NATIONAL E-PROCUREMENT PROJECT GUIDANCE NOTES

PROCUREMENT SPEND ANALYSIS

Title:	**Procurement Spend Analysis**
Identification:	Supports organisations in gathering and analysing procurement spend to highlight system and business issues and to enable business case development.
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1. Introduction and Definitions

This document describes a methodology for undertaking a Procurement Spend Analysis. In broad terms, the purpose of spend analysis is to gather and analyse statistical information on what an organisation buys, who it buys from and the values and volumes of its transactions (in total and by individual department).

The first aim is to highlight system and business issues that need to be resolved. The analysis can then be used to support recommendations for change, provide the basis of a business case and generate opportunities for savings.

Undertaking a Procurement Spend Analysis at the earliest stage of an e-Procurement Project in an organisation will benefit it through:

- Highlighting the range of categories of products and services that are being bought
- Identifying who is buying what, to support change management programmes
- Providing an overview of the supply base
- Supporting the development of procurement strategies, policies and systems for the different things that are bought
- Setting the scope for e-Procurement and enabling expectations to be set on what is ‘e-Procurable’
- Providing a checklist of system functionality requirements against which to re-implement existing systems or measure new systems
- Highlighting the importance of data classification, including suppliers, products and services, budgets and organisational groupings
- Identifying cultural and other business issues that will be faced, such as the lack of an effective low value strategy
- Identifying candidates for prioritisation and quick wins (suppliers, product categories and departments)
- Enabling realistic estimates to be made of process and direct cost savings opportunities
- Providing a list of baseline measures from which key performance indicators (KPIs) can be set to measure the impact of any changes

We recommend that spend analysis is performed using information from the Accounts Payable (Creditors) module of the corporate financial system. Additional information may be available in integrated Purchase Ordering systems, purchasing card statements and other operational systems, but this additional information is not essential for this exercise.

This document does not detail how the analysis is to be performed, but it does outline the issues and challenges that will be faced and some of the recommendations and conclusions that can be drawn.

2. Methodology

2.1 Introduction

The following stages are required:

1. Data is extracted from the Accounts Payable (AP) and related systems for a full financial year. This is usually performed by the finance systems team or IT, depending on the capabilities of the finance system. The extract should be written into a spreadsheet or database (such as Access) depending on the number of invoice lines extracted.
2. A review of the data is performed, with non-influenceable spend being removed and a sanity check performed.
3. Data is analysed into a set of tables using spreadsheet and database tools such as Excel and Access or using business intelligence tools such as Cognos, Crystal or Business Objects.
4. The data analysis is then interpreted and conclusions and recommendations drawn.

2.2 Data Extraction

From the Creditors or AP ledger, the following information is required for a full financial year (or failing that a calendar year) for each invoice line:

Data Element	Essential or Desired	Notes
Supplier Code	Essential	
Supplier Name	Essential	
Supplier Analysis Field with Description(s)	Desired	Analysis codes may be available showing different categories of suppliers such as factors, local suppliers, voluntary organisations, employees etc.
Supplier Address Details, including Post Code	Desired	
Supplier VAT Registration	Desired	
Supplier Relationship Information	Desired	Where suppliers exist in parent-child or other groupings
GL Account with Descriptions	Essential	You need to establish how the GL Account is formatted. The minimum information needed will be a nominal/account code and an organisational code such as cost centre, department or service code. The GL Account will exist on the invoice line, or its related transaction in the General Ledger. You will need to identify the descriptions for each relevant element of the GL Account that you are going to analyse by. For example: *1200119907 breaks down into* *12 – Education* *120011 – St Anne's Primary (in this case cost centre is unique only when associated with department)* *9907 – Play Equipment*

Data Element	Essential or Desired	Notes
Unique Invoice Reference	Essential	This will enable summaries to be generated by *invoice*.
Supplier's Invoice Reference	Desired	
Net Amount by Invoice Line	Essential	
Invoice Date	Desired	
Transaction Code	Desired	Some AP systems will allow organisations to code invoices for further analysis or to determine processing rules
Product / Service Code with Description	Desired	Such as UN/SPSC or NSV or internal classification if it exists. Often the GL nominal/account code is the only product/service classification that exists in a finance system
Service / Department / Directorate	Essential	Establish the level of summarisation that is going to be most useful and meaningful based on the objectives of the study. You may need to do this by manually collating cost centre codes if the structures do not exist. This is particularly useful when establishing ownership of spend during targeted savings exercises.
Purchase Order Reference	Desired	
Contract Reference	Desired	

