5 Ways Artificial Intelligence is Transforming and Automating Accounts Receivable
May 24–26, 2016
Disney’s Contemporary Resort | Walt Disney World, FL

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Why Automate?
Why Automate?

From Process Automation Percentages to Real Balance Sheet Dollar Savings

Automation of Manual, Repetitive and Time-Intensive Tasks

Resources re-focused on high-value activities – research and decision-making

80-90% Automation of Manual Tasks

DSO Reduction & Savings
Lower Bad Debt Write-Offs
Lower Operating Costs
Business Growth
Trends

Tools are moving from basic visibility and auditability to simple automation and cost reduction

**From**
- Management
  - Assignment of tasks to specialists
  - Electronic Workflow
  - Notes
  - Attachments
  - Reminders
  - History

**To**
- General Automation
  - Reduce use of paper
  - Automated prioritization of tasks and assignment to specialists

**Future**
- Business Process-specific
  - Specific optimization and automation
  - Fully eliminate paper
Agenda

1. What is Artificial Intelligence?
2. 5 Ways A.I. is changing A/R
3. Technology Impact
What is Artificial Intelligence?
ARTIFICIAL INTELLIGENCE (AI)

Technology Characteristics:
• Intelligent Self-Learning
• Smarter over Time
• Excellent at Repetitive Tasks

Areas of Application for Artificial Intelligence

AEROSPACE
Advanced auto-pilot and landing systems.

CUSTOMER SERVICE
AI enabled support systems to man service and contact centers.
Artificial Intelligence for A/R

Function & Capability

- Machine-learning enabled system, pattern analysis based on past data
- Extract information across document formats
- Contextual information capture
- Corrects data for quality issues and missing information

Application

- Payment and remittance collection, linking and processing
- Dispute (claim), debit memo collection and processing
- Collection past behavior analysis
- Credit decision making

Impact

- 90% + elimination of manual work required in collecting information
- Over 100%+ improvement in business process efficiency
5 Ways AI is changing Accounts Receivable
5 Applications of AI in A/R

1. Achieving real automation in processing paper remittance
2. Electronic payments and remittance automation
3. Intelligent self-optimizing collection strategies
4. Intelligent parsing of deduction backups
5. Auto-matching of deduction backups to trade promotions
Optical Character Recognition

FOUNDATION OF REMITTANCE PROCESSING
What is OCR?

Converts text on paper or in an image into electronic text for digital consumption.
# Defining Templates

<table>
<thead>
<tr>
<th>INVOICE</th>
<th>DESCRIPTION</th>
<th>GROSS AMT.</th>
<th>DISCOUNT</th>
<th>NET AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1407420</td>
<td>Information Enc.</td>
<td>100.00</td>
<td>0.00</td>
<td>100.00</td>
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<td>Information Enc.</td>
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<td>439.92</td>
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<td>100814</td>
<td>COUP DED 10/08/</td>
<td>21.08</td>
<td>0.00</td>
<td>21.08</td>
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<tr>
<td>100914</td>
<td>COUP DED 10/09/</td>
<td>17.26</td>
<td>0.00</td>
<td>17.26</td>
</tr>
</tbody>
</table>

Reading rectangle defined for: Invoice No.  
Reading rectangle defined for: Net Amount
Real-world Remittance Issues

- **New Formats - Expanding customer base**
  - Onboarding new customers every week, new remittance formats

- **Changing Formats – Inconsistent Customers**
  - Existing customers keep revising their remittance formats time to time

... lead to ineffective automation with templates
Template-based OCR requires manual inputs to manually create and manage reading templates.
Leveraging Artificial Intelligence
FOR OPTICAL CHARACTER RECOGNITION
The Accounts Payable & Procure-To-Pay Conference & Expo is produced by:

ERP Cash Applied

OCR Remittance + Payment

Artificial Intelligence

READS Real Automation!

90%

THINKS

No Manual Intervention

Cash Applied

ERP

Exception Handling

May 24–26, 2016
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Advantages

• **No Template Management** – AI enabled OCR is capable of extracting information without the need for manually defined templates

• **No Rules Management** - AI enabled OCR is capable of extracting information without the need for manually defined templates

• **90% Automation** – real automation which significantly reduces the requirement for manual intervention
### User review of OCR results

#### Raw extracted data

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
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<td>1</td>
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<td>Inv_Number</td>
<td>Inv_Date</td>
</tr>
<tr>
<td>2</td>
<td>902481532</td>
<td>03/18/13</td>
<td></td>
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<tr>
<td>3</td>
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<td>03/18/13</td>
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<tr>
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<td>902738720</td>
<td>04/12/13</td>
<td></td>
</tr>
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<td>5</td>
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<td>04/11/13</td>
<td></td>
</tr>
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<tr>
<td>16</td>
<td>902738752</td>
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</table>

