This chapter dives into the sourcing and procurement process in the next-generation SAP landscape. From sourcing to purchasing to services procurement, you’ll see how SAP S/4HANA and SAP Ariba come together to complete the SAP solution portfolio for sourcing and procurement.

“Sourcing and Procurement with SAP S/4HANA and SAP Ariba”

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SAP: An Introduction—Next-Generation Business Processes and Solutions

537 Pages, 2018, $69.95

www.sap-press.com/4563
Chapter 4
Sourcing and Procurement with SAP S/4HANA and SAP Ariba

In this chapter, we’ll focus on sourcing and procurement as a business process before discussing the evolution from arm’s-length adversarial procurement to a tighter, more collaborative approach. Following this, we’ll investigate the tapestry of products that form SAP’s sourcing and procurement portfolio.

Sourcing and procurement is a topic that encapsulates how digital technology has and continues to disrupt long-established ways of doing business. Rather than simply speeding up traditional business processes, digital technology has been a catalyst enabling procurement departments to adopt new relationship models that move beyond arm’s-length vendor/supplier relationships and embrace mutually beneficial collaboration based on intelligence networks.

We procure items from a myriad of sources—shops, markets, cafes, restaurants, and online—however, despite the commonplace nature of the activity, finding a consensus as to the lexicon or even the encompassing span of activities for the term “procurement” isn’t so straightforward.

To illustrate the point, some organizations “procure” from “suppliers” while others “purchase” from “vendors,” some “source,” some “transact,” and some “buy.” Our first task therefore is to wrangle the somewhat elusive term “procurement” into its constituent parts (as shown in Figure 4.1) and establish a common definition that we’ll use throughout this chapter, as follows:

- **Sourcing**
  Sourcing refers to processes and activities spanning the initial identification, evaluation, and engagement of suppliers through to the agreement of contracts. Logically, sourcing is a precursor to purchasing.

- **Purchasing**
  Purchasing relates directly to the act of acquisition. It leverages the relationships
and contractual instruments established during sourcing and spans activities from the raising of a purchasing request (or requisition) to the processing of a purchase order (PO) and the final payment of vendor invoices.

**Procurement**

As shown in Figure 4.1, many use procurement as an umbrella term encompassing both sourcing and purchasing activities. However, for practical purposes SAP uses the terms “procurement” and “purchasing” almost interchangeably, and therefore within this chapter, we shall do the same.

![Figure 4.1 Breakdown of Procurement and Its Relationship to Supply and Demand](image)

This chapter will begin by highlighting SAP’s solution landscape for sourcing and procurement, before walking through the major sourcing and procurement business processes, digging into some of the key functionality contained within SAP S/4HANA Enterprise Management and SAP Ariba. First, let’s check in with our business case.

### 4.1 Business Case

As a large manufacturing organization that both procures a wide range of stock items and has a sizable network of service providers, procurement featured high on the transformation agenda at Bault Robotical. From a process perspective, procurement was defined as one area that should “fit to standard,” meaning that the organization should seek to adopt the standard SAP best practice approach and look to change business processes rather than changing the solution. From a legacy perspective, Bault Robotical already used SAP heavily for its sourcing and procurement functionalities with the organization already using SAP Ariba Sourcing and SAP ERP for direct, indirect, and services procurement. Parts of Bault Robotical’s business also used SAP Supplier Relationship Management (SAP SRM) for aspects of the procurement cycle, although this was far from being widespread.

Bault Robotical decided that the future landscape for procurement would include SAP S/4HANA Enterprise Management, SAP Ariba (various modules), SAP Fieldglass (for services), and SAP Concur to manage travel and expense purchasing. Following are a few of the strategic decisions made by Bault Robotical in regard to its sourcing and procurement estate:

- **Stock materials procurement at Bault Robotical**
  The implementation of SAP S/4HANA Enterprise Management was principally to control the procurement of stock materials of which demand was generated from the material requirements planning (MRP) run. While the trigger remained within SAP S/4HANA, the communication of the orders to the vendors and the subsequent control of the inbound process was transferred to SAP Ariba. This necessitated a significant business change effort and working with SAP to move the vendors of Bault Robotical onto the SAP Ariba platform. This move also necessitated a change to Bault Robotical’s standard contractual terms to include a clause that any potential vendors would agree to transact through the SAP Ariba platform. Any stock items that weren’t triggered by MRP could also be purchased through catalog functionality within SAP Ariba.

- **Indirect material procurement at Bault Robotical**
  It was decided to control all indirect (nonstock) material procurement through the Ariba Network using the catalog functionality to facilitate self-service procurement within the Bault Robotical business. Mobile applications within the SAP Ariba solution also facilitated procurement by Bault Robotical engineers in the field.

- **Contingent labor**
  As part of the overall solution, Bault Robotical decided to control all sourcing and procurement for contingent labor from within SAP Fieldglass (Chapter 12). Although it was noted that some functionality specifically around sourcing events was shared with SAP Ariba, the end-to-end (sourcing to offboarding) functionality offered by SAP Fieldglass, plus the inclusion of a managed service provider, convinced Bault Robotical that the SAP Fieldglass solution was the better fit.

- **Travel and expense**
  Bault Robotical also decided to use both Concur Expense and Concur Travel for its travel and expense process. While this is a topic that isn’t covered here, it does form part of the procurement suite and is covered in Chapter 13.

- **Trigger material reservations**
  One gap that Bault Robotical did have was the ability for field engineers to request existing stock through a material reservation (rather than a PO). In this scenario,
Bault Robotical engineers wanted the ability to check stock balances within a specific warehouse or storage depot and request certain materials. While this functionality wasn’t available at the time this was written, Bault Robotical, working with SAP, did acknowledge that this functionality was due to be released before the end of 2018, so this is something that Bault Robotical committed to revisiting in the future.

