

# Importante!

- ❖ Material elaborado pelo time de especialistas em Power Platform da Microsoft Brasil para ser utilizado em **demonstrações online para seus clientes**.
- ❖ O uso deste material é permitido **apenas para clientes** Microsoft que participaram da sua apresentação em ambiente online e para **fins de referência e/ou autoestudo**.
- ❖ Este conteúdo é de **propriedade intelectual da Microsoft**. Todos os direitos reservados.
- ❖ Este material utilizou como referência as funcionalidades da **Power Platform** disponíveis conforme a **documentação oficial** e previstas para lançamento em seu **guias de lançamento** na data de sua elaboração (ver slide de abertura). Como o conteúdo destas fontes é dinâmico, sempre consulta-las em caso de dúvidas.

Em caso de dúvidas ou questões acesse nosso site (Power Platform Connect)  
<https://microsoft.github.io/powerplatformconnect/>

# App and portal development with Power Platform

V2.1 from Mar 11, 2024

# Agenda

**The opportunity**

**A unified low-code platform**

- About Power Platform
- Power Platform and AI
- Power Platform patterns of value

**Power Platform deep dive**

- Canvas App
- Dataverse and model-driven apps
- Power Pages

**Next steps**



# The opportunity

# Surging digital demand

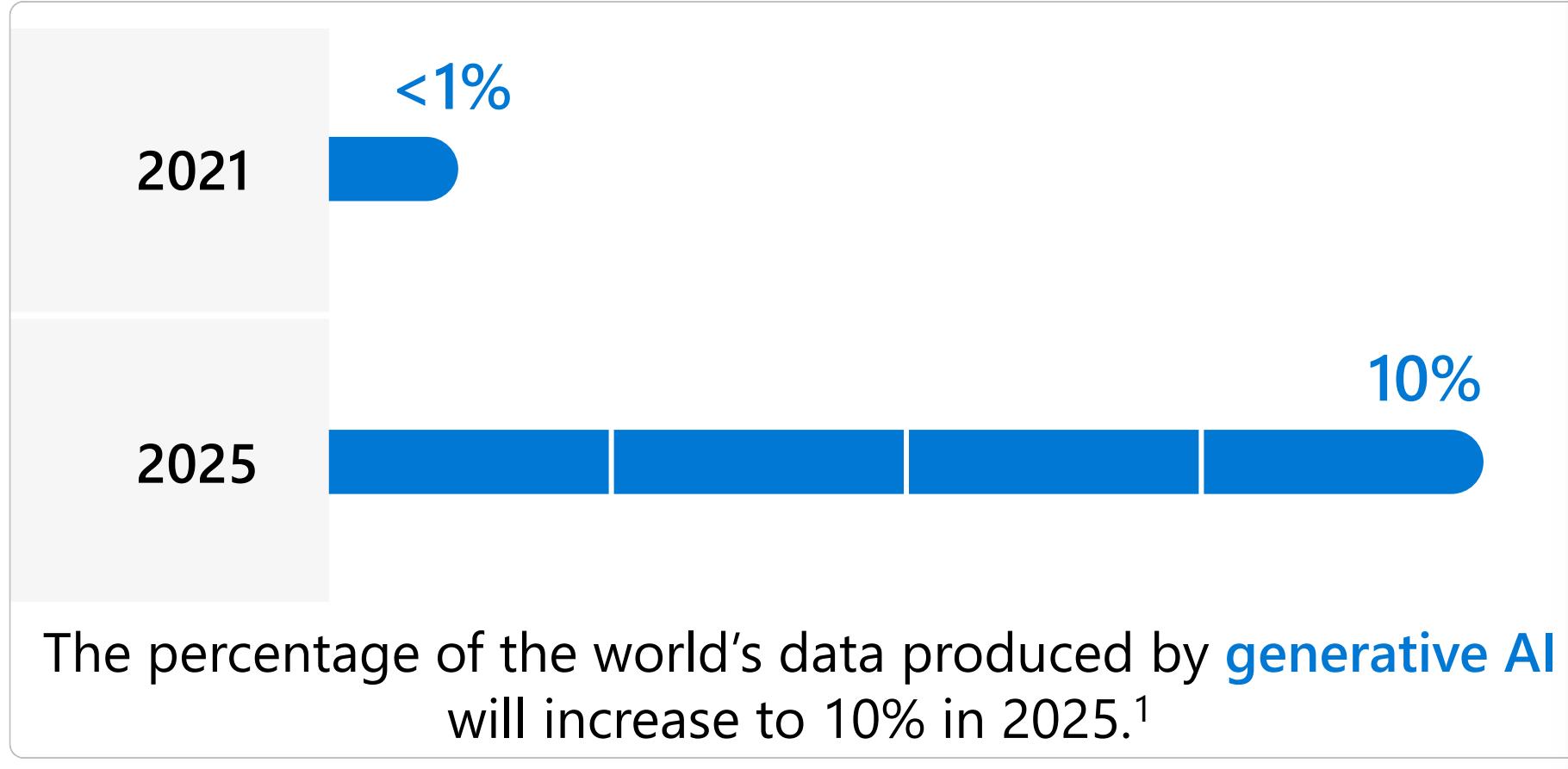


**new apps need to be built  
by 2025**



**of digital work can be  
automated with current tech**

# The union of low code and AI is a game changer



1. Source: Gartner® Press Release ,Gartner Identifies the Top Strategic Technology Trends for 2022, October 18, 2021. GARTNER is a registered trademark and service mark of Gartner, Inc. and/or its affiliates in the U.S. and internationally and is used herein with permission. All rights reserved.

2. Source: Gartner 2019 Magic Quadrant for Enterprise Low Code Application Platforms

**65% +**  
More than  
65% of app  
development  
**will be**  
**low-code** by  
2024.<sup>2</sup>

# AI and low code are the future



87%

CIOs & IT professionals say that increased embedded AI into low code platforms would help them maximize the technology



87%+

that's with **87+%** of CIOs and IT Pros already saying low code has made their organizations **more efficient** and **increased employee innovation**

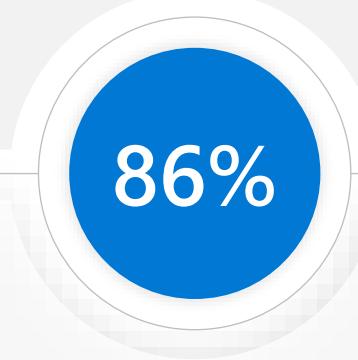
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# Not enough developers



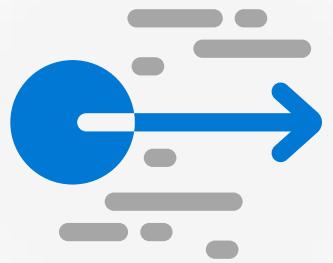
4M

developer shortfall



86%

of companies struggle to hire  
tech talent



**Accelerate developers and  
empower new makers**

# Low-code empowers everyone

Developers

IT Admins

Business and Front-Line Workers





# About Power Platform

# Microsoft Power Platform

AI Enabled 



Copilots



Automations



Apps



Pages



BI



Power Fx



Managed  
Environments



Dataverse



1000+  
Connectors



AI Builder

[aka.ms/PowerPlatform](http://aka.ms/PowerPlatform)

**CONNECT TO ALL YOUR INTERNAL AND EXTERNAL DATA SOURCES**

# Over 1,000 Power Platform data connectors

Built-in connectivity to cloud services, content services, databases, and APIs

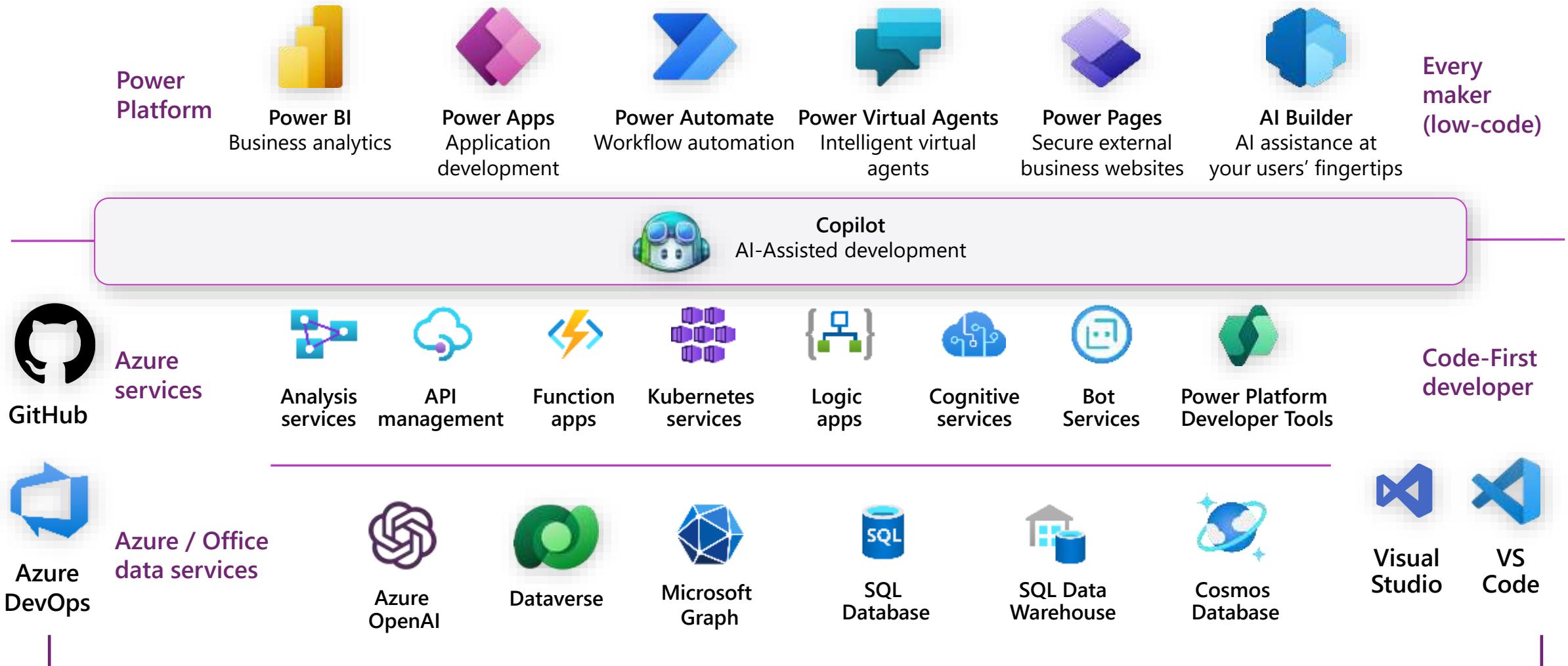
Seamless hybrid connectivity via the on-premises data gateway

Custom connectors as building blocks for citizen developers

Robotic Process Automation is the ultimate connector, if necessary



# Develop Faster than Ever Before



# Easily publish your custom APIs to Power Platform

**Azure API Management** enables professional developers to publish their backend service as APIs, and easily export these APIs to the Power Platform

With this capability, citizen developers can use the **Power Platform** to create and distribute apps that are based on internal and external APIs managed by API Management.

[Learn more](#)

The screenshot shows the Azure API Management interface for creating a connector to the Power Platform. The left sidebar lists various management options: APIs, Products, Subscriptions, Named values, Backends, API Tags, and Power Platform. The 'Power Platform' option is highlighted with a red box. The main right-hand pane is titled 'Create a connector' and contains sections for selecting an API and a PowerApps environment. The 'API' section shows 'Demo Conference API' selected. The 'PowerApps' section shows 'Personal Productivity' selected as the environment to publish to, and 'MyAPIMConnector' entered as the API display name. A checkbox for 'Create subscription key connection parameter' is checked. At the bottom are 'Create' and 'Back' buttons.

# Disconnected Solutions

**Increased complexity**

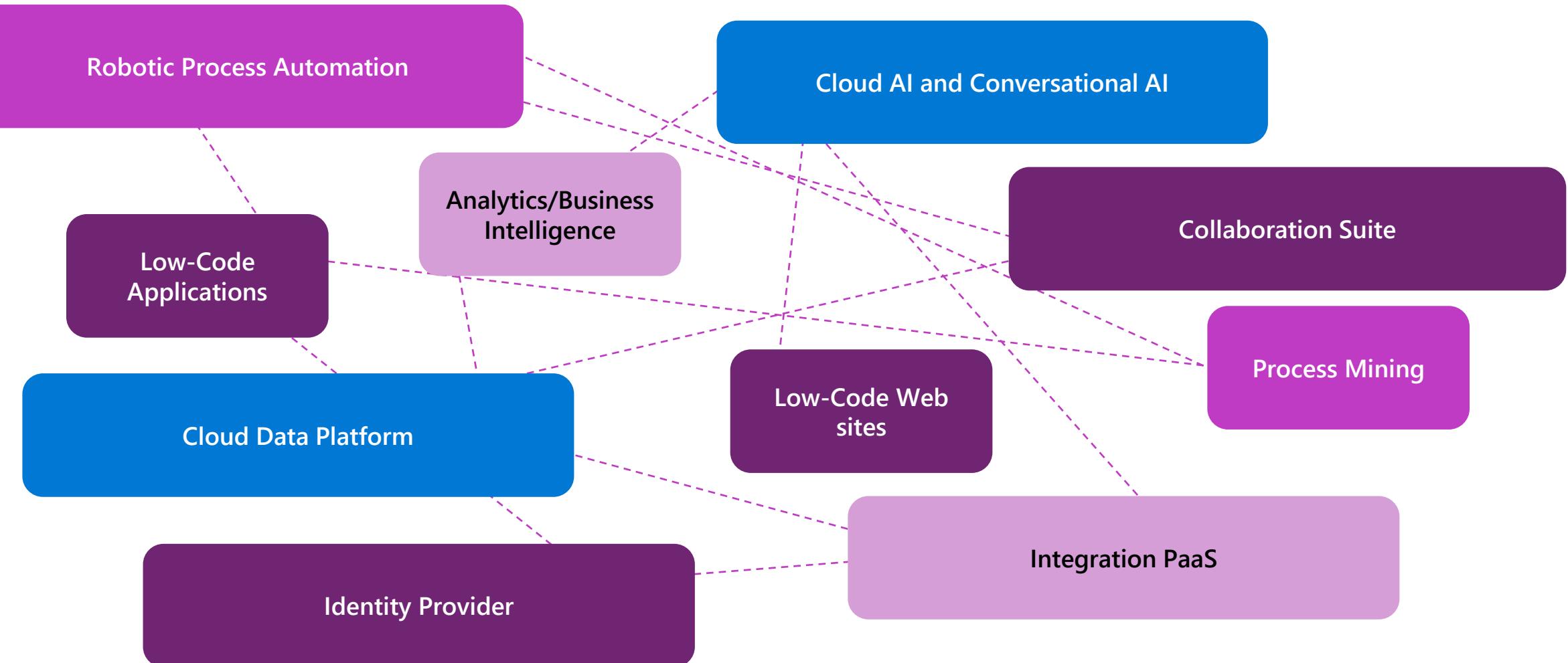
disparate admin/security/governance

**Higher TCO**

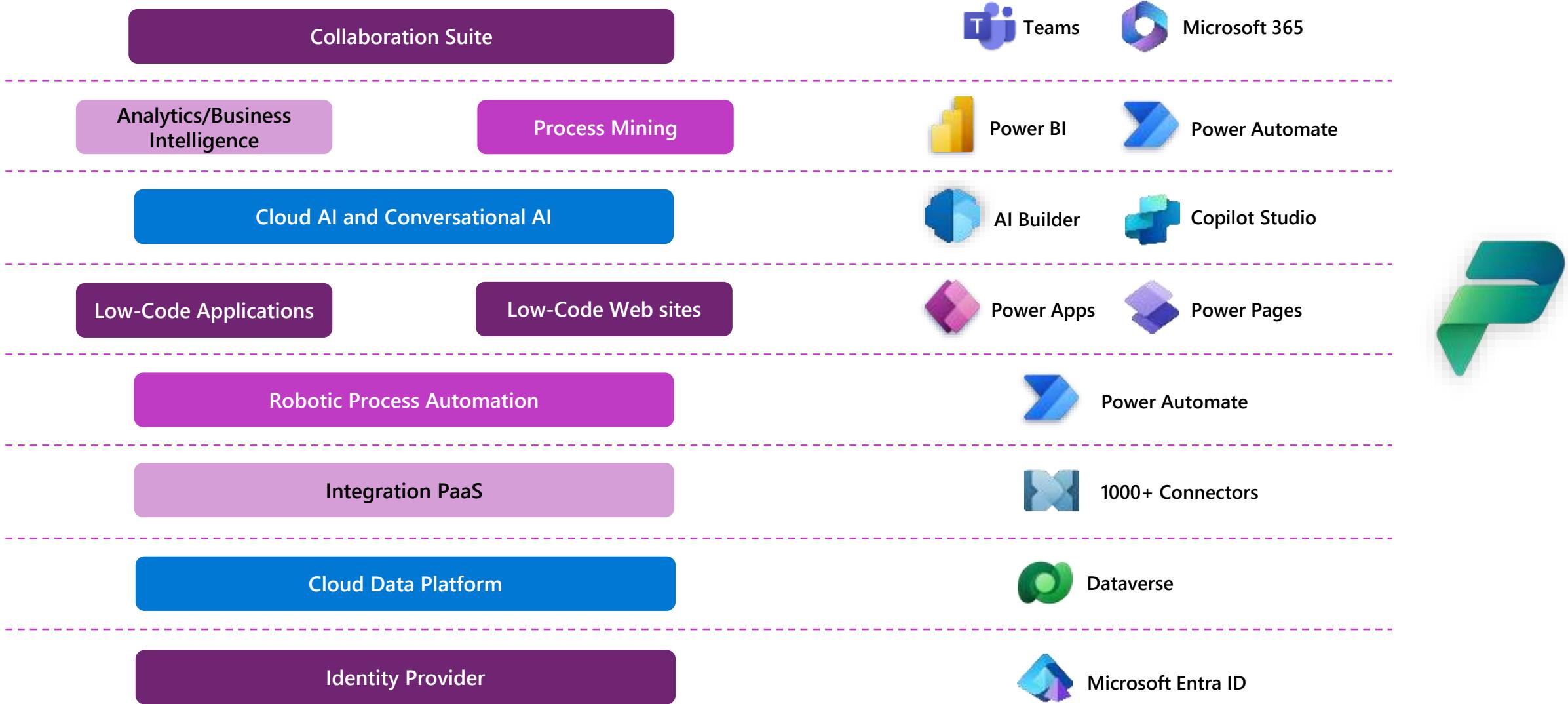
multiple vendors = multiple bills

**Additional support considerations**

multiple specialist experts



# The Microsoft Approach – An Orchestrated Platform



# Why Microsoft Power Platform

1



Common data model across all business applications

16



Analyst reports where Microsoft is positioned as the leader

500K



Power Platform customers

97%



Fortune 500 companies use Business Applications

**Leader in AI** with large language model (GPT3), ML, Azure Cognitive Services

**Leader in collaboration and productivity**, infused in business processes

**Leader in low code platforms**, the most complete with apps, flows, bots and web pages

# Why Microsoft Power Platform

## Proven value in real world business scenarios

Reduction in app development costs

74%

Reduced errors due to increase automation

27.4%

Less effort required to build and maintain bots

80%

Reduce development costs

24%

Improve customer experience

33%

Meet business demands faster

50%

Reduction in Pro Dev and DevOps cost

Reduced time to market

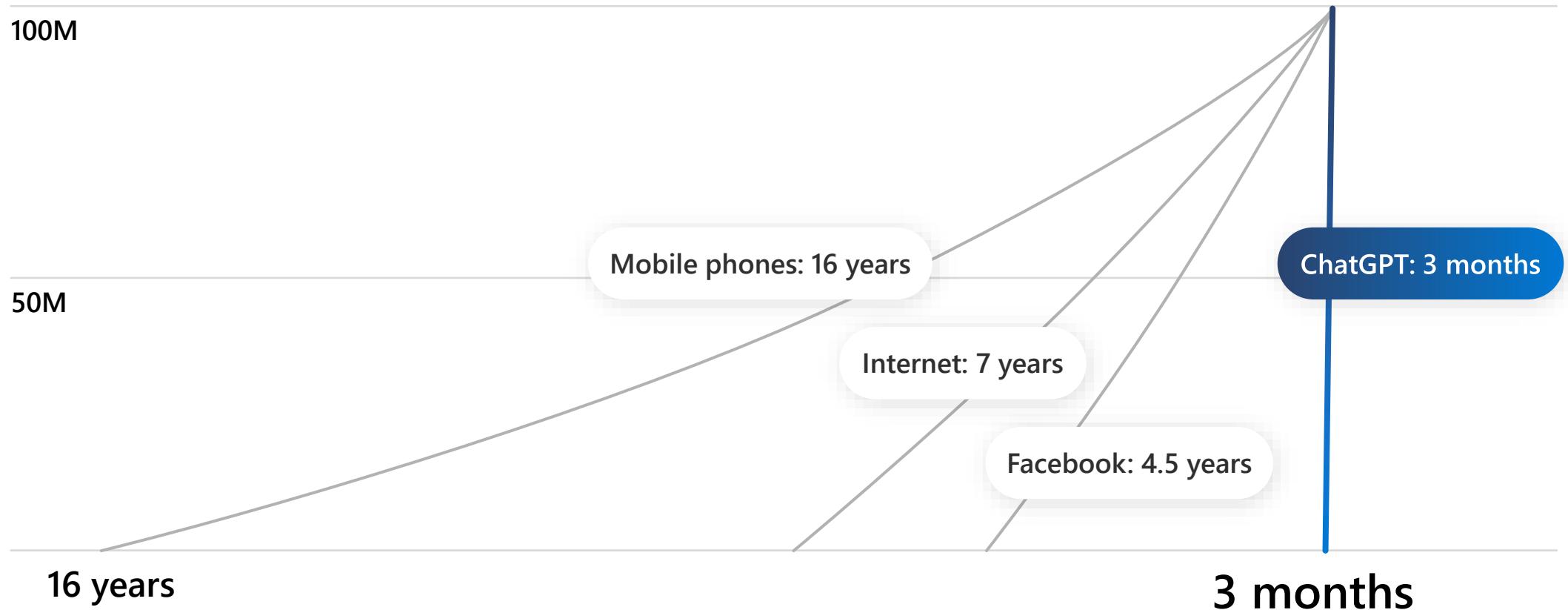
Reduced time to handle customer support requests



# Power Platform and AI

# Generative AI technology is here

Time to reach 100M users



# Era of the AI Copilot

Augmenting human productivity and ingenuity

## The role of technology

From

To

Tools

Helpful “copilot”

Data input / output

Conversational interface, using  
natural language

Perform linear tasks

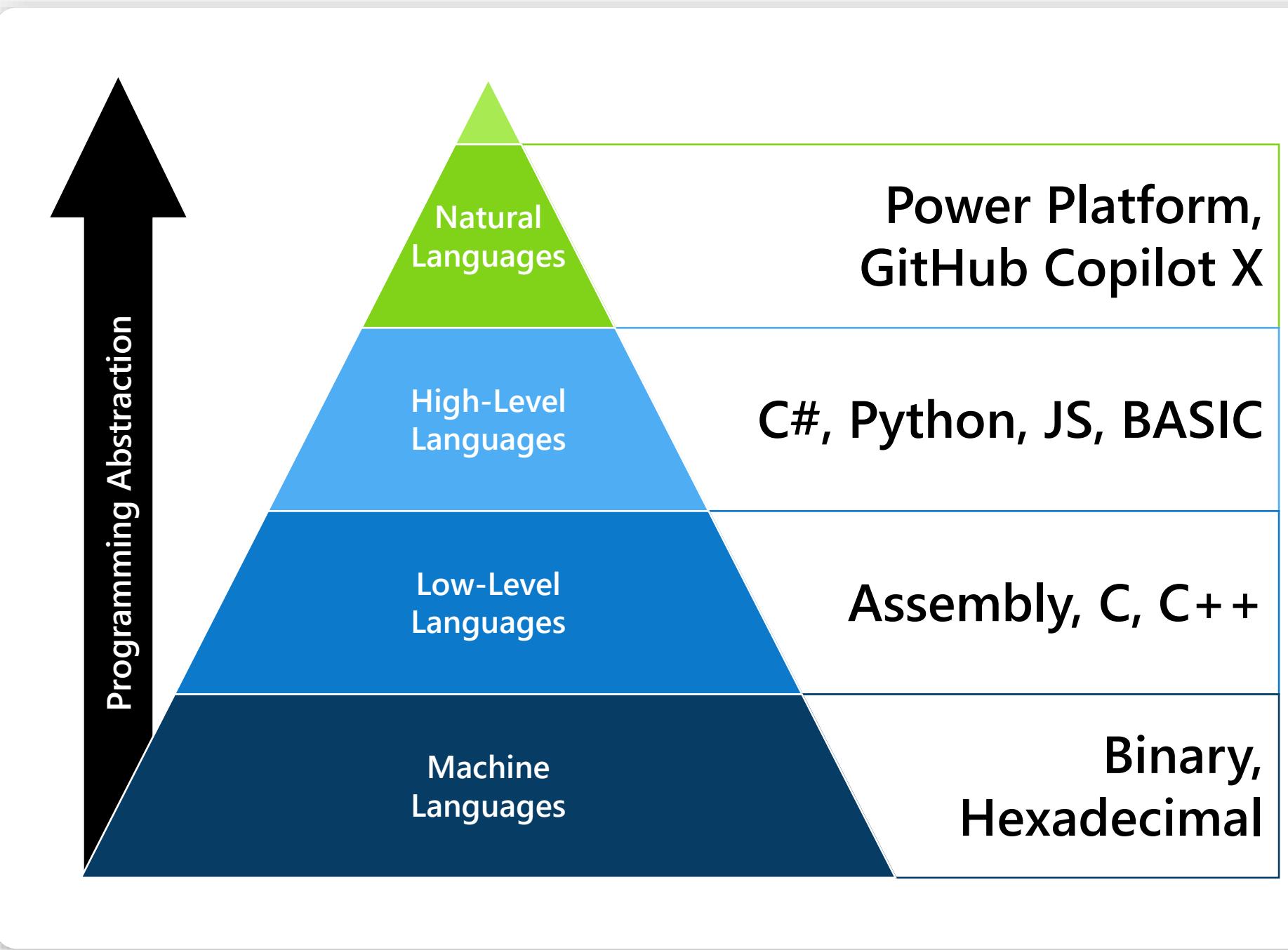
Performs complex, generative  
tasks

Follow commands

Iterate ideas and output, with  
human in the loop



**With Copilot in  
Power Platform,  
your language is  
now a  
Programming  
Language**



# What AI does for Power Platform

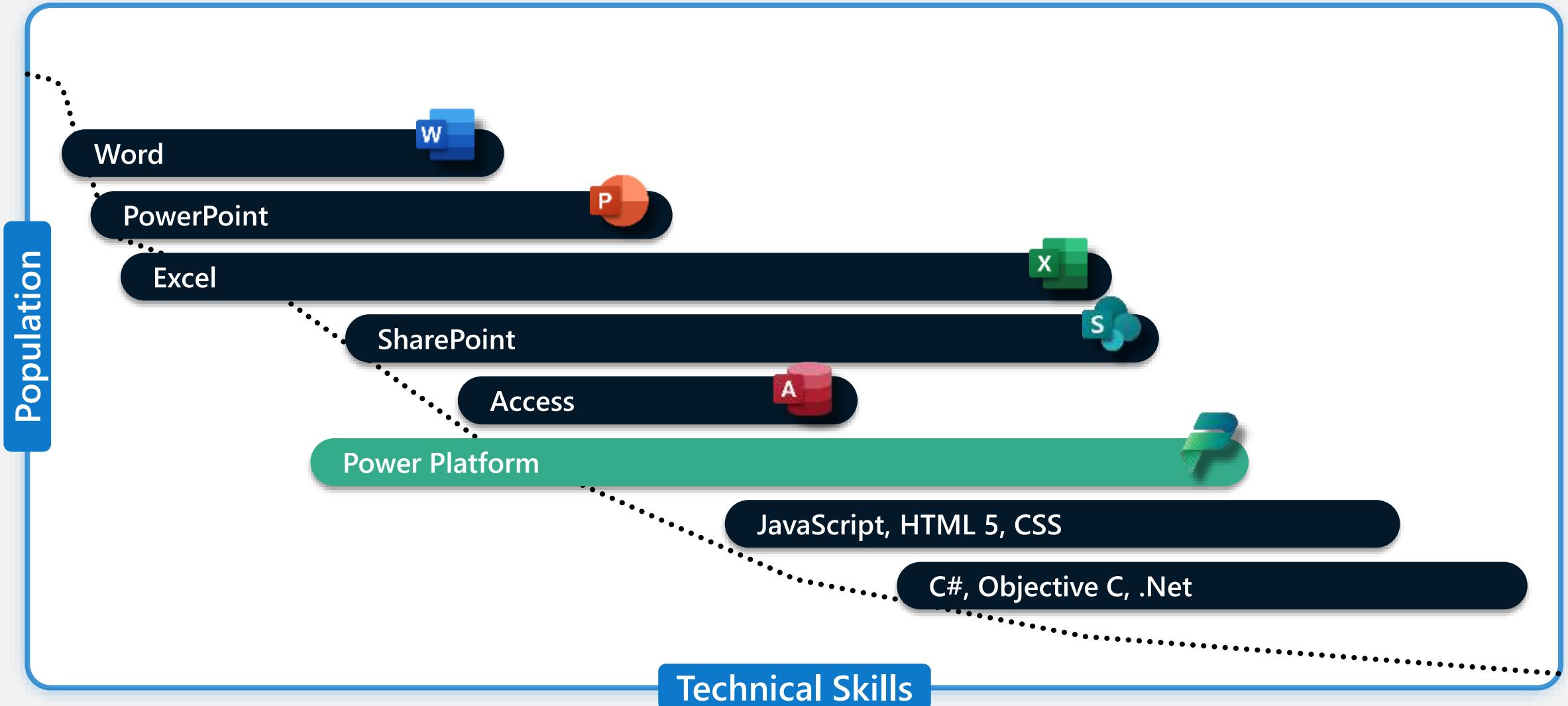


Easier to **make** apps,  
automations, copilots, and sites

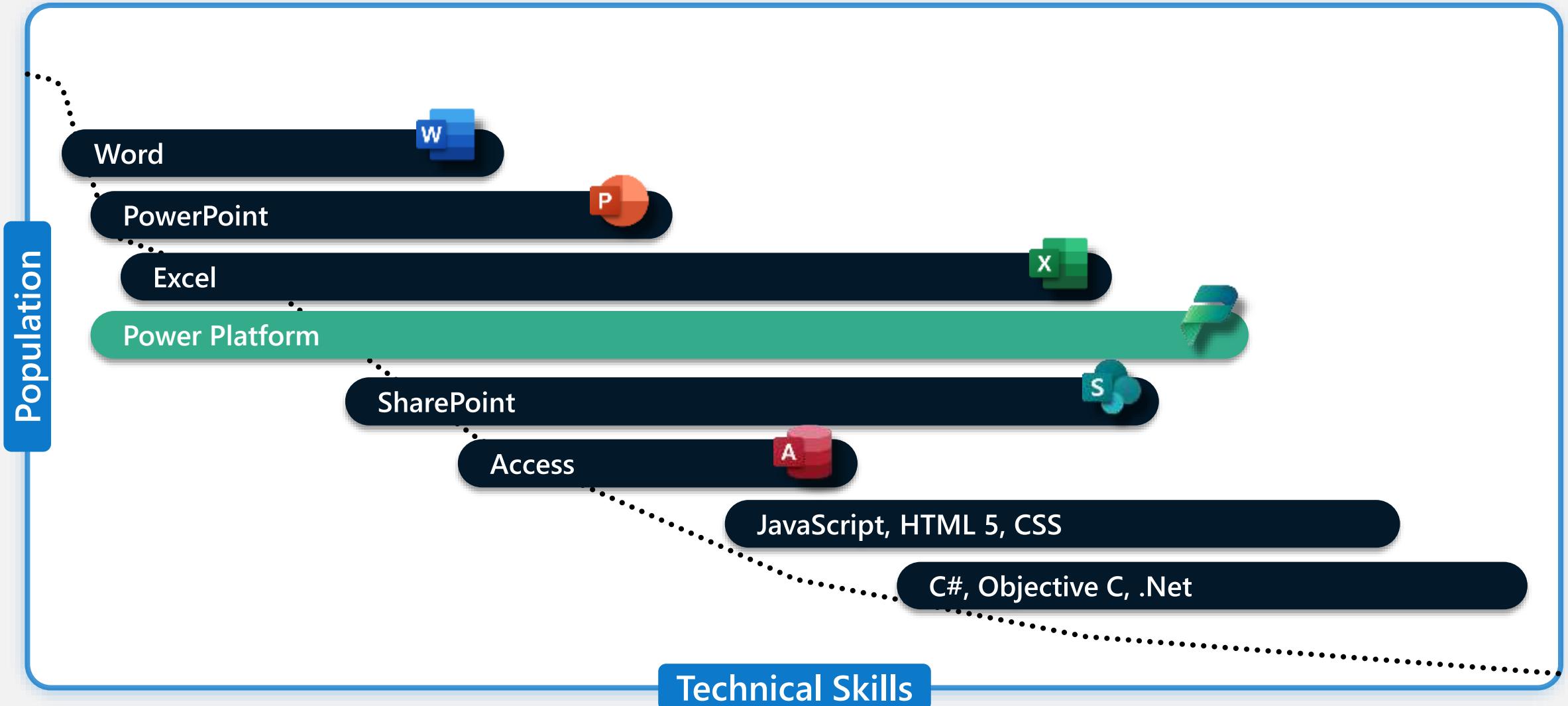
**Richer** to use apps,  
automations, copilots, and sites



# Low Code Adoption



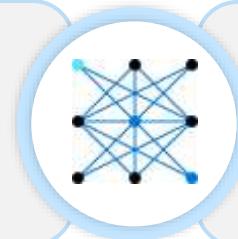
# Low Code Adoption + AI Copilot



# Work smarter and faster

with AI designed for everyone

## Across Power Platform



## Across Microsoft



## Power Platform

**AI powered insight** empowers everyone in your organization to make data-driven decisions.

Identify and prioritize problem areas in your processes like bottlenecks, then act quickly with AI recommendations for optimization and automation.



