



Automated Accounts Receivable Processing Solution Proof of Concept

Open Scan Technologies, Inc.

ABSTRACT

Open Scan Technologies, Inc., in conjunction with a Fortune 500 company, completed a proof-of-concept exercise of its Corporate Accounts Receivable (A/R) Automation Solution in a controlled test environment. The test, which utilized actual payment documents from the company's customer base, yielded the following results:

- 385 templates created in 3^{1/2} hours
- 67% reduction in time required to handle bank exceptions
- 100% elimination of bank lockbox remittance data entry (keystrokes)

This report details the results of the test.

BACKGROUND

A Fortune 500 wholesale distributor (company) was interested in the OPEN SCAN® solution and wanted to determine if it would be effective for their operation. The test was designed to measure two features of the OPEN SCAN system:

1. Proprietary point-and-click template creation
2. Exception handling

It also measured the features' ability to impact three (3) key areas: ease of use for operators, speed of processing and accuracy of data.

The company operates multiple divisions in locations across the U.S. Their clients submit payments to a number of bank lockboxes. The banks deposit checks and key remittance data such as invoice number and amount paid from client documents. The banks charge by the keystroke for this service. In addition to the bank keying remittance data, the company also has in-house staff to handle payments that the bank could not (i.e. exceptions). The in-house staff resides at a centralized shared services center. On average, they have one (1) FTE per division in the A/R department and 75 divisions total. The combination of bank keying and in-house exception handling can process, on average, 1,000 invoices per day, per division.

Although the company creates a standard remittance form for their clients, only 10% of their customer base use this document. The other 90% uses either their own remittance document (generated by the customer's A/P system) or no document at all. Many customers pay multiple invoices with a single check. The average is 4.5 invoices per check.



TEST ENVIRONMENT

The test utilized an image archival CD-ROM from one of the bank lockboxes as a source of customer payment images. This ensured that the test used actual customer documents and real customer data. It also served as a baseline reference for the number of total invoices paid and posted. Operating the system during the test were two A/R staff members from the shared services center. There was only one station, so the operators alternately took turns working. Therefore, the test results represent the work of one FTE. Prior to the test, neither operator had ever seen the system before.

SAMPLE SIZE

The bank lockbox archival CD included images from **430** envelopes and deposit data from two consecutive days. In this case, an 'envelope' refers to all the contents (remittance page(s) + check) within an actual envelope that a customer had sent in to the bank. According to the bank record, the bank had identified **1,947** separate invoices within these 430 envelopes. The **1,947** invoices represent approximately double the average daily number handled by each division.

Included in the 430 envelopes were **45** envelopes that had only **handwritten** data, either in the memo field of the check or on a separate document. Within the 45 envelopes there were **158** invoice lines (**8% of the total volume**). This handwritten data can not be interpreted by the software and had to be keyed manually. The nature of the company's clientele (many small, "mom & pop" businesses included in the mix) leads to a comparatively high number of handwritten documents.

TESTING STEP 1: Point-and-Click Template Building

OPEN SCAN's solution is designed for businesses that receive payments on a wide range of document types from their varying customers. In order to accommodate this complex environment, the system utilizes a proprietary template technology. Unlike many document recognition systems where template-building is cumbersome and often requires IT or professional services, the OPEN SCAN solution is very user-friendly and templates can be built quickly and effectively on the fly even by novice operators.

The goal of this portion of the test was to measure how quickly operators could be trained to use the system and then how quickly they could build templates once they were trained. Two staff members, neither of whom had ever seen the system before, were brought in to run the test.

After less than **30 minutes of training**, the first operator began building templates. Although a few of the more complicated documents required some trainer assistance, the first operator worked independently most of the time. Once the first operator was confident in her ability, the second operator took over template building. There was little difference in the pace at which the second operator learned the system.