4.2 SAP Portfolio Overview

Having established the key business elements encompassed within procurement, we’ll now spend time introducing the SAP products and services that constitute the modern SAP procurement portfolio and some of the key technical enablers that have facilitated the development of this portfolio. Specifically, we’ll now discuss SAP S/4HANA Enterprise Management and SAP Ariba in detail while making reference to SAP Fieldglass along the way (we’ll discuss SAP Fieldglass in greater detail in Chapter 12).

Out with the Old

From the outset, we should state clearly that the products in SAP’s next-generation sourcing and procurement suite that we’re about to discuss weren’t originally designed to work together, resulting in areas of functional duplication and crossover. From a genealogy perspective, SAP S/4HANA Enterprise Management has its roots firmly planted in SAP ERP (which in practical terms began with R2 in the early 1970s), whereas Ariba and Fieldglass were successful products in their own rights prior to acquisition by SAP in 2012 and 2014, respectively.

Rather than highlighting a definitive delineation as to where the functionality of one of these products ends and the next begins, this chapter offers practical guidance to the advantages and disadvantages of one solution over the other. We’ll also discuss and demonstrate how these solutions can be co-deployed in a hybrid manner to exploit the specific benefits of each solution.

4.2.1 SAP S/4HANA Enterprise Management

The procurement functionality present in SAP S/4HANA Enterprise Management is an evolution of functionality developed largely to service the internal needs of the organization engaged in procurement without much thought being given to the supplier who receives the procurement order. In practice, this means that most of the work done within SAP ERP focuses on creating the correct internal checks and balances to ensure that the end-to-end SAP-based procurement-to-payment process runs smoothly.

As an example, consider the PO. Conceptually, the purpose of the PO is to notify a vendor of goods or services required by the purchasing organization, the date the goods and services are required, and the price to be paid. A PO is quintessentially a “shared” document, meaning that it’s equally important for both the procurement organization and the vendor. However, within the confines of SAP S/4HANA Enterprise Management, native options for communicating a PO are very limited, with organizations either printing and posting physical copies or communicating by fax or email. The PO outputted from SAP S/4HANA Enterprise Management is therefore a “dumb” document that can’t easily be acknowledged, amended, or rejected digitally unless specific point-to-point integration between the purchasing organization and vendor has been established.

Point-to-point integration allows for individual links to be established on a vendor-by-vendor basis and can circumvent the inherent limitations of dumb outputs from SAP S/4HANA. These integrations can be fairly cumbersome to establish and maintain, however, and due to the time and effort required, they don’t lend themselves to a purchasing organization looking for a fluid and agile supplier base. Practically, this limitation has created a cottage industry of departments whose sole job is to validate that vendors have received POs, confirming quantities and dates, and monitoring/amending shipping information.

Apart from the inherent internal focus within SAP S/4HANA, the functionality is aimed more at purchasing rather than sourcing. A few exceptions do exist, and sourcing concepts such as request for quotations (RFQs) are catered for within SAP S/4HANA. From a high-level perspective, however, we can consider complex sourcing to be outside the scope of SAP S/4HANA Enterprise Management.

4.2.2 SAP Ariba

Unlike SAP S/4HANA and SAP ERP before it, SAP Ariba was effectively “born digital.” It was conceived specifically as a cloud-based, networked solution designed to facilitate collaboration between purchaser and vendor.
To illustrate the point, let’s revisit the PO example. As we’ve already stated, within SAP S/4HANA and without specific point-to-point integration, the PO is an intelligent document only within the confines of the purchasing organization. However, within a networked solution such as SAP Ariba, the PO is intelligent on both sides of the fence and acts as a shared object that is the basis of automated communication. Steps such as order acknowledgments, order amendments, and advanced shipping notifications are automated and conducted within the SAP Ariba solution itself, and real-time information is provided to both parties.

**What’s Right for You?**
Therefore, right from the outset, we can start to shape our thinking along these two distinct lines: Where the requirement is based solely within the internal processes of the purchasing organization, then SAP S/4HANA Enterprise Management may well contain the requisite functionality. Alternatively, if the focus is based around the effective sharing of information outside of the four walls of the procuring organization, then due to the nature of the underpinning technology, SAP S/4HANA Enterprise Management on its own is unlikely to satisfy the complete requirement. In this case, an organization should look to access the feasibility of a hybrid model combining the functionality of SAP S/4HANA Enterprise Management with SAP Ariba and/or SAP Fieldglass.

The Ariba portfolio encompasses a full range of functionality covering both Sourcing and Purchasing. Indeed, Ariba can run the entire procurement process without interaction with SAP S/4HANA or indeed any ERP solution at all. However, as practically speaking as this book is aimed at an SAP audience the lion’s share of the discussions will focus on the interaction between SAP Ariba and SAP S/4HANA Enterprise Management.

This being the case we can consider the SAP Ariba Portfolio in three broad sections:

- **Sourcing functionality**
  Sourcing (as outlined at the beginning of this chapter) is a term that encompasses all activities pertaining to the identification of suitable suppliers and the establishment of the requisite terms required for the actual purchase to proceed. Sourcing also includes evaluating suppliers and ensuring that all factors are considered when identifying the most suitable provider of goods and services. We’ll discuss sourcing further in Section 4.3.

- **Purchasing functionality**
  The purchasing functionality of SAP Ariba includes all activities concerned with the transactional procurement of goods and services, ideally based upon the centrally agreed terms specified in sourcing. This includes the raising of orders from catalogs as well as processing requisitions created via the MRP process. We’ll discuss this further in Section 4.4.

- **The Ariba Network**
  The Ariba Network is an e-commerce platform that connects vendors and customers from around the globe. It’s designed to facilitate collaboration and enables self-service and the instantaneous communication of procurement process steps and documents. It’s effectively a digital marketplace where purchasers and suppliers (and, as importantly their individual systems) are fully connected. The Ariba Network is effectively the communication channel for orders, shipping notifications, etc., and can be used as the vehicle to transmit procurement information that has either been generated directly from the Ariba Network or equally from orders that originate from SAP S/4HANA Enterprise Management (for example, stock orders generated by MRP).

Figure 4.2 outlines the constituent parts of the portfolio at a more detailed level.

