



Nati Turtledove



AI in the Context of Power Platform



Nati Turtledove

Power Platform | ❤️ #LowCodeNoCode Enthusiast | 🏆 11x Microsoft Certified | 🚀 #PowerAddict | 🏠 #Community Rocks

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About me

I am Nati Turtledove

- Currently live in Cape Town, South Africa.
- I've been developing with the Power Platform for over 5 years .
- I love building solutions that make day to day activities simpler.
- Love all sorts of technology (Don't get me started on Raspberry Pi's).

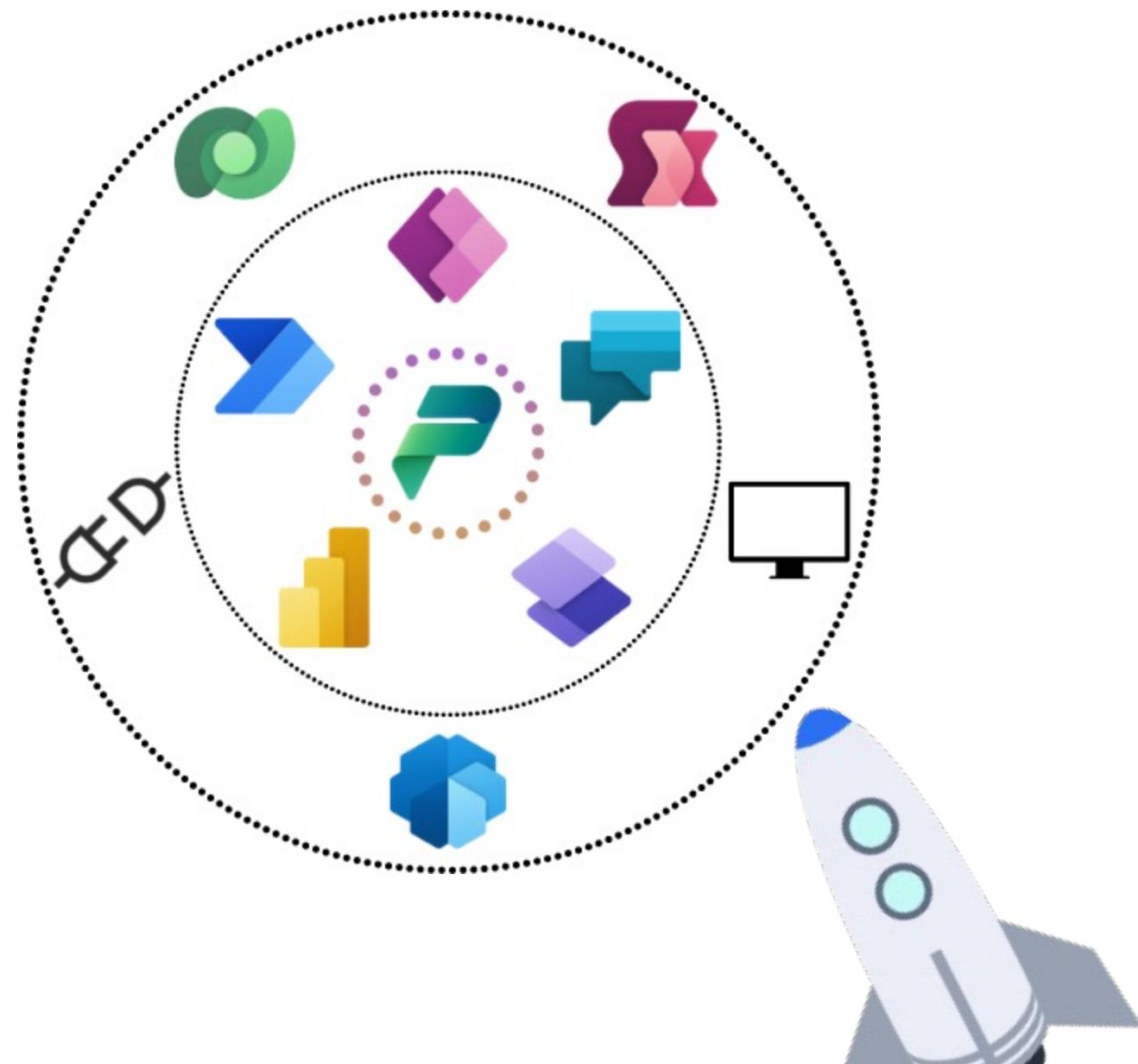


Agenda

- Power Platform basics
- What is AI?
- Azure AI vs AI Builder
- Building an AI Model
- Power Apps use case & Demo
- Power Automate use case & Demo
- Power Virtual Agents with AI
- AI & Application Lifecycle Management (ALM)
- AI Builder Licensing
- Key Take Away
- Q&A

