

Case Study

Searching for Irregular Supplier Master Data from an SAP ERP Environment

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The case study is accompanied by the following files:

| Name | Filename | File content |
|-------------------------|--|---|
| Lieferanten_Stammdaten | SAP tables (selected fields) LFB1, LFA1, LFBK, LFC1 all in text format | Master data as described in 3.2, as well as unformatted SAP tables and alternatively in Excel format |
| | Same tables, as Excel files | |
| Lieferanten_Gesamtdaten | Lieferanten_Gesamt.XLS | Total master data, associated and able to be evaluated in Excel format |

Note

The process model shown in the documentation below and the integrated checklists, including the associated training files, are intended for the exclusive use of Roger Odenthal & Partner Management Consulting and companies authorized by them. Any use or reproduction beyond these limits – even for teaching purposes – is expressly forbidden and requires the sole approval of the author.

1 Initial position

In the past, the ODE-Sample Co. Inc. had numerous accusations of corruption. Using fictitious suppliers and invoices submitted by them, illegal accounts were allegedly set up and operated. A new CEO wants to put a stop to this. He instructs the company compliance officer to identify possible fictitious suppliers within the SAP system. The compliance officer asks internal audits to investigate.

2 Preliminary considerations

Since fictitious suppliers do not fulfill any of the usual functions in commerce, they may not be completely and carefully set up in the SAP process. They could be discovered based on inadequate master data, such as missing address information or bank relationships. However, since such characteristics might also be due to normal but careless processing, a special delimitation is necessary.

Indications of fictitious suppliers can also be seen from data in the invoice and payment transaction (movement data). Implausible invoice amounts as well as obvious variations in payment transactions could send the same signals.

In this case, the evaluation will concentrate exclusively for now on *master data* from SAP suppliers, which show alternative balances carried forward, posting transactions, or sales, during a time period specified by the auditor.

All evaluation steps and all results must be documented in working papers. Furthermore, the audit process in evaluation must assure that possible sources of error and irregularities in the data are not overlooked.

Outline below the questions that you think should be answered using the audit software:

3 Tasks

3.1 Recording the audit actions

As the first step, summarize in writing what you think are the meaningful analyses. Briefly state the goal of the analysis and describe what evaluation steps seem necessary to you. Concentrate primarily on functional (not on technical) points of view. The evaluation options of the audit software also are not important for the time being.

Examples:

- Business transactions with blocked suppliers
 - with a central or company code-related posting block
 - with a central or company code-related purchasing block
- Posting transactions and sales to creditor accounts that are scheduled for deletion
 - with central or company code-specific deletion indicator
 - with a restricted validity date
- Suppliers without adequate payment-relevant information
 - with CPD indicator (contra pro diverse)
 - with an indicator for the payee in the (payment) document
 - with an indicator for a different payee
 - with irregular payment methods (without bank connection) such as check, bill of exchange, or cash
 - with settlement in intercompany accounts, for example for a customer
- Creditors with irregular setup and asset data
 - central setup of supplier was done on weekends or holidays
 - company-code-specific activation on weekends or holidays
- Checking for missing information for the supplier
 - no or unusual name entries (Test, Trial, ABC, etc.)
 - no address (town, postal code, street)
 - missing tax number
 - without bank information (bank routing number, bank account number)
- Review for other irregular characteristics
 - also set up as personal creditor
 - with a irregular control account (primary or reconciliation account)
 - without audit characteristics for double-entry bookkeeping
 - without tolerance group
 - without account group
 - without authorization group
 - missing search term for supplier name

3.2 Deriving the necessary file fields from an SAP environment

Think about which data fields are necessary for the desired evaluations. Also take into account organizational elements of the process and of bookkeeping such as:

- Payment methods T042Z
- Tax codes T007
- Authorization groups TBRG
- Tolerance groups T043T
- Chart of accounts SKAT

These clarify all SAP characteristics, key concepts and abbreviations. The additional fields for the SAP tables with master data, which are necessary for auditing, are shown in the following table:

| SAP table | Field name | Field descriptor | Comments |
|-----------|------------|-------------------------|------------------|
| LFB1 | LIFNR | Vendor | |
| LFB1 | BUKRS | Company code | |
| LFB1 | PERNR | Personnel number | |
| LFB1 | ERDAT | Set up on | |
| LFB1 | ERNAM | Set up by | |
| LFB1 | SPERR | Posting block for BuKrs | for company code |
| LFB1 | LOEVM | Deletion flag for BuKrs | for company code |
| LFB1 | AKONT | Reconciliation account | |
| LFB1 | BEGRU | Authorization group | |
| LFB1 | ZWELS | Payment method | |
| LFB1 | XVERR | Clearing with debtor | |
| LFB1 | ZAHLS | Payment block | for company code |
| LFB1 | ZTERM | Payment condition | |
| LFB1 | EIKTO | Account with creditor | |
| LFB1 | LNRZB | Agency business payee | for company code |
| LFB1 | REPRF | Duplicate invoice | |
| LFB1 | TOGRU | Tolerance group | |
| LFB1 | HBKID | House bank | |
| LFB1 | XLFZB | Accounts for alt. payee | for company code |
| LFB1 | GMVKZK | Creditor in enforcement | |
| LFA1 | LIFNR | Creditor | |
| LFA1 | LAND1 | Country | |
| LFA1 | NAME1 | Name | |
| LFA1 | NAME2 | Name 2 | |
| LFA1 | NAME3 | Name 3 | |
| LFA1 | NAME4 | Name 4 | |
| LFA1 | ORT01 | City | |
| LFA1 | PSTLZ | Postal code | |
| LFA1 | SORTL | Search term | |
| LFA1 | STRAS | Street | |
| LFA1 | BEGRU | Authorization group | |
| LFA1 | ERDAT | Set up on | |

| SAP table | Field name | Field descriptor | Comments |
|-----------|------------|---------------------------|-----------------------------------|
| LFA1 | KTOKK | Account group | |
| LFA1 | KUNNR | Debitor | |
| LFA1 | LNRZA | Alternative payee | Central for all company codes |
| LFA1 | LOEVM | Central deletion flag | Central for all company codes |
| LFA1 | SPERR | Central posting block | Central for all company codes |
| LFA1 | SPERM | Central purchasing block | Central for all company codes |
| LFA1 | STCD1 | Tax number 1 | |
| LFA1 | STCD2 | Tax number 2 | |
| LFA1 | TELF1 | Telephone 1 | |
| LFA1 | TELF2 | Telephone 2 | |
| LFA1 | TELFX | Fax number | |
| LFA1 | XCPDK | One-time order acct. | |
| LFA1 | XZEMP | Payee in document | Central for all company codes |
| LFA1 | SPERZ | Payment block | |
| LFA1 | XLFZA | Acct. for alternate payee | |
| LFBK | LIFNR | Creditor | Bank data |
| LFBK | BANKS | Bank country | |
| LFBK | BANKL | Bank code | |
| LFBK | BANKN | Bank account | |
| LFBK | KOINH | Account holder | |
| LFBK | KOVON | Valid from | |
| LFBK | KOBIS | Valid until | |
| LFC1 | LIFNR | Creditor | |
| LFC1 | BUKRS | Company code | |
| LFC1 | GJAHR | Business year | |
| LFC1 | UMSAV | Balance brought forward | |
| LFC1 | UM01S | Debit | In each case, for all 16 periods! |
| LFC1 | UM01H | Credit | |
| LFC1 | UM01U | Sales | |

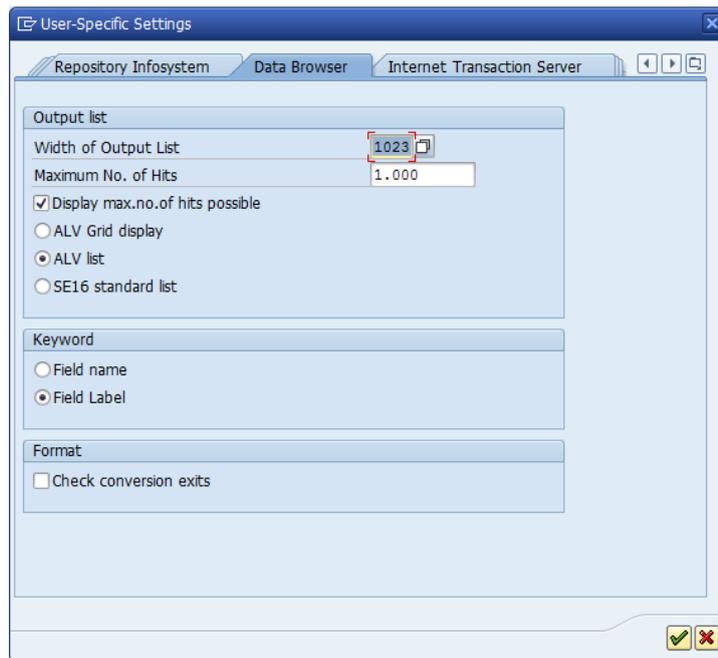
3.3 Data creation from the SAP ERP system

