



Intelligent Document Processing with Automation and AI

February 8th, 2023



What will be covered today

- AI and Automation at Microsoft
- Intelligent document processing solutions for professional developers
- Intelligent document processing solutions for citizen developers
- Next wave of AI innovations
- Q&A



Speakers



Joe Fernandez
Product Manager, AI
Builder, Microsoft



Xiaopeng Li
AI Business
Lead, Microsoft
Western Europe



Fabrizio Ruocco
Global Black Belt –
Senior AI Tech Lead,
Microsoft EMEA



Harald Wentein
Power Platform
Business Lead,
Microsoft Western
Europe



AI and Automation at Microsoft

Harald & Xiaopeng

The future of AI is now

▶ AI ADOPTION CONTINUES TO ACCELERATE

95%

Of enterprises report consider AI technology to be important for their digital transformation efforts

▶ AI IS NOT THE FUTURE, IT IS NOW

80%

Of enterprises report that they are using some form of AI in production

▶ AI-POWERED BUSINESS RESULTS

81%

Of enterprises report positive ROI in less than two years

Source:

1. *AI use, adoption gains momentum with enterprise amid pandemic – 451 survey*
2. *State of AI for Enterprises*
3. *Thriving in the era of pervasive AI*

“AI is moving from the age of experimentation to the age of implementation.”

Digital Feedback Loop



How customers adopt AI

Solve common business scenarios

Knowledge Mining

60%

Reduction in cost of compliance

Conversational AI

30%

Of all e-commerce will be through voice by 2030

Document Process Automation

46%

Cost savings with process automation in IT enterprises

Machine Translation

78%

Of language services utilize Machine Translation

Speech Transcription & Analytics

64%

Of online education experts use automated transcription

Build, deploy and manage custom ML models

Microsoft AI

Applications



Partner Solutions



Business Users
& Citizen
Developers

Application Platform

AI Builder



Power BI



Power Apps



Power Pages



Power Automate



Power Virtual Agents

Scenario-Based Services

Applied AI Services



Bot Service



Cognitive Search



Form Recognizer



Video Indexer



Metrics Advisor



Immersive Reader

Customizable AI Models

Cognitive Services



Vision



Speech



Language



Decision



OpenAI Service



Developers &
Data Scientists

ML Platform



Azure Machine Learning



Intelligent Document Processing with Azure AI

Fabrizio

Microsoft AI

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OpenAI Service



Developers &
Data Scientists

ML Platform



Azure Machine Learning

Challenges

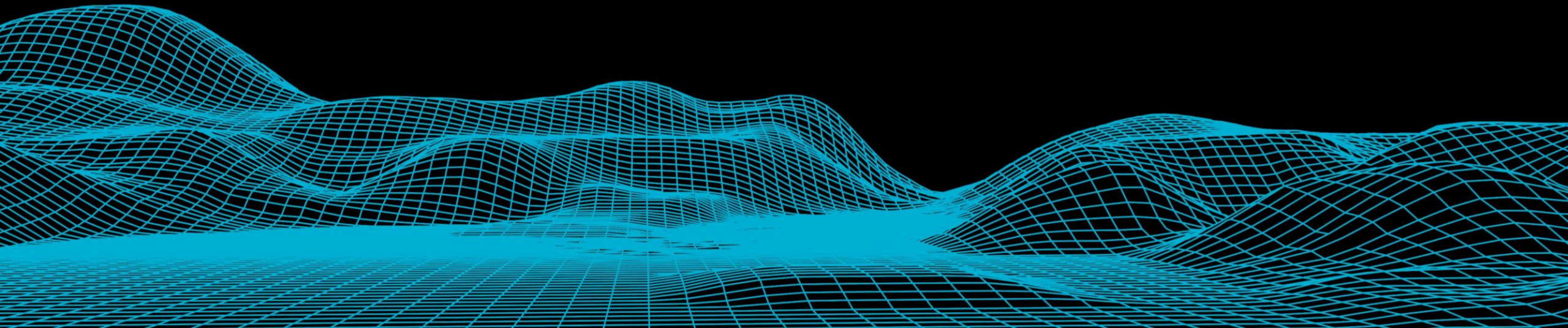
Documents are everywhere and still major communication tool between organizations