## Copilot

**AI assisted authoring** available "at your fingertips" allows developers and non-developers alike to build, edit, and extend solutions using natural language.

Build quickly and more easily by using Copilot to write code, recommend next steps, and access documentation through chat.



## AI Builder

**AI powered processing** infuses intelligence into business processes with prebuilt and custom AI models for document processing, image data extraction, prediction, and analytics.

Build, train, and publish AI models without a single line of code or the help of a data scientist.



# Copilot and the age of AI

Companies with highly engaged workforces had better financial outcomes.

Productivity

X

Engagement

=

Performance



88%

feel more productive with  
AI assistance.<sup>1</sup>



74%

say AI enables them to focus  
on more satisfying work.<sup>1</sup>

\$46,511

On average, each additional point of engagement reported by employees correlated with a +\$46,511 difference in market cap per employee.<sup>2</sup>

# AI in Power Platform

Easier to make. Richer to use.



## Power Apps

- [Copilot - Natural Language to App \(Generally Available\)](#)
- [Excel to Canvas App \(Generally Available\)](#)
- [Copilot Control in Canvas \(Limited Preview\)](#)
- [Custom Copilot Control \(Limited Preview\)](#)
- [Copilot Answer Control \(Public Preview\)](#)
- [Express Design \(Public Preview\)](#)
- [Power FX Ideas \(Generally Available\)](#)



## Power Automate

- [Copilot - Natural Language to Cloud Flow \(Generally Available\)](#)
- [Copilot for Desktop Flows and Scripts \(Public Preview\)](#)
- [Copilot to analyze automation activity \(Public Preview\)](#)
- [Process Mining Root Cause Analysis \(Generally Available\)](#)
- [Format data by Examples \(Generally Available\)](#)



## Copilot Studio

- [Copilot - Natural Language to Topics \(Generally Available\)](#)
- [Generative Answers \(Generally Available\)](#)
- [Generative Answers sourcing documents \(Public Preview\)](#)
- [Generative Actions \(Public Preview\)](#)
- [Extend Copilot \(Public Preview\)](#)



## Power Pages

- [Copilot - Natural Language to Site \(Public Preview\)](#)



## Power BI

- [Copilot - Natural Language to Reports \(Private Preview\)](#)
- [Natural Language to DAX Quick Create \(Generally Available\)](#)



## AI Builder, Managed Environments, Dataverse

- [Azure OpenAI models with Templates \(Public Preview\)](#)
- [Power Platform Advisor \(Public Preview\)](#)
- [Formula Columns in Dataverse \(Generally Available\)](#)
- [App Descriptions \(Limited Preview\)](#)
- [ALM Deployment Notes \(Generally Available\)](#)
- [AI Models \(Generally Available\)](#)
- [Dataverse and AI \(Limited Preview\)](#)

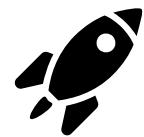


Release Planner | AI Availability

# Power Platform patterns of value

# Power Platform Patterns of Value

## Why IT chooses Power Platform



### Agility

Create rich apps, automations, and bots fast with AI Copilot and low-code tools.



### Governance

View, control, and manage policies, usage, onboarding, ALM via Managed Environments.



### Security

Built-in Identity and user management, DLP, encryption, compliance, and privacy.



### Responsible AI

AI that is fair, reliable, safe, private, secure, transparent, accountable, and inclusive.



### Pro Dev Friendly

APIs, Connectors, Custom Connectors, PCF controls, Azure DevOps, and Visual Studio support.



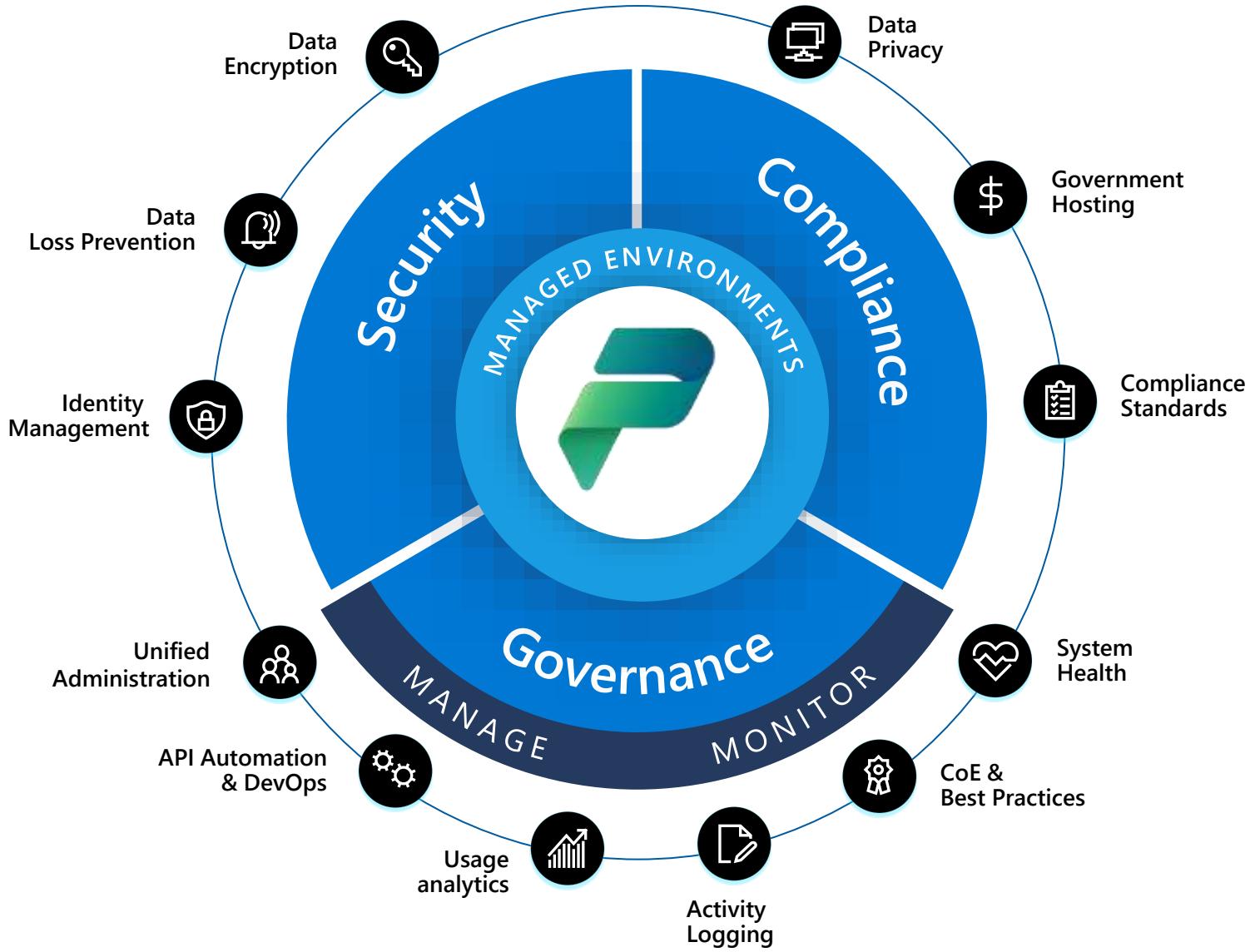
### Accessibility

Build accessible and compliant apps easily for Windows, Web, iOS, and Android.

With Power Platform, organizations can reimagine business, IT, and developer **culture** and elevate all employees.

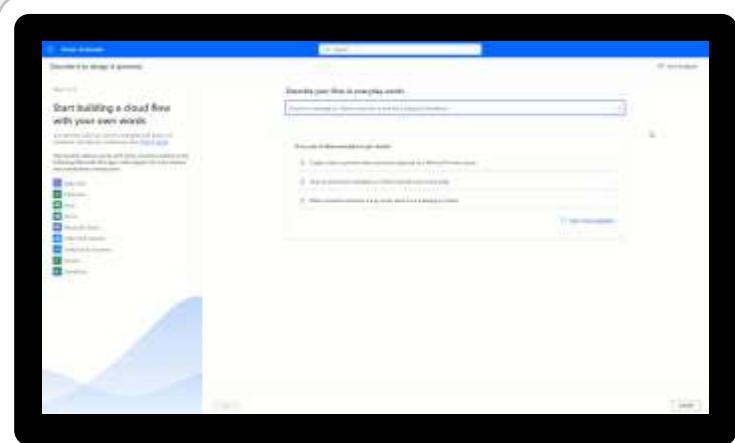
Power Platform Gartner 2023

Power Platform  
offers  
unmatched  
governance and  
security controls  
at scale today



# The right tools for your governance requirements

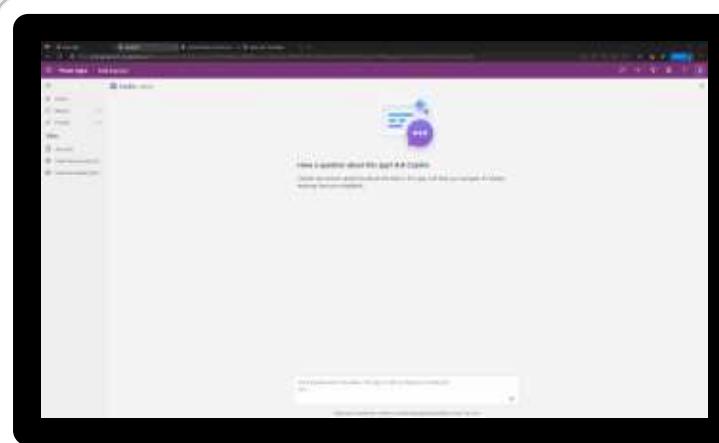
## Power Platform Admin Center



### Standard governance offering:

- Build guardrails around data, apps, and environments
- View analytics on low code assets across your organization

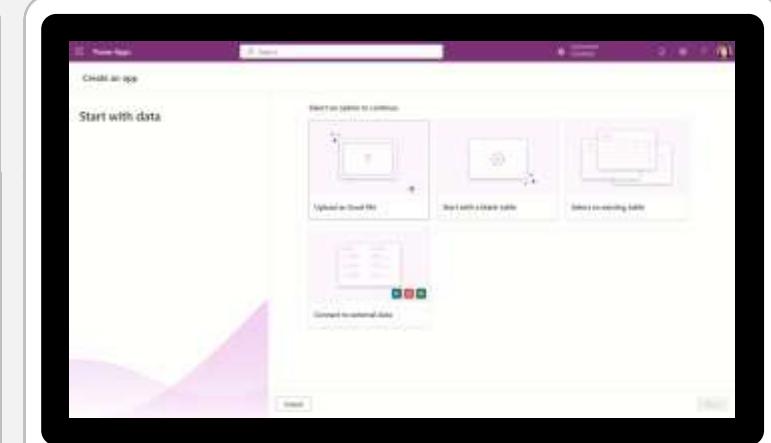
## Managed Environments for Power Platform



### Premium governance offering:

- Enable governance-at-scale without additional IT resources
- Proactively build and enforce best practices while gaining key insights and analytics

## Center of Excellence Kit



### Extensible governance add-on:

- Enhance your governance journey with powerful open-source tools
- Drive innovation and improvement faster

# Power Platform Patterns of Value

## How Business uses Power Platform



### App Modernization

Update, rearchitect, and rebuild apps at scale and address backlog.

### Business Agility

Improve processes and experiences for core systems: SAP, Oracle, Salesforce.

### Accelerate Pro Development

Reduce time and effort in creating enterprise-grade apps.

### Enhance Employee Experience

Interact with business data with ease in Microsoft 365 and Teams.

### Empower Departments

Enable departments to solve business challenges with IT governance.

### Optimize Hyperautomation

End-to-end automation with RPA, DPA, AI, chatbots, more.

#### Caterpillar

Rental equipment turn around processing app reduced entire process to **1-day**

#### Ernst and Young

General ledger posting process connected to SAP yields **30% Cost reduction from**

#### Blackmores Group

Pro-code plus No-code practice reduced time to produce key supplier reports by **50%**

#### American Airlines

Frontline connected through Teams and Power Apps save **10 hours** of taxi time per day

#### T-Mobile

Employee led initiatives facilitated by Marketing team saves **\$4M+** from employee initiatives

#### Pacific Gas & Electric

Digital productivity program supported by Cognizant saved **75,000 hours** across organization

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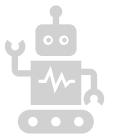
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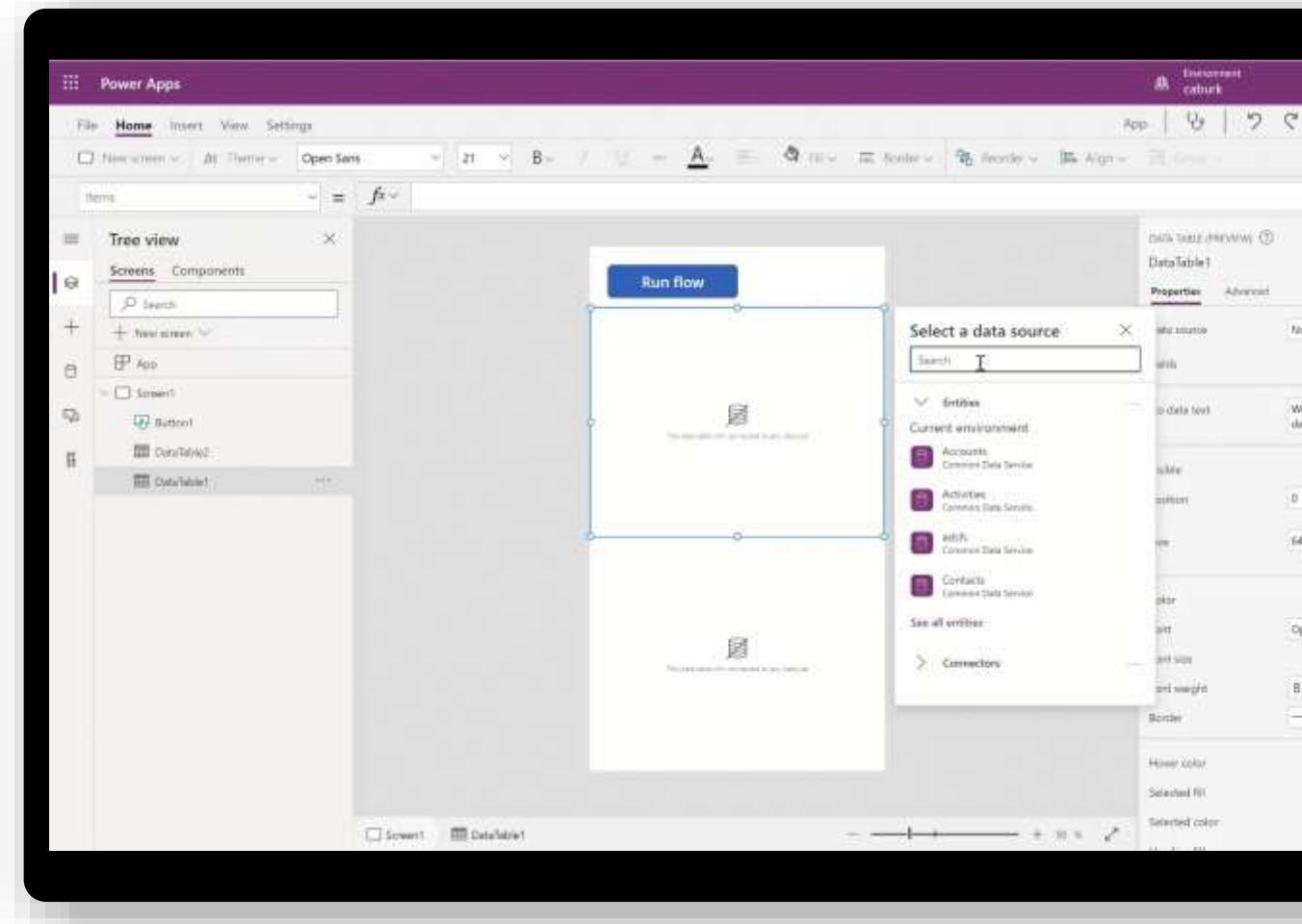


# Power Platform deep dive

# Canvas App

# Power Apps – a plataforma low-code mais completa do mundo

- 1 Integração com **Azure**, **Visual Studio**, and **GitHub** permite que todos criem com as **ferramentas que mais usam**
- 2 Experiências assistidas por IA com **linguagem natural** para geração de fórmulas e aplicativos a partir de imagens
- 3 Componentes **nativos** para **mapas**, **sensores de dispositivos** e **realidade aumentada**
- 4 Customize com **Power FX**, linguagem de código aberto para **criar lógica** que é familiar para qualquer pessoa **que use o Excel**



# Power Apps + Teams

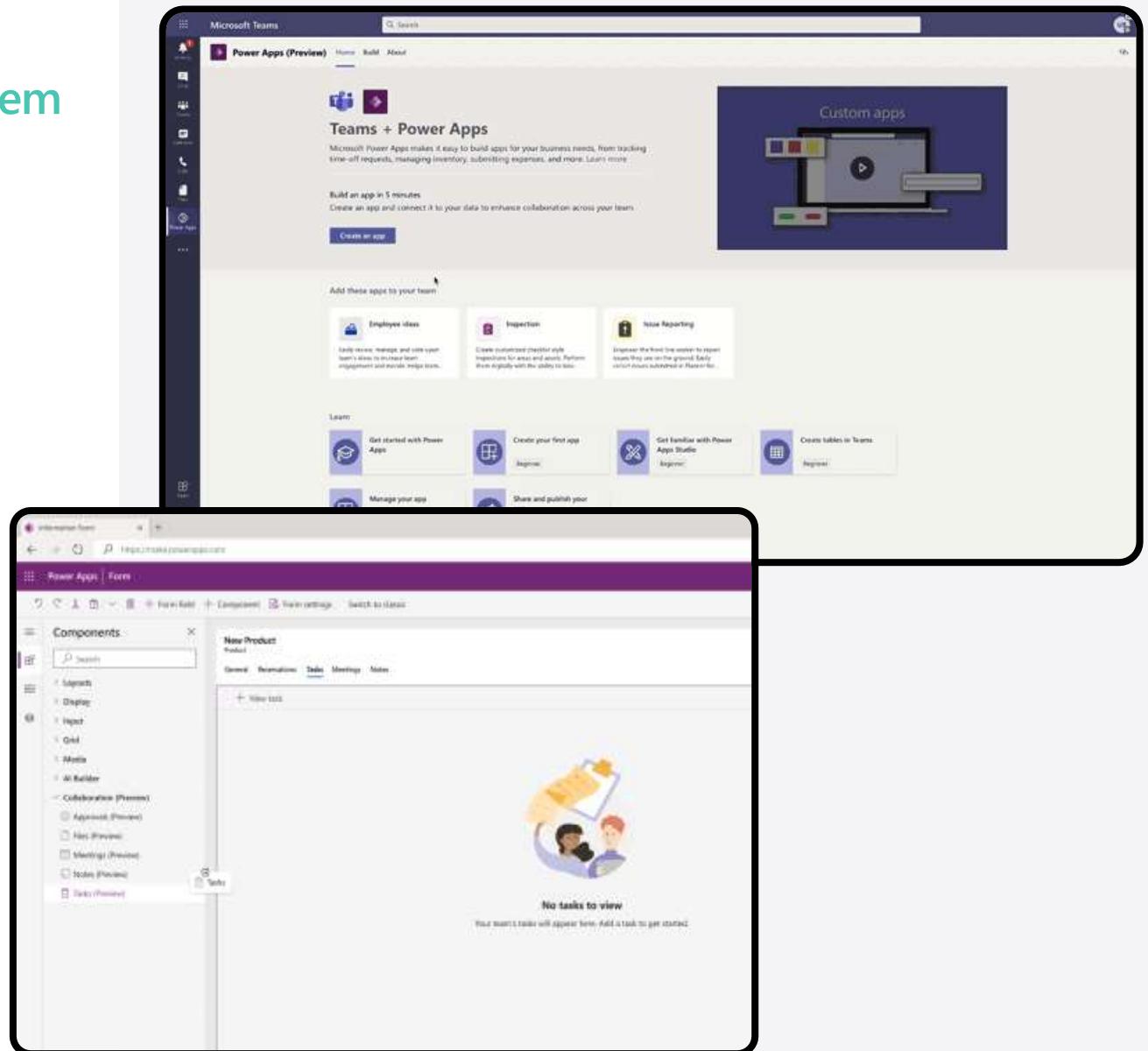
Para que os criadores se conectem e colaborem

Os criadores podem colaborar usando comentários e menções para trabalhar juntos em um aplicativo no **Modern App Designer**

Adicione notas, comentários e conversas com outras pessoas diretamente no seu bot, assim como faria no **Office**

Os comentários terão suporte no **Power Apps**, no **Power Automate** e no **Power Virtual Agents**

Conecte-se com outros criadores em sua organização por meio do **Maker Matching**



Crie rapidamente aplicativos da Web e móveis para resolver seus desafios de negócios.

# Power Apps simplifica e acelera o desenvolvimento

1

O designer de aplicativos permite que você crie e implante aplicativos com **aparência profissional mais rapidamente**

2

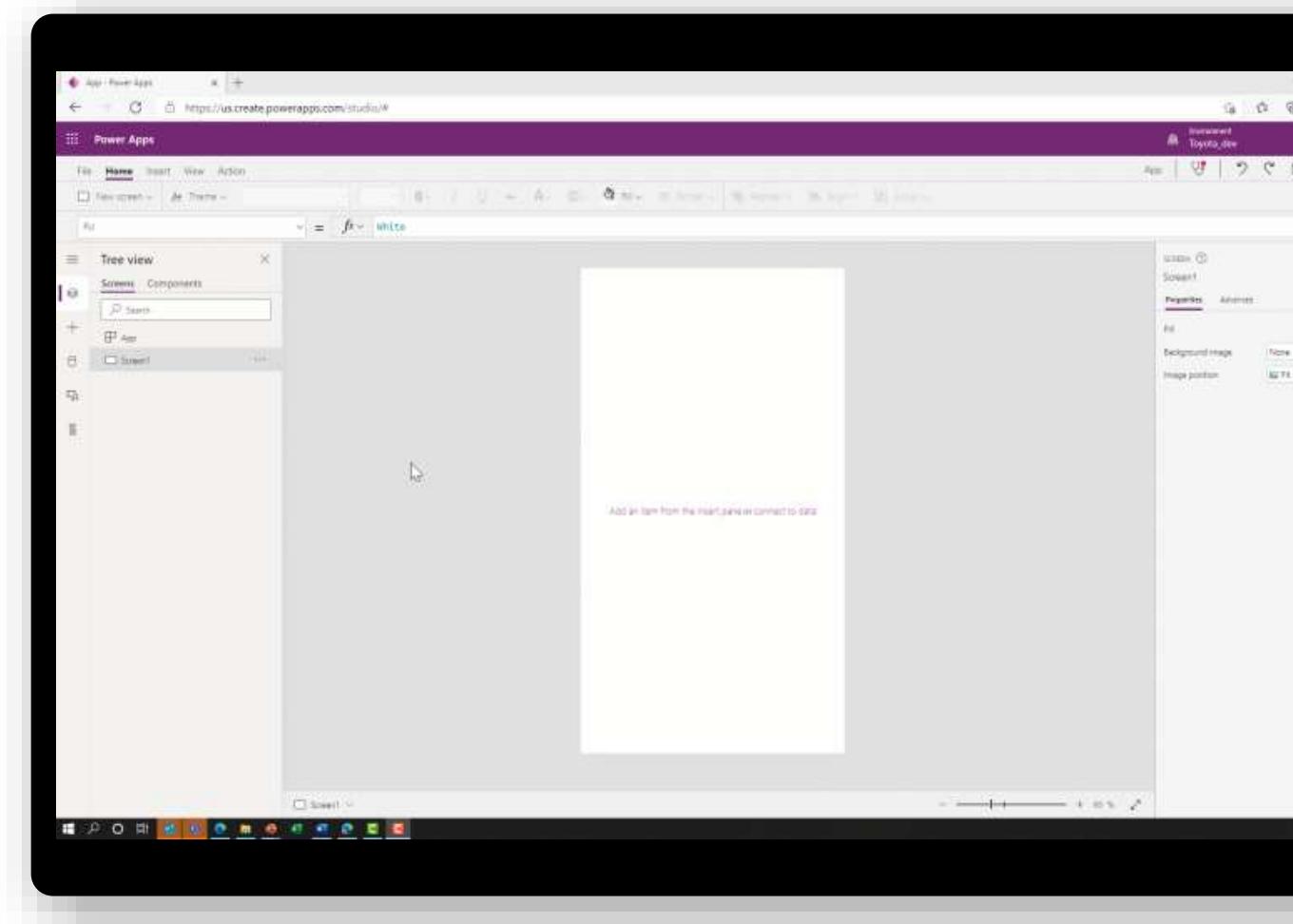
Aplicativos que funcionam em **múltiplos dispositivos: implante uma vez, use em qualquer lugar**

3

**Conecte-se com seus aplicativos legados de forma rápida e segura**

4

**Integrado nativamente com Microsoft Teams, Office e Dynamics 365**

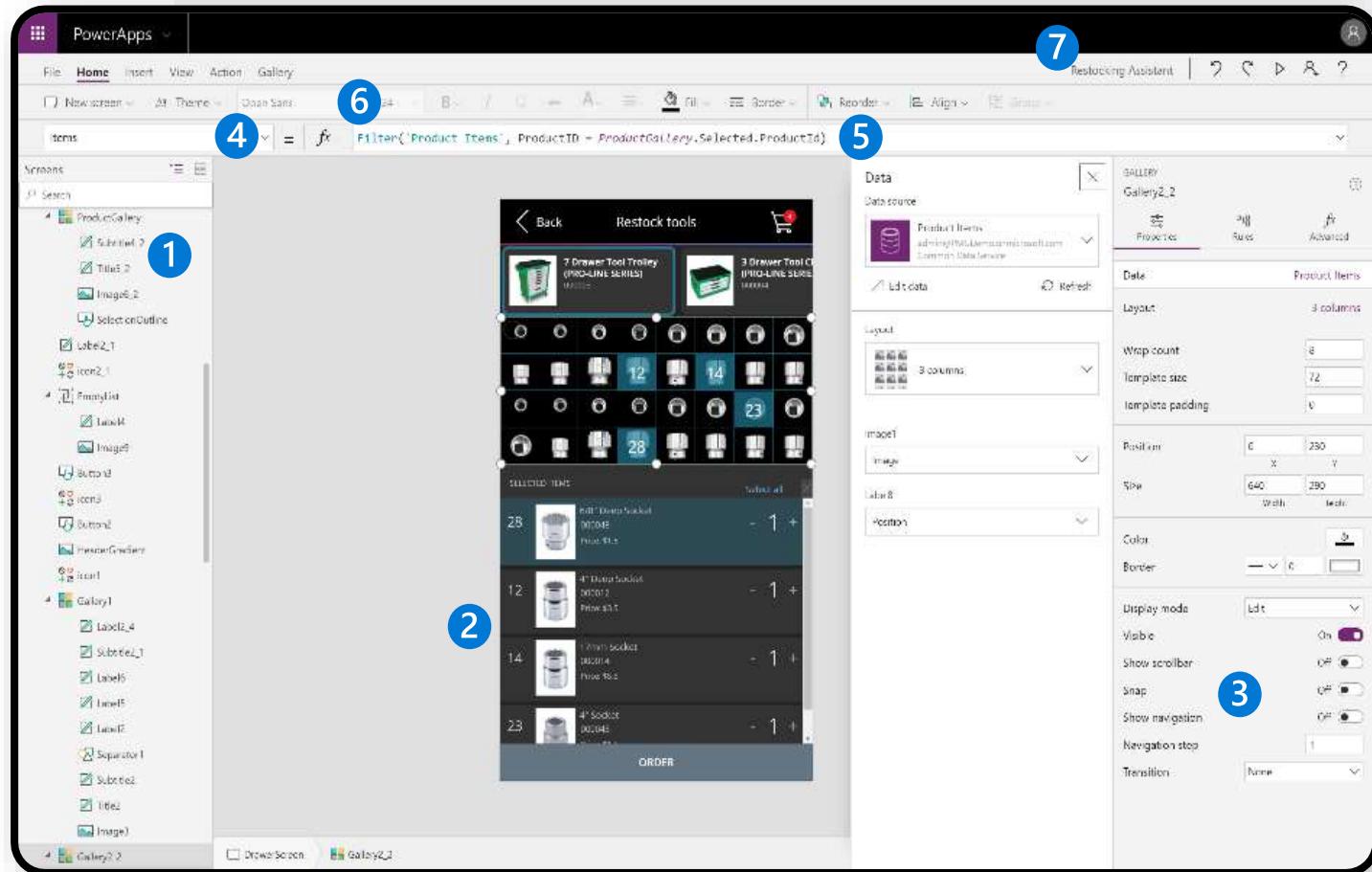


# Power Apps Studio

Experiência para criar Power Apps

Sempre atualizado com as versões mais recentes e permite que você trabalhe em seu navegador, esteja você no trabalho ou em casa em um Mac ou PC

- 1 Barra de navegação
- 2 Canvas
- 3 Painel direito
- 4 Propriedades
- 5 Barra de fórmulas
- 6 Faixa de comandos
- 7 Itens adicionais



# Microsoft Power Fx

A linguagem low-code para personalização lógica na Power Platform

```
fx ▾ Notify( "Hello, World!" )
```