As noted before, 430 envelopes were presented to the operators for templating. Forty-Five of these contained handwritten or otherwise “un-templatable” documents. The remaining 385 envelopes (some of which contained multiple pages) were templated in 210 minutes. The resulting rate is:

385 envelopes / 210 minutes = 30.5 seconds per template

Because two operators used the system during this test, these results include two separate learning curves. Taking that into consideration, it can be reasonably expected that this rate would improve slightly in a full production environment.

385 envelopes /
210 minutes =
110 envelopes
per hour, per
FTE, or 30.5
seconds per
template

*This is what the
“Enter and Balance”
screen looks like once
a template is created
and the transaction
balances.*

The screenshot displays the Open Scan software interface. At the top, a check image is shown with the following details: Laser Optics International, 2455, Laser Optics Int'l, 1009290455401 2345556, and MIM Distributing. Below the check image is an 'Open Scan Search Dialog' window. The dialog has search fields for Search ID1 (988539) and Search ID2 (P096979). Below the search fields is a table with the following data:

Invoice No	Amount	PO Number	Company Name	Address	City	St	Postal Code	Customer Number	Confidence
988533	\$15,684.23	P096979	Laser Optics International	914 Edinboro Blvd Ste 301	Fridley	MN	55432	021872	1.0157
988539	\$426.95	K9697P	Grace Pet Care	19 NE 11th Pkwy	Austin	TX	12345	444444	0.7

Below the search dialog, there are three columns of data showing invoice numbers and amounts, with some values highlighted in green and red. The values shown are 988532, 988538, and 988534.

TESTING STEP 2: Exception Handling

One method the OPEN SCAN solution uses to extract remittance data from document images is OCR (optical character recognition). Because OCR Software engines can make mistakes, the OPEN SCAN system has built-in **validation processes** designed to identify and correct errors. It compares the ‘amount paid’ portion of a remittance to the amount of the accompanying check to ensure that they balance to each other. In addition, the system utilizes a continually-updated **validation file** (which contains data pertaining to all open invoices) to verify the accuracy of data read from a payment document.



Once data has been extracted from the document, it is intelligently compared to the validation file using **context-based algorithms**. If the system determines with high confidence that the data is accurate, it is put into a file that will be loaded into the A/R system.

If the system cannot confidently validate the accuracy of the data, the entry in question is presented to an operator for verification or further research. At this point, the operator is presented with the image of the source documents (remittance and check). Also available to the operator is a search tool that allows them to view the validation file for comparison purposes.

This is what the "Search" tool looks like. A worker uses it to find and match a correct invoice.

Remit

Laser Optics International
 914 Edinboro Blvd. Ste.301 Vendor Name : MJM Distributing
 Fridley, MN 55432 Vendor ID : 14682
 Check Number : 2455
 Check Date : 12/4/2006

Description/Invoice	Invoice Date	Voucher	Gross	Discount	Net
988500	11/01/06	PO96847	-	-	\$58.79
988501	11/01/06	PO96848	-	-	\$62.41
988502	11/06/06	PO96849	-	-	\$9,090.00
988503	11/06/06	PO96850	-	-	\$9,947.50
988504	11/07/06	PO96854	-	-	\$2,111.85
988505	11/08/06	PO96855	-	-	72.83
988506	11/12/06	PO96859	-	-	\$904.32
988507	11/12/06	PO96861	-	-	\$28.83
988508	11/12/06	PO96862	-	-	\$14,285.32
988509	11/13/06	PO96865	-	-	\$23.00
988510	11/13/06	PO96867	-	-	\$28.83
988511	11/13/06	PO96874	-	-	\$1,593.04
988512	11/13/06	PO96879	-	-	\$392.30
988513	11/13/06	PO96884	-	-	\$45.32
988514	11/15/06	PO96886	-	-	\$51.15
988515	11/15/06	PO96884	-	-	\$1,004.00
988516	11/15/06	PO96899	-	-	\$1,343.00
988517	11/15/06	PO96904	-	-	\$88.04
988518	11/15/06	PO96909	-	-	\$1,382.00
988519	11/21/06	PO96914	-	-	\$1,991.00
988520	11/21/06	PO96914	-	-	\$39.89
988521	11/21/06	PO96919	-	-	\$39.89
988522	11/22/06	PO96944	-	-	\$2,221.85
988523	11/22/06	PO96944	-	-	\$240.00
988524	11/22/06	PO96949	-	-	\$875.26
988525	11/22/06	PO96949	-	-	\$34.26
988526	11/27/06	PO96959	-	-	\$2.04
988527	11/27/06	PO96964	-	-	\$34.26
988528	11/27/06	PO96969	-	-	\$548.27
988529	11/27/06	PO96974	-	-	\$45.52