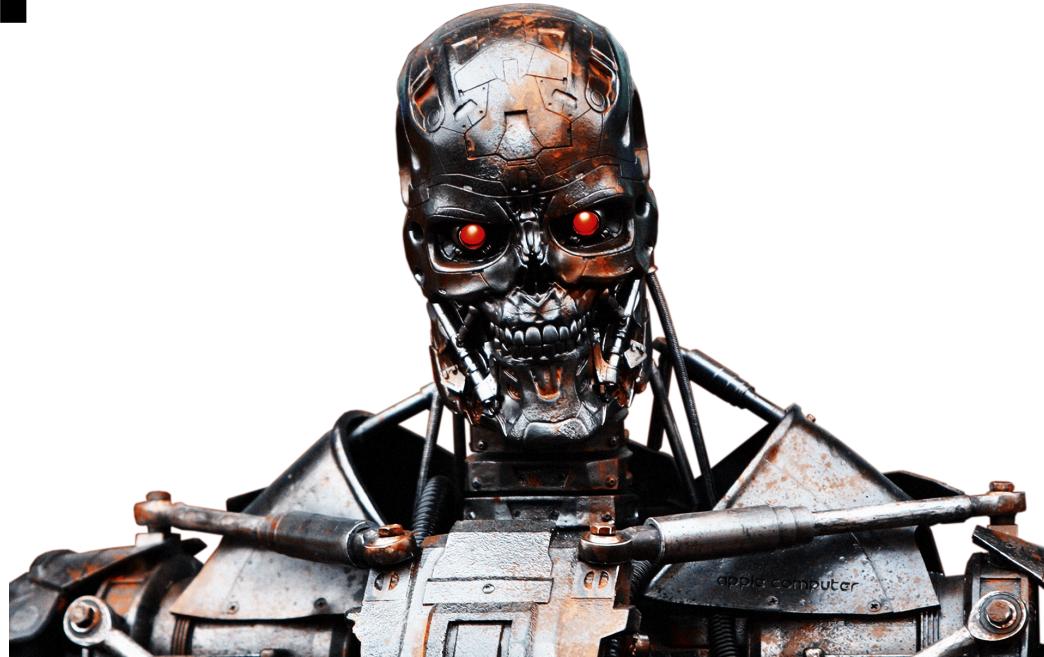


Power Platform Basics



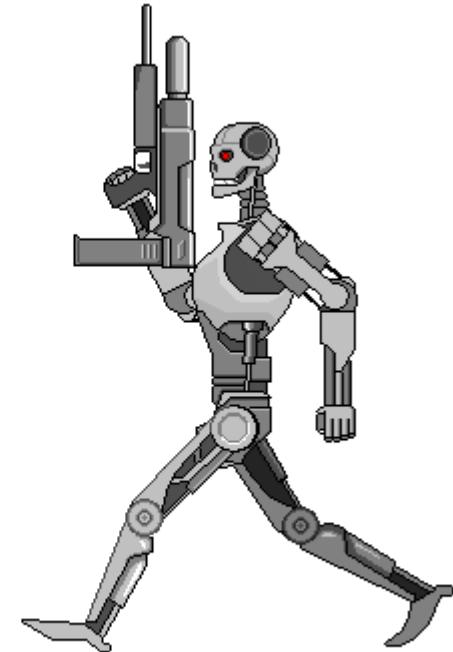
What is Artificial Intelligence?

Not Skynet achieving world domination



What is Artificial Intelligence?

- Simulation of human intelligence processes by machines
- Replacement for tasks that normally require human intelligence
- AI can be self improving through reasoning and correction processes (again, not SkyNet)



Types of AI

Reactive AI	Limited memory	Theory of mind	Self-aware
<ul style="list-style-type: none">Good for simple classification and pattern recognition tasksGreat for scenarios where all parameters are known; can beat humans because it can make calculations much fasterIncapable of dealing with scenarios including imperfect information or requiring historical understanding 	<ul style="list-style-type: none">Can handle complex classification tasksAble to use historical data to make predictionsCapable of complex tasks such as self-driving cars, but still vulnerable to outliers or adversarial examplesThis is the current state of AI, and some say we have hit a wall 	<ul style="list-style-type: none">Able to understand human motives and reasoning. Can deliver personal experience to everyone based on their motives and needs.Able to learn with fewer examples because it understands motive and intentConsidered the next milestone for AI's evolution 	<ul style="list-style-type: none">Human-level intelligence that can bypass our intelligence, too 

