



## **Solution Spotlight: Enhanced customer service for proof-of-payment with OnDemand**

*by Peter Nirenberg, Image Architects, Inc.*

### **Introduction**

Image Architects, Inc., an IBM Business Partner, has been working with the IBM EDMSuite OnDemand portfolio of products for several years. Our solutions have ranged from implementing traditional Advanced Function Presentation (AFP) and statement archival to adding image scanning to the OnDemand Archive. We have recently put into production a proof-of-payment system at one of the largest credit card companies in the United States. Our system merges image and statement data for one-click customer support. This system currently supports 500,000 scanned images per day and is designed to handle millions more.

Our Enhanced Check Archival Solution (ECAS) merges checks and payment coupons together with statement data that is sent to the company's accounting system. If the coupons contain *Change of Address* information, that information is also contained in the image. The result is one unified image that contains not just the images but the data that was sent to the accounting system. This detailed integration was accomplished without modifying or compromising the existing check scanning system.

### **The business problem**

Our customer processes more than 500,000 images per day (180 million per year) using six NCR check scanners. This is part of a complete scan and data entry operation that employs more than 50 people in two shifts. The operation runs 24x7, 365 days a year. Prior to ECAS, the customer microfilmed their checks and generated dozens of rolls per day. They cataloged each image using Credit Card Number, Checking Account Number, Check Number, Film ID and Frame Sequence. The film was then put on the shelf until a call came in.

In most cases, a customer would call a CSR (customer support representative) because the customer noticed that his next bill had either not shown his last payment or the listed payment was incorrect. And he would only call if the discrepancy was not in his favor. So the phone would ring, and the CSR would jot down the customer's account information, payment date and other information. Quite often, the customer did not have his card number or checking account number handy, so this type of call required much more research to get to the correct roll of film.

It took about one day to find the film and make a photocopy of the particular frame. The CSR then would call the customer back and work to resolve the problem. Quite often, the source of the problem was found on an earlier frame or film, and the payment coupon information then had to be cross-referenced with the accounting system. The types of questions that the customer support reps had to answer in order to resolve a problem were:

- Did they really receive the payment?
- Was the correct amount applied?
- Was it applied to the correct account?
- Was the payment applied in a timely manner?

Answering these questions was expensive for several reasons:

1. Cost of time spent searching for the film
2. Cost of time cross-referencing with the accounting department
3. Cost of the customer's time
4. Cost of processing the film

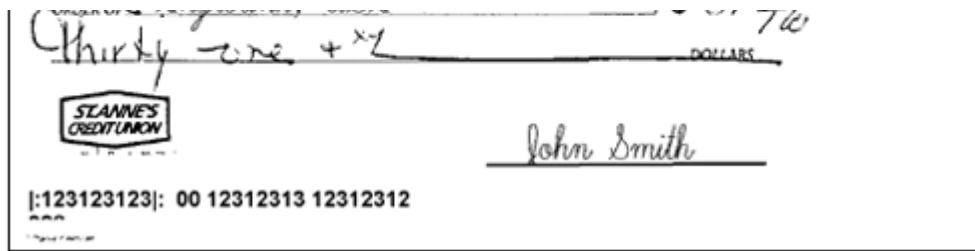
The bottom line was that it cost a great deal to respond to customer inquiries and earn back the good will that was lost when a dispute occurred.

### The business solution

Our ECAS solution removed the cost of time and film processing by merging all the necessary data onto one image. As you can see in the example below, the coupon, check and accounting department information are all stored in OnDemand and retrieved at once. Everything needed to resolve the dispute appears on the CSR's screen in seconds. The benefits to the CSR are:

- He can immediately tell if the amount and card account information that was passed to the accounting department is the same as what was written on the coupon and check.
- He can see if the processing date is beyond the due date or just how different it is from the check date.
- He no longer has to call the customer back, because the matter is now resolved while the customer is still on the initial phone call.

<p>AnyBank, NA PO Box 1234 Anytown, USA 12345-1234</p> <p>John Smith 100 Main Street MillersTown, GA 12345-1034</p> <p>AnyBank, NA PO Box 1234 Wilmington, DE 19886-1234</p>	<p>AnyBank, USA</p> <table border="1"> <tr><td>Account number</td><td></td></tr> <tr><td>New balance</td><td>\$1,551.02</td></tr> <tr><td>Past due amount</td><td>\$0.00</td></tr> <tr><td>Minimum payment due</td><td>\$31.00</td></tr> <tr><td>Payment due date</td><td>10/11/99</td></tr> <tr><td>Amount enclosed</td><td>\$ 31.00</td></tr> </table> <p>To ensure proper credit, please return this portion with your payment. Please write your account number on your check, made payable to</p> <p><input type="checkbox"/> Address change? Print information on back.</p> <p>123456781234123410000003100012355650</p> <p>⑆01⑆7098 Seq:366 ABA:21010101011 Acct:123456789012 Check#:0328 Amt:\$31.00</p> <p>53 02/3/2113 03 328</p> <p>DATE 10-5-99</p> <p>PAY TO THE ORDER OF AnyBank, USA \$ 31.00</p>	Account number		New balance	\$1,551.02	Past due amount	\$0.00	Minimum payment due	\$31.00	Payment due date	10/11/99	Amount enclosed	\$ 31.00
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## Technical implementation

### Scanning

The starting point for ECAS is the six NCR check scanners and the data entry system. These scanners scan the front and back of the checks, creating separate batches of 600 items. Each batch contains several files that hold the front and back of images, data entry files, control files and other files that are not needed by ECAS. Interestingly, due to the position of the scanner cameras, the backs of images are mirrored, something the next stage has to deal with. After the operator-assisted data entry stage, the files are FTP'ed to an RS/6000 OnDemand Server using an automatic transfer system.

