferruccio Ferranti
Amministratore Delegato e Direttore Generale
Consip S.p.A.

Prof. Gustavo Piga
Presidente
Consip S.p.A.

Indice

While this report draws on the inputs of the EU Public Procurement Learning Lab the authors bear full responsibility for the content of this paper, which is not to be considered as an official paper from any EU country.

Abstract

This paper presents some preliminary results of an exploratory analysis of public procurement practices in Europe. The analysis is realized collecting and processing data and information provided by detailed questionnaires sent to a selected group of organisations representing twenty-four European countries.

The Organisations selected are members of the "European Public Procurement Learning Lab", a laboratory launched by the Italian Department of Public Administration, jointly with the Italian Ministry of Economy and Finance.

Through the questionnaires we are able to handle information related to the governance of Organisations involved and about auction design and competition policies in tendering processes.

From data processing we provide a summary of practices, tendencies and policies followed by the European Institutions, which can be a first indicative benchmark for public procurement agencies.

1. EU Public Procurement Learning Lab - Task and Structure

Public procurement is becoming increasingly important within the European Union, its trend towards electronic support causes a significant process simplification, and, at the same time, allows a better channel through which Governments try to monitor public expenditure. Procurement entities face almost similar problems and difficulties related to new technology adoption, market supply transformation and change management complexity. There exist, therefore, reasons to suggest that some coordination among procurement entities might be useful.
The EU Public Procurement Learning Lab has been developed in this context in order to share experiences and information in the field of public procurement. As the EU Lab has agreed in fostering internal debate also through confidentiality, names of countries have been withheld from the discussion and randomly replaced with alphabet letters. This means that there is not a logical relationship between the alphabet letter and the name of the country. Confidentiality mattered in specific instances; for example when a country was asked to describe the relationship across national institutions.

1.1 History

During the Greek Presidency of the European Union the 10th meeting of Ministers and the 40th meeting of Directors Generals of the Public Administration took place[1].
Participant ministers considered of vital importance to meet on a regular basis, in order to exchange practices and ideas in the areas of cooperation and give overall direction to activities within the network. In this context the "EU Lab" instrument was considered the ideal tool in order to promote informal exchange of information and to establish a network among participants.

[1] *The meeting took place in Rhodes (Greece) on 6th June of 2003.*

During the Italian Semester of Presidency, the Italian Department of Public Administration, jointly with the Ministry of Economy and Finance, launched a EU Lab on Public procurement, named "EU Public Procurement Learning Lab". The objective of this initiative is to compare the activities and to share useful knowledge among the European procurement entities, in accordance to the resolution of 11th meeting of European Ministers responsible for Public Administration[II].

The kick-off meeting took place on November 28th 2003 in Rome. Nineteen institutions, representative of sixteen countries, participated in the meeting[III]. During the event the working programme of the initiative was defined. In order to achieve some results by the end of 2004 participants agreed to focus their activities on a limited number of topics. After a general overview among participants three topics were chosen: "Procurement and Small and Medium Enterprise", "Technical Issues of Procurement", "Auctions Design and Competitive Issues".

In order to reduce the work of all participants it was decided to set up three Working Groups related to the topics chosen, in which participant Institutions choose to participate according to their interest. The composition of the working groups is explained in the second paragraph.

The expected results from each Working Group will be reports outlining the EU situation, Studies that analyse the high or low efficiency on specific practices, databases, possible suggestions to the Ministers to enhance/update EU Directives, etc. Each Working Group will be responsible for defining results to be achieved, by developing issues on the chosen topic and sharing results with all the institutions that are not directly involved in the group.

In order to establish a time-frame for 2004, three meetings have been agreed. The first meeting was held in London last April. During the meeting participants, representative of sixteen countries and eighteen institutions had the

[II]Rome, 1 December 2003. During the meeting participants declared "their intention to pursue and enhance informal European Cooperation in the field of public administration, so that the constant exchange of information and best practices between administrations, and the performance of joint activities can foster the process of modernising the administrations at the national and European levels"

[III]We do not consider those institutions, such as national embassies, that were not requested to fill in the Questionnaire.

opportunity to assist to the presentation of three case studies (made from A, U and R) and to learn about progress of each working group. During the event R agreed to host the next meeting on October 4th 2004.
Over all, twenty-six institutions representative of twenty countries have participated in the meetings in Rome and London[IV].

1.2 Description of Participants

It is important to underline that the EU Lab participants are only public institutions. In order to understand results obtained from the Questionnaire distributed, it is important to describe the governance organisation of the EU Lab participants because each of the three governance organisations that we identified reflects specific activities in the field of public procurement[V]:

Large Administrations. Their purchasing activity is essentially addressed to their own organisation. Product categories and services are consistent with own requirements of each institution. We consider Large administrations two members[VI].

Central Purchasing Bodies. Their purchasing activity is directed to buy not only for they own interests but also for the one of other public administrations. Product categories purchases generally differentiated: Paper & Stationary; ITC products and services: Hard- and Software, Printers, Desktop + PCs & Maintenance; Photocopiers; Telephone Services; Cars; Facility Management; Transport & Postal Services; Furniture; Oil & Energy; Travel services; Food & Meal Coupons etc… We consider Central Purchasing Bodies ten members.

[IV] Four institutions did not participated to the two meetings but they asked to be anyway members of the EU Lab. For this reason, they received the Questionnaire.
[V] As you will see not all the institution members are considered in the following description because of we do not have available data.
[VI] We ranked only institutions that gave us precise data about their governance organisation.

Authorities. Their interest in public procurement is not due to direct purchase activity since their main object is to set rules for the Public Sector Procurement. Their tasks are (in general): assist the Public Administrations, verify correct use of procurement procedures and practices, make recommendations, promote competition and transparency, collect and publish statistical data on Public Procurement; implement the procurement legislation. Among authorities we consider seven members.

Working Groups Composition

The EU Lab activity is defined by three working groups, that try to focus the main aspects and issues related to public procurement (see Table 1 for Working Groups Participants)[VII].

Table 1

Small and Medium Enterprises	C F I I1 M O R S T
Auction Design and Competitive Issues	A B D H H1 I K L M Q U Y Y1
Technical Issues	D1 D2 E F G P P1 V Z

Note: more than one institution sometimes represents one country. In this case we name institutions through the letter of the country followed by an Arabian number

The working group on Auction Design and Competitive Issues aims at studying how different member institutions apply procurement auctions with the objective of finding a best practice. In order to achieve this result, this working group analyses every aspect that a procurement entity should consider in designing an auction in fact this choice has important consequences in terms of number of participants, kind of participants, savings obtained, etc. Moreover, this group considers the consequences of public procurement auctions in terms of competition among bidders.

[VII] *N and J did not join any working group.*

The working group on Technical Issues aims at sharing information among EU Lab members about those technical aspects related to public procurement. The main objective of the working group is to collect information about requirements that are necessary in each country for the suppliers willing to participate to electronic auctions. Examples of technicalities analysed are: the introduction of digital signature in e-auction, to increase the involvement of users in frame contracts[VIII], the coordination of platforms compatibilities and so on.
The working group on SMEs aims at identifying problems related to experiences of different EU Lab members in terms of participation of Small and Medium Enterprises to public procurement auctions. In fact, the co-ordination of government procurement and purchasing activities may create entry barriers for small and medium enterprise, which is problematic since one of the most important aspects of procurement design is to promote entry.
Are frame contracts systems, framework agreementsIX etc poor in this respect? What are the experiences of the different EU countries with regard to this issue? How can the design of public procurement using frame contracts, framework agreements[IX] etc be improved to promote entry of small and medium enterprise? These are some of the questions that the working group on public procurement and SMEs will focus on.

[VIII]A "frame contract" is a general contract between a procuring entity and an economic operator for the delivery of goods (or the providing of services) within a certain time frame at specified price and conditions. Ordering Units can buy the goods (or the services) provided for in the contract, at the price and conditions agreed, by sending an order that, by completing terms and conditions defined by the frame contract (i.e. it indicates quantity, place of delivery, date of delivery, etc.), becomes a fully valid contract.

