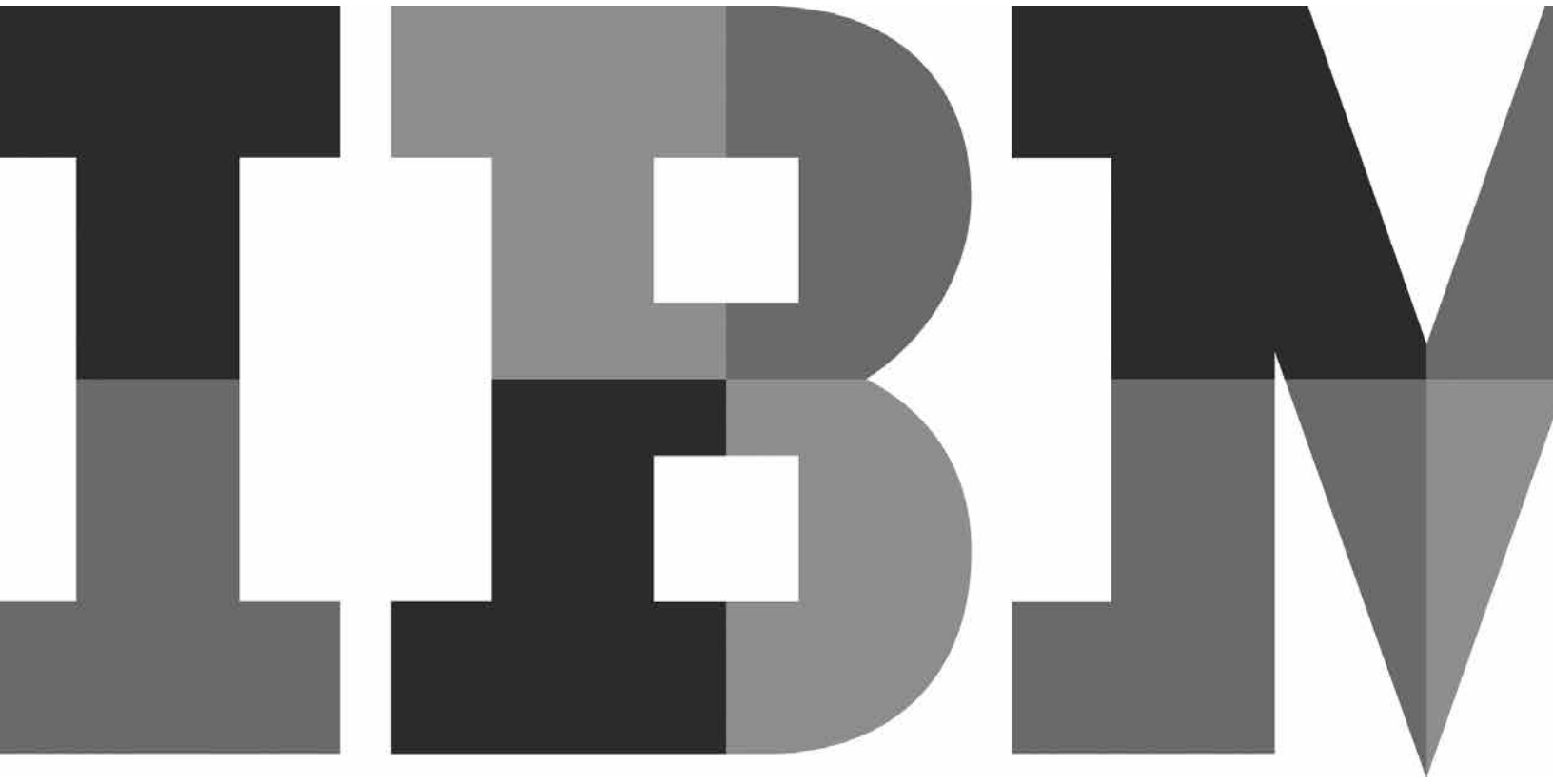
Spend Enrichment: Making better decisions starts with accurate data



