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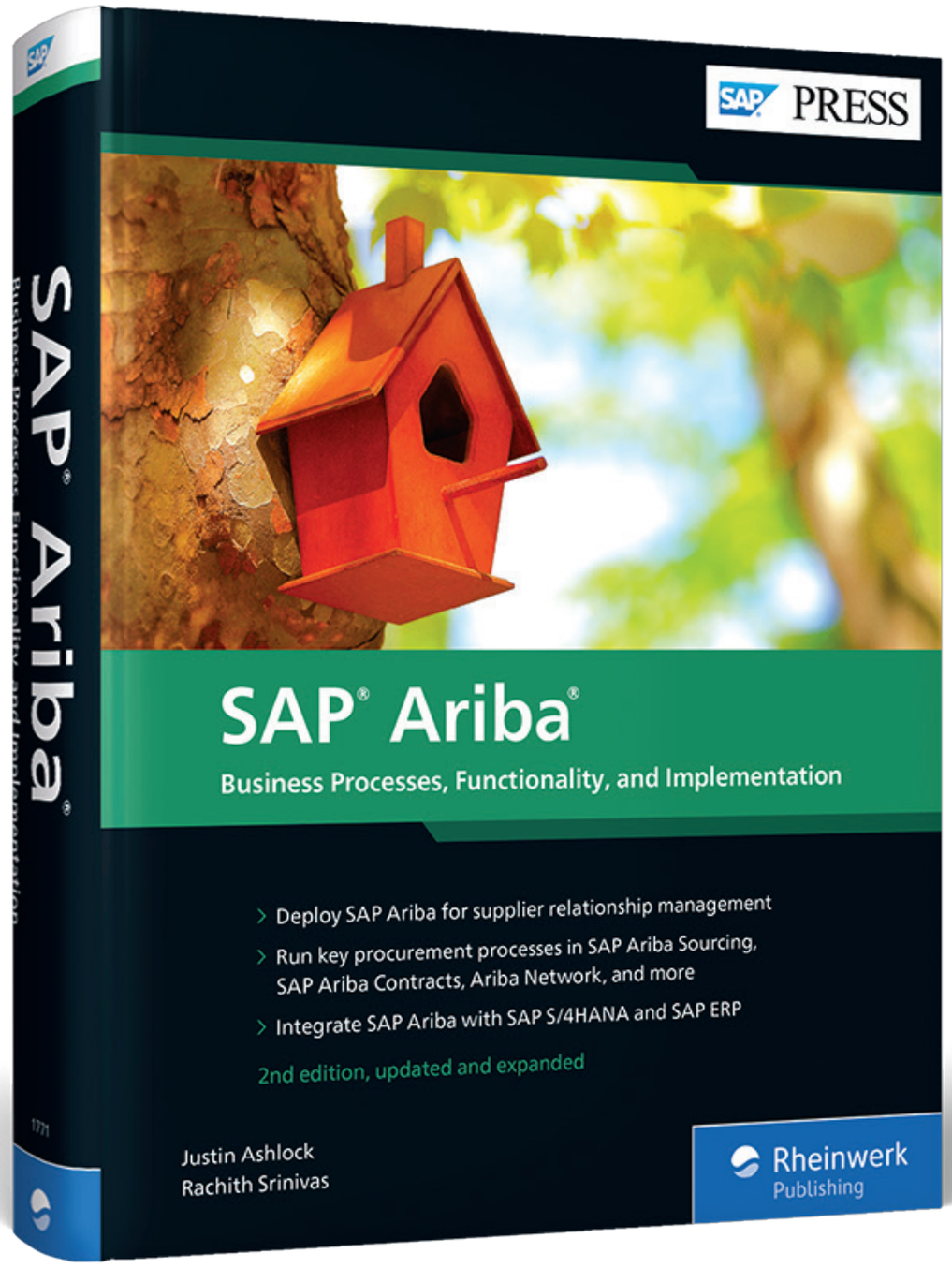

Browse the Book

This chapter showcases a major analysis area for procurement—Spend Analysis. We'll outline the SAP Ariba Spend Analysis capabilities and how to implement spend analysis to get a closer look at procurement operations at large.

"Spend Analysis"

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Chapter 9
Spend Analysis

In this chapter, we'll showcase a major analysis area for procurement—spend analysis. SAP Ariba Spend Analysis combines supplier data with category- and invoice-based spending to build a comprehensive view of your procurement spending.

The most important strategic area of procurement is spend analysis. Once your procurement systems and processes are in place, the resulting transactional data across these systems needs to be analyzed. An organization that constantly analyzes its procurement activities will grow smarter with each cycle, create more savings and competitive opportunities, and ultimately increase both bottom- and top-line revenue: Bottom-line revenue increases by saving the organization more money, and top-line revenue increases by identifying growth opportunities with a company's key suppliers. To paraphrase Socrates, an unexamined procurement operation is not worth running.

In this chapter, we'll outline SAP Ariba's spend analysis tool—SAP Ariba Spend Analysis—and show you how to implement it to get a closer look at your procurement operations at large and learn where to make changes. Depending on which SAP Ariba solutions you've implemented, you may also run reports on other areas of procurement, such as sourcing events, contracts, purchase orders, requisitions, and suppliers. In any case, SAP Ariba Spend Analysis is SAP Ariba's main reporting tool.

9.1 What Is Spend Analysis?

Spend analysis is the process of analyzing historical spend by collecting, categorizing, cleansing, and evaluating data on spend from all business units/departments across the organization. The goal of spend analysis is to increase profitability within an organization by identifying wasteful spending and reducing procurement cost, increasing operational efficiency, and identifying contracts for renegotiation.

Good spend analysis begins with a good spend visibility across the spend ecosystem, as shown in Figure 9.1.

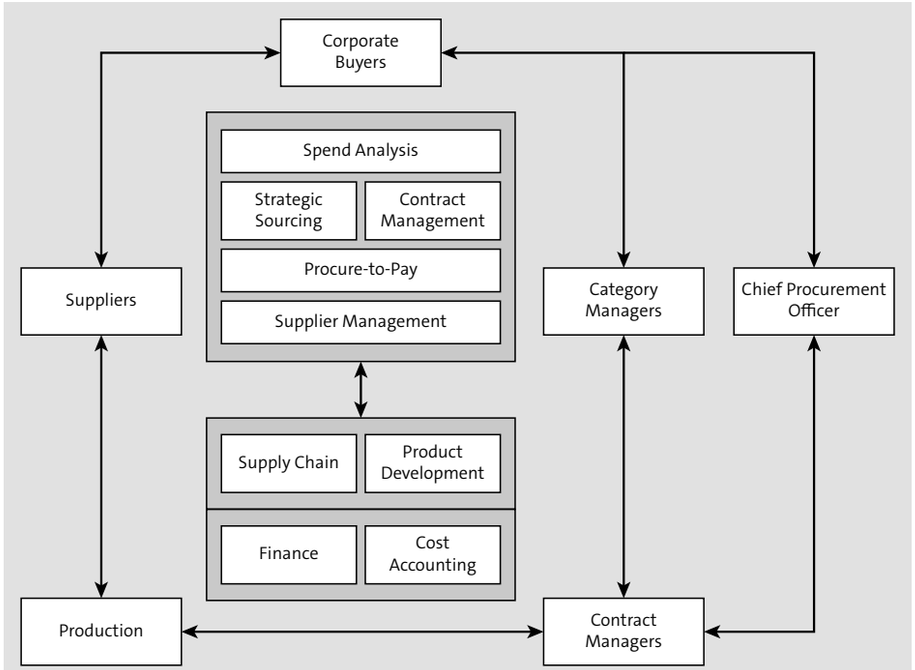


Figure 9.1 Spend Management Ecosystem

Factors that can drive a focus on spend analysis include the following:

- Need to identify and forecast savings opportunities
- Need to identify and prioritize top spend categories
- Need to improve negotiation leverage for supplier contracts
- Need to track off-contract spend
- Need to bolster bottom-line growth
- Need to reduce supply base

Spend analysis is crucial for organizations to align procurement (purchasing) strategies with the organization's overall strategic goals to maintain a competitive edge over peers in its industry.

Challenges in Gaining Spend Visibility

Some challenges that companies face in terms of gaining spend visibility across the organization are:

- Inconsistent data quality
- Limited access to market information
- Poor visibility on suppliers
- Disparate data sources
- Manual effort-intensive processes

In the following sections, we'll look at some key strategies for spend analysis that your company can utilize and describe how SAP Ariba's Spend Analysis tool can help this process.

9.1.1 Spend Analysis Strategies

In today's fast-paced global economy, to be competitive, companies should take a more strategic approach where their procurement organization plays a major role in driving towards the company's overall goals.

Here are some ways to understand your spend better and control costs through spend analytics:

- **Analyzing aggregate spend**
  With spend data and analytics, companies can use this data to understand "what your company buys?", "who buys it?", "what's the buy process and buy channels?" This understanding of aggregate spend allows companies to streamline their processes and further reduce spend.
- **Managing supplier performance**
  With spend data and analytics, companies can measure their suppliers on metrics and key performance indicators that matters to the company. This allows companies to identify risks in its supply chain such as over dependency on a supplier, quality issues, and other risks. Based on this information, companies can take corrective actions with their supply chain to mitigate the company's risks.
- **Enforcing contract compliance**
  Contract compliance to ensure the right suppliers are awarded business and contracts are adhered to is key for your company's bottom-line and performance.

Spend analytics provides useful insight and opportunities for your company to drive for better contract compliance.

- **Forecast planning**
  With historical spend data and analytics, your company has better visibility into its spend trends. This allows you to make more informed decisions about managing supplier relationships so as to improve processes.
- **Internal benchmarking**
  Spend analysis tool can help companies create internal benchmarks so that you can monitor their performance and continuously improve to stay ahead of the curve.
- **Sharing spend behavior across departments**
  With Spend data and analytics, departments and business units can understand spending behaviors and review internal processes. By providing visibility to preferred suppliers, and tools to better manage spend, departments and business units can modify the way they buy goods and services, and award contracts to a smaller set of key, high performing suppliers. Departments can significantly increase efficiency using SAP Ariba Spend Analytics.

Through spend analytics you can identify spend and drill down to spend by supplier. This data allows you to understand who your key suppliers are and provides opportunities to build strategic relationships with your key suppliers allowing you to negotiate deeper discounts. Consolidating your spend to these suppliers provides savings opportunities for your company.

In the next section, we'll look at how SAP Ariba can with a key component of spend analysis—spend visibility.

9.1.2 SAP Ariba Spend Analysis

SAP Ariba's answer to spend analysis is its cloud-based solution—SAP Ariba Spend Analysis. This solution allows you to extract, classify, and enrich spending data from your other SAP Ariba solutions like SAP Ariba Buying and Invoicing and from your SAP ERP backend or other legacy spend systems. You can then analyze the spend data collected from various sources using dashboards, risk intelligence, compliance/spend reporting, and benchmarking, as shown in Figure 9.2.