[IX]A "framework agreement" is an agreement between one or more contracting authorities and one or more economic operators, the purpose of which is to establish the terms governing contracts to be awarded during a given period, in particular with regard to price and, where appropriate, the quantity envisaged. The awarding of contracts based on Framework Agreements is in general more flexible than that of Frame Contracts; in fact in Framework Agreements there can be a choice between multiple operators and/or a "second stage competition" on one or more economic variables that in Frame Contracts tend to be fully pre-determinated. According to EU Directive 18/2004 the second stage competition for Framework Agreements must comply with the following procedures:
• "Where a framework agreement is concluded with a single economic operator, contracts based on that agreement shall be awarded within the limits of the terms laid down in the framework agreement. For the award of those contracts, contracting authorities may consult the operator party to the framework agreement in writing, requesting it to supplement its tender as necessary."
• "Contracts based on framework agreements concluded with several economic operators may be

awarded either:- by application of the terms laid down in the framework agreement without reopening competition, or- where not all the terms are laid down in the framework agreement, when the parties are again in competition on the basis of the same and, if necessary, more precisely formulated terms, and, where appropriate, other terms referred to in the specifications of the framework agreement, in accordance with the following procedure:(a) for every contract to be awarded, contracting authorities shall consult in writing the economic operators capable of performing the contract; (b) contracting authorities shall fix a time limit which is sufficiently long to allow tenders for each specific contract to be submitted, taking into account factors such as the complexity of the subject-matter of the contract and the time needed to send in tenders; (c) tenders shall be submitted in writing, and their content shall remain confidential until the stipulated time limit for reply has expired; (d) contracting authorities shall award each contract to the tenderer who has submitted the best tender on the basis of the award criteria set out in the specifications of the framework agreement."

2. Questionnaires

2.1 Structure of the Questionnaire

Within the working group on Auction Design and Competitive Issues it has been decided to produce a Questionnaire in order to collect information about member organisations and practices used running procurement auctions. The Questionnaire is composed of six main parts:

Preliminary remarks: It stresses the objective of the questionnaire and gives a very general definition of "Auction".

Glossary: It aims at facilitating the understanding of questions and at stimulating the attention of the reader. We provide a full list of the most common terms used in the field of auction theory in order to establish a common reference vocabulary.

General information about the organisation: In this part, questions are related to the main activities run by the entity, the number of employees, the institution for which the organisation buys, the value purchased during 2003, product categories purchased, the number of auctions performed by year, relevant legal aspects and other information considered of potential interest.

Recommendation: The objective of this part is to give advice on filling in the questionnaire correctly.
The next two parts represent the final objective of the questionnaire and contain questions related to the design of auction and competitive issues.
Auction design: This part contains questions about the main aspects that a procurement entity has to consider when designing procurement auctions. We submitted questions focused on eight aspects:
· Awarding procedures;
· Number of lots;
· Length of the contract;
· Reserve price;

· Participation requirements;
· Awarding criteria;
· Disclosure policies;
· Subcontracting.

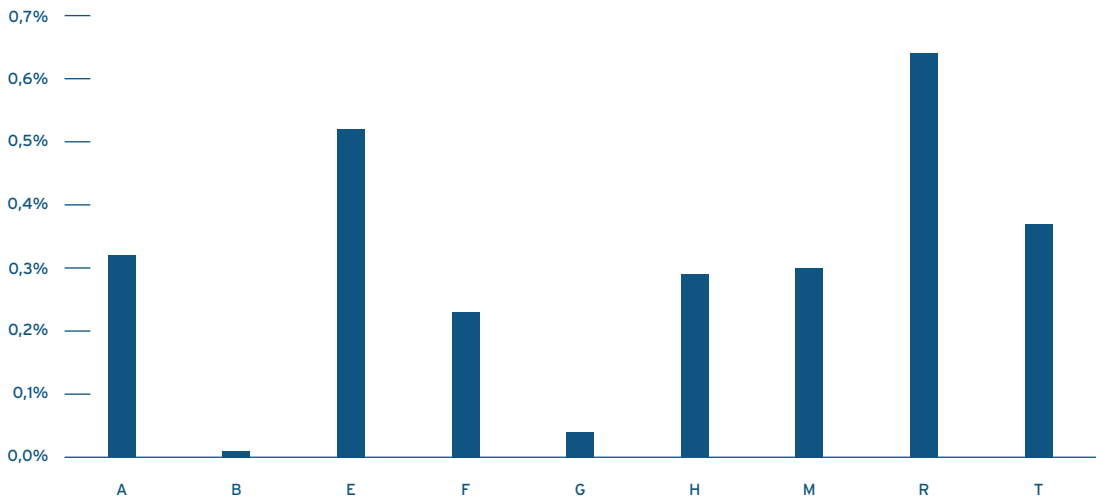
Competition: This part contains questions related to the level of competition registered by the central purchasing body, methods to avoid collusion, and their own experience about participants' collusive behaviour.

2.2 Description of Feedback Received

Questionnaires have been sent to thirty members of the EU Lab representing twenty four countries and we received responses from eighteen institutions representing eighteen countries. According to the case of D the Questionnaire received represents other two institutions of the same country. As we already pointed out, members of the EU Lab are organisations that have different governance and we had evidence of the fact that usually central purchasing bodies have been more precise in describing the procurement activity (an exception is C an Authority that provided very precise responses).

The main part of the Questionnaire is related to procurement auctions and for this reason it is interesting to analyse for each organisation the economic value of auctions performed during 2003.

Figure 1 - **Purchased value/Total General Government Expenditure**



Source: for Expenditure: Eurostat; for Purchased value: Questionnaire.

Since we are considering organisations from different countries (in terms of dimension) we calculated the value of goods and services purchased in respect to the total general expenditure of each country (see Figure 1).
In this way it is possible to compare different organisations in order to understand the relative importance in terms of purchases that they have in their own country[X]. Data show that E and R purchase higher amount of goods and services in respect to the total general government expenditure. Instead, the percentage of purchased value over the total general government expenditure of A, H, M, T and F is around 0,3%.
After having analysed the general aspects related to auctions, we are going to evaluate answers we had about the eight main aspects that a central purchasing body has to consider in designing a procurement auction.

2.2.1 Awarding Procedures

Questions related to this aspect were aimed at assessing how different procurement entities award frame contracts, framework agreements and procurement contracts[XI]. First of all we specify that by Auction we refer to what in the EU directives is defined Open Procedure and Restricted Procedure as well as to transposition of these procedures in Domestic Laws of EU Member States. In an auction the competing firms cut the price until no one is prepared to offer any lower (aspect that the competition is played in a single round, that bids are secret, and that the price goes down rather than up does not change the nature of "auction" of these procedures). Responses from the Questionnaire point out that all organisations usually involved award frame contracts applying the Sealed Bid Pay As You Bid Auction (information about O is not available)[XII].

[X]Institutions not mentioned in the figure did not give any answer on this aspect.
[XI]"Procurement contracts" are contracts for pecuniary interest concluded in writing between one or more economic operators and one or more contracting authorities and having as their object the execution of works, the supply of products or the provision of services.
[XII]Whether auction is awarded using the lowest price criteria, G and M underline that it could be useful to use the Second Price Auction where the auction is awarded at the supplier submitting the best bid. That means that the winner is the one that offers the highest discount, but it pays only the price offered by the second, non winning firm. However, both procurement entities underline that a Second Price Auctions could produce juridical problems because procurement laws supposedly state that the contract is to be made on the most efficient offer, not with the most efficient bidder.