AI Within the Power Platform

AI Builder



- Commercial feature
- Useable as a service in solutions
- Platform product integrations
- Solution dependency
- Manageable through Admin Centre
- Requires ALM
- Licensed with a credit matrix
- Scalable into advance Power Platform + Azure Service Solutions

Azure AI



- AI Models built in Azure Machine Learning Studio
- AI using external custom libraries
- Register to AI Builder in a Power Platform environment
- Model can be used as a data-source

What is Azure AI

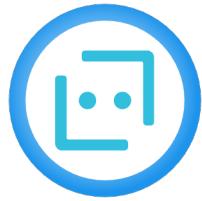
How can we utilize it within the Power Platform

What Is Azure AI?



Pre-Built AI

Azure Cognitive Services



Conversational AI

Azure Bot Service



Custom AI

Azure Machine Learning

- Portfolio of AI services designed for developers and data scientists
- High-quality vision, speech, language, and decision-making AI models through simple API calls
- Utilize models to create ML models with Jupyter Notebooks, Visual Studio Code, TensorFlow and PyTorch
- Build complex model types using pro-code languages such as C# and Python

Azure AI Pro Dev to Citizen Dev



Microsoft Azure Machine Learning Studio

Microsoft > byom_dev > Notebooks

Custom model

Invoice processing
Extract information from invoices

Text recognition
Extract all the text in photos and PDF documents (OCR)

Receipt processing
Extract information from receipts

Identity document reader
Extract information from identity documents

Business card reader
Extract information from business cards

Form processing
Extract custom information from documents

Sentiment analysis
Detect positive, negative, or neutral sentiment in text data

Category classification
Classify customer feedback into predefined categories

Entity extraction
Extract key elements from text, and classifies them into predefined categories

Key phrase extraction
Extract most relevant words and phrases from text

Language detection
Detect the predominant language of a text document

Text translation
Detect and translate more than 90 supported languages

Category classification
Classify texts into custom categories

Entity extraction
Extract custom entities from your text

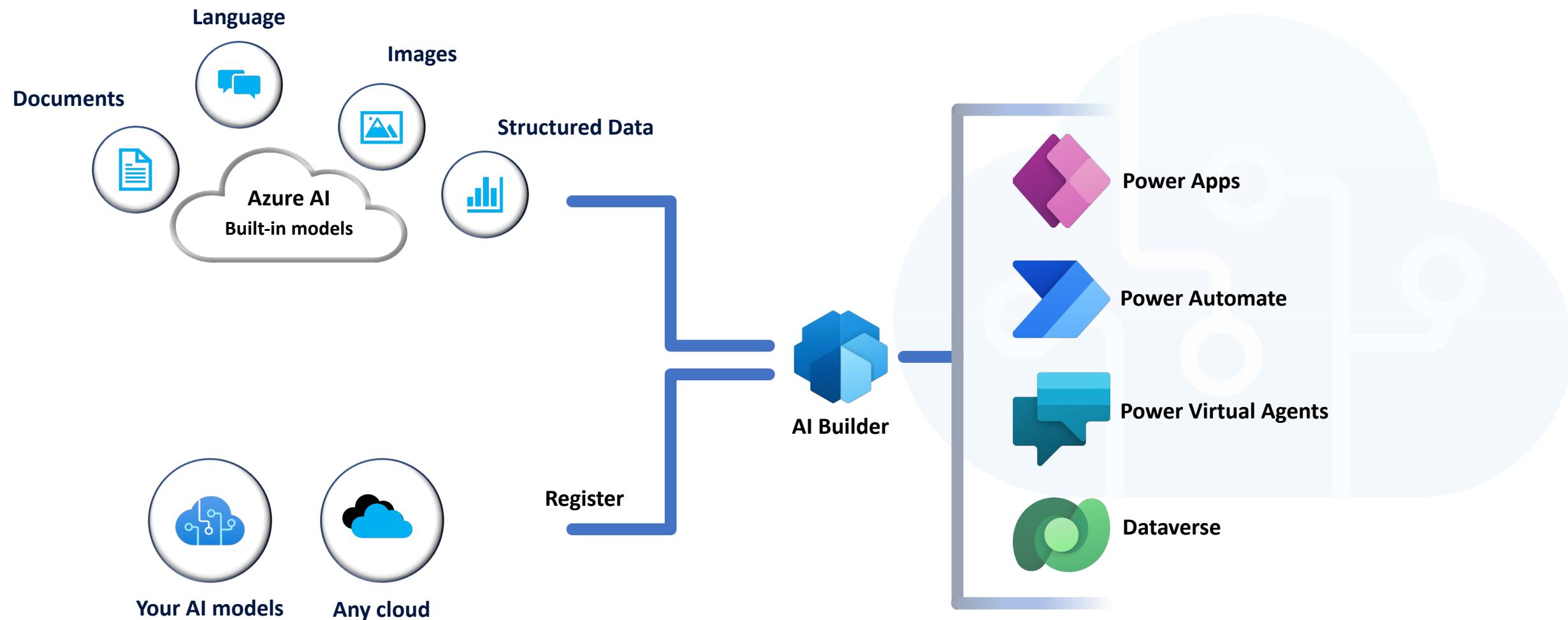
Prediction
Predict future outcomes from historical data