#### Transformed Data

#### Validation Logic

**Header Details**
- **Customer Name:** Mid-States Distributing Co.
- **MICR Number:** 0919163787028271
- **Check Number:** 656315
- **Check Amount:** 32027.36
- **Total Net Amount:** 32027.36
- **Current Page:** 2

**Item Details**

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<tr>
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<th>Delete Items</th>
<th>Bulk Edit</th>
<th>Check Amount: 32027.36</th>
<th>Total Net Amount: 25016.72</th>
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<td>Page Totals</td>
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<tr>
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<td>0</td>
<td></td>
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5 Applications of AI in A/R

1. Achieving real automation in processing paper remittance

2. *Electronic payments and remittance automation*

3. Intelligent self-optimizing collection strategies

4. Intelligent parsing of deduction backups

5. Auto-matching of deduction backups to trade promotions
Rise in Electronic Payments

Large numbers of B2B transactions are already happening through electronic formats

Top Reasons for choosing Electronic Payments

- **Cost savings**: 51%
- **More efficient and streamlined processing**: 45%
- **Increased accuracy and control of payment delivery**: 23%
- **Straight-through processing of payments**: 20%

*Source: Ardent Partners 2014 Market Report*
Top Electronic Remittance Formats

- **Delivered through E-mail**
  - E-mail body
  - E-mail attachments (PDF)
  - E-mail attachments (Spreadsheet)

- **Delivered through Websites**
  - Customer portals
  - 3rd Party Portals
1. Loss of accuracy in converting from ‘digital’ format to ‘image’ based PDF

2. Template Management

3. Manual scan to link remittance with payment

Manual Process: Email Remittance Processing
1. ‘Lossless’ data input for the OCR for highest accuracy

   - Emails
   - Attachments

2. Template-free reading of remittance data

3. Smart customer identification based on:
   - Sender information

Al-enabled Email Remittance Processing

- Automated Capture
- Digital Input to OCR
- AI Based Cash Application System
- Auto-Linking
- Accurate Output

'Template-free' reading of remittance data

AI-based Cash Application

Auto-Linking
The Accounts Payable & Procure-To-Pay Conference & Expo is produced by:

**AI Enabled Software**

- **Retain Electronic Data**
  - **ADVANTAGE**
    - AI directly reads the electronic data for extracting information from remittance

- **Template-Free**
  - **ADVANTAGE**
    - Similar to AI enabled OCR
    - Does not require reading templates or management

- **Auto Linking**
  - **ADVANTAGE**
    - Smart linking capabilities allow auto-detection and linking
5 Applications of AI in A/R

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The Collections Challenge

Product/Order Fulfillment

Collections Department

- INPUT DATA
- Company ERP
- Your Company

- Invoice Payments
- Invoice Payments

- Collections
- Collections
- Collections
- Collections

- Collectors
- Collectors
- Collectors
- Collectors

- Customer Contacts
- Past-Due Invoices
- Huge Spreadsheets

- Collection Process
- Reminder Calls
- Reminder Mails
- Blocked Orders
The Challenge of Scale

The Challenge with Customers

- Smaller customer accounts also require the same time-intensive manual effort
- Big customer accounts are more important but we have little time to focus on them
- All accounts being treated equally
- All notices – irrespective of account size – were being handled by Collector with no clear defined prioritization
Enter: Automation

Prioritized Worklist
Intelligently gathers data and does task prioritization

Rules-based Automation
Automates low-touch dunning and enables strategic collection activities

Collections Department
Collector
Collector
Collector
Collector

Your Company
Company ERP

Invoice Payments
Customers

COLLECTION PROCESS

The Accounts Payable & Procure-To-Pay Conference & Expo is produced by:
Dynamic Collection Strategies

WITH ARTIFICIAL INTELLIGENCE
Automation of Collections Operations

Set of Customers \([C1, C2, \ldots, Cn]\)

Subset of Customers \([C1, C2, \ldots, Cn]\)

Rules

Strategy

Call

Auto Correspondence

Email

Fax

Mail
Self-Optimizing Collection System

Collection Data

Payment Behavior

Credit Data

Collection Analytics

Customer Profiling Model

Payment Pattern analysis Model

Dynamic Collection Strategies

Reminder Calls

Reminder Mails

Robo Callers
Continuous Learning

• Integrate automated testing and fine-tuning into strategies

• Examples
  – Correspondence schedule optimization
    • Send reminders 1-2 days early or late
    • Check results and adjust accordingly for optimal customer payment behavior
  – Day of week
  – Time of day
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Deduction Worklist Items

Claims are automatically collected into claims repository.