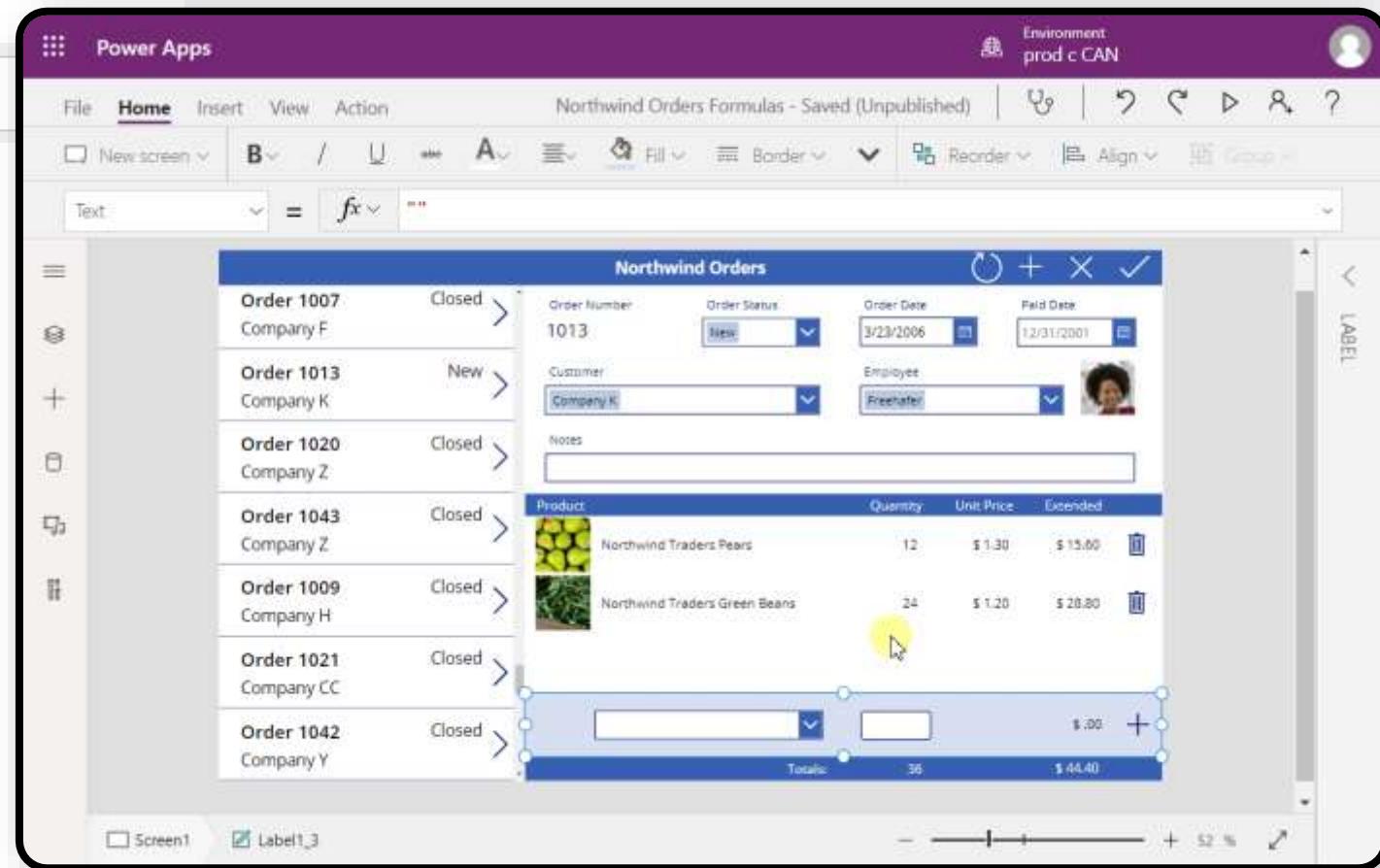
Uma linguagem de código aberto que estará disponível para todos usarem e implementarem

Expressa em texto, é uma linguagem low code com a qual os criadores podem trabalhar diretamente

Reduza as barreiras para começar com um idioma que aproveita o conhecimento dos usuários do Excel

Acelere com a simplicidade das fórmulas e adicione código onde for importante usando as ferramentas de desenvolvedor favoritas

Função ParseJSON para analisar cadeias de caracteres JSON em objetos e tipos PowerFx

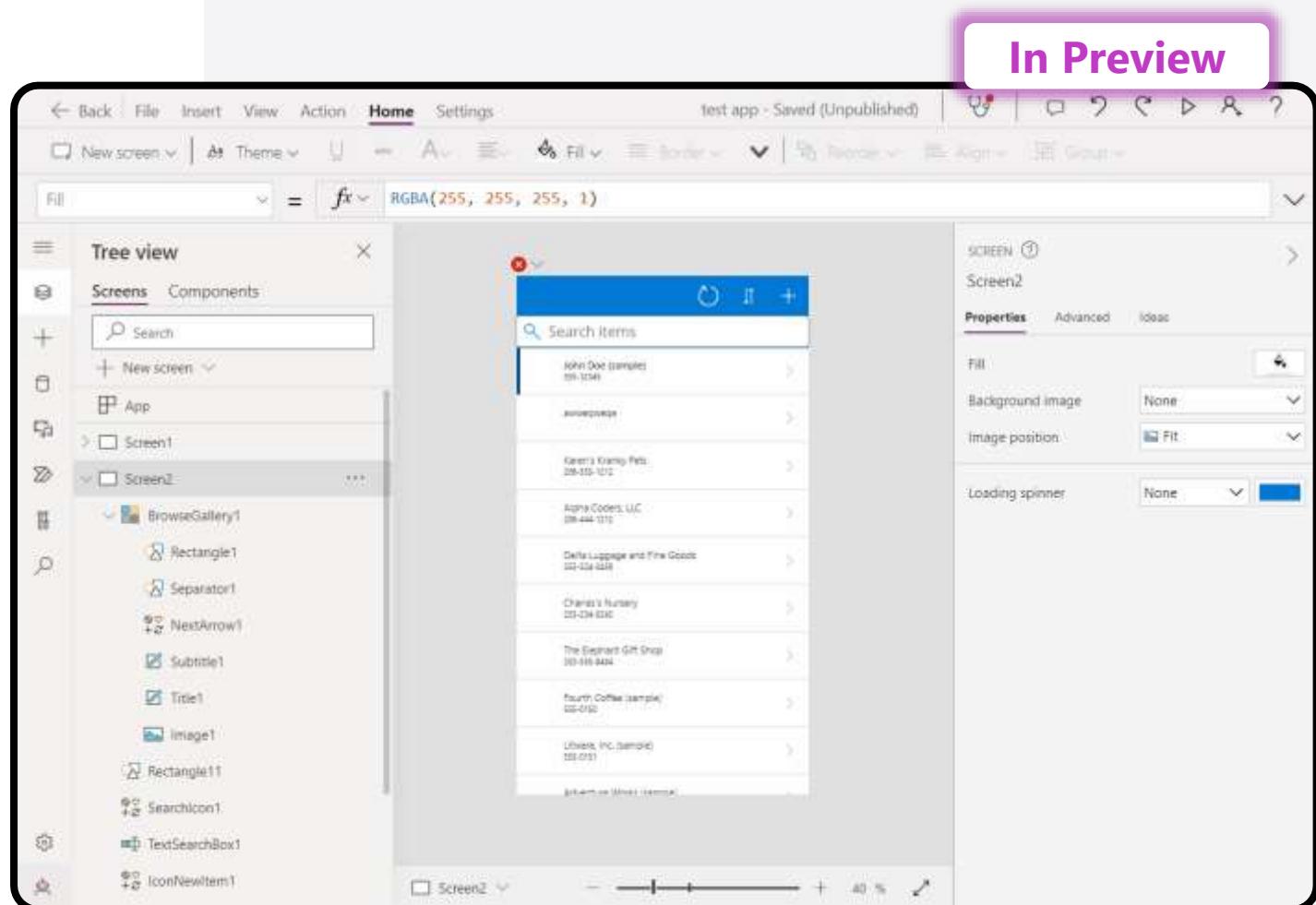


<https://powerapps.microsoft.com/en-us/blog/what-is-microsoft-power-fx/>

# Formula Repair

Acelere sua verificação de erros com a ajuda de correções sugeridas.

Corrija parênteses e aspas ausentes, erros de digitação facilmente identificáveis, operadores ausentes e muito mais.



# Named Formulas

Crie suas próprias propriedades de fórmula e pontos de reutilização

Defina funções sem parâmetros e use-as em qualquer lugar em um aplicativo Canvas

Ganhe tempos de carregamento mais rápidos

Criar e atualizar em um só lugar, usar em todos os aplicativos

The screenshot displays the Advanced Formula Environment interface. On the left, a table titled 'Employee' is shown with columns: Employee, Manager, DirectReports, and TotalReports. The data includes rows for Charles, Sandra, John, Tina, Julia, Fred, Kim, and Jane. The formula for 'TotalReports' is =TotalReports[@Employee]. On the right, the 'Editor' tab of the Advanced Formula Environment shows two Lambda functions:

```
1 DirectReports =
2   Lambda( Employee,
3     IfError(
4       Rows( Filter( Employees[[Employee]:[Manager]],
5             Employees[Manager] = Employee ) ),
6       0
7     );
8
9 TotalReports =
10  Lambda( Employee,
11    IfError(
12      Reduce( 0,
13        Filter( Employees[[Employee]:[Manager]],
14              Employees[Manager] = Employee ),
15        Lambda( Partial, Manager, Partial +
16          If( Employee <> Manager, 1 + TotalReports( Manager ), 0 )
17        )
18      ),
19      0
20    );
21
22
```

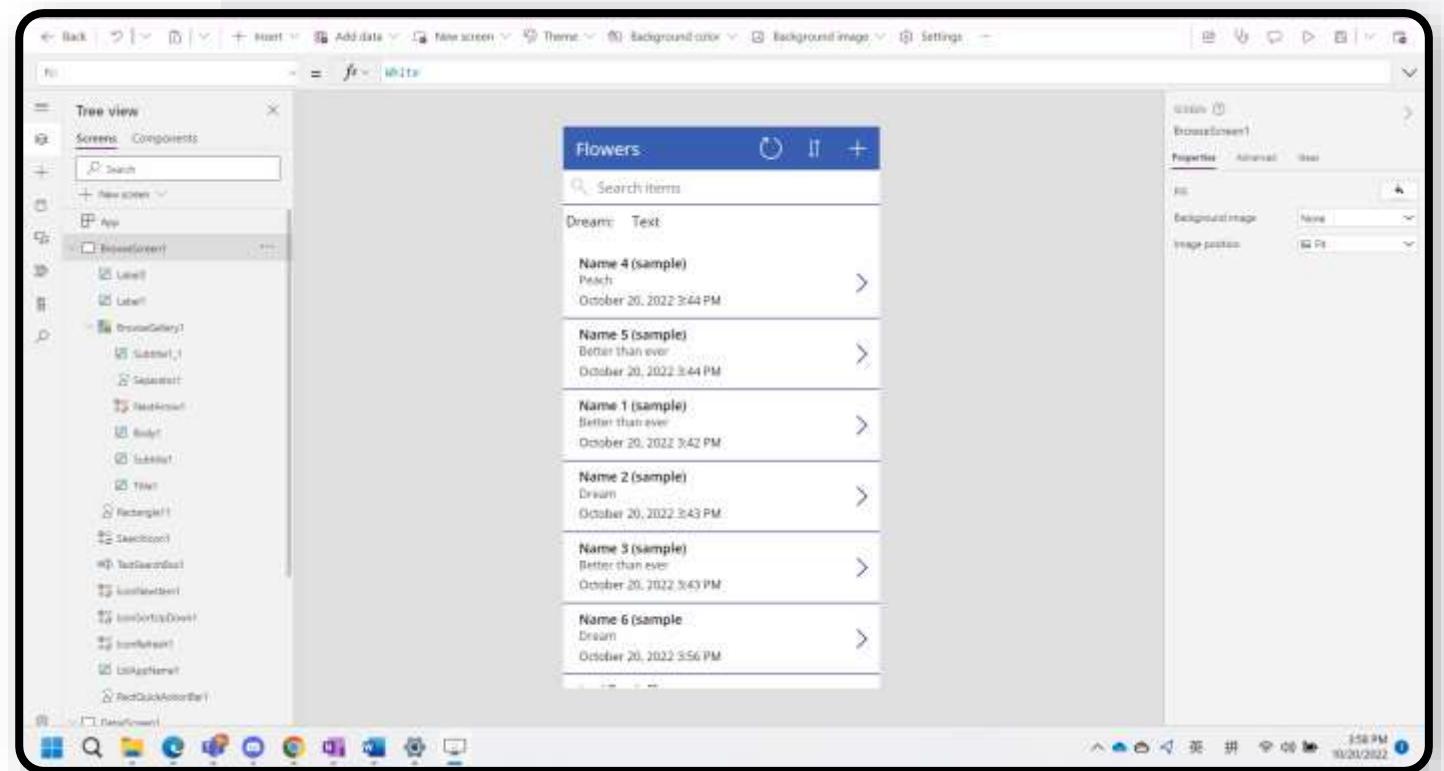
# Power Apps Ideas

Use as sugestões de IA para acelerar seu processo de criação

Disponível em galeria, tabela de dados, rótulos, entrada de texto e controles suspensos

Ele agora suporta mais fórmulas, como contagem e formatação condicional

Powered by GPT-3 para compreensão de linguagem natural, e PROSE para programação por exemplos



# Copilot in Power Apps

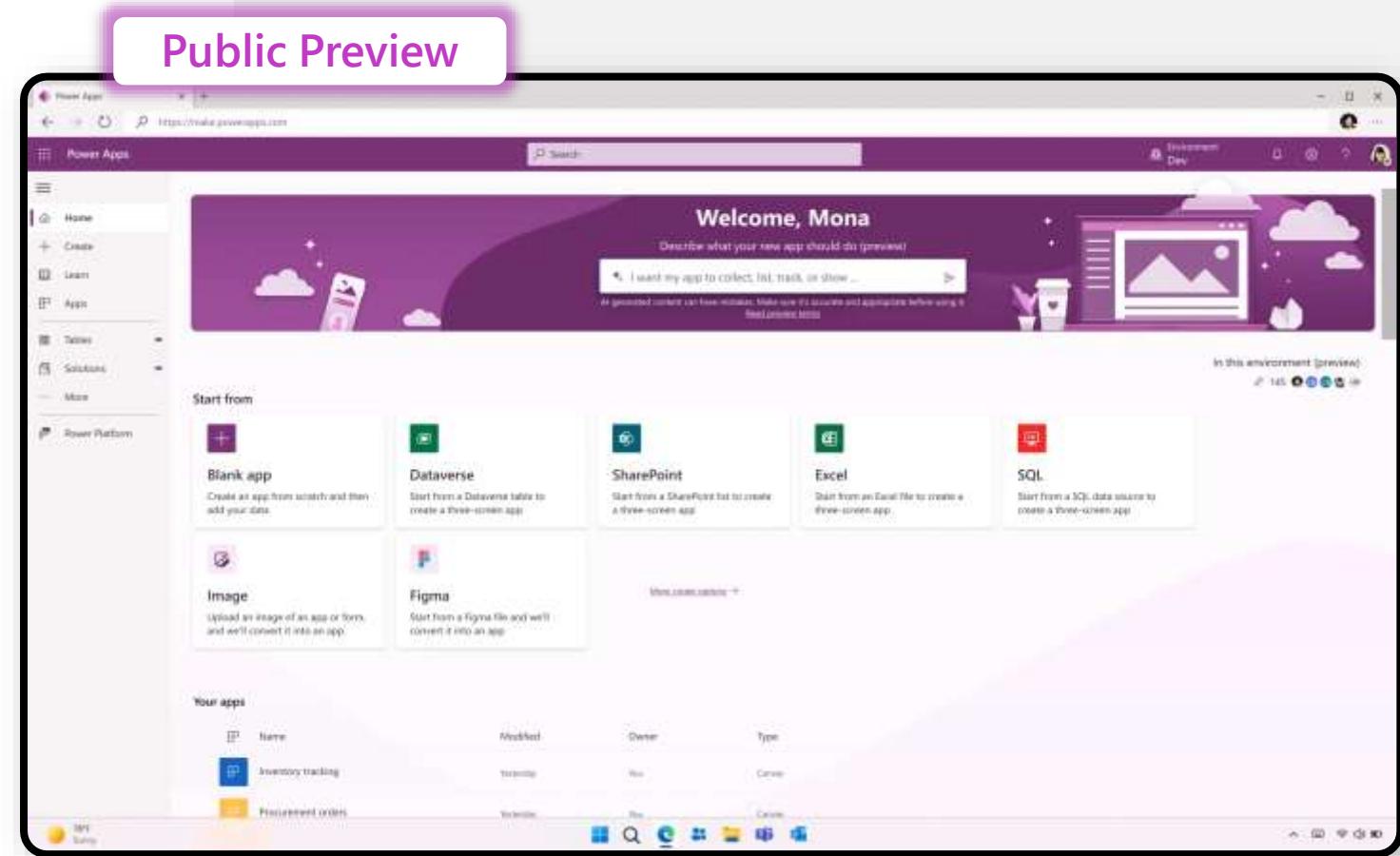
Descreva. A Power Apps cria

Crie novos aplicativos apenas descrevendo em linguagem natural o **que você precisa**

Conversação em vários turnos e várias etapas através do processo de criação de dados e personalização de UX

Os criadores podem criar um **aplicativo completo com Dataverse** começando com linguagem natural

Fácil de utilizar



# Copilot in Power Apps

## Copilot enhancements

### Importando dados do Excel

A capacidade de entender dados não estruturados de arquivos do Excel como entradas e transformá-los em dados estruturados, como tabelas e aplicativos

### Criar interfaces no aplicativo

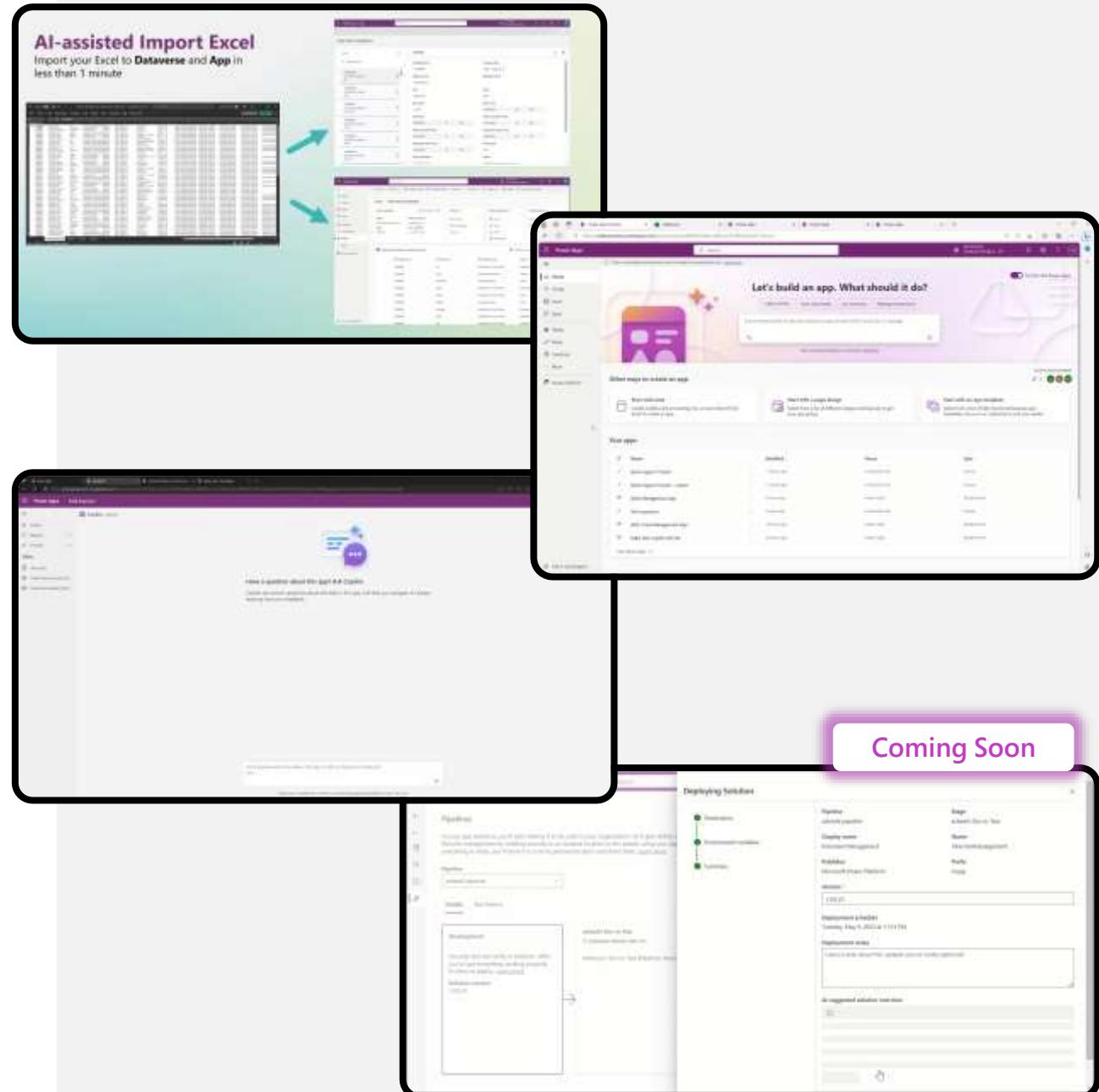
Use linguagem natural para gerar ações que transformem o trabalho manual de projetar uma interface do usuário em uma tarefa orientada pelo Copilot

### IA em todos os aplicativos

O controle do copiloto e o novo sidebar oferecem uma experiência consistente em toda a plataforma, enquanto suas habilidades para ajudar, analisar e agir são detectáveis por meio de gatilhos e certas experiências de aplicativos, criando um verdadeiro fator "uau"

### Descrições de aplicativos e soluções

Descrições geradas por IA ao publicar aplicativos ou implantar soluções que aliviam a tarefa manual de adicionar anotações escritas à mão para explicar o que um aplicativo faz ou aborda a solução



# Transforme imagens e rascunhos em aplicativos com o AI Builder

Passe do rascunho ao protótipo mais rápido

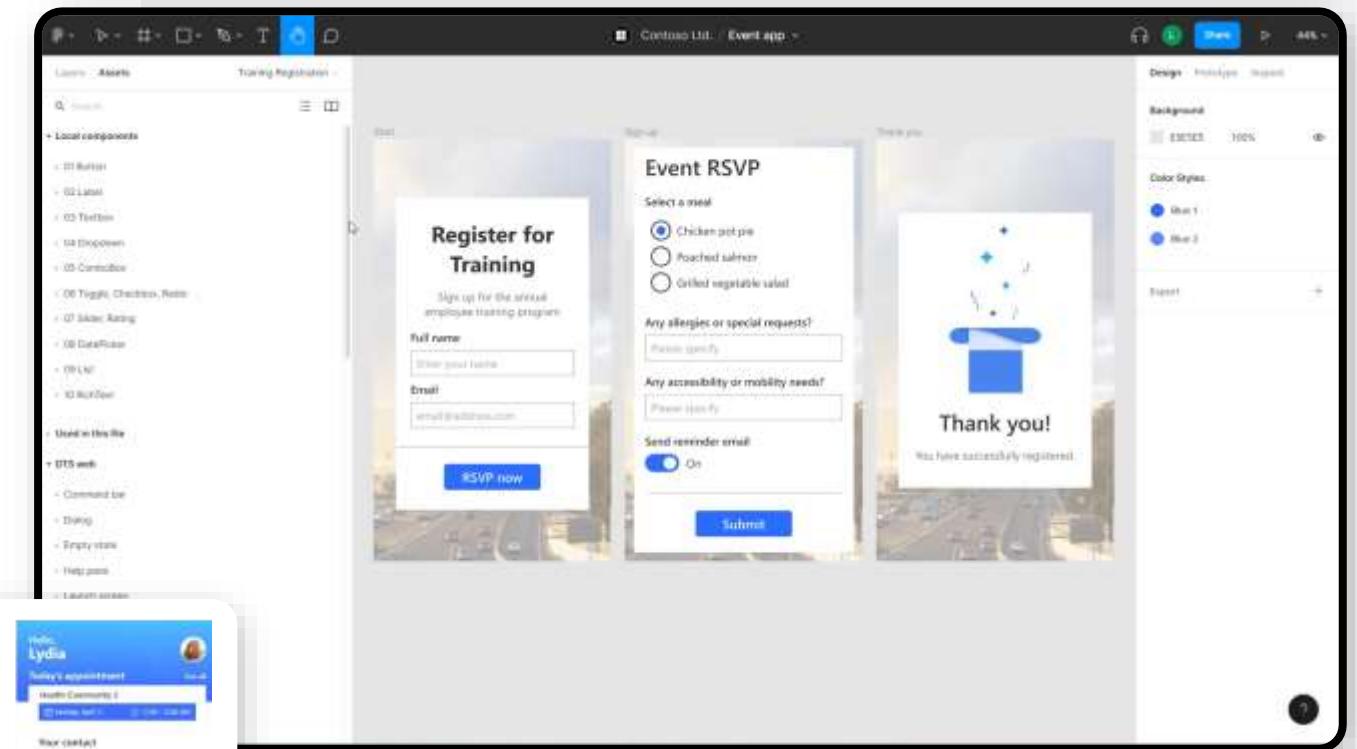
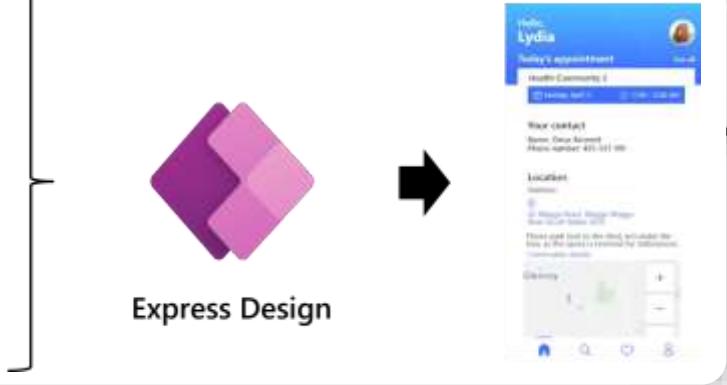
Use o poder da IA para criar os aplicativos a partir do seu esboço no papel ou do Figma

Passe mais rápido de uma ideia para um protótipo

 Figma design files

 PDFs and paper forms

 Hand-drawn sketches



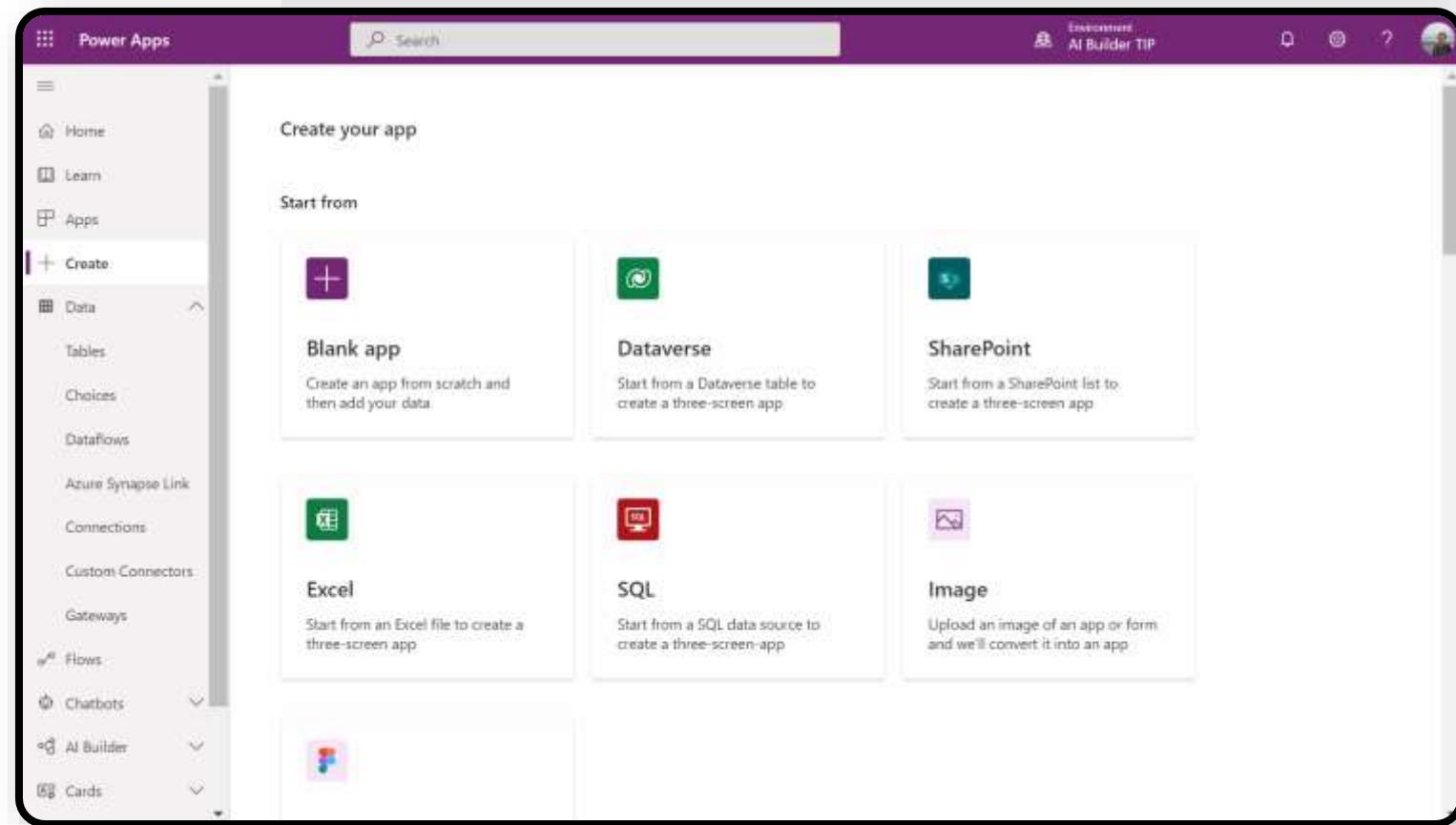
# AI Express Design – Image to app

Carregar uma imagem e mapear seus elementos para componentes do Power Apps

Suporte aos controles mais comuns, como entradas, botões, caixa de seleção, listas suspensas, entradas de texto, etc.