Different **compliance and security requirements** between regions, industries and organizations

Organizations amass **wide varieties of documents**, which complicates uniform extraction methodologies

Manual data entry and extraction could be **costly** and **erroneous**

Shortage of **AI-skilled resources** to develop and implement the solution, as well as



Digitizing documents is an important first step

New AI services and capabilities to make it easier to build document-understanding solutions



Manual



Automated object-
data detection

Smart, capable, and
right out of the box



Form processing

Customize for your
organization's specific needs



File classification and
entity extraction

Taught by your subject
matter experts



Azure Form Recognizer

High accuracy and precision with Optical Character Recognition



Simple extraction

Accelerate the extraction of data from forms of varying complexities, all without slowing down related processes



Customized results

Get output tailored to your layouts with automatic custom extraction and improve it with human feedback.



Versatile capability

Ingest data from the cloud to the edge and use AI to scan, read, and identify the key value pairs appropriate for your business



Built-in security

Rely on enterprise-grade security and privacy applied to both your data and any trained models.

Employment

EMPLOYER (COMPANY NAME)

HOW LONG?

MONTHLY GROSS INCOME

ADDRESS

CITY

STATE

ZIP

JOB TITLE

SUPERVISOR'S NAME

SUPERVISOR'S TELEPHONE #

Azure Form Recognizer

High accuracy and precision with Optical Character Recognition

Use prebuilt model to get data

Start with a pre-built model to extract data from forms – Invoices, Receipts, Business cards and more. Submit your data and get results right away.

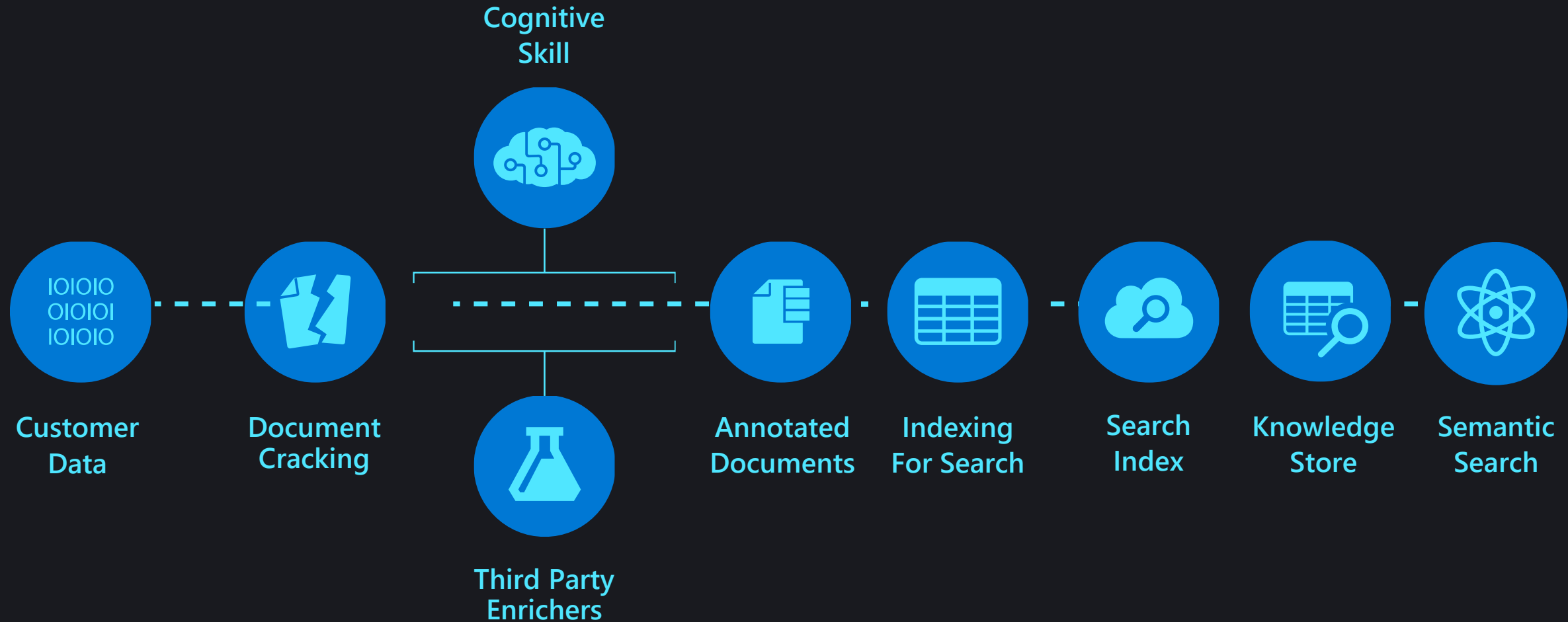
Use Layout to get text, tables, and selection marks