All information is extracted – claim number, customer, cost, reason code, etc.
Claims & PODs are automatically downloaded

Backup documents are downloaded and linked to support research.
### WAL-MART STORES, INC.
**NOTIFICATION OF CLAIM**

**Supplier:**
- Number: 338053
- Name: [Redacted]
- Address: AUSTIN MN, MN 55912-0000

---

**Claim #**
- Number: 99474750

**Claim Date**
- 09/09/2012

**Invoice Date**
- 08/24/2012

**PO #**
- 30307819352

**Wse #**
- 7033

**PO Type**
- 33

**Dept #**
- 92

**PO Date**
- 08/19/2012

---

**LINE LEVEL QUANTITY DISCREPANCY**

<table>
<thead>
<tr>
<th>INV LN#</th>
<th>ITEM #</th>
<th>DESCRIPTION</th>
<th>INV QTY</th>
<th>RCV QTY</th>
<th>CLAIM QTY</th>
<th>RCVR COST (EACH)</th>
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</thead>
<tbody>
<tr>
<td>68</td>
<td>550306966</td>
<td>8/3OZ HNL PEPR BACON</td>
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</tr>
<tr>
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<td></td>
<td>PER UNIT COST</td>
<td>-2.0400</td>
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**LINE LEVEL QUANTITY DISCREPANCY**

<table>
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<tr>
<th>INV LN#</th>
<th>ITEM #</th>
<th>DESCRIPTION</th>
<th>INV QTY</th>
<th>RCV QTY</th>
<th>CLAIM QTY</th>
<th>RCVR COST (EACH)</th>
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<td>11</td>
<td>92273854</td>
<td>26 OZ 07860</td>
<td>48</td>
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<td>0</td>
<td>-67.20</td>
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<td>PER UNIT COST</td>
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**LINE LEVEL QUANTITY DISCREPANCY**

<table>
<thead>
<tr>
<th>INV LN#</th>
<th>ITEM #</th>
<th>DESCRIPTION</th>
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<th>RCV QTY</th>
<th>CLAIM QTY</th>
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<td>PER UNIT COST</td>
<td>-1.5100</td>
<td>0</td>
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</tr>
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</table>

**DEDUCTION CODE 22**
**MERCHANDISE BILLED NOT SHIPPED**
**RCVR # 0**

**DEDUCTION CODE 22**
**MERCHANDISE BILLED NOT SHIPPED**
**RCVR # 0**

**DEDUCTION CODE 22**
**MERCHANDISE BILLED NOT SHIPPED**
**RCVR # 996545**

**HRDZ CASERA HOT SLSA**

**TOTAL COST FOR CLAIM**
- $170.52

PRINT IN LANDSCAPE FORMAT TO SEE ALL THE DATA
Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below:

Tracking Number: 1Z2AT4600353526061
Reference Number(s): CLOSEOUT, 4296072, 1324990273
Service: UPS Ground
Weight: 10.40 lbs
Shipped/Billed On: 06/05/2012
Delivered On: 06/04/2012 9:30 A.M.
Delivered To: 55 ORISKANY DR
TONAWANDA, NY, US 14150
Signed By: FORSYTH

Left At: Receiver
Thank you for giving us this opportunity to serve you.

Sincerely,

UPS

Tracking results provided by UPS: 08/15/2012 2:09 P.M. ET
Claims Backup Electronically Captured

Welcome Mike Green (Logged in as AR Manager) [MyProfile][Logout]

Line items information from original submitted claim
5 Applications of AI in A/R

1. Achieving real automation in processing paper remittance
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Trade Deductions

Claims are automatically collected into claims repository.

Trade claims also come in as pre-deductions and are assigned to the right analyst.

All information is extracted – claim number, customer, cost, reason code, etc.
### Trade Deduction with Downloaded Claim Copy

**Details**

- **Id:** 1443346
- **Payer:** 006999528
- **Customer Name:** THE KROGER CO
- **Claim Number:** 092-A421984-034
- **Accounting Doc Number:** A421984-034
- **Open Amount:** 9252.48
- **Original Amount:** 9252.48
- **Sales Area Id:** 0912302
- **Sales Area Name:** ROBINSON J K

