



Mass General Brigham

RPA HB Paper Correspondence Project

Presenter: Shannon Duncan

Agenda

OCR introduction

ABBYY Vantage and RPA Process Overview

What is ABBYY Vantage?

What is the current process?

What will the new process look like?

Scope and Benefits

What is the scope of this project?

What is the benefit of these changes?

Questions

Appendix



OCR introduction

Definition: *optical character recognition (OCR)* is the capability for artificial intelligence (AI) to process words in images into machine-readable text. OCR is the foundation of processing text in images and uses machine learning models that are trained to recognize individual shapes as letters, numerals, punctuation, or other elements of text.



Early versions of OCR technology were deployed by postal services to sort mail by postal codes

How it works

Image Acquisition

A scanner will read a document and convert it into binary data based on what is white and black

Pre-processing

OCR engines will 'clean' the image to remove outliers

- Adjusting tilt/skewing
- Removing digital spots
- Cleaning up boxes and lines
- Script recognition

Text Recognition

OCR algorithms match the data with databases to find matches; this works best for known fonts.

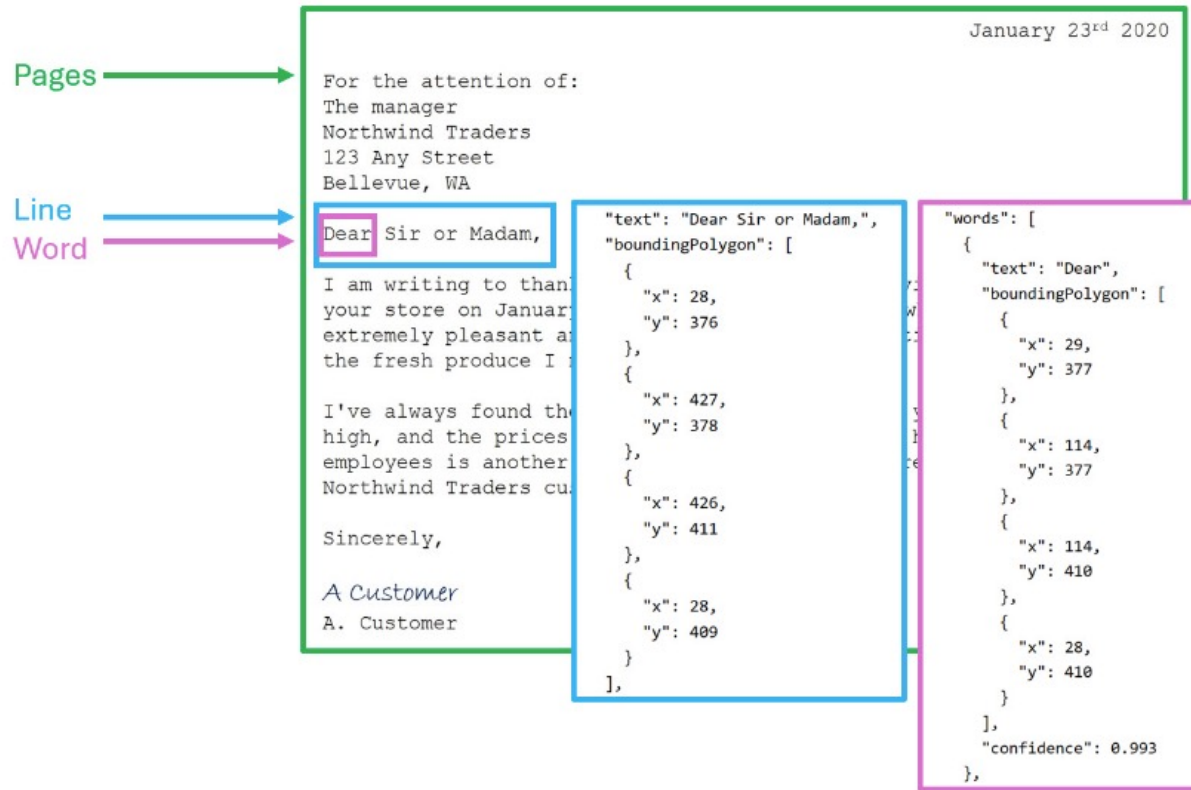
Different databases help based on different scenarios (e.g., handwritten vs. computer font)

Post Processing

OCR engines convert the extracted data into a format that is digitized and ready for use



Development tools in action



Microsoft's OCR engine works by taking in a file and identifying bounding boxes / coordinates based on the location on the image.