Check

Laser Optics International
 914 Edinboro Blvd. Ste. 301
 Fridley, MN 55432

Check Number: 2455
 DATE: 12/04/06

PAY TO THE ORDER OF: MJM Distributing
 \$ 24,550.14

ONE HUNDRED NINETY THREE THOUSAND NINE HUNDRED FOURTEEN AND 66/100 *** DOLLARS

MJM Distributing

PO96899

Search Tool

Invoice	Client Name	Search ID1	Search ID2	\$ Amt
988516		988516	PO96899	1,333.00
988517		988517	PO96904	68.04
988518		988518	PO96909	1,662.00
988519		988519	PO96914	1,991.00
988520		988520	PO96919	39.89
988521		988521	PO96924	12,550.10
988522		988522	PO96929	34.26
988523		988523	PO96934	39.89
988524		988524	PO96939	2,221.56
988525		988525	PO96944	246.00
988526		988526	PO96949	575.26
988527		988527	PO96954	23.00
988528		988528	PO96959	12.54
988529		988529	PO96964	34.26
988530		988530	PO96969	548.27
988531		988531	PO96974	45.52

In the company's current work environment, they pay for 23,000 keystrokes and spend 13 FTE work hours to process and post 1,947 invoices. After automatically reading, validating and posting 1,536 invoices with no knowledge worker intervention. This left 259 (14%) lines of detail that required operator intervention to verify. The most common reasons for an invoice requiring assistance were:

1. Poor image quality
2. Item not found in validation file*
3. Insufficient information on the remit
4. Bad OCR read
5. Customer intention unclear

**Test covered only one division, so a more complete validation file will address this issue.*



There were 116 additional cases where the total remittance amount did not balance to the check amount due to an OCR mis-read in the amount column of the remit. These were tracked separately from the low-confidence posting items. In many cases the amount of OCR problems were concurrent with invoice matching issues. In all, the operator was able to view and verify all 259 questionable invoices, correct all 116 amount OCR errors, and manually enter all 158 handwritten items in 260 minutes.

**Result 533 exceptions / 260 minutes =
67% reduction in time to process**

In addition to reducing the hours spent by in-house staff on exceptions, 100% of bank lockbox keystroke fees were eliminated.

VALIDATION ACCURACY

At the end of the test, an output file including A/R posting data, like invoice number and net amount paid, was generated by the system. The output file from the system was compared to the output file that was originally created by the bank lockbox. The original data on the bank archival CD reported 1,947 lines of detail. The OPEN SCAN output file included 1,956 lines of detail. The difference in these two numbers comes from the fact that operators using the system have access to the validation file and could quickly include details that the customer intended, but did not make clear on their documentation. Prior to the test, it was anticipated that a successful test may indeed generate more detail than the bank file. The ability to extract more information at the beginning of the process is expected to reduce the overall cost of the operation.

TEST RESULT COMPARISON

	BEFORE (CURRENT WORK ENVIRONMENT)	AFTER (OPEN SCAN TEST ENVIRONMENT)	RESULT (% REDUCTION)
FTE HOURS REQUIRED	13 Hours to Process Exception Payments	4.3 Hours to Process Exception Payments	67% Reduction in Hours Required
LOCKBOX KEYSTROKES REQUIRED	Approximately 23,000 Keystrokes Required	100% Reduction in Bank Lockbox Keying Fees.	No Bank Keystrokes Required