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Figure 4.2 Overview of How the Ariba Network Enables Sourcing and Purchasing

**4.2 SAP Portfolio Overview**

**4.2.3 SAP Fieldglass**
We’ll cover SAP Fieldglass and the concept of the “gig economy” in Chapter 12. At this point, however, we’ll simply say that SAP Fieldglass is a tool to manage vendors and...
individuals performing tasks on behalf of an organization but aren’t contracted to that organization in a traditional employee/employer relationship.

In addition, for the purpose of this chapter, we can draw a clear distinction by thinking of SAP Fieldglass as being concerned with the procurement of services rather than materials. With this distinction drawn, we should also acknowledge that, functionally speaking, there is an overlap among SAP S/4HANA Enterprise Management’s service management functionality, SAP Fieldglass, and SAP Ariba. Once again, this chapter will shed some light on what functionality sits where and how these solutions can be combined to provide a “best of both worlds” hybrid model.

4.3 Sourcing

Sourcing in its simplest form is a term that encompasses all activities pertaining to the identification of suitable suppliers and the establishment of the requisite terms required for the actual purchase to proceed. Up to now, however, we’ve treated “sourcing” as a consolidated term, when in actuality, as a process and a strategy, sourcing can look markedly different between businesses and even within the same business. We’ll now look at some of these different approaches to sourcing while at the same time highlighting the SAP products and functionality most applicable to these differing approaches. We’ll start with the most basic approach: reactive sourcing.

4.3.1 Reactive Sourcing

Let’s begin by considering the scenario in which it’s a hot day, and your children are pestering you for an ice cream. After token resistance, you capitulate and agree. You now have your starting point, your demand.

However, before you can purchase the ice cream, you need to find somewhere to buy it from. Now let’s further assume you’re near a beach or at a fun fair, so finding a source of the ice cream should be easy with several potential sourcing options (think ice cream van, sweet shop, and café). After you’ve assessed your potential options, considered the terms (e.g., price and length of the line), and made a final decision about who to buy from, you have, in effect “sourced” the ice cream.

In this very simple scenario, the little sourcing that was done was completely reactive in nature. In this example, the source of supply wasn’t identified until the demand was created, and no sourcing work was carried out in anticipation of an expected demand. While this scenario is simplistic in nature, it’s still prevalent within many organizations today.

Even today, many purchasing organizations will only become notified of a requisition at the point it needs to be actioned. At this point, the procurement organization will seek to find a suitable supplier to accommodate the demand, but due to the urgency of this type of demand, the commercial value that the department can add is limited at best. However, in some cases, even after careful consideration of all sourcing options, many organizations may well decide to manage certain material types and services on this ad hoc reactive basis. It may not be possible to justify the effort and cost needed to manage low-cost items that are ordered infrequently on anything other than a reactive basis.

This type of sourcing can in theory be handled within SAP S/4HANA Enterprise Management. Like its predecessor SAP ERP, SAP S/4HANA Enterprise Management contains the functionality required to establish baseline contractual data, which can subsequently be used within the execution of purchasing. This is either in the form of outline agreements or master data, such as purchasing information records that set predefined rules for purchasing certain items off certain vendors. It also allows vendor records to be created that hold the necessary procurement data, such as terms of payment and contact details.

4.3.2 Tactical Sourcing

Beyond reactive sourcing sits tactical sourcing, which can be viewed as a more structured form of sourcing (but still not particularly comprehensive). Tactical sourcing events are once again generally reactive although formal processes, such as RFQs, may be used to try to obtain improved purchasing terms. In this type of sourcing, the commercial effort is relatively one dimensional in nature and, as in our ice cream example earlier, is often concerned almost exclusively with identifying suppliers who can provide the requisite material or services at the lowest purchase price.

This type of sourcing approach also tends also to be accompanied by a siloed standard cost view of the world. For this sourcing approach, the performance of the specific purchaser is evaluated based almost exclusively upon the metric of purchase price variance (PPV). Unfavorable variances are recorded if the actual purchase price exceeds the default standard, and favorable variances occur if the purchase price secured is less. This therefore incentivizes the procurement organization to focus on identifying suppliers who can provide the lowest purchase price. This creates a problem when facing other, perhaps more substantial problems within the organization.

Even today, SAP Fieldglass is concerned with the procurement of services rather than materials. With this distinction drawn, we should also acknowledge that, functionally speaking, there is an overlap among SAP S/4HANA Enterprise Management’s service management functionality, SAP Fieldglass, and SAP Ariba.
exclusively on lowering the transaction price and has little thought to wider value-based metrics, such as total cost of ownership (TCO).

In practice, this type of customer/supplier relationship tends to be both arm’s length and adversarial with the purchasing organization looking to obtain the lowest possible purchase price while the supplier is simultaneously concerned with “winning the work” and protecting its own margin.

Like reactive sourcing, tactical sourcing can be accommodated within SAP S/4HANA Enterprise Management by utilizing the functionality described previously and by also using the inherent RFQ functionality.

RFQ functionality within SAP S/4HANA Enterprise Management can be used to invite vendors and suppliers to submit quotes for items required by the purchasing organization. The RFQ contains the estimated quantities to be purchased, the date by which the material needs to be delivered, and a deadline outlining when the supplier must submit the response (Figure 4.3).

After vendors submit the quotations, the information is entered into SAP S/4HANA and compared using a price comparison list. The winning bid can then be turned into a purchasing information record, and rejection letters can be created for the unsuccessful suppliers.

However, while this explanation may appear to be a fairly straightforward approach for managing a tactical sourcing scenario, keep in mind that all SAP S/4HANA Enterprise Management functionality is predominantly inwardly focused, and therefore all interactions between the purchasing organization and vendor are conducted manually. In addition, note that SAP S/4HANA doesn’t help in the identification of potential vendors nor provide any formal method of bid management. Therefore, while these limitations may be accommodated within a tactical sourcing scenario, it sits unhappily with a more complex strategic sourcing strategy.