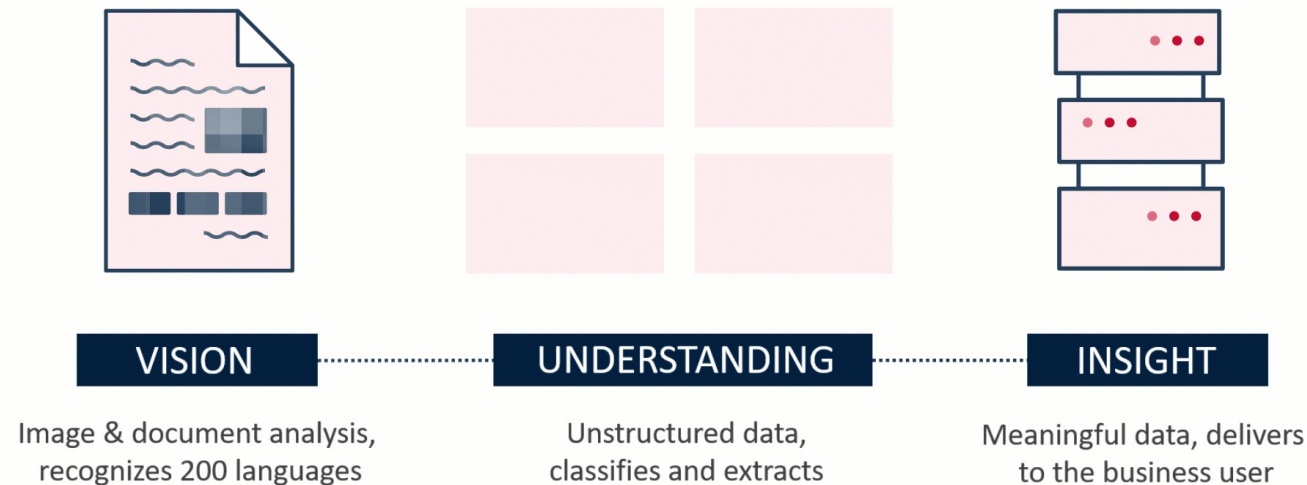
Each line and word includes bounding box coordinates indicating its position on the page.

Developers can use the Lines and Words to extract and use the data they need for the automation.

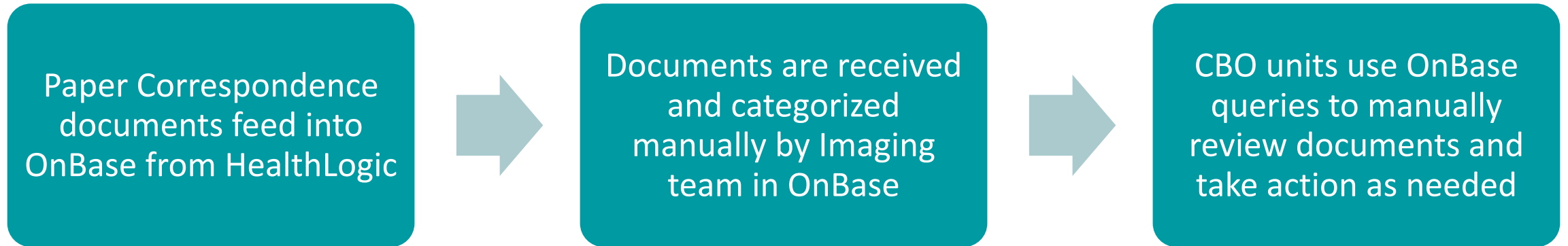


What is ABBYY Vantage

- Intelligent Document Processing platform
- Uses optical character recognition (OCR), natural language processing (NLP), and image recognition to extract data from documents
- Integrates with RPA (Robotic Process Automation) software



