

contributors

in this issue



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Chile, the world's largest copper producer, where he led and participated in business process projects and the introduction of standard software. He has been a consultant to prominent Chilean companies from both the public and private sectors in the area of business process management.

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Dragan Vasiljevic

Dragan Vasiljevic is associate professor of computer-integrated manufacturing and logistics in the Faculty of Organizational Science of the University of Belgrade. He acquired his M.S. and Ph.D. degrees in maintenance and logistics management in the same department. Vasiljevic has published more than 60 papers in journals and conference proceedings. He is the author of two books, *Computer-Integrated Logistics: Models and Trends* and *Logistics and Supply Chain Management*, which have been used as course books. His areas of expertise include maintenance, logistics and supply chain management.



CASHING in

on DATA

BY JESSIE CHIMNI

EXECUTIVE SUMMARY

Corporate procurement organizations are responsible for securing products and services of the best quality at the lowest possible cost for their operations. To ensure that they are able to accomplish these objectives consistently, procurement executives at innovative companies are embarking on a key initiative: spend analysis. Spend analysis is the process of determining what is being spent, with whom and for what.

Spend analysis enables organizations to prioritize sourcing efforts by enabling them to identify and focus on the categories that represent large buckets of corporate buying and rationalize the supply base by determining the right number of suppliers to do business with. Procurement managers can take spending on a category that is currently scattered among multiple suppliers and award that volume of spending to a smaller number of suppliers and gain volume discounts. In this way, spend analysis also supports compliance efforts by identifying causes and sources of contract leakage and using that information to put remediation measures in place.

Through engagements and research, I've found that most organizations can enjoy savings of about 2 percent to 6 percent of their total spend by identifying and executing low-hanging opportunities determined through spend analysis. This is especially true in the case of companies that have not outsourced manufacturing, such as industrial manufacturing companies. For a typical manufacturer to show a similar gross margin increase would equate to about a 15 percent increase in revenue.

Separately, Aberdeen Group had analyzed detailed savings from spend analysis initiatives in their research report "Best Practices in Spending Analysis," which are shown in Figure 1.

While the benefits from spend analysis and supply base rationalization are clearly huge, there are a number of challenges in getting accurate spend visibility data. Most companies have a wide variety of data from different sources about what they buy — some in invoices, some in purchase orders and others in receipts, making it hard to do detailed analysis.

Even after implementing enterprise resource planning (ERP) systems, most organizations do not have accurate spend data. If a company has a single ERP system, information may be captured at too high a level to be effective in spend analysis. For example, reports

from the ERP system may say how much a company has spent on computer equipment or temporary workers, but it may lack any breakdown into the types of computer equipment or kinds of temporary workers actually purchased.

The major issue with relying on purchasing systems is that more than 35 percent of an organization's spend may not be going through the ERP system's purchasing module. For example, let's look at insurance purchase within a large company. Inbound freight shipments carry insurance purchased by the shipper. It may be hidden by being billed to the company under a different general ledger code than health and life insurance and liability insurance spend. Trucking costs may show up in freight forwarder charges for outbound shipments and may not show up as a separate line item for inbound shipments.

If you want to track spend via accounts payable systems, the issues are similar. Wire transfers and credit/procurement cards usually only show up as a single-line item, therefore hiding who you really purchased from (and therefore what you bought). Freight forwarding and freight payment typically show up as a journal entry and have no record in accounts payable.

Similarly, general ledger systems do not provide a good overall picture of corporate spend. They are designed to tell a corporation why something was purchased, but not what was purchased. For example, a PC peripheral may be entered in a general ledger system as a marketing expense or charged against manufacturing, but other essential information can be collected.

Finally, what one sees in their materials requirements planning and execution reports are the direct materials that the company is purchasing. In addition, the reports only reflect the anticipated price of the purchase and not the actual price at the time of the buy.

Welcome to the big picture

All of these examples serve to illustrate that despite having sophisticated

ERP systems, tracking spend is still a very complicated issue. The solution to this is for data needs to be brought over from multiple systems to provide a consolidated view, and spend analysis is then done on that consolidated data. However, additional issues exist that need to be resolved before spend analysis is done on this consolidated data. For example, if the company is global with several different enterprise resource planning systems, the data will be in different formats, making it hard to get a consolidated picture of purchases across the entire enterprise.

