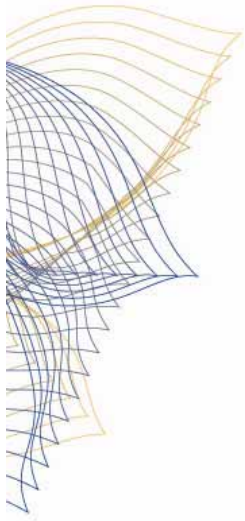




Bridging the Paper-to-Digital Divide with 2D Barcode Technology

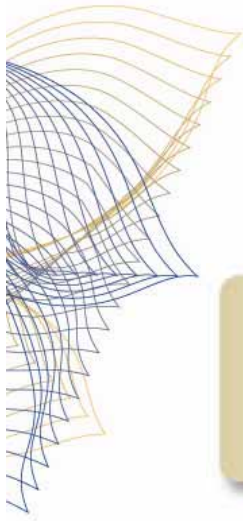
Geoff Baum
Group Product Manager
Adobe Systems, Inc.
(baum@adobe.com)





Today's Agenda

- Paper form challenges and costs
- Automated solutions today
- 2D barcode basics
- Barcoded forms solution example
- Demonstration
- Additional 2D barcode resources



Paper Form Processing Challenges

Persistence of Paper

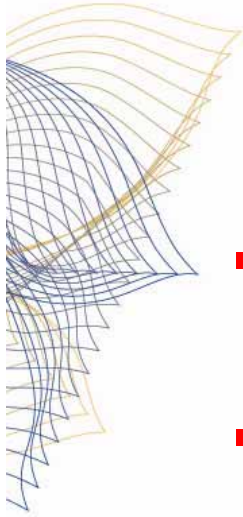
Ink or multiple signature requirements, customer preference, supplemental attachments, CPA or legal review

Complicated IT Infrastructure

Disconnected processing systems for paper and electronic form workflows

Cost

Manual processing, data integration, and inaccurate data



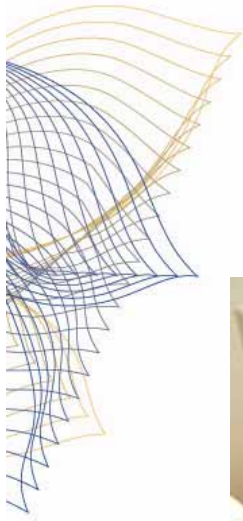
Paper Form Processing Costs

- US organizations spend \$15-\$20B annually on manual data entry*
- Average hourly cost for U.S. data entry clerk: \$15/hour*
- Per form data entry labor cost: as much as \$2.77**
- Average cost per day of manual data entry for mid-sized & large U.S. corporations : \$8,000**
- Data accuracy for initial manual input: 96% - 98%**
- Data accuracy for OCR-based solutions: 90%**
- Avg. processing time for paper tax form: 90 minutes***

* Pacific Crest Securities, Harvey Spencer Associates

** TAWPI, Forms Processing and Image Capture Market Study, by Harvey Spencer Associates & David Wood, 2000

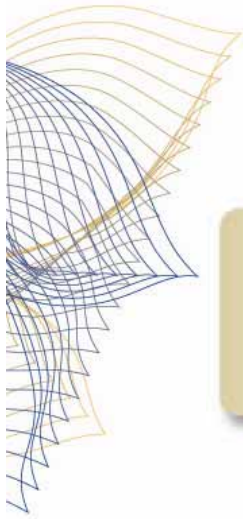
*** U.S. Tax Administration, FTA Barcode Usage Study, 2003



The Old Way...