**Status:** Research & Validation

**Attachment List:**

- **D51 C1**
- **PK10907**

**Packet Id:** PK10907

**Type:** Deduction

**Reason Code Category:** IX

**Action Code:** IPM - Enter Payment

**Owner Role:** Sr. Sales Support Specialist

**Accounting:**

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Customer Item Number</th>
<th>Item Description</th>
<th>Upc Number</th>
<th>Reason Code</th>
<th>Unit Cost</th>
<th>Quantity</th>
<th>Extended Cost</th>
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<td>929</td>
<td></td>
<td>6800.28</td>
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<tr>
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<td>7.32</td>
<td>335</td>
<td></td>
<td>2452.20</td>
</tr>
</tbody>
</table>

**Total Cost of all Line Items = 9252.48**
## Original Claim Copy

**KROGER**  
Regional Accounting Service Center (RASC)  
Nashville, TN

**Invoice Number:** 092-A421984-034

**Pay To:** P46000  
**Terms:** Net Cash  
**Period:** PD 11  
**Invoice Date:** 11/18/2013

---

**Contract Number:** 465478  
**Amount:** $9,252.480

**KATS WEEK ENDING 2013-11-16 for DIV 034/WHSE 034/ACCT 02-2300**  
Billing Period from 10/30/2013 to 11/19/2013  
**PO#:**  
**PO/ME Vendor#:**  
**PO Write Date:**  
**Buyer Code:**  
**Batch Payment#:** PROMO2013-11-18

---

<table>
<thead>
<tr>
<th>E40 Number</th>
<th>Rec. #</th>
<th>Rec. Date</th>
<th>Store</th>
<th>Dept</th>
<th>Line No.</th>
<th>Case Description</th>
<th>Case UPC Number</th>
<th>Item Qty</th>
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<td>$7.320</td>
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</tbody>
</table>

**Total Amount: $9,252.480**

**Contact:** rascpromo@kroger.com
Deduction Line Items

Details

- Id: 1443346
- Status: Research & Validation
- Attachment List: DS1 C1
- Payer: 006999528
- Type: Deduction
- Packet Id: PK10907
- Customer Name: THE KROGER CO
- Reason: Promotion
- Parent Id: PO0001
- Accounting Doc Number: A421984-034
- Action Code: IPM
- Processor: Sales Support Clerks
- Open Amount: 9252.48
- Planning Account: PO0001
- Fiscal Year: Oct 30, 2013
- Sales Area Id: 0912302
- Promotion Start Date: Oct 30, 2013
- Sales Area Name: ROBINSON J K
- Order Number: 092-A421984-034
- Claim Amount: 9252.48

Details of Deductions taken and SKU level item data affected

- Item Number: 0003760046221
- Item Description: CHILI NO ...
- Upc Number: 0003760046221
- Reason Code: 7.32
- Unit Cost: 929
- Quantity: 6800.28
- Extended Cost: 2452.20

Total Cost of all Line Items = 9252.48
SKU Level item numbers Rolled up into Product Hierarchy for easier Deduction Resolution

Correct trade promotion automatically identified
Performance Results
AI-enabled A/R Departments
Typical Results

WITH ARTIFICIAL INTELLIGENCE
5+ Days of DDO Reduction

90%+ Reduction of Bad Debt Write-Offs

90%+ Improvement of Automated On-Invoice Cash Application Hit Rate

$10 Million+ Recurring Annual Savings from DSO Reduction
May 24–26, 2016
Disney’s Contemporary Resort | Walt Disney World, FL

About Us

highradius
Receivables. Payments.
The Beginning
• Founded in 2006
• Headquartered in Houston, Texas

Credit-to-Cash Innovation Experts
• Trusted leader in Credit-to-Cash solutions
• Over 300+ employees focused on Research & Development

Business Leadership
Our expertise and leadership is vetted by the industry

Ranked as a “Cool Vendor” in the 2014 IT vendor research report by Gartner.
Nominated among fastest growing technology companies in our space for 4 years in a row.

Our Solutions
Cloud-based Software-as-a-Service Solutions for Receivables Management
Industry Group Partnerships

- NACHA – Preferred Partner
- ASUG/Sapphire – Ruby Sponsor
- Credit Research Foundation (CRF) – Platinum Partner
- National Association of Credit Managers (NACM) – Platinum Partner
- National Chemical Credit Association (NCCA) – Platinum Partner

Thought Leadership and Speaking Engagements

- CRF SAP User Groups: Marina Del Rey, Chicago, Fort Lauderdale
- SAP Financials
- The Institute of Financial Operations Fusion Conference
- TEXPO Treasury Conference
- AFP Annual Conference
- NACM Credit Congress
- Board of Credit Interchange Group
- NMDRG Regional Meetings (5) : Sporting Goods, Food Equipment Credit Group, National Computer & Consumer Electronics Distributors
Questions?

JAY TCHAKAROV, VP PRODUCT MANAGEMENT
HIGHRADIUS CORPORATION

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