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Different codes are used to describe the same supplier or commodity across divisions or even within a division. For example, HP may be "coded" as HP in one plant (or division) of the ERP system and as Hewlett Packard in another. As a result, spend aggregation information from an ERP system may not be accurate, leading to inefficient leverage over suppliers. Most ERP systems use item codes, but do not relate an item to an industry standard classification. Consequently, it becomes difficult to aggregate similar and equivalent data. For example, two different suppliers may be providing equivalent pumps at different prices. Without being able to correlate this information (since supplier and item codes for them will have different values within the ERP system and item descriptions may not be sufficiently revealing), it is difficult to identify opportunities to save money by combining spend across commodities, locations, suppliers and programs.

Relationships between suppliers are rarely identified within ERP systems. For example, your ERP system may not tell you that Lab Safety Inc. is a subsidiary of WW Grainger. If it did, you would realize that you are spending a lot more money with WW Grainger than you thought, and you could use that information to gain negotiating leverage.

Other related information such as minority status of suppliers usually does not exist within ERP systems.

Such information is critical to take advantage of tax breaks or to meet regulatory compliance requirements. Without this information, supplier rationalization initiatives can fall short of expectations.

Before pursuing spend analysis and supplier rationalization, the spend data accuracy issue must be addressed. With accurate spend data, a proper framework can be established to identify low-hanging fruit through spend analysis and to drive the supplier rationalization initiative to success.

Framework for spend analysis and optimization

This section outlines a proven three-step approach to address key issues, and the first step is to ensure accuracy of spend data. Once that phase is completed, you must identify low-hanging fruit through spend analysis. In step three, apply a proven approach to supplier rationalization and spend optimization.

Rather than approaching spend analysis and optimization as a one-off project, it is critical to execute the steps in this framework on an ongoing basis (at least once every six months) to achieve sustainable benefits. To help clients perform these ongoing activities cost-effectively, provide a managed service program that allows clients to build on the data cleansing/enrichment and analysis work done in the past without having to initiate a brand new data improvement and enrichment process again on the entire spend data.

Phase 1: Accurate spend data.

A resource-intensive process, this phase consists of three steps. First, convert the paper data into electronic format. Remember that spend data consists of invoices, receipts and purchase orders. Identify the sources of spend data and set up mechanisms to convert the raw data source information into electronic formats that can be imported for analysis.

Next, extract information from

Spending analysis breakdown

Improvement area	Performance impact
Material/services cost	Reduce costs 2 percent to 12 percent through informed strategic sourcing strategies
Supplier management	Eliminate duplicative suppliers. (Reduction depends on previous efforts.)
Contract compliance	Improve compliance 55 percent. Save 7 percent through use of contract pricing.
Regulatory compliance	Meet regulatory reporting rules.
Inventory management	Cut excess stocks >50 percent. Lower inventory costs 5 percent to 50 percent. Reduce expediting costs.
Product management	Cut unnecessary part introductions by 20 percent. Increase part reuse. Align design and supply strategies. Facilitate early supplier integration.
Process cycles	Reduce spend analysis project cycles 30 percent to 50 percent. Refocus sourcing and business managers on strategic tasks.

Figure 1. Findings from the study, "Best Practices in Spending Analysis." by the Aberdeen Group

source systems. Spend data often exists as individual transactions in various source databases such as ERP systems, procurement applications, purchasing modules, and travel and expense reports from American Express. This information must be extracted from the various sources and aggregated into a common location such as a separate database. The data must then be normalized and enriched.

Normalization ensures that similar supplier names (such as HP, Hewlett Packard or HP Systems) are recognized and converted to a common supplier

name. Normalization also addresses inconsistencies across systems such as spelling variations or abbreviations and use of different commodity codes (a key requirement for improving data quality as well as analysis accuracy).

