



Integrating Coupa with SAP

Summary

SAP is the ERP system most commonly used by Coupa customers. The options for integrating Coupa and SAP are varied both in their architecture (which objects get integrated and where) and in their means (which integration technologies are used), but taken together they provide a flexible range of proven reliability. This paper is an overview of the most common available options, and can be used as a starting point in developing your integration strategy.

Building on the ERP Core

SAP sits at the center of many corporate IT landscapes, holding the core financials of the organization. Coupa's customers build on that ERP core with easy-to-use financial applications that can be deployed to end users throughout the company with far less time and expense than is typically required with SAP. Through near-universal adoption, Coupa brings enterprise wide business process consistency and spend visibility to employees and managers at organizations running SAP, including those running multiple instances of SAP.

Coupa also provides a much-needed layer of agility in financial applications. Success in procurement, invoicing, sourcing, expense management and other financial applications requires adapting to change as the organization optimizes business processes and adds suppliers. With Coupa, IT is spared from the maintenance burden associated with customized on-premise solutions. Coupa's organically developed suite allows authorized business users to change workflows or add fields as needed without IT involvement. In addition, suppliers are given multiple options when interacting with buyers. This freedom of choice drives supplier adoption while also minimizing IT involvement.

Coupa has invested heavily in both our software and our people to ensure that SAP customers are successful. Implementation projects include a data modeling workshop to plan how Coupa will work together with SAP. This workshop includes designing how master data such as company codes, accounts, projects, and assets will be passed from SAP to Coupa. Master data is stored in Coupa to match the way it is stored in SAP to ensure consistency and data integrity. Coupa has extensive experience as well as pre-packaged tools for integrating with SAP to help customers throughout the process.

SAP Certification

Coupa's applications have been certified by the SAP Integration and Certification Center (SAP ICC). This certification includes Coupa's capability to use SAP's IDoc ("intermediate document") technology for bidirectional integration.

Data Workshop

During the early stages of an implementation, Coupa runs a data modeling workshop with the customer to define the data flows needed to support end-to-end business processes across Coupa and SAP. SAP landscapes vary widely due to the many ways that customers tailor SAP to address their business requirements. The customer's SAP landscape must be well understood and the project integration approach must be adopted to fit with the customer's unique landscape. The data modeling workshop lets Coupa and the customer jointly define the data flows and integration approach that lay the foundation for integration project success.

SAP Integration Flows

A typical integration flow between SAP, Coupa, and the customer's suppliers starts with enterprise master data being passed from SAP into Coupa. The integration scope, processes, and data flows vary based on the set of Coupa products that the customer chooses to deploy. Customers may choose to deploy the entire Coupa spend management suite, a few Coupa products, or even a single product. Some of the most typical data objects that customers choose to integrate are listed below.