Try out the Form Recognizer Layout service to extract text, tables, selection marks and structure of your document.

Use Custom to train a model with labels and get key value pairs

You provide your own training data and do the learning. The model you create can be used on your industry-specific forms.

Azure Cognitive Search Orchestration Architecture





CUSTOMER:

Air Canada

INDUSTRY:

Travel & Transportation

SIZE:

Corporate (10,000+ employees)

COUNTRY:

Canada

PRODUCTS AND SERVICES:

Azure Applied AI Services
Azure Form Recognizer

[READ FULL STORY HERE](#)

Form Recognizer was able to predict the form within seconds. For us, that was really great due to the volume of forms that had to go through validation.

—Cindy Yao, Data Scientist at Air Canada

Situation:

The Canadian government mandated in September 2021 that all employees of federally regulated companies had to be vaccinated against COVID-19. Air Canada needed a way to quickly verify thousands of vaccination forms in only 2 months.

Solution:

Air Canada decided to use Form Recognizer to scan and verify vaccination forms, while achieving the necessary privacy and security needed for personal medical information.

Impact:

Form Recognizer helped Air Canada go from an idea to implementation in only 4 weeks. Their solution is able to predict form compliance in seconds, and now handles over 75% of vaccination forms without human intervention.

Beiersdorf



Customer:
Beiersdorf

Industry:
Consumer Goods

Size:
Corporate (10,000+ employees)

Country:
Consumer Goods

Products and services:
Azure Cognitive Search
Azure Cognitive Search for Language

[Read full story here](#)

“We’re able to free our researchers from interacting with dozens of different interfaces, which means more quality time spent on research and innovation.”

—Stephan Abend, Head of the Data Science Hub, Beiersdorf

Situation:

Beiersdorf’s team of more than 900 scientists have been researching innovative, cutting-edge skin care solutions for decades. Their researchers need to find relevant information from its library of data, fast.

Solution:

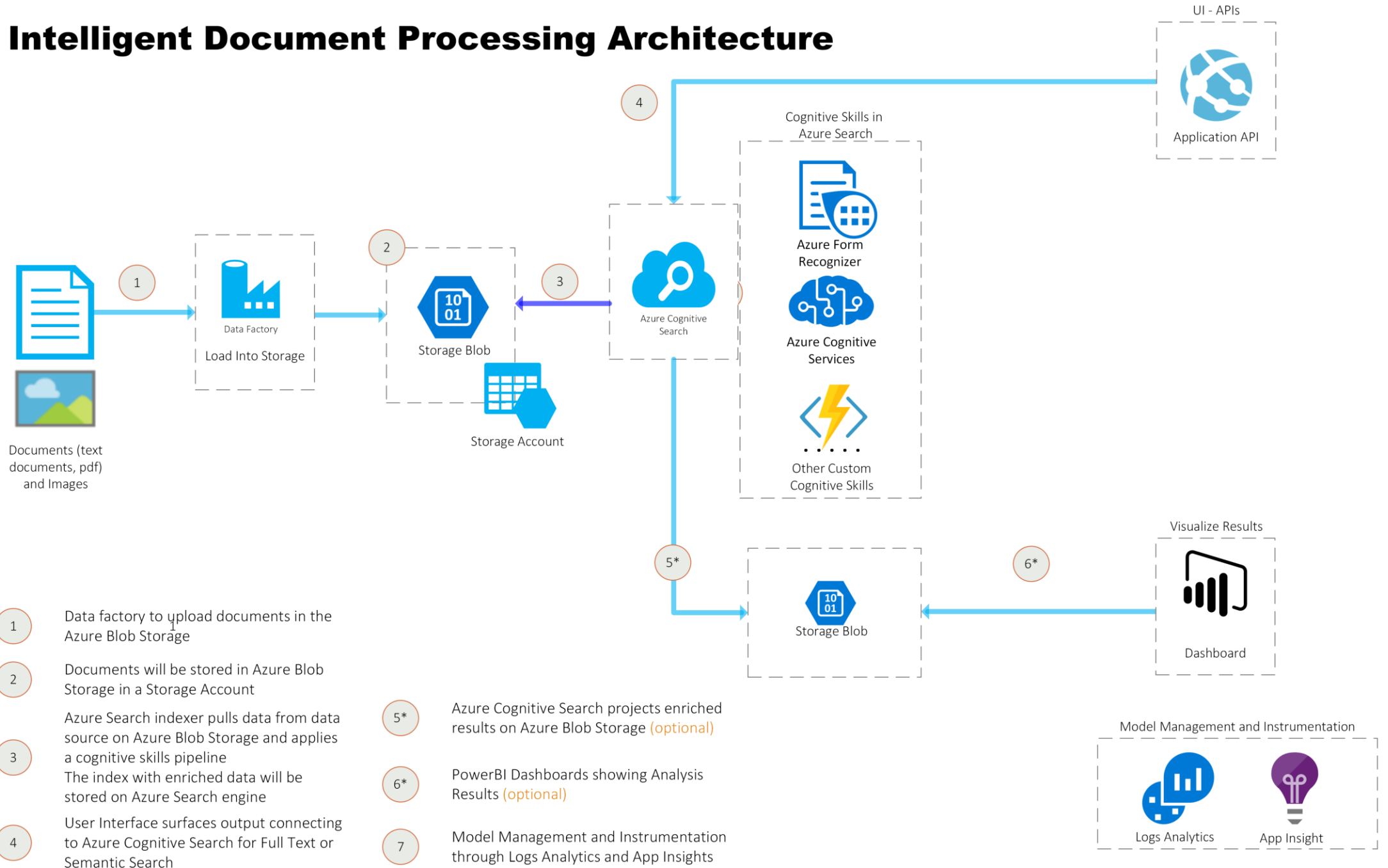
By centralizing its immense data library and leveraging AI-powered knowledge mining with Azure Cognitive Search, its researchers can find the information they need quickly. Features such as document summarization, semantic search, document tagging, and optical character recognition allow researchers to extract key information.

Impact:

Beiersdorf has unlocked information through smarter search capabilities, which means their team can spend less time on searching and more time on cutting-edge science and research development.



Intelligent Document Processing Architecture





Intelligent Document Processing with AI Builder

Joe

Microsoft AI

Applications



Partner Solutions



Business Users
& Citizen
Developers

Application Platform

AI Builder



Power BI



Power Apps



Power Pages



Power Automate



Power Virtual Agents

Scenario-Based Services

Applied AI Services



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OpenAI Service



Developers &
Data Scientists

ML Platform



Azure Machine Learning



Microsoft Power Platform



Power BI
Business analytics



Power Apps
Application development



Power Pages
Site development



Power Automate
Workflow automation



Power Virtual Agents
Intelligent virtual agents



Dataverse
Data management



Power Fx
Low code programming



AI Builder
No code AI

How is AI Builder different from Azure AI ?