As part of this case study, the associated supplier master data should be selected from the following tables available within the SAP process:

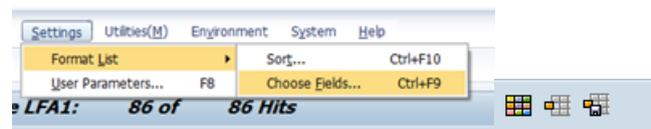
- Supplier master data in the company code LFB1
- General supplier master data LFA1
- Bank connections of suppliers LFBK
- Net sales, amounts carried forward and transaction figures for supplier LFC1

One way is to use the SAP table transaction "SE16 (Data Browser)." Use the following [settings| user parameters] for the data transfer

- Output list as *ALV list*
- Output list *set width at 1023*
- Keyword *fieldname*



Selection of the necessary table columns (fields) is then done within the SAP selection screen using [Settings| List preparation| Field selection] or the option for layout configuration.



In the last step, the corresponding data are loaded onto the auditor's personal computer in a suitable format (e.g. Excel or unconverted text).

3.4 Data transfer into ACL audit software

Now transfer the tables generated by the SAP system into the ACL audit software. The method of transfer will be different, depending on whether an Excel or a text format was created. In the case of text formats, it is a good idea to select the ACL import option "file with delimiters."

Also be sure to watch out for the following factors in the ACL data transfer:

- Suitable data types for the individual data fields
 - In tables *LFB1*, *LFA1* and *LFBK*, the data type "ASCII" (character format) should be selected for all data fields (except those with date information). Date fields, however, should be set up with the data type "Date" and an appropriate date screen.
 - In the table *LFTC1*, the numeric fields are to be set up with the balance brought forward, debit and credit postings, and sales, with the data type "numerical" and all other fields with the data type "ASCII."
- Equal length of key fields
 - With regard to the *key field* "Supplier number," make sure in every individual table that after transfer into ACL the same data type and field length are present.
 - Use the SAP technical field designations (not their explanations).

3.5 Implementing the evaluation (evaluation schedule)

Begin with evaluation according to a structured evaluation schedule. Follow the first four steps exactly:

- Visual inspection

Check whether all data have been transferred correctly. This especially applies for value and date fields:

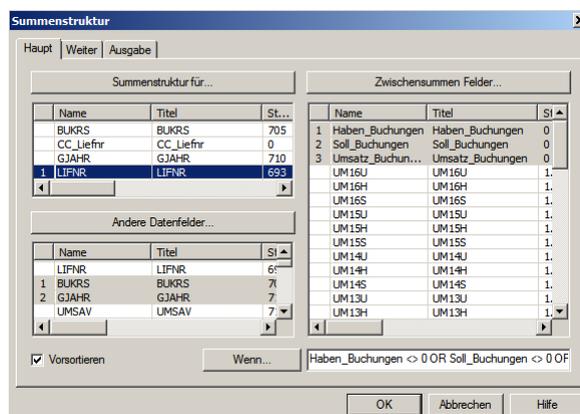
- Are the numbers (Table LFC1) within reasonable limits?
- Do the decimal points agree?
- Are the positive/negative signs in place?
- Do the month and year information agree?
- Do date fields have a “date format?”
- Do all the other fields (Tables LFB1, LFA1, LFBK) have the data type “ASCII?”
- Does the “key field” (vendor number) have files in all tables with a uniform field format (ASCII) and a uniform field length?

- Prepare Table LFC1 for the following link:

- Set up a new calculation field “Debit postings” as the addition of all debit fields UM01S through UM16S
- Set up a new calculation field “Credit postings” as the addition of all credit fields UM01H through UM16H
- Set up a new calculation field “Sales postings” as the addition of all sales fields UM01U through UM16U
- *ACL function sum structure* for the field “Vendor number” with “subtotals” for the fields:
 - UMSAV (balance brought forward)
 - Debit postings
 - Credit postings
 - Sales postings and

“Other data fields”

- Company code
- Business year



For all positions [ACL switch "if"], which alternatively have a *value not equal to zero* for *balance brought forward, credit, debit or sales postings* in the new file "LFC1_revenue."

This identifies all suppliers for which there is a balance brought forward or booking traffic in the time period in question. These are the only ones who will be investigated by the later connection (comparison) with the new table "LFC1_revenue" with regard to possible irregularities.