In this case bidders submit bids in sealed envelopes; the person submitting the best bid, that means the highest discount or the best offer, wins the prize and pays what he bid. This kind of auction can be implemented also on-line. In this case bidders submit their offers using an informatics tool and the auctioneer will "open" the offers like he would have done in the paper based sealed bid auction.
Reasons that lead to this choice are:
· It may reduce collusion, since bids and participants are kept secret until offers are publicly opened (A, M, T, E, C, N, G, P).
· It is very simple, transparent, ensures equal treatment to all bidders and reduces the participant's legal claim (A, M, T, E, C, N, G, P).
· The product can be specified very clearly, so the needed goods can be compared and offers based on the technical specification (A).
Most procurement entities use Sealed Bid Auction because information can not circulate and this hinders the coordination among bidders during the procurement process. Moreover, since a participant could conveniently deviate from the cartel because no one has the possibility to punish him, the competition during the auction should be consistent. Another reason that makes Sealed Bid Auction appreciated by procurement entities is connected with their simplicity and transparency: the less complicated is the awarding procedure the lower will be the probability that loosing participants appealing in court will win.
An other point that we wanted to stress is whether procurement entities apply Combinatorial auction with package bidding in multi-unit auctions. In an auction for multiple items, this allows bids made up of a "package" (i.e., a set of items) and an associated payment. A bid is interpretable as an all-or-nothing offer for the specified package at the associated payment. This particular format could be useful when there are potential economies of scales in bidding for more than one lot and when splitting the supply contract into many lots can enforce participation in the auction. In fact, when a bundled contract is split into many lots, requirements to bid for each lot will be lower (since the value of the single lot is lower) and this should facilitate SMEs[XIII] to enter the auction.

[XIII] *A performs multi unit auctions with package bidding, where the units are geographically differentiated lots, in order to exploit potential synergies that firms may have in bidding for adjacent regions/area. The auction on Telecommunication service run by M provided two lots: one for the fixed line (Lot 1) and one for the mobile line (Lot 2). Participants had the possibility to bid for Lot 1, Lot 2 and for a package made up by the first and the second lots. Due to juridical problems an offer on the package would have been awarded only if prices on both parts were lower than those offered on single lots. In the end Lot 1 and Lot 2 were awarded to different firms.*

However, it will not damage larger enterprises that can exploit synergies bidding on a package of lots.
Three institutions apply this format: A, B and M. A affirms that in most of the cases it performed combinatorial auctions with package bidding using geographical lots. M performed a combinatorial auction with package bidding for Telecommunication services and it is working to perform a multi unit auction with package bidding, where the units are geographically differentiated lots, in order to exploit potential synergies that firms may have in bidding for adjacent regions/areas and to facilitate the participation of SMEs . C performs combinatorial auctions with package bidding mainly for Supplies e.g. laboratory consumables. As usual they underline that through package bidding participants are allowed to bid for a single lot or on a package of lots. However it mentioned that in most auctions they allow bidding on an item-by-item basis.
The new EU Directive on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts published on March 2004 acknowledges the application of online auction and affirms that "Since use of the technique of electronic auctions is likely to increase, such auctions should be given a Community definition and governed by specific rules" (Whereas n. 14). For this reason we decided to collect information about this new technique which is not necessarily a new procurement format (as we said before it is possible to perform online auction applying the standard sealed bid format). Seven institutions (A, E, F, G, M, P and T) have taken advantage at least on online auction[XIV]. All these organisations started applying the online auction between 2001 and 2004. The first Institution was M (September 2001). Generally they are used in order to award both procurement contracts and frame contracts for goods and services. Differently from the standard paper based auctions, it is "common feeling" that this new technique is very useful because it permits the use of different kinds of auction formats. In fact, the electronic way allows many bids to be managed in a very short time. Usually web-based online auction enable efficient bidding between pre-qualified suppliers[XV].

[XIV] M, F and T performed online auction below and above the threshold defined in the OJEC; instead G run online auction only below the former EU threshold. Of 130.000 €.
[XV] The T policy is to award contracts on the most economically advantageous tender so in practice there may be different rounds of bidding, for example to assess non-price or other non-quantifiable criteria. Price or other quantifiable criteria may then be the subject of an online descending auction therefore for most straightforward procurements there would be two rounds.

Two different formats have generally been used:
· Descending auction also called reverse auction (M, T, G, F);
· And multiple round descending auction (M).
In the first case, competing bidders cut the starting price[XVI] (discount) until no-one is prepared to bid any lower, and the final bidder then wins the prize at the final price he bid.
Descending multiple round auctions are similar to descending ones, but the price decreases not continuously but round by round. A multiple round auction is the discrete version of the descending one. Each solution provides different functionalities such as:
· *Bid decrements:* the minimum level by which a supplier can reduce the bid compared to the previous lowest one. The decrement varies depending on contract value and type of goods/services that will be purchased.
· *Extensions:* this aspect is related only to the descending auction format. This auction can have a fixed time period (e.g. two hours), or it can operate with extension. T, for example, runs online auction of a certain planned duration (e.g. thirty minutes) but if any bids are received within the last five minutes then the online auction is given a five minutes extension. This continues until there is a five minutes period of inactivity.
· *Weightings:* more complex online auction will allow suppliers to update their bids in respect to any issue including, but not restricted to price. For example quality that is objectively measurable.
· *Limited or unlimited number of rounds:* in the multiple-round format the number of rounds can be decided before the beginning of the procedure or can depend on the bidding activity of participants. In this case it will be very important to fix a bid decrement in order to reduce the possible number of rounds.
Finally, we are going to point out two particular cases that emerge from the answers to our Questionnaire. The first one regards the Parallel Framework Agreement performed by R. For every single product (software, pc, servers, etc.) agreements are signed with a number of suppliers, usually between five and ten.

[XVI] *The procurement entity can choose either a reserve price by itself or to set the first bid received as a starting price (G).*

The range is from two to thirty five. At the moment, the average number of parallel agreements is nine. R affirms that it is important to bear in mind, however, that the number of firms involved in selling on these framework agreements is much larger than these figures suggest. In total, there are some nine hundred firms acting as sub-suppliers/retailers to the firms that have framework agreements for ICT products and services.

A rule of thumb is that R strives at having as many suppliers as it thinks is necessary in order to meet the estimated aggregate demand from the different government agencies. An agency interested in buying a product for which there exists framework agreements may order directly from one of the firms that received an agreement, or it could make an inquiry to all suppliers that received the framework agreement. The inquiry should describe the need the agency wants to fill and the answer from the supplier should describe how the needs can be met.

When the inquiry is made to several suppliers there is, de facto, a second-stage of competition between the suppliers (in accordance with directive 2004/18/EC for public procurement 32.4). Thus, in a sense, the construction with parallel frameworks agreements and a second stage competition means that there is both competition for the market – a rivalry between potential suppliers for a limited set of framework agreements - and competition in the market – a rivalry between suppliers with framework agreements for selling products - at the same time. The prices that firms put into their offers have a dual role. First, they are used in the evaluation to compare firms offer, second, they serve as ceilings in the second stage competition when authorities make inquiries to the firms. In order to sell on the framework agreements firms may need to lower their prices compared to the prices they put into their offers at the bidding stage.

The second case we want to underline is the two stages sealed bid online auction that will be implemented soon by M. The best two bids in the first round will go to the second one. The starting price in the second round is the lowest price presented in the first one. This auction is applied in other contexts (e.g. "AeroXchage", an U.S.A. private marketplace for aviation industry). This format may be effective in avoiding collusion (because for participants is difficult to communicate during the auction since there are only two rounds) and in promoting entry.

2.2.2 Number of Lots

Procurement contracts can be awarded as single lot or multiple lots depending on several factors, e.g. market concentration, geographical distribution of supplier, participation of SMEs, etc. Answers to our Questionnaire show that seventeen procurement entities divide the contract into lots[XVII] while the L does not usually split procurement contracts in lots[XVIII].

It is interesting to analyse the most important reasons that lead an agency not to award a contract as a single lot but through a certain number of lots. From the survey we sorted out three main reasons (see Figure 2):

· To facilitate the participation of SMEs to the auction (nine organisations): bundled contracts can hinder SMEs' participation to the auction because they could not be affordable in terms of dimension of supply, bank guarantees, delivery on the territory[XIX]. B, given that the largest proportion of companies are SMEs, ensures that this group of companies have a maximum chance of getting government contracts. 85% of private firms in this country are SME's and 80% of National contractors are SMEs. In an auction, it determines the number of lots as a function of the capacity of the SME's. If large quantities have to be split into small lots for this purpose, then B takes this step. B then stipulates that the bidders, if they wish, can submit a bid for several lots. By doing so the division of large quantities into various items does not act to the disadvantage of large companies. It is self evident that the right choice can only be made after a thorough market survey.