AI Builder runs on top of Azure AI, is built for citizen developers, and is natively integrated in Power Platform.

POWER
PLATFORM



Power Apps



Power Automate



Power Virtual Agents



Power BI



AI Builder



AI Builder

For the Citizen Developer

- Native Power Platform Integration
- Model customization for makers
- Model Governance, Performance Metrics, Model Usage

AZURE
SERVICES



Analysis
Services



API
Management



Azure
Functions



Kubernetes
Service



Logic
Apps



Bot
Services



Cognitive
Services

*Azure Cognitive Services
power many AI Builder
scenarios*

Azure

Cognitive Services

For the Pro Developer

- Requires Azure Subscription
- Interact with APIs
- Custom Code to Integrate

AI Builder capabilities



Documents

- Process forms and structured documents
- Recognize text (OCR)
- Process invoices and receipts
- Process passports and US driver's licenses
- Process business cards



Text

- Categorize text
- Extract entities
- Extract key phrases
- Detect language
- Analyze sentiment
- Translate



Images

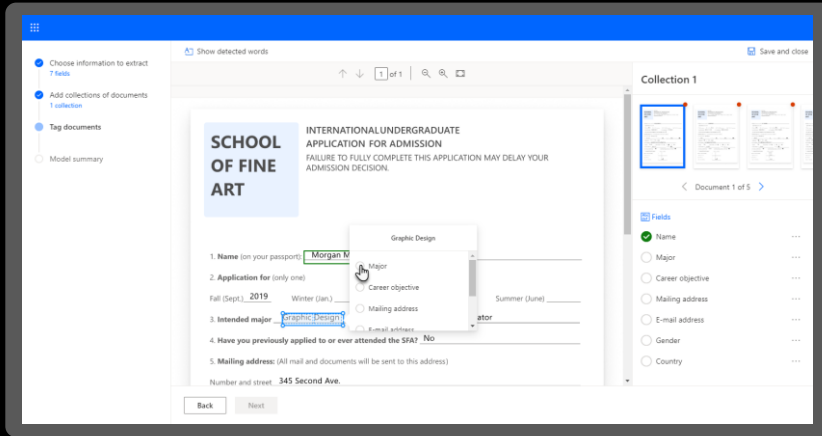
- Detect objects
- Classify images



Structured Data

- Predict quantity
- Predict outcomes

Intelligent Document Processing in Power Platform



Empower all users to automate workflows with customizable AI models for their unique business needs

Less errors

Reduced cost

GA



Process Documents

- Structured Forms
- Invoices
- Recognize text (OCR)
- IDs
- Unstructured Docs
- Receipts
- Business Cards

GA



Process Language

- Extract entities
- Analyze Sentiment
- Detect Language
- Categorize text
- Extract Key Phrases
- Translate

GA



Build Custom Models

- Complex Table Extraction
- 200 layouts in a single model
- PDFs, TIFFs, Images
- Lifecycle Management
- Checkboxes
- 70+ languages
- Process 300 fields per flow

GA



Export Data

- 900+ Connectors
- Power Automate Desktop to export data to legacy systems

GA



Document Automation end to end

- Pre-configured flows and validation app to easily setup a Document Automation process end-to-end

Demo: AI Builder



Komatsu Australia

Microsoft Power Automate Customer Stories

Industry	Size	Country
Manufacturing	5000+ Employees	Australia

Department

Finance, Accounts Payable

Company Overview

Komatsu is an industry-leading manufacturer and supplier of equipment, technologies and services for the construction, forklift, mining, industrial and forestry markets. For a century, Komatsu equipment and services have been used by companies worldwide to develop modern infrastructure, extract fundamental minerals, maintain forests, and create technology and consumer products.