4.3.3 Strategic Sourcing

Unlike reactive and tactical sourcing, strategic sourcing as a concept is proactive and endeavors to preempt the needs of the wider purchasing organization and have optimal vendor relationships prior to any communication of actual demand. Strategic sourcing aims to provide a holistic understanding of both the needs of the complete business and information regarding the current levels of spend. Unlike the previous two examples, strategic sourcing can’t take place in a vacuum and depends on collaboration both with vendors and across the procurement organization and the wider business.

The organizational challenge that this latter collaboration creates should not be underestimated with departmental structures, reporting lines, bonus structures, and many other factors creating and sustaining silos within the organization. As can be seen from the previous two sourcing scenarios, many organizations and departments will only involve the purchasing organization at the last minute, and changing this behavior often involves a conscious business effort alongside the formulation of a truly cross-functional team to assess areas where a strategic sourcing scenario approach is applicable.

Once formed, this team will walk through a variation of the following six sequential elements:

1. Profiling the category
2. Selecting the sourcing strategy
3. Generating the supply portfolio
4. Selecting the implementation path
5. Negotiating and selecting supplier
6. Manage vendor lifecycle and performance

These six elements are an adaptation from the seven-element model developed in 2001 by the management consulting firm AT Kearney. Although the list has been refined and adapted by various consultancies, it remains a pragmatic and widely recognized overview of the tasks involved in strategic sourcing.

From an SAP portfolio perspective, we’ll be breaking down strategic sourcing into the following SAP Ariba solutions:

- SAP Ariba Spend Analysis
- SAP Ariba Sourcing
- SAP Ariba Contracts
- SAP Ariba Supplier Lifecycle and Performance
- SAP Ariba Supplier Risk

We’ll now discuss each step in more detail.

Profile the Category
This initial step in strategic sourcing is itself subdivided into three logical sections, all of which are concerned with gathering intelligence from various forms of analysis.

This intelligence gathering is of paramount importance to ensure that the correct foundations are set and to ensure that the organization adopts the optimal sourcing strategy (step 2) and full knowledge of specific suppliers is available when it comes to supplier negotiations (step 5). The three elements are as follows:

- Spend analysis
  The purpose of a spend analysis is to obtain a clear understanding of the internal spend of the complete organization by, for example, certain vendors, commodities, and cost centers. Practically, this often begins with a company-wide collation of all the existing contracts that the supplier has so a complete picture of spend can be developed based on financial value, locations, pricing, terms and conditions, and which sources are used most frequently.

SAP provides the following two key solutions for analyzing its spend:

- SAP Spend Performance Management: As neither an SAP S/4HANA Enterprise Management solution nor an SAP Ariba solution, SAP Spend Performance Management is an on-premise analytical reporting tool based on SAP Business Warehouse (SAP BW) that allows spend data from multiple SAP and non-SAP sources to be consolidated and reported through predefined metrics that a user accesses via a web-based frontend. These metrics are based on SAP best practices, which are, in turn, based on industry best practices and are designed to offer a standard out-of-the-box analysis.

- SAP Ariba Spend Analysis: This SAP HANA solution based on software-as-a-service (SaaS) aggregates, classifies, and allows for the enrichment of spend data while also making this data available via an analytic tool. SAP Ariba Spend Analysis facilitates the capture of compliance and savings KPIs by consolidating spend across all of the enterprise’s purchasing systems in an organization’s landscape. Compliance KPIs are incorporated to understand what has already happened, such as vendor compliance, and contract level compliance. Savings KPIs forecast potential opportunities for ordering and invoicing consolidation.

- Needs analysis
  Needs analysis as a process demonstrates why strategic sourcing must be done through a cross-functional team and not exclusively by the procurement department. A needs analysis involves gaining a thorough understanding of the business-wide need, how the business feels about a particular supplier, and what improvements the business feels could be made to either the product or the service. By conducting a needs analysis, a qualitative context is added to the previously discussed spend analysis.

- Supply market analysis
  Having gained both quantitative and qualitative information about the vendor, the idea here is to understand the supply market that they operate in by determining the main competitors, their specific cost pressures, and the current industry trends. It’s also important to try and understand as much as possible about the health of the vendor’s business together with starting to gain an understanding of which other suppliers could provide similar products or services.

  Together with collating pertinent information pertaining to an organization’s spend, SAP Ariba Spend Analysis also provides functionality to support supply market analysis by enriching spend data with market intelligence both from the Ariba Network itself and also (as an optional extra) from Dun & Bradstreet, a Fortune 500 company that provides commercial data to businesses on the credit history and risk exposure, among other things, of more than 265 million companies.
This enrichment includes elements such as financial indicators, company parentage, and industry designations.

What’s Right for You?
Enriched parentage can identify where multiple vendors belong to the same parent company and therefore present potential scope for commercial rationalization, whereas financial insight can help manage risk and provide useful context to the health of the vendor’s business.

Additional enrichment, available at an extra cost from Dun & Bradstreet can encompass factors such as the vendor’s diversity and environmental considerations. These may be critical factors within local legislative environments; for example, businesses in South Africa have to meet a number of government-mandated targets around company ownership and diversity. Additionally for companies that have environmental credentials and reputations at stake, it will be critical to ensure that their supply chain reflects their aspirations and ethos.

Select the Sourcing Strategy
The next step is to define the sourcing strategy that should be assigned to a particular product or group of products. To achieve, this many organizations will classify the products into one of the following four items:

- **Strategic items**
  Strategic items are the most important items for a procurement organization, and ensuring a regular supply of these items should be a primary focus. To accomplish this procurement organizations, organizations can adopt the following sourcing strategies:
  - Product specification improvement: This involves working with the supplier to tailor the product specifically to meet the needs of the purchasing organization.
  - Joint process improvement: The procurement organization and the vendor consciously work together to provide a better and mutually beneficial service.
  - Relationship restructuring: The procurement organization and the vendor establish a long-term partnership that provides the vendor assured demand and should provide the purchasing organization preferred pricing and a greater degree of confidence of supply.