In addition, each product should be mapped to popular standards-based classification taxonomies such as Universal Standard Products and Services Classification (UNSPSC) and eCl@ss. A manufacturer, for example, would want a taxonomy (classification scheme) that not only maps an item to a name such as high-pressure valves, but to specific

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Three-stage methodology

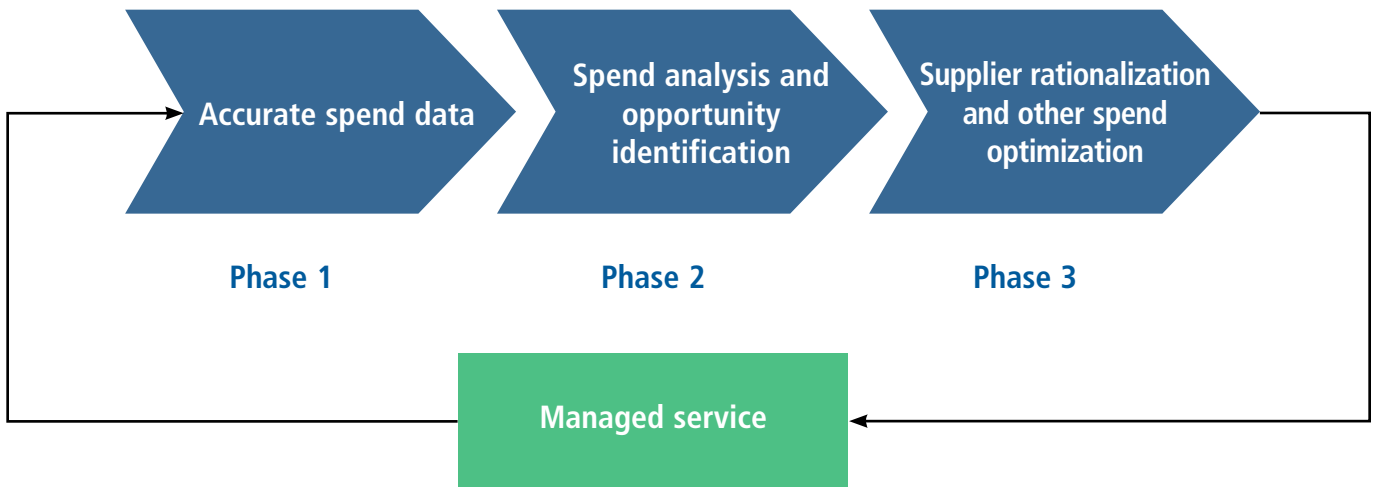


Figure 2. All costs can be monitored and improved using three phases of spend analysis.

categories of valves (such as 10-inch copper-coated or 10-inch zinc-coated). Mapping the standards-based taxonomy to each transaction record within the spend analysis repository allows users to aggregate spend information for the same commodity type (such as 10-inch valves) but across different item codes (such as 10-inch copper coated) across various source applications for spend analysis. Alternately, they can view the information at detailed item code level. Subject matter experts with prior experience as commodity managers are helpful to ensure accuracy and relevance.

Finally, additional supplier-related information, such as the parent company name, revenues, credit rating, Standard Industry Code or diversity, status is added during this step. This type of data enrichment allows for deeper and richer spend analysis. Note that even the best enabling technologies used for this phase may be able to classify 95 percent to 98 percent of invoices or purchase orders accurately. That still leaves 2 percent to 5 percent of spend items that need to be manually reviewed and then assigned to the appropriate spend category. The solution should present these unclassified items to a commodity expert and then capture in the system how that item was classified so that it can be automatically classified the next time it arises.

Phase 2: Spend analysis and opportunity identification. Once data has been cleaned, normalized and enriched, it can be analyzed to identify low-hanging opportunities for cost savings. Figure 3 shows one methodology that can be used for this analysis. Various opportunities for cost savings are identified and prioritized using the bubble chart approach. Magnitude of savings, relative ease of implementation and culture changes that are needed to achieve the results are among the key prioritization criteria.