Good communication with the business world is therefore necessary. It is therefore the outcome of the market survey that determines how many lots B will provide for the schedule of conditions.

· To increase the participation to the auction (four organisations): smaller lots give to suppliers the opportunity to bid just on a part of the contract.

[XVII] *A as B, awards 50% of frame contracts through multiple lot auctions; M splits the 40% of its frame contracts (but this percentage is growing); N affirms that usually large supply contract are divided in lots.*

[XVIII] *The I and the D did not give any detail about questions related to split the procurement contract in lots.*

[XIX] *The F states "This is not a legal obligation but public administrations, especially the State administrations, are encouraged to divide contracts in multiple lots as often as possible, to facilitate access of SMEs".*

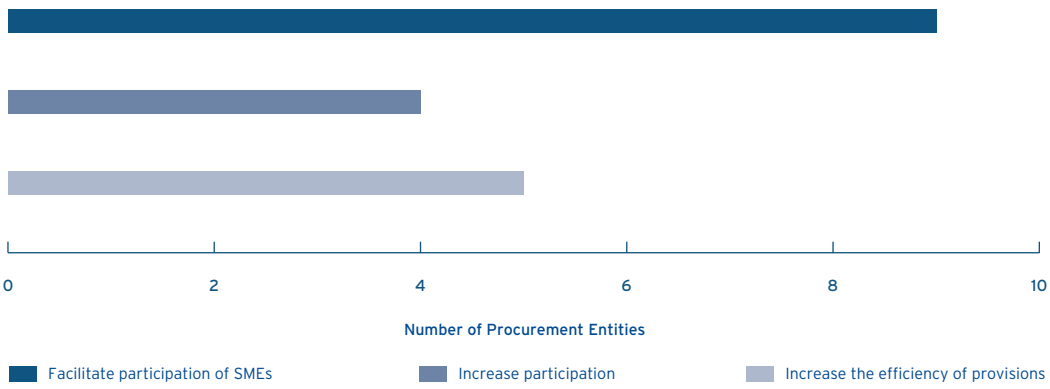
This should decrease the participation requirements and foster participation.

· To increase the efficiency in the provision of goods/services in terms of:

I. Optimisation of transport's cost when the presence of relevant geographical dispersion of firms (three institutions)[XX];

II. Qualitative differentiation existing in some product categories (three institutions).

Figure 2 - **Reasons to split the contract into lots**



When the contract is split into many lots is more difficult for a firm to exploit possible economies of scale because it does not know how many lots it will be able to win. This "uncertainty" will lead to higher bidding price. On the other hand, smaller lots are more affordable for smaller firms and this will foster participation. Since more firms will enter the auction competition will be higher and participants should be more aggressive. Moreover, when the contract is split in qualitative or geographical lots the winning firm should be the only one able to supply the product with precise technicalities and in each defined area.

The number of lots depends on the market structure of the product auctioned (H, M, F, B and G). Regarding this aspect, M declares that the number of lots should be lower than the number of enterprises expected to enter in the auction, as suggested by the national Antitrust Authority. Generally, depending on the market structure M, B, A and F (in the future), allow for either geographical or qualitative lots. In the first case the contract could be split in many lots: one lot for region, geographical area, etc. (let's think about food stuff auction where it

[XX] *A affirms that SMEs would improve the level of goods/services supplied because local suppliers will charge reduced cost of transport and have a better and well introduced supplying system for the region. Sometimes they have already experienced with single customers and do not need a "learning curve" regarding "making business with the local authorities".*

could be useful to have different suppliers for different regions). Instead in the second case, the contract is split in qualitatively different lots (let's think about a PCs supply, where the procurement entity is interested in purchasing high, medium and standard level PC.

Finally, almost all procurement agencies auction off lots simultaneously in order to promote a fair competitive environment and mitigate potential collusion occurring in sequential auctions. In fact, coordination among bidders is believed to be easier when lots are auctioned sequentially since suppliers can rotate in winning the auction. Also, F and E stress that awarding all lots at the same time allows easier budget and contract management, facilitates users and suppliers, reducing the quantity of administrative work and the costs and time related to the auction.

2.2.3 The Time Length of a Contract

The choice of contract time length may reflect particular characteristics of the good being auctioned and can have important consequences on bidders' behaviour. In fact, while longer contracts can be used to hinder collusion (short contracts can facilitate rotation among firms), they may constraint administrations to purchase good/services from the same firm for a long time, leading to undesirable lock-in (Milgrom, 2004). The administration should consider this trade-off and accurately choice the contract time length.
From responses we see that the length of contracts awarded varies from country to country and strictly depends on the object of the auction. Responses show that the contract's length depends on the requirement, dynamism and competitiveness of the market and the desired nature of the relationship with the supplier. Generally contracts for provision of goods are shorter while procurement contracts for services are relatively longer. This is quite logical since goods are obsolete (especially the technological one) and so it would be useful to have the possibility to change on time. Moreover, services often require high investment costs that need more time to be recuperated. From the responses to our Questionnaire
M provided data about the length of frame contracts auctioned until December 2003. Precisely, it affirms that the length of services' contracts varies from a minimum of six to a maximum of forty-eight months while that of goods' contracts from three to thirty-six. It makes it clear that Frame Contracts for

services are long lasting in respect to the ones for goods (and this satisfies what we stressed above).
B explains that normally a contract is concluded for a defined period, which usually lasts for a maximum of 1 year. If this involves government contracts, with a possibility of tacit extension by two one-year periods. At the end of each contractual year, the contracting authority will check whether the prices are still competitive and whether the range of products still meets the customers' needs. For B, in some rare cases multi-annual agreements are opted for, because a better price can then be achieved or because a major investment cost can be recuperated over several years. This latter argument does not apply to standard products, but to specific purchases. Agreements are concluded for 5 years and longer for some contracts. This relates to complex contracts with which substantial investments are linked. Lengthy contracts are also concluded if it appears that the continuity of the service could be threatened if the contracts were shorter.

2.2.4 Reserve Price

The Reserve Price is the maximum amount the procurement entity is willing to pay for a certain good or service and reflects the perception of the procurement entity with respect to the expected discount. From our survey we find that many organisations consider the reserve price as an estimate that not necessary has to be disclosed to bidders (B, C, D, E, F, L, R, N)[XXI]. In fact, only six institutions (A, G, H, M, T and P) publish the reserve price before the auction. In establishing the reserve price five of them attach more weight to participation, fixing it at a sufficiently high level in order to foster participation. Moreover, having more participants to the auction means an increase in competition among bidders. However, institutions that usually do not disclose the reserve price have an internal expectation of the price that the result of an auction should not exceed. One of the reasons that leads not to disclose this price is expressed by F: "Disclosing the reserve price to participants can facilitate collusion".
Nevertheless, even if the reserve price is not disclosed but bids exceed the expected price the procurement entity can:
· Request an explanation to the bidders;

[XXI] *D, I, O and Q, did not give a precise answer to questions related to the reserve price.*

· Decide to declare the auction unsuccessful and rerun it (as underlined by B, referring to the Article 18 of the National law);
In case it has enough money and there are reasons to think that the auction actually produced the "right" price it may decide to award the contract above his prior estimated price (F).
Usually, the reserve price (or the expected one) is calculated on the basis of average price that prevail in the market at the awarding date (resulting from thorough market analysis) and the previous awarding price (if available). Countries that do not have a reserve price will not be able to use a formula for evaluating the economical offer based on it. This has implications (see below) for the measurement of the worth in Euro of one technical point.

2.2.5 Participation Requirements and Grouping of Firms

Participation to the auction is usually conditional on specific requirements. Responses from the survey show that almost each organisation restricts the participation requiring technical, economical and legal qualifications. Among them four are the most important requirements that participants need to provide (see Figure 3):
· Cumulative specific budget revenue[XXII];
· Bank warranties;
· Ability to execute the contract
· Quality certificates.
In Figure 3 we did not mention participation requirements applied by only one procurement entity, like: Official documents for the digital certificate, International certificates, Samples, Catalogues, Photographs of the good, Adequate number of staff and equipment, Volume of work relating to the subject of the procurement proceedings and References.