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Introduction

Spend visibility should be the foundation of any sourcing or procurement savings program. However, gaining accurate and complete spend visibility has long been a challenge. Companies have been shackled by the dispersed and disparate nature of their spend data; it is often stuck in dozens of different systems and departments across the organization and around the globe. Automation tools, such as business intelligence, have helped businesses aggregate some of the disparate data, but data sources are often missed, or the data is not appropriately categorized, limiting the accuracy of the information. This results in a view of data that lacks any meaningful insight to the organization.

Leading businesses realize the importance of accurate data to their strategic planning processes, specifically around savings identification and monitoring. In the typical Global 1000 organization, spend data exists in multiple locations, in varied formats with varying levels of granularity. Simply gathering all that data into a single location can be a challenging process, yet consolidated and normalized data alone does not deliver information that is insightful for sourcing and procurement decision making. Ensuring that corporate spend can be analyzed at both the corporate and individual supplier level and providing a view of spend by category requires enrichment of the corporate spend data. Unfortunately, many spend analysis initiatives lack the tools to enrich spend data, that is, to properly transform the data into actionable information.

To create richer information, businesses are using a manual approach or leveraging tools which often lack enrichment capabilities. These approaches tend to take weeks and, while the output is a step in the right direction, they often produce inconsistent results or poor quality data. These challenges span all types of spend data.

Sources of spend data

Typically, there are several types of transactions that comprise an organization's spend data. Accurate classification of each type of transaction is a critical part of the success of all spend visibility initiatives:

- **Invoice-only spend:** This type of spend is captured in accounts payable systems and typically has invoice and payment information, but no associated Requisition or Purchase Order (PO) information. This spend usually represents commodities such as Marketing and Facilities. Classification often relies upon less detailed attributes such as Supplier, GL Account, Cost Center or Geography. Master Data Management (MDM) initiatives and traditional extract, transform and load (ETL) technologies do not provide solutions to classify this spend accurately.
- **Unstructured purchase orders:** When a buyer utilizes a PO but is not purchasing, or has not selected a known item from the material/service master or catalog, an unstructured PO is the result. This set of spend is common across all indirect spend types including maintenance, repair and operations (MRO). As with Invoice-Only Spend, this type of unmanaged spend transaction is not typically accurately classified as part of MDM initiatives and traditional ETL technologies.
- **Purchase order of managed items:** These transactions contain items that are known and managed by the business typically in the form of a material/service master or catalog item. Classification of these items should only occur once, upon the creation of the item either with manual assignment or use of an automated enrichment technology.
- **Other transactions:** P-cards, e-purchasing systems, supplier feeds, and time and attendance systems are also potential sources of rich spend information.

To make the most of all of these varied transactions, an automated and repeatable process is necessary to turn the raw information into accurately classified spend that can be used in decision making without losing access to the granular level of detail associated with these transactions. Robust technologies are needed to ensure that spend transactions that vary from established processes and currently known/managed items are properly handled by your spend analysis initiative.

Emptoris Spend Enrichment Manager

The Emptoris Spend Enrichment Manager is designed to automate the processes to gather and classify data from each of the sources mentioned above and to provide accurate and granular visibility across 100 percent of spend. The Emptoris Spend Enrichment Manager automates data enrichment and employs multiple sophisticated techniques that enable an automated, repeatable, and efficient process. Thus, spend enrichment allows companies to unlock the value of spend data and ultimately make better business decisions.

The Emptoris Spend Enrichment Manager assists companies with managing and cleansing all primary types of spend. For Invoice-Only Spend, the solution can classify transactions with an industry-leading rules engine and a large library of pre-existing rules. The Spend Enrichment Manager also contains an industry-leading auto-classification technology and knowledgebase built from processing 100s of millions of transactions. The auto-classification technology can be used to classify unstructured Purchase Orders, including unstructured descriptions, and accurately classify them to the chosen taxonomy. In addition, that same technology can be applied to a one-time cleanup or creation of new items.