Figure 4, an analysis for a manufacturer, further demonstrates the bubble chart approach that groups pertinent information. It shows a large variance in purchase price for the same item across suppliers, which makes it possible to identify the total cost savings that would be achieved by standardizing all procurement with a supplier on a negotiated price and ensuring compliance with the contractual terms across divisions.

Similarly, Figure 5 shows that the company is using similar items from multiple suppliers at varying prices. Even larger savings in that commodity spend can be realized by consolidating spend for that commodity under one supplier and one item and then putting processes in place to ensure

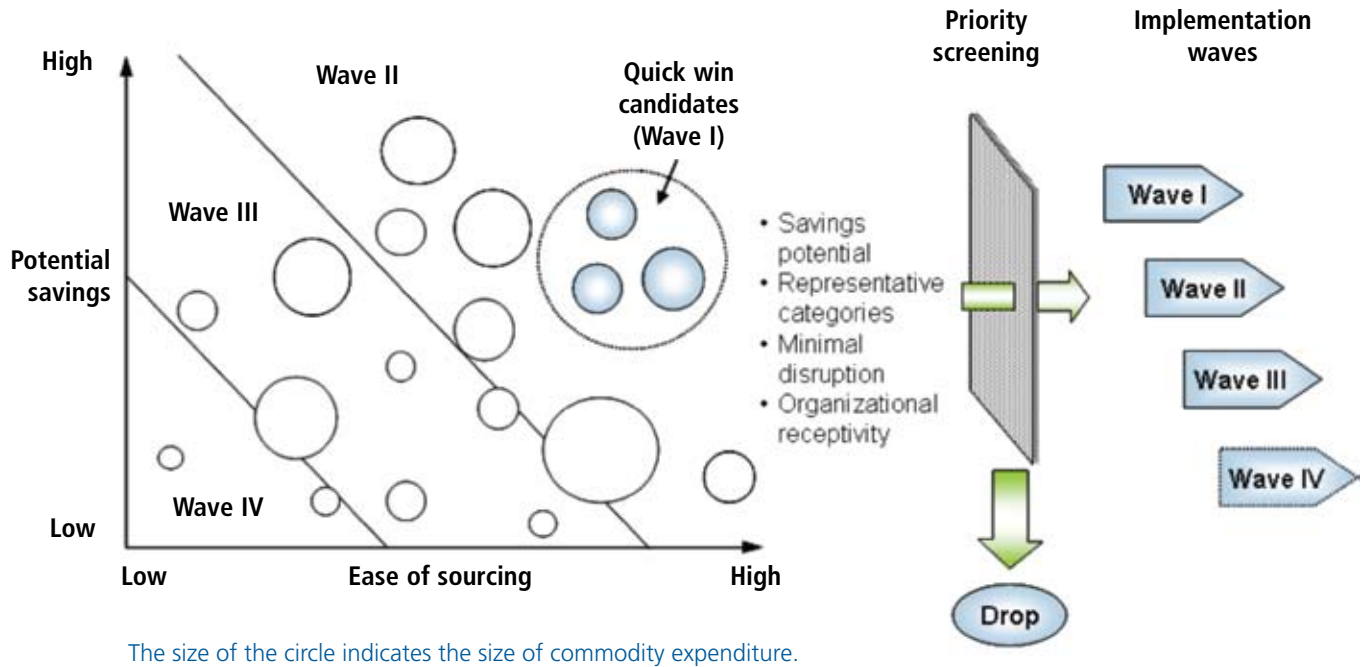
contract compliance and prevention of item proliferation. In some cases, companies can use parametric search capabilities to enable searching of a catalog item with similar or equivalent attributes to reduce item proliferation.

By focusing on duplicate, equivalent and similar item analysis and by incorporating supplier hierarchy, diversity attributes and performance into spend analysis, this company was able to identify various savings opportunities and pursue a course of action based on business-relevant criteria.

Phase 3: Supplier rationalization and other spend optimization. A key outcome of this phase is cost reduction as a result of supply-base optimization. It is important during this phase to identify all cost (and time) savings opportunities. Prioritize and implement cost savings opportunities through refinement of sourcing strategy and resulting supply base rationalization. Define and evaluate key performance indicators and use them as the basis for supplier analysis.