- **Leverage items**
  This is the next most important class of products. In common with strategic items, leverage items are very important to the overall profitability of the organization, but unlike strategic items, there is a low supply risk, meaning the product in question is often a standard item that can be supplied by multiple suppliers. Appropriate sourcing strategies for products within this classification include the following:
  - Volume concentration: Looking to collectively buy the requirements for the whole organization centrally to gain leverage with the supplier.
  - Best price evaluation: Negotiating to achieve the lowest possible price. For items in this classification, an organization may consider developing new vendors or expanding their supplier network often through pursuing sourcing opportunities in low-cost countries or by exploring outsourcing opportunities.

- **Bottleneck items**
  These items have a low potential impact on the overall profitability of the organization but are either single sourced or supplied by a very small number of suppliers. Procurement approaches here follow broadly the approach taken with strategic items.

- **Noncritical items**
  These items have a low impact on the potential profitability of the overall organization and carry a low supply risk. Common purchasing approaches for these items are usually with items classified as leverage items.

From an SAP perspective, SAP Ariba Spend Analysis once again supports this activity with reports such as the Supplier Fragmentation Report, Supplier Footprint Report, and Spend Concentration Report, which are intended to clarify scenarios where organizations have dependencies and bottlenecks with certain suppliers.

After these two first steps have been achieved, and a procurement organization has a sound understanding of its internal spend, its needs, the supply market, and a clear direction in terms of procurement strategy, the next step is to engage suppliers.

Generate the Supplier Portfolio
This step is exclusively concerned with widening the procurement organization’s supplier base and identifying all viable suppliers for the product to be sourced. This is done by incorporating the needs analysis performed in step 1 to develop the criteria
for supplier selection. At this point, a portfolio of potential suppliers should be established with all potential suppliers included. To make this identification of suppliers as simple as possible, SAP Ariba offers SAP Ariba Discovery, which is a service that allows buyers to identify new suppliers and read profile information and feedback.

**What’s Right for You?**

From a buyer perspective, searching SAP Ariba Discovery is free; for suppliers, they have the choice of three subscriptions options: Standard, Advantage, and Advantage Plus. A Standard subscription gives you free access to SAP Ariba Discovery, the ability to exchange messages with buyers (limited to 20), and access to respond to requests for information (RFIs)/RFQs on a pay-per-response basis. The Advantage subscription increases the message limit to 50, removes the response fees, and adds a premium profile for an annual subscription. Advantage Plus provides unlimited messaging, priority support, expert advice, and networking opportunities, again on an annual subscription basis.

**Select the Implementation Path**

The purpose of this step is to define the mechanics of selecting a supplier from the portfolio. Common approaches are littered with three letter acronyms, such as RFI and RFP, and are often grouped together under the umbrella term RFx. The approach an organization takes will depend on the desired outcome, such as information, a firm proposal, or a detailed price bid. Let’s explore the major approaches:

- **Request for Information (RFI)**
  An RFI is a structured process whereby information is sorted from suppliers prior to a formal sourcing event. It’s a structured process in which many potential suppliers can be reduced to a list comprising only organizations that are able to fulfill the requirements of the procurement organization. An RFI is typically followed by an RFP or RFQ.

- **Request for proposal (RFP)**
  An RFP is a means by which a procuring organization can seek and receive detailed and comparable proposals from suppliers for products and services. It should be a comprehensive document that provides the requisite level of detail for the procurement organization to make an accurate and informed sourcing decision.

Note that in a situation where step 3 only generates one viable supplier, an organization may dispense with this step altogether and choose instead to negotiate directly without issuing an RFP.

The setup and management of RFx processes are core elements of the SAP Ariba Sourcing solutions of which there are currently two:

- **SAP Ariba Start Sourcing**
  This basic version of SAP Ariba Sourcing is free sourcing software (maximum of two users creating two sourcing events per month) that allows a purchasing organization to quickly create and manage sourcing events, including wizard- and template-based RFx and auctions. Once created, these events can subsequently be published to SAP Ariba Discovery (discussed earlier) where new suppliers can find and respond to them. SAP Ariba Start Sourcing can also help to manage communications pertaining to these events on a one-to-one or one-to-many relationship.

- **SAP Ariba Sourcing**
  This includes the same features of SAP Ariba Start Sourcing together with offering additional functionality, such as project management and workflow features needed for the organization of more complex sourcing events.

**Negotiate and Select Suppliers**

This step involves using all the intelligence that has been garnered in the previous steps to select a supplier. Understanding the supplier’s current bargaining position (supply market analysis) will provide invaluable insight when conducting negotiations and when it comes to accessing the relative bargaining power of both parties. After a vendor has been selected, SAP Ariba Contracts can be used to automate and accelerate the entire contract lifecycle. SAP Ariba Contracts removes the issues relating to the misplacement and mismanagement of paper contracts by having a contract as a shared document that is always available and always accessible to both parties.

**Manage Vendor Lifecycle and Performance**

For every organization, the scenario of onboarding new suppliers and discontinuing old ones is common, as is the desire to understand the performance of a vendor. This final step within the strategic sourcing scenario concentrates on the mechanics of
both managing suppliers from onboarding to phaseout and the ongoing monitoring of the vendor throughout the lifecycle.

When considering supplier lifecycle and performance, SAP has developed the SAP Ariba Supplier Management portfolio, which covers lifecycle management and supplier risk and consists of three solutions:

- SAP Ariba Supplier Lifecycle and Performance
- SAP Ariba Supplier Risk
- SAP Ariba Supplier Information and Performance Management

Out with the Old

Until recently, the default solution for managing supplier onboarding and performance was SAP Ariba Supplier Information and Performance Management; however, as this solution has now been superseded by SAP Ariba Supplier Lifecycle and Performance, it has been omitted from this chapter. It should be noted that SAP Ariba Supplier Lifecycle and Performance only works with the business partner functionality and therefore will only work with legacy SAP ERP systems if vendors have been converted to business partners.

The idea behind the portfolio is to provide a single view of all information relating to a vendor in one place and in a manner that is intrinsically linked to SAP S/4HANA Enterprise Management.

