Centralization in Public Procurement

Gian Luigi Albano, Ph.D.
Head of Research
Consip S.p.A. - the National Central Purchasing Body, Italy
Email: gianluigi.albano@consip.it
www.gianluigialbano.com

Rome, 4 April 2014
Roadmap (1/2)

1 Centralized procurement: basic economic principles
   - Bargaining power
   - Process ("language") standardization
   - Coordination and network effects
   - Innovation

2 Centralized procurement and public finance
   - Potential vs. actual savings: the role of "historical expenditure"

3 Centralized procurement and sustainability
   - The potential drawbacks of decentralized systems when externalities are taken into account
   - The potential advantage(s) of centralization
Roadmap (2/2)

4 A case study: Consip S.p.A.
- The design of National Frame Contracts
- The electronic marketplace

5 The organizational design of centralized procurement
- Which level of government?
- The role of specialized CPBs
- Human capital
Some references


1 Centralized procurement - basic economics

A simple model of procurement activity:

Maximize: \( \text{Value for Money} = \text{Quality} - \text{Price}^* - \text{Process costs} \)

Subject to:
- minimum buyer’s needs/requirements
- budget constraint (possibly intertemporal)
- (interpretations of the) legal framework

In the case of public procurement, additional objectives might be pursued:

- **Innovation**
  - Innovative solutions, innovative procurement processes

- **Market governance**
  - Prevent dominant positions, lock in, foster participation of SMEs

- **Sustainable development**
  - Environmental and social objectives

*may include life-cycle considerations
Centralized procurement - basic economics

A simple model of procurement activity:

**Maximize:** \[ \text{Value for Money} = \text{Quality} - \text{Price} - \text{Process costs} \]

**Subject to:**
- Minimum buyer’s needs/requirements
- Budget constraint (reserve price)
- Legal framework

In the case of **public procurement**, further strategic targets can be set by industrial policy or economic policy choices:

- **Innovation**
  - Innovative solutions, innovative procurement processes
- **Market governance**
  - Prevent dominant positions, lock in, foster participation of SMEs
- **Sustainable development**
  - Environmental and social objectives

Further strategic targets include:
- Administrative cost
- Time
- Information gathering
- Risk of legal suits
- Contract management

Centralization
1 Centralized procurement - basic economics

Main dimensions involved:

- Demand heterogeneity
- Bargaining power
- Budget control
- Information management
- Specialization/expertise
- Favoritism/corruption
- E-procurement tools
- Impact on market structure
- Network effects
- Standardization
- Sustainability
- Central/Local Gov. powers
1 Centralized procurement - basic economics

Contract and tender design: the toolbox

- Demand side analysis
- Supply side analysis
- Contract design
  - Object of the contract
  - Lots definition
  - Minimum technical requirements
  - Compensation schemes & contract incentives
  - Contract penalties
- Competitive tendering design
  - Selection criteria
  - Reserve price
  - Awarding criteria (lowest price vs MEAT)
  - Scoring rule (price)
  - Evaluation technical aspects (obj. vs. subj.)
1 Centralized procurement - basic economics

Streamline process → process cost savings

- Lower number of negotiation/tendering processes
- Investments in procurement activity (organization structure, ICT infrastructure...)
- Specialized skills: management, law, economics, marketing, product managers, ICT specialists

- Information management: aggregating, updating, processing information coming from the market (possibly different although correlated markets) as well as from previous acquisitions
- Training, dissemination of good practices
- Need for complex and possibly very costly information gathering to evaluate demand characteristics
1 Centralized procurement - basic economics

Higher volume of purchases $\rightarrow$ purchasing price savings

- Economies of scale: where fixed costs are relevant, suppliers/firms can produce at lower unit price

- High(er) bargaining power of central purchasing body: particularly in markets where the public sector accounts for a relevant share of the overall demand, centralized acquisitions can affect the market share distribution. Hence, losing may have a dramatic impact on firms