Fornece etapas opcionais de configuração de dados para você extrair campos da imagem e criar uma tabela do Dataverse imediatamente

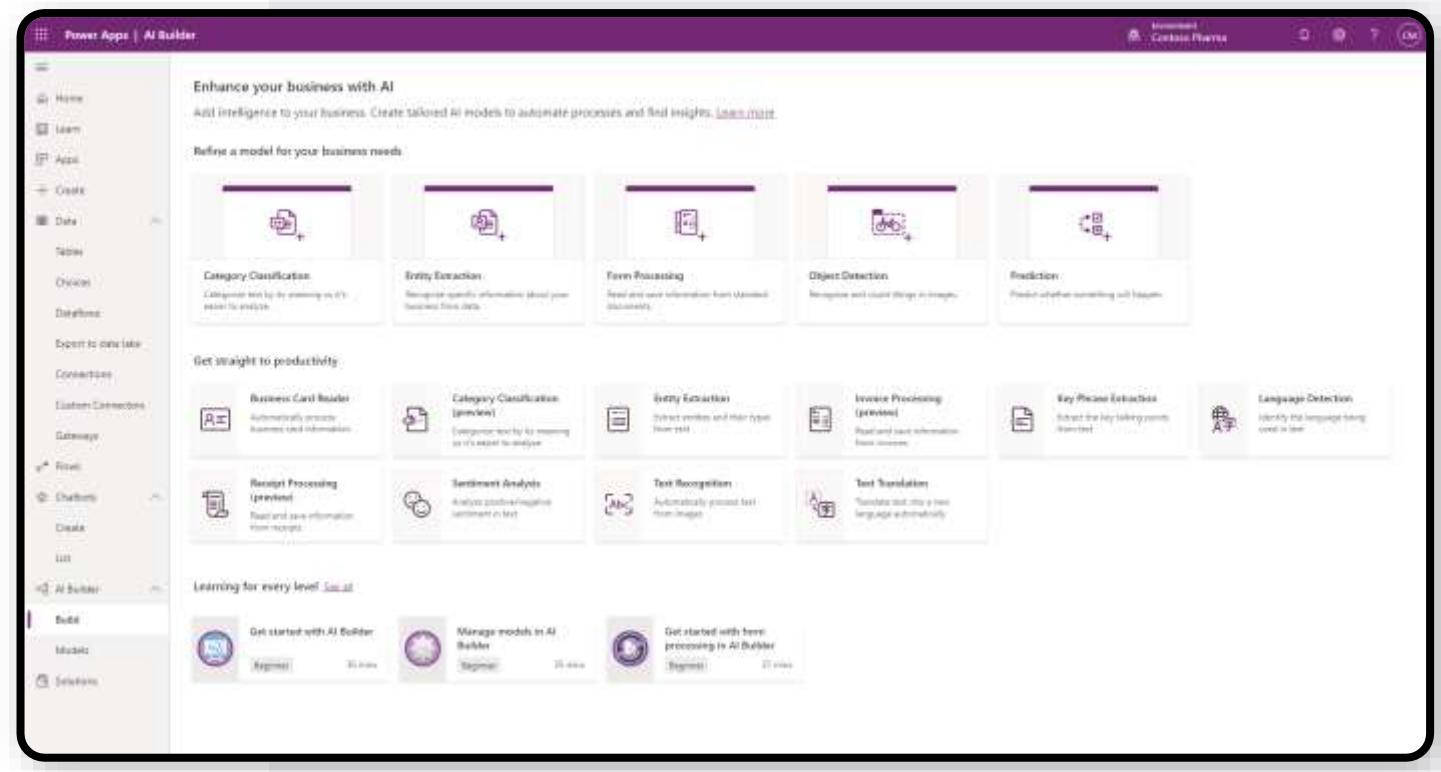
Um aplicativo funcional baseado no conteúdo da imagem é gerado automaticamente



# Adicione IA para seus aplicativos

Dê aos usuários finais recursos de IA com o AI Builder

Proporcione aos usuários de seus aplicativos uma experiência aprimorada com IA que é fácil de criar e configurar no Power Apps



# **DataVerse and Model Driven App**

# O que é Dataverse?

É muito mais do que um banco de dados!



## Mais do que um servidor

Embora o Dataverse **seja baseado no SQL do Azure**, ele é muito mais do que um servidor SQL, permitindo que os usuários capturem, analisem, prevejam, apresentem e relatem dados com um alto nível de agilidade.



## Uma plataforma acionável

O Dataverse vem com um rico **conjunto de recursos acionáveis** que permitem que ele opere como uma plataforma para fazer mais com seus dados.

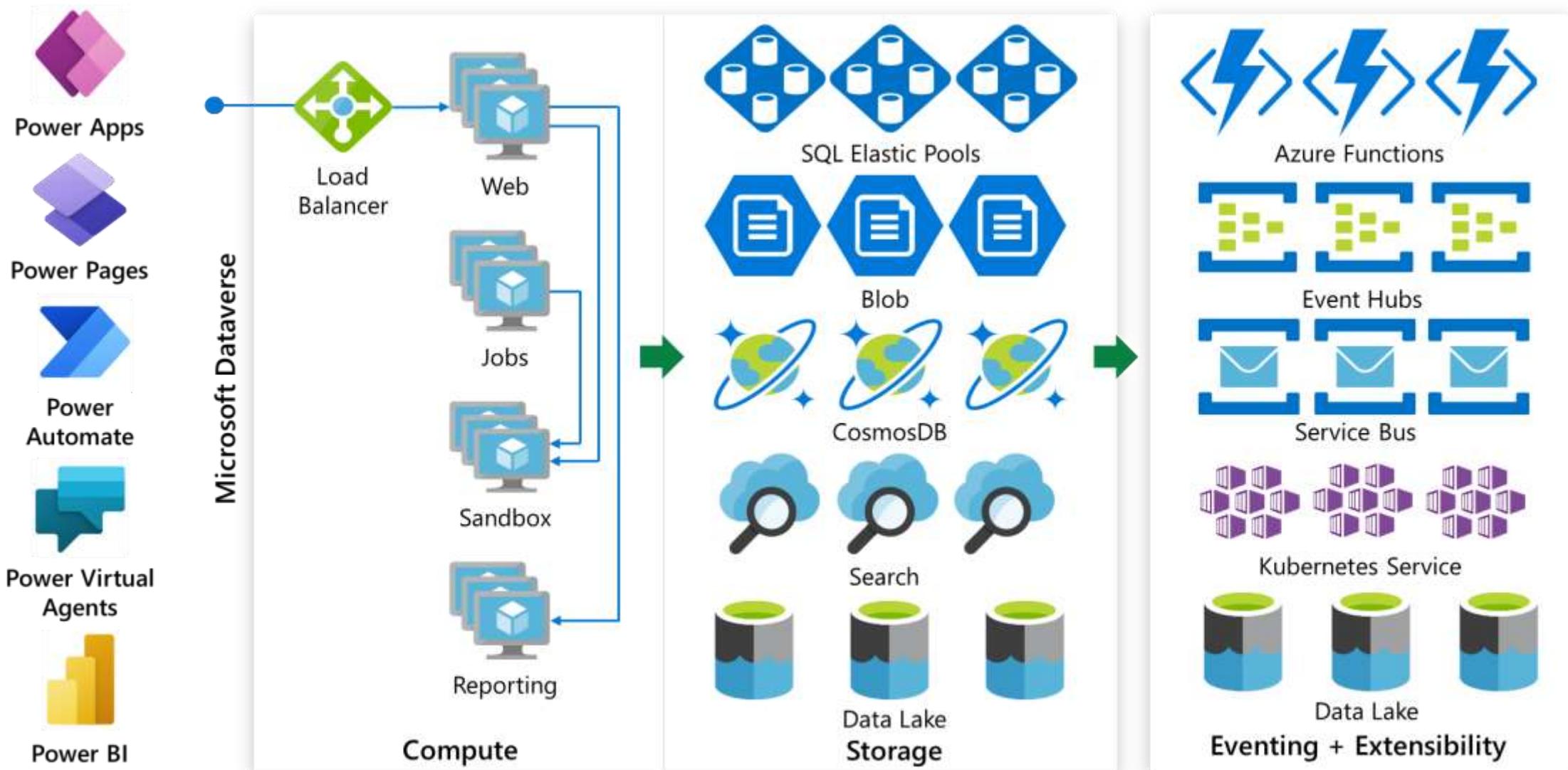


## Controles prontos para uso

Um banco de dados tradicional **precisaria de camadas de aplicativos** para lidar com elementos como segurança e lógica de negócios, mas **com o Dataverse tudo isso é resolvido nativamente**, permitindo que você vá direto para modelagem de dados, aplicativos de negócios e apresentação de dados.

# O que é Dataverse?

Executado e se estende no Azure



# What is Dataverse?

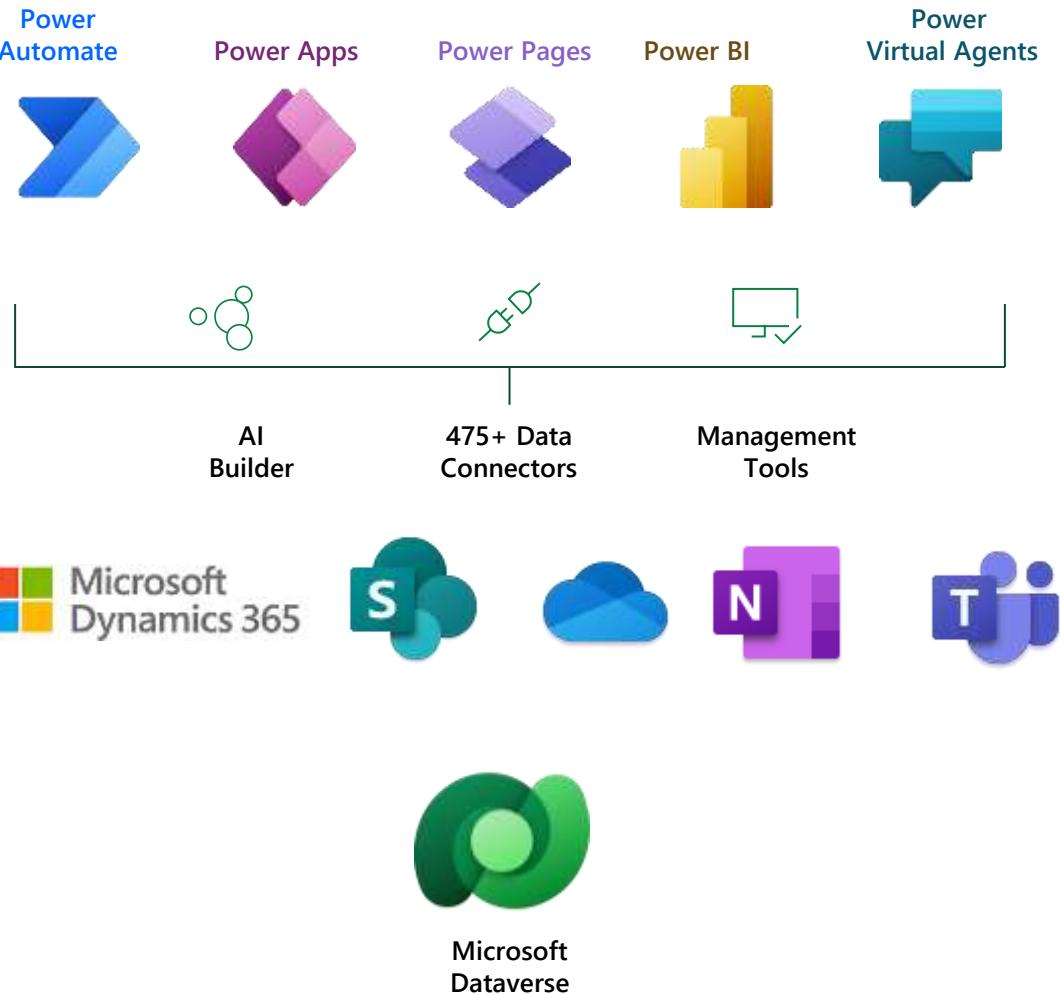
O Dataverse é uma solução **fácil** e **escalável** para **seus dados** em uma variedade de serviços da Microsoft

O **Microsoft Dataverse** é a **plataforma de dados** para o Microsoft Power Platform que permite armazenar e gerenciar dados corporativos.

O Dataverse também é a plataforma na qual os aplicativos do **Dynamics 365 são criados**, portanto, se você for um cliente do Dynamics 365, seus dados já estarão no Dataverse.

O Dataverse fornece suporte para **integração** com **SharePoint, OneDrive e OneNote**.

O **Microsoft Dataverse for Teams** é um subconjunto essencial de recursos do Dataverse incluído como uma poderosa plataforma de dados integrada para milhões de usuários do Teams sem custo adicional.



# Por que Dataverse?



Os dados são responsáveis pelo **desempenho do aplicativo** e podem fornecer insights profundos sobre o comportamento do usuário.

O Dataverse oferece **soluções poderosas e escaláveis para seus dados**, aproveitando a **segurança** e a **conectividade** da Power Platform para que você possa controlar, automatizar e fortalecer totalmente seus negócios.

# Por que Dataverse?

Uma plataforma de desenvolvimento de aplicativos low-code em que você pode confiar

Foque em inovar. Nós cuidamos do resto.



## Inteligência

### Totalmente personalizável

Adapte-se rapidamente às suas necessidades com entidades personalizadas, lógica de negócios personalizada e conectores personalizados para gerar resultados de negócios.

### Multiplique sua capacidade técnica

Experimente toda a gama de desenvolvimento e gerenciamento do ciclo de vida do aplicativo, com ferramentas avançadas para desenvolvedores profissionais.

### Inteligência integrada

Supere os concorrentes infundindo sua automação de processos com ferramentas de IA de baixo código.



## Escalabilidade

### Escala incrível

Supere os silos de dados operando como uma única fonte de dados para vários aplicativos.

### Uma estratégia de dados eficiente

Reutilize modelos de dados em experiências de usuário final para Power Apps, Power Automate, Power BI, Power Virtual Agents e outros frontends para consistência e eficiência e menores custos de manutenção de longo prazo.

### Economize tempo

Automatize e aprimore elementos repetitivos e demorados, aproveitando modelos de dados e criando componentes reutilizáveis que podem ser utilizados em milhares de aplicativos



## Segurança

### Uma plataforma em que você pode confiar

Criado no Azure, disponível em 54 data centers em todo o mundo. Liderança em conformidade com 13+ padrões, incluindo FedRAMP high, HIPAA, cláusulas modelo da UE, SOC e GDPR).

### Mantenha a conformidade

Uma plataforma de dados low-code projetada para estar em conformidade com o GDPR, com mais de 90 certificações de conformidade, mais do que qualquer plataforma semelhante, incluindo mais de 50 específicas para regiões e países globais.

### Fácil de gerenciar

Sem comprometer a governança e a segurança, fornecendo os principais recursos de segurança e conformidade de que você precisa para a infraestrutura crítica de aplicativos.



## Agilidade

### Mais valor para o negócio

Economize tempo no encanamento contando com uma plataforma de dados gerenciados, permitindo um tempo de implantação mais rápido, com mais valor comercial em geral.

### Pronto para ser inovador

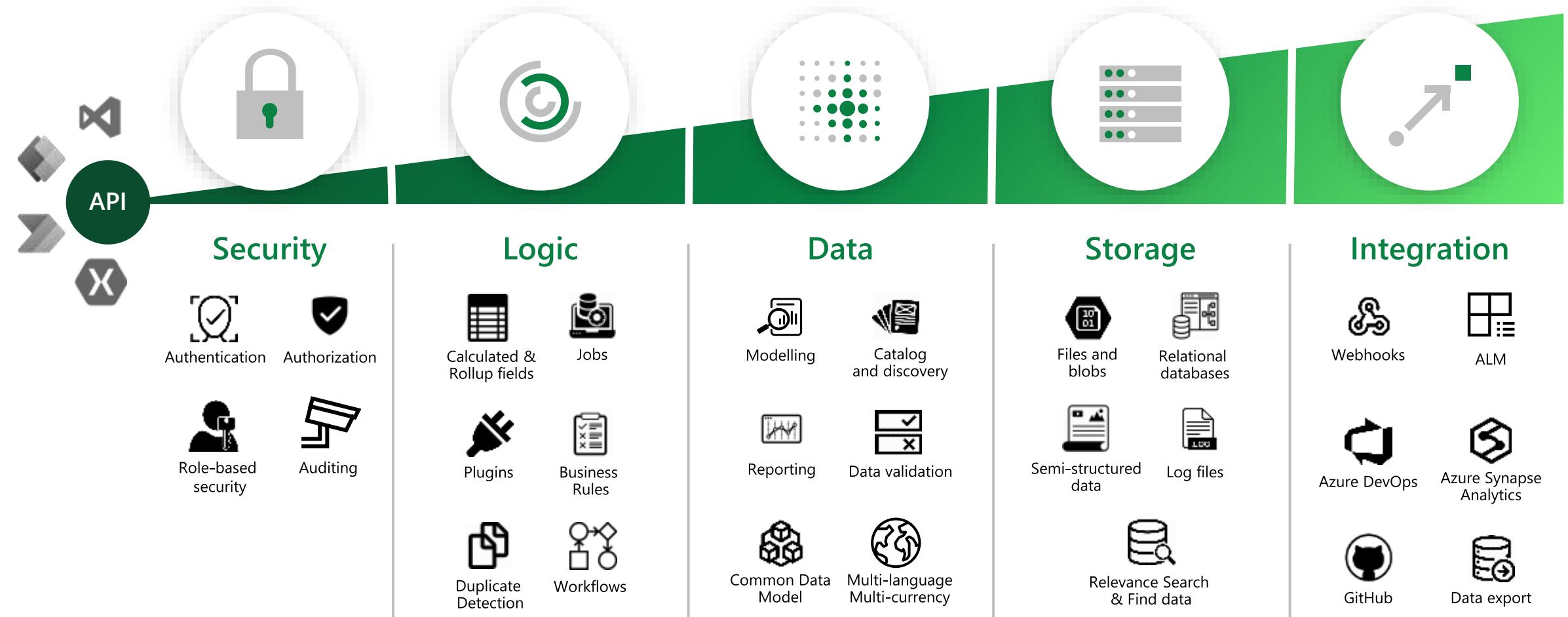
Crie rapidamente aplicativos e fluxos de trabalho usando um modelo de dados extensível com lógica de negócios, segurança e integração integradas.

### Aproveite o modelo de dados comum

Com entidades comuns prontas para uso, atributos estendidos, significados semânticos, ferramentas, integração nativa com a plataforma Microsoft e um ecossistema aberto, você pode obter uma vantagem inicial para ser verdadeiramente ágil.

# Por que Dataverse?

Uma plataforma de desenvolvimento de aplicativos low-code em que você pode confiar



# Por que Dataverse?

Recursos de plataforma de dados que ampliam a capacidade, o controle e a segurança quando você precisa

## Clients

Web  
Mobile (power Apps/D365 Player)  
Desktop  
Microsoft Outlook  
Microsoft Excel  
Microsoft Teams

## Data

Advanced Data Types  
Activities/Activity Feeds  
Common Data Model  
Managed Lake  
Mobile Offline  
Non-Relational Log  
Relevance Search  
Virtual Entities  
Relational  
Basic Datatypes  
Common Data Model (coming Soon)  
Custom Tables  
File + Image, Find, Filter, Sort

## Integration

API Access  
Event to Event Hub  
Events to Service Bus  
Export to Lake  
Plugins  
Server-Side Sync  
Web Hooks  
Power Automate  
O365 and Microsoft Dataverse for Teams included, Premium with license  
Data Flows (Import only)

## Security + compliance

Admin Roles  
User Roles  
Business unites (multiple)  
Customer Managed Keys  
Hierarchical Security  
Field Level Security  
Sharing WS Trust/Legacy AuthN  
Activity Logging  
Auditing  
Encryption at Rest  
Encryption in Transit  
Business unit (1 per Team)

## Environment lifecycle

Unlimited environments  
Reset  
Copy  
Promote to Common Data Service/D365  
Backup  
Point-in-time Restore  
Disaster Recovery

## App lifecycle

Unmanaged solutions (unlimited)  
Managed solutions (unlimited)

## Business rules and workflows

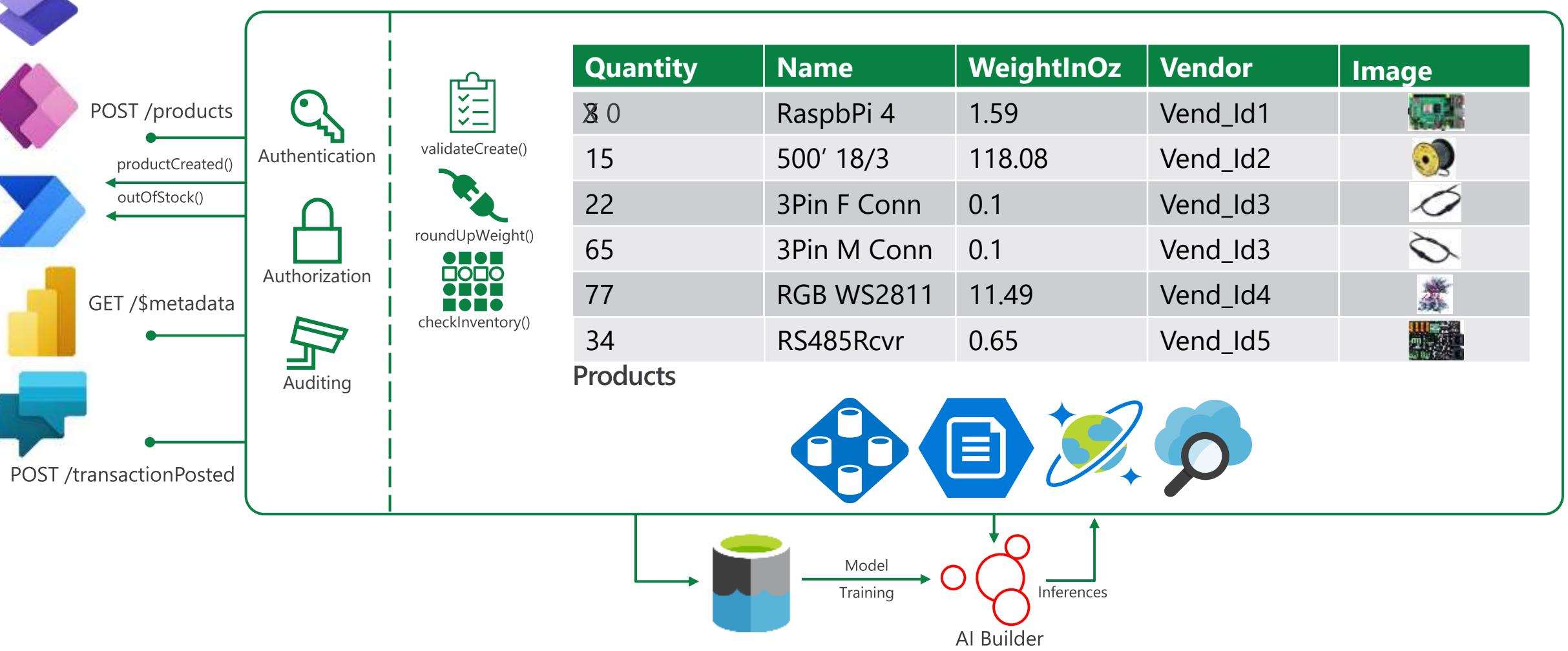
Business Rules  
Business Process Flows

## Reporting

Paginated reports (SSRS)  
Data Visualization  
Power BI (Coming soon)

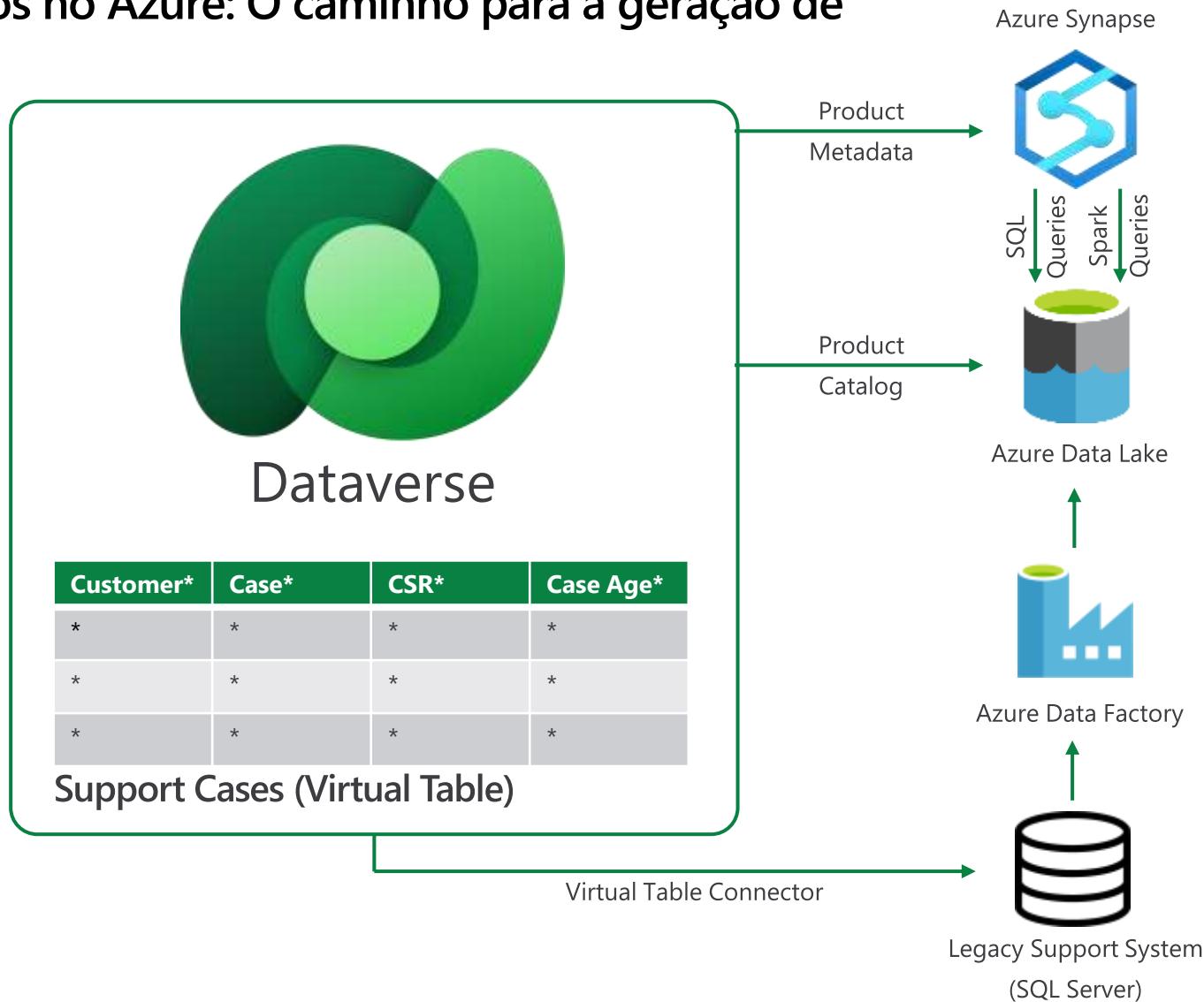
# Por que Dataverse?

Uma plataforma de dados low code



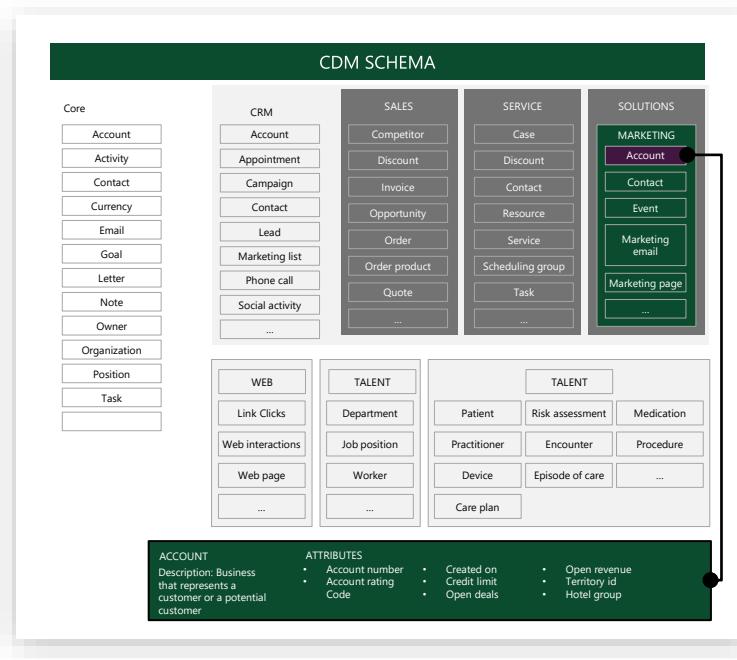
# Por que Dataverse?

Dataverse + Dados no Azure: O caminho para a geração de insights

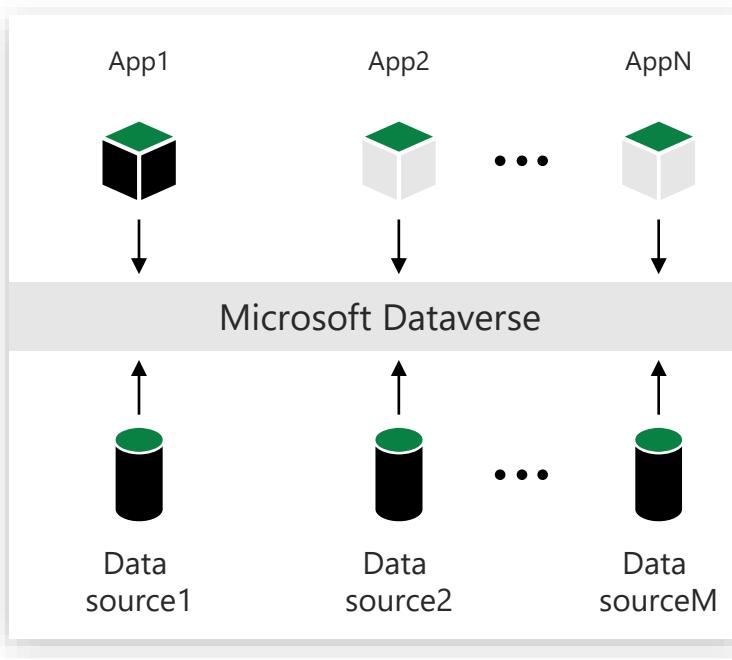


# Por que Dataverse?

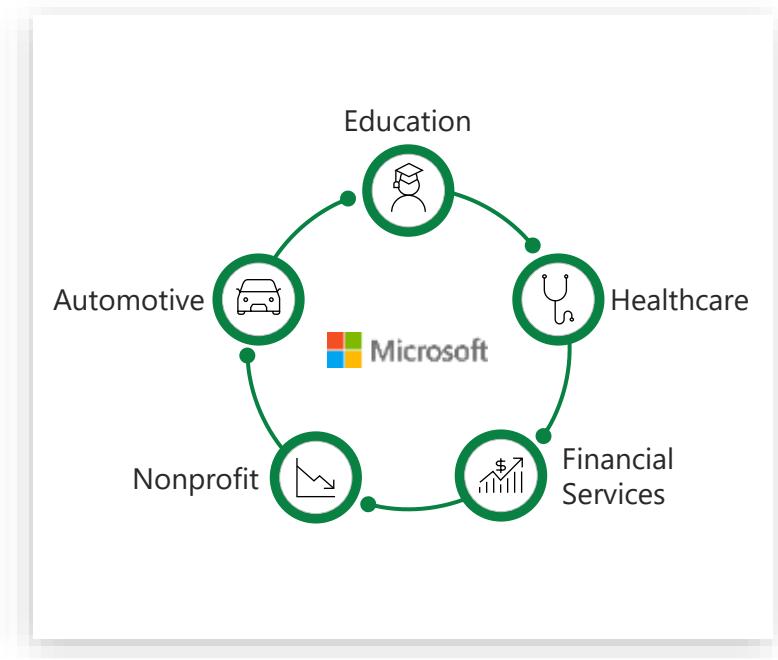
Modelo de dados de código aberto com CDM (Common Data Model)



Modelo de dados de código aberto e compartilhado que fornece consistência semântica para dados



Permite que os makers desenvolvam aplicativos e integrações mais rapidamente para interagir mais facilmente em vários sistemas



Um conjunto crescente de soluções e parceiros que contribuem para o esforço implementando o CDM ou estendendo-se com domínios específicos do setor

# Model Driven Apps

Aplicativos para suportar processos complexos

1

Crie aplicativos responsivos baseados na sua **estrutura de dados** no **Dataverse**

2

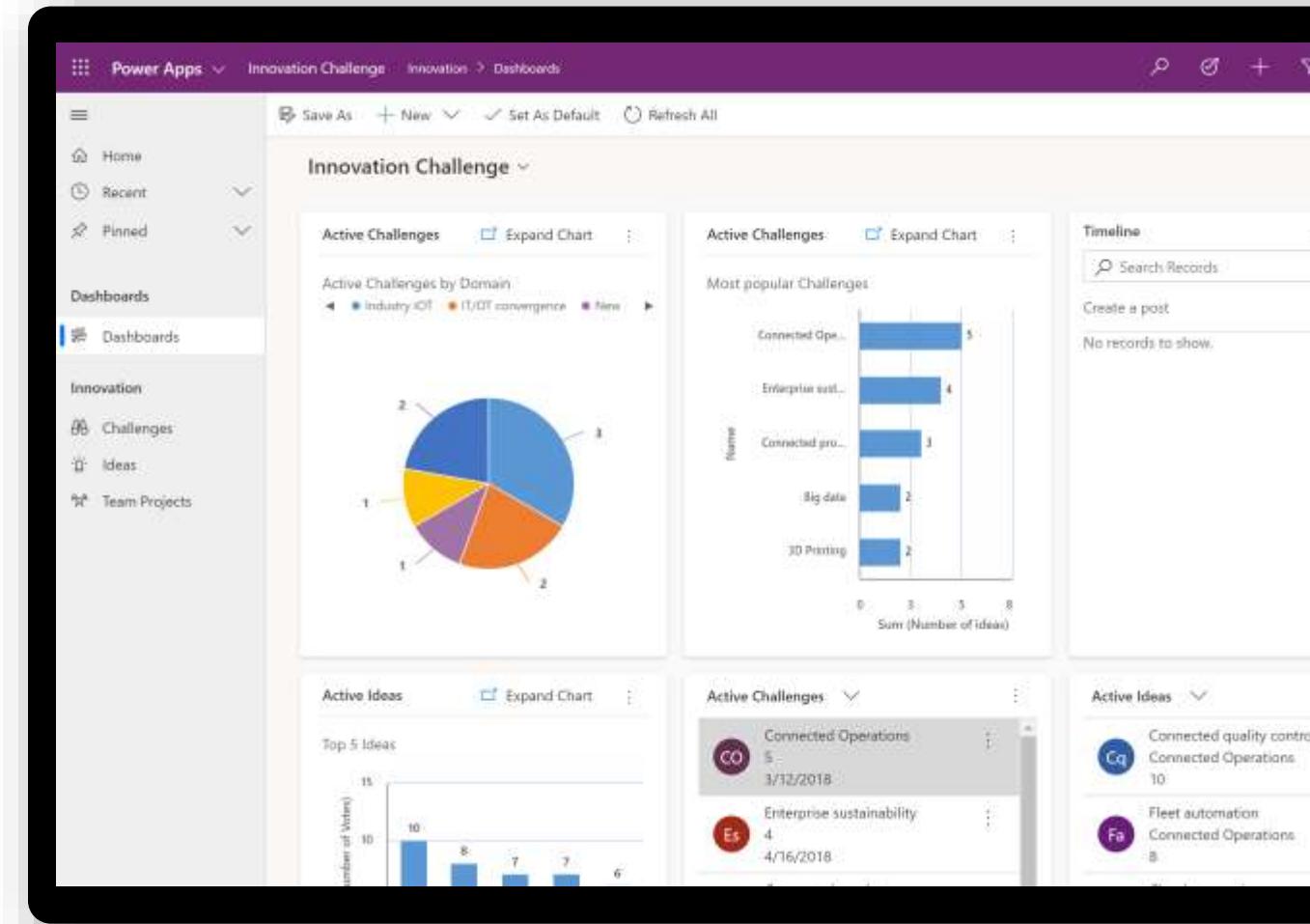
Forneça uma **experiência** de uso **consistente** para todos os seus aplicativos, independentemente do dispositivo

3

Aumente a **eficiência** do processo ao fornecer uma **navegação** e manipulação de dados **ágil**.