[XXII] *It would be very interesting to analyse thoroughly the average ratio between the specific budget revenue required and the economic value of the auction. In fact the higher is this ratio and the more difficult will probably be for the SMEs to enter the auction. In fact, this result means that the specific budget requirement is very high and so difficultly affordable for SMEs. This consideration is even more important when we speak about central procurement entity where the value of auctions run is generally substantial. Unfortunately, at the moment, we do not have reliable data on this matter.*

Figure 3 - **Participation Requirements**

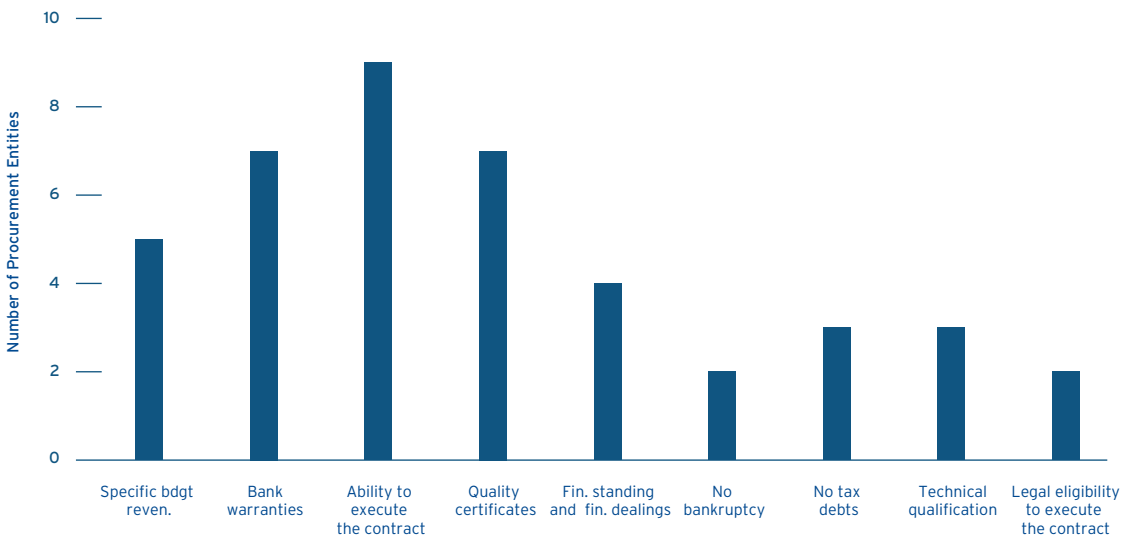


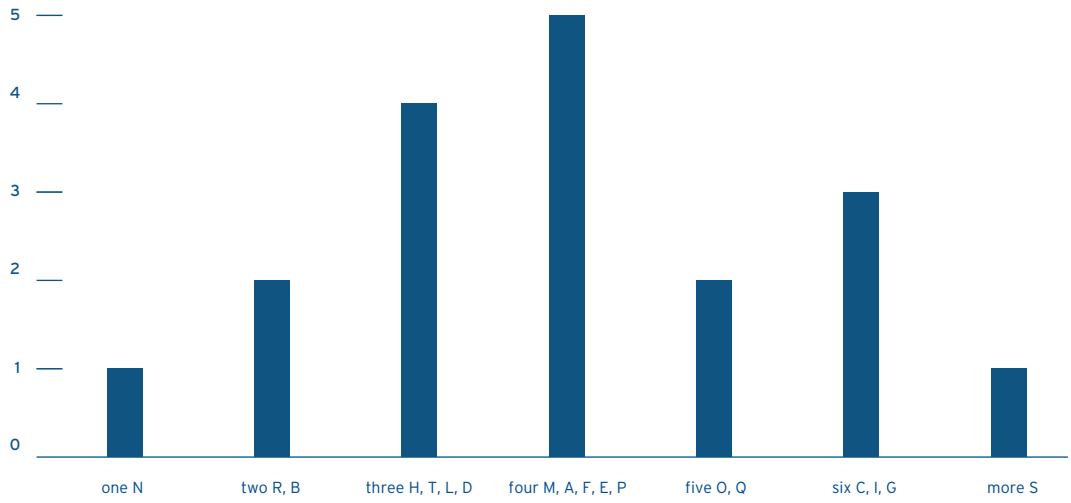
Figure 4 shows the number of participation requirements that each procurement institution use in order to guarantee legal and technical qualifications of tenderers. 50% of the survey requires four or five parameters in order to enter the auction. N is the only procurement entity to ask only one participation requirement (bank guarantees).

F and O underline that requirements change depending on the object of the auction[XXIII], while several institutions (M, B, and R) affirmed they define participation requirements in order to facilitate the participation to the auction (particularly referring to SMEs), taking into account the competition aspect. B sustains that in order to obtain an auction with a good result on the price level, they want to allow only firms that have competences that guarantees a perfect execution of the contract.

[XXIII] *According to F, for example, for public works candidates must prove their technical qualifications, either with a system of certificates delivered by professional organisations or by providing written testimonies that they have successfully delivered similar works in the recent past. For services the requirement is basically past similar experiences. For goods it is specified a minimum revenue only for very large contracts because courts have judged that nothing legally prevents a firm from multiplying 3 or 4 times its revenues with one public contract, unless the PA have solid technical reasons to think the firm will not be able to do it. For national frame contracts the most important requirement is the ability to deliver the goods all over the territory, that is about seven thousands different addresses. Candidates can prove the disposition of the necessary network with their own structure but also with the intervention of subcontractors.*

To achieve that result, they carefully select bidders and choose the level of barriers only after a thorough market investigation. Selection criteria always are justified in a written document meant for the functionaries who have to approve the tender. B also contacts a lot of suppliers or firms and shows them some fragments of the tender. They can give their opinion.

Figure 4 - **Number of Participation Requirements Requested by Institution**



B always asks them to justify their answers. For big tenders (for delivering goods of executing services of more than € 500.000,00) B publishes in the Internal and European journal asking for a reaction of interested firms on their possibilities and competences. Only at the end of the discussion with those firms, B starts the editing of the technical specifications and the selection and awarding criteria.

During the execution of a contract the F can not notify to a poorly performing contractor that it will be excluded from future tenders (this is not a penalty the contracting authority can write in the specifications), but in a future tender when they check the qualifications of candidates they can use evidence of poor performances in a previous contract as evidence of insufficient qualifications (a convincing file is needed). It is not clear in case-law how long a contracting authority can legally refuse to accept candidatures from previously failing contractors.

When requirements prevent participation, two or more firms can group together in a single larger entity, which satisfies the requirement for the auction. From our survey we see that almost each country in the survey lets firms aggregate together in order to submit a common bid.

Once firms are grouped together they are considered as a single participant. National and European laws do not establish particular restriction to grouping. Restrictions are eventually imposed via discretionary manner and they can vary case by case. In this contest M and P follow the indication provided by the national antitrust authority, which noted that, in order to obtain sufficient levels of competition in the auction, grouping should be prevented between two or more supplier able to bid individually. In the same contest, the A cartel law covers grouping of firms whereby grouping should be prevented between two or more firms able to bid individually. For other institutions, grouping of firms are not regulated and suppliers may group also if they are able to bid by themselves as long as the aim or the effect of grouping is not a restriction of competition: genuine consortia bidding is allowed whereas collusive bidding is subjected to challenge and legal proceedings. for the L and P each member of a group has to meet the minimum financial, legal and technical capacity requirements as appropriate.

B reports that small firms, when registered as one entity, can enjoy a range of advantages, i.e. the turnovers can be combined, the references of the various companies can be taken into account, etc. This means that a consortium can be selected for the government contract and can make a better bid thanks to the "bundling of efforts[XXII]".