“Swivel Chair” Integration



Automated Solutions Today

Electronic submission

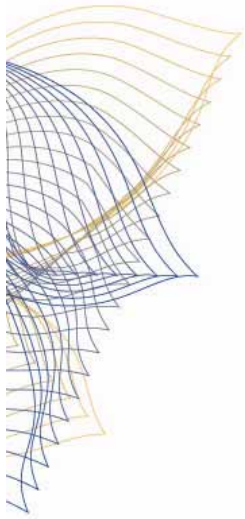
Strengths: Automated, cost effective, secure, accurate
Weaknesses: Regulatory demands, legacy systems, customer preference, and limited digital signature infrastructure lead to persistence of paper forms

OCR

Strengths: Semi-automated, relatively cost effective means of handling paper forms
Weaknesses: OCR system requires human oversight, accuracy, security associated with paper

2D Barcodes

Strengths: Automated, cost effective, 100% accurate, bridges to or unifies with fully electronic system, maintain existing workflow
Weaknesses: Security, form design considerations

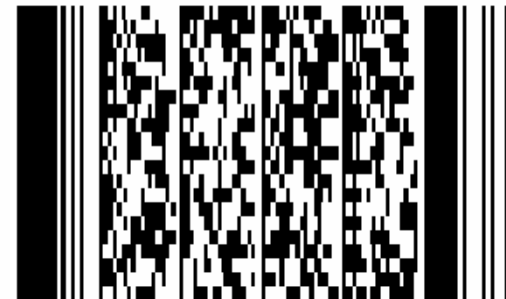


Barcodes Basics

- **Two-dimensional (2D) compared to 1D barcodes**
 - Encode data in both width and height
 - Stores significantly more data than 1D barcode (~2K characters versus ~20 characters)
- **Barcodes are machine readable**
 - Incorporate error correction codes (ECC) for resiliency
 - No false positives – successful decode produces 100% accurate data



Conventional 1D barcode (Code 39)



2D Barcode (PDF417)

Sample Form Utilizing 2D Barcode

Bridging the gap between paper and digital processes

Adobe Reader - [Quarterly Report.pdf]

File Edit View Document Tools Window Help

82%

Documents

Signatures

Pages Layers





Air Emissions Quarterly Report

DISTRICT: 2974 - Northern California DATE DUE: 2/10/04

FACILITY INFORMATION

License to be issued to: Global Corp.		
Mailing Address: 9999 Industrial Way		
City: San Jose	State: CA	Zip Code: 95337
Nature of Business: Commercial Refinery	SK Code: 2911	
Contact Person: Conrad Simms, Project Manager Global Corp. Refinery Division	Phone Number: 408-536-6000	Fax Number: 408-537-6000
	Email: csimms@GlobalCorp.com	

DEPT. OF ENVIRONMENTAL RESOURCES USE ONLY

If received by mail: Scan barcode and send via inter-office.		Transaction No. 123456789-0
Office Code: _____		
Employee Number: _____		