Among other capabilities, Emptoris Spend Enrichment Manager can be a key solution to help companies keep suppliers cleansed. The tools and knowledge required to manage both the initial clean-up and on-going maintenance of this data is not provided by traditional ETL technologies and requires the use of external data. In addition, the constant changes in supplier relationships due to mergers and acquisitions require regular maintenance to the supplier master. Emptoris embeds this knowledge in our enrichment technology..

Emptoris' Solution is designed to maximize and compliment businesses' existing technology and process investments. Emptoris Spend Enrichment Manager seamlessly integrates with existing data warehouse and master data management process flows to enable an accurate and consistent view to a company's spend data. In addition, Emptoris Spend Enrichment Manager is offered as part of a fully-automated Emptoris Spend Analysis solution that covers the entire spend analysis life-cycle from data extract to savings identification and compliance monitoring.

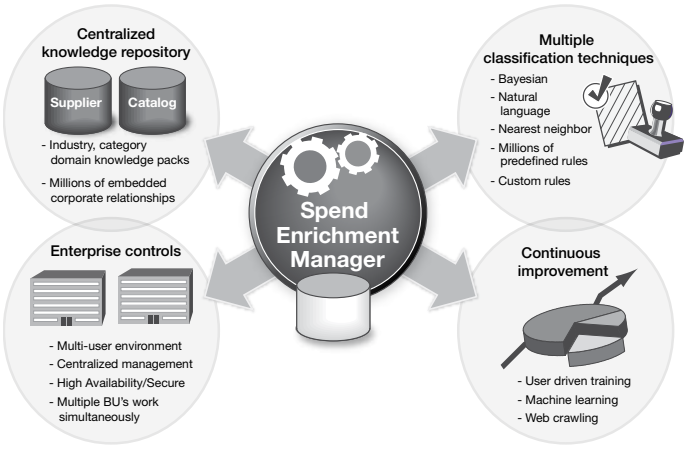


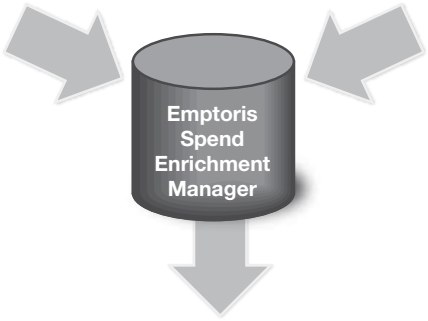
Figure 1: Spend data services knowledge base

Category enrichment with Emptoris Spend Enrichment Manager

- Businesses often struggle to appropriately classify what they are spending, and the cost of incorrect classification can be significant. A recent report by Aberdeen noted that Automated spend analysis solutions provide an additional 3 percent savings on sourcing activities – implementation of a tool such as SEM is a key component of that solution, ultimately leading to millions of dollars of additional savings. The Emptoris Spend Enrichment Manager utilizes multiple classification techniques to ensure that optimal levels of accuracy are achieved for all transaction types. At a summary level, these techniques can be divided into two broad approaches, Auto-classification and Rules.

Transactions from various sources

GL	PO description	Amount
Maintenance		$4,123,421
Capital outlay	Desktop PCs	$5,894,639
Capital outlay	Computer displays	$2,674,323
Capital outlay	Personal computers for graphics	$4,452,621
Professional services		$15,191,821
Professional services		$11,231,611
Capital outlay	Application software	$28,805,842



Categorized by commodity

Commodity	Amount
Computer maintenance	$4,123,421
PCs	$10,347,260
IT professional services	$26,423,432
Software	$28,805,842

The solution uses auto-classification technology based on supervised learning. The auto-classifiers reside over information repositories called Knowledgebases which contain pre-classified data as well as supplementary information such as nouns, synonyms, acronyms, etc. With hundreds of millions of items classified across trillions of dollars in spend, the Emptoris Knowledgebase is broad and deep. Emptoris auto-classifiers draw from best-of-breed auto-classification technology such as Bayesian, NLP, Nearest Neighbor and others.