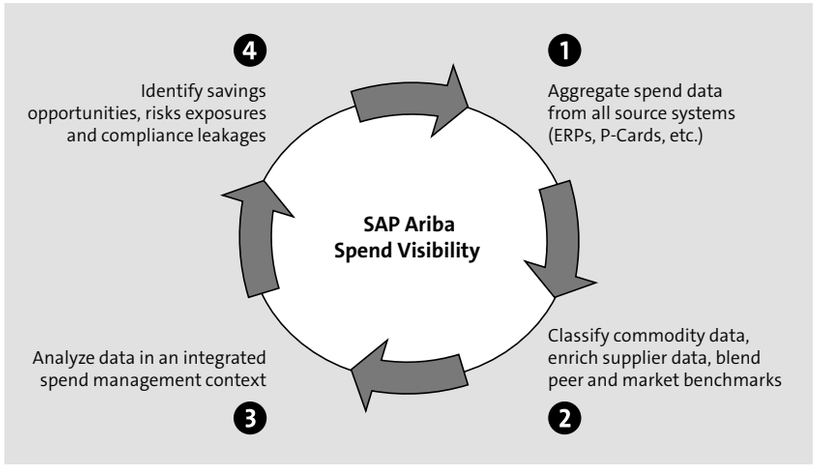


Figure 9.2 SAP Ariba Spend Analysis

SAP Ariba Spend Analysis is an effective spend management tool with the following features:

- Spend management dashboard with a 360-degree view of all spend activities
- Native integration to the most comprehensive supplier database—Dun & Bradstreet (D&B)
- Blazing fast analysis on spend data with SAP HANA
- Best practice services with the tool to accelerate your return on investment (ROI)
- Cloud-based deployment to realize lower total cost of ownership (TCO) and rapid time to value

SAP Ariba Spend Analysis is available in several versions, depending on your data analysis needs and landscape:

- SAP Ariba Spend Analysis basic
  - SAP Ariba Spend Analysis basic for SAP Spend Performance Management (primarily for SAP environments)
  - SAP Ariba Spend Analysis basic (focused on non-SAP environments)
- SAP Ariba Spend Analysis professional
  - An augmented solution to the basic versions

In short, spend analysis is the general product area, and SAP Ariba Spend Analysis (both basic and professional) are the reporting tools that can deliver complete analytics projects, including project management and data enrichment.

The core spend performance management functionality in the basic SAP Ariba Spend Analysis includes multiple engines to distill the data into actionable form:

- **Data validation engine**
  Uploading SAP Ariba Spend Analysis data files includes automatic data validation, designed to identify formatting errors in the files, as well as reports detailing errors occurring during the data load.
- **Supplier matching engine**
  A supplier engine matches supplier records in your data against SAP Ariba's more than 200 million-record supplier database and enriches validated suppliers for supplier parentage and other information, according to your service level agreement (SLA).
- **Rationalization engine**
  A rationalization engine uses learned models; text reading; and linguistic analysis of invoices, general ledgers, and supplier information to rationalize transactions.
- **Business rule engine**
  A business rule engine invokes business rules or mappings specific to your company to categorize transactions.
- **Inference engine**
  An inference engine uses weighted triangulation and multivector inference on potential outcomes of classifications to ensure the highest reliability of outcome.
- **Machine learning engine**
  A machine learning engine uses decision trees, classification by example, Bayesian algorithms, and joint field hybrid methods using historically categorized transactions and export refinement to predict classification outcomes.

If you see commodity classification errors in the data, you can submit those errors via a change request workflow for correction. Approved requests are exported and included in the next enrichment cycle. Depending on the service levels defined in the SAP Ariba Spend Analysis deployment description, SAP Ariba will run data enrichment refreshes at given intervals.

Optional features and services include:

- **Custom commodity taxonomies up to six levels**
  This option must be implemented by leveraging SAP Ariba services.
- **Supplier diversity and green reporting**
  This reporting option needs to be enabled by an SAP Ariba representative, and diversity and green data is managed as an SAP Ariba service.
- **Supplier risk and financial data**
  Risk data requires a separate contract with Dun & Bradstreet, a company information provider. The SAP Ariba representative can act as a liaison between your company and D&B to gather the supplier risk data. Financial data is enabled by SAP Ariba representative directly in SAP Ariba.

SAP Ariba Spend Analysis professional includes all these capabilities plus a few additional features. One main difference between the Basic and Professional versions of SAP Ariba Spend Analysis is the dashboard, which is exclusively part of SAP Ariba Spend Analysis professional. This dashboard centralizes the views and reporting in one area and includes:

- A personal calendar for each user
- SAP Ariba data, such as to-do lists and document folders, which users can add to their dashboards
- Company news content, including information from RSS feeds, which can be configured include news content from your sites.
- The ability for users to create multiple dashboards to cover different areas

Other differences can be found in reporting. SAP Ariba Spend Analysis professional include:

- Prepackaged invoice and PO reports
- Basic supplier financial data
- Reporting against common commodity benchmark data such as consumer price index and producer price index
- Custom analytical reporting, including reporting across multiple fact tables and compound reports
- United Nations Standard Products and Services Code (UNSPSC) commodity display in English and up to four different languages

Each SAP Ariba Spend Analysis subscription includes an SAP Ariba best practice center-managed project, which is, in essence, a coaching engagement that provides recommendations on the technical and functional use of the software.

> **Note**
>
> The main difference between professional and basic versions is the dashboard, which is only provided in SAP Ariba Spend Analysis professional, which also includes augmented reporting services and support.

In the following section, we'll look at the how you can plan for a successful implementation of SAP Ariba Spend Analysis using either basic or professional.

9.2 Planning Your Implementation

As mentioned in previous chapters, the key to a successful implementation of the SAP Ariba Spend Analysis is planning, key stakeholder/executive-level ownership, and effective change management. The SAP Ariba Spend Analysis team must be engaged to implement this solution. Implementing SAP Ariba Spend Analysis is different from implementing other SAP Ariba modules in that SAP Ariba Spend Analysis *does not* follow the typical SAP Ariba on-demand deployment methodology, which is the SAP Activate methodology.

Table 9.1 shows the implementation methodology for spend visibility.

Prepare and Kickoff	■ Kick off the project team ■ Provide data schema training
Data Collection and Validation	■ Build data extraction scripts ■ Upload data to SAP Ariba Spend Analysis ■ Validate data collected and provide feedback
Data Enrichment	■ Load data to SAP Ariba Enrichment tool (ADE) ■ ADES expert analyze and cleanse data
Supplier Enrichment	■ ADES provides supplier enrichment component including supplier parentage for customer analysis

Table 9.1 Spend Visibility Implementation Methodology

Deploy	■ Commodity classifications provided ■ User training ■ Deployment of SAP Ariba Spend Analysis ■ Conduct data assessment

Table 9.1 Spend Visibility Implementation Methodology (Cont.)

To implement the SAP Ariba Spend Analysis solution, the following roles will be required on SAP Ariba side:

- SAP Ariba data enrichment services lead
- SAP Ariba project manager
- SAP Ariba Spend Analysis shared services lead
- SAP Ariba Spend Analysis technical lead

The following roles will be required on the customer side:

- Project sponsor
- Project manager
- Functional data lead
- Functional subject matter experts (SMEs)
- Technical data lead (IT)

In the following section, we'll review the phases in the SAP Ariba Spend Analysis deployment process that you, the customer, must plan for.

9.2.1 Prepare and Kickoff Phases

The prepare phase is the first implementation phase, usually after you've completed the discover phase with the SAP Ariba sales organization. The initial project scope, timeline, and budget is agreed upon during the discover phase. The purpose of the prepare phase is to confirm value drivers, goals and objectives, project scope, and success metrics for a successful implementation. In this phase, the project team is identified. The project plan, the project governance framework, the issues and risk plan, and the project roles and responsibilities matrix are defined and finalized with the customer.

Analytics projects are somewhat more nuanced, however. Analytics can often provide the return on investment for projects, especially procurement projects, where a

single insight can sometimes pay for the entire implementation. As tantalizing as this prospect may be, analytics projects usually come later in the overall rollout process of procure-to-pay (P2P) solutions because analytics requires data, and data must be generated before you can report on it. For SAP Ariba Spend Analysis, defining the dataset that will underpin these reports is a key task and ideally should be undertaken prior to project kickoff.

The roles and responsibilities will be needed for the tasks we've just discussed:

- **SAP Ariba data enrichment services team**
  The SAP Ariba data enrichment services team is responsible for all aspects of customer data enrichment for on-demand engagements leveraging SAP Ariba data enrichment technology for supplier enrichment and commodity classifications.
- **SAP Ariba project manager**
  Both an in-house project manager and an SAP Ariba and/or consulting partner project manager are assigned to a SAP Ariba Spend Analysis project. SAP Ariba Spend Analysis project managers should be well versed in the various aspects of the SAP Ariba Spend Analysis engagement and will assist you in:
  - Understanding the overall SAP Ariba Spend Analysis process
  - Mapping your SAP ERP data to the analysis data schema
  - Providing feedback on uploaded source data extracts
  - Identifying the optimal combination of hint fields for enrichment
  - Various informational sessions on both analysis and the enrichment process
  - Assisting with reviewing enrichment results and refining classifications where appropriate
  - Deployment of enriched data to users
  - Conducting a data assessment at the completion of the first pass of enrichment
- **Customer project manager**
  You should assign a project manager to keep all resources focused on the project goals; to make key decisions in a timely manner; and to report progress to internal stakeholders, the project sponsor, and/or the steering committee.
- **Customer technical data lead**
  Your IT data lead and his/her team are primarily responsible for the data collection at your end, as your source data must be extracted and transformed into the SAP Ariba Spend Analysis data schema format.

- **Customer functional data lead (procurement) and subject matter experts**
  Your functional data lead is the key resource that SAP Ariba team engages with during this project. This resource is responsible for identifying historical spend data and its sources where the data must be extracted and pushed to SAP Ariba Spend Analysis. This resource works closely with the SAP Ariba Spend Analysis shared services lead throughout this project to define and enable the data extraction process from your various spend systems and to validate any enrichments made to the extracted data. In addition, obtaining participation and support from subject matter experts (SMEs) on your procurement team, who will eventually be the tool's primary users and beneficiaries, is critical to the success of the project. Throughout the project, these procurement SMEs will have access to increasing levels of data, starting with the raw customer data once it is initially loaded into SAP Ariba Analysis and SAP Ariba Spend Analysis. The first enrichment milestone is available at the midway point of the enrichment phase and provides supplier enrichment results, including supplier parentage and additional enrichment attributes including diversity, industry codes, and credit ratings. The final stage is the first-pass go-live, when commodity classifications are available and your data can be leveraged to achieve numerous predefined project objectives, including the identification of sourcing savings opportunities, supplier rationalization activities, and compliance monitoring.
- **Customer project sponsors (and other key stakeholders)**
  Stakeholders are executive-level members of your organization who sponsor the project and promote buy-in and adoption in order to realize ROI. Your project manager will normally update stakeholders on progress, issues, and decision-making crucial to the completion of the project. Alternatively, stakeholder meetings can be held for such updates.