8.5 x 11 in

1 of 2

Captured XML Data.xml

File Edit View Favorites Tools Help

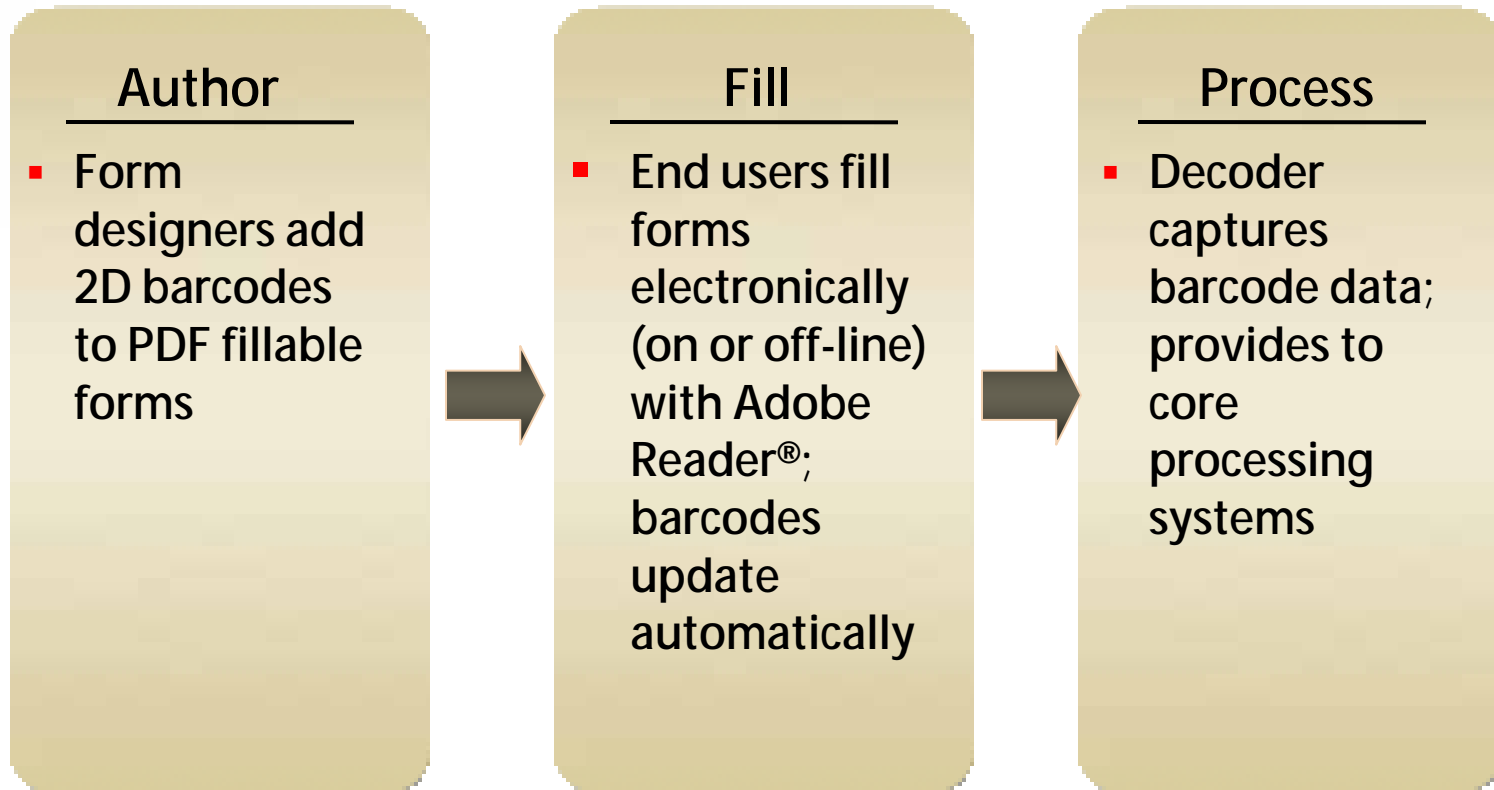
Back

Search Favorites

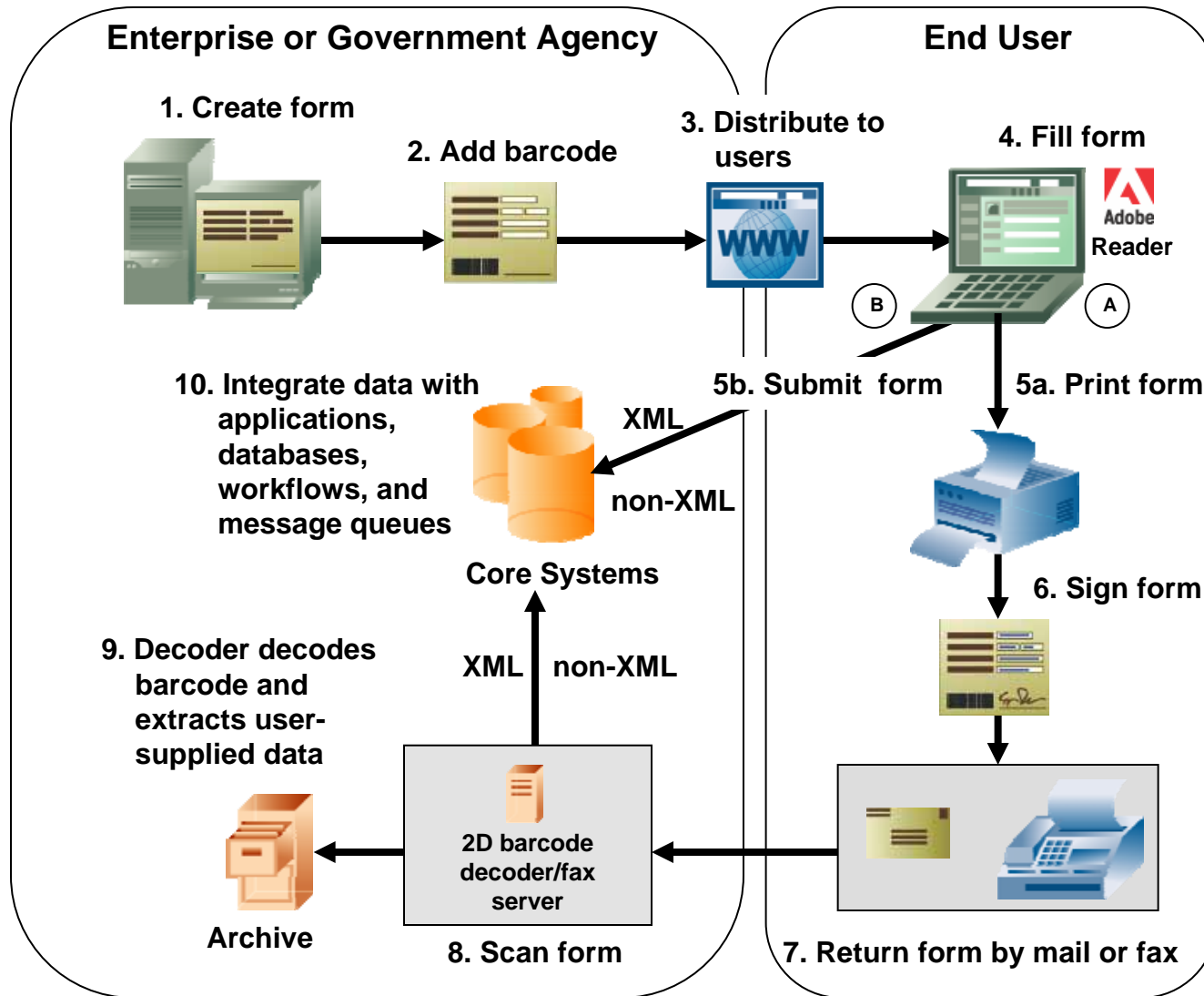
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</field>
- <field name="Company">
  <value>Global Corp.</value>
</field>
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  Global Corp. Refinery Division</value>
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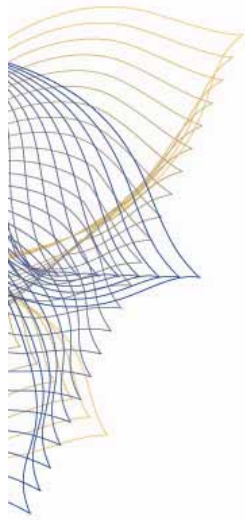


Overview—A Complete 2D Barcode Solution



Sample Workflow with 2D Barcodes





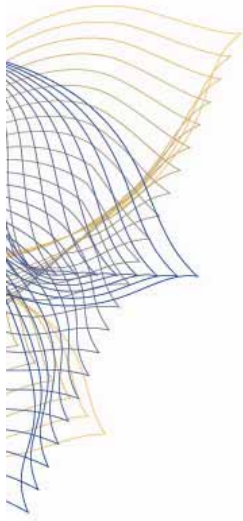
Case Study: Internal Revenue Service

■ Challenges

- Reduce costs and improve citizen service
- Streamline paper and electronic forms processing
- Comply with government regulations