4

Migração entre ambientes **ágil** e **simples**



# Model Driven Apps versus Canvas Apps

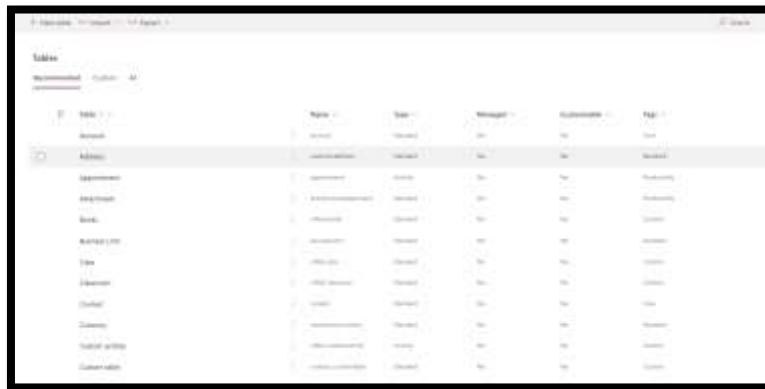
## Tabela comparativa

Categoria	Model-driven apps	Canvas apps
<b>Plataforma de dados</b>	Somente Dataverse	Dataverse + outras plataformas através de conectores
<b>Experiência de design</b>	Design focado em componentes sem código	Manipulação usando expressões Power Fx
<b>Controle de interface do usuário</b>	Personalização limitada, predominante	Controle total
<b>Consistência do aplicativo</b>	Alto – difere predominantemente com base nas tabelas e exibições escolhidas	Muitas vezes baixo, dado o controle significativo que os designers têm da experiência do usuário
<b>Migração entre ambientes</b>	Simples	Potencialmente complexo, dado que as fontes de dados podem precisar ser atualizadas
<b>Velocidade de criação</b>	Rápido	Depende da complexidade do projeto
<b>Responsividade</b>	Automática	Somente responsivo se projetado dessa maneira
<b>Navegação por relacionamentos</b>	Automático, desde que existam relacionamentos	Somente quando projetado e aplicado usando fórmulas Power Fx
<b>Recursos de acessibilidade</b>	Nativos	Deve ser projetado no aplicativo: <a href="#">Create accessible canvas apps</a>

# Model Driven Apps

## Ferramentas para criação

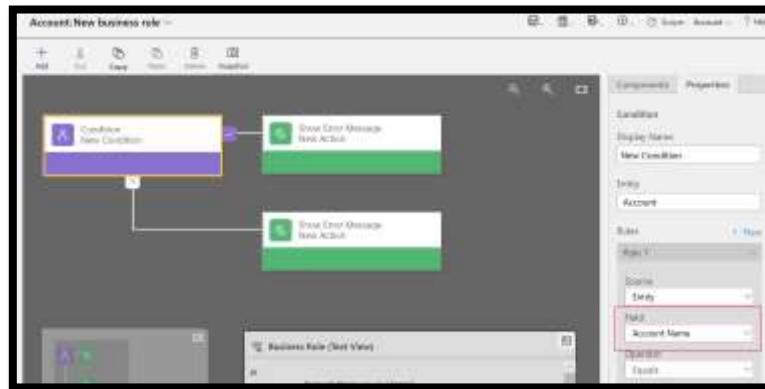
Editor de tabelas



Criação de **tabelas** e seus componentes, dentre eles:

- Campos
- Formulários
- Exibições
- Relacionamentos

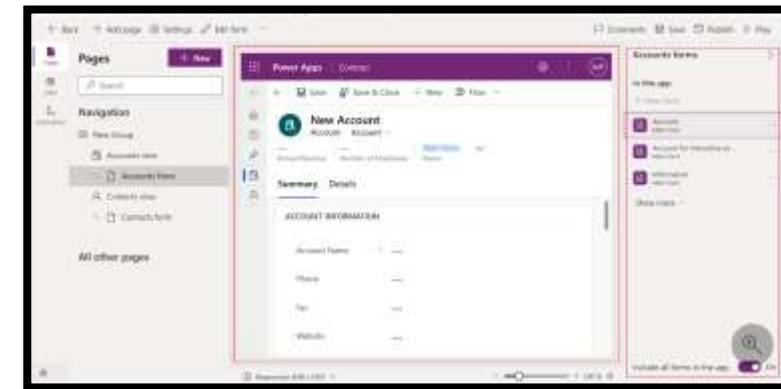
Editor de regras de negócio



Criação de **regras condicionais** a serem aplicadas nos formulários:

- Obrigatoriedade
- Valor padrão
- Controle de exibição de campos

Editor de aplicativos



Definição dos **componentes** que farão parte do aplicativo.

# Model Driven Apps

## Grid de dados editáveis

### Edição em linha

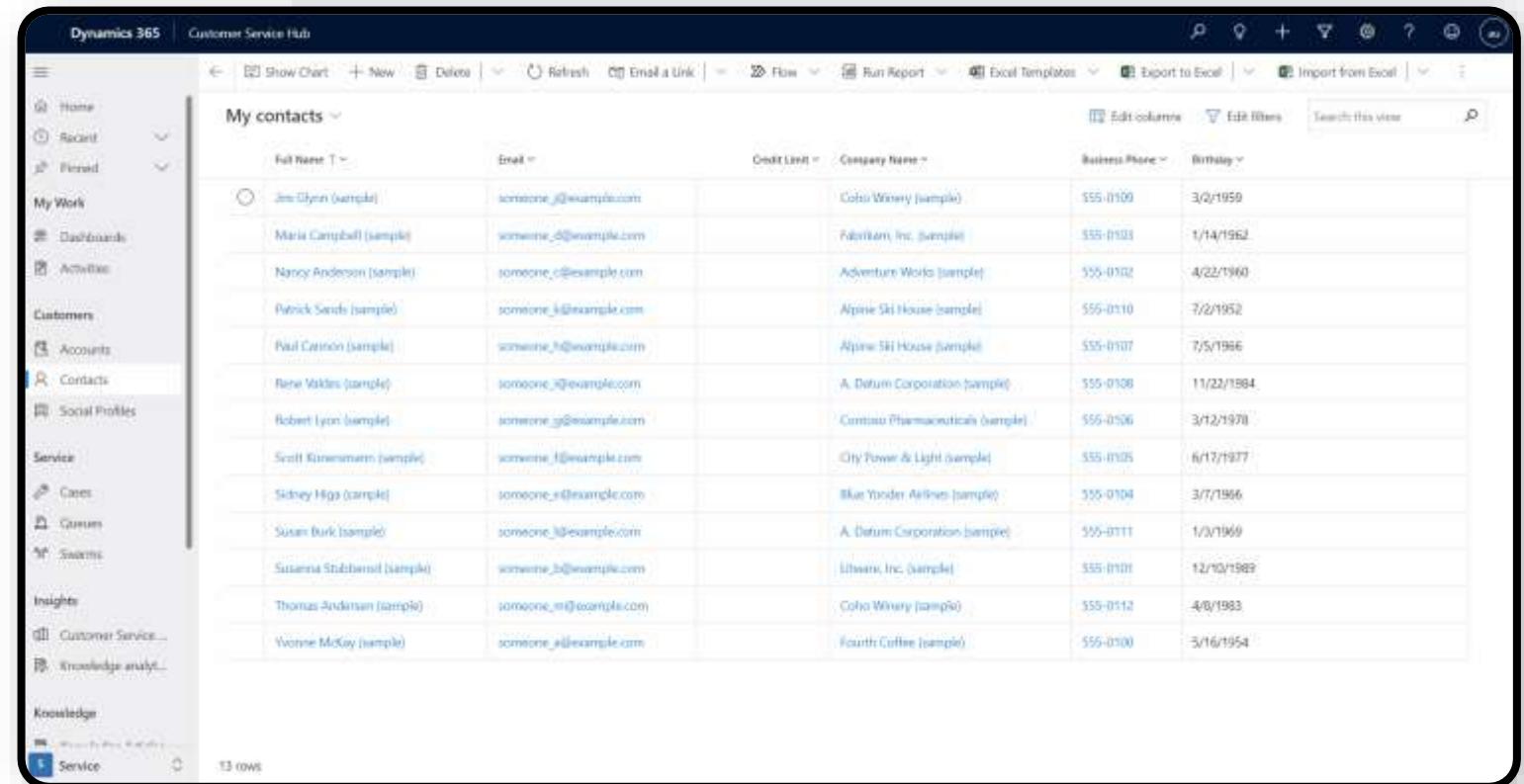
Exibir e abrir registros em modos de exibição e subgrades e habilitar alterações diretamente na grade sem navegar para um formulário

### Rolagem infinita

Uma experiência de navegação moderna que permite aos usuários rolar indefinidamente os dados

### Renderizadores/editores de células personalizados

Para fazer modificações em uma ou mais colunas por meio da propriedade "Controle do personalizador"



The screenshot shows the Dynamics 365 Customer Service Hub interface. On the left is a navigation sidebar with links like Home, Recent, Folders, My Work, Dashboards, Activities, Customers, Accounts, Contacts, Social Profiles, Service, Cases, Curations, Surveys, Insights, Customer Service, and Knowledge. The main area is titled 'My contacts' and displays a grid of 13 rows of contact information. Each row includes columns for Full Name, Email, Credit Limit, Company Name, Business Phone, and Birthday. To the right of each row is a small circular icon with a pencil symbol, indicating that the data can be edited directly from the grid.

Full Name	Email	Credit Limit	Company Name	Business Phone	Birthday
Jim Glynn (sample)	someone_j@example.com		Coho Winery (sample)	555-0109	3/2/1959
Maria Campbell (sample)	someone_c@example.com		Fabrikam, Inc. (sample)	555-0103	1/14/1962
Nancy Anderson (sample)	someone_n@example.com		Adventure Works (sample)	555-0102	4/22/1960
Patrick Sando (sample)	someone_p@example.com		Alpine Ski House (sample)	555-0110	7/2/1952
Paul Cannon (sample)	someone_h@example.com		Alpine Ski House (sample)	555-0107	7/5/1966
Rene Wilders (sample)	someone_r@example.com		A. Datum Corporation (sample)	555-0108	11/22/1984
Robert Lyon (sample)	someone_g@example.com		Contoso Pharmaceuticals (sample)	555-0106	3/12/1978
Scott Koenemann (sample)	someone_f@example.com		iCity Power & Light (sample)	555-0105	6/17/1977
Sidney Higa (sample)	someone_e@example.com		Blue Yonder Airlines (sample)	555-0104	3/7/1966
Susan Burk (sample)	someone_d@example.com		A. Datum Corporation (sample)	555-0111	1/3/1969
Susanna Stubben (sample)	someone_b@example.com		Uhura, Inc. (sample)	555-0101	12/10/1989
Thomas Andersson (sample)	someone_m@example.com		Coho Winery (sample)	555-0112	4/6/1983
Yvonne McKay (sample)	someone_s@example.com		Fourth Coffee (sample)	555-0100	3/16/1954

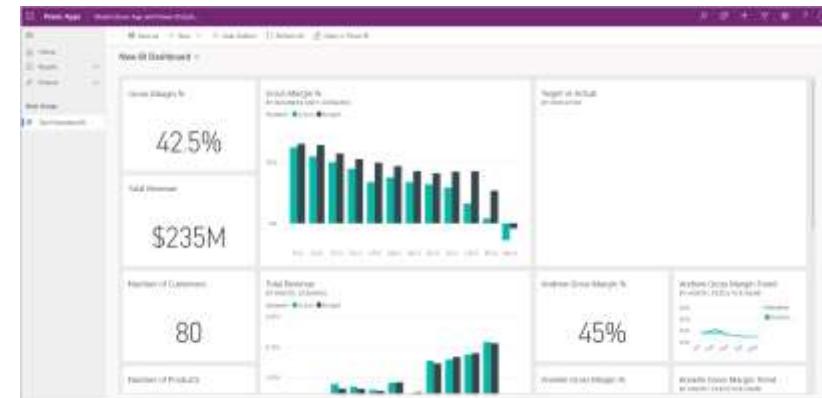
# Model Driven Apps

## Integrações nativas disponíveis

### Gestão de documentos no Sharepoint

The screenshot shows the SharePoint interface for managing documents. It includes a navigation bar at the top, a search bar, and a main content area displaying a list of documents. A sidebar on the left provides navigation links for Home, Recent, and Recently added items.

### Dashboards do Power BI



### Execução de fluxos do Power Automate

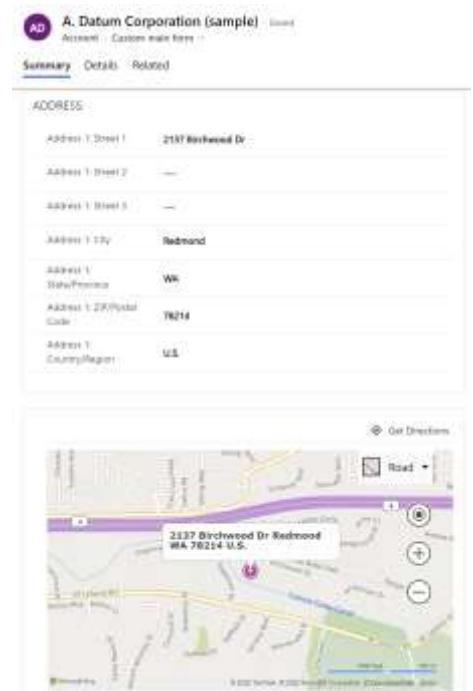
The screenshot shows the Power Automate interface. At the top, there are navigation icons for Email a Link, Flow, Export to Excel, and Import from Excel. Below this, a 'Manage' section offers options to 'Create a flow' and 'See your flows'.

### Edição de dados no Excel Online

The screenshot shows an Excel Online spreadsheet titled 'Active Ideas'. The table lists various ideas along with their status, last modified date, and a timestamp. A context menu is open over the row for the idea 'Cloud computing', with options like 'Open in Excel Online', 'Static Worksheet', 'Dynamic Worksheet', and 'Dynamic PivotTable'. The table also includes columns for 'Last modified by', 'Last modified on', and 'Timestamp'.

Active Ideas	Last modified by	Last modified on	Timestamp
Cloud computing	Sriram	7/7/2020 11:30 PM	7/7/2020 11:30 PM
Tiny Homes	AI Printing	7/7/2020 11:30 PM	7/7/2020 11:30 PM
Integrated service management	Connected Operations	8/7/2020 11:30 PM	8/7/2020 11:30 PM
Rapid prototyping	Industrial manufacturing	8/7/2020 11:30 PM	8/7/2020 11:30 PM
Quality control sample	Connected Operations	8/7/2020 11:30 PM	8/7/2020 11:30 PM
Solar panels	Enterprise sustainability	8/7/2020 11:30 PM	8/7/2020 11:30 PM
Automation sample	Connected Operations	8/7/2020 11:30 PM	8/7/2020 11:30 PM

### Mapas do Bing Maps



# Opções escalonáveis de modelagem e armazenamento de dados



## SharePoint Online Lists

- Built and maintained by **citizen developers**
- Connect natively with a **standard connector**
- Good for **low volume and simple non-relational data model** shared across O365 and Power Platform
- **Simple Permission Groups** managed by IT Professionals and super users



## Dataverse for Teams

- Built and maintained by **citizen developers**
- Connect natively with **Microsoft Teams**
- Good for **low volume of relational data structures** to use exclusively within Microsoft Teams
- **One-click upgrade to Dataverse**
- **OMG** (Owner, Member, Guest) permissions



## Microsoft Dataverse

- Built and maintained by **super users**
- Connect natively with a **premium connector<sup>1</sup>**
- Good for **large volume of transactional data** (Data, Files, Log)
- Out-of-the-box **multi-language and multi-currency support**
- **Advanced Role Based Access Control (RBAC)**
- Auto **Load-Balancing, Backup, Restore and audit log**
- Customizable **duplicate detection** and **business rules**



## On Premises Data

- Built and maintained by **IT professionals**
- Connect with an **On-Premises data gateway<sup>1</sup>**
- Good for connecting to **legacy master data and systems**
- **Share same Gateway** across Power Apps, Power Automate and Power BI
- Can be configured for **load balancing**



## SQL On Azure

- Built and maintained by **IT professionals**
- Connect with a **premium connector<sup>1</sup>**
- Good for **very large volumes of master data** shared with heterogeneous systems
- Role Based Access Control (**RBAC**) **customizable by IT Professionals**
- Data Quality Tools and Business rules **customizable by IT Professionals**

<sup>1</sup>Feature requires standalone Power Apps or Power Automate user license

# Opções escalonáveis de modelagem e armazenamento de dados

	SharePoint Lists	Dataverse for Teams	Dataverse	On Premises Data	Azure SQL
Maximum data capacity	25 TB per site collection <i>limits when <a href="#">accessing and operating</a> on lists in an app</i>	2 GB per environment <i>no option to increase but can upgrade to Dataverse environment</i>	4 TB per environment	-	100 TB
Hierarchical security	None	None	Out of the box <i>via <a href="#">Business units</a></i>	-	Customization
Field level security	None	None	Out of the box	-	Out of the box
Who will create and manage the app and data model?	Business	Business	Business or IT	IT	IT
Data model complexity	Simple or flat	Simple or complex	Simple or complex	Complex	Very complex
Platform	PaaS	SaaS	SaaS	-	PaaS
Advanced analytics and reporting	Simple reporting on non-real time data. Refresh is on a schedule.	Direct Query with security trimming and near real-time updates.	Connects to Data Lake Gen 2 for advanced analytics. Direct Query with security trimming and near real-time updates.	-	Direct Query available for near real-time update.

# Power Pages

# Evite desafios comuns do desenvolvimento web com o Power Pages



Restrições orçamentárias e de tempo



Fluxos de negócios complexos



Restrições de hospedagem de sites



UX Design



Integração de produtos



Silos de dados



Riscos de segurança e conformidade

# Diferenciação do Power Pages na Power Platform

## Necessidades do público do usuário e suas respectivas opções

Historicamente requer desenvolvimento de aplicativos tradicionais, poucas soluções prontas

Public/Anonymous  
Usuários externos



**Externo**  
Clientes,  
Parceiros,  
Fornecedores,  
Vendedores, etc.

**Interno**  
Usuários dentro  
da minha  
organização

Produtividade no local de trabalho  
Desenvolvimento low-code



Public/Anonymous  
Usuários externos



Usuários internos



Power BI



Power Automate



Power Apps



Dynamics 365



Office 365

Capaz de atender a todos os públicos de usuários



Power Pages



Power Virtual Agents



Power BI Embedded

# O Power Pages oferece suporte a sites de negócios



## Digitalização de serviços públicos

Atenda a comunidade em escala

Permissões

Licenças

Pedidos

Relato de  
incidentes/interrupções

## Autoatendimento ao Cliente

Forneça suporte 24/7

Inscrição

Devoluções

Suporte

Compromissos

Agendamentos

Fóruns

## Operações de parceiros

Simplifique os processos de negócios

Onboarding

Rastreio

Solicitações

Supporte

## FAQs

Fornecer respostas para perguntas comuns

Produtos

Serviços

Eventos especiais

Políticas

Procedimentos



Brochures

Photography portfolios

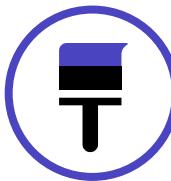
Blogs

# Crie sites de negócios modernos, seguros e responsivos



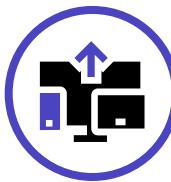
## Facilite a criação para todos

Permita que todos em sua organização projetem e iniciem sites envolventes – sem necessidade de codificação.



## Construa sem limites

Capacite seus desenvolvedores com ferramentas avançadas de web design que podem levar suas páginas a um nível totalmente novo.



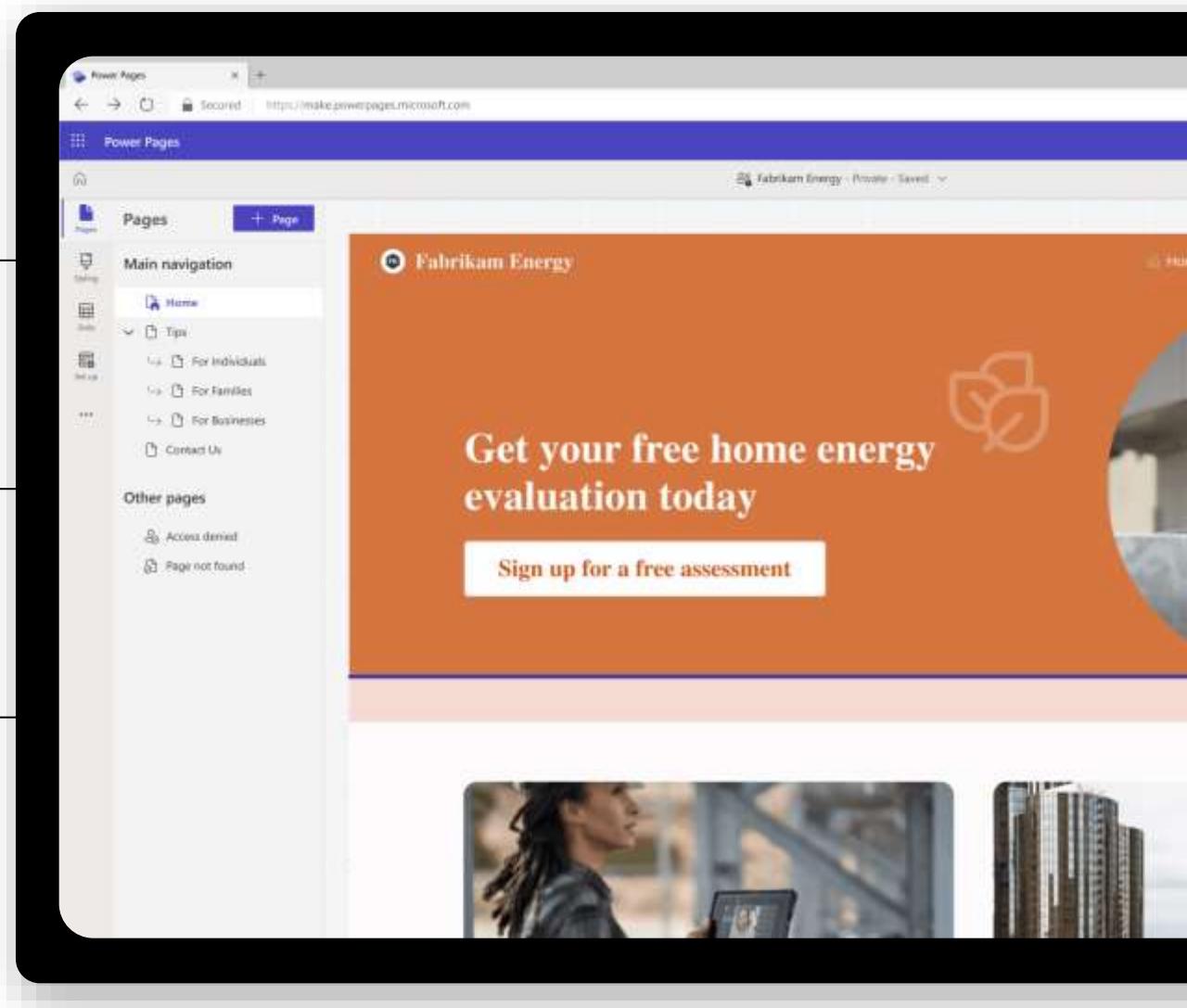
## Compartilhe com segurança

Gerencie todos os seus sites em um único local e atenda aos seus requisitos de segurança e conformidade mais exigentes.



## Aproveite os novos e empolgantes recursos de desenvolvimento

Adicione painéis, compartilhamento de documentos, chatbots, automação e muito mais para uma experiência mais inteligente, com **integração nativa** com Power Platform e a outros serviços da Microsoft.



# Crie sites de negócios modernos, seguros e responsivos



## Facilite a criação para todos



Design pixel perfect web pages with ease



Make secure login easy



Add a search functionality



Extend Dynamics 365 and other business apps



Support multiple languages



## Construa sem limites



Customize your sign-in experience



Expand your existing websites



Accelerate development with your own templates



Bring custom code to low-code



Streamline your app lifecycle management



## Compartilhe com segurança



Unify your management experience



Support multiple security scenarios



Make your site more accessible



Manage and remediate, faster



Meet your privacy requirements



## Snap in exciting new pro-dev capabilities



Display business intelligence reports and dashboards



Share documents and files

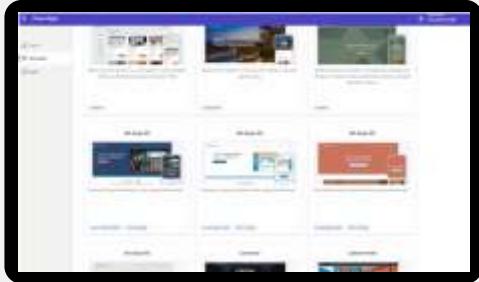


Enable chatbot agents



Get a better understanding of your website traffic

# Conheça o Power Pages Studio



## Template Hub

Crie seus sites corporativos a partir de modelos e personalize facilmente a partir de **16 novas opções**.

Resolva casos de uso comuns entre setores, simplifique processos de negócios específicos e estenda aplicativos **do Dynamics 365**.

## Design Studio

Use-o para **personalizar, configurar e publicar** sites de negócios modernos, responsivos e centrados em dados.

Os criadores agora podem criar **formulários de várias etapas** e adicionar **CSS personalizado**

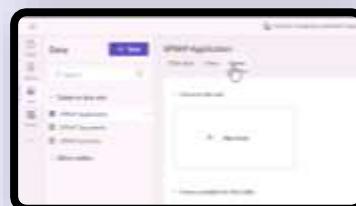
## Quatro espaços de trabalho



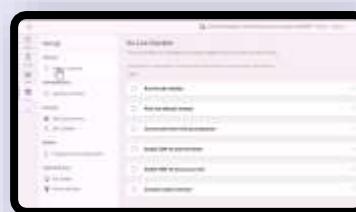
Pages workspace



Styling workspace



Data workspace



Setup workspace



## Learn Hub

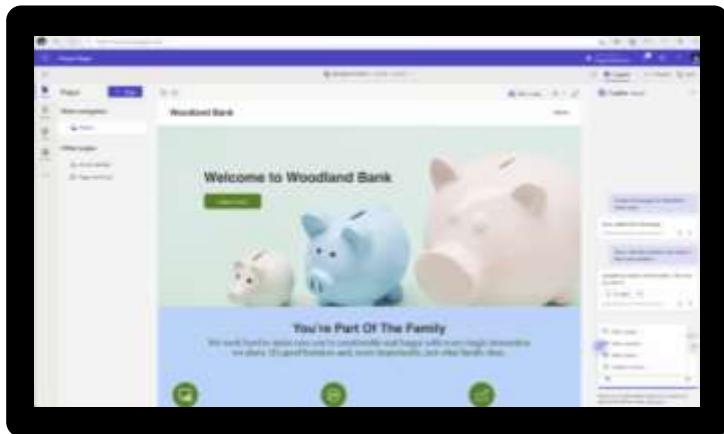
Explore guias, tutoriais e vídeos rápidos para aprender a **criar, modelar, visualizar** e muito mais.

A recém-adicionada seção **Tutoriais** oferece mais suporte para desenvolvedores profissionais e cidadãos

# Copilot no Power Pages | Recursos generativos de IA

## Crie páginas do site

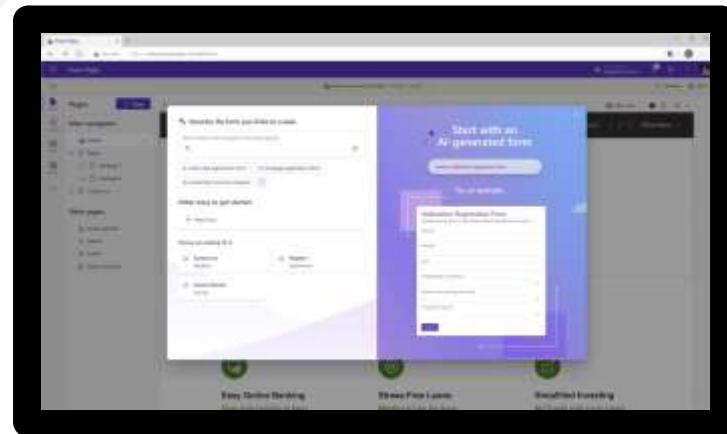
Linguagem natural para página



Crie layouts de página com o conteúdo inicial apropriado do site por meio de linguagem natural.