In the elapsed time between contracting SAP Ariba for a SAP Ariba Spend Analysis engagement and the project kickoff, you can begin to review the data schema document to frame questions for the kickoff. However, we recommend delaying data extraction work until after project kickoff, as key decisions and clarifications will often be made during kickoff meetings.

During this time, strategizing about how to accomplish the data extraction is crucial. If not properly planned and resourced, extraction poses the greatest risk for delaying the project timeline.

Note

SAP Ariba can offer assistance in your data extraction efforts, so we don't recommend delaying a visibility effort if IT resources are not available to extract data. For more information, ask your SAP Ariba account executive.

Finally, several decisions must be made before you can request an SAP Ariba Analysis instance. You should brainstorm several key concepts and be prepared to have an answer for each during the project kickoff. As a result, the SAP Ariba project manager can request the development of the new SAP Ariba Analysis instance immediately following kickoff. Some considerations to keep in mind include the following:

- Customer name to appear embedded in URL (20 characters max, lowercase only, no spaces)
- Your company's fiscal calendar
- The spend currencies that will be available for reporting in SAP Ariba Analysis (USD plus up to four additional currencies, as required)

Typical deliverables in this phase are project kickoff, SAP Ariba Spend Analysis project overview, and analysis data schema. Let's begin with project kickoff.

Project Kickoff

The project kickoff routinely takes one or two days, depending on project size and scope. The kickoff consists of two parts: project overview and data schema training. The SAP Ariba project manager can be onsite or can be available by teleconference, at your discretion. These two parts break out as follows.

SAP Ariba Spend Analysis Project Overview

The project overview should be attended by all project participants if possible. The discussion will include:

- An overview of the SAP Ariba Spend Analysis solution and tools
- A scoping discussion including project resources, data, challenges, and time estimates
- A high-level overview of the SAP Ariba Spend Analysis process (shown later in Figure 9.4)

- Data collection talking points
- An overview of the SAP Ariba data enrichment services process
- Next steps

Analysis Data Schema

The second portion of the kickoff is much more detail-oriented and consists of the SAP Ariba project, your functional and technical data leads, and your project manager walking through the analysis data schema in a detailed fashion. The objectives of this session are to make key decisions on what spend will be in scope (and out of scope), to map data fields from your SAP ERP system(s) to the analysis data schema, and to ensure you understand all schema structure and formatting.

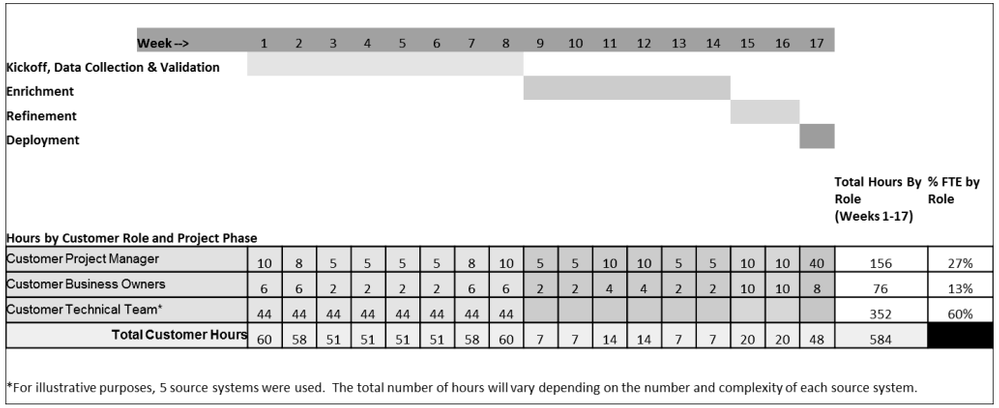
SAP Ariba Spend Analysis uses a fixed schema designed to enable best practice spend analysis. While not all fields are required, we recommend populating all the available fields. Although the process is flexible enough to accommodate other formats and SAP Ariba has experience extracting and transforming data from multiple ERPs, you're far better off building scripts to automate data flows during refreshes and having a structured schema to ensure all useful information is captured.

The SAP Ariba Analysis data schema is a series of associated flat files containing CSV (comma-separated value) tables in a "star-schema" format. The center of the "star" is your invoice and purchase order (PO) data. The supporting tables that these tables refer to are the arms of the "star."

Note

The standard scope for implementing SAP Ariba Spend Analysis doesn't prevent you from deviating from the standard SAP Ariba schema. However, if you wish to deviate from the standard SAP Ariba schema, you must inform SAP Ariba during sales cycles to adjust the scope.

A typical SAP Ariba Spend Analysis project runs 17 weeks, as shown in Figure 9.3.



Week -->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total Hours By Role (Weeks 1-17)	% FTE by Role
Kickoff, Data Collection & Validation																			
Enrichment																			
Refinement																			
Deployment																			
Hours by Customer Role and Project Phase																			
Customer Project Manager	10	8	5	5	5	5	8	10	5	5	10	10	5	5	10	10	40	156	27%
Customer Business Owners	6	6	2	2	2	2	6	6	2	2	4	4	2	2	10	10	8	76	13%
Customer Technical Team*	44	44	44	44	44	44	44	44										352	60%
Total Customer Hours	60	58	51	51	51	51	58	60	7	7	14	14	7	7	20	20	48	584	

*For illustrative purposes, 5 source systems were used. The total number of hours will vary depending on the number and complexity of each source system.

Figure 9.3 SAP Ariba Spend Analysis High Level Resource Plan and Timeline

For a list of typical activities by phase, consult Table 9.2.

Data Collection and Validation	■ Kick-off ■ Data schema training and mapping ■ Data extraction and validation ■ Spend approval
Enrichment	■ Invoice and supplier enrichment ■ Custom mapping ■ Enrichment training
Refinement	■ Review results and provide feedback ■ Apply feedback
Deployment	■ Analysis training ■ Report templates, dashboards ■ User creation

Table 9.2 Typical Activities by Phase

9.2.2 Data Collection

Once the data has been extracted in the SAP Ariba Spend Analysis data schema format, the designated individual at your site will upload the source data files directly into SAP Ariba Analysis. At this time, the SAP Ariba project manager will automatically receive a notification.

IT resources are typically required for data collection to perform the extraction and upload the data files into SAP Ariba Analysis. In the event that assistance is needed extracting data from SAP source systems, which are historically the most difficult, SAP Ariba offers an extract, transform, and load (ETL) tool, which extracts data from customer source systems, transforms it into the SAP Ariba Analysis loading format, and which can help load the data into SAP Ariba Analysis. The actual product is IBM WebSphere DataStage with their SAP adapter. SAP Ariba engineering has built "job templates," which are included in the product when purchased through SAP Ariba and provide a good starting point for customers with SAP sources.

9.2.3 Data Validation

Upon uploading a data file in SAP Ariba Analysis, the user will receive validation messages in various formats depending upon severity. At this time, the SAP Ariba project manager will assist by reviewing these validation messages and performing checks on the file formats and content. The unenriched source data is loaded into SAP Ariba Analysis, where the data is made available for your review and remains available throughout the project. As a result, some valuable aspects of the data will be available to you in the analytic tool within days of project kickoff, depending on whether the raw data can be aggregated. Various spend reports should be run at this time to ensure that the data in SAP Ariba Analysis matches the data extracted and is consistent with your common knowledge of your spend base. Please note that data collection and validation is an iterative cycle. As issues are discovered, data will have to be reextracted, loaded, and validated. Once you're convinced that the data is acceptable to proceed, your project manager should send a spend approval notice to their designated SAP Ariba project manager. This email is a milestone that completes the data collection/validation phase and moves the project into the next phase of the project—data enrichment.

Again, this cycle time will vary greatly depending upon the scope of the project. However, SAP Ariba has found the average time is *2 to 8 weeks* for such an effort, keeping in mind that this time frame depends largely on your ability to complete data collection.

Typical deliverables and activities for the SAP Ariba team and for you, as the customer, in this phase include the following:

- SAP Ariba deliverables and activities
  - Assist customer data mapping, collection, and extraction

  - Train the customer on online data validation messages to find data format issues, missing data, data inconsistencies, and anomalies
  - Spend Validation Reports detailing amount of spend per source system, supplier, business unit, part or other attributes defined by the customer
  - Training on basic navigation and report creation
- Customer activities
  - Responsible for reviewing the online data validation messages
  - Responsible for resolving all data issues and file formats in order to meet the SAP Ariba data acquisition schema requirements

9.2.4 Data Enrichment

The first step for SAP Ariba data enrichment services is to perform a data assessment. This step provides a more accurate view into the magnitude of the work required based on the quantity and quality of your data. Because the actual quantity and quality of the data often varies significantly from the estimates provided during the sales cycle, project time estimates may change at this point—perhaps more, perhaps less, time. In most cases, the estimate you receive at kickoff will hold true with minimal changes, that is, assuming no significant changes in the data occur. After the data assessment, SAP Ariba data enrichment services will run 100% of your spend data through SAP Ariba's enrichment engines, including engines that look for content, persistence, and supplier matches.

SAP Ariba data enrichment services will provide results and confidence levels for these results based on the data. These results are what the SAP Ariba data enrichment services team will process, update, and approve over the next several weeks for supplier enrichment and parentage, provided at the midway point of the enrichment phase, and for commodity classifications, which will be available at first-pass go-live.

Data enrichment makes up a majority of the project timeline due to the volume of processing, review, and quality assurance required. In this phase, the greatest variability exists depending on the scope of the project. Exceptions exist, but in most cases, data enrichment will require *3 to 10 weeks*.

Typical deliverables and activities for the SAP Ariba team and for you, as the customer, in this phase include the following:

- SAP Ariba deliverables and activities
- Complete invoice and supplier enrichment

- Support custom mapping activities
- Create data assessment report
- Update project timeline based on data enrichment requirements
- Create custom taxonomy mapping table and application on SAP Ariba analysis, if applicable
- Invoice classifications per service level agreement
- Supplier parentage and enriched information per service level agreement

9.2.5 Deployment

The SAP Ariba project manager will work with your project manager to finalize the customizable dashboard, default reports, and user setups as the now-enriched data is deployed for widespread use in the identification of sourcing savings and analytics. This work is performed in the lead time up until deployment. Your project manager should allocate 2 to 5 days for this work.