Object detection
Detect custom objects in images

Image classification
Classify your images based on their content (powered by Lobe)

```
ENVIRONMENT = "d10-demo-001"
# The name of the model as it will appear in AI Builder
model_name = "AI Pneumonia Detection"
env = Environment.get(environment_name=environment)
response = env.register_model(model_name=model_name, connection=service, override=True)
if response != ModelClientResponseStatus.success:
    raise Exception('Model registration failed')
```

Register Azure AI Model to AI Builder



Let's Talk AI Builder

How does it fit into the context of Power Platform



AI Builder Basics

- **AI Builder is a Low Code artificial intelligence service within the Power Platform**
- **Using AI models within the Power Platform helps optimize your business processes using the Power Apps and Power Automate services**
- **Designed in a simple step by step process to get your first AI model up and running within minutes**
- **Simple drag, drop & tag methods allowing you to easily optimize and train your model**
- **Offers scalability into complex Power Platform + Azure solutions**

AI Builder Other Uses

SharePoint



- AI Builder in SharePoint with Microsoft Syntex
- Form Site structures
- Create Libraries
- Generate documents in libraries

Teams



- AI Builder templates in Teams using Power Automate

Power Apps



- Using AI to auto generate a Canvas App based off a Figma design

Power Automate



- Create flows using the power of AI and your own words

What are my options?

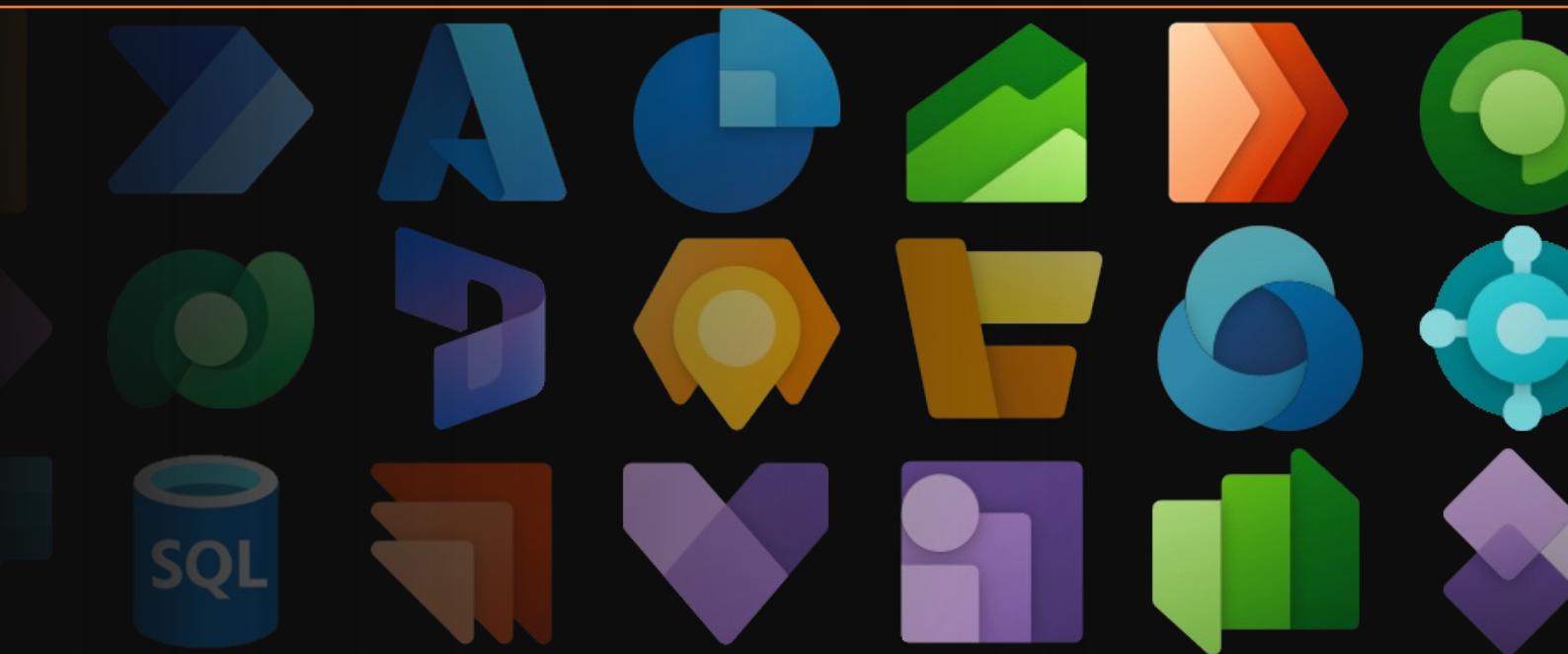
AI Builder offers many prebuilt models as well as the ability to create your own custom models.