- Risk of (long run) anti-competitive effect on the market structure (create or strengthen dominant positions)

- Higher organization cost for many suppliers

- Risk of higher barriers to entry $\rightarrow$ discrimination against SMEs
1 Centralized procurement - basic economics

Standardization (to some extent)

- If economies of scale $\Rightarrow$ lower unit cost $\Rightarrow$ lower purchasing prices (ceteris paribus!)
- Problems with heterogeneous demand
- Risk of adverse selection

Network effects
(For the users of a given solution, the value of the solution itself is higher the larger the “network” of users)

- Possibility to reach the “critical mass” of users needed to switch from one standard to another
- Stimulate innovation
- “Wrong” choice on the standard/technology may amplify harmful effects
Centralized procurement and public finance

Do unit price savings simply translate into cash savings?

\[ \Delta(p \cdot q) = p_1 \cdot q_1 - p_0 \cdot q_0 = \Delta p \cdot q_0 + \Delta q \cdot p_1 \]

- **Total spending variation over time**

- **“Price” effect**
  - Centralization lowers unit price

- **“Quantity” effect**
  - Quantity typically tends to increase with lower price
    - In case of tight budget the quantity effect may still be at work...
    - ...often due to bad incentives stemming from accounting rules:
      - Savings achieved on one budget item can hardly translate in additional resources on other items
      - Resources allocation among different cost objects set on historical basis

- Unit price savings do not easily translate into lower *aggregate* public expenditure
- In financial terms, the final impact of a Central Purchasing Agency performance heavily depends on variables which are not under its control
Centralized procurement and sustainability

The “traditional” procurement strategy usually asks the buyer to minimize the purchasing cost of a product/service (for a given set of minimal quality standards).

In recent years, the idea of sustainability has changed our view of public procurement, as many of the economic consequences stemming from any purchasing choice go well beyond the purchasing time.

**SUSTAINABLE PROCUREMENT**, in particular:

- Sets new, specific goals and scopes for public procurement
- Introduces LCC approach: the buyer should evaluate the procurement cost along the whole life cycle of a good/service

Important issues arise, among which:

- Tendering design: how to weight “green” award criteria?
- Incentives to the CAs: why might buyers not have enough incentives to adopt a LCC approach and/or to pay for externalities?
- Centralization: why may central purchasing agencies play a crucial role?
Determining the value of green aspects

Crucial to estimate willingness to pay and set the correct weight for the green award criteria. Two main dimensions (albeit not always easy to separate):

<table>
<thead>
<tr>
<th>Private benefit:</th>
<th>directly accruing to the purchasing authority (savings, better working conditions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>Examples: energy/water savings, long lasting batteries</em></td>
</tr>
<tr>
<td>Social benefit:</td>
<td>(pure externality) accruing to the whole society</td>
</tr>
<tr>
<td></td>
<td><em>Examples: CO₂ emissions, noise emissions, use of toxic materials, recycled paper</em></td>
</tr>
</tbody>
</table>

- In many cases both components coexist and may be very hard to measure
  - *Examples: social benefits from lower noise emissions, private benefit of a lighter laptop, social and private benefit from not using toxic materials*

However, there exist sound techniques to **elicit willingness to pay**

- Often private benefits can be assessed more easily than externalities
- Both components should be evaluated in a whole life cycle costing (LCC) perspective
Centralized procurement and sustainability

Incentives for the CAs to internalize externalities

- Green products can be considered as higher quality products with respect to non-green ones, and they may have higher purchasing cost.
- However, big gains from higher quality do not accrue only to the CA that purchases the product, but also to other parts of society.
- At the single CA level, green goals might not be pursued, unless strong sensitivity or legislative constraints.