One to two weeks after the first-pass deployment, the SAP Ariba project manager will conduct a spend assessment, which highlights possible opportunities based on the recently available enriched customer data. Note that the data assessment does not include customer input or interviews and is therefore more directional in nature but can illustrate several examples of how the data can be analyzed for potential action.

Typical deliverables and activities for the SAP Ariba team and for you, as the customer, in this phase include the following:

SAP Ariba deliverables and activities

- Train customer on feedback and refinement process
- Create a base set of custom report and export templates and dashboards
- Train customer on SAP Ariba Analysis, including report templates, dashboards, and user management
- Create data access controls
- Publish enrichment results

Note

Additional deployment services, such as enriching supplier data with diversity and environmental information, and data transformation services to transform data

from your customer-specific format to the SAP Ariba format can be purchased as optional services. Contract your SAP Ariba customer engagement executive for the SAP project for more information.

SAP Ariba Spend Analysis is now live in the customer's landscape and available for sourcing and category managers and other users to run spend analysis.

In the next section, let's look at how to configure your SAP Ariba Spend Analysis solution.

9.3 Configuring SAP Ariba Spend Analysis

Let's now explore the configurations required to enable the SAP Ariba Spend Analysis solution in your company's landscape -

9.3.1 Configuring File Validation

File data validation is a critical step in spend analysis. In SAP Ariba, there are certain file validation configurations that must be completed. Let's explore these configurations.

Setting a File Validation Error Threshold

Three levels of error exist: error, warning, and info. You can specify a threshold for each level of error reported. Once SAP Ariba Spend Analysis encounters the limit for that level of error, file validation stops; thus, when the file is uploaded, the number of lines processed will not match the file's size. Once SAP Ariba Spend Analysis encounters the limit for warnings and info messages, it stops recording messages but does not stop validating.

The three parameters for setting file validation error thresholds are:

- `System.Analysis.FileValidation.ErrorThreshold`
  Default = 100
- `System.Analysis.FileValidation.WarningThreshold`
  Default = 200
- `System.Analysis.FileValidation.InfoThreshold`
  Default = 200

Configuring Extended File Validation Reports

Extended file validation includes duplicate checks, dimension reference checks, and other field-specific checks. SAP Ariba Spend Analysis will export the results of the extended file validation to CSV validation reports, which includes sample lines and groups of rows where errors occur, as well as detailed messages on the errors.

By default, extended file validation is enabled. You can enable or disable this feature using the following parameter:

- `System.Analysis.FileValidation.ExtendedValidationEnabled`

The parameters for setting thresholds on the amount of information included in validation reports are:

- `System.Analysis.FileValidation.NumDuplicateCheckSampleLines`
  Default = 15
- `System.Analysis.NumDuplicateCheckGroups`
  Default = 15
- `System.Analysis.FileValidation.NumDuplicateCheckMessage`
  Default = 15
- `System.Analysis.FileVali8dation.NumReferenceCheckSampleLines`
  Default = 150
- `System.Analysis.FileValidation.NumReferenceCheckGroups`
  Default = 150
- `System.Analysis.FileValidation.NumReferenceCheckMessages`
  Default = 150

9.3.2 Setting Opportunity Search Date Ranges

In SAP Ariba Spend Analysis, *opportunity search* allows users to perform targeted searches for savings and other organizational opportunities using data ranges. You must configure opportunity search date range settings before users can run opportunity searches. The settings you configure constrain the dataset in which users can perform searches, and this setting applies globally to all searches. The default configuration is the *most recent year*.

Setting Up Opportunity Search Date Ranges

In this section, let's look at how we can setup a date range for searching for opportunities:

1. Log in with the **ANALYSIS ADMINISTRATOR** role into SAP Ariba Spend Management.
2. Click on **Manage • Administration**.
3. In SAP Ariba administrator page, click **Spend Visibility Manager • Opportunity Search**.
4. Under the **Edit Settings** tab, click **Edit**.
5. Specify a date range setting.
6. To set a date range that is automatically updated with new data whenever users view an opportunity search, click **Relative Date Range** and choose a time period: **Year**, **Quarter**, or **Month**. Then, choose the number of most recent and future time periods you want to include and select whether you want to include the current time period in the search.
7. To set a specific date range, click **Fixed Date Range** to enter dates or click the calendar icon. Select **Automatically** so that ranges are adjusted to include complete months, to exclude the current partial month, and to optimize search performance.
8. Click **OK**.

Because opportunity search measures are computed, the settings you specify are available in the data load database schema with the next scheduled SAP Ariba Spend Analysis data load that includes postprocessing. Users can then run opportunity searches on the data load schema. Once the schemas are switched, users can run opportunity searches on the presentation schema. The opportunity search task's **Data Load Schema** and **Presentation Schema** tabs display the settings that are currently in effect in each database schema.

9.3.3 Configuring Star Schema Export

You can configure the star schema export process in your system to limit the number of export ZIP files that are stored on the server at one time.

Use the following configuration parameters to set limits on the total number of stored ZIP files and the amount of time they are stored before being automatically deleted:

- `Application.Analysis.MaxStarSchemaExportsKeepTimeInDays`
- `Application.Analysis.MaxBgStarSchemaExportsKept`

9.3.4 Configuring Non-English UNSPSC Code Display

By default, SAP Ariba Spend Analysis displays the UNSPSC code in English even though the rest of the report is displayed in user's locale. You can configure SAP Ariba Spend Analysis to display UNSPSC codes in other languages, and users with matching designated locales will see UNSPSC codes in those languages when running reports.

To display non-English UNSPSC codes in reports, you must load the UNSPSC code data for the languages you plan to use. The number of languages other than English in which you can display UNSPSC codes is specified by the following parameter:

- `System.Analysis.Admin.AllocateMLSColumns`
  Default = 4

Setting Languages for UNSPSC Code Display

The following parameter specifies the languages you can select for UNSPSC code display:

- `System.Analysis.ReportMSLLanguageList`

Once you've set other languages for UNSPSC code display, you must reload your data to associate the non-English UNSPSC codes with existing report data. Until you reload the data, reports will continue to display UNSPSC codes only in the previously specified languages.

To set languages for UNSPSC code display, follow these steps:

1. In SAP Ariba admin page, choose **Reporting Manager • Customer Settings**.
2. On the **Edit Settings** tab, select the languages in which you want to display UNSPSC codes.
3. Click **OK**.

9.3.5 Integrating SAP Ariba Spend Analysis and SAP Ariba Data Enrichment Services

You can integrate SAP Ariba Spend Analysis and SAP Ariba Data Enrichment Services to implement server-to-server communication between the two applications. With

server-to-server communication, SAP Ariba Spend Analysis users can export supplier and invoice data enrichment request files directly to a server, where the SAP Ariba Data Enrichment Services team takes over for enrichment and then export the files back to the server. You then load the enriched data back into SAP Ariba Spend Analysis for use in reports. Email notifications let the appropriate users know when enrichment request files have been exported from SAP Ariba Spend Analysis to the server and when enrichment response files are ready to be loaded back into SAP Ariba Spend Analysis.

To integrate the two solutions, you'll need to perform the following steps:

1. When using your own installed instance of SAP Ariba Data Enrichment Services, see the SAP Ariba Data Enrichment Installation and Migration Guide.
2. When using SAP Ariba Data Enrichment Services, contact SAP Ariba to have your SAP Ariba Analysis integrated to the SAP Ariba Data Enrichment Services.
3. Configure SAP Ariba Spend Analysis to support enrichment activity notification emails and to allow SAP Ariba Data Enrichment Services to recognize and identify your instance of SAP Ariba Spend Analysis.

Integration-Specific Permissions

Two different SAP Ariba Spend Analysis permissions are associated with SAP Ariba Data Enrichment Services:

- `AnalysisDownloadfilesForEnrichment`
  Allows users to export enrichment request files from report pivot tables.
- `AnalysisMonitorEnrichmentFiles`
  Allows users to receive email notifications whenever SAP Ariba Spend Analysis generates an enrichment request file

In addition to these integration-specific permissions, the `AnalysisMonitorDataFiles` permission allows users to receive include notifications whenever SAP Ariba Data Enrichment Services has pulled an enrichment request file from the SAP Ariba Spend Analysis server and whenever an enrichment response file is uploaded to SAP Ariba Spend Analysis, either through a server pull or a manual file upload.

Configuration Parameter Settings

You should also make sure the following general upstream platform parameters that support notification emails are set correctly:

- `System.Base.SMTPDomainName`
  Identifies the domain of the SMTP server used for sending notification emails.
- `System.Base.SMTPServerNameList`
  Identifies one or more comma-separated SMTP servers used for sending notification emails.
- `Application.Base.NotificationFromAddress`
  Identifies the name of the user account used as the "from" field in notification emails.

9.3.6 Enrichment Change Request Setting

SAP Ariba Spend Analysis enrichment feedback allows users with the appropriate permissions to submit requests from the report pivot table to change how SAP Ariba Data Enrichment Services enriches data. For example, a user running a report might notice that a supplier is associated with the wrong parent company and can submit a request to correct the mistake. After the request has been approved and sent to SAP Ariba Data Enrichment Services, the request is evaluated, and changes made to enrichment results where appropriate. These corrections appear in reports when the corrected enrichment response data is loaded for reporting.

You can use enrichment change request settings to enable or disable enrichment feedback, to edit the filters that constrain the data subject to feedback, and to export and archive approved enrichment change requests.

You can modify enrichment change request settings in the **SAP Ariba Spend Analysis Manager** workspace on the admin page. To manage enrichment change request settings, you must have your user preferences set to view data from the data load schema.

Viewing Data from the Data Load Schema

In this section, let's look at how we can setup a preferences to enable viewing data from data load schema:

1. In the SAP Ariba spend management dashboard, click **Home**.
2. On the command bar, click **Preferences**.
3. Click **Change Report Preferences**.
4. Select the **Use Data Loading Schema** checkbox.

5. Click **Ok** to apply these preferences.
6. Click **Done**.

Enrichment feedback is enabled by default. Users with the `AnalysisSubmitCCR` permission can submit requests to change the enrichment results for items in reports.

Enabling/Disabling Enrichment Feedback

In this section, let's look at how we can enable/disable enrichment feedback:

1. In SAP Ariba admin page, choose **Spend Visibility Manager • Enrichment Change Request Settings**.
2. To enable enrichment feedback, select the **Enrichment Change Request Enabled** checkbox. To disable enrichment feedback, deselect the checkbox.
3. Click **Save**.

You can edit enrichment change request filters to constrain the range of reporting data for which users can submit change requests. Users can run reports on data outside of the constraints you apply, but they can only request changes to enrichment results within the filter parameters you set. Enrichment change request filters apply for all users in all reports.