[XXIV] *B refers to a contract for the IT-platform for the National identity card. In that case eight companies grouped together. It was a negotiated procedure. B negotiated until the moment that obtained normal prices and normal conditions (terms, quality of the products and services, etc.). It is clear that releasing a big contract in one lot is dangerous in that it might stimulate the creation of monopoly situations, because the number of companies that are able to execute the contract in that case is very limited. In the future, B claims, those kinds of contracts will be cut in many lots. Since having many smaller lot will increase the possibility of winning for SMEs, the competition in the auction will increase. It sometimes happens that various selected candidates group together and submit a joint bid. It has already occurred (especially with complex government orders for services) that ultimately only one bidder remains, because all selected candidates have grouped themselves into a consortium. It is self evident that the time of the price formation must be closely viewed and that the discounts which can then be achieved will be rather minimal. If the contracting authority notices that the price develops unfavourably due to the lack of competition, it can always opt not to follow up the current procedure and decide to launch a new government order, while taking account of the elements that have led to inadequate competition.*

Awarding constraints limit the fraction of supply that each firm can be awarded. Six procurement entities affirmed to use this procedure. M and A sustained that this choice has been mainly due to prevent one firm from becoming the monopolist in the market. Other motivations are:
· Increase participation, in particular for SME's which can only afford small lots;
· Increase competition: the constraints increase the possibility for each participant to be a winner and this foster participation. If there are more participants the probability to win is lower and thiswill induce firms to submit more aggressive bids;
· Avoid lock-in; multiple-winners auctions do not constraint public administrations to purchase from only one firm.

2.2.7 Awarding Criteria

Usually, contracts can be awarded on the basis of two different awarding criteria: the lowest price and the most economically advantageous offer. In the last case other aspects rather than price are taken into account. Responses pointed out that the majority of institutions use both the lowest price and the most economically advantageous offer and the last one is the most commonly used (H 65%, M 78%, I 90% and O 61%). The ratio behind this choice is that the price is not sufficient to identify the best offer, because there are other relevant aspects to be considered. For this reason, as the object auctioned becomes more complex, the weight of technical aspects is increased. This is to secure that all the relevant aspects of the offers are taken into consideration: price is still a focus point but also product details like the range of products, geographical coverage, services (for example electronic commerce solutions) and environmental issues are taken into consideration.

To make an example, the average weighting used by the O during 2002 was:

· Price: 37%
· Technical merit: 25%
· Modalities of payment: 13%
· After-sale service: 13%
· Term of performance: 12%

Differently, the lowest price procedure is usually used when good's features are well defined and the price is the only element that can diversify offers. This type of procedure has been applied to IT services/equipment, Energy services, food, etc.

When there are other aspects rather than simply price relevant to award a contract they are considered in the Technical Offer. A certain number of technical points is decided (more technical points mean that technical aspects

are more important) and they are distributed among different aspects. The awarding commission evaluates the different technical offers and gives relatives points. So, while participants decide themselves on which technical aspects focus their offer, points on the economical part (price) are assigned using a particular formula.
From Questionnaire we collected some formula:
· Recently, M mainly used the following formula: TP=PE+PT, and

$$PE = n * \frac{P_B - P_O}{P_B - P_S}$$

Where:
PE = economical points (obtained as a function of offered price)
PT = technical points
n: maximum economical points available;
P_S: threshold price (price that assigns the maximum number of points);
P_O: offered price;
P_B: reserve price.
The formula used to calculate PE is mainly used because it is linear and so very simple. With this formula it is possible to calculate before the auction is run how many points an offer (in terms of price) will obtain. Moreover, it is possible to evaluate the economical value of one technical point. Last but not least, the economical points obtained do not depend on the other prices offered.
Also H, generally awards contracts on the basis of the most economically advantageous offers. For this reason, as the object auctioned becomes more complex, they increase the weight of technical aspects. Each offer received obtains a technical score.
In this contest, it is evaluated only the offers that have been judged technically acceptable and are in line with to the terms of contract notice. When they evaluate the offers, technical criteria are classified in two teams: Team A "Technical Specifications and Quality " and Team B "Technical Support ". In Team A they consider the following criteria:
· Agreement with technical specifications;
· Functionalism and efficiency;
· Appropriateness of material;
· Homogeneity of material to other already existing.

In Team B they consider:
· The guarantee of good operation or maintenance,
· the after-sale service and the guarantee of parts and
· The particular faculty, experience, education and equipment of supplier.
Each one of the above criteria has a factor of gravity, expressed in percentage. Team A assembles factor from 70 - 80 %, while Team B assembles factor from 30 - 20 %. The total is always 100%. The most economically advantageous offer is the one that presents the smaller reason of (L).

$$L = \frac{Comparative\ price}{Total\ technical\ grade}$$

For the configuration of comparative price they take into consideration the Price offered, the cost of installation, and operational and maintenance cost. The comparative price will result on the basis of the type:
Comparative Price = T + [K]
Where: T = price of offer K = cost of installation, operation and maintenance.
· The formula proposed by C is the following one:

$$Total\ score = \frac{TPx}{TP\max} + \frac{Minimum\ price}{Px}$$

Where:
TPx: Technical points of the bidder x
TPmax: Technical points of the best technical offer
Minimum price: Lowest price offered
Px: Price offered by the bidder x

2.2.8 Disclosure Policy

The amount of information disclosed regarding the auction may have positive or negative effects in terms of risk of coordination and collusion among bidders. It is important to stress that each country has specific rules about the quantity of information to give to participants. Moreover, single institutions have the possibility to disclose information that are not expressly mentioned by the law. For example M, before auctioning has to disclose all the information related to the auction in the Contract Notice as defined by the EU legislation, such as: the object/service auctioned, the number of lots, quantity or scope of the contract,

length of the contract, conditions for participation, type of procedure, etc[XXV]. Moreover, in order to level informational asymmetries between new participants and incumbents, M chooses to disclose information about the needs of Public Administrations contacting potential participants too. Once the contract is awarded, information related to prices offered and bidders are publicly disclosed and the winner is declared.

It is interesting to notice that the analysis of responses shows that there are differences among institutions in disclosing information, particularly considering prices and bidders. What kind of information is disclosed before the auction and after?

Before auctioning, responses to our survey make it clear that the number of expected bidders is not made public[XXVI]. This decision is probably aimed at avoiding collusion among participants. But there is an exception: B decides to disclose the number of bidders before the auction and this is, according to the B's response, mainly directed to form a price[XXVII]. Before specifying awarding criteria in the tender, B also executes an investigation, by entering in to contact with big companies who are able to execute the contract, and without forgetting to take into account SME's. When the investigation is terminated, B may make the following decisions: establish the number of lots; decide the awarding criteria and the weight given to each awarding criterion. B attempts to keep the competition as broad as possible.

It is also interesting to note the experience of E in this field: in connection to some of the high profiled auctions, E chooses to issue press releases and invite all potential suppliers to participate in information meetings. Then, suppliers can obtain information regarding the specific auction: during the meetings E gives them specific information regarding the needs of the public sector and general

[XXV] *In addition to this information other institutions (A, R) disclose also the following information: terms and conditions of the contract, duties of the bidder and of the buyer, the needs of the Public Administrations, the contracting authorities, the estimated turnover on the framework agreements, the reserve price, technical requirement.*

