



INTELLIGENT INVOICE PROCESSING AT ELECTRICAL WHOLESALER SONEPAR IN GERMANY

Automatic initial account assignment of more than 48,000 invoices by means of machine learning



Customer

- Sonepar Deutschland GmbH
- Year of foundation: 1972
- Headquarters: Düsseldorf
- Number of employees: more than 5,000

Industry

- Electrical wholesale

Challenge

Rapid company growth involved a very high document volume in a short time that had to be processed manually. The initial account assignment of incoming invoices in particular was to be structured more efficiently and digitally.

Solution

- FIS Invoice Management
- Machine learning services for intelligent account assignment and approver determination

Benefits

By means of intelligent account assignment and approver determination, invoices are initially assigned to accounts by using ML. After a few months only, the system processes more than 80 percent of the documents correctly and automatically. As a consequence, employees are relieved, manual processing errors prevented and process efficiency in invoice receipt increased.

Posting internal or external documents to accounting ledgers are recurring accounting processes binding lots of manpower. For initial account assignment, clerks of electrical wholesaler Sonepar manually enter approximately 60,000 invoices in the system per year for instance. To automate these work steps, a smart solution for invoice processing has been implemented in the course of an ERP changeover to SAP S/4HANA – including an intelligent account assignment and approver determination. Now, invoices are initially assigned to accounts by means of machine learning. After a few months already, the success rate of automatic initial account assignment of invoices amounts to up to 80 percent. As a consequence, employees are relieved, manual processing errors prevented and invoice receipt processes become more transparent.

“As we have already been working successfully with FIS for more than ten years, we were convinced that we can efficiently automate the invoice receipt by using the solution proposed by them.”

Klaus Blum,
managing director/Sonepar Deutschland
Information Services GmbH



For areas such as accounting and controlling, digitization is an important means of managing the ever-growing data volume and automating processes. At the same time, increased transparency enables improved cooperation and communication among departments, provided that the selected electronic applications are manageable and mutually compatible.

Sonepar in Germany also intended to automate internal processes and form organizational synergies in accounting. More than 5,000 employees are working for the enterprise founded in 1972. The full-range electrical wholesaler for craftsmen's and industrial needs offers about 500,000 articles of more than 2,000 brand manufacturers. 20 percent of these articles form the regular assortment constantly kept in stock.

Processing incoming invoices more efficiently with SAP optimization

Sonepar's rapid company growth involved a very high document volume in a short time. "The number of invoices has been and is still increasing. This induced a high manual task orientation. Paper documents had to be edited, scanned and redistributed. As a consequence, very many employees were preoccupied with simple processes. In the course of the SAP S/4HANA implementation, we were therefore looking for a solution to automate these work steps," Klaus Blum, managing director at Sonepar Deutschland Information Services GmbH, recalls the initial situation.

Since 2012 already, Sonepar has relied on SAP in accounting and controlling. Within the scope of the SAP S/4HANA transition carried out lately, incoming invoice processing was to be optimized as well. FIS assumed Sonepar's changeover of accounting and controlling from SAP ERP ECC 6.0 to SAP S/4HANA with almost 500 million documents and a volume of 2.4 billion document lines. In parallel, the FIS Invoice Management solution was implemented in addition to optimally structure the invoice process right from the beginning. Machine learning services for intelligent account assignment and approver determination round off the portfolio. "As we have already been working successfully with FIS for more than ten years, we were convinced that we can efficiently automate the invoice receipt by using the solution proposed by them," Blum reports.

Sonepar made a decision in favor of the FIS Invoice Management solution from the FIS/edc solution portfolio as incoming invoice processing was to be structured more efficiently and, in particular, digitally. The reason is that the clerks process more than two million incoming invoices per year. Here,

the FIS application provides for a high degree of automation. In the area of initial account assignment, this is an optimal user case for artificial intelligence. For each document, data has to be entered in the system by the clerks to determine company code, vendor, G/L account, cost center and the responsible approver. "These are constantly recurring processes, i.e. a perfect field for a machine learning application," Martin Tempel points out. As a Business Development and Innovation Manager, he is responsible for all issues relating to artificial intelligence (AI) at FIS.