Invoice processing Extract information from invoices	Text recognition Extract all the text in photos and PDF documents (OCR)	Receipt processing Extract information from receipts	Identity document reader Extract information from identity documents	Business card reader Extract information from business cards	Form processing Extract custom information from documents
Sentiment analysis Detect positive, negative, or neutral sentiment in text data	Category classification Classify customer feedback into predefined categories	Entity extraction Extract key elements from text, and classifies them into predefined categories	Key phrase extraction Extract most relevant words and phrases from text	Language detection Detect the predominant language of a text document	Text translation Detect and translate more than 90 supported languages
Category classification Classify texts into custom categories	Entity extraction Extract custom entities from your text	Prediction Predict future outcomes from historical data	Object detection Detect custom objects in images	Image classification Classify your images based on their content (powered by Lobe)	

The Process



Demo



This is a developer environment and not meant for production use. [Learn More](#)

Build business apps, fast

Create apps that connect to your data and work across web and mobile. [Learn about Power Apps](#)

Start from



Blank app

Create an app from scratch and then add your data

[Watch video](#)



Dataverse

Start from a Dataverse table to create a three-screen app

[Watch video](#)



SharePoint

Start from a SharePoint list to create a three-screen app

[Watch video](#)



Excel

Start from an Excel file to create a three-screen app

[Watch video](#)



SQL

Start from a SQL data source to create a three-screen-app

[Watch video](#)



Image (preview)

Upload an image of an app or form and we'll convert it into an app



Figma (preview)

Start from our Figma UI kit and convert it into an app

[More create options →](#)

[Ask a virtual agent](#)
<https://make.powerapps.com/environments/95bc83fe-11c7-e9fe-b1a4-d05e827bc44e/home>

Building an AI Model

Once our model is trained and ready, we can use this model in various ways.

- Power Apps AI control
- Power Apps formula for text AI models (preview)
- Power Automate AI Builder actions
- Power Automate Dynamic Model ID (JSON)
- Power Virtual Agents in a “call an action” flow

Demo

AI Builder in Power Apps

AI in Power Apps Use Case

Before today's Teach the Techie, all members who registered via the LinkedIn post were required to complete a Webform with details as per their driver's license.

This was the first step to ensuring only registered people had access to this event.

How?

The image shows a LinkedIn post from the group 'AI Builder Group'. The post is titled 'Microsoft has recently announced their Power Platform release wave 2 for 2022.' It includes a message encouraging registration for a session, a link to the registration page (<https://lnkd.in/hdh38h3>), and a link to the Microsoft Release Plan (<https://lnkd.in/q312d1>). The post has 4,173 likes and 182 comments. Below the main post, there are standard LinkedIn interaction buttons for Like, Comment, Share, and Send.

AI Builder Group
2,322 followers
1w · Edited ·

Microsoft has recently announced their Power Platform release wave 2 for 2022.

With so much excitement in the air, we thought it'd be fun to open our December Teach the Techie sessions to the public.

Register now so you don't miss out our interesting discussion around AI in the context of Power Platform 😊