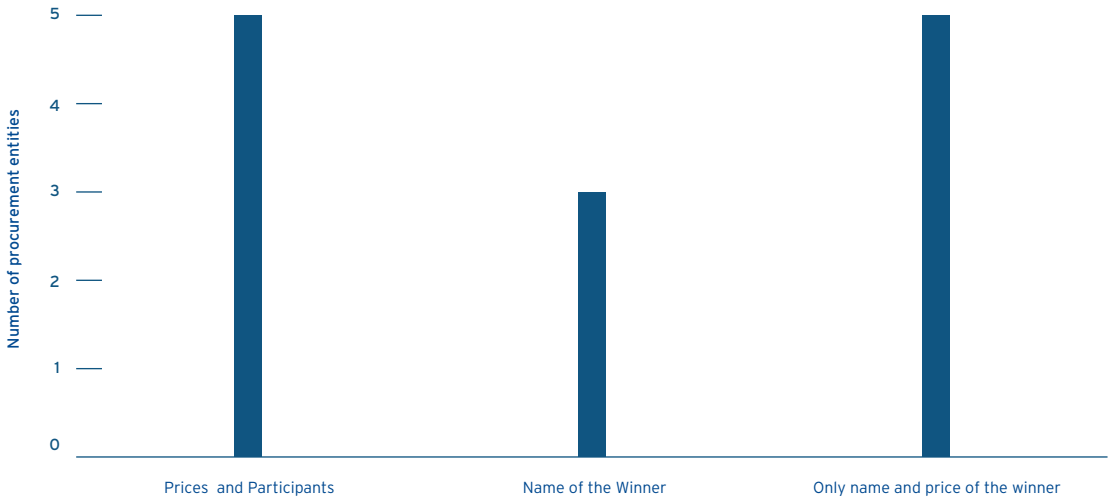
[XXVI] *If the purchasing entity makes investigations about potential participants in order to better design the auction it would have an idea about the number of firms that will enter.*

[XXVII] *B stresses that if the number of expected participants is higher, revealing that number could increase competition. Otherwise, B recognises that in the case of weak level of supplier publishing the number of expected participants could keep their offered prices higher. This is why publishing or not the expected participants cannot be an obligation for the procurement entity.*

information regarding the rules that govern public procurement (like the EU Directives). But these meeting are also important for E, because E believes to obtain from them the possibility to obtain how best to give attractive auction bids. Information disclosed after the auction also makes it clear that there are relevant differences among institutions. More specifically, responses from three different kind of information disclosed emerged (see Figure 5)[XXVIII].

1. There are procurement entities that disclose names and prices offered by all supplier that participated to the auction (five institutions);
2. There are procurement entities that publish only the name and the price offered by the winning firms (five institutions);
3. And, finally, there are procurement entities that disclose only the name of the winning bidder (three institutions).

Figure 5 - **Information disclosed after the auction**



3.2.9 Subcontracting

Subcontracting is considered of great importance. Allowing subcontracting can increase participation of SMEs otherwise potentially excluded. The recent European Directive considers that "in order to encourage the involvement of small and medium-sized undertakings in the public contracts procurement market, it is advisable to include provisions on subcontracting". So, it is important to underline that all institutions that sent back the Questionnaire

[XXVIII] *Five institutions did not answer clearly.*

grant the possibility of subcontracting to winning firms. But the way in which they apply it is quite different: for example 65% of institutions impose restrictions on firms that decide to subcontract, whereas 30% does not[XXIX]. Usually, firms have to provide all necessary documents to prove that potential subcontractors satisfy the requirements relative to subcontracted activities (45%). But not the whole value of frame contracts can be subcontracted: for example B underlines that the contracting authority wishes to keep control of crucial elements of the contract and only secondary activities are eligible of contracting. In this context the quality of the good/service auctioned is considered of great importance.

M emphasises that in case of subcontracting winning firms cannot subcontract more than 30% of the total value of the frame contract. But I follows a different strategy: here allowing subcontracting is fully the right of the bidder and not of the contracting authority. Otherwise, it is argued, if the contracting authority sets a minimum or maximum limit for subcontracting it means discrimination of firms and consequently no equal treatment.

It is interesting to observe that R firms that bid for a framework contract in the first stage but failed to receive it, are not allowed to become subcontractors.

An other important aspect, that has to be taken into account when subcontracting, is the monitoring of how the subcontract is executed. In this context two possible solutions are presented: on the one hand, institutions that allow the frame contract can directly monitor how the subcontract is executed, otherwise this activity is under the responsibility of the purchasing entity. From the answers to our Questionnaire we note that the last case is the most common among institutions: 46% leaves to purchasing entities the activity of monitoring subcontracting. Only the 22% do it directly. [XXX] M and A monitor only subcontracting related to IT frame contracts.

In the context of subcontracting it is also important to consider when the decision of subcontract can be made, because, whether subcontracting is decided after the frame contract is allowed, collusion can occur among participants (e.g. the winner subcontracts to losers). The possibility to subcontract only before the auction is agreed upon in 50% of cases, whereas 23% agreed with the possibility to agree before and after the auction. The case of C is remarkable, because

[XXIX] *The 5% does not answer.*

[XXX] *The 32% does not answer.*

participants are not required to subcontract before the auction.[XXXI]The winner of the auction is deemed solely responsible for the whole contract and the issue of subcontracting is usually left entirely up to him.

2.2.10 Competition

The key of a successful auction is deterring collusive behaviour among participants and promoting competition. Market structures vary across types of goods and services, thus influencing outcomes of the performed auctions. Usually, the level of competition is connected with economic conditions governing different segments of the market (e.g. strong competition on IT equipment, low competition on fuel) and, obviously, with the design of the procurement process.

It is not simple to find an indicator that defines the level of competition during the auction procedure but we may assume that the level of discount obtained and the number of participants to the auction can seen as indicator of the level of competition reached. However, it is important to keep in mind how the discount is calculated. A reliable indicator could express the discount as the difference between the awarding price and the market price[XXXII]. Some institutions that are central purchasing bodies provided the overall discount registered. Sometime discounts are calculated with respect to the initial reserve price. This value may not have however any meaningful implication for competition.

We assume that the higher is the discount as well as the number of participants and the higher is the level of competition in the auction (in the case of the discount registered this is a very strong assumption because it is strictly related to the price used to compare the awarding price).

On average no one registers discounts lower than 10%, whereas the highest discounts are registered by M[XXXIII] and P (around 20%). But there are also cases

[XXXI] *The rest (22%) does not answer.*

[XXXII] *F argues that comparisons with general public market prices are largely meaningless because no important organisation pays those prices. Comparison with the estimated price and/or with previously awarded prices is done case by case, so for example the price of paper obtained after the last "multi awarding " procedure is about 10% cheaper that the previous price but figures like that cannot be aggregated together. F says that there is nothing like a global data aiming at measuring an average discount obtained through tendering procedures.*

[XXXIII] *M calculates the discount as the difference between the awarding price (in terms of unit price) and the price published by ISTAT, a national statistical centre.*

of low discounts obtained: in two online auctions performed by G the bids received showed a discount of 1-5% more than the before paper based procedure[XXXIV]. Furthermore, according to the answers to our Questionnaire, high competition is registered in Telecommunication and IT sectors.
Table 2 shows data related to the number of bidders participants in auctions for different products. In detail F, R and I provided in the Questionnaire the minimum and the maximum number of bidders participating to the auctions, whereas O offers the average number of bids received.

Table 2

Institution	Description of auctions	Minimum	Maximum
F	Goods	5 (cars)	15 (furniture)
	Works	20	30
	Services	20 (common)	200 (design)
R	All (average)	5	20
I	All (average)	6	7
O	Public works	5,1 (average)	
	Services	4,5 (average)	
	Supplies	3,6 (average)	

As showed in Table 2, auctions performed by the F related to services may obtain 200 candidates, whereas, an auction related to the car sector may receive only five bids. For O the highest number of participants is registered in public works.

Mechanisms adopted to avoid collusion

It is straightforward that to achieve a good level of competition in the auction it is important to apply mechanisms and strategies aimed at avoiding collusion among participants. According to responses, it emerges that the most important mechanism adopted to avoid collusion is the use of Sealed bids, mainly because it prevents the possibility that each participant may have information about the offers of other participants. G and T underline that this result may be obtained also by using online auctions, because each participant obtains online

[XXXIV] *G only compares the awarding price with the expected awarding price.*

information just about his bid. Moreover online bidding has the effect to increase the visibility of "non-collusive behaviour". According to the T's experience the adoption of techniques like online bidding are expected to achieve the right market price in response to their requirement. Moreover, G underlines that a minimum of three or four participants is necessary in order to have an acceptable level of competition when single lot contract is auctioned.
Responses point out other methods used in order to limit collusion:
· Forbid controlled or affiliated suppliers to take part to the auction;
· Establish the number of lots not greater than the number of participants;
· Augment the length of contracts to avoid rotation among firms;
· Limit the grouping of enterprises;
· Try to facilitate entry of SMEs;
· Split the contracts into lots accessible to SMEs;
· Monitor responses against expectations based on knowledge of the marketplace;
· Use the press to stimulate participation.
For F the most effective strategy adopted to avoid collusion among participant firms is the reputation the contracting authority has in professional circles (in fact the contracting authority is known to be competent enough to detect anything suspect in the tenders) and the fear it inspires (no hesitation to lodge a complaint with the antitrust authority in case of suspicions).
B performs the strategy to order identical products on the basis of different contracts. The consequence is that if a cartel is formed, a different honest supplier will be assigned the orders, because the customers scan contracts well and recognise that the same product can be obtained via a different contract but at a better price. Constant checking of the scale advantage is therefore an ideal weapon for revealing cartels.