Centralized procurement can play a key role in:
- Internalizing green goals on behalf of many CAs
- Properly setting the discount factor
- Exploiting benefits of nation-wide competition, so limiting the cost of green products and sustaining the industry development

Mandatory programs considerably strengthen the role of centralization.
3 Centralized procurement and sustainability

Incentives for the CAs to adopt the LCC approach

Independent expenditure centers or legal constraints may prevent from shifting resources from one budget item to another. This strongly limits the possibility to pursue green goals through a sound LCC approach.

Again, centralization can play a key role: de facto, the central purchasing agency acts as a “coordinated” CA, so avoiding acquisitions at a (seemingly) low price with a negative impact on the current expenditures.
A case study: Consip S.p.A.

Consip and the Italian public procurement system

Central government

Consip

Regional CPBs

Health Sector

Local Authorities

Schools

Universities

Centralization vs. decentralization: a mixed system

- Consip NFCs are mandatory for the central government (solid arrows)
- Voluntary for all other PAs (dashed arrows), provided that they meet or beat the quality/price benchmark defined by Consip NFCs
- E-marketplace mandatory for all PAs (below the EU threshold only!)
- Consip and the Regional CPBs work together to form a “network system”
Dealing with a complex environment

Consip operates in a very complex environment, with multiple stakeholders often advocating conflicting interests.

**Demand Side**
- Different customers:
  - Central Government
  - Local Authorities
  - Health Sector
  - Schools and Universities
  - Public Companies
- Different and sometimes conflicting needs:
  - Simple and effort-saving acquisition process (“click and buy”!) on the one hand...
  - ...but flexibility and autonomy on the other hand!
  - Heterogeneous needs, preferences and characteristics (with respect to customization, spending capabilities, contract mgmt skills, payment delays...)

**Supply Side**
- Need to anticipate the potential impact on the (supply) market structure:
  - Dominant positions and lock-in (actual risks in markets where the public demand account for a sizeable share of the market, e.g. health care sector)
  - Role of SMEs (particularly crucial for the Italian economy)
  - Innovation
4 Managing complexity through information management

Data collection, maintenance and analysis is crucial in all the stages of the procurement process.
4 The life cycle of the National Frame Contracts

- Feasibility study and definition of procurement strategy
  - Demand analysis and market analysis
  - Opportunity identification and Feasibility Study deliverable
  - Procurement strategy deliverable

- Supplier selection and contract award
  - Tender documentation deliverable
  - Authority opinion acquisition
  - Tender documentation publication
  - Frame Contract signing

- National Framework Contract management
  - Support to administrations during purchasing phases
  - Tracking of orders issued and remaining product/service availability
  - Contract unit/quantity extension (if necessary)
  - Contract time extension (if necessary)

- Service Level monitoring
  - Service level inspection
  - Surveys analysis
  - Complaint analysis
  - Corrective measures

- Account Management
- Legal
- Sourcing
- Research Unit
- Strategic Marketing
- Account Management
- Legal
- Sourcing
- Research Unit
- Strategic Marketing
- Account Management
- Legal
- Sourcing
- Research Unit
- Strategic Marketing

Classification: Consip public
4 The role of information - Demand analysis

- **Main goals:**
  - Estimate the value of Public Administration demand ➔ value of the NFCs
  - Identify the most relevant qualitative elements of demand (i.e., degree of demand heterogeneity)

- **Main tools/indicators employed:**
  - On-line surveys based on a sample of contracting authorities
  - Analysis on purchasing orders through active NFCs: automated data flow from NFCs suppliers into Consip’s Data warehouse
  - Analysis of tender notices published on the Tender Electronic Daily by Italian contracting authorities outside of NFCs
  - Data from purchase orders on the e-Marketplace
The role of information - Supply market analysis

- **Main goal:** to monitor the evolution of the supply market and anticipate the impact of NFCs:
  - prices trend
  - technological evolution, innovation, offered products/services, technical features
  - market structure: number, market share and market power of potential bidders
  - risk of collusion