Let’s unpack SAP Ariba Supplier Lifecycle and Performance and SAP Ariba Supplier Risk further:

- SAP Ariba Supplier Lifecycle and Performance
  Provides a unified view of all information pertaining to a supplier by combining supplier information (onboarding), qualification segmentation, vendor performance, spend, and risk data in one place. SAP Ariba Supplier Lifecycle and Performance manages the onboarding of a supplier both from SAP Ariba and backend SAP S/4HANA Enterprise Management perspectives, meaning that after a supplier is approved within SAP Ariba, it’s synced with SAP S/4HANA Enterprise Management (through standard connectors that are soon to be superseded) and is ready to the purchased against within SAP ERP or SAP S/4HANA.

- SAP Ariba Supplier Risk
  Understanding and monitoring suppliers’ risk is an important factor in deciding whether and how to do business with them. SAP Ariba Supplier Risk integrates seamlessly with SAP Ariba Supplier Lifecycle and Performance and provides continuous risk exposure tracking for risks such as the following:
  - Financial: Supplier insolvency/bankruptcy, counterfeiting, and theft
  - Operational: Supplier nonperformance, shortages, IT security breaches, and infrastructure outages
  - Geopolitical: Natural disaster and geopolitical instability
  - Reputational: Child labor, safety lapses, and poor working conditions
  - Regulatory: Bribes, Sarbanes Oxley (SOX) violations and environmental violations

We’ve now completed the overview of sourcing, having outlined strategies ranging from simple reactive sourcing to the far more complex strategic sourcing. Now that we have these foundations in place, we can move ahead to looking at the next procurement topic: purchasing.

4.4 Purchasing

The purpose of this section is to detail the SAP solutions available for purchasing. For the purpose of this section “purchasing” involves the steps relating to the transactional procurement of goods or services. This procurement is facilitated by sourcing activities that have already established relevant suppliers and contractual terms that define the rules of the commercial engagement.

A simple purchasing scenario involves the following steps:
1. Purchase request
2. Purchase
3. Acknowledgment and shipping notification
4. Receiving
5. Invoicing

The following sections outline these key process steps while also highlighting the factors that materially affect which member of the SAP procurement portfolio is likely to be suitable for direct material purchasing, indirect material purchasing, and services purchasing.
4.4.1 Purchase Request

As previously discussed, the purchasing process begins with a demand that is subsequently turned into a request to purchase, which generally takes the form of a purchase requisition.

A purchase requisition is purely an internal document that outlines a desire to purchase specific goods or services. It’s neither legally binding nor intended to be communicated to a supplier. A purchase requisition details the required quantity, product number (or description), and a date that the requestor would like the goods or services to be delivered. Once created, it’s then generally routed to an approver who may decide either to approve or deny the request. If the vendor is known at this point in time, the approver can also confirm that the desired purchase is in line with who may decide either to approve or deny the request. If the vendor is known at this point in time, the approver can also confirm that the desired purchase is in line with the relevant sourcing infrastructure (contracts, preferred suppliers, etc.) outlined in Section 4.3 of this chapter and compliant with company procurement policy.

Although this process step sounds simple, the origin and type of demand will largely dictate which SAP solution should be used to create and subsequently process the purchasing request. A common way of delineating the demand is to separately segregate demand emanating directly from a manufacturing process from demand that is indirectly related to the manufacturing process—that is, between direct procurement and indirect procurement.

For most organizations, direct procurement demand is generated automatically within an ERP system such as SAP S/4HANA Enterprise Management and more specifically from the MRP process. (MRP and manufacturing as a topic are discussed in Chapter 5.) Therefore, unlike for indirect procurement, an organization will generally have all the necessary information (e.g., material number, specifications, etc.) required to procure from a vendor. In addition, if the sourcing tasks described in the previous section have been followed, very little additional effort is needed during the purchase requisition stage. Indeed, often when a material demand emanates from a direct source, MRP will create the initial planned order (which is a step before purchase requisition) based on the manufacturing plan. If the source of supply is already known, which is often the case, the purchase requisition becomes almost irrelevant and may even be converted to a PO automatically via a scheduled job.

Functionality for controlling direct procurement has long been a staple of SAP ERP and continues to be in SAP S/4HANA Enterprise Management. For this reason, many organizations continue to use SAP S/4HANA Enterprise Management as the tool to generate (and subsequently process) purchase requisitions for direct materials.

However, although processing of direct material demand has long been an established and robust process within SAP ERP (and subsequently SAP S/4HANA Enterprise Management), the same can’t be said for the processing of indirect material demand. The reasons for this are twofold: First, direct materials are almost always set up as material masters within SAP S/4HANA Enterprise Management, which means the attributes of the material are known, and sourcing master data, such as contracts, schedule agreements, purchase information records, and source lists, can be created and made visible to MRP. However, indirect spend often comes from items that aren’t created as material masters, so they can’t easily be assigned to sourcing master data elements, nor can MRP generate demand. In this latter scenario, the purchasing requisition takes on a level of importance that it doesn’t have when demand is generated directly.

It would however be erroneous to suggest that SAP S/4HANA can’t deal with indirect purchases or that purchase requisitions can’t be generated for indirect goods. Indeed, the purchasing steps in the process are identical. Material masters can be generated for indirect materials (using material types specific to indirect materials), and contracts and purchasing information records can control indirect material spend in exactly the same way as direct material spend. In fact, in the real world, the problem isn’t within the capability of the software but rather the nebulous nature of items that fall within the category of “indirect.” The main gap comes with unlike direct materials, for example, other regulated materials (ORM) with demand that is often sporadic, immediate, and encompassing an almost infinite number of products and vendors. This in turn means that many purchases for ORM tend to be maverick in nature, that is, falling outside of the control of procurement and thus often outside of the scope of approved company buying policies. For this reason, many of the same organizations that trigger direct materials purchasing within SAP S/4HANA Enterprise Management should be able to gain more control over indirect materials, such as ORM, by using the functionality within SAP Ariba.