Link to registration: <https://lnkd.in/hdh38h3>

Link to Microsoft Release Plan: <https://lnkd.in/q312d1>

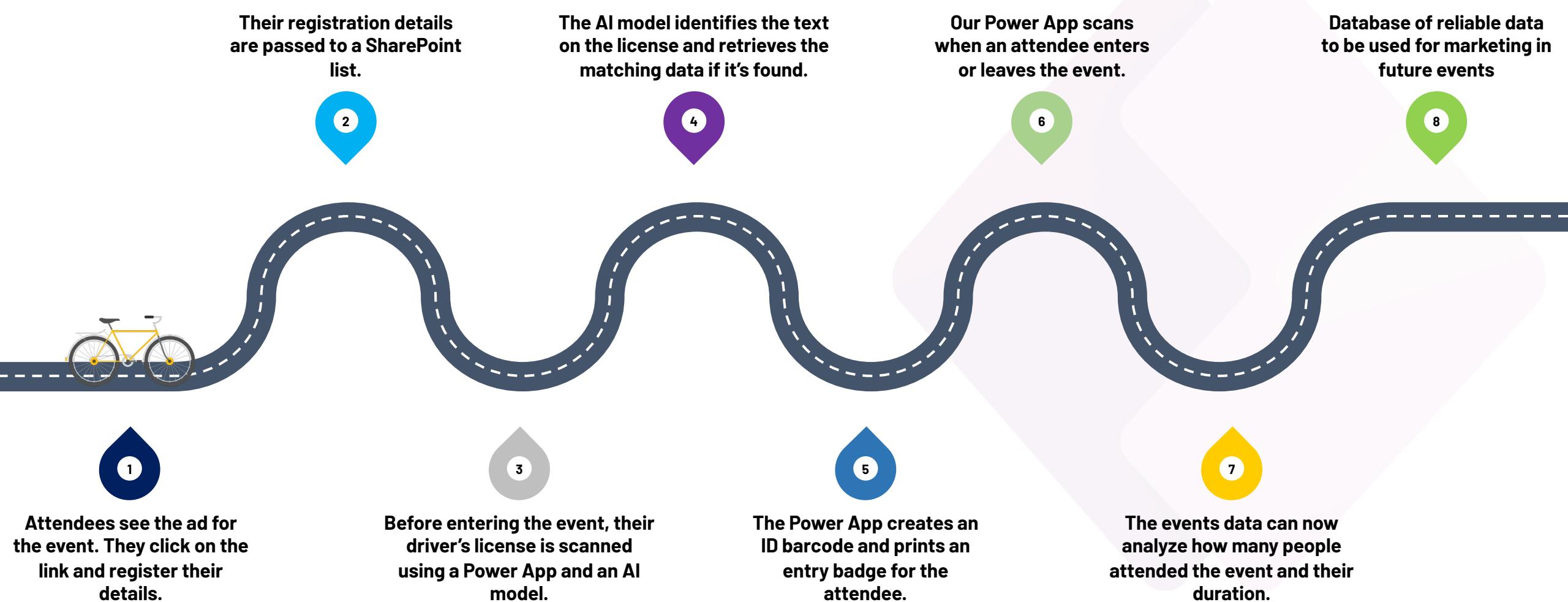
See you there

Register for your seat today.
forms.office.com/Pages/ResponsePage · 2 min read

4,173 likes · 182 comments

Like Comment Share Send

The Journey



Demo

AI Builder in Power Automate



AI in Power Automate Use Case

Now that the event is over, we'd love some feedback from those that attended.

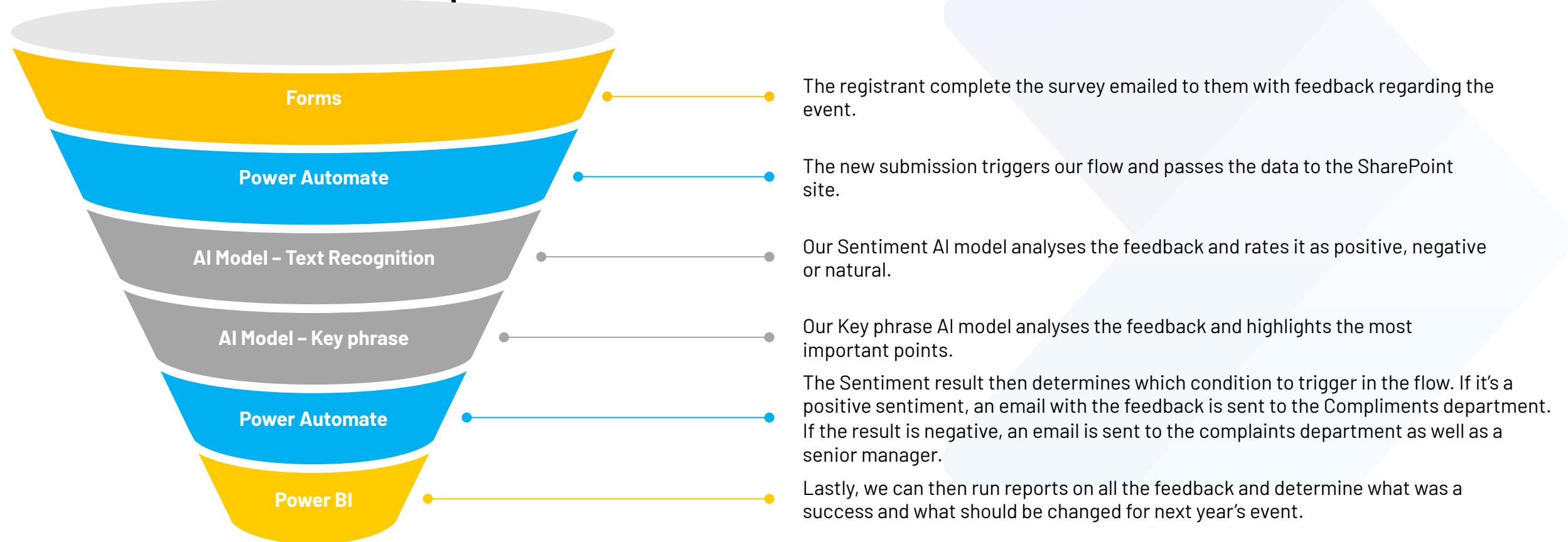
An email was sent to all the registered emails asking them for feedback regarding the event.