From SAP to Coupa

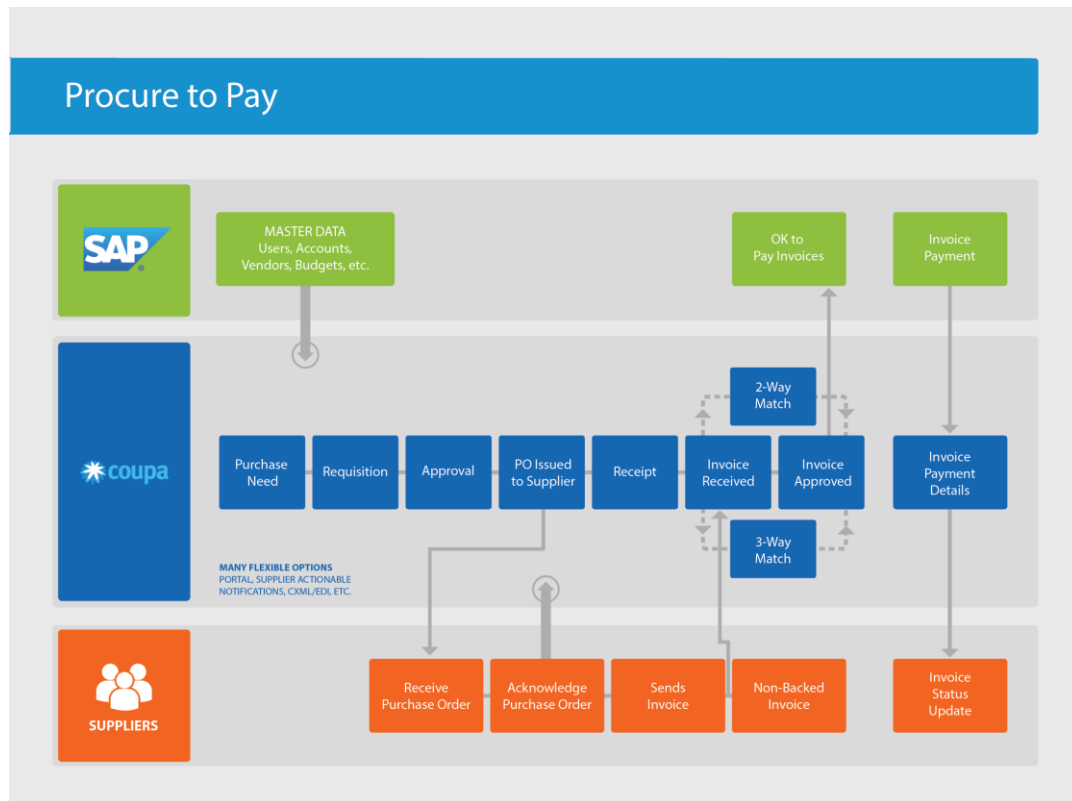
- Vendors - vendors with necessary details for completing transactions
- Accounting Data - company code, account category, general ledger, project, asset, WBS, internal order
- Budgets - budgets for each account to inform purchase approval decisions
- Exchange Rates - rates for international payments
- Invoice Payments - payments that have been made to suppliers

From Coupa to SAP

- Purchase Orders - POs that have been approved
- PO Revisions - changes to POs that need to be logged in SAP
- Invoices - Invoices from suppliers that are approved as "OK to Pay"
- Receipts - end user receipt of goods or services from suppliers

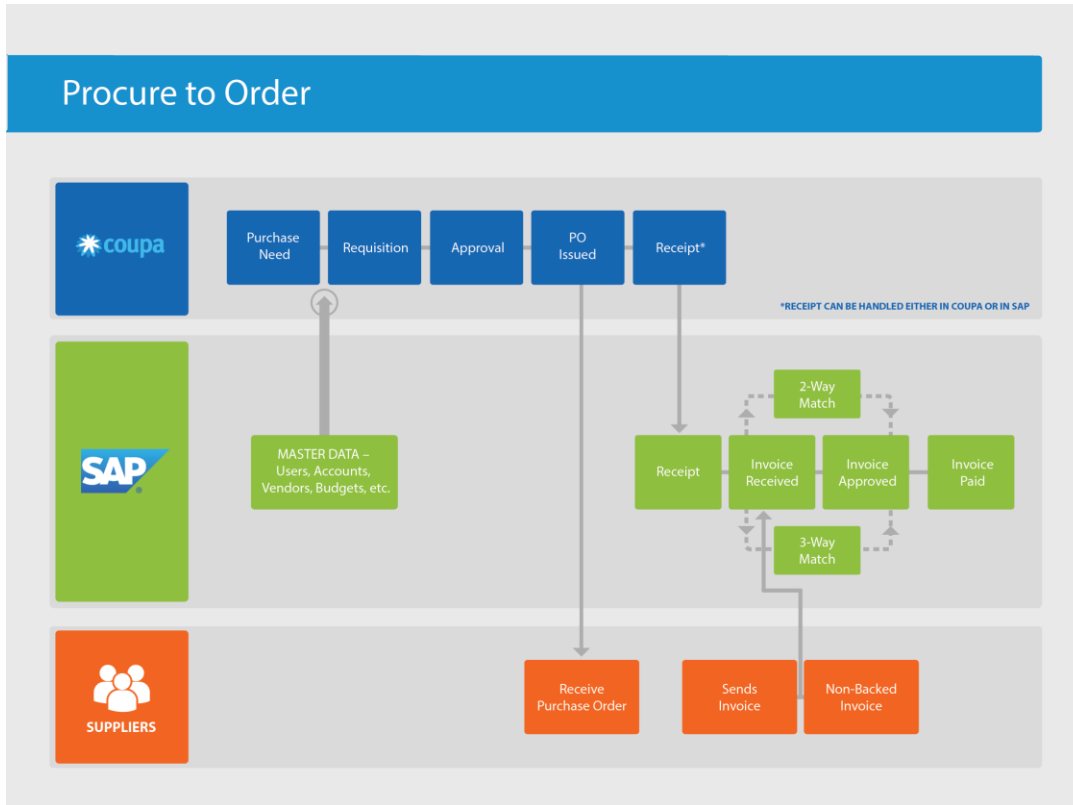
Integration Flow #1: Procure to Pay (P2P)