## Crie formulários

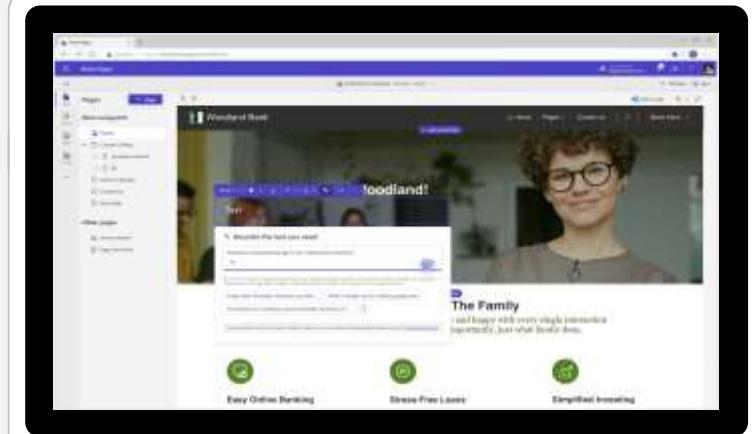
Linguagem natural para formulários



Crie formulários e as tabelas apropriadas para armazenar os dados do formulário.

## Crie conteúdo de texto

Linguagem natural para texto

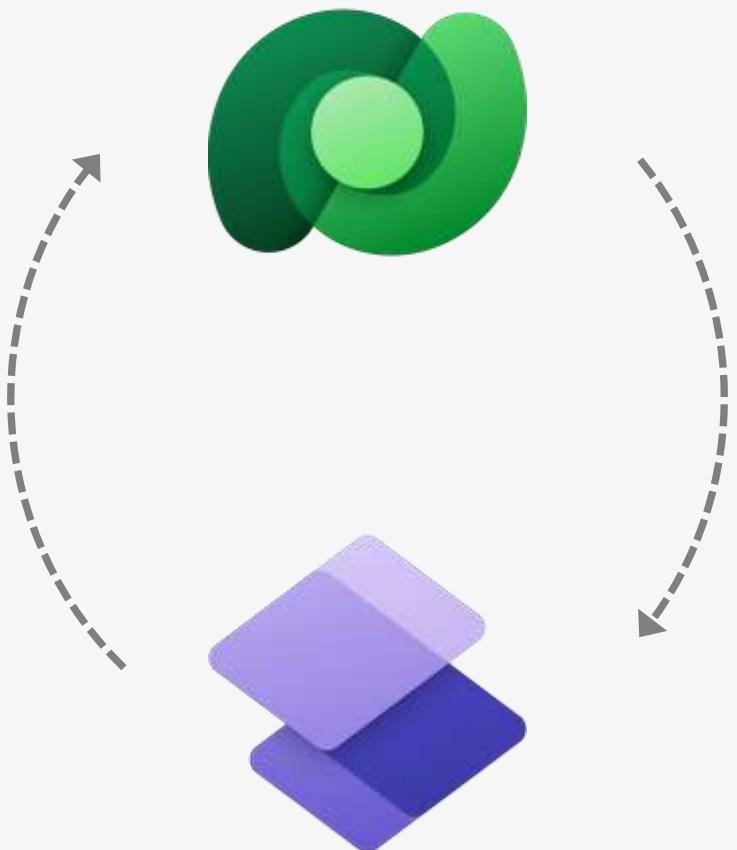


Use linguagem natural para gerar o conteúdo de texto que pode ser ajustado para comprimento, tom e muito mais.

Verificações responsáveis de IA + verificações de moderador de conteúdo do Power Pages + verificações de moderador de conteúdo do Azure Open AI

Azure OpenAI

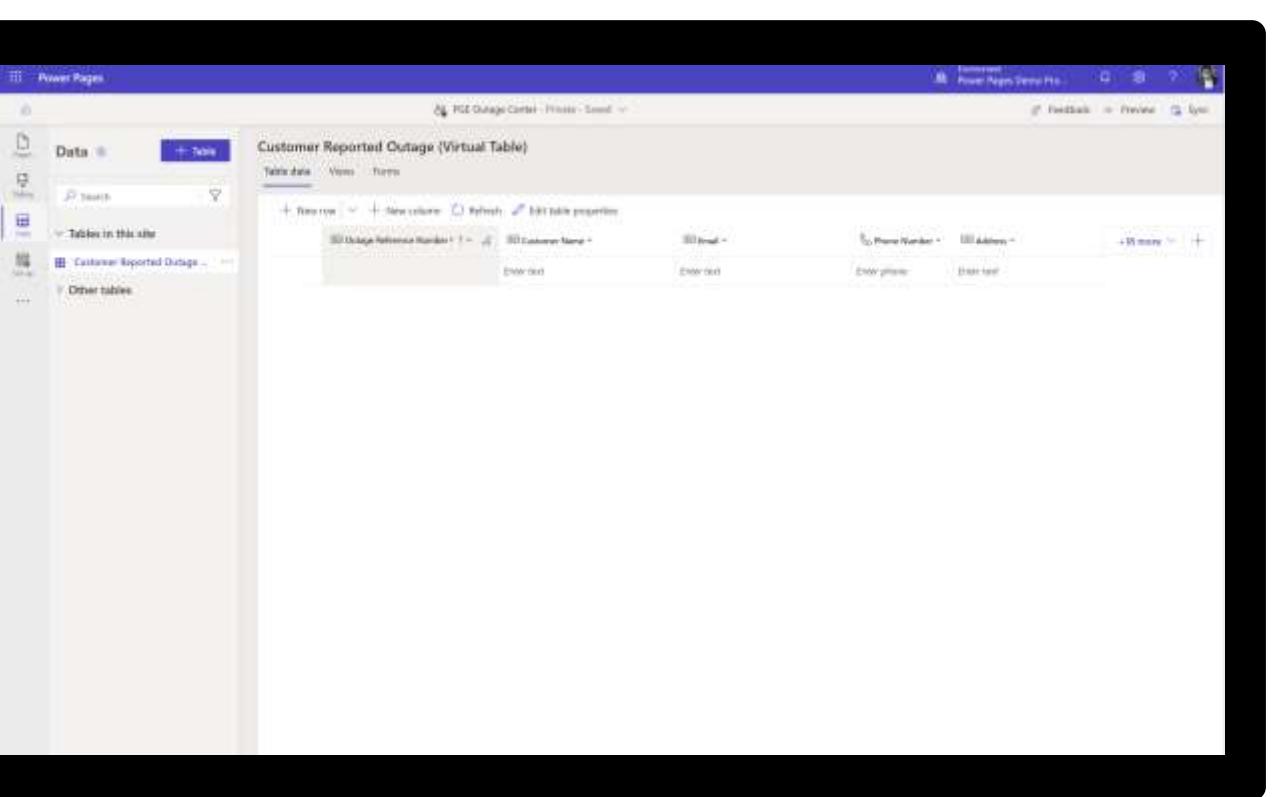
# Power Pages utiliza Microsoft Dataverse



## O Dataverse é a plataforma de dados low-code da Microsoft

- O Dataverse extrai perfeitamente dados de uma variedade de fontes e armazena esses dados em uma única fonte de verdade que é executada **na segurança do Azure**, habilita análises simplificadas e vem equipada com automação interna.
- Os dados do Dataverse são usados para executar **rapidamente o Power Pages**, aproveitando os mesmos componentes utilizados nas apps Model Driven
- O Power Pages não tem seu próprio armazenamento de dados, portanto, **não há atraso de sincronização** e a interação de dados em tempo real no Dataverse permite que você aja, automatize e avalie com as demais soluções da Power Platform.

# Fontes de dados externas: tabelas virtuais



## Generally Available

O suporte para Tabelas Virtuais do Dynamics 365 F&O permite a interação em tempo real a partir do Power Pages

## Public Preview

### Suporte para tabelas virtuais com conectores virtuais

- Habilita o suporte para SQL e SharePoint como fontes de dados no Power Pages
- A tabela virtual funciona como tabelas normais e vem com suporte para componentes OOB como formulários, formulários de várias etapas, lista etc.
- Oferece suporte a permissões de tabela (escopo de Contato e Conta), permitindo o acesso a dados em nível de linha

# Fontes de dados externas: Fluxos do Power Automate como APIs

```
POST https://demo.powerappsportals.com/_api/cloudflow/v1.0/trigger/ddf31952-b344-4b72-9785-ed3c0b5cafd5
Accept: application/json
Content-Type: application/json; charset=utf-8
Body:
{
    "text": "abc@contoso.com"
}

Response
Cloud flow without response action
HTTP/1.1 Accepted
Content-Type: application/json

Cloud flow with response action
HTTP/1.1 200 OK
Content-Type: application/json
Body
{
    "Name": "Sample Account",
    "Credit On Hold": false,
    "Description": "This is a sample account",
    "Revenue": 50000000
}
```

Permite chamar um fluxo de nuvem do Power Automate de forma segura a partir do site do Power Pages (em visualização)

- Novo gatilho de Power Pages que só seria ativado quando chamado a partir de Power Pages. Nenhum gatilho HTTP necessário.
- Defina qual fluxo pode ser chamado por qual usuário (função Web).
- O fluxo é chamado de forma síncrona como qualquer outra API da Web.

Como vai funcionar:

- Crie um fluxo com Power Pages como gatilho (novo tipo de gatilho).
- Dê permissão a uma função Web para chamar um fluxo específico.
- No site, chame o fluxo como uma API da Web. Passar parâmetros para o fluxo como uma API normal, também inclui contexto OOB padrão, como informações do site e do usuário

# Analytics and out-of-box granular security

## Obtenha informações sobre o uso do seu site usando provedores de análise padrão do setor



### Integração com fornecedores de análise padrão do setor

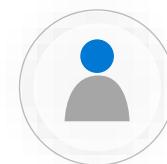
Obtenha informações sobre o comportamento do usuário em seu site integrando provedores de análise padrão do setor, como insights de aplicativos do Azure, Google Analytics, Microsoft Clarity, etc..

## Gerencie a exposição de dados – do nível da tabela ao nível da coluna – com permissões de tabela



### Confie na sua plataforma de dados

O Dataverse é executado no SQL TDE e é compatível com FIPS 140-2 (com criptografia e descriptografia em tempo real) e arquivos de log para dados em repouso.



### Os dados certos para as pessoas certas

Cada usuário autenticado do site é associado exclusivamente a um registro de contato no Dataverse, o que permite recursos como o gerenciamento de perfis para garantir que as pessoas tenham acesso apenas aos dados para os quais têm permissões.

# Segurança e governança aprimoradas

Suporte integrado para autenticação



Autorização baseada em função



Checklist do Go Live



Integração com o Azure Web Application Firewall



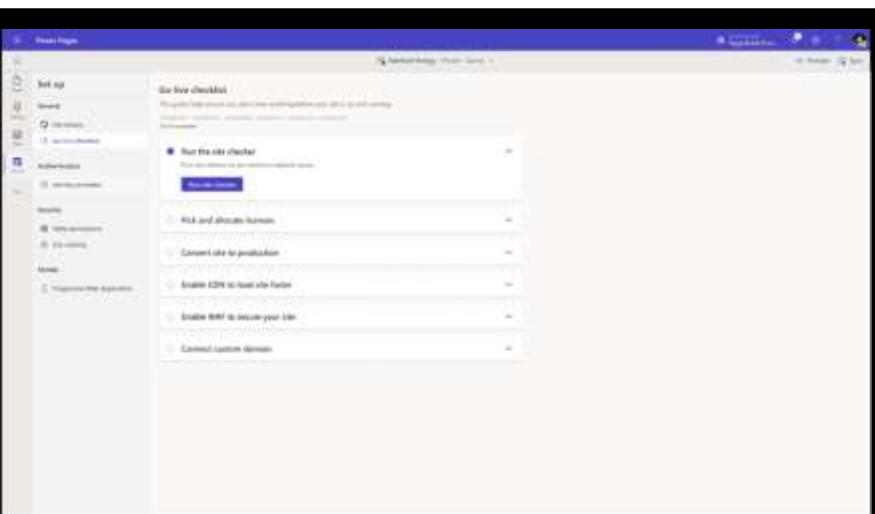
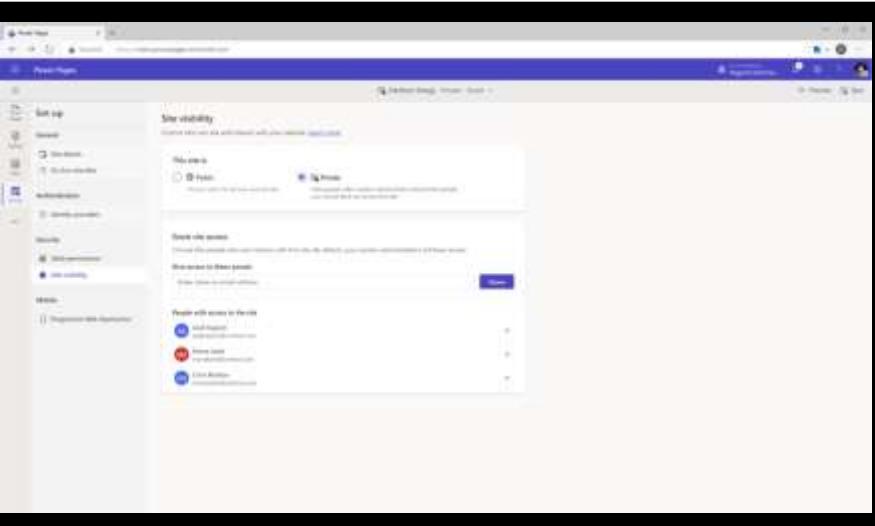
Sites mais rápidos com suporte à Content Delivery Network



Controle total sobre quem torna o site público



# Segurança e governança aprimoradas



## Segurança

Usando o Microsoft Azure e o Dataverse, o Power Pages fornece recursos de segurança críticos que incluem:

- Criptografia avançada
- Controles de acesso avançados baseados em função

## Permissões

- Configure permissões de tabela para permitir diferentes níveis de acesso e privilégios aos registros do Dataverse.
- As permissões de tabela e página individual estão associadas a funções Web para fornecer acesso apropriado aos usuários.

## Conformidade e privacidade

O Power Pages atende aos mais altos níveis de:

- Confiança e transparência
- Padrões conformidade
- Conformidade regulatória, como o Regulamento Geral de Proteção de Dados (GDPR)
- Padrões de criptografia modernos

## Usuários autenticados

Os usuários autenticados podem receber funções da Web que fornecerão acesso específico às informações no site.

O Power Pages pode ser integrado a muitos provedores de autenticação, como Azure Active Directory B2C, Microsoft e LinkedIn

## Governança

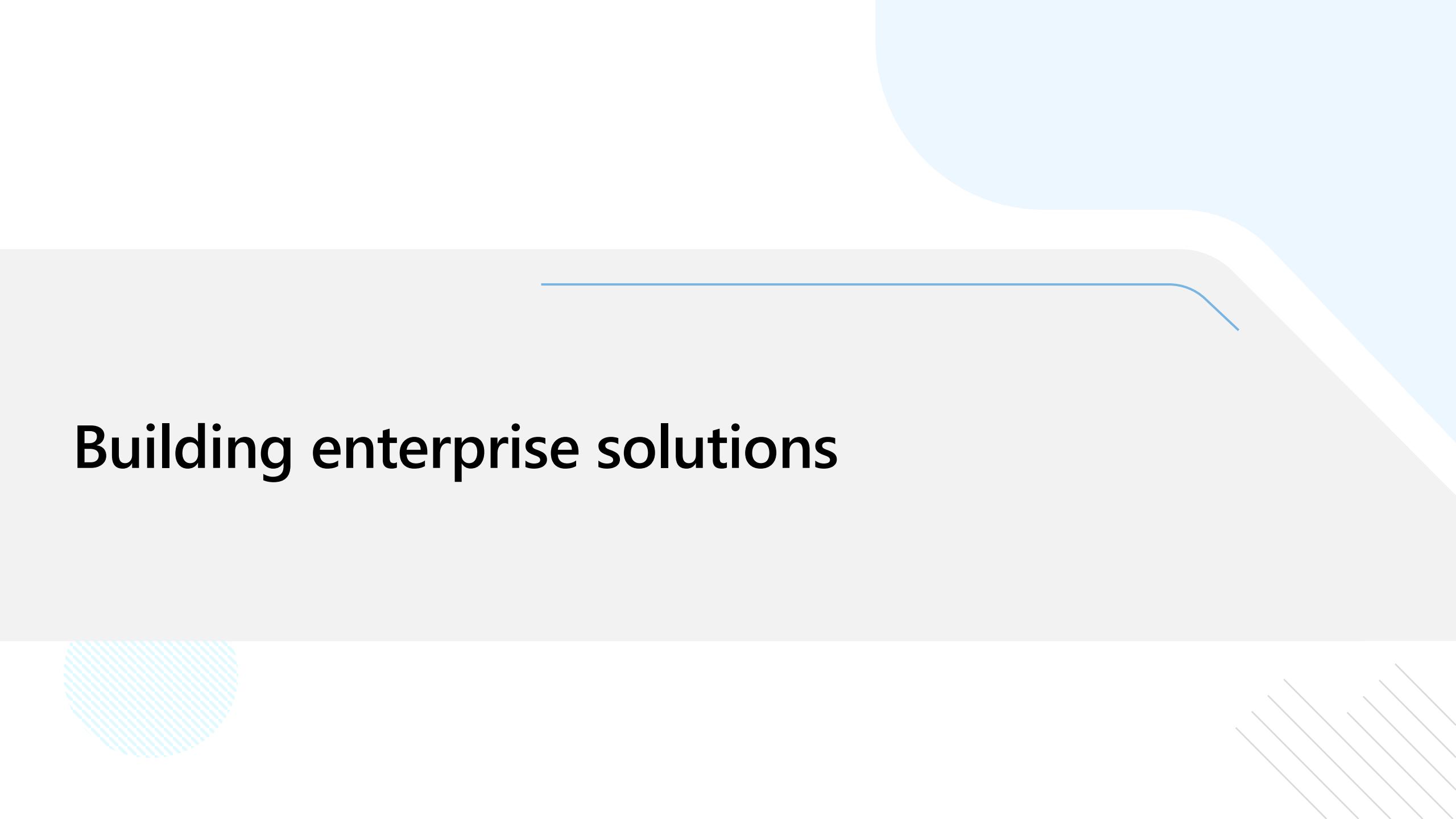
As novas atualizações de segurança e governança incluem:

- Integração com Azure Web Application Firewall
- Suporte à CDN (rede de entrega de conteúdo) com o Azure Front Door
- Suporte para domínios personalizados
- Adicionado suporte para novos dados do Microsoft Dataverse

## Funções da Web

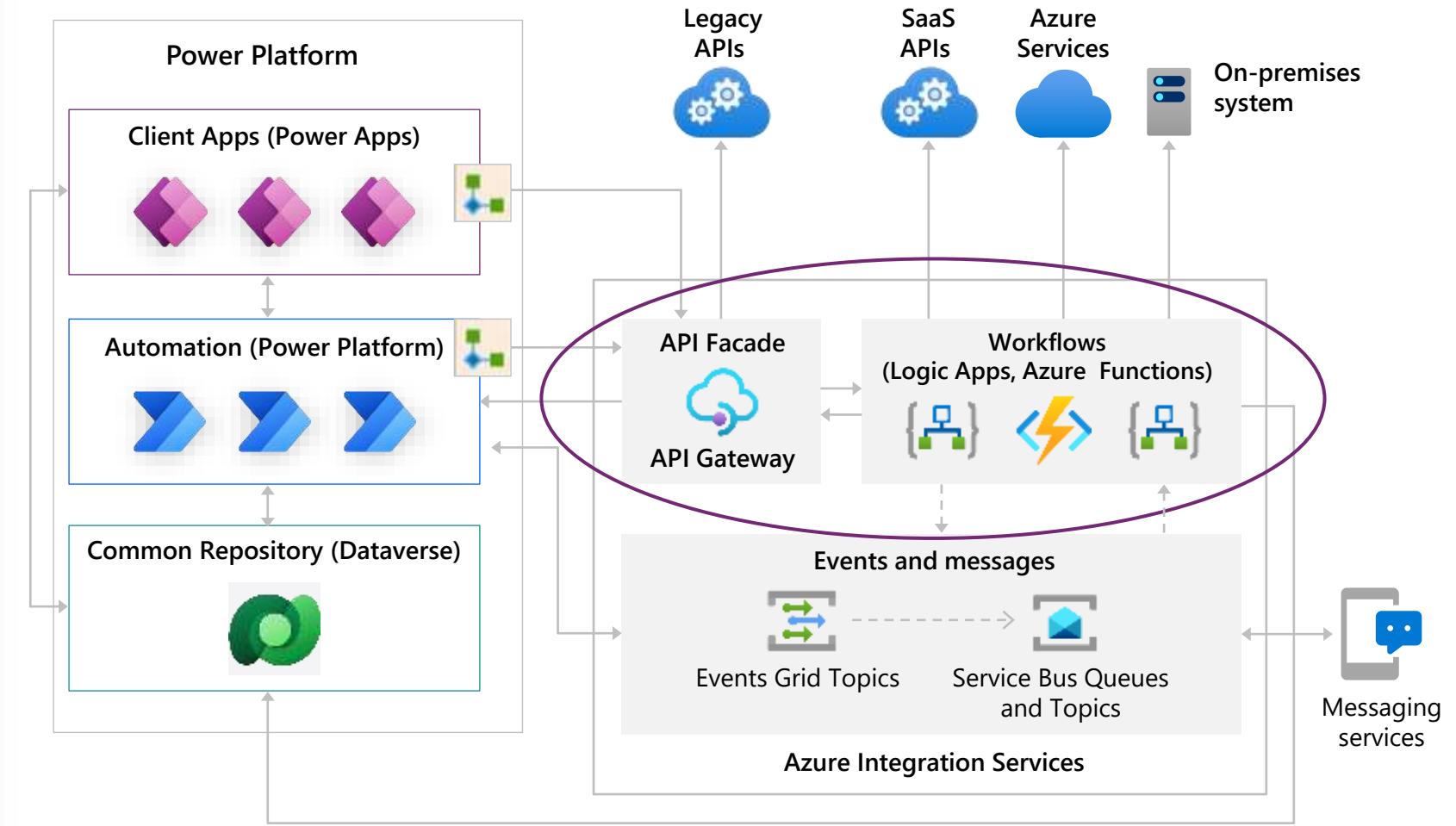
As funções da Web podem ser criadas para permitir que os usuários executem ações especiais ou acessem qualquer conteúdo e dados protegidos no site

funções da Web vinculam usuários à permissões de tabela e de página.



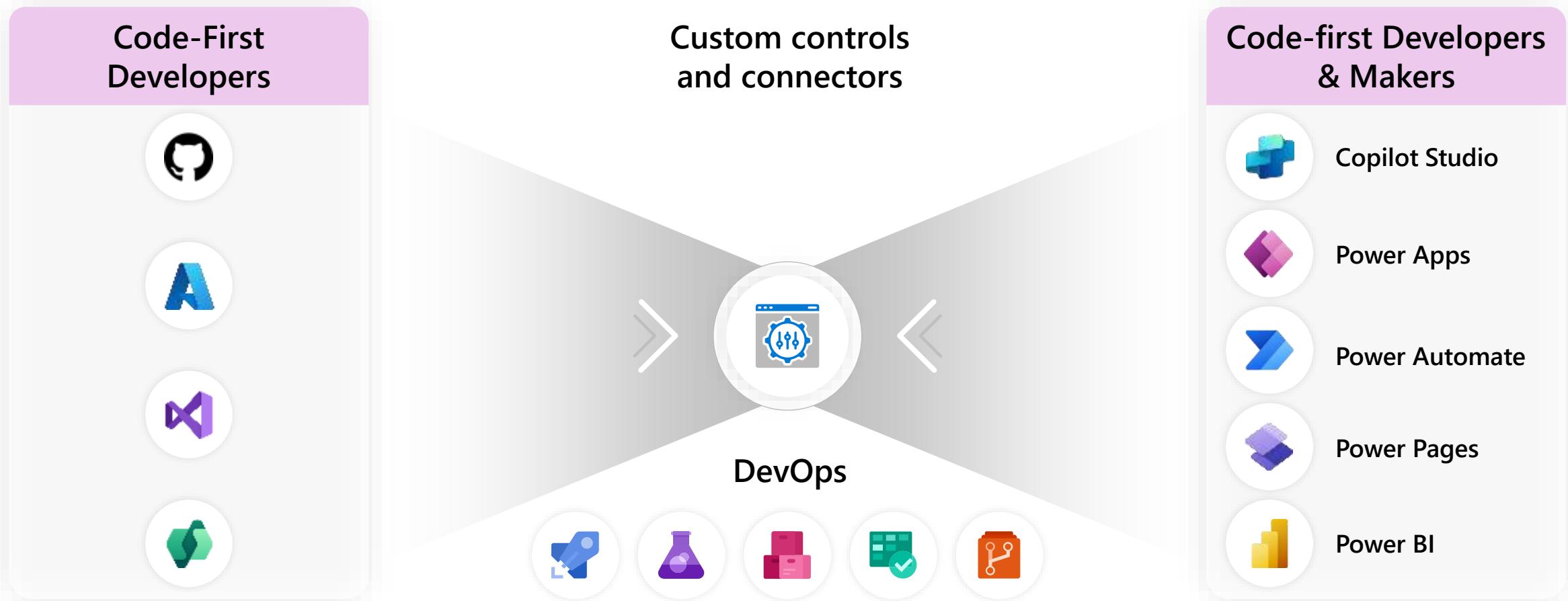
**Building enterprise solutions**

# Enterprise solutions can be a little of everything...



Integration services are a gateway to Azure!

# Azure + Power Platform = Rapid Application Development



Power Apps provides a low-code approach to rapidly build apps for any device, while seamlessly working with your Azure-based services through a rich professional developer extensibility model.

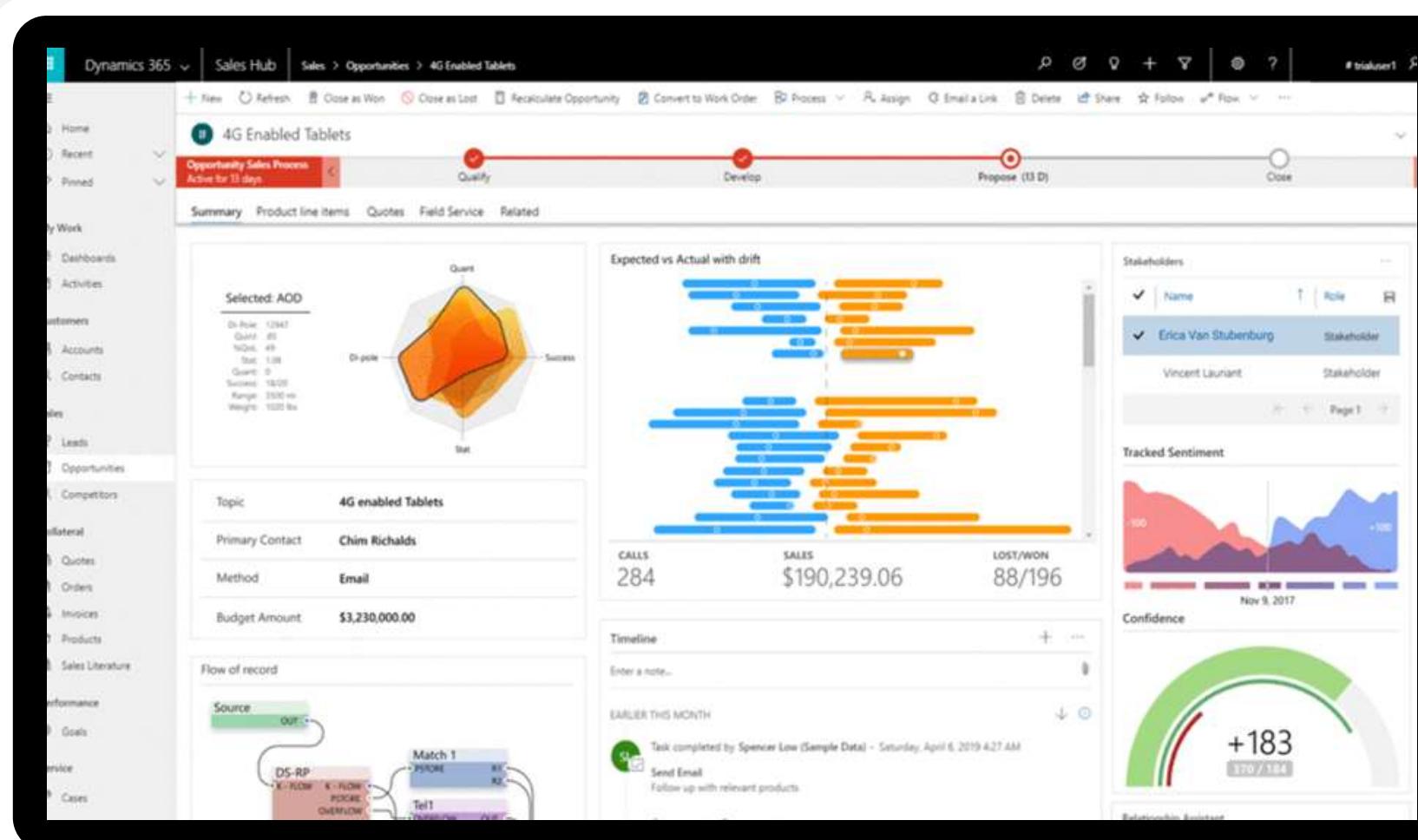
# Build Custom Components with the Power Apps Component Framework

Developers can build compelling visual components for Power Apps

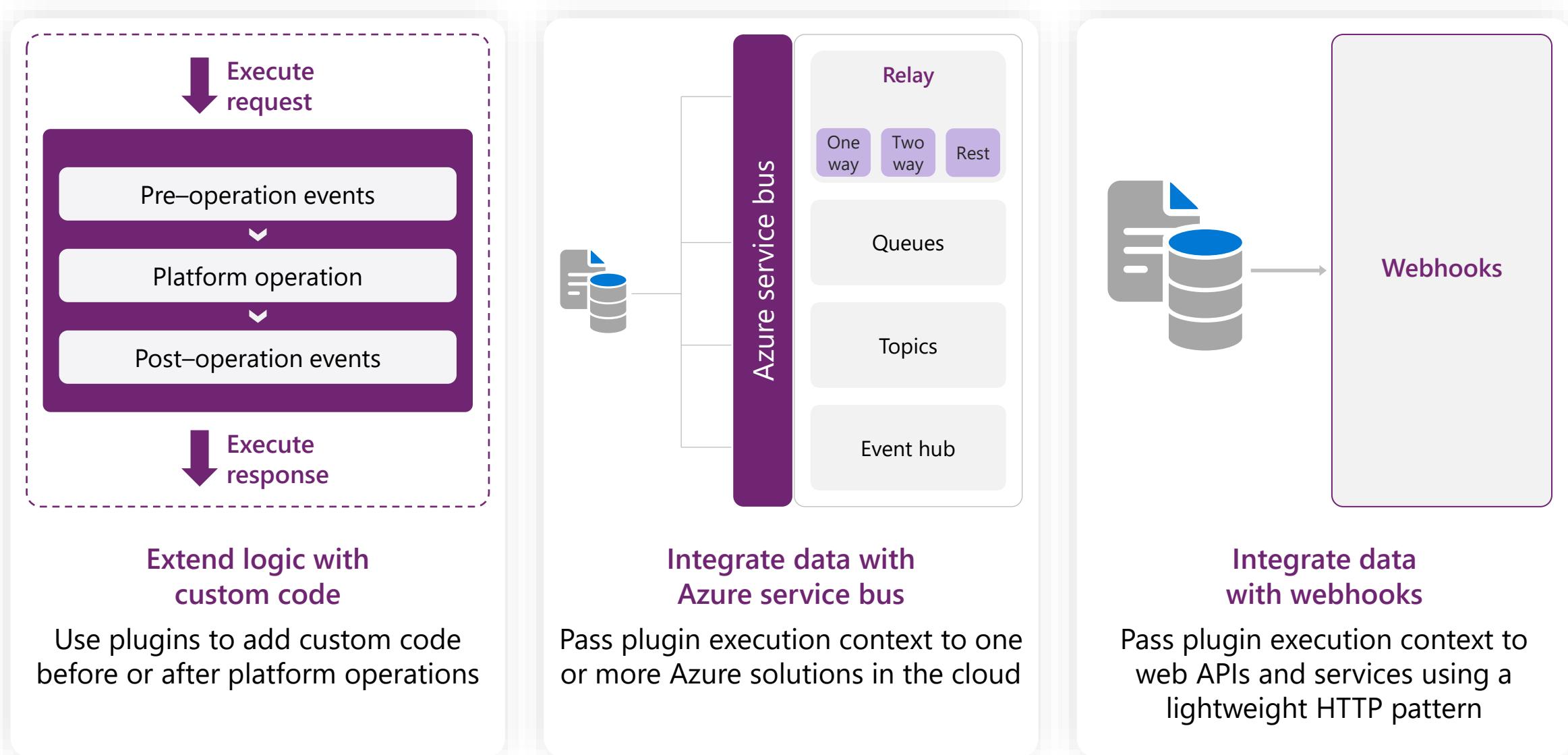
Custom components are responsive, reusable and support multiple form factors