- **Main tools/indicators employed:**
  - Open consultations with suppliers and professional associations
  - analysis of bids submitted in previous competitive tendering for NFCs
  - analysis and generalization of best practices at national and international level (at least one meeting per year among EU CPBs)
4 The role of information - Supply contracts monitoring

**Main goal:** identify potential weaknesses in the supply contract structure:

**Main tools/indicators employed:**
- Number/features of complaints by the contracting authorities
- Number/value of penalties levied by CAs
- Number/relevance of supply contract breaches detected through sample inspections conducted by an audit company selected by Consip through a competitive process
- Direct communication with both the contractor(s) and the contracting authorities
The main worry at the contract execution stage of NFCs
4 Performance Monitoring: the Sample (1/3)

Snapshot on the 2008 sample of framework contracts

- 11 framework contracts:
  - 7 “mandatory” and 4 “non-mandatory”
  - 6 low-service components and 5 high-service component

- 743 inspections:
  - Public bodies: 226 central administrations, 330 local administrations, 91 education bodies and 96 health bodies
  - Geographical location: 360 in the North, 169 in the Centre and 214 in the South

- Performance “compliance score” evaluated on a 1 (min) - 5 (max) scale:
  - average quality of execution of purchasing orders (avg_EPO)
  - average delivered (intrinsic) quality (avg_DQ)
  - average quality of post-purchase services (avg_PPS)
  - average total performance index (avg_TPI)
4 Performance Monitoring: the Sample (2/3)

NFCs:

- Cars (purchase) ed. 2 nonmandatory
- Cars (purchase) ed. 3 nonmandatory
- Real Estate Services nonmandatory
- Microsoft Licences ed. 7 mandatory*
- Photocopiers (rental) ed. 9 mandatory*
- Photocopiers (rental) ed. 11 mandatory*
- Laptop Computers ed. 6 mandatory*
- Desktop Computers ed. 8 mandatory*
- Local Networks ed. 2 mandatory*
- Videocomm. Solutions ed. 2 nonmandatory
- Printers ed. 6 mandatory*

* As defined by the 23 Jan 2008 Decree of the Ministry of Economy and Finance
### Performance Monitoring: the Sample (3/3)

#### Sample of performance dimensions in which penalty clauses were included in the contract

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. of cases of compliance</td>
<td>1062</td>
</tr>
<tr>
<td>N. of cases of compliance with remarks</td>
<td>21</td>
</tr>
<tr>
<td>N. of cases of low noncompliance</td>
<td>41</td>
</tr>
<tr>
<td>N. of cases of mild noncompliance</td>
<td>39</td>
</tr>
<tr>
<td>N. of cases of high concompliance</td>
<td>401</td>
</tr>
<tr>
<td>Total number of cases</td>
<td>1564</td>
</tr>
<tr>
<td>Total number of cases of noncompliance (NC)</td>
<td>481</td>
</tr>
<tr>
<td>N. Penalties (P)</td>
<td>12</td>
</tr>
</tbody>
</table>

**P/NC:** 2.49%
4 Low-quality contract mgmt.: conjectures

How much should we worry about these findings?

If/when correctly anticipated by contractors, contract mismanagement is likely to affect nature of competition at the selection stage upon submitting quality-price schedules suppliers may use extra profits arising at the execution stage.

Reasons for contract mismanagement:

- Lack of skills/ know-how and/or “passive behavior” (aversion toward the centralization model)
- Lack of incentives
- Renegotiations: “Since you failed on task A so you may compensate me by executing task B even if not in the contract”
- Integrity concerns
4 The role of information - Internal process monitoring

- **Main goals:**
  - identify possible bottlenecks slowing down the time-to-market
  - identify possible misusage of resources
  - risk management
  - improve internal organization

- **Main tools/indicators employed:**
  - Performance indexes (discussed in the next slide)
  - Time required for any NFC to be active
  - Number of FTEs
  - Continuous quality improvement approach
4 Measuring performance and “social” value

Main goal: to capture a broader measure of benefits from centralized procurement besides “savings”

Main tools/indicators employed:

- **Unit purchase price savings:** achieved reduction on unit prices for each specific category (estimated yearly by a third party, namely the National Institute of Statistics, ISTAT)
- **Process cost savings:** time and FTEs required for the procurement process

Other relevant tools/indicators:

- Volume of transactions
- Number of purchase orders
- Number of registered “purchasing units”
- Number of registered suppliers
- Number of active Framework Contracts
- Customer satisfaction surveys
- CO2 reduction
“Intangible” values?