[Read the case study](#)

Key Impact



300
hours saved annually



1200+
invoices automated



24x7x365
availability



Komatsu Australia accelerates hyper automation with Power Automate – from licensing to production in 4 weeks

Komatsu Australia sends and receives a high volume of invoices from suppliers each year. For the parts department, a small team that manages over 52,000 invoices annually, fixing invoices was a manual and tedious process that put immense pressure given the size of their team. The RPA solution saved them 300 hours a year in invoicing for one supplier alone.

Key Impact



Eric Cheng
Digital Solutions Architect
Komatsu Australia

Eric Cheng is a Digital Solutions Architect in the Business Technology and Systems team at Komatsu Australia with over 13 years of experience in developing and architecting solutions using Microsoft technologies. He has been one of the early adopters of Power Platform at Komatsu Australia and his team has built several solutions to date.

“With this one single supplier, we’ve automated over 1,000 invoices annually and realized an efficiency gain of 300 hours per year.”

– Eric Cheng, Digital Solutions Architect, Komatsu Australia





Customer:
Sonae MC

Industry:
Retail

Size:
54,000 employees

Country:
Portugal

Products and services:
Microsoft Power Platform
• Power Apps
• Power Automate
• AI Builder

[Read full story here](#)



CONTINENTE
2^c
Labs

Progressive retailer resolves challenges with low-code automation and AI solutions

“I think Power Automate is going to change the company’s perception of what they think can be possible.”

— Edgar Simoes, Projects IT4HR Analyst for Sonae MC

Situation:

Sonae is on a digital transformation journey. Their Workplace Design team is empowering business leaders to leverage low-code automation solutions to resolve critical issues. Pioneering departments like the People Management & Development team are leveraging Power Platform to accelerate needed solutions.

Solution:

Multiple efforts are underway. The company [automated the interview scheduling work process](#) using Power Automate for the prestigious Sonae Contacto Traineeship Programme. [COVID-19 test results processing was automated](#) using Power Automate and AI Builder.

Impact:

Results are significant. [Scheduling efforts are reduced by 220 hours](#) while increasing quality of the entire process. [Test results processing is fully automated saving over 42 hours a month](#) in productivity. The company has over 4,000 cloud flows running on Power Automate per month and has robust plans to continue to leverage Power Platform.



Intelligent Document Processing in Power Platform



AI Builder



Custom and prebuilt AI models to extract data from different document types and languages