Reuse your current IP and skills—framework is based on standard web technologies TypeScript/JS, CSS and HTML5

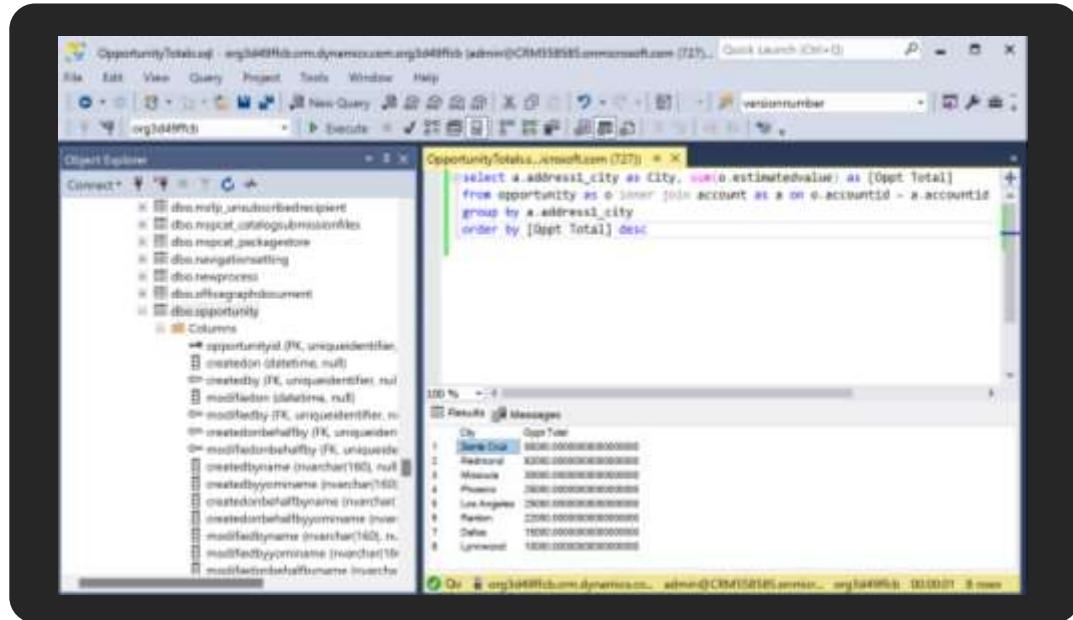
React and fabric support available in preview



# Service-side Extensibility for Dataverse



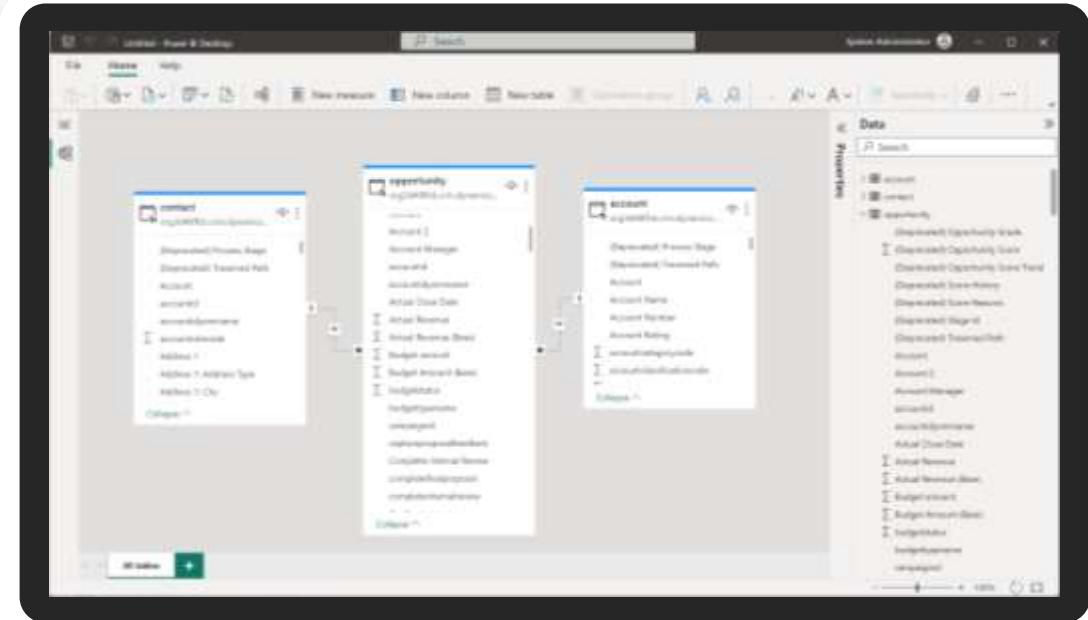
# More Powerful Data Tools for Dataverse



# T-SQL endpoint for Microsoft Dataverse

# SQL Server Management Studio WORKS!

AAD auth means all security WORKS!  
(e.g. RLS trimming)



# Microsoft Dataverse Direct Query for Power BI

The full stack runs –  
e.g. security and rules

# Entity Framework WORKS!

# Virtual Connection Provider

Make the process of creating virtual tables easier by letting Dataverse do some of the work for you

Virtual tables connect to existing data outside of Dataverse and allows you to access it within an app so you no longer need to:

- Create plug-ins for APIs
- Create Service Principles
- Search for which tables/lists are compatible in your data source

## Virtual Table Creation Wizard

Set up your connection, pick your site or database, select your list or SQL table and your virtual table will appear ready to use!

The screenshot shows the Microsoft Power Apps portal interface. At the top, there's a purple header bar with the Microsoft logo, a search bar, and navigation links. Below the header, a main content area has a purple banner that reads "Build business apps, fast" and "Create apps that connect to your data and work across web and mobile. [Learn about Power Apps](#)". Underneath this, there's a section titled "Start from:" with five options: "Blank app", "Dataverse", "SharePoint", "Excel", and "SQL". Each option has a small icon, a title, a brief description, and a "Watch video" link. Below these, there's a "Learning for every level" section with four cards: "Get started with Power Apps" (Beginner, 31 mins), "Author a basic formula to change properties in a..." (Beginner, 42 mins), "Work with external data in a Power Apps canvas app" (Intermediate, 43 mins), and "Manage and share apps in Power Apps" (Beginner, 42 mins). At the bottom, there's a "Your apps" section with a table showing two items: "Asset Checkout" and "Innovation Challenge". The "Asset Checkout" row includes columns for Name, Modified, Owner, and Type, with values like "1 wk ago", "Frank Lin", and "Model-driven". A yellow bar at the bottom of this section says "2 connection references needs to be updated".

In Preview

[Click here for more info](#)

# Leverage existing Skills and Code Investments

Use the tools you're familiar with

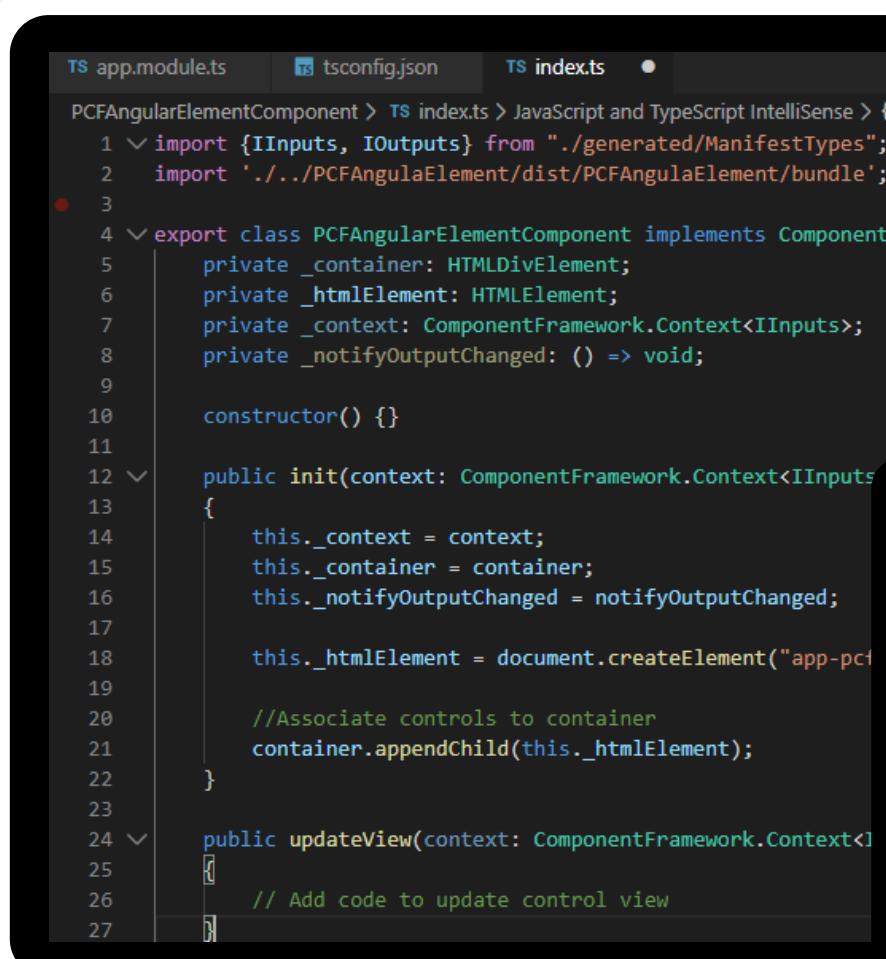
Extension for visuals in the Power Platform is based on TypeScript

Developers can use Visual Studio or Visual Studio Code

APIs with many helper functions

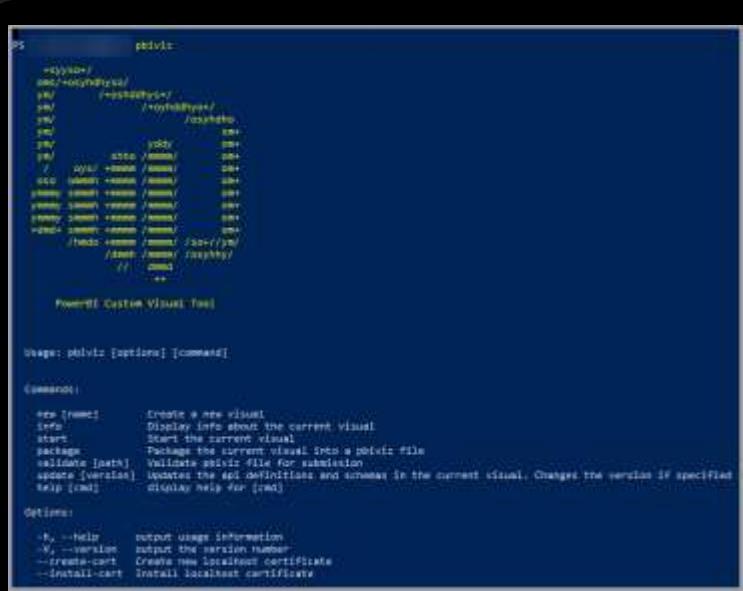
Use common frameworks like React

Command-line tools for building and testing



The screenshot shows a code editor with three tabs: `app.module.ts`, `tsconfig.json`, and `index.ts`. The `index.ts` tab is active, displaying the following TypeScript code:

```
PCFAngularElementComponent > TS index.ts > JavaScript and TypeScript IntelliSense > {} "index" > PCFAngularElementComponent > updateView
1 import {IInputs, IOOutputs} from "./generated/ManifestTypes";
2 import './../../../PCFAngularElement/dist/PCFAngularElement/bundle';
3
4 export class PCFAngularElementComponent implements ComponentFramework.StandardControl<IInputs, IOOutputs> {
5     private _container: HTMLDivElement;
6     private _htmlElement: HTMLElement;
7     private _context: ComponentFramework.Context<IInputs>;
8     private _notifyOutputChanged: () => void;
9
10    constructor() {}
11
12    public init(context: ComponentFramework.Context<IInputs>){
13        this._context = context;
14        this._container = container;
15        this._notifyOutputChanged = notifyOutputChanged;
16
17        this._htmlElement = document.createElement("app-pci");
18
19        //Associate controls to container
20        container.appendChild(this._htmlElement);
21    }
22
23
24    public updateView(context: ComponentFramework.Context<IInputs>){
25        // Add code to update control view
26    }
27}
```



The command-line interface shows the following help text for the `pbivt` command:

```
Usage: pbivt [options] [command]

Commands:
  new [name]      Create a new visual
  info            Display info about the current visual
  start           Start the current visual
  package         Package the current visual. Spans a package file
  validate [path] Validate manifest file for submission
  update [version] Updates the apx definitions and schema in the current visual. Changes the version if specified
  help [cmd]       Display help for [cmd]

Options:
  -h, --help      Output usage information
  -v, --version   Show the application version
  --create-crt   Create a new localhost certificate
  --install-crt  Install localhost certificates
```

# Why Host Logic in Azure?

Azure provides an extensibility surface for hosting many different types of logic

APIs for connecting to modern or legacy systems

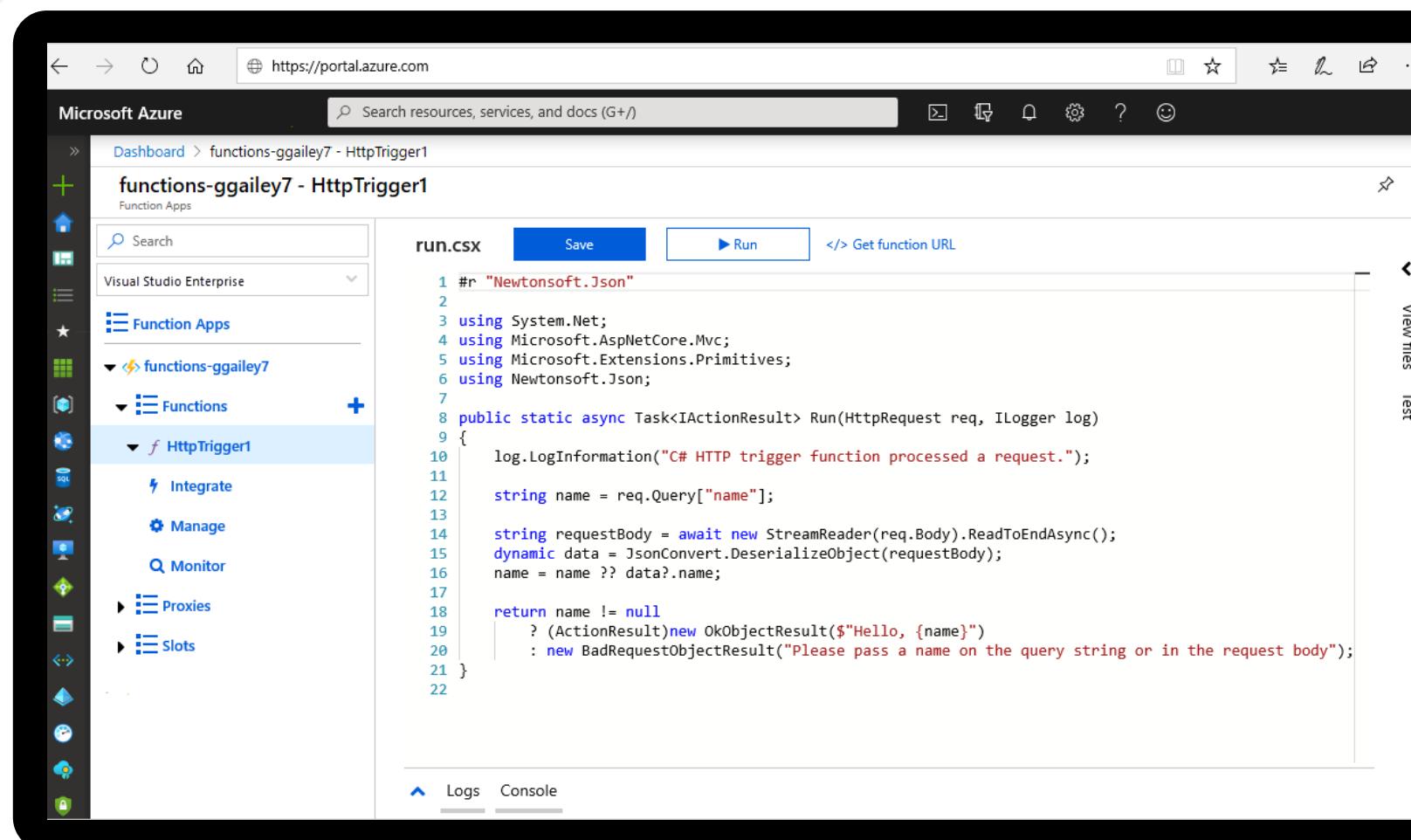
APIs and Functions for hosting and running custom logic

Data storage and compute

Environment for data scientists to build, deploy, and share advanced analytics solutions

Bot Framework Composer for deep integration with Azure services like LUIS and QnA maker

Build apps as a guest in another tenant for increased collaboration across subsidiaries and partners with Azure B2B Maker



The screenshot shows the Microsoft Azure portal interface. The left sidebar navigation bar includes icons for Home, Function Apps, Storage, SQL, and more. Under 'Function Apps', 'functions-ggailey7' is selected, and under it, 'HttpTrigger1' is selected. The main content area displays the 'run.csx' file code:

```
1 #r "Newtonsoft.Json"
2
3 using System.Net;
4 using Microsoft.AspNetCore.Mvc;
5 using Microsoft.Extensions.Primitives;
6 using Newtonsoft.Json;
7
8 public static async Task<ActionResult> Run(HttpContext req, ILogger log)
9 {
10    log.LogInformation("C# HTTP trigger function processed a request.");
11
12    string name = req.Query["name"];
13
14    string requestBody = await new StreamReader(req.Body).ReadToEndAsync();
15    dynamic data = JsonConvert.DeserializeObject(requestBody);
16    name = name ?? data?.name;
17
18    return name != null
19        ? (ActionResult)new OkObjectResult($"Hello, {name}")
20        : new BadRequestObjectResult("Please pass a name on the query string or in the request body");
21}
22
```

Below the code editor, there are tabs for 'Logs' and 'Console'.

# Power Apps + Azure API Management

Empower developers with no-cliff extensibility from Teams and Power Platform to Azure

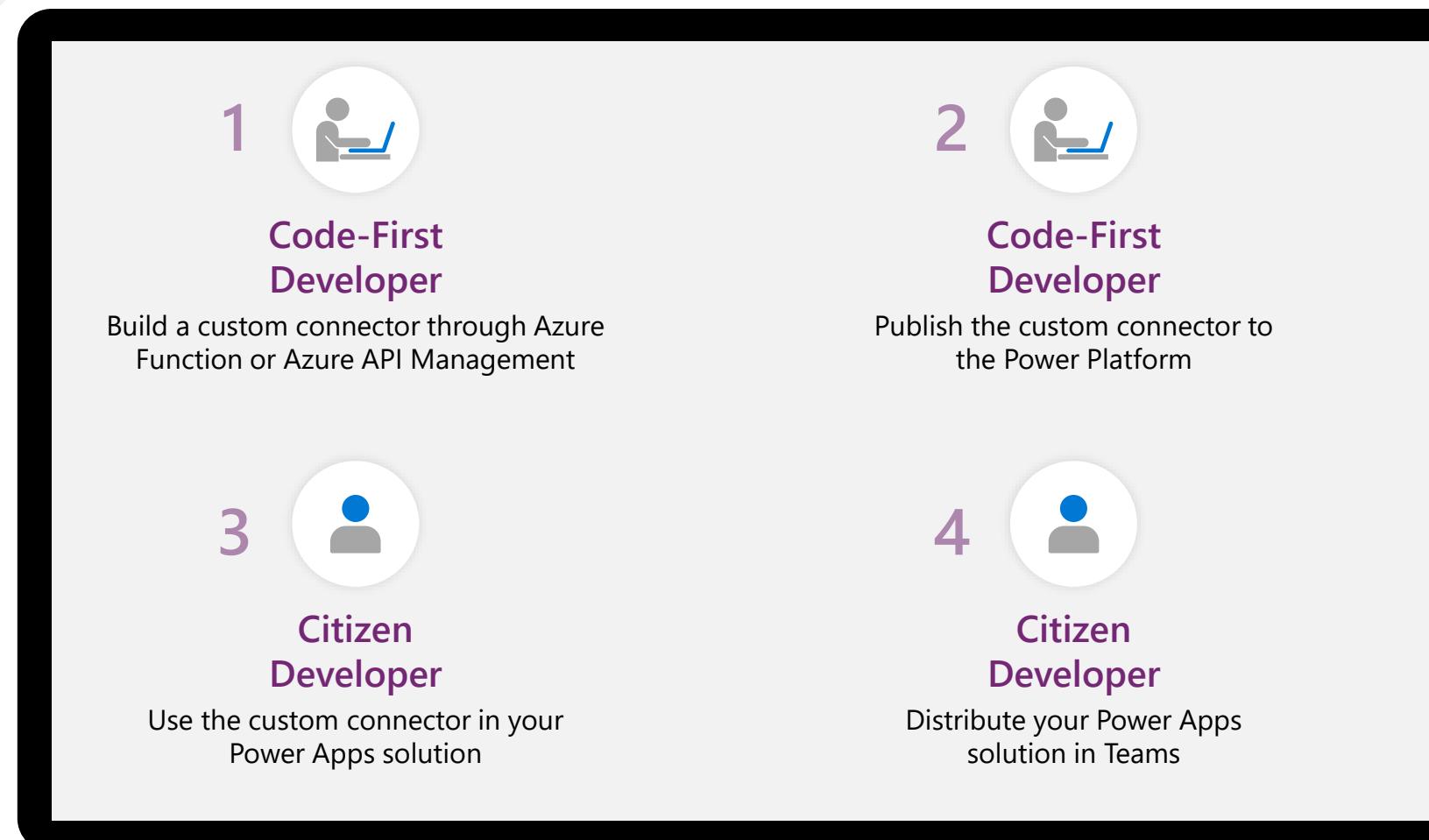
Extend and distribute your Azure APIs as Power Platform connectors

Create custom connectors to unlock access to any Microsoft cloud hosted data source

Seamlessly push custom connectors to dedicated Power Platform environments for easy discovery in Power Apps

Leverage Azure Functions and Azure API Management to enable citizen developers to distribute Power Apps in Teams at no additional licensing cost

Automatically create a Power App from a REST API



# Azure and Power Platform scenarios

Solutions and architectures that use Power Platform together with Azure services.

The screenshot shows a Microsoft Learn article page with the URL <https://learn.microsoft.com/en-us/azure/architecture/example-scenario/citizen-ai-power-platform>. The left sidebar contains a navigation menu with sections like 'Microsoft cloud developer docs', 'Azure and Power Platform scenarios' (which is expanded), 'Overview', 'All Power Platform architectures', 'CI/CD for Power Platform', 'Citizen AI with Power Platform' (which is selected and highlighted in grey), 'Eventual consistency with Power Apps', 'Extract text using Power Automate', 'Optimize inventory and forecast demand', 'Power Automate deployment at scale', 'Real-time ML with Power Platform', 'Azure and Microsoft 365 scenarios', 'Azure and Dynamics 365 scenarios', 'Azure and Microsoft on-premises servers', 'Third-party scenarios', 'Azure for AWS professionals', 'Azure for Google Cloud professionals', 'Design Patterns', 'Microsoft Azure Well-Architected Framework', 'Azure categories', 'Industry solutions with Azure', 'Cloud Adoption Framework', and 'Download PDF'. The main content area has a title 'Architecture' and a large diagram illustrating the flow from 'Import' (using Azure Data Factory) through 'Train and Deploy Model' (using Azure Machine Learning) to 'Operate' (using Microsoft Power BI). Below the diagram, there's a link to 'Download a Visio file' and a 'Workflow' section with a note about the workflow steps. A purple button at the bottom right says 'Learn more!'

Learn more!

# Next steps

A large white and blue supply vessel, the 'PACIFIC SHARAV', is shown sailing on dark blue ocean waves under a clear sky. The ship's superstructure is visible, featuring multiple levels of walkways, ladders, and equipment. A tall metal lattice mast stands prominently on the deck.

~~"Como criamos um aplicativo mais rápido?"~~

**“Como transformar 1.000  
processos por ano?”**

# Make it Real!

“Como transformar 1.000 processos por ano?”



1

Cultura

Patrocínio executivo de cima para baixo em TI e LOB. [Mudança de cultura](#) para convidar e conectar LOB com TI e Pro Devs para participar da criação de soluções

2

Fundação de TI

Liderança de TI [no centro de excelência](#) e orientação para governança, segurança, orçamento e adoção para ambientes centralizados ou distribuídos

3

Pro Developers

Desenvolvedores profissionais [reformulando fluxos](#) de trabalho para dimensionar e interagir com operadores de informações de LOB em soluções novas e existentes

4

LOB

Departamentos identificando "[usuários avançados](#)" para adoção e representação antecipadas e identificando recursos e orçamentos administrativos

5

Formação

Capacitação e capacitação via [hackathons](#) e programas de certificação para adotantes da Power Platform na organização

6

Nurture

Cadências de [qualificação](#) e celebração de soluções ao adotar novas inovações da Power Platform

Executive Sponsor ● Governance Lead ● Adoption Lead ● Community and Skilling Lead ● Power Platform Admin ● Pro Devs ● Architect ● Security

Suporte e recursos externos da Microsoft, parceiros ou consultores profissionais

# Investir em Power Platform compensa



**Quanto mais cedo você começar, mais tempo você colhe benefícios.**

140%

Retorno sobre o investimento (ROI) ao longo de 3 anos

45%

Redução de custos de desenvolvimento de aplicativos

\$8.23M

Valor presente líquido (VPL)

# Basic capabilities

1

Aplicativos e automações em pequena escala

2

Automação pessoal ou somente em equipe

3

Conectividade selecionada pronta para uso

4

Sharepoint, Excel ou Dataverse para equipes

5

Opções limitadas para compartilhar e reutilizar soluções já criadas



Resolva problemas apenas para equipes ou indivíduos

Ganhos de eficiência limitados a indivíduos, equipes ou pequenos departamentos.

A necessidade de troca de solução, entrada de dados repetida e risco de dados ruins

Permite estruturas de dados simples e gerenciamento de acesso limitado a dados.

Construção repetida de aplicativos e automações semelhantes, perda de eficiência.

# Premium investment

1

Aplicativos e soluções podem se estender por toda a organização



Dimensionamento rápido e fácil, ganhos de eficiência e melhorias de desempenho

2

Automações entre sistemas e departamentos



Resolução acelerada de problemas, trabalho mais rápido e menor necessidade de repasses manuais.

3

Conecte tudo



Dados conectados significam resolução rápida de tarefas e menos esforço na manutenção de dados.

4

Dataverse



Gerencie dados e aplicativos para obter insights, impulsionar o negócio e reduzir custos.

5

Compartilhamento e dimensionamento fáceis e gerenciáveis



As pessoas que precisam dos aplicativos e dados podem ser concedidas facilmente sem medos.

# Impacto do Power Platform premium



## Revenue

**4-5x growth**

Companies with developer velocity in top quartile experience

**McKinsey & Company**

[McKinsey & Company - Developer Velocity: How software excellence fuels business performance](#)



## Efficiency

**23%**

Increase in developer efficiency

**Forrester**

Total Economic Impact of Power Platform Premium Capabilities



## Costs

**45%**

Development cost reduction

**63%**

Lower costs to develop a large-scale solution using premium connectors and Dataverse

**Forrester**

Total Economic Impact of Power Platform Premium Capabilities



## Agility

**63%**

Improved agility to changes

**Forrester**

Total Economic Impact of Power Platform Premium Capabilities



## Security

**91%**

better security and visibility around data connections

**Forrester**

Total Economic Impact of Power Platform Premium Capabilities

**24%**

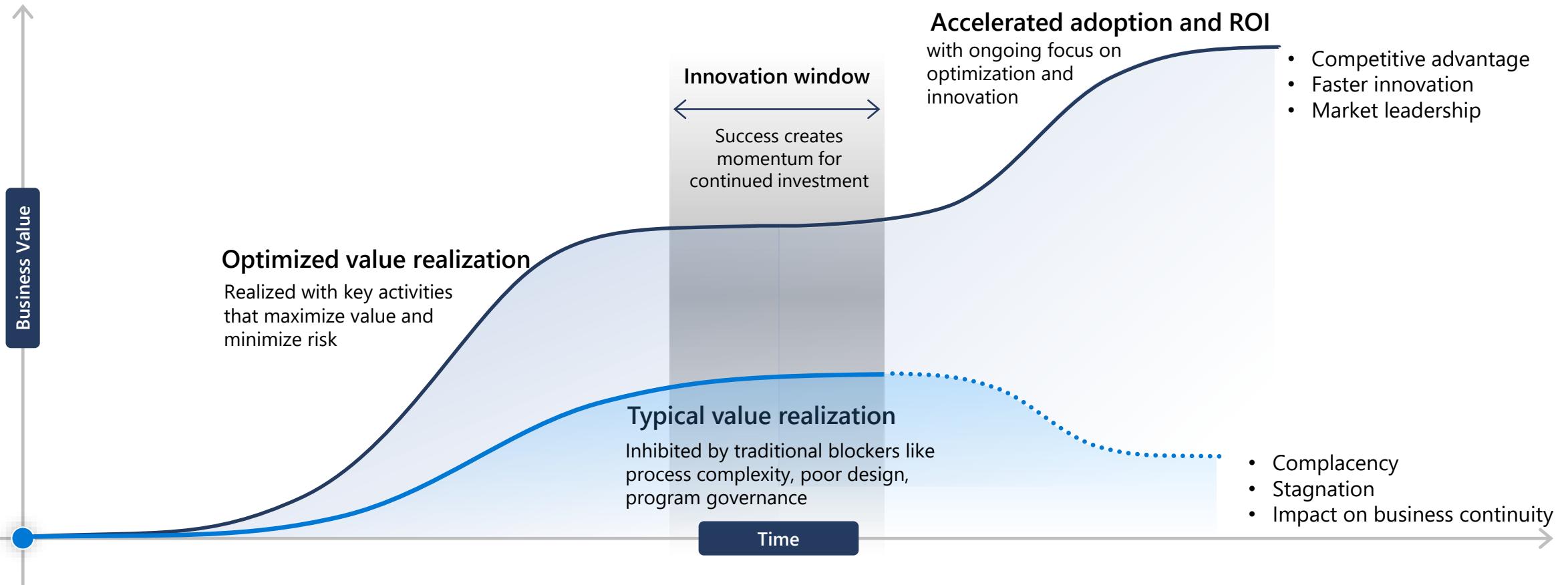
Cost reduction using Power Platform and Azure due increased DevOps efficiency a reducing spending third-party solution

**Microsoft**

[Microsoft Power Platform and Azure for Corporate IT TEI](#)

# Maximize seus investimentos com o Microsoft Unified

Acelere seu tempo de implantação com serviços liderados por especialistas, desde o planejamento até a implantação e muito mais



# Conte com especialistas para construir seus aplicativos

Com acesso direto aos especialistas da Microsoft, você pode criar aplicativos personalizados usando o Power Platform para resolver desafios de negócios e automatizar processos de negócios

## O que você quer alcançar...

- Estabeleça um modelo de governança e padrões e prepare-se para a IA
- Implantação bem-sucedida da plataforma de energia em toda a empresa
- Validação de processos de projeto e desenvolvimento de arquitetura de soluções

## Como entregamos...

- Assistência na criação de um Centro de Excelência (COE) para governar a criação de aplicativos e acelerar a adoção em toda a organização
- Orientação prescritiva de especialistas para acelerar a implantação com workshops de Maker e Developer para melhorar as habilidades da equipe
- Revisões técnicas e funcionais para validar planos e abordar problemas e riscos

## Saiba Mais

Visite [aka.ms/Enhanced-Solutions](https://aka.ms/Enhanced-Solutions) para agendarmos uma sessão com objetivo de determinar como nossas **Soluções Aprimoradas** podem ajudá-lo a alcançar os resultados desejados

# Continue sua jornada de **conhecimento**

## Eventos técnicos de Power Platform

Eventos no **Microsoft Teams** conduzidos pelos especialistas em Power Platform da Microsoft Brasil. Para participar procure seu **gestor(a) de conta** (AE) ou **especialista** (SSP).