Editing Filters for Enrichment Change Requests

In this section, let's look at how we can edit filters for enrichment change request:

1. In SAP Ariba administration page, choose **Spend Visibility Manager • Enrichment Change Request Settings.**
2. Click **Edit Filters**.
3. Specify the date range for the data for which users can submit enrichment change requests.
   - Click **Relative date range** to let users submit enrichment change requests for data in a time period relative to the current date. Choose the time period (**Year**, **Quarter**, or **Month**), then choose the number of most recent and future time periods you want to include. Select whether you want to include the current time period.
   - Click **Fixed date range** from to let users submit enrichment change requests for data in a specific time period and enter dates or use the calendar icon. Select **Automatically** adjust the range to include complete months to include complete months in the fixed date range.

4. In the Field Browser, click the **Others** tab.
5. Add fields to the generic report from the **Others** tab and filter the data as you would in any report. The **Applied Filters** area keeps track of the filters you apply to constrain the set of data for which users can request enrichment changes.
6. Click **Return to Enrichment Change Settings**.
7. Click **Save**.

You can export approved enrichment change requests to SAP Ariba Data Enrichment Services so that enrichment results will be corrected in subsequent data enrichment runs. After exporting the requests, you can archive these change requests so that they won't be included in any subsequent exports of approved requests.

The **Actions** area of the **Enrichment Change Request Settings** page displays the number of currently approved, unarchived enrichment change requests.

Users with the `AnalysisMonitorEnrichmentFiles` permission also receive notifications for the export of approved enrichment change requests. While these requests are being exported, you can move the operation to the background while you perform other tasks.

Exporting Approved Enrichment Change Requests

In this section, let's look at how we can export approved enrichment change requests:

1. In SAP Ariba admin page, choose **Spend Visibility Manager • Enrichment Change Request Settings.**
2. Click **Export Approved Requests**.
3. To download the exported request file, click **Download Enrichment File**.
4. Click **Return to Report** to return to the **Enrichment Change Requests** page.

The **Spend Visibility Enrichment Change Requests** folder contains all enrichment change requests. You can archive approved enrichment change requests to move them to the **Archived** subfolder in the **Spend Visibility Enrichment Change Requests** folder. Archived requests remain in the **Archived** folder until you delete them.

Archiving Approved Enrichment Change Requests

In this section, let's look at how we can archive approved enrichment change requests:

1. In SAP Ariba admin page, choose **Spend Visibility Manager • Enrichment Change Request Settings.**
2. Click **Archive Approved Requests**.

Viewing Archived Enrichment Change Requests

In this section, let's look at how we can view enrichment change requests:

1. On the command bar, choose **Search • Knowledge Project**.
2. Click the vault link.
3. Click the **Spend Visibility Enrichment Change Requests** folder and choose **Open**.
4. Click the **Archived** folder and choose **Open**.

9.3.7 Managing Data Access Control

Access control determines which users are authorized to see specific SAP Ariba Spend Analysis data in reports. You should only use the access control discussed in this section to control access to SAP Ariba Spend Analysis data; to control access to other data, you should define access control for users in the application where the data originates.

To implement access control, you'll supply an access control class. SAP Ariba defines a Java API for access control in reports, and the default SAP Ariba application implementation includes one access control implementation, `ariba.analytics.mdql.RoleBasedAccessControlManager`, which reads a set of access control rules from a configuration file. When you use this class, you are implementing data access restrictions by writing rules, which can be based on user name, group, role, or permission.

The upstream platform default configuration for reporting uses the `RoleBasedAccessControlManager` class. However, if you aren't using a default configuration, you must change your configuration to use either the default `RoleBasedAccessControlManager` implementation or a custom implementation of your choosing.

Note

Data access control rules alter report queries and can affect report performance, especially if they interfere with materialized views (a database object that contains the result of a query). When you implement data access control rules, you should be aware that these rules may prevent the use of out of the box materialized views and

that you might need to implement customized materialized views that support the queries generated by your access control rules to minimize their impact on performance.

Role-Based Access Control Manager

The `RoleBasedAccessControlManager` reads data access control rules from an access control rule configuration file.

To use the `RoleBasedAccessControlManager`, set the following parameter:

```
System.Analysis.AccessControlManager =
 ariba.analytics.mdql.RoleBasedAccessControlManager
```

When you use the `RoleBasedAccessControlManager`, you can update and maintain your rules from the Data Access Control task in the SAP Ariba admin page Spend Analysis manager workspace. Users with `AnalysisManageAccessControlRule`s permission can access this task.

Administering Access Control Rules

In this section, let's look at how we can administrator access control rules:

1. In SAP Ariba admin page, choose **Spend Visibility Manager • Data Access Control**.
2. Click **Export Rules**.
3. Save the exported AccessControlRules.table file to the location of your choice.
4. Use a text editor to make any necessary changes to access control rules in the file.
5. Click **Import Rules**, navigate to the location where you saved the AccessControlRules.table file, and click **Open**.
6. Click **Upload** to import the modified rules configuration file.

The edits you make to the access control rules take effect immediately after you upload the rules file.

Rule Precedence

Each access control rule can either allow or block access for a user based on the user's user name, permissions, roles, or groups:

- `Allow` means that the user can see only the data specified by that rule, and no other data.
- `Block` means that the user can see all data except for the data specified by that rule.

The data a user can see in reports is defined by a cumulative view created by all the rules that apply to that user, in the order that they are listed in the access control rule configuration file.

The precedence of rules is as follows:

- If a user's information matches the user name, permission, role, or group in a rule, that rule applies to the user.
- If no rules apply to a given user, no restrictions limit that user's view of the data.

If two rules that apply to a user conflict with each other because they specify allow and block operations on the same fact/field-path/field-value combination, the last rule to be read in the configuration file is the rule that applies. You should structure rules to avoid this situation.

Note

Rules are evaluated against facts, not dimensions.

9.4 Integrating SAP Ariba Spend Analysis with SAP Analytics Cloud and On-Premise Data Sources

Transactions, especially payment, can be located outside of the SAP Ariba solutions you implement, which is perfectly okay, as long as you can get to the applicable data in these systems and extract it into SAP Ariba Spend Analysis. SAP Ariba offers a number of ETL tools, the main being the SAP Ariba Integration Toolkit, and other services to facilitate this process. In addition to adding data from third-party systems, SAP Ariba Spend Analysis offers a number of key report settings that can be leveraged to tailor reports for your organization. Some fundamental settings are:

- Languages for UNSPSC display in addition to English can be set, up to four additional languages.
- Fiscal calendar settings are only available in sites with SAP Ariba Spend Analysis, and these settings determine how invoice and purchase order dates translate into

fiscal years in reports, including possibly an offset configuration to allow fiscal years to begin at different times other than the calendar year.

- Custom field hierarchies allow for more detailed fiscal settings, such as fiscal months that begin several days into a calendar month.
- Custom fields for measure, date, dimension, and string can be enabled by creating custom fields for your site, loading the data to the data load schema, and then loading the data to the presentation load schema.
- Customizing field labels can be customized field in SAP Ariba Spend Analysis reports by uploading CSV files with field label strings.

Users in the SAP Ariba Spend Analysis project manager group can customize field labels. Four files are available for string customization:

- The aml.analysis.HostedSpendExt.csv file contains flexible field labels.
- The aml.analysis.InvoiceAnalysis.csv file contains strings for field labels in the invoice fact table, such as invoice number and invoice spend.
- The aml.analysis.PurchaseOrderAnalysis.csv file contains strings for field labels in the purchase order fact table, such as the PO ID.
- The spend.aml.analysis.SpendAnalysis.csv file contains SAP Ariba Spend Analysis-related field labels, such as procurement system and source system.

9.5 Mining Procurement Operations for Data

In the following sections, we'll provide an overview of the types of data that with SAP Ariba Spend Analysis can analyze, the basic facets on which you should consider focusing your analysis, and the work areas available for drilling down into data and key reports. Next, we'll discuss some key reports, along with the areas they can impact. Finally, we'll cover some key data sources and our options for importing this data into SAP Ariba Spend Analysis.

9.5.1 Data Types

SAP Ariba Spend Analysis provides provide tools that allow you to analyze the following types of data:

- SAP Ariba Spend Analysis invoice and purchase order data, which may be new or existing data enriched by SAP Ariba data enrichment with improved supplier and commodity classification.
- SAP Ariba Spend Analysis data also includes common data, such as custom units of measure, currency conversion rates, fiscal hierarchies, taxonomies for commodities and services, diversity certifications, and opportunity search ranges.
- Data from other SAP Ariba spend management solutions such as the SAP Ariba Contracts, SAP Ariba Sourcing, and SAP Ariba Supplier Lifecycle and Performance.
- Custom fact data, which can come from external data sources such as SAP ERP systems or from SAP Ariba Spend Management solutions.
- Data from other SAP Ariba Spend Management solutions, which is updated through regular, automated data pulls. SAP Ariba Spend Analysis and custom fact data update through regular data loads.

To make new SAP Ariba Spend Analysis and custom fact data available for reporting and analysis, you'll perform the following high-level steps:

1. **Acquire data**
   Data may come from data sources such as SAP ERP or other third-party systems but must be consolidated in data files with the correct format.
2. **Load data**
   After the data is consolidated into data files, designated users can add the files to data load operations and schedule those operations to load the data into the data load database schema.
3. **Switch schemas**
   After the data load operation is complete, designated administrative users can verify the data and then switch from the data load database schema to the presentation database schema, at which point the data becomes available in reports to all users. Next, an automatic operation that copies the data back from the presentation schema into the data load schema, so that it is ready for the next data load.

9.5.2 SAP Ariba Spend Analysis: Areas for Analysis

Once the data has been loaded and organized, you can proceed to analysis. The main areas for analysis and strategic review are categories, direct material order patterns, noncompliant spend (or "maverick" spend), supplier relationship management, and

spending by brands. Using these insights can further reduce costs, focus and optimize your supplier base and help you understand supplier vulnerabilities and criticalities, as shown in Figure 9.4.