Define and evaluate key performance indicators and use them as the basis for supplier analysis. Evaluate the alignment of design, manufacturing and procurement, identifying issues causing friction that increase costs or time and getting agreement on the organizational structure to support sourcing activities from design

Bubble chart approach



The size of the circle indicates the size of commodity expenditure.

Figure 3. The bubble chart allows for more options of identifying potential savings.

Purchase price identification

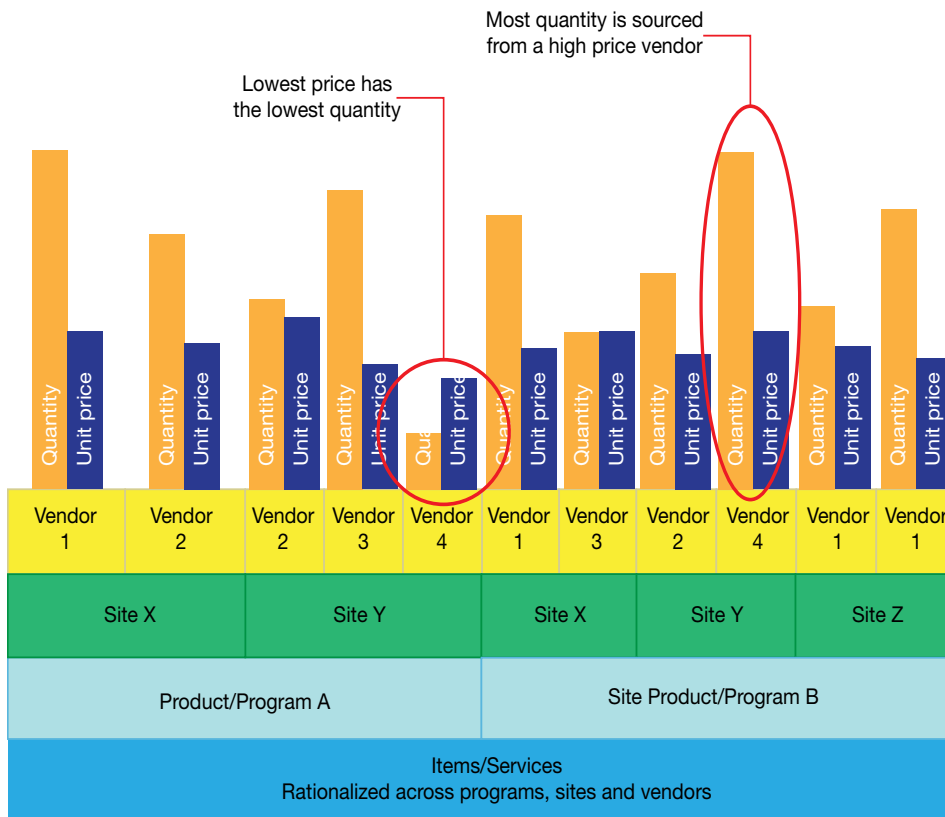


Figure 4. Using the bubble approach for grouping information, total cost savings can be defined.

through obsolescence. Streamlining supplier collaboration activities such as bid management should also occur during this phase.

Some organizations may see a large spike in savings from doing the entire process (all three steps outlined above) just one time. However, this approach does not really set things up for sustained results. Over time, practices such as maverick buying, lack of contract compliance and buying the same commodity from multiple suppliers at varying prices will invariably creep in. Sustaining and building on initial gains can only be accomplished if spend analysis, supplier rationalization and spend process optimization is an ongoing activity woven into the fabric of the operation. However, as a baseline, this requires the spend data to remain normalized and enriched on an ongoing basis as well.

A managed service program can help manufacturers perform these ongoing activities in a cost-effective manner.

This method builds on the data cleansing/enrichment and analysis work done in the past without having to initiate a brand new data improvement and enrichment process on the entire spend data every time.