### Image extraction and indexing

Once on the RS/6000, a cron job starts the image extraction and indexing operations. Each image file from the scanners actually contains about 600 images, and because they are not in TIFF or IBM MO:DCA format, they have to be converted. The backs are mirrored and some of them are upside down, having been scanned that way. Our image extraction process extracts the images into individual files and then merges fronts and backs (if there is a change of address). We deskew the images and remove black and white borders that are created by the scanners, ensuring a crisp, accurate image for the CSR. The process also reads the MICR data from the image headers. Finally, we take accounting information from the data entry files and digitally print it on the image, much like the information at the top of a fax.

### Loading into OnDemand

The last step is to load the images into OnDemand using the *arsload* utility. This is the utility that comes with OnDemand, and we have not made any modifications to this process. The whole process from extraction to loading takes approximately five hours per day using just one server for both the extraction and loading procedures.

### Audit trails

After the *arsload* utility is run, we generate a Microsoft Excel report that shows a count of images that were extracted and loaded. Approximately 0.1% of the images created during the scanner stage are invalid, and we indicate this in the log files and create substitute images in the OnDemand archive.

Date	Time	Batch	BatchDate	DocCount	DocCount	QDocCount	FComp	BComp	FCompErr	BCompErr	FCheck	BCheck	FCheckErr	BCheckErr	AuditDate	AuditTime	AuditStat
10/2/99	7:00:27	8576	10/19/99	4	3	3	3	0	0	0	1	3	0	0	10/2/99	7:06:45	OK
10/2/99	7:01:54	8621	10/20/99	4	3	3	3	0	0	0	1	3	0	0	10/2/99	7:07:21	OK
10/2/99	7:04:27	8650	10/20/99	5	4	4	4	0	0	0	1	3	0	0	10/2/99	7:08:09	OK
10/2/99	7:06:45	8688	10/20/99	3	2	2	2	0	0	0	1	3	0	0	10/2/99	7:10:29	OK
10/2/99	7:06:45	8648	10/20/99	3	2	2	2	0	0	0	1	3	0	0	10/2/99	7:10:29	OK
10/2/99	7:08:10	8670	10/20/99	26	25	25	25	0	0	0	1	3	0	0	10/2/99	7:11:31	OK
10/2/99	7:10:23	8699	10/20/99	12	11	11	11	0	0	0	1	3	0	0	10/2/99	7:15:22	OK
10/2/99	7:10:23	8668	10/19/99	4	3	3	3	0	0	0	1	3	0	0	10/2/99	7:15:30	OK

1002999	7:11:21	8590	1002999	6	5	5	5	0	0	0	1	3	0	0	1002999	7:15:58	OK
1002999	7:15:22	85609	1002999	4	3	3	3	0	0	0	1	3	0	0	1002999	7:20:06	OK
1002999	7:15:30	85728	1002999	34	33	33	33	0	0	0	1	3	0	0	1002999	7:20:50	OK
1002999	7:15:58	85600	1002999	5	4	4	4	0	0	0	1	3	0	0	1002999	7:20:50	OK
1002999	7:20:06	85619	1002999	3	2	2	2	0	0	0	1	3	0	0	1002999	7:24:55	OK
1002999	7:20:51	85610	1002999	3	2	2	2	0	0	0	1	3	0	0	1002999	7:27:57	OK
1002999	7:20:51	85988	1002999	45	44	44	44	0	0	0	1	3	0	0	1002999	7:28:18	OK
1002999	7:24:55	85629	1002999	3	2	2	2	0	0	0	1	3	0	0	1002999	7:29:01	OK
1002999	7:28:19	85990	1002999	5	4	4	4	0	0	0	1	3	0	0	1002999	7:33:11	OK
1002999	7:27:58	86620	1002999	53	52	52	52	0	0	0	1	3	0	0	1002999	7:33:25	OK
1002999	7:33:11	85608	1002999	43	42	42	42	0	0	0	1	3	0	0	1002999	7:37:33	OK
1002999	7:37:33	85618	1002999	3	2	2	2	0	0	0	1	3	0	0	1002999	7:40:30	OK
1002999	7:40:38	86628	1002999	3	2	2	2	0	0	0	1	3	0	0	1002999	7:43:49	OK
<b>Totals</b>																	
				266292	134588	134838	133888	9099	187	0	133026	462	186	0		OK	723
																Failed	0

## Benefits

One unanticipated benefit of ECAS has been proactive correction of billing problems. Occasionally, payments get out of sync — much like missing a row on a multiple choice exam. When CSRs find the first error in a batch, they can correct all other *downstream* errors before more customers call.

Overall, the Enhanced Check Archival Solution has yielded great benefits for our customers. It has created measurable hard dollar savings as well as other benefits. It has streamlined back office operations by eliminating microfilm, and it has improved the productivity of the CSRs. As we move towards larger systems, we will be segmenting the extraction process and adding more OnDemand Object Servers to gain more bandwidth.

## Contact information

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