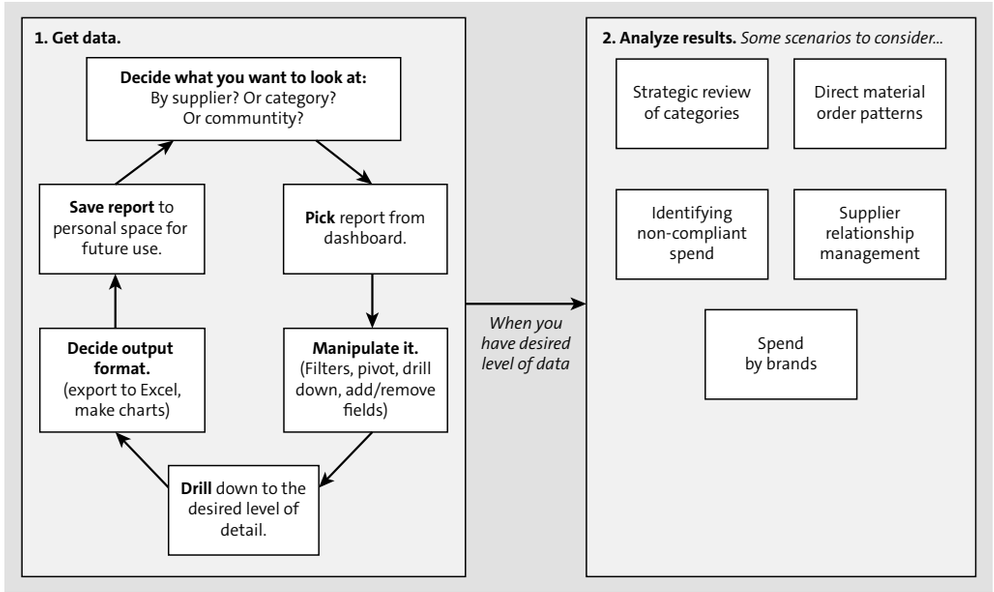


Figure 9.4 SAP Ariba Spend Analysis: Process

Ideally, these insights are funneled back into the SAP Ariba set of solutions (SAP Ariba Sourcing, SAP Ariba Buying and Invoicing), SAP Ariba Invoice Management professional, and so forth) to optimize your procurement operations further in system, cycle-by-cycle. For example, if you identify that most noncompliant spend is for items that haven't been categorized or aren't in the catalogs or contracts available, then adding these items to the system and communicating these changes to your users should significantly improve this area. If you rely solely on a single supplier for a key input or category, that supplier is in a position to raise prices or impact your supply chain. Thus, efforts should be made to inviting, vetting, and adding similar suppliers to your environment. Similarly, if you have a growing number of suppliers delivering same types of goods and services, standardization and optimization efforts will help to focus your supply chain on key suppliers, drive up your bargaining power with volume increases, and ultimately drive down costs.

9.5.3 Work Areas

SAP Ariba Spend Analysis offers a variety of work areas for drilling down into your data and generating key reports, such as the following:

- **SAP Ariba Spend Analysis manager workspace**
  You can use the SAP Ariba Spend Analysis manager workspace to manage data related to SAP Ariba Spend Analysis reports. The following authorization groups have access to the manager workspace:
  - Customer administrator (everything except the opportunity search task)
  - SAP Ariba Spend Analysis project manager (everything except the opportunity search task)
  - SAP Ariba Spend Analysis category change request (CCR) reviewer (enrichment change request settings task)
  - SAP Ariba Spend Analysis opportunity analyst (opportunity search task)
- **Source systems**
  A source system represents a distinct data source for your reporting data. Each source system has a source type that defines the format of the data.

  Members of the SAP Ariba Spend Analysis project manager group have access to upload files and load data into all source systems, but members of the SAP Ariba Spend Analysis data file manager group only have access to upload files and load data into their assigned source systems.
- **Import/export star schema**
  You can import and export the database star schema to synchronize your database with external systems or with the database star schemas in your SAP Ariba solutions.

  Your system has a dedicated database star schema if it includes SAP Ariba Spend Analysis or custom reporting facts.
- **Enrichment data**
  Enrichment data improves commodity and supplier classifications, including a more detailed classification of commodities and services.

  Members of the SAP Ariba Spend Analysis project manager group will receive email notifications when users generate enrichment request files.
- **Data access control**
  Data access rules determine which users are authorized to see specific SAP Ariba

Spend Analysis data. You can restrict access to SAP Ariba Spend Analysis data in reporting facts by writing access control rules based on user name or group.

All changes to rules take effect immediately after you import the rules file.

- **Enrichment change request settings**
  The feedback loop with SAP Ariba for correcting and adjusting classifications in the data is the enrichment change process. To control access to feedback submission, you can use enrichment change request settings to enable or disable enrichment feedback, to manage when newly approved enrichment changes are loaded to the presentation schema, and to manage the current in your site. For example, a user might submit an enrichment change request to correct a report that displays the wrong commodity classification for a particular commodity from a supplier.

  This section also displays all the rules that have been generated by currently submitted enrichment change requests.
- **Manage benchmarking**
  SAP Ariba customer support loads benchmarking data to use with your SAP Ariba Spend Analysis reports.
- **Opportunity search**
  Opportunity searches are targeted searches, based on commodities, that highlight opportunities for savings, improved efficiency, supplier diversity, and other company goals in your spend data. You can run prepackaged opportunity searches or create your own opportunity search.

  You use the opportunity search task to configure the accounting date range for opportunity search settings, as shown in Table 9.3.

Opportunity Search Type	Description
Price variation	Identify areas for savings through more effective choice of suppliers
Supplier fragmentation	Identify areas for savings through supplier consolidation
Order fragmentation	Identify inefficient purchasing in your company
Opportunities for sourcing	Identify commodities for which a large sourcing event might achieve savings

Table 9.3 Opportunity Search Types

9.5.4 Key Reports and Corresponding Impact Areas

In addition to understanding general spending, several reporting areas in SAP Ariba Spend Analysis can have immediate impact and return on investment for procurement solutions. Areas like contract awareness, rationalizing pricing across contracts, and understanding supplier ownership structures to consolidate further volume for contract negotiations, all provide relatively quick returns with little required change management or process changes. In essence, you are already working the processes, but "leakage" occurs due to a lack of understanding or visibility in these areas.

Contract Awareness Report

The Contract Awareness report, shown in Figure 9.5, is built in SAP Ariba Spend Analysis using purchasing price variance (PPV) data. You define the variance as where the same supplier billed two different prices for the same item. Another metric is different customer sites purchasing at different prices, which is called purchase price alignment (PPA). Once this data is defined, additional data points can be calculated, such as supplier optimization cost (SOC) or the savings associated from always buying from the supplier that offers you the most favorable pricing.

Reporting — Overall Spend by UNSPSC L3, PPV, SOC, PPA — Edit | Save... | Export | Actions

Field Browser: Page | Others

- Accounting Date (Year)
- Part Name
- Supplier Parent (enriched)

Pivot table | Chart | Dashboard

Applied Filters

Data

UNSPSC (L3)	Total Invoice Spend (USD)	Total Split Count	Total Invoice Count	Total Price Variance Cost (USD)	Total Supplier Optimization Cost (USD)	Total Price Alignment Cost (USD)
Total	**1,198,609,864**	**716,616**	**491,838**	**160,283,483**	**68,736,056**	**3,346,551**
Circuit assemblies and radio frequency RF components	61,074,324	22,763	18,385	14,622,087	3,001,057	14,356
Machining and processing services	51,820,479	46,258	34,166	5,793,972	3,374,078	-12,421
Biochemicals	45,535,434	15,281	4,179	11,146,702	13,204,062	2,936,311
Measuring and observing and testing instruments	45,137,352	13,308	9,152	6,256,140	2,102,498	-41,436
Electronic hardware and component parts and accessories	34,395,227	19,945	11,603	2,657,992	1,357,086	-17,231
Organic derivatives and substituted compounds	33,692,791	5,113	4,969	3,988,884	1,483,072	6,480
Compounds and mixtures	31,627,152	13,259	11,161	1,965,413	713,887	20,923
Spectroscopic equipment	23,510,084	2,160	1,660	1,590,355	306,413	-26
Indicating and recording instruments	23,011,647	3,350	2,263	1,057,362	827,990	-9,218
Laboratory and scientific equipment	22,804,386	8,950	5,576	2,084,665	644,754	15,425
General laboratory glassware and plasticware and supplies	20,421,840	10,461	6,172	1,155,598	104,976	8,488
Structural materials and basic shapes	16,619,633	5,830	3,465	2,169,408	329,304	-736
Injection moldings	16,323,663	11,449	9,331	1,135,926	1,128,851	8,801
Electrical equipment and components and supplies	16,067,143	16,636	10,625	2,028,810	642,588	363
Laboratory centrifuges and accessories	15,764,632	1,135	737	1,116,973	643	-156
Electrical measuring and testing equipment	15,552,463	2,700	2,175	1,401,224	343,025	6,959
Bottles	15,384,286	4,345	4,016	2,969,602	125,944	766
Stampings and sheet components	15,081,820	23,667	21,238	4,301,952	2,352,945	718
Packaging materials	13,973,129	17,827	10,753	1,668,492	529,762	168,655
Chromatographic measuring instruments and accessories	13,944,438	7,273	3,849	1,069,147	764,105	174,051
Laboratory pumps and tubing	13,671,563	3,914	2,637	1,338,653	277,757	3,923
Funds transfer and clearance and exchange services	13,451,037	7,348	4,694	1,217,148	166,529	34,991

Figure 9.5 SAP Ariba Spend Analysis: Contract Awareness Report

As shown in Figure 9.5, the PPV, PPA, and SOC totals are available on the Contract Awareness report. Keep in mind that these amounts, if saved, could represent immediate additional profitability to your company but may require significantly more in sales/revenues to realize, depending on the company's net margin. So, if $10 million in savings is realized via these insights in procurement, and your company is working with a 10% net margin, you would have to sell 100 million more of products/services to realize this amount.

Supplier Parentage Report

Different types of procurement situations may include this type of opportunity. For example, if you're buying a product category that is supplied by an industry undergoing a lot of mergers and acquisitions activity, you may be unknowingly buying from subsidiaries of the same parent company at different prices and on different contracts. Or, you may be buying off of multiple contracts for the same product for the same supplier and would thus have an opportunity to consolidate that way. If the suppliers are conglomerates, or if the supplier base in this industry is heavily dominated by a few key players, fewer opportunities may arise for this type of report to uncover. Also, if the owner of the supplier is an investment entity or conglomerate, this type of contract roll up/consolidation will be less fruitful.

Reporting — Utilities Supplier Familiy Consolidation — Edit | Save... | Export | Actions

Field Browser: Page | Others

- Accounting Date (Fiscal Year)
- Accounting Date (Year)
- Active Parts
- Ariba Classification Taxonomy (L1)
- Company Level 3
  - US-PIT, HMD,SMD,USRMD 3,765,630
  - BSRockville 3,283,908
  - ALLENTOWN 1,664,029
  - LED - Asheville 1,458,056
  - GC - Fair Lawn 1,443,463
  - LCD - Roskilde 1,324,692
  - Corp-Waltham 1,206,893
  - LSR-ROCKFORD 1,174,130
  - LCD - Auburn 983,912
  - LCD-Vantaa Joensuu 924,557
- Custom Category (L1)
- ERP Commodity
- Region
- •Utilities

Pivot table | Chart | Dashboard

Applied Filters

- •3,238,119,033 Accounting Date — Spanning: 1/1/2008 -- 3/31/2009
- Supplier Parent (enriched) — * Exclude * THERMO FISHER SCIENTIFIC
- •23,443,095 UNSPSC (L1) — Public Utilities and Public Sector Related Services -> Utilities ->(Electric utilities, Oil...