- Merging partial data sets

In another step, an evaluable database can be created by joining or linking the transferred or prepared tables. Since the evaluation results can vary depending on the master information within the individual accounting areas, table LFB1, containing accounting-area-specific information, is a sensible starting point for linking. Please follow the sequence below exactly:

- Open table LFB1 and connect with secondary table LFA1

The connection key is always the vendor number field. *All fields* from both tables are transferred into the new file. The connection option [button "More"] is "*all primary data sets.*"

The name of the *new file* is "LFB1_LFA1"

- Open the newly created table "LFB1_LFA1" and connect it (merging) with secondary table "LFBK."

The connection key is again the vendor number. The newly created file contains all fields from the tables to be connected. The connection option again is "*all primary data sets.*"

As the output filename, select "LFB1_LFA1_LFBK"

- Now open the most recently created file "LFB1_LFA1_LFBK" and connect this with the secondary table "LFC1_Umsatz"

The connection key is the vendor number. All fields are transferred into the new data inventory. The connection option here is "*all compared data sets.*"

Use "LFB1_LFA1_LFBK_LFC1" as the output filename.

The result is all necessary information for the evaluation of only those master data files for which the balance brought forward, posting transactions or revenues were irregular during the audited period (selected business years from table LFC1).

- Now create additional calculation fields

In this case, creating additional calculation fields for the analysis envisaged here is hardly necessary. If desired, the weekdays (function „DOW()“) can be set from the entry and setup dates of the master records.

The necessary analytical and inspection runs can then be done.

- Extracts and test runs

| Test | Selection | Results |
|------|--|----------------------------|
| 1 | LAND1 = "" | Without country code |
| 2 | ZWELS = "" OR at(1;"W";ZWELS) <> 0 OR at(1;"T";ZWELS) <> 0 OR at(1;"S";ZWELS) <> 0 OR at(1;"O";ZWELS) <> 0 OR at(1;"K";ZWELS) <> 0 OR at(1;"C";ZWELS) <> 0 | Payment method is not bank |

| | | |
|----|---|-----------------------------|
| 3 | DOW(ERDAT) = 1 OR DOW(ERDAT) = 7 | Setup date is weekend LFB1 |
| 4 | VAL(PERNR;0) <> 0 | Personal creditor |
| 5 | AKONT = "" | No reconciliation account |
| 6 | XVERR <> "" | Settlement with debtor |
| 7 | ZTERM = "" | No terms of payment |
| 8 | REPRF = "" | No audit |
| 9 | TOGRU = "" | No tolerance group |
| 10 | DOW(ERDAT2) | Setup date weekend LFA1 |
| 11 | ORT01 = "" | No city |
| 12 | PSTLZ = "" | No postal code |
| 13 | STRAS = "" | No street address |
| 14 | STCD1 = "" | No tax code |
| 15 | TELF1 = "" | No telephone number |
| 16 | XCPDK <> "" | CPD KZ in LFA1 |
| 17 | XZEMP <> "" | Payee in currency |
| 18 | LAND1 <> BANKS | Bank country different |
| 19 | BANKL = "" | No bank routing number |
| 20 | BANKN = "" | No bank account |
| 21 | ZA <> "" | Different payee in LFA1 |
| 22 | LOEVM2 <> "" | Deletion flag in LFA1 |
| 23 | LOEVM <> "" | Deletion flag in LFB1 |
| 24 | SPERR2 <> "" | Posting block in LFA1 |
| 25 | SPERR <> "" | Posting block in LFB1 |
| 26 | SPERM <> "" | Purch. block in LFB1 |
| 27 | SPERZ <> "" | Payment block in LFA1 |
| 28 | SPERM2 <> "" | Purch. block in LFA1 |
| 29 | ZAHLS <> "" | Payment block in LFB1 |
| 30 | LNRZB <> "" | Different payee in LFB1 |
| 31 | SORTL = "" | No search term |
| 32 | GMVKZK <> "" | In enforcement |
| 33 | find("test";NAME1) OR find("abc";NAME1) OR find("fehler";Name1) OR find("error";NAME1) OR alltrim(NAME1) = "" OR alltrim(exclude(NAME1;"0123456789")) | No or irregular designation |

3.6 Expansion / automation of the evaluation (experienced ACL users)

The test processes done up to this point may lead to a large number of results, which then must be checked for relationships (suppliers with many irregular characteristics). For an improved overview and to facilitate automation (scripting), it is advisable to assign every supplier an incremental indicator, depending on the extent of the individual irregularities. In addition, the test where the irregularity was found should be indicated. Consider how this could be achieved with a simple script program.