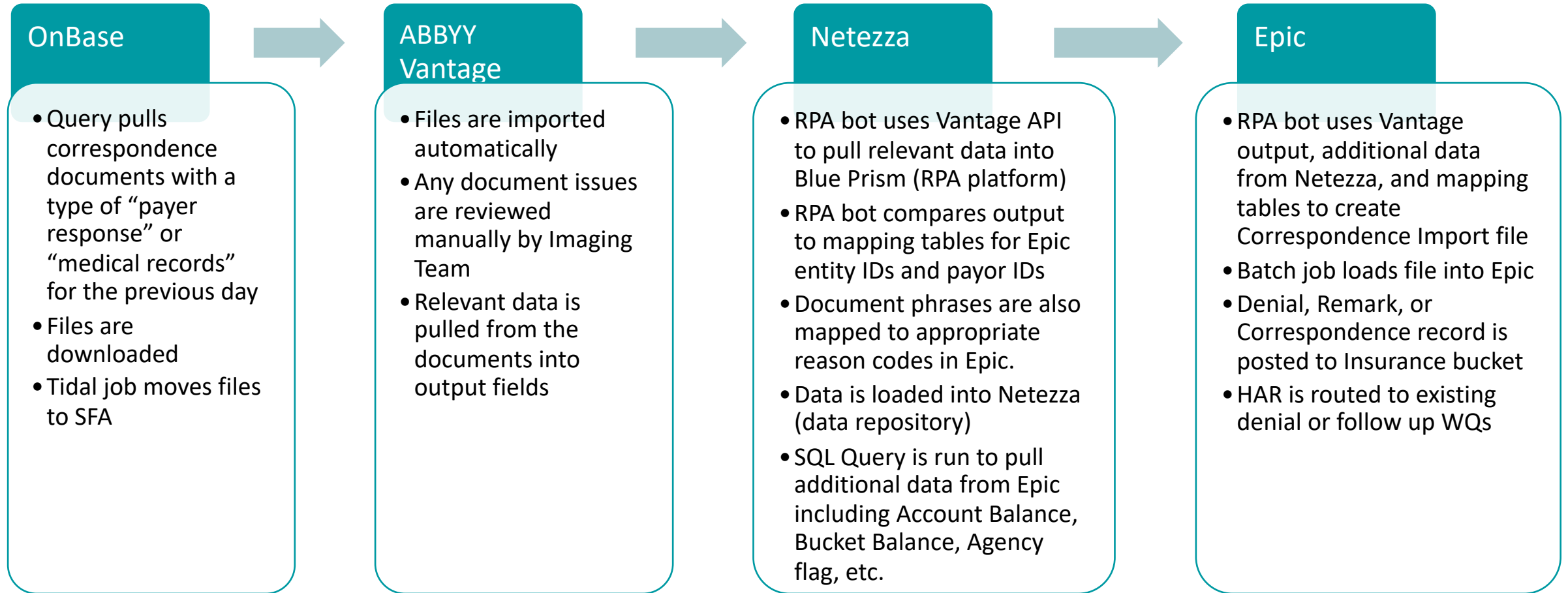
HB Paper Correspondence: Old Process



Problem: There is no interface with Epic



HB Paper Correspondence: New Process



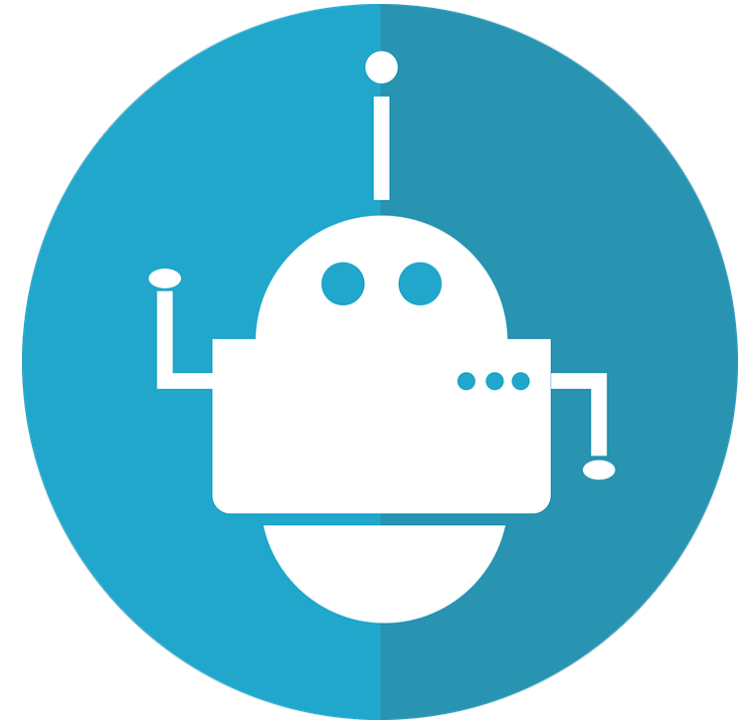
**There is an option to pull document images from OnBase into Epic for an additional cost.