2.3 Excluding Non-Influenceable Spend

Analysis is performed only on spend that is ‘influenceable’ as this is the scope of Procurement’s activity. Other benefits can be achieved by improving the management of non-influenceable spend (such as the payment of employee expenses, refunds or grants), but this is usually outside the scope of a Procurement department and an e-Procurement implementation. ‘Influenceable’ is defined as where cost, quality, service levels or the trading process can be affected by human intervention:

2.4 Doing a *Common Sense* Check

At this stage it is recommended that some summary totals be produced to check the completeness and validity of the data before undertaking full analysis. Ask individuals in Finance and Procurement what they would estimate influenceable spend to be. Do checks on the number of invoices and the total influenceable expenditure. The validity and acceptance of the final analysis and any recommendations and conclusions will depend on whether people believe in the data.

2.5 Data Analysis

The following table shows some of the types of analysis that can be performed on the data and the conclusions/recommendations that can be drawn. Organisations will need to determine what analysis is appropriate for their needs based on the size of the organisation and the objectives of the study.

Analysis	Conclusion / Recommendation
Influenceable Spend as a % of Total Spend	Indicates what the AP system is being used for. Recommendation would be to determine how to segregate the ledger to keep influenceable third party spend separate from other payments. Starts to set expectations on the scale of potential change. Avoid falling into the trap of thinking that every invoice is to be 'e-Procurable'.
Invoice Analysis	
Average Invoice Value	Can be set as a KPI to measure the impact of change.
Average number of invoice lines per Invoice	Can be set as a KPI to measure the impact of change.
Number and value of invoices by value bands (see table in Appendix A) 80% of invoices by volume equates to X% by value 20% of invoices by value equates to X% of invoices	Indicates that a low value strategy is required as significant effort is spent managing a very small portion of the organisation's spend. A low value strategy will consider process and business issues (such as re-defining authority levels and centralising budgets) in addition to using appropriate technologies to increase automation (such as Purchasing Cards, buying on-line, self-billing and catalogues). Strategy must be to 'organise and let go'. Note that £45 is considered to be the *minimum* estimate of the whole life cost of handling an order, invoice and its associated payment. It reflects both direct costs (postage, cheque printing, etc) and indirect costs (staff time, overheads, etc). Some organisations use a much higher figure, rising to £100, representing more complex transactions or larger overheads. *Typically 70% of invoices are for less than £500. They represent about 10% of total influenceable spend and have an average value of around £100.* *Often 25% of invoices are for less than £45 and represent 1-2% of influenceable spend.*
Number of invoices with a single line Number of invoices with more than 10 lines List of suppliers who generate more than one invoice a week with a single line	This is a way, albeit a crude one, to determine if any consolidation of invoicing is happening. You would expect to see higher numbers of lines and fewer invoices if consolidation is occurring.
List of suppliers who generate invoices with large numbers of lines (say 50)	Indicates where consolidation of invoicing is occurring and highlights opportunities for electronic invoicing. Alternatively, some of these suppliers may be candidates for centralising budgets and reducing the numbers of lines (and therefore data entry). This will apply only if the lines are there purely for accounting purposes (e.g. a utility bill) and not for multiple products. Trend analysis and statistics from other systems can be used to cross-charge centralised budgets if required, although this should be done only if the values are high enough to warrant the additional administration.