Starter kit and prebuilt IDP processes



Power Automate



Automate at scale: DPA + RPA



900+ connectors



Power Platform Governance

Next wave of AI innovations

Harald & Xiaopeng

Massive AI models transform how we think about AI



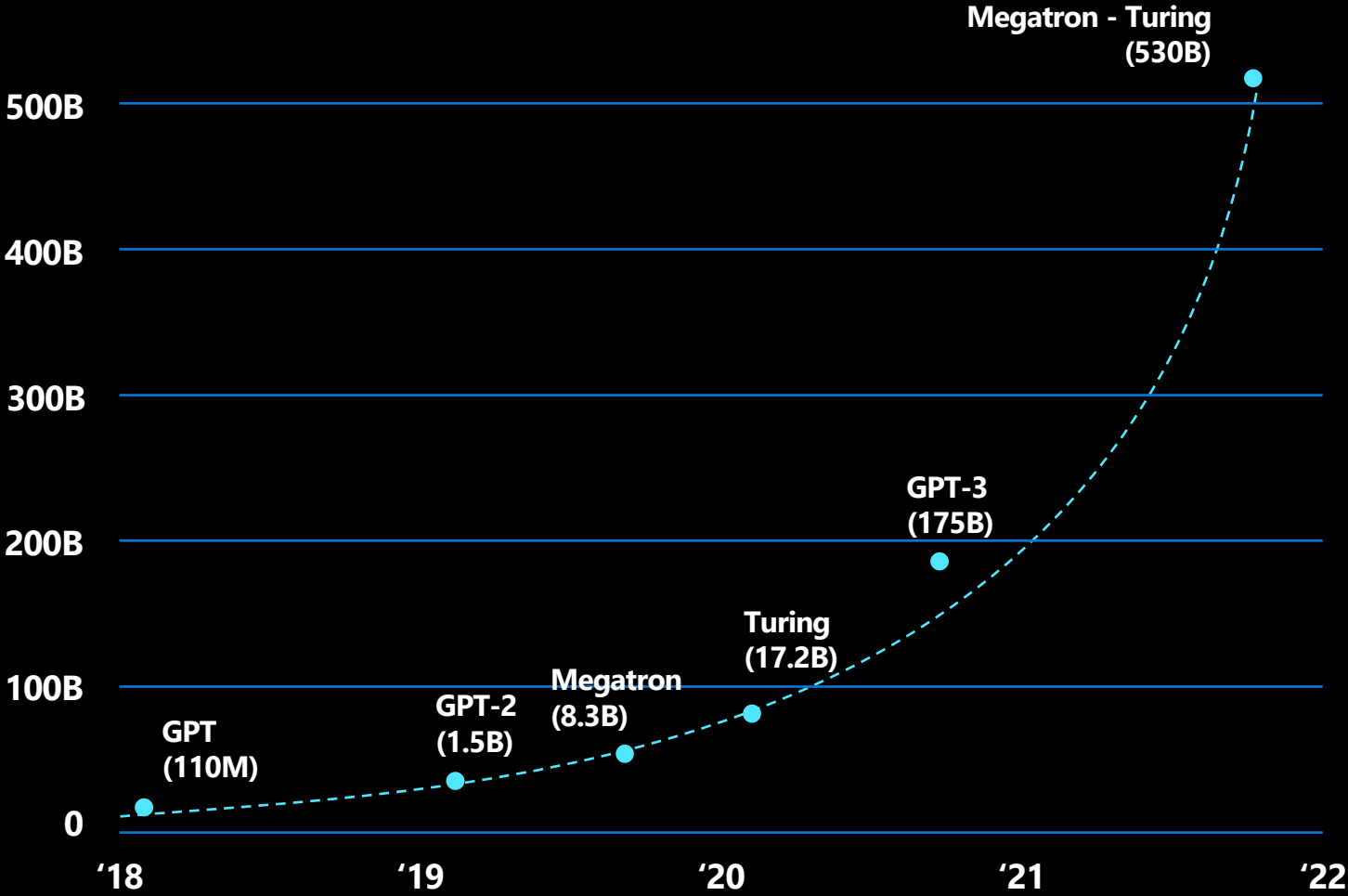
More powerful,
massive models



Multi-modal,
multi-task



Interactive



Microsoft AI

Turing

Rich language understanding

Z-Code

100 languages translation

Florence

Breakthrough visual recognition

GPT

Human-like language generation

DALL-E

Realistic image generation

Codex

Advanced code generation

OpenAI

Azure Cognitive Services

Vision Service

Speech Service

Language Service

Decision Service

OpenAI Service

Azure Applied AI Services

Cognitive Search

Form Recognizer

Immersive Reader

Bot Service

Video Analyzer

What's new

Azure Form Recognizer

New prebuilt model for contracts

Language expansion for Read to 275 languages

What's new

Azure Cognitive Service for Language

Expanded summarization for documents and conversations

What's new

Azure OpenAI Service

DALL•E 2 coming to Azure OpenAI Service

General Availability

GitHub Copilot

Your AI pair programmer

```
ts sentiment.ts
1 #!/usr/bin/env ts-node
2
3 import { fetch } from "fetch-h2";
4
5 |
6
7
8
9
10
11
12
13
14
15
16
17
```

copilot.github.com

What's new

Description to cloud flow in Power Automate

Use natural language to generate suggested flows to create instantly

What's new

Description to Power fx code in Power Automate and Power Apps

Use natural language to generate suggested
"code" instantly

What's new

AI Builder

Feedback Loop

Text recognition support for 164 languages

Unstructured document support

Microsoft Azure Virtual Training Days

AI Fundamentals

Microsoft Power Platform Virtual Training Days

Automate Business Process



<https://www.microsoft.com/en-ie/training-days/>