Interaction with the National Antitrust Authority

An issue we are interested is related to the interaction between the public procurement entity and national antitrust authorities. Responses show that the 55% of institutions considered interact with the national antitrust authority whereas the 33% confirmed that there is not interaction.

The main forms of interaction are:
· Adoption of advices in the 40% of agencies surveyed: when institutions perform an auction they ask to the Antitrust Authority to emit an opinion/feedback. Even if opinions are not binding, institutions take them into account in designing auctions.
· Steering group about procurement strategy designs.
· Investigation on practices encountered or suspected on a segment or sub-segment of the market.
· Discussion of issues such as the new EU Directives and methods to carry out public procurement under the threshold values while at the same time meeting guidelines of the Directives.
· Sharing of information related to national guidelines.
· Cooperation in order to identify whether collusive behaviour takes place.

Problems of collusive behaviour

The kind of goods/services auctioned can lead to different levels of competition among participants. The collusive behaviour may also depend on the auction format chosen.
33% of EU Lab participants show that in the recent past they have not had problems related to collusive behaviour among auction's participants. Other procurement entities identified the following sectors "risky" :
· Fuel;
· Energy providers;
· Lunch coupon;
· Envelopes.
Trade off between the strength of competition and the quality provided by the supplier[XXXV].
Competition among participants determines final awarded prices and, in turn, impacts the quality provided by the winners. Reduced profit margins due to low awarding prices may be recovered by reducing the quality of aspects not

[XXXV] *Only nine institutions over eighteen responded to this part of the Questionnaire.*

negotiated in the contract. In this context it interesting to know whether institutions have the feeling that there is a trade off between the strength of competition and the quality provided by the supplier.
55% of institutions surveyed do not consider that low awarding price can lead to low quality. T confirms that by using the most economically advantageous offer as the award criteria and not emphasising price as the most important factor grants the possibility to seek the optimum combination without quality suffering. The F considers that for common supplies there should be no trade-off since firms are not going to launch a new production process to deliver a special low-quality product different from what they sell to other customers. That would cost them much more than the cost of the low margin they had to concede to win the auction.
Four institutions underlined, instead, that there exists a trade off between the strength of competition and the quality provided by the supplier. This problem is accentuated when public works are auctioned. This is the case of C and F. The F underlined that the answer to the problem lies on the capacity of the public administration in awarding the contract to the best tender instead of to the cheapest one, but also to convince in advance candidates that their effort in providing high quality will be rewarded. This is not an easy thing to do, especially during periods of strong budget constraints.
B noted that after the approval of the order the supplier occasionally does not execute some of the obligations or fulfil them adequately. This aspect usually cannot be identified immediately during the execution of the order, but it causes disadvantages afterwards. In order to avoid these problems is therefore important to describe exactly in the schedule of conditions what the procurement entity is looking for and to monitor closely the execution of orders.
The change of the business cycle can also have an adverse influence on the correct execution of the contract. It is therefore of major importance to examine whether the bidders' financial reserves are adequate. A weak financial situation can also lead to abuses.

3. Comments

The answers to our Questionnaire gave us a first impression regarding methods and instruments that European public procurement institutions use in order to implement procurement auctions. Many institutions apply different criteria and are regulated by different rules but we can underline some common features. First of all, what emerges is that the most common auction format used is the Sealed Bid Pay As You Bid Auction. More than 90% of the survey generally applies this procedure. Basically, three are the main reasons that lead to this choice: it is expected to hinder collusion; it is perceived as very simple and transparent and it permits to specify products clearly. Moreover, this auction format can be implemented also in the online auction.

Up to now, seven institutions have applied this "new" procedure for auctioning goods and services. This online technique is useful because it allows institutions to take advantage of different kind of auction format. In fact, aside from the standard sealed bid online auction, two more formats have been used: the descending auction (also called reverse auction) and the multi-round descending auction.

Another common strategy used by all institutions considered in our Questionnaire is the division into lots of the supply contract. Also in this case we point out three main reasons that lie behind this choice: it facilitates the participation of small and medium enterprises; it increases the participation; it augments the efficiency in the provision of goods and services. Almost all procurement entities auction off lots simultaneously in order to mitigate potential collusion in sequential auctions.

Related to the length of the contract, responses show that usually contracts for provision of goods are shorter than the procurement services ones because of the obsolescence of goods and the longer time needed to recuperate the initial investment. The reserve price, considered as the maximum amount the procurement entity is willing to pay, is published only by six agencies and five of them fix it sufficiently high to foster participation to the auction. The majority of institutions that answered to our Questionnaire restrict participation to at least three participations requirement representing technical, economical and legal qualifications. They are seen as a form of guarantee for the execution of the contract. Related to the awarding criteria used in order to define the auction

winner, the "most economically advantageous offer" seems to be the most common. Usually, only very standardised products are awarded through the criteria of the lowest price. Responses underlined the existence of several different formulae that are usually applied to assign points to offers composed by the price and the technical part too. Regarding the information disclosed by the auctioneer, it is important to say that each country has specific rules about the quantity of information to be given to participants. Before auctioning, usually procurement agency disclose as much information as they can and sometimes they directly contact potential participants to better design the auction. After the auction, instead, only five institutions over eighteen disclose participant's names and prices, mainly in order to avoid negative implication related to collusion. All institutions of our survey allow subcontracting but the way in which it is regulated varies among countries: 65% of institutions impose some kind of restriction on firms that decide to subcontract while 30% do not. Moreover, almost 50% of procurement entities leave to purchasing entities the activity of monitoring subcontracting while the 22% does it directly.
Since promoting competition among participants should be one of the most important objectives of the auction design, we wanted to understand which practices each country applies in order to avoid and detect collusive behaviour. First of all we tried to find a robust indicator to measure the level of competition in an auction. We started considering the average discount obtained by each country but we realised that this index could be misleading because the way it is calculated may induce misrepresentation in the level of competition. As we did not have uniform data, further investigation is needed on this front. However we found that usually higher discounts are registered in the IT sector. Then we considered the number of firms that participated to the auction. Also in this case we had few reliable data. After that, we analysed mechanisms adopted to avoid collusion. Once again, we found that institutions believe that the most important mechanism adopted is the use of the sealed bid auction (either in the standard paper based auction and in the online one). Other common methods used are: to augment the length of the contract in order to avoid rotation among firms; to facilitate entry of SMEs; to forbid to controlled or affiliated suppliers to take part to the auction, etc. From the answers to our Questionnaire we also had that more than 50% of institutions considers the interaction between the procurement entity and the National Antitrust Authority as a useful tool in order to detect collusion.

Finally, we would like to stress that from the answers to the Questionnaires received the issue related to the participation to the auction of the SMEs tends out vigorously. The majority of institutions contacted pointed out this issue and actively try to involve SMEs into auction procedure. Procurement entities aim at enforcing SMEs participation through different mechanisms such as: using particular auction format (like the combinatorial auction with package bidding); splitting the supply contract in many smaller lots; setting the reserve price at sufficiently high level; defining less restrictive participation requirements; promoting grouping of enterprises among small firms; using awarding constraints in order to have more than one winning supplier; disclosing as much information as possible to level informational asymmetries; promoting subcontracting.

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