Many customers choose to run the full Procure to Pay ("P2P") process using Coupa. Under this scenario the entire process from purchase requisition through requisition approval, PO, receipt, invoice, and invoice approval is managed through Coupa. Suppliers get many flexible options to connect so that they can receive POs, acknowledge POs and send invoices. Suppliers can upload their information and catalogs and can make comments through the system to ask questions or resolve any issues. Suppliers also receive status updates by email or through the portal. Integration flows with SAP occur at the beginning of the process to bring in master data and at the end to push back process results including approved invoice for payment.



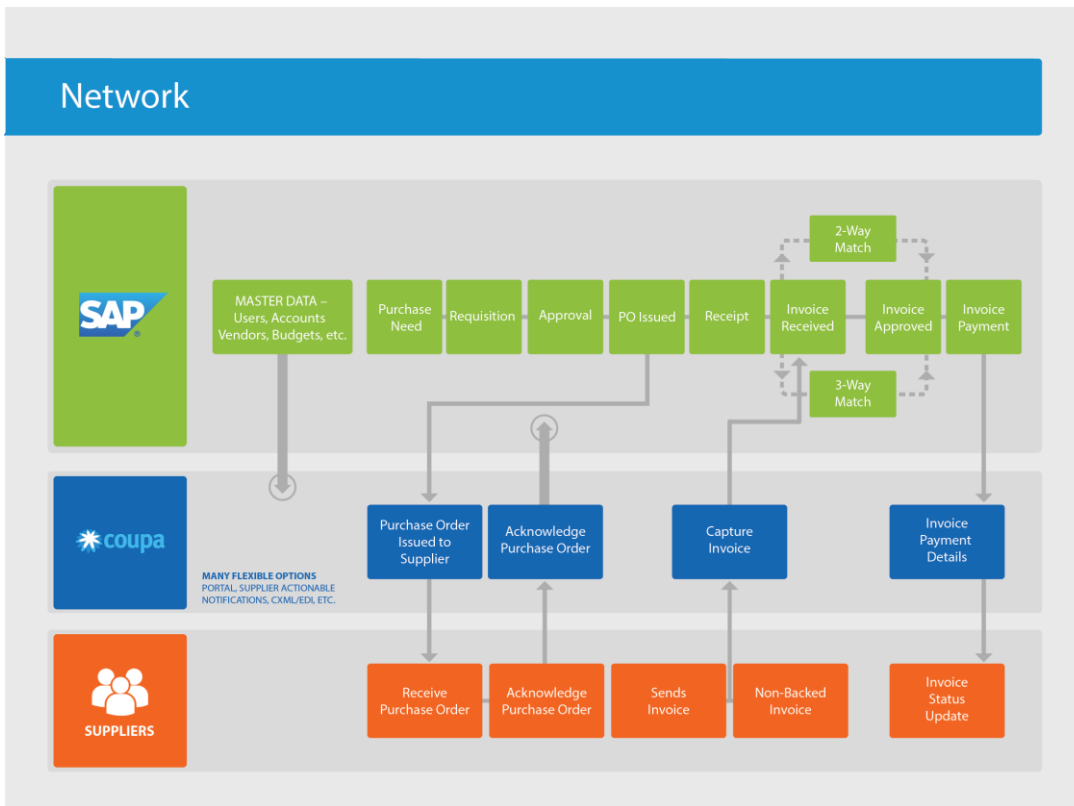
Integration Flow #2: Procure to Order (P2O)

Customers may also choose to implement Coupa Procurement while continuing to receive and pay invoices using their SAP ERP system. Under this scenario, the process starts with purchase requisition, approval, and purchase order in Coupa. POs are passed to SAP and then to the supplier. Receiving may occur either in Coupa or in SAP depending on the customer's requirements. Invoice receipt through supplier payments occurs within SAP.