SAP Ariba Buying contains the guided buying functionality, which enables a member of the purchasing company to search for products from a unified catalog that contains only items from approved vendors. Company buying policies are “baked in” to this functionality, and, crucially, it doesn’t need a material master to exist in SAP ERP to be able to control the request. In tandem with guided buying, SAP Ariba Buying allows access to a controllable business-to-business (B2B) marketplace for scenarios when an item can’t be found in the company catalog. Using this platform, business users can search the entire SAP Ariba Spot Buy catalog, filtering results by category,
brand, and price. Configurable business rules and workflows can also be used to enforce corporate policies and approve requisitions.

To create a requisition within guided buying or SAP Ariba Spot Buy, a user simply adds the product to a shopping cart and then checks out. At this point, the approver will be notified that a requisition has been created.

### 4.4.2 Purchase

If the request to purchase was approved in the previous step, then these requisitions can be converted to a PO, which, once communicated to a vendor, becomes a legally binding document and triggers the acquisition. The order must contain the terms of the purchase, including such items as price, quantity, and delivery date. In our SAP Ariba example, after the item has been approved, it’s created both within SAP Ariba and within the accompanying SAP S/4HANA system. It’s also communicated to the vendor directly via the Ariba Network.

Within SAP S/4HANA, a purchase requisition can be converted to a PO either en masse or individually, and generally the PO (rather than the requisition) will be subject to the approval process, which is based on the value of the item being purchased. After the PO has been approved, the output will be generated, meaning that it’s now capable of being communicated to the vendor. This, as has previously been discussed, is where SAP S/4HANA Enterprise Management used in a standalone scenario faces challenges as communication to a vendor needs to be done either using legacy means, such as print and mail, email, or fax, or by leveraging point-to-point integrations, such as Electronic Document Interchange (EDI). However, under a hybrid model, an order that up until this point hasn’t touched SAP Ariba can be communicated to the vendor through the Ariba Network. The result of both processes at this point is therefore the same: POs created in SAP S/4HANA and SAP Ariba are communicated directly to the vendor via the Ariba Network.

### 4.4.3 Acknowledgment and Shipping Notifications

Once communicated from the purchasing organization, a vendor may acknowledge that it has received the order and also confirm that the request quantity of the material or nature of the service can be supplied under the terms stipulated within the PO. In addition, the vendor may, either immediately or at a later point, create and transmit a shipping notification to the purchasing organization to notify the latter that the material on the PO has been shipped. From the procurement organization perspective, this information isn’t only visible within SAP Ariba but is also updated within SAP S/4HANA. This is a significant step forward because while SAP S/4HANA and SAP ERP have long had the ability to record both order acknowledgments and shipping notifications with the PO, in practice, this was subject to the same frailties already discussed. In fact, unless a point-to-point integration exists, then this information has to be entered manually by a member of the procurement organization following a telephone conversation, email, or fax. However, in common with the communication of the PO, vendors can quickly enter acknowledgments and shipping notifications into SAP Ariba, and this information is then updated directly within the SAP S/4HANA system of the purchasing organization.

### 4.4.4 Receiving

When goods physically arrive, the purchasing organization will perform a goods receipt to confirm that the material has arrived and also to confirm that it’s the requested product, in the required quantity, and at an acceptable quality. In terms of a process in SAP, a goods receipt for direct materials can be recorded within SAP S/4HANA or SAP Ariba as part of the goods in process, but it must be duplicated in the other system.

### 4.4.5 Invoicing

The vendor will send an invoice requesting payment for the goods or services provided, which will be processed by the purchasing organization (as shown in SAP Ariba in Figure 4.4). During this activity, a three-way matching process is usually employed to ensure that the three key documents in the process (PO, goods receipt, and vendor invoice) match. Assuming that the invoice matches the PO and the goods receipt, the payment will be processed (generally by an organization’s accounts payable department).

Traditionally, invoices are received either by mail or by email, making the entering, checking, and payment processes complex and time-consuming. To overcome this issue, SAP introduced SAP Invoice Management by OpenText, which is an on-premise solution that contains various branches of functionality to facilitate faster invoice processing. SAP Invoice Management by OpenText contains the OpenText Invoice Capture Center (ICC), which houses optical character recognition (OCR) functionality
that allows “dumb” invoices to be scanned automatically, stored in a document repository, and converted to a machine-readable format. SAP Invoice Management by OpenText also aids in the processing of these invoices by identifying invoice discrepancies and duplications automatically and routing them directly to the correct specialist. Within SAP Invoice Management by OpenText, all invoices are subjected to a defined and documented set of business rules, and the actions that a user can take (e.g., amend purchase price, goods receipt quantity, etc.) are linked to specific roles that guarantee the requisite segregation of duties. SAP Invoice Management by OpenText also contains a mobile app that enables invoice approvals to be executed on a mobile device.

Figure 4.4 SAP Ariba Invoicing Screen

As mentioned, SAP Invoice Management by OpenText is an on-premise solution and corresponding SAP Ariba functionality also exists. Note that the very nature of the Ariba Network removes two of the principle hurdles that SAP Invoice Management by OpenText was designed to overcome: the manual entering of dumb invoices and issues caused by invoices that arrive prior to a goods receipt taking place. The first hurdle is overcome because all documents flowing from SAP Ariba to SAP S/4HANA Enterprise Management and back again are intelligent and automatically created as live documents within SAP Ariba and SAP S/4HANA. Secondly, when an invoice is presented prior to goods being receipted, the SAP Ariba network contains configurable business rules that ensure (among other things) that documents can’t be exchanged out of sequence, meaning that SAP Ariba won’t allow an invoice to be created and sent to the purchasing organization before the prerequisite goods receipt has taken place.

However, to further streamline the process, SAP introduced Ariba Invoice Management, which not only deals with the invoices submitted through the Ariba Network but can also be used with invoices received via more traditional channels. The solution automatically facilitates the processing of invoices that match the corresponding POs by allowing payment to be made directly from SAP S/4HANA. Invoices with exceptions are sent back to vendors via the Ariba Network for correction and resubmission. Finally, after payment is executed within SAP S/4HANA, SAP Ariba Invoice Management links the payment to remittance advice and allows vendors to reconcile their payments.