Many dimensions of the created value are hard to measure: *knowledge, culture, innovation, expertise*

- Spurring the adoption of new procurement solutions
- Standardization of procurement “language”
- Development of specialized know-how
- Training provided to both suppliers and public officials
- On-demand consultancy to Public Bodies
- Research activity
- International benchmarking
- Enhancing the integrity of the public procurement system
14 years in one picture

High degree of demand heterogeneity

Demand side

Low degree of demand heterogeneity

Supply side

1999/2000

• 1 supplier
• Fixed conditions

Frame Contracts:

• 1 supplier
• Open conditions

Framework Agreements:

• Multiple suppliers
• Open conditions

2003/04

2007/08

2011/12

Dynamic Purchasing System

MePA

• Multiple suppliers
• Fixed conditions

• 1 supplier
• Open conditions

Concentrated

Fragmented

Standardized

Specialized
## Purchases through the NFCs in 2012

<table>
<thead>
<tr>
<th>Service</th>
<th>Value (in million euro)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>412</td>
</tr>
<tr>
<td>Meal Vouchers</td>
<td>354</td>
</tr>
<tr>
<td>Office Maintenance Services</td>
<td>250</td>
</tr>
<tr>
<td>Fuel Cards</td>
<td>167</td>
</tr>
<tr>
<td>Integrated Energy Services</td>
<td>163</td>
</tr>
<tr>
<td>Fuel</td>
<td>114</td>
</tr>
<tr>
<td>Oil for Heating</td>
<td>108</td>
</tr>
<tr>
<td>Lighting Services</td>
<td>71</td>
</tr>
<tr>
<td>Car Rental Services</td>
<td>51</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>35</td>
</tr>
</tbody>
</table>

Values in million euro. 37 active NFCs in 2012 - top 10 NFCs account for 83% of the overall value of purchases.
4 The Electronic Marketplace

The Italian Public Administration eMarketplace (MePA)

- Virtual market where any CA can select goods and services offered by several suppliers, for purchases below the European threshold.
- Suppliers (and goods) are qualified according to selection criteria stated in the Call for Qualification Notice published by Consip for the different product categories.
- Entirely digital process. Digital signature in order to ensure legal compliance.
4 The Electronic Marketplace

Demand side: two ways of purchasing

- **Direct Order:** CAs buy directly from the e-catalogues accepting price, terms and conditions offered by suppliers (i.e., with no competitive process).

- **Request for Quotation:** allow the CAs to negotiate price and service conditions by inviting a pool of qualified suppliers to make a customized quotation that fits to the expressed needs. This procedure may be used to request more than one bid from different invited suppliers in order to obtain better conditions than those offered in the ecatalogue.

**Remark:** although requests for quotations imply electronic bidding, that is pretty different from Electronic Auction!

- Registration and usage are completely free of charge
Updated 28 Feb 2014

Green initiatives

- Furniture
- ICT goods and services
- Office supplies
- Stationery
- Maint. of thermo-hydraulic systems
- Maint. of electrical systems
- Maint. of elevators
- Maint. of anti-fire systems
- Learning solutions and schools (MePI)

- Cleaning services
- Hygiene products
- Electrical supplies
- Tools and services for health care
- Personal protection equipment
- Solutions for sustainable mobility
- Renewable energy power
- Services for events
- Urban facility mgmt.
## MePA - Main Results Achieved (31.12.2013)