Setting an example

A large aerospace company wanted to gain a comprehensive understanding of its direct and indirect spend across all operations. Their chief procurement officer believed that by significantly reducing the purchase of similar commodities from multiple suppliers at varying contractual pricing and eliminating maverick buying, the organization would be able to reduce its purchasing spend by about 5 percent. Spend analysis would give him and his staff clear visibility into pricing variance for the same commodities across various plants and locations and allow him to reduce item/service costs and rationalize the supplier/material base. As a result, he would also be able to reduce inventory across several plants. He also knew that the first step in the process was the normalization and enrichment of spend data from various source systems.

The company engaged a leading supply chain consulting firm for the entire spend analysis initiative, including:

- Analysis of extraction rules and process from 16 source systems including SAP
- Extraction and consolidation of data consisting of about 22 million records
- Data cleansing and normalization
- Creation of a level five classification scheme for items/services
- Standardization of more than 3 million item/service records using industry standards
- Enrichment of data with classification and supplier attributes
- Spend analysis

The firm's spend analysis provided some valuable insights into current

Multi-price identification

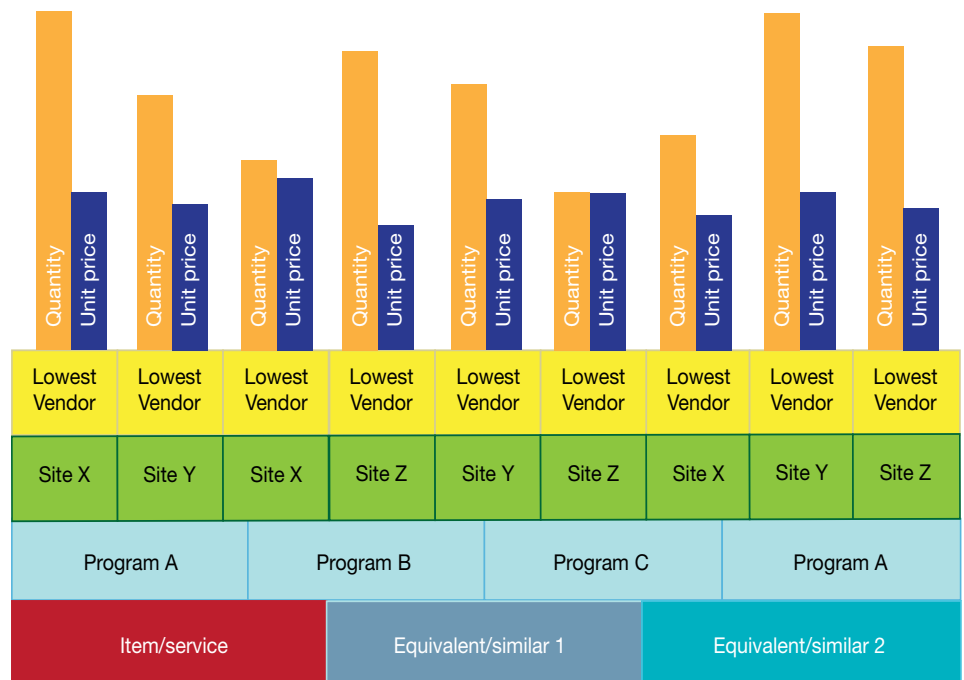


Figure 5. This manufacturer uses similar items but from different suppliers and at varying costs.

practice. The same item by the same name was purchased at different prices across sites, and pricing variance for the same item at the same site was very high. Nomenclature was inconsistent across sites as the same item was referred to by different item codes at different sites, making it hard to obtain companywide spend on a commodity type. It also led to multiple contracts with the same suppliers for the same commodities at vastly different prices.

By identifying the spend cost savings opportunities and implementing them, the company was able to reduce its overall costs by more than 5 percent (approximately \$42,000).

Spend analysis, supply-base rationalization and spend optimization are strategic initiatives for a purchasing organization and can help reduce overall procurement spend in most companies. These initiatives require a combination of extraction, normalization and analytics capabilities in a spend analytics package of vendors

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such as SAP, a proven framework and subject matter expertise, and must be conducted as an ongoing program to ensure stickiness of savings results.

The right service provider can bring all three elements together in a blended project and managed service program to help its client significantly increase their purchasing power and increase earnings. ❖