4.5 Services Procurement

Until this point, almost all of the focus has been on material purchasing, while service procurement has been somewhat neglected. However, with the advent of the “gig economy” and a trend toward outsourcing, effective processes and systems to manage service providers and outsourced operations are more important than ever before. Put simply, the gig economy means contracting with third parties to perform a specific piece of work or “gig.”

Digital Disrupter

Digital disrupters such as Uber, TaskRabbit, and Deliveroo are often cited as pioneers of the gig economy, but, in reality, it’s a concept that has long existed (as any SAP contractors reading this book can attest to!).

This type of engagement appears to have increased dramatically in recent years, and although finding concrete numbers is difficult, it’s estimated that within the United States, for example, 53 million contingent workers exist, equating to 34% of the US workforce. Estimates are that by 2020, this percentage may well exceed 40%. The
effect of this new trend on businesses means that more and more work is being carried out by vendors and individuals external to the organization but who need to be controlled and managed as if they were internal resources.

Added to the emergence of the gig economy is the conscious decision by many organizations to outsource many business processes. Drivers for this outsourcing trend include cost reduction, a desire to focus on core business functions, and the need to address capacity issues. Other organizations actively embrace outsourcing as a way to drive transformational change and improve business results.

To illustrate this point, let’s consider the example of apparel and footwear giant Nike. It maintains a healthy proportion of the footwear industry and counts its sales in multiples of billions of dollars. It’s also an example of an organization, and reflection of an industry, that has truly embraced outsourcing. From a manufacturing perspective, Nike products are produced in more than 700 factories across 42 countries and distributed from a network of about 60 distribution centers. However, Nike owns no factories nor directly engages in manufacturing of any sort.

With factors such as the gig economy and the global prevalence of outsourcing, the need for organizations to effectively collaborate and obtain requisite oversight of vendors who provide services has become a key focus for procurement (and HR) departments around the globe.

From a procurement perspective, SAP offers three solutions to services procurement:
- SAP S/4HANA Enterprise Management
- SAP Ariba
- SAP Fieldglass

However, before we go into each of these solutions in more detail, it’s worth noting that there is a crossover in terms of functionality offered. As mentioned elsewhere in this book, both the Ariba and Fieldglass solutions have been acquired by SAP, so which solution is strategic to SAP moving forward is unclear.

In addition, because SAP Fieldglass is discussed in detail in Chapter 12, we’ll save that conversation for later.

### 4.5.1 Services Purchasing

SAP S/4HANA Enterprise Management can facilitate the purchasing element of service management; that is, it doesn’t contain any HR-related functionality, such as onboarding capabilities that are present in SAP Fieldglass. The purchasing process for services is almost identical to the process for goods with the key exception that rather than entering a goods receipt, the vendors and contingent workers “confirm” the activities they have performed into a service entry sheet (see Figure 4.5). This service entry sheet is then routed for approval by a member of the purchasing organization. Assuming that the service entry sheet is approved, the invoicing cycle continues per the material purchasing scenario.

**Figure 4.5 Process Overview Outlining the Differences between Service and Material Purchasing**

### 4.5.2 Services Processing

SAP Ariba’s services procurement functionality aims to facilitate the procurement and subsequent processing of services. In common with the SAP S/4HANA process outlined previously, the main consideration with services processing is ensuring that the third-party vendor (or individual) is paid in accordance to the work performed and that these costs are correctly attributed to the requisite internal cost object.

Let’s take the example of a field engineer and imagine that all employees are obliged to fill in a time sheet. By doing this, their internal costs are attributed to the relevant
cost object (e.g., a work order, work breakdown structure [WBS] element, etc.), meaning the cost of performing that specific piece of work is captured accurately. In addition, this information can also feed into payroll to allow considerations such as salary and overtime to be calculated.

Now if this work is performed by an external contractor, the same mechanism isn’t used for allocating time to a cost object nor for ensuring that the invoice submitted is correct.

SAP Ariba’s services procurement functionality enables the management of these considerations together with enabling the hiring and tracking of candidates.

In functionality akin to SAP S/4HANA, SAP Ariba enables the use of service sheets upon which contractors enter time against a specific cost object. SAP Ariba then turns this time sheet into an invoice, which effectively links the work performed (and hours/days approved) into a cost against a cost object. To complement this functionality, SAP Ariba also provides expense sheets that, once again, convert information entered by the third party (in this case, expenses) into a linked invoice.

4.6 The Road Ahead

Procurement is a microcosm for how businesses will develop within the next decade. For years, the procurement process has remained largely unaltered and has been reliant on human intervention to fill in gaps that the technology could not accommodate. For this reason, interactions between purchasing organizations and vendors at every level of the procurement process have required phone calls, emails, and even the postal service. This means that still today, many organizations have whole departments dedicated to performing manual tracking and communication of documents and process steps that should, but could not be in the past, automated and digitalized.

The advent of digital networks underpinned by the Internet has finally overcome this deficiency, and today organizations should be looking at how procurement processes should change to embrace this step change. We shouldn’t forget, however, that humans aren’t simply one-dimensional interfaces, and together with the manual tasks that these departments perform, they also provide an often much-needed safety net to ensure that errors in data and issues elsewhere in the supply chain are rectified prior to being converted into legally binding agreements with vendors. Therefore, organizations need to be fully aware of the burden of raising master data
The ERP system constantly communicates with the goods in transit to work out (based on current traffic conditions, etc.) the time that the goods will arrive at the designated location.

When the goods arrive, they are automatically prereceived.

This simple scenario has no human interaction at all and is achievable with technology that exists today. Far from being a vision of a distant future, it’s likely that some forward-thinking organizations already have this type of functionality today and highly likely this type of process will be commonplace within the next five years.

Having gone into some depth around sourcing and procurement, we’ll now focus on one of the main consumers drivers for procurement: manufacturing.
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