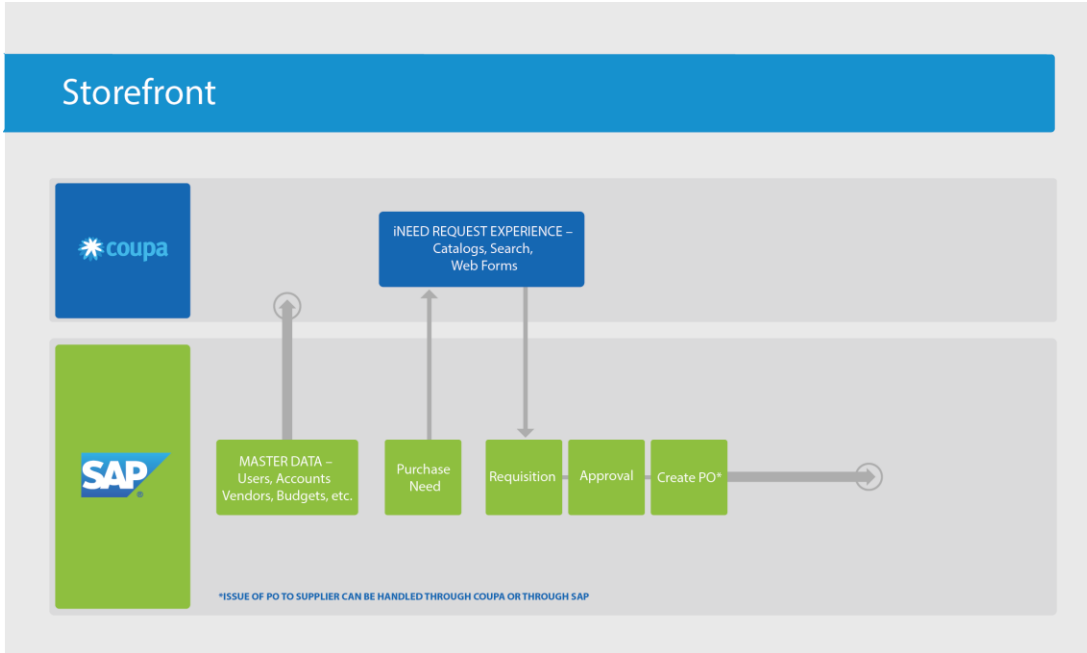
Integration Flow #3: Network-Only (for suppliers)

Customers can use the Coupa network to dramatically improve online collaboration with their suppliers. The open Coupa network can be implemented as part of a P2P deployment, a P2O deployment, or it can even be implemented as a direct extension to SAP. Network-only deployments minimize change within SAP while extending flexibility to suppliers. Suppliers can choose to integrate through cXML or EDI, to register for the Coupa portal, to simply email PDF invoices, or to use Coupa's patent-pending Supplier Actionable Notifications. Registration is completely optional for suppliers and there are no supplier fees. The customer's AP team can also use invoice quick-entry for any paper invoices that are received. Interaction between suppliers and AP is streamlined with Coupa's automatic status update emails, leaving no need for suppliers to pick up the phone to ask for updates. While customers have many options when implementing Coupa's open business network, the below diagram illustrates a Network-Only deployment.