■ Solution

- Use Adobe® Acrobat® Professional to create interactive barcoded PDF forms
- Publish tax forms at IRS.gov and distribute by CD; constituents fill forms with free Adobe Reader
- Automate paper-based data capture with 2D barcodes
- Implemented production 2004 Schedule K-1 Forms
- In 2005, IRS will implement additional barcoded forms



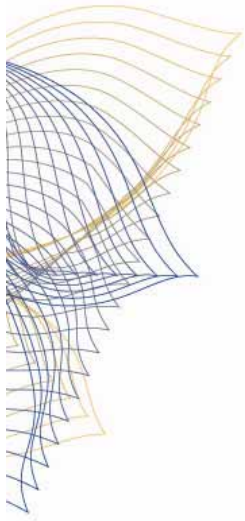
Features and Benefits

Government Agency

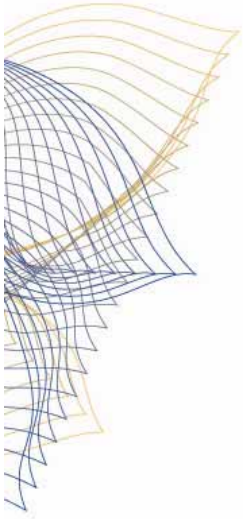
- Reduce manual entry costs, time, and errors
- Successful decodes are 100% accurate; no false positives
- Easy-to-use design tools reduce form development and maintenance costs
- Enhance agency's data access and citizen service
- Unify paper and electronic forms processes

Form End User

- Reduce citizen input errors
- Work online or offline
- Provide end user choice of submission methods
- Improve customer service



Demonstration



Additional 2D Barcode Resources

AIIM E-Doc Magazine Article: "Barcodes and Document Management: 7 points to make barcodes work for you"

- http://www.edocmagazine.com/article_new.asp?ID=29450

Overview of PDF417 2D barcode symbology

- http://www.symbol.com/products/barcode_scanners/2d_products_2d_technology_broc.html

FTA barcode information

- <http://www.taxadmin.org/fta/edi/2-dcurrent.html>



Additional Adobe 2D Barcode Resources

Adobe's Barcoded Form Technology

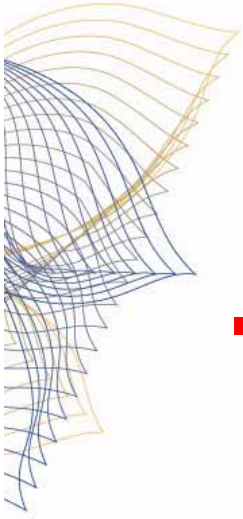
- <http://www.adobe.com/barcodedforms>

Adobe Document Services

- <http://www.adobe.com/products/server/main.html>

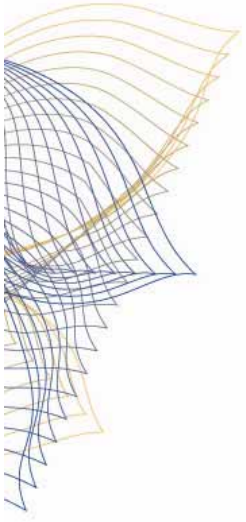
Live, On-demand Demo

- <http://www.adobe.com/barcodedformsdemo>



To Learn More....

- Schedule a personal meeting with Adobe; Contact MJ Johnson, 408-536-4635 or mjjohso@adobe.com
- View a webinar highlighting tax agency issues and solutions at: <http://www.adobereg.com/fta/>
- Visit www.adobe.com/barcodedforms for more information on Adobe LiveCycle Barcoded Forms
- Visit www.adobe.com/government for more information on other Adobe Document Services



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