What's next?

The Process

Workflow Pipeline



AI and ALM

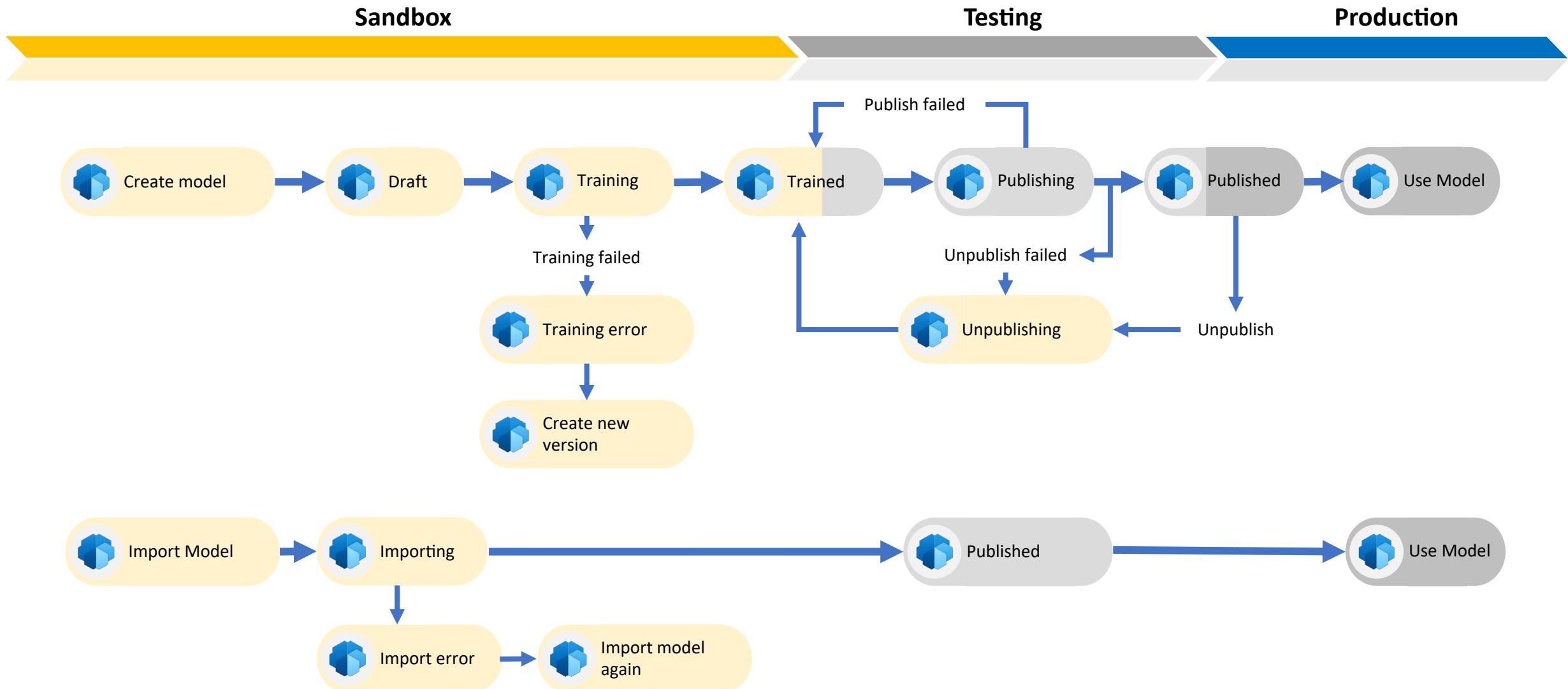


What Is Application Lifecycle Management (ALM)?