MGB Project Scope

- All 15 MGB Entities with Hospital Billing
- All HB Payor Correspondence in OnBase
 - Document types of “payer response” and “medical records”

****NOTE**** Documents that are out of scope for this project continue to follow the current process using queries directly in OnBase



Benefits

-  Improved Accuracy of Denial Reporting
-  Possible Reduction in Denial Write-offs
-  Possible Increase or Acceleration in Denial Recovery Payments
-  Augmented Savings Potential of about \$380,000 (for pilot project)
-  Paper Correspondence information directly in Epic
-  Follow Up Staff only need to go into OnBase if additional info is needed



Impacts



Increase in Denial Volume in Epic



Denials will not be reflected in Line-Level Denials Reporting

Additional Metrics



Over 9,000 Denial, Remark, or Correspondence Records loaded into Epic since August 2023



Replaced 3 open FTE positions on the HB Imaging team



Questions?



Appendix



Sample of Denial Mapping file

DenialReasonDescription	RMC Recommendation	Remark
Cannot identify member	31-DENIED, PAT CANT BE ID AS OUR INSRD.	
Charges do not qualify for reimbursement. Please resubmit one bill for total confinement	96-NON-COVERED CHARGES. [96]	
Claim has been paid	92-CLAIM PAID IN FULL.	
claim has been redirected to Meritain Health for potential	109-NOT CVD BY PAYOR. SND TO CRRCT PAYOR	
Claim is currently being reviewed	23-ADJ, IMPCT OF PRIOR PAYOR ADJUD.	
Claim is Denied	A1-CLAIM/SVC DENIED. [11]	
Claim must be resubmitted for processing	129-DENIED, PRIOR PROCSSNG INFO INCRRCT.	
claim processed correctly	193 - ORIGINAL PAYMENT DECISION IS BEING MAINTAINED. UPON REIEW, IT WAS DETERMINED THAT THIS CLAIM WAS PROCESSED PROPERLY	
Claim was originally denied correctly because it does not meet medical necessity guidelines	50-NON-CVD, NOT DEEMED MED NECESSITY.	M60 - Missing Certificate of Medical Necessity. N227 - Incomplete/invalid Certificate of Medical Necessity. N170 - A new/revised/renewed certificate of medical necessity is needed.
Claims for services rendered by your office that needs further review and /or update	16-LACKS INFO NEEDED FOR ADJUDICATION. [16]	
Claims must be filed within 120 days from the date of service for pa	29 - THE TIME LIMIT FOR FILING HAS EXPIRED	
clinical records, progress notes, and test results	252-AN ATTACHMENT IS REQUIRED TO ADJUDICATE THIS CLAIM/SERVICE [252]	N393 - Missing progress notes/report. N394 - Incomplete/invalid progress notes/report. M127 - Missing patient medical record for this service. N237 - Incomplete/invalid patient medical record for



Sample of Denial in Epic Account History

History

50 of 203 loaded

Load Remaining 153

Hide Details

P	Date and Time	Type	Summary	User	Level	
Today						
	06/13/2023 0957	Denial	Log Denial/Remark [4508250085]	Hbpapercorresp, Background	Bucket	⌵
	06/13/2023 0957	Denial	Claim denial for bucket: 1761538691.	Hbpapercorresp, Background	Acct	⌵
	06/13/2023 0957	Denial	Denial opened by RPA bot for Paper Correspondence in OnBase with the following key	Hbpapercorresp, Background	Acct	⌴
			Denial opened by RPA bot for Paper Correspondence in OnBase with the following key phrase: Cannot identify member.			  

*Note – Wording may not be exact. Denial Owning areas will be mapped the same way as electronic remit reason codes.



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