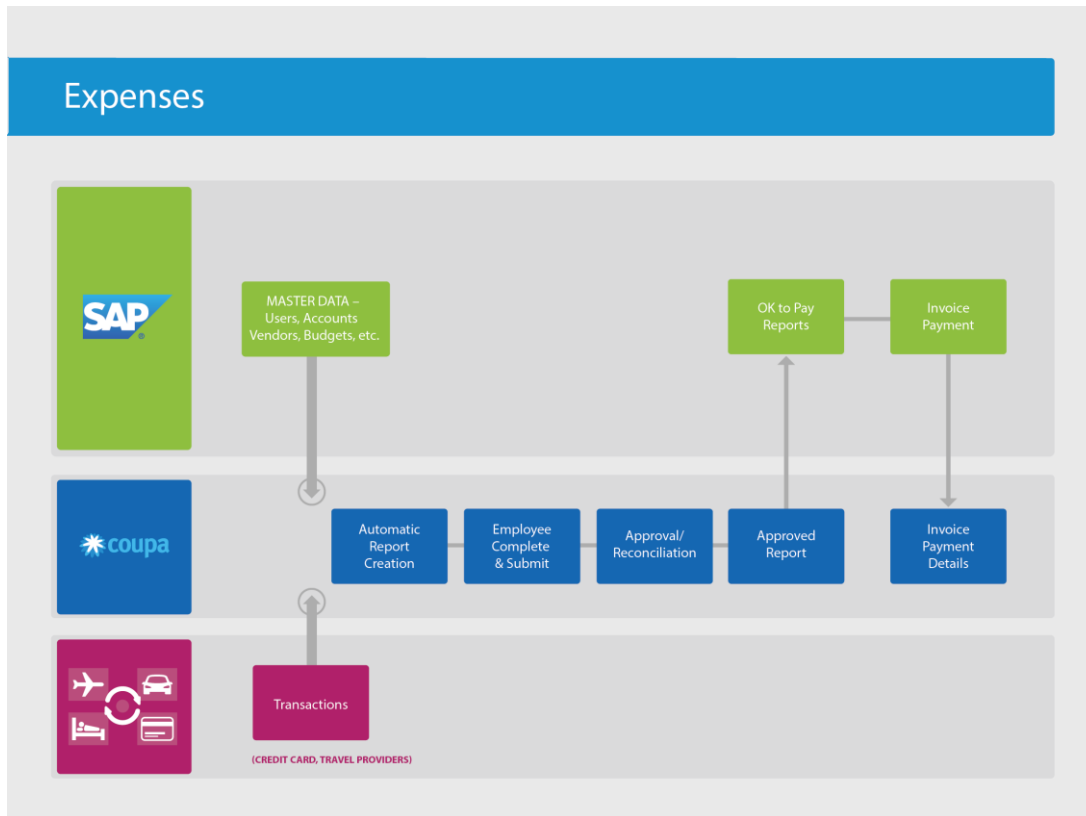
Integration Flow #4: Storefront

Customers who want to provide the Coupa user experience for shopping only may choose to implement Coupa Storefront as a front end to their SAP ERP system. The Storefront option gives users the full Coupa guided buying experience including catalogs, search, tiered pricing, web forms, and in-context purchasing policies. After the user finds what they need, a completed shopping cart is sent back to SAP for approvals.



Integration Flow #5: Expenses

Data on expenses is gathered directly from travel booking and corporate card providers so that users do not have to manually enter expense data into the system. Once submitted and approved, payment requirements are sent to SAP where they are processed, with details sent back to Coupa to close the loop.



Integrating with Other Systems

Coupa's open architecture also supports integrations with other 3rd party systems. Integrations with outside systems for purchasing and invoicing of specialized products or services such as laboratory chemicals and utilities are common. As noted above, customers with Coupa Expenses typically integrate with their travel and credit card providers to save time for employees and prevent errors by automatically loading expense data. While not directly related to SAP, using Coupa to gather and centralize data across multiple, disparate systems can both simplify the overall corporate IT landscape and provide new insights into spend patterns and savings opportunities.

Data Modeling

A key benefit that Coupa provides is the ability to replicate a customer's SAP accounting model and data segregation across one or more SAP instances (or even multiple ERP systems) in a single instance of Coupa. Coupa's Chart of Accounts allows customers to segregate accounting data, define relationships between segments, and define accounting validation rules to ensure valid coding of each transaction prior to integrating with SAP. In addition, vendors and users can also be restricted to specific company codes as they are in SAP through the use of Content Groups in Coupa. All of these relationships, validation rules, and visibility restrictions are defined during the data modeling workshops to determine the appropriate configuration needed in Coupa. Most SAP customers implement some variation of the following three models:

Model #1: Traditional Approach

All possible segments are displayed and accounting validation rules are used to drive which fields can be populated based on the Account Assignment Category selected. Each of the drop-down lists can be filtered based on the Company Code if needed.

Choose An Account	
SAP Company 100	Company: US (100)
	AcctCat: Cost Center (K)
	CostCtr: 10000 Operations (10000)
	BusArea: Engineering (1000)
	GenLdgr: Office Supplies (600000)
	Order: Select an Option
	Project: Select an Option
	Asset: Select an Option

Model #2: Cost-Element Based Approach

A simplified model which ensures that only one cost element (Cost Center, WBS, Internal Order, or Asset) is assigned to each transaction without the need for additional validation rules. Again, each of the drop-down lists can be filtered by Company Code if needed:

Choose An Account	
SAP Company 300	Company: APAC (300)
	GenLdgr: Professional Services (650000)
	Element: WBS (WBS)
	Value: SAP Upgrade (1000)

Model #3: Account Category-Based Approach

This approach allows the user to be presented with the specific segments that need to be populated based on the Account Category selected. The set of fields displayed would be different for Cost Center, WBS, or Asset for example.