Analysis	Conclusion / Recommendation
Number of invoices where spend is greater than £150K List of suppliers generating invoices greater than £150K List of suppliers where spend is greater than £150K List of procurement categories where spend is greater than £150K	This is a crude way to analyse adherence to OJEU limits. Note that not all spend is applicable, e.g. social care provision.
Percentage of invoices with related purchase order references List of procurement categories where purchase orders are used (80% or more invoices have PO numbers) List of suppliers where purchase orders are used (80% or more invoices have PO numbers)	The ability to complete this part will vary depending on whether there is a manual or an integrated purchase order database. Often purchase orders are held in different operational systems in organisations. Investigating the gaps will identify internal issues on the use of purchase orders, which will need to be addressed before e-Procurement can be successful. The gaps will also identify where other Procure to Pay solutions will need to be considered – emergency orders, utilities and estimated orders, for example. Will help identify priority (quick win) areas for e-Procurement.
Percentage of spend under contract	This can be difficult to determine unless contract references are specified at the time of order or invoice. It is not enough to state that because Supplier X is the preferred supplier for stationery therefore all spend with Supplier X is under contract, unless you know that all items purchased from Supplier X fall into the stationery category. This will be relevant in determining and evaluating maverick spend.
Supplier Analysis	
Number of suppliers used this year	Can be set as a KPI to measure the impact of change.
Number of suppliers used this year as a percentage of suppliers on the database	Can be set as a KPI to measure the impact of change.
Number and value of suppliers by supplier bands (see table in Appendix A) Count of suppliers with a single invoice Average invoice value of suppliers with a single invoice 80% of the suppliers by volume equates to X% of the spend 20% of the suppliers by spend equates to X% of the volume	The majority of suppliers with a single invoice will be ad-hoc, one-off suppliers. This generally indicates the level of off-contract spend. Each new supplier will be generating administrative effort to create and maintain which could be saved, as could the effort required by the purchaser/customer to source the supplier. *Typically 50% of suppliers have a single invoice. This represents between 1 and 2% of spend.*

Analysis	Conclusion / Recommendation
Count of suppliers with more than 100 invoices Count of suppliers with more than 250 invoices (approx. 5 a week)	These suppliers should be considered as a priority for more creative payment methods such as self-billing, consolidated invoicing and electronic invoicing.
Number of 'new' suppliers this year	Often indicates the scale of off-contract spend (which could be as a result of poor contract coverage).
Number of 'new' suppliers in the previous financial year who have been re-used in this financial year	As above, can also be indicative of where insufficient supplier registration procedures exist, when combined with a review of the existence of duplicate supplier records.
List top 50 suppliers by spend and volume of invoices (see table in Appendix A) List suppliers who are in the top 50 by spend <u>and</u> by volume of invoices	Simplistically, the suppliers with whom the most money is spent generally require some designated supplier relationship management in order to ensure that the organisation is achieving best value for money and to negotiate changes in business practice (including e-Procurement and other automation). Suppliers who generate the most invoices are candidates for increased automation throughout the Procure to Pay cycle.
Duplicate suppliers (list evidence and show how it would affect the positioning in the top 50 tables)	Most organisations have significant duplication of suppliers. This can be identified by postcode, telephone, and VAT registration or description searches. It is also worth checking manually for the first few suppliers by volume and value (using keyword searches). In some instances this may be for legitimate reasons (e.g. different supplier locations), but in others it could be human error. Even where suppliers have different addresses, it is always advantageous to be able to access a common record. This is for reasons such as price variance, delivery management and billing rationalisation. Depending on the scale of the problem it can be advantageous to use a data cleansing organisation to clean the supplier database. This will provide a list of suppliers who are still trading, a structured key (to be used as a foreign key for future analysis) and a standardised description. The supplier creation and maintenance procedures should then be reviewed so that only new suppliers are added to the database.
Supplier analysis by supplier groupings (if available) • Local suppliers • SMEs • Contracted Suppliers • Suppliers who are Purchase Card enabled • Bottleneck, Routine, Strategic and Leverage suppliers (i.e. risk vs. spend)	Usually indicates lack of supplier coding, as this information is rarely available. Indicates procurement compliance with corporate policies and social responsibilities. Breakdown of suppliers based on risk and spend will help when designing <u>appropriate</u> automation and e-Procurement strategies (use of e-auctioning, buying on-line, Purchasing Cards etc.).
Product / Service Analysis *(Usually limited to that which can be determined from the General Ledger nominal code)*	
Percentage of invoice lines and spend against unspecific categories	Spend coded to categories such as *miscellaneous creditors, miscellaneous expenses, supplies, general creditors,* etc. is difficult to analyse further and means that other categories result in being understated