- Manage solution requirements through DevOps
- ALM phases and environments (Sandbox, User Acceptance Testing, Production)
- Peer reviews and quality assurance to exceed standards
- Packaged solutions for simple scalability
- Pipeline deployment and release management through App interface

AI & Application Lifecycle Management (ALM)





What are the Costs?



Multiple Licensing Structures and Credit Structure

- AI Builder works off a Credit Structure pooled in a tenant.
- AI Models use these credits when they are used.
- Credit usage vary amongst models.



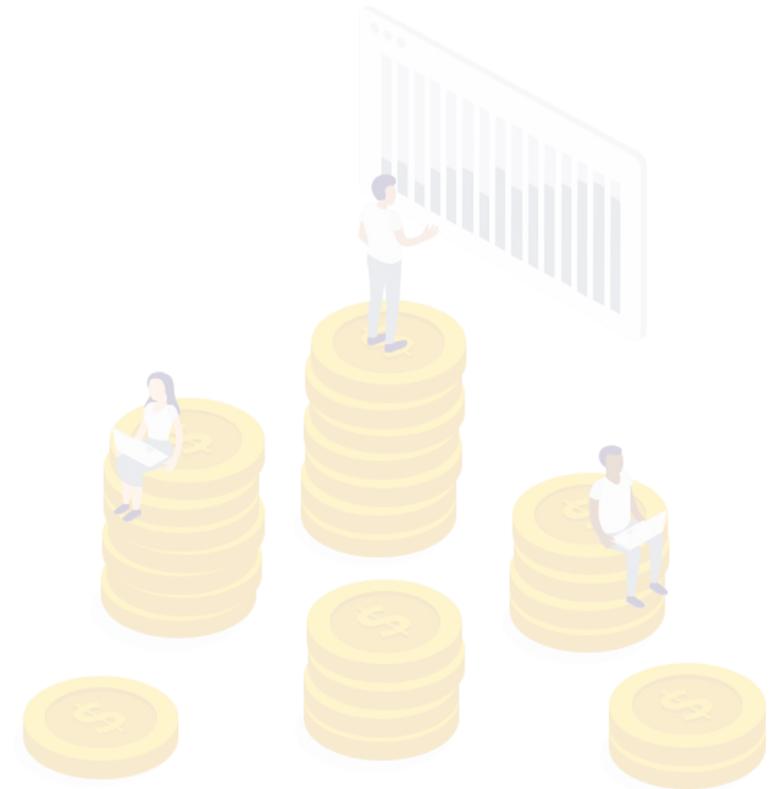
Power Apps Licensing Structure



Power Automate Licensing Structure



AI Builder Unit Structure



Licensing Structure



Plan	Amount	AI credits
Per App Plan	\$5	250
Per User Plan	\$20	500
Pay as you go	\$10	TBA



Plan	Amount	AI credits
AI Builder add-on unit	\$500	1,000,000
Unattended RPA add-on (bot)	\$150	5,000

AI Builder add-on units are tenant wide and not pooled per user.



Plan	Amount	AI credits
Per App Plan	\$15	0
Per User Plan with RPA	\$20	5,000

Like SharePoint storage, credits are pooled together in a tenant. E.g., We have 20 “Per User Plan with RPA” licenses resulting in 100,000 AI credits

1,000,000 sounds like a lot, right?

Microsoft have created an AI Builder Unit calculator to allow us to determine how many units are required based of the AI models.

[AI Builder Calculator](#)

AI Builder Unit Structure: Unit breakdown

Credit usage amongst AI models vary based on the model. 1 AI unit can accommodate the following (separately)

Model Type	Use	Qty per month
Business card reader	Identifies and extracts information, such as name and email, from business cards	10,000
Form processing	Identifies and extracts fields and tables from documents	2,000
Identity document reader	Read and save information from identity documents	10,000
Invoice processing	Identifies and extracts key information from invoices	2,000
Key phrase extraction	Identifies and extracts key phrases from unstructured text documents	50,000
Sentiment analysis	Detects positive, negative, or neutral sentiment in text data	50,000

How can we make it a bit more complicated....

Model Type	Use	Qty per month	Trainings per month
Object detection	Recognizes, counts, and labels items in images	49,375	1

Model Type	Use	No. of models	Outcomes per month	Update per month
Prediction	Uses historical data patterns and results to predict future outcomes	2	82,182	Daily



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