Display Options: Edit | Min/Max rows: 3/8 | Layout: Pivot Outline

Data

Supplier Parent (enriched) / ERP Supplier	Total Invoice Spend (USD)	Total Invoice Count
Total	**23,443,095**	**4,297**
PEPCO HOLDINGS	**4,034,908**	**483**
Pepco	2,156,196	361
PEPCO ENERGY SERVICES INC A/P-96688	724,576	54
PEPCO ENERGY SERVICES	593,415	29
AMG Division, Pepco	407,083	8
DELMARVA POWER C-08588	122,316	15
PEPCO	30,569	12
Pepco Energy Services	666	3
PEPCO/MAIL STOP: EP7223	88	1
CONSTELLATION ENERGY GROUP	**1,870,882**	**185**
CONSTELLATION NEW ENERGY	628,021	51
CONSTELLATION NEWENERGY INC A/P-102632	450,559	16
CNE - GAS	301,247	17
CONSTELLATION NEWENERGY INC B-102632	169,849	25
Constellation NewEnergy	131,694	15
BALTIMORE GAS & ELECTRIC CO B-46461	110,989	48
Constellation Newenergy	78,523	13
ENERGI DANMARK A S	**1,324,692**	**107**

Figure 9.6 Supplier Parentage Report: Utilities

Supplier parentage can be brought to bear on negotiated utilities contracts, as shown in Figure 9.6, and spend volume reports. The report shows which utilities share a common parent as well as your spend volumes and indicates opportunities to consolidate your contracts as parent-to-parent versus location to subsidiary.

The Supplier Parentage report is also where spend volumes and trends come into play—if you're spending higher amounts than before, include this fact in the next negotiation round as leverage and justification for obtaining better pricing and rates. Likewise, understanding which product categories are influenced by price changes in terms of how much your company eventually purchases (price/volume elasticity), and which categories are largely price insensitive, can determine whether you look for external price reductions from your supplier, or for internal measures to curb demand for hat category. If your company's volume of buying in a category is largely driven by price, achieving a price reduction from the supplier will lead to an almost commensurate increase in purchasing, negating the savings effects. Having pricing and category information, as well as historical trend data in the form of volume over time by price, can assist you with understanding whether reducing volume or price leads to the greatest savings. Follow-on reports are available in SAP Ariba Spend Analysis, such as the Spend Volume report and the Spend Variance Analysis Volume vs. Price Effects report.

Supplier Fragmentation Report

Fragmented markets often represent the best sourcing opportunities, which means, from an economics standpoint, with the correct analysis and understanding of the market, you stand to obtain pricing at, or even below, cost. A fragmented supply market typically encompasses many competitors vying for your business in that product or service category. Conversely, if the market for an item is split neatly between a few large suppliers, your negotiating leverage may be severely reduced. No matter how well laid out your arguments are, you may still end up paying what the supplier asked for initially because you don't have alternatives. Figure 9.7 shows an example supplier fragmentation report.

Once you account for geographical or other justifications for a larger-than-normal amount of suppliers providing a category, you'll next determine whether your sourcing and cost-saving strategies for a particular category had potential from a supplier availability and overall market standpoint.

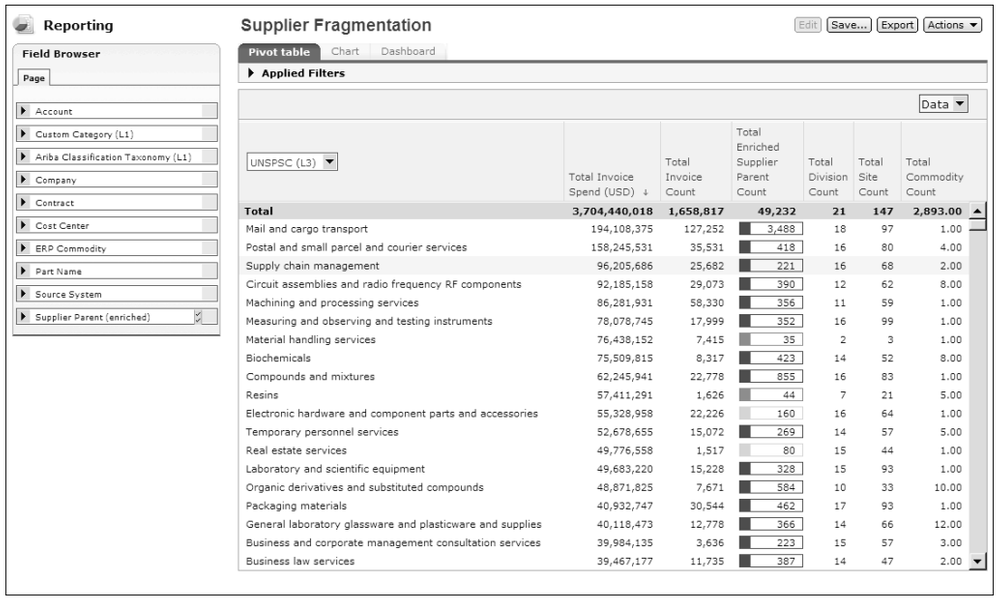


Figure 9.7 Supplier Fragmentation Report

Additional Reports

The Supplier Footprint report provides several useful data points with invoicing activity, as well as commodity and site/division count on a supplier, with the goal of facilitating consolidation. Invoicing activity highlights opportunities to streamline ordering with top suppliers, including drilldown by category. Commodity counts uncover niche suppliers, whose spend could potentially be consolidated with a more diverse supplier. Site/division count show how entrenched, or intertwined, a supplier is with your company, since a supplier with a large number of relationships with your company's sites will be more difficult to replace with another.

In the short term, moving away from a heavily entwined or favored supplier may not be feasible, but understanding from a long-term strategy approach may be the first step in eventually achieving dissolution or independence from the relationship. Likewise, the Spend Concentration report allows you review categories of spend where you currently have too little competition and too much dependence on one supplier.

Finally, as with demand management, the insights gleaned from these reports should drive changes in procurement behaviors in your organization, rather than solely supplier-focused rationalizations. To help change procurement behaviors, SAP Ariba Spend Analysis provides prepackaged reports such as three PO vs. Non-PO Spend reports; an Off Contract Spend report by commodity/organization unit/supplier; and an Organizational Analysis report from source systems.

Understanding multiple aspects of a procurement scenario and finding is necessary to making an informed decision. You could simply act on the first report showing that you are overly dependent on a supplier who is underperforming. However, before using this report to justify a host of other actions, you'll need understand (via other reports in SAP Ariba Spend Analysis) just where this supplier fits in, both internally at your company as well as externally in the market. For example, if you don't take into account the supplier's relationship level with your company from a site standpoint, or if you ignore the supplier market makeup for the product being supplied, a sudden "rip and replace" move by the supplier could have negative consequences that outweigh the sought-after savings. Likewise, if you chase a savings target on a commodity via negotiating a price reduction with the supplier without understanding your company's price elasticity with that commodity, achieving a reduction in price could simply lead to more wasteful usage of that commodity and no real savings, due to increased purchasing volumes.

As shown in Table 9.4, analysis and cross-functional insight are required when leveraging these data points and reports from SAP Ariba's analytics tools to take action. When pursuing a savings opportunity, be sure to assess not only the opportunity, but also the business impact, supply risk, ease of implementation, and savings potential. To fully understand the savings potential, you'll need to consider additional historical factors in your spend volumes, supply base concentration, spending concentration with supplier, and savings history, as shown in Figure 9.8.

Business Impact	Supply Risk	Savings Potential	Ease of Implementation
■ Total cost ■ Customer value ■ Product differentation ■ Performance ■ Technology ■ Safety, governmental, industrial regulations	■ Market depth and intensity ■ Pressure from substitutes ■ Bargaining power ■ Off-shore supply ■ Entry barriers ■ Constraints ■ Corporate buying power ■ Intellectual property ■ Outsourcing services ■ Logistics, inventory, and lead time	■ Spending characteristics ■ Specification accuracy ■ Specification development ■ Supply market analysis ■ Competitive sourcing ■ Saving history ■ Labor as percentage of total cost ■ Raw material pricing trends	■ Contract length ■ Switching costs ■ Onsite requirements ■ Organizational sensitivity ■ Technical complexity ■ Availability of expertise ■ Customer imposed constraints

Table 9.4 SAP Ariba Spend Analysis: Insight-Driven Action

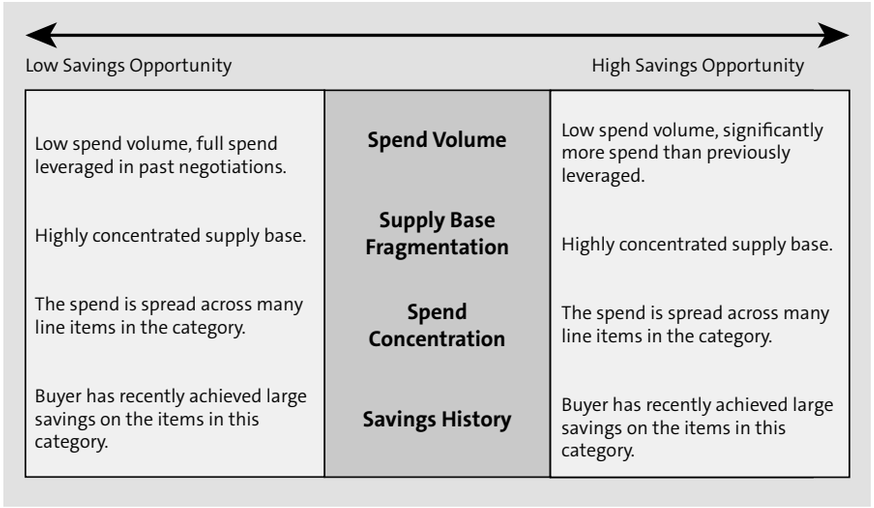


Figure 9.8 Key SAP Ariba Spend Analysis: Factors for Sourcing Savings

Insights often seem obvious once stated, but hidden up until that point. Similarly, if you aren't spending a lot of money with a supplier or type of item in the category, prioritizing this area for analysis or savings initiatives doesn't make sense. When only a few suppliers operate in a market, you're dealing with an oligopoly, and oligopolies don't have to negotiate as hard as perfectly competitive markets. Finally, if you've recently secured large savings in a category or with a supplier, the savings opportunities may very well be exhausted for this area at the moment.