Pilot project for automatic initial account assignment of invoices

As a branch of AI, machine learning (ML) is a self-learning technology and can enable intelligent account assignment and approver determination within the scope of credit-side cost accounting. "ML is used to create an automatic account assignment logic. Afterwards, the tool determines the approver responsible for the invoice and automatically transfers it for being approved," Martin Tempel explains. The Sonepar management board as well as the IT managers had a strong interest in implementing the automatic initial account assignment of invoices by means of ML in a pilot project. Here, company code, vendor and text layer are exported from the invoices. Based on this information, AI will automatically select G/L account, cost center, internal order and approver.





Fully automated initial account assignment of more than 70 percent of incoming invoices

To train the first models, learning data from 36,000 invoices were imported, because the system had to learn how to proceed with each individual invoice. The solution was implemented with TensorFlow, Google's neural network. "We have trained the neural network with historic posting data from the past, e.g. what user posted which amount to what cost center, who was the first approver and so on. In this way, we have eventually automated this manual process by using ML," Daniel Stemig, Team Leader FIS EIM Consulting, explains. Based on this information, the model created in this way will make forecasts for future invoices and automatically preassign them if the information is correctly assigned by AI with a probability determined in advance. The user can interfere at any time if necessary. In the case of Sonepar, an invoice will only be preassigned completely and automatically if the ML system achieves a probability of more than 80 percent of the account assignment objects proposed. By using this application, different document categories can be processed, such as invoices and commercial invoices.

All persons involved were impressed with the first results of the pilot project. About 70 percent of the invoices were automatically and initially assigned to accounts and forwarded to be approved. And the system is permanently learning. The learning data is updated by new models each month to ensure that the success rate is continuously increasing and, as a consequence, the number of preassignments without manual interference. At Sonepar, the intelligent account assignment and approver determination has resulted in a considerable efficiency increase in incoming invoice processing and in an enormous gain in time for the employees involved.

Intelligent solutions for future invoice management

Machine learning models are used to train algorithms on the basis of existing datasets to identify patterns and rules and use them to independently develop results. In this way, business processes are optimized and automated. In the course of its changeover to SAP S/4HANA, solution provider Sonepar has implemented FIS Invoice Management and machine learning services to automatically and initially assign invoices to accounts by using ML. After a few months only, the system processes more than 80 percent of the doc-

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Klaus Blum, managing director/Sonepar Deutschland Information Services GmbH

uments correctly and automatically. A successful pilot project that optimally uses the opportunities of new technologies to take invoice management in SAP to the next level.

“Our employees can now commit themselves to more exciting tasks. Furthermore, we were able to successfully imple-

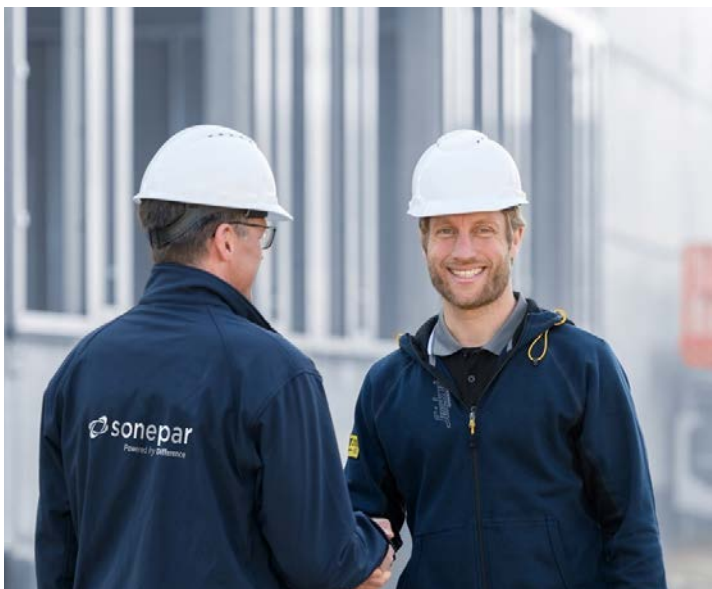
ment a uniform organizational scheme for the entire enterprise, because we have standardized processes used in all legal entities. The new AI solution is the starting point to enable constant further development. The automation of goods receipt invoices is to be the next step,” Blum explains and provides an outlook for the future.



Sonepar Deutschland GmbH

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