Analysis	Conclusion / Recommendation
List top 50 product/service categories by spend and volume of invoices (see table in Appendix A) List product/service categories which are in the top 50 by spend and by volume of invoices	Simplistically, the categories where the most money is spent generally require some designated category management in order to ensure that the organisation is effectively covered by contract and that opportunities for savings are identified. Categories where spend is over £150K can indicate where non-compliance with EU regulations exists.
List product/service categories by number of unique suppliers used	This often highlights coding issues. This is often down to lack of awareness of the importance of coding, or to lack of explanation/information on which codes to use. In some cases transactions are miscoded deliberately to support budget compliance, e.g. when budget is available in 'miscellaneous purchases' but the budget for 'IT consumables' has been exhausted. Miscoding for any reason is a significant issue when attempting procurement spend analysis, but it also has a wider impact when budget codes are used for other types of reporting (to external bodies for ring-fenced expenditure, for example). Note that through the separate use of procurement classifications and appropriate 'self coding' systems, the scale of financial miscoding can be measured and audits performed on problem areas. This will also highlight areas where significant off-contract procurement is taking place. *Note that for some categories the procurement strategy may be for more rather than fewer suppliers in order to reduce business risk.*
Risk/Value analysis of the top 50 product/service categories	*See National Procurement Strategy for Local Government.* Determine what percentage of each category is Bottleneck, Routine, Strategic and Tactical by considering the amount of spend, market characteristics and business objectives. This will ultimately enable appropriate e-Procurement strategies to be developed and will give an indication of the amount of spend which is potentially e-Procurable.
Organisational Analysis	
By spend and volume of invoice lines	Spend analysis by cost centre, department or service will indicate priorities and parts of the business that will be most impacted by change. Spend analysis should be performed for key suppliers and product/service categories to identify overlap and ownership.

3. Issues and Risks

There are a number of issues and considerations to take into account when undertaking Procurement Spend Analysis in this way.

- A number of issues can arise in trying to extract the required information from the finance systems. These will include:
    - Lack of internal skills or knowledge on database structures
    - Lack of confidence in the data in the system (leading to resistance)
    - Conflicts in ownership of the data (between Finance, Procurement and IT, for example)
- There are likely to be a number of data quality issues, including duplication of suppliers, negative transactions and miscoding, that will distract from the messages that the analysis gives. It is important to stress that this is *financial data* from your own finance systems and that problems with the data just emphasise the need to make improvements.
- There is unlikely to be a procurement-facing classification of suppliers, which will not enable a robust analysis of where money is spent. A typical classification would support a complete picture of the types of supplier used, expenditure levels, risk exposure, (e.g. monopoly / unstable / poor quality) and supplier relationships. Ideally, suppliers should also be classified to enable analysis against policies such as use of small firms, local companies, ethnic minority businesses, voluntary organisations and community sector providers.
- There is usually evidence of some duplication of supplier records. In some instances this may be for legitimate reasons (e.g. different supplier locations), but in others it could be human error. Even where suppliers have different addresses, it is always advantageous to be able to access a common record. This is for reasons such as price variance, delivery management and billing rationalisation. The duplication of suppliers dilutes true spend by supplier.
- Product/service categories can usually be determined only from an analysis of the General Ledger (account or nominal) code. In many organisations, codes are introduced to support financial analysis and not procurement analysis, and there will be no hierarchies or relationships between codes. This does not readily lend itself to procurement reporting, particularly for identifying influenceable expenditure, quick wins and market consolidation opportunities and therefore does not readily support business case development without significant manual analysis.
- There are a number of issues to be considered that arise through the decision to base Procurement Spend Analysis on Accounts Payable information. These include:
    - Actual suppliers of goods and services are not always the same organisations to whom payment is made. Spend made via third parties is not always analysable (use of factors, leasing companies, Purchasing Card providers, etc.)
    - Use of generic bucket codes prevents detailed procurement category analysis
    - Use of balance sheet codes hides the cost centre that is making the purchase
    - Organisations and suppliers who do not invoice will not be included (internal charging by *County Supplies* for example)
    - Payments made by journal entry in General Ledger will not be included

4. Conclusions

- It is recommended that Procurement Spend Analysis be repeated periodically as appropriate (at least annually) to highlight improvements and identify further opportunities.