Only through measured analysis of these vital areas will you likely achieve the desired results and realize the actual opportunity estimated from the data. Hasty decision-making based off one-dimensional reporting can resemble a game of whack-a-mole, with constant effort only surfacing other problems to replace the targeted one.

9.5.5 Key Data Sources and Options for Importing into SAP Ariba Spend Analysis

SAP Ariba spend management and visibility uses the concept of a "source system," which is not necessarily a separate system, but more of a mechanism for segregating data. SAP Ariba spend management reporting uses source systems to represent distinct data sources. Each source system has a source type that defines the format of the data loaded into it. Users in the SAP Ariba Spend Analysis project manager group can add and delete source systems and can manage which source systems users in the SAP Ariba Spend Analysis data file manager group can access on the admin page for the SAP Ariba Spend Analysis manager.

Depending on the solutions implemented, your site will use some combination of the following source systems, as shown in Table 9.5.

Source Type	Source System Name	Description
SAP Ariba Spend Management	SAP Ariba Spend Management	Transactional data and data on projects and tasks from SAP Ariba Contracts, SAP Ariba Sourcing, and SAP Ariba Supplier Lifecycle and Performance data. Automated data pulled from these solutions is loaded into this source system. In SAP Ariba Spend Management solutions that do not include SAP Ariba Spend Analysis; you always load custom fact data into the SAP Ariba Spend Management source system.
Global	Default	Global data, such as master data, from SAP Ariba Contracts, SAP Ariba Sourcing, SAP Ariba Spend Analysis, and SAP Ariba Supplier Lifecycle and Performance. Star schema ZIP files are loaded into this source system.
SAP Ariba Spend Analysis	Defined upon creation of source system	Users in the SAP Ariba Spend Analysis project manager group can create different source systems of type SAP Ariba Spend Analysis for loading SAP Ariba Spend Analysis data files. You can also load custom fact data into an SAP Ariba Spend Analysis source system.
Global	Self service procurement: None	Global, unpartitioned data from SAP Ariba invoice and procurement solutions. Automated data pulls from these solutions are loaded into this source system.
Buyer-Generic	Self service procurement: Generic	Generic format data for SAP Ariba invoice and procurement solutions. Automated data pulls from these solutions are loaded into this source system.

Table 9.5 Source System Types

Source Type	Source System Name	Description
Buyer: SAP	Self service procurement: SAP	SAP format data for SAP Ariba invoice and procurement solutions. Automated data pulls from these solutions are loaded into this source system.
Buyer: Psoft	Self service procurement: Psoft	PeopleSoft format data for SAP Ariba invoice and procurement solutions. Automated data pulls from these solutions are loaded into this source system.

Table 9.5 Source System Types (Cont.)

You can add or delete source systems of the SAP Ariba Spend Analysis source type, but you cannot add or delete ASM, global, or buyer source systems. You can add a single source system at a time, or you can add batches of source systems by uploading a source system via a CSV file. Source system names cannot be longer than 20 alphanumeric characters or contain spaces.

Custom reporting facts are available in:

- SAP Ariba Contracts professional
- SAP Ariba Sourcing professional
- SAP Ariba Spend Analysis professional
- SAP Ariba Supplier Management
- SAP Ariba Supplier Lifecycle and Performance

SAP Ariba Spend Management solutions include a set of reporting facts to store data about the basic transactions that users are investigating when they run a report. These facts include invoice, purchase order, contract workspace (procurement), event item summary, and others. SAP Ariba Spend Management automatically loads data into these facts from your solution package at regular intervals. In SAP Ariba Spend Analysis solution packages, SAP Ariba Spend Analysis project managers can load external invoice and purchase order data into SAP Ariba Spend Analysis for analytical reporting.

Custom reporting facts are not enabled by default. To enable custom reporting facts, you'll need to work with SAP Ariba services. You can use custom reporting facts to load other kinds of data from third-party systems into SAP Ariba Spend Management

and then run analytical reports to show this data side-by-side with SAP Ariba Spend Management data. You can use custom reporting facts to load:

- Third-party supplier quality data, such as percentage of claims in total freight cost, for use in key performance indicators (KPIs) in SAP Ariba Supplier Lifecycle and Performance scorecards.
- Third-party supplier risk data for use in surveys.
- Third-party savings pipeline and tracking data for reporting alongside SAP Ariba Sourcing project data.
- Third-party external contract data for reporting alongside SAP Ariba Spend Analysis invoice and purchase order data.
- Third-party order fulfillment data for reporting alongside SAP Ariba Contracts management workspaces, SAP Ariba Sourcing projects, or SAP Ariba Supplier Lifecycle and Performance projects.
- Spend forecast data for reporting alongside SAP Ariba Spend Analysis invoice spend data.
- SAP Ariba supplier data in a separate supplier fact for drilling down and filtering supplier data by commodity category, region, minority-owned status, and so on. By default, SAP Ariba stores supplier data in a dimension, which does not allow for this kind of analytical reporting.

As with other aspects of database design, custom reporting facts require careful planning and analysis. After you create a custom fact, it cannot be deleted in the system, and modifications to custom fact data are subject to limitations. For example, you can overwrite existing data with new rows of data that use the same lookup key values as existing data, and you also can add new data to the existing dataset. However, you cannot delete existing data.

Because of these limitations, custom facts are most suitable for data that is static or that changes slowly. For example, data from completed rounds of supplier performance evaluations is unlikely to change. You will, however, continue to add to it. Supplier data changes infrequently, and even if your company stops doing business with a supplier, you'll want to retain that supplier's record for archival purposes. On the other hand, you're likely to run up against these limitations with large-volume datasets that change rapidly, including procurement documents such as invoices, requisitions, and purchase orders.

Custom facts have further limitations: Custom facts do not include any default fields for common measures, such as spend and count, nor do they support currency conversions. You must create all the measure fields you want when you create the custom facts.

If you've enabled the custom fact feature or are implementing SAP Ariba Spend Analysis, you'll store data in a dedicated star schema. This star schema uses fact tables to store specific types of records, such as invoices, projects, or survey, and uses dimension tables to store records that are common to most or all facts, such as suppliers and commodities, or regions.

As shown in Figure 9.9, dimensions can contain different levels of data, organized in top-down hierarchies that progress from general to specific. Report queries associate fact and dimension tables so that you can drill down, navigate hierarchy levels, add and remove hierarchy fields, and perform other analytical tasks in reports.

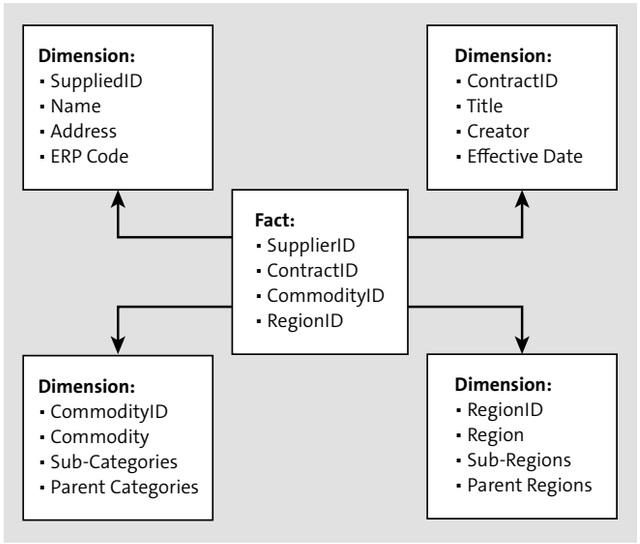


Figure 9.9 SAP Ariba Star Schema Data Model

9.6 Summary

Like SAP Ariba Supplier Lifecycle and Performance, SAP Ariba Spend Analysis was developed to address more complex reporting requirements in procurement than the one-dimensional reports available in various solution areas. SAP Ariba Spend

Analysis combines disparate data sources and purchasing documents with actual spend/payment data to provide managers and executives with a clear understanding of just where the money is going in procurement. Whether in procurement or in politics, following the money is always a good starting point. What is gleaned from SAP Ariba Spend Analysis reporting can then be used to achieve greater savings through targeted initiatives. You should use further analysis with SAP Ariba Spend Analysis to focus on what is important and useful for your organization, using market analysis and reports in the supplier side of the system to identify where the most savings can be achieved with the least amount of effort. As with the other analysis tools in SAP Ariba Supplier Lifecycle and Performance, how you interpret and what you do with the insights is just as important as getting to them in the first place.

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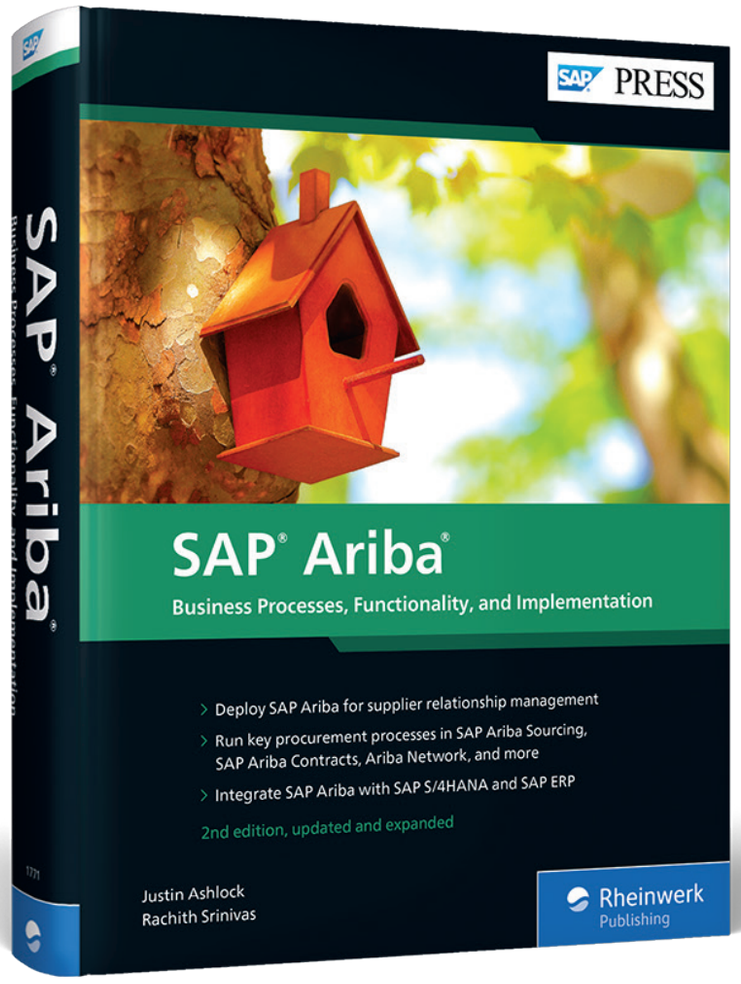

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