### Orders

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Value (M€)</td>
<td>8.3</td>
<td>29.8</td>
<td>38.2</td>
<td>83.6</td>
<td>172.2</td>
<td>230.6</td>
<td>254.2</td>
<td>243.4</td>
<td>360.0</td>
<td>907.609</td>
</tr>
<tr>
<td>% growth vs previous year</td>
<td>259%</td>
<td>28%</td>
<td>119%</td>
<td>106%</td>
<td>34%</td>
<td>10% *</td>
<td>-4%</td>
<td>48%</td>
<td>152%</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>3.143</td>
<td>9.677</td>
<td>11.468</td>
<td>28.173</td>
<td>63.245</td>
<td>72.796</td>
<td>77.132</td>
<td>74.397</td>
<td>104.084</td>
<td>337.682</td>
</tr>
<tr>
<td>% growth vs previous year</td>
<td>208%</td>
<td>19%</td>
<td>146%</td>
<td>124%</td>
<td>15%</td>
<td>6% *</td>
<td>-4%</td>
<td>40%</td>
<td>225%</td>
<td></td>
</tr>
</tbody>
</table>

### Supply

<table>
<thead>
<tr>
<th>Category</th>
<th>Enterprises on line</th>
<th>Catalogues on line</th>
<th>Articles on line</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>309</td>
<td>868</td>
<td>1.156</td>
</tr>
<tr>
<td></td>
<td>113.207</td>
<td>&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;&gt;</td>
<td>540.000</td>
</tr>
</tbody>
</table>

### Demand

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Active buyers</td>
<td>540</td>
<td>1.100</td>
<td>1.255</td>
<td>2.748</td>
<td>4.288</td>
<td>5.070</td>
<td>5.339</td>
<td>5.589</td>
<td>8.788</td>
<td>24.295</td>
</tr>
</tbody>
</table>

### Suppliers segmentation:
- 89% Micro (<10 empl.)
- 8% Small
- 2% Medium
- 1% Large

### N. orders:
- 25% RfQ
- 61% RfQ

### Value orders:
- RfQ: 6.700€
- DO: 1.300€

### Average value:
- 2011: 243.4
- 2012: 360.0
- 2013: 907.609

### % growth vs previous year:
- 208% (2011 vs 2010)
- 30% (2012 vs 2011)
- 15% (2013 vs 2012)
The organizational design of centralized procurement

ITALY
- Population: ca 60 mln
- PA employees: 3.700.000
- > 4.000.000 Enterprises
- ca. €140 bln expenditure in G&S in 2012

CENTRAL Gov.
- Ministries: 18
- Central Gov. bodies: >100

LOCAL Gov
- Regions: 20
- Provinces: 110
- Municipalities: 8.101
- School system: Universities: 94
  Schools: >10.000
- Health Sector: >300

MANUFACTURING SECTOR
- 98% SMEs
The organizational design of centralized procurement

Would you believe this is a centralized system?

- ~30,000 contracting authorities “identified” by the oversight/regulatory Authority (Avcp) (source: 2012 report)

- 58.5% of completed procurement procedures characterized by a level of the reserve price (≈ estimated value) between €40,000 and €150,000, but accounts only for 6.3% of the overall value of procurement procedures (all sectors)

- Most of the procedures (in numbers) are negotiated: 69.4% public works - 65% services - 55.9% goods
5 The organizational design of centralized procurement

State of the art (fairly updated)

- Regional CPBs
- Specialized CPBs (health care)
- Joint procurement (health care): mind Tuscany!
5 The organizational design of centralized procurement

Designing centralized procurement

Which dimensions should we consider?

- Market structure
- Share of general govn’t procurement by level of govn’t*
- Human capital training/career profile
- Product characteristics

*See slide from the OECD Government at a Glance 2013
7.2. Share of general government procurement by level of government, excluding social security funds (2011)