- **Flexibility in classification:** Emptoris Spend Enrichment Manager offers flexibility in classification, allowing for organization of spend against either industry standard taxonomies or internal custom taxonomies. The learning engine within the solution provides mechanisms for automatic training as well as direct manipulation of the knowledgebase.
- **Configurable to unique business rules:** For spend transactions that cannot be auto-classified; Emptoris Spend Enrichment Manager allows businesses to create their own customized rule types, or rules precedence schemes and manage their own custom knowledgebase. As the business continues to use Emptoris Spend Enrichment Manager, the system is able to improve its accuracy through more training. Over the years, Emptoris has created a rules knowledgebase that has millions of reusable rules.

In addition to rules based upon any number of attributes, such as supplier, GL account, geography, precedence can be determined based upon parameters such as user, time, number of attributes in the rule, and granularity of the attribute.

- **Confidence score:** When a person is asked to classify or map a specific item to a category, often, the classification is done with an associated 'confidence level', especially if the item, category or both are not precisely defined. The Spend Enrichment Manager auto-classifiers report a similar 'confidence score' metric each time they classify. This is a score between 0 – 100, with 0 being lowest confidence and 100 being highest. This confidence score, along with the spend information is useful in determining which outputs to inspect. For example, transactions that have low spend and high confidence score can be spot checked, whereas the

transactions at the other end of the spend/confidence spectrum may require a more thorough level of inspection.

Emptoris Spend Enrichment Manager and supplier enrichment

Having a consolidated view of all your business with a Supplier is a base requirement for any spend visibility initiative. While this seems like a simple task, the challenges with delivering this include the following:

- Supplier data across many systems for a single supplier
- Misspellings, or different spellings of names, including punctuation
- Multiple business name acronyms
- Acquisitions and divestitures of suppliers, or supplier division.

Leveraging our knowledgebase of over 5 million instances of linked suppliers, Emptoris is able to ensure a consistent and accurate view of spend with both global and local suppliers. In an era of mergers and acquisitions, Emptoris is able to assure that spend with suppliers reflects any changes in the market, some of which may directly impact the business' negotiating position.

Matching algorithms allow Spend Enrichment Manager to be continuously trained based on user feedback generated at the inspection stage. This addresses any issues associated with different names or acronyms for suppliers. Any corrections made during inspection can be routed back for re-training. This ensures continuous improvement in the accuracy of the supplier data

Putting Spend Enrichment Manager into action

Emptoris offers flexible methods for businesses to maximize their use of Spend Enrichment Manager. Data management services help businesses unlock the value in their spend and contract data. This service is designed to address all types of spend—indirect, MRO, direct—and aggregate the data from all types of enterprise systems to provide companies with accurate and granular visibility across 100 percent of their spend. Emptoris data analysts leverage Emptoris to automate data enrichment and employ multiple sophisticated enrichment approaches. This enables an automated, repeatable, and efficient spend data enrichment process that empowers companies with more complete spend visibility to make better business decisions. For companies that have in-house expertise in spend enrichment, Emptoris also offers the solution as a stand-alone application with user training, allowing the business to handle spend enrichment on its own.

Summary

Businesses make decisions every day based on incomplete or inaccurate information. These decisions can be as simple as going out to bid on an item to find a better deal or as complex as determining the top 5 most strategic suppliers and engaging in a deeper relationship with them to drive new innovation and reduce costs. Without the most accurate data from the most available sources, these decisions may not achieve the desired results.

Automated Spend Enrichment allows businesses to make sense of data coming from varying sources with different levels of detail. Proper enrichment of both supplier and category information paints the most accurate picture of spend with your business partners, creating confidence in the data being used for strategic decision-making.

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