Choose An Account	
SAP Company 400 - Internal Order	
Company	LATAM (400)
CostCtr	10000 Operations (10000)
GenLdgr	Professional Services (650000)
Order	Trade Fair (1000)

Integration Technologies

Coupa supports various technologies to integrate with customer ERP systems. These range from simple unidirectional flat file based on CSV formats to SAP IDocs and a rich and robust API that allows complex integrations to be built using middleware. Coupa does not restrict customers to one technology when integrating, but allows a hybrid model whereby flat file and API can be used together in order to suit customer needs.

SAP IDoc

Coupa provides native support for integration with SAP using IDoc, one of the most common and stable methods for integrating with SAP. Each business object has a specified IDoc format that can be used to import and export data between SAP and external systems. Coupa includes the ability to generate and consume IDoc files for a number of specific business objects. A table listing each integration point along with the IDoc format for the most common business objects shared by customers between Coupa and SAP ECC appears in Appendix A.

Flat File

Coupa has the ability to export flat files and make them available via SFTP to customers for import. This approach requires the customer to translate the data files from Coupa's CSV format to the formats required for import to SAP. Coupa can also consume master data from SAP via flat file integration.

Coupa API

Customers who rely on a middleware package for integration may choose to use the Coupa API to pass data into and out of Coupa in a more direct, real-time fashion. The API supports all master data objects as well as business objects such as Purchase Orders, Receipts, Invoices and Expense Reports. The Coupa API is very open and enables complex and flexible business processes to be extended by allowing integration into external systems. For example, a customer may require external approval on a requisition that can only take place via a project approval step in SAP. The API can be called through middleware to pull the requisition information out of Coupa, perform the approval in SAP, and then call another API call to approve the requisition in Coupa.

Using Middleware

Coupa customers often use middleware when integrating Coupa to SAP such as SAP PI, TIBCO, Oracle Fusion, and webMethods. Middleware is typically used to transfer CSV files, map data between Coupa and SAP, orchestrate API-based integration, route messages to multiple ERPs and monitor and handle any error situations.

SAP Process Integration

Coupa's certified support for SAP integration includes content that can be used with SAP's Process Integration (PI) solution. Coupa provides SAP PI processes for each business object that will broker IDocs between SAP ECC and Coupa's SFTP server. Customers who do not have PI may choose another method to transfer IDocs between Coupa and SAP ECC.

Error Handling

As part of the Integration workshops, Coupa works with partners and customers to devise the best strategy for error handling based on customer specific requirements. Each customer has different requirements for handling integration errors, whether they are technical (i.e. message failures) or application errors (i.e. Period closed for posting). Coupa supports a number of ways in which integrations can be monitored. Issues with the load of master data are identified and reported with email triggers. Errors and warning messages and any associated statistics regarding files loaded via SFTP can be reported through API call. Status messages, whether successful or in error, can be logged through attachments to transactional objects such as POs, Receipts, Invoices and Expenses via an Integration History API. This allows for easy recovery from technical and functional errors by re-execution of middleware processes on reported error conditions. IT teams can understand issues by reviewing status codes that identify unique business scenarios. All of the above can be combined to build an effective error handling process.

Appendix A – Integration Points with IDoc Formats

Object	Source	Target	IDoc Format
Cost Centers	SAP	Coupa	COSMAS01
GL Accounts	SAP	Coupa	GLMAST01
Internal Order	SAP	Coupa	INTERNAL_ORDER01
WBS	SAP	Coupa	PROJECT01
Vendors	SAP	Coupa	CREMAS05
Purchase Orders	Coupa	SAP	PORDCR102
PO Confirmation	SAP	Coupa	ORDERS02
PO Revisions	Coupa	SAP	PORDCH02
Invoices	Coupa	SAP	INVOIC02
Payments	SAP	Coupa	PEXR2002
Receipts	Coupa	SAP	MBGMCR02



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