- Organisations should not underestimate both the technical skills required to analyse large volumes of data and the procurement skills required to interpret the trends.

- Do what you can with the data that you can get. Something is better than nothing and you will be able to make some observations and recommendations. Plan re-implementations and new systems (including e-Procurement) to enable improved analysis in the future. Many existing financial and ERP systems already contain functionality that could rectify problems and provide information, so do not immediately assume that you need to buy a new system.

- There are wider benefits than supporting an e-Procurement Business Case that can be obtained through understanding expenditure better. All stakeholder groups, including Internal Audit, Finance, Accounts Payable, Budget Managers and devolved Buyers, will find opportunities for improvement from the outputs.

- Use the data analysis to inform annual reviews of your procurement strategy and to set priorities for improvement.

- Seek to use the data analysis to make improvements to the supplier database and content on your systems. This will help improve the quality and accuracy of the analysis each year. Take on board the following points:

  - The supplier file should be *shared* by both Finance and Procurement - both have different, but equally valid, information requirements that need to be supported to meet both departmental and corporate/policy needs
  - Every effort should be made to segregate non-trade creditors into a different area of the data file
  - Basic supplier classifications should be introduced at the earliest opportunity. As a *minimum* they should be:
    - **Strategic** being those deemed to be in the *Bottleneck* and *Strategic* boxes and some in the *Leverage* box (high aggregate spend only). The level of detail and information held on these will be far greater, although the number of suppliers would be relatively low
    - **Tactical** deemed to be in the *Routine* box and some in the *Leverage* box, being those that are used or likely to be used on a regular basis. Information will be far more straightforward at this level
    - **Sundry** being those suppliers that are likely to remain one-off purchases and do not warrant the overhead of establishing and maintaining anything more than rudimentary records
  - Think about who should be able to put new suppliers onto the systems. Why are so many new suppliers needed when the types of goods and services and sources of supply are relatively static

5. Links to Other Documents

The following web sites and documents provide useful additional information on this subject:

- Maximising Returns from Purchasing Data - Informed Business Decisions from Coding and Classification (www.CIPS.org)

Appendix A – Sample Tables

The following table samples can be used to collate data

Invoice Analysis

Number of Invoices:	Count	Cumulative Volume	% Volume	Cumulative Volume	Value	Cumulative Spend	% Spend	Cumulative Spend
<£0								
<=£45								
<=100								
<=£500								
>£500, <=£2,000								
>£2,000, <=£10,000								
>£10,000, <=£30,000								
>£30,000 <=£150,000								
>£150,000								

Supplier Analysis – order by spend and volume of invoices

Number of Suppliers with:	Count	No Invoices	% Volume	Cumulative Volume	Value	% Spend	Cumulative Spend
More than 100 invoices							
6 to 100 invoices							
2 to 5 invoices							
1 invoice							

Supplier Detail

Supplier	Spend	% Spend	Cumulative Spend	Number of Invoice Lines	% Volume	Cumulative Volume	Number of Accounts	Number of Product/Service Categories	Number of Cost Centres
		Spend / Total Spend			No Inv Lines / Total Inv Lines		If available, this is the number of unique account codes (nominals) that have been used by this supplier	This is the number of procurement categories that this supplier has supplied	Or departments or services, whichever is most appropriate

Product/Service Category Detail – order by spend and volume of invoice lines

Product/Service Category	Spend	% Spend	Cumulative Spend	Number of Invoice Lines	% Volume	Cumulative Volume	Number of Accounts	Number of Suppliers	Number of Cost Centres
If available, otherwise use account or nominal code to give a general procurement category		Spend / Total Spend			No Inv Lines / Total Inv Lines		If available, this is the number of unique account codes (nominals) that have been used to code this category	This is the number of unique suppliers who have supplied this category	Or departments or services, whichever is most appropriate

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