### Governança e ALM

#### Tópicos

- Governança
- Segurança
- Monitoramento
- CoE Starter Kit
- ALM/DevOps

#### Duração

03 horas



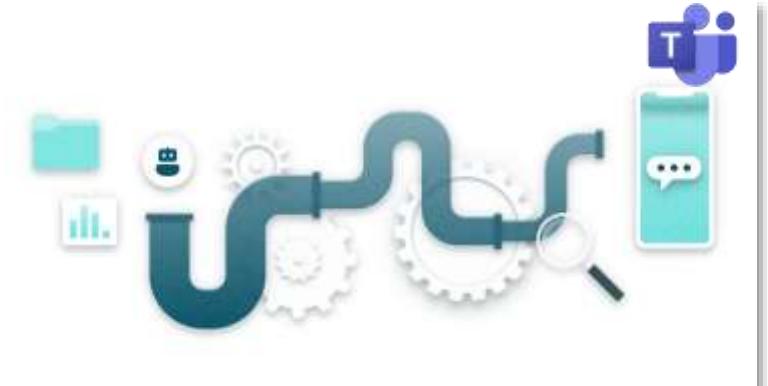
### Desenvolvimento de aplicativos

#### Tópicos

- Power Apps Canvas
- DataVerse e Model Driven Apps
- Power Pages
- Fusion Teams

#### Duração

03 horas



### Hiper automação

#### Tópicos

- DPA e BPA
- Power Virtual Agents
- Process e Task Mining
- RPA
- Estendendo o SAP com Power Platform

#### Duração

03 horas

# Continue sua jornada de **conhecimento**

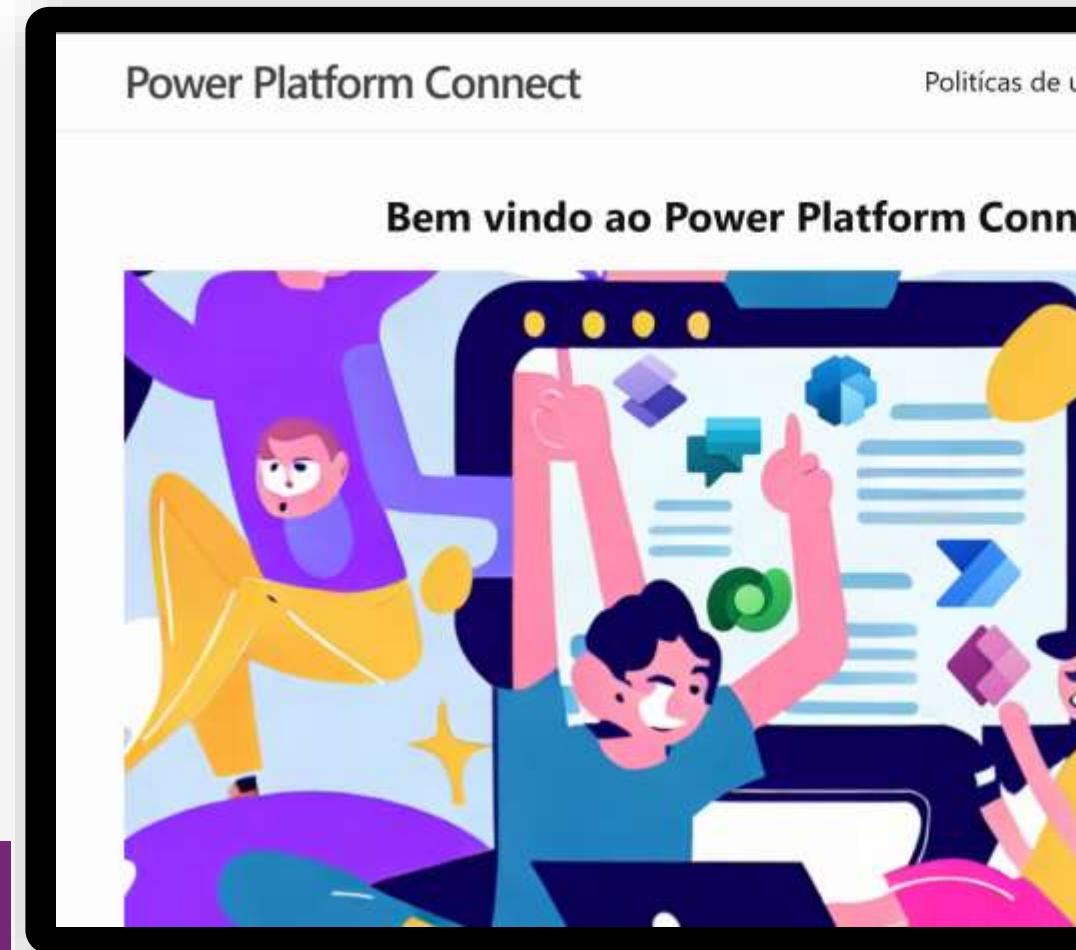
## Power Platform Connect

Site mantido pelos especialistas em Power Platform da Microsoft Brasil.

Nele você encontrará:

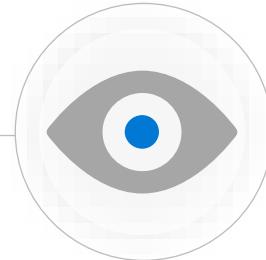
- ❖ **Links** para a **documentação oficial** de todos os produtos da Power Platform
- ❖ **Materiais** utilizados nos eventos conduzidos pelos times de especialistas
- ❖ **Notícias** sobre a Power Platform e **oportunidades de treinamento**
- ❖ **Espaço de discussão** para você esclarecer suas dúvidas diretamente com nosso time.

<https://microsoft.github.io/powerplatformconnect>



# Acelere sua jornada low-code com nosso guia de adoção

## Planeje



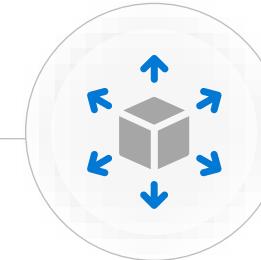
- Kickoff
- Equipe do projeto
- Patrocínio executivo
- Estratégia e visão de adoção
- Critérios de sucesso
- Plano de gerenciamento de mudanças
- Prontidão
- Estratégia de treinamento

## Capacite



- Campeões
- Comunidade
- Recompensas e reconhecimento
- Plano de comunicação
- Consciência
- Suporte contínuo

## Cresça



- Centro de Excelência (CoE)
- Maturidade da adoção
- Plano operacional
- Acompanhamento de sucesso
- Gestão de mudanças
- Calendário de atividades

Saiba mais: [aka.ms/PowerPlatAdoption](http://aka.ms/PowerPlatAdoption)

# Thanks !

## Ricardo de Souza

Technology Specialist - Power Platform

✉️ rdesouza@microsoft.com

.linkedin https://www.linkedin.com/in/ricardodesouza/

# Additional slides

# Power Platform and AI

# AI in Power Platform

Easier to make. Richer to use.



## Power Apps

- [Copilot - Natural Language to App \(Generally Available\)](#)
- [Excel to Canvas App \(Generally Available\)](#)
- [Copilot Control in Canvas \(Limited Preview\)](#)
- [Custom Copilot Control \(Limited Preview\)](#)
- [Copilot Answer Control \(Public Preview\)](#)
- [Express Design \(Public Preview\)](#)
- [Power FX Ideas \(Generally Available\)](#)



## Power Automate

- [Copilot - Natural Language to Cloud Flow \(Generally Available\)](#)
- [Copilot for Desktop Flows and Scripts \(Public Preview\)](#)
- [Copilot to analyze automation activity \(Public Preview\)](#)
- [Process Mining Root Cause Analysis \(Generally Available\)](#)
- [Format data by Examples \(Generally Available\)](#)



## Copilot Studio

- [Copilot - Natural Language to Topics \(Generally Available\)](#)
- [Generative Answers \(Generally Available\)](#)
- [Generative Answers sourcing documents \(Public Preview\)](#)
- [Generative Actions \(Public Preview\)](#)
- [Extend Copilot \(Public Preview\)](#)



## Power Pages

- [Copilot - Natural Language to Site \(Public Preview\)](#)



## Power BI

- [Copilot - Natural Language to Reports \(Private Preview\)](#)
- [Natural Language to DAX Quick Create \(Generally Available\)](#)



## AI Builder, Managed Environments, Dataverse

- [Azure OpenAI models with Templates \(Public Preview\)](#)
- [Power Platform Advisor \(Public Preview\)](#)
- [Formula Columns in Dataverse \(Generally Available\)](#)
- [App Descriptions \(Limited Preview\)](#)
- [ALM Deployment Notes \(Generally Available\)](#)
- [AI Models \(Generally Available\)](#)
- [Dataverse and AI \(Limited Preview\)](#)



Release Planner | AI Availability

# Previews

Status	Description	Next Step
Generally Available (GA)	Feature commercially available.	<ul style="list-style-type: none"><li>• Learn about feature and any prerequisites (e.g. geography availability, language availability)</li><li>• Understand how to enable feature within tenant or admin portal if required</li></ul>
Public Preview	Wide test for a larger group of customers. Features are actively developed and may not be complete.	<ul style="list-style-type: none"><li>• Learn about feature and any prerequisites (e.g. geography availability, language availability)</li><li>• Read details around availability of preview feature and limitations</li><li>• Understand how to enable feature within tenant or admin portal if required</li></ul>
Limited Preview	Controlled test for a small group of customers. It is used to test new product capabilities.	<ul style="list-style-type: none"><li>• Learn about feature and any prerequisites (e.g. geography availability, language availability)</li><li>• Read details around limitations and signing-up, opting-in, or getting access to feature</li><li>• Understand how to enable feature within tenant or admin portal if required. SLAs may vary</li></ul>
Private Preview	Controlled test for a small group of customers. Typically invite-only and requires an NDA.	<ul style="list-style-type: none"><li>• Learn about feature and any prerequisites (e.g. geography availability, language availability)</li><li>• Customers invited experience a formal evaluation program.</li></ul>

[Power Platform Release Planner](#)

# Microsoft and OpenAI

OpenAI is an AI research and deployment company. Azure OpenAI Service brings OpenAI API + Azure enterprise-level security, compliance, and regional availability.

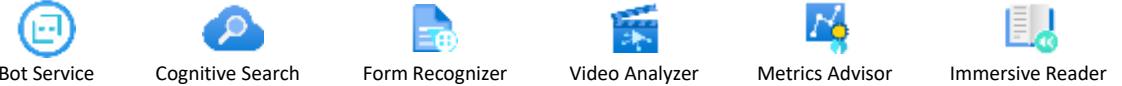
 Microsoft

Power Platform | Microsoft 365 | Dynamics 365 | Partner Solutions



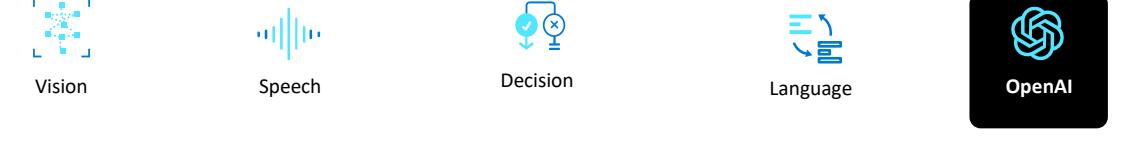
Azure AI

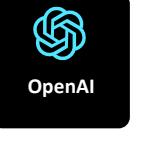
Scenario-Based Services - Applied AI Services



Bot Service      Cognitive Search      Form Recognizer      Video Analyzer      Metrics Advisor      Immersive Reader

Customizable AI Models - Cognitive Services



Vision      Speech      Decision      Language       OpenAI

ML Platform



Azure Machine Learning

 OpenAI

**ChatGPT**  
Conversational AI chatbot

**GPT-3**  
Understand and generate natural language

**Whisper**  
Automatic speech recognition

**CodeX**  
Understand and generate code

**DALL-E**  
Creating images from text

# Microsoft and OpenAI

OpenAI is an AI research and deployment company. Azure OpenAI Service brings OpenAI API + Azure enterprise-level security, compliance, and regional availability.

	Azure OpenAI Service	OpenAI
<b>Security &amp; Data Privacy</b>	Enterprise Security, RBAC, Customer-Managed Keys	Basic Security
<b>Compliance</b>	SOC2, ISO, HIPAA, CSA STAR	None
<b>Reliability</b>	Azure SLA	No SLA
<b>Responsible AI</b>	Built-in, enterprise-grade, low latency moderation, and harm prevention	Separate Safety Classifier (adds latency)
<b>Holistic Solution</b>	OpenAI Models, Complete AI Solution, and a Complete PaaS	Advanced LLM & Image Generation, Basic Speech
<b>APIs</b>	REST APIs + Python, C#, etc. SDKs	REST APIs + Python SDK

[Azure OpenAI Service](#)

# Enterprise Grade AI

## Enterprise Security

Your data does not leave the **Microsoft ecosystem**

Microsoft **cannot see your data**, except for debugging or abuse

Your data respects existing **permissions models**

**Azure security, enterprise promises, compliance**

Published availability **SLA**

## Responsible AI

Your data is not used to train AI for **other customers** or for ChatGPT

**Content moderation**

**Hallucination filter**

**Fairness and inclusive** policies

**Red-teaming** and adversarial testing

## Governance

Respects **existing security and privacy guardrails**

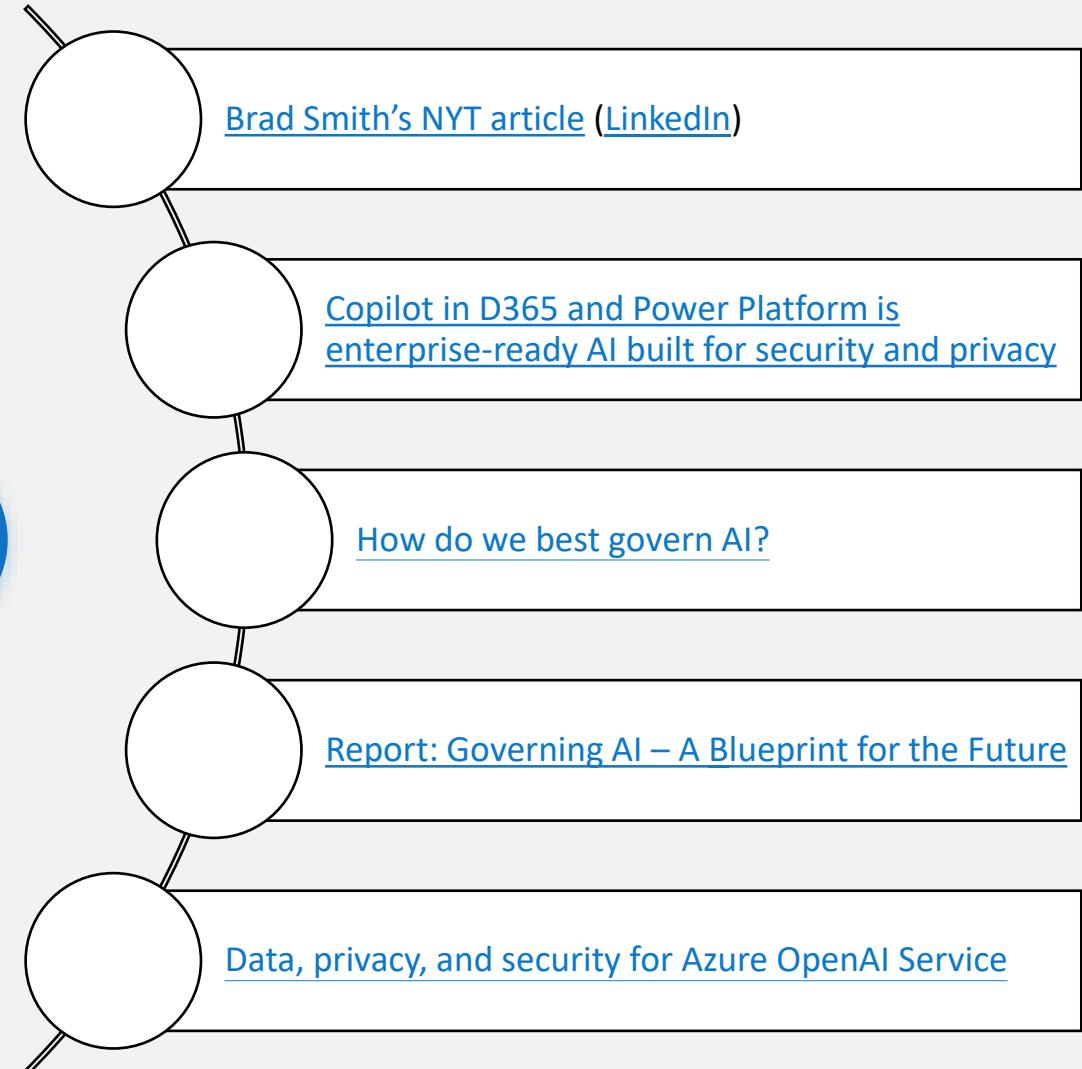
**Data loss prevention policies** to safeguard data

**Analytics reports** to provide admin visibility

**Data sharing** is opt-in only

Data, Privacy, & Security

# AI security, privacy & governance



# Power Platform patterns of value

# **App modernization**

# Build and update solutions at scale



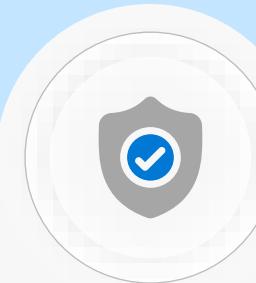
## Develop solutions at scale.

Free up limited pro dev resources and enable them to work faster on mission critical solutions.



## Build solutions where you work.

Adapt and save money with scalable solutions that solve your greatest business challenges.

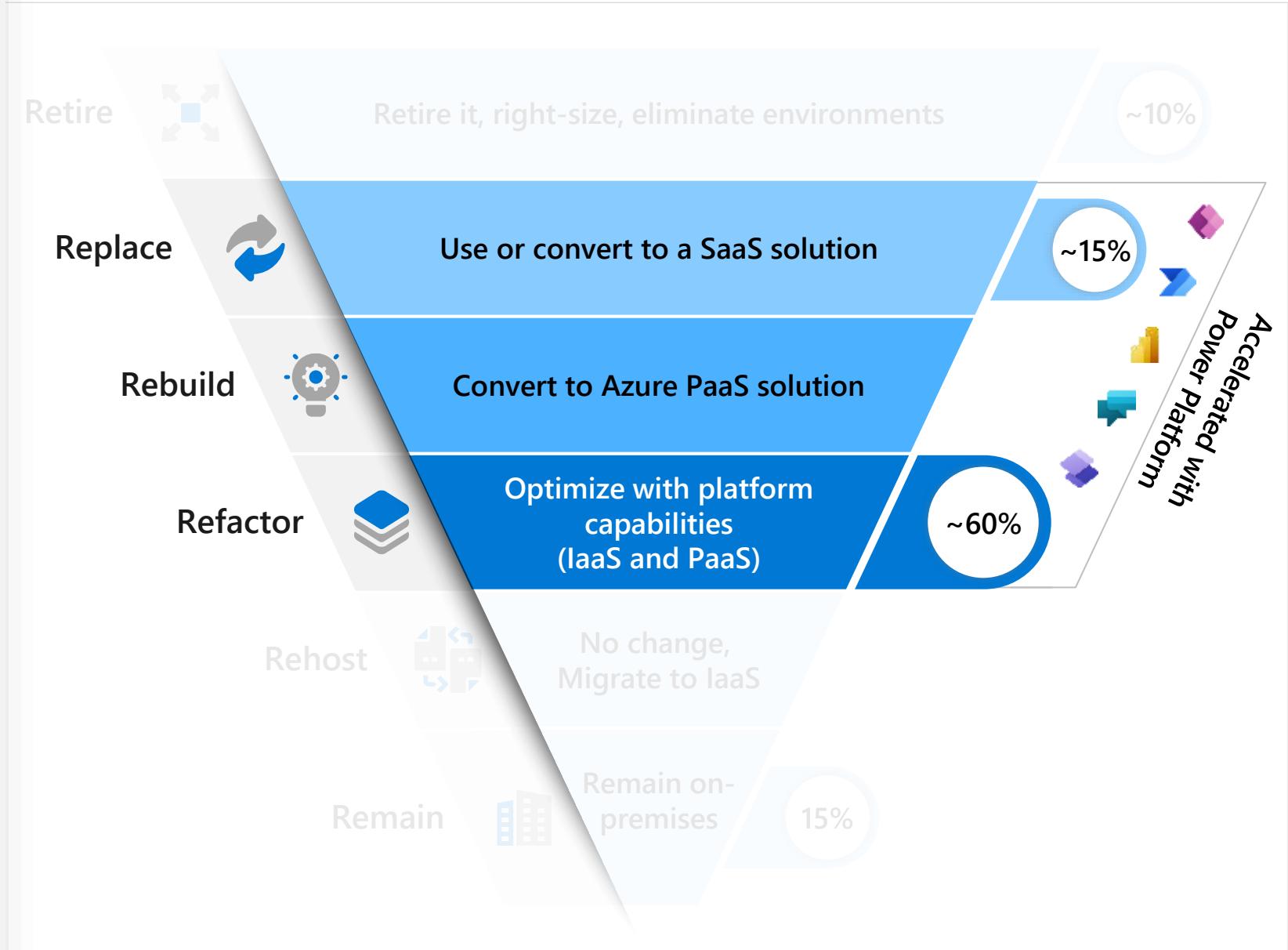


## Create secure external websites.

Refresh your existing websites or quickly launch new ones at scale using built-in, easy to use components.

**87% of CIOs and IT pros say low-code is very useful in helping their organizations modernize legacy applications.<sup>1</sup>**

# App Building & Modernization



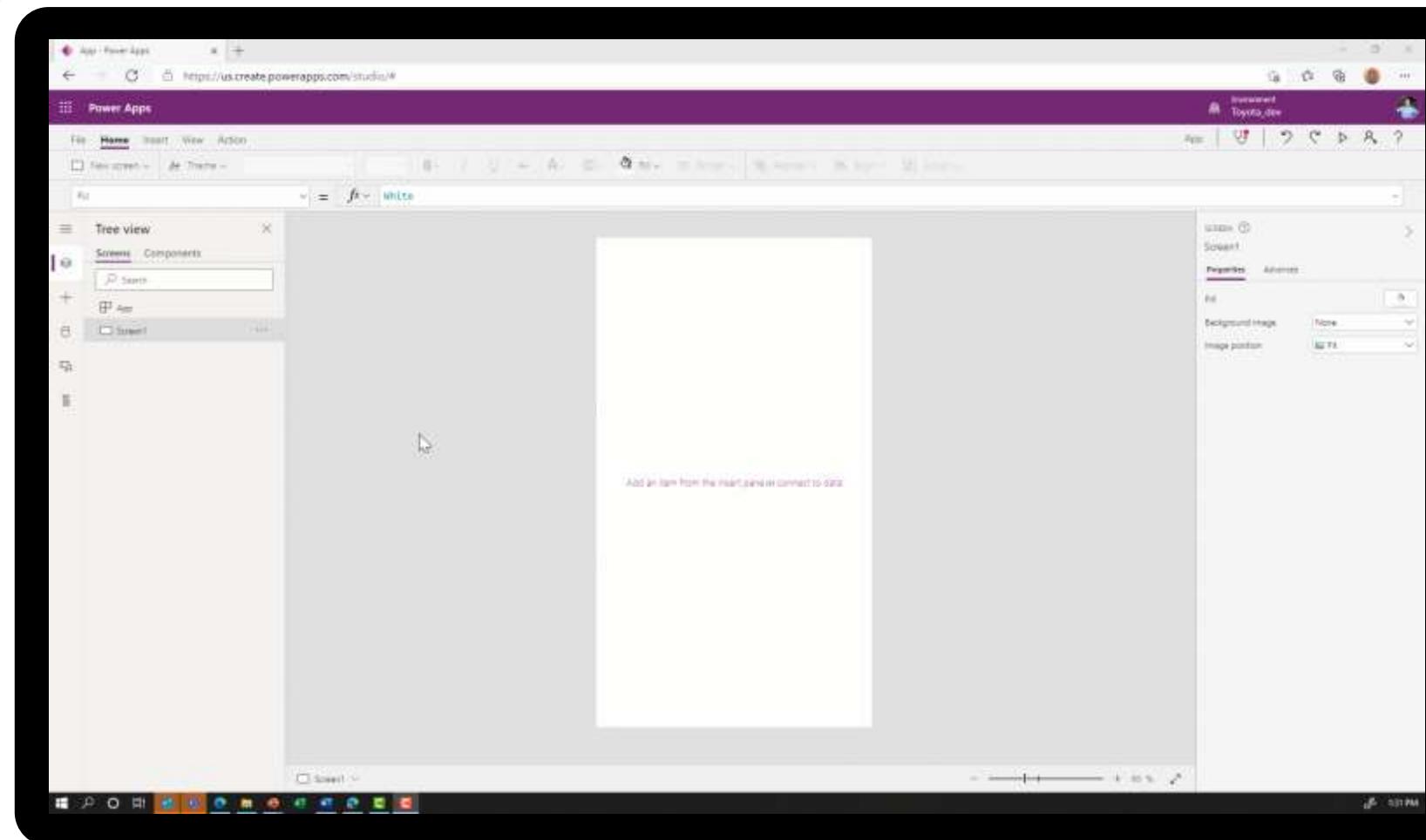
# Simplify & accelerate development

Pixel perfect **visual app designer** enables you to build and deploy **professional looking apps faster**

Applications that work across **many form factors: Deploy once, use everywhere**

Integration with **Azure, Visual Studio, and GitHub** enables everyone to build with the **tools they use most**

AI assisted experiences with **natural language to formula generation and apps from images**



# **Business agility**

# Improve and extend your core systems



**Improve processes and user experience** across your company's core systems like SAP, Oracle, and Salesforce.



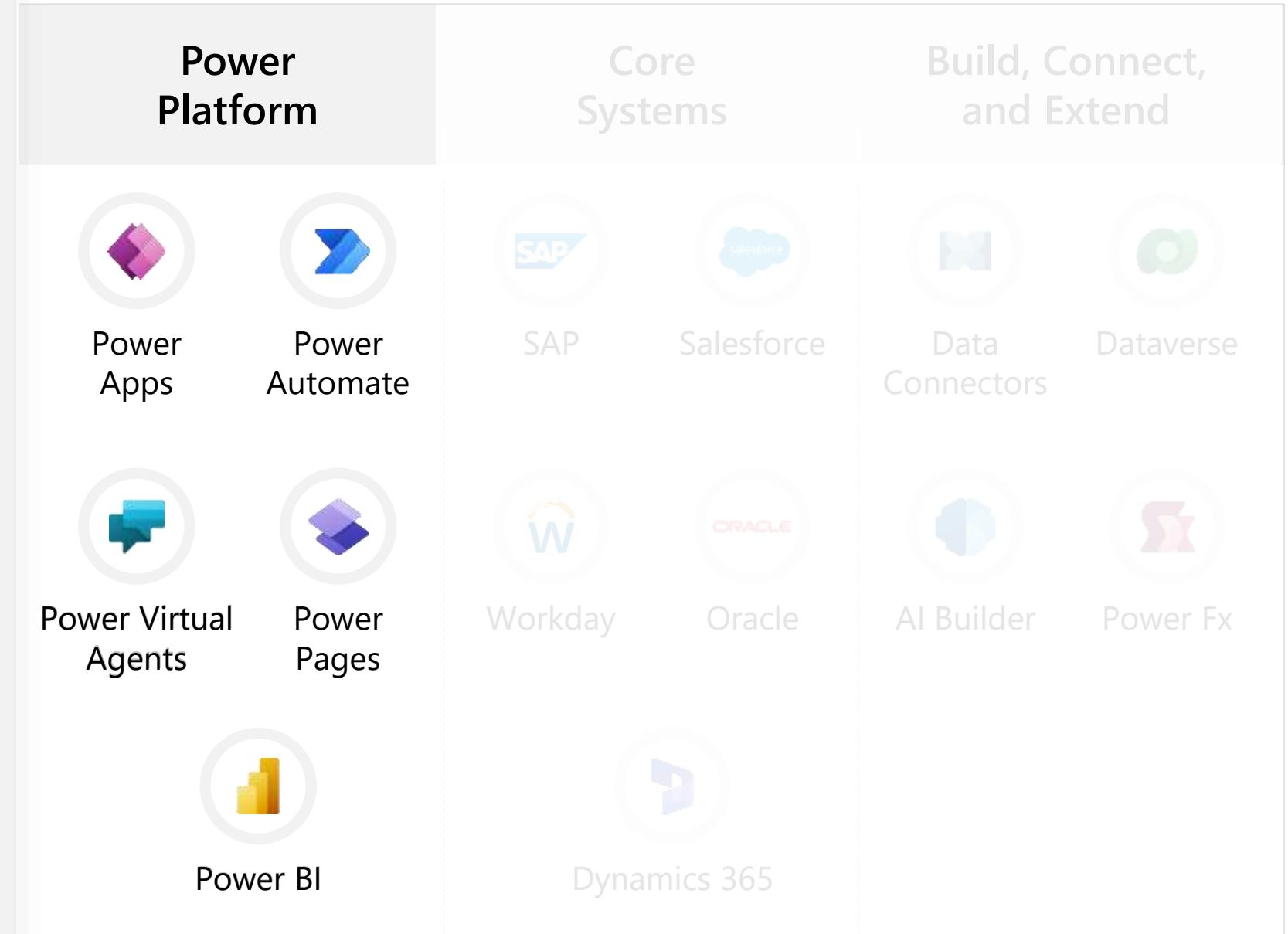
**Extend your core systems** with apps, flows, external websites, chatbots and dashboards to fill gaps and deliver flexibility.



**Get more out of your existing investments** with a modern solution that keeps the user experience seamless and extends the life of your core systems.

**89% of CIOs and IT pros surveyed say low-code is effective in increasing efficiency.<sup>1</sup>**

# Agility for core business systems



# Extend LOB Systems with Power Platform



**Build** low-code apps, workflows, external websites, chatbots and dashboards to deliver simple, modern and powerful experiences across your data and processes on any device.



**Automate** processes that span your key line of business systems without the need for complex code using digital and robotic process automation.



**Empower** users wherever they work by surfacing apps and processes in the productivity tools they use every day, such as Teams and Outlook.



**Safeguard** mission critical data that supports your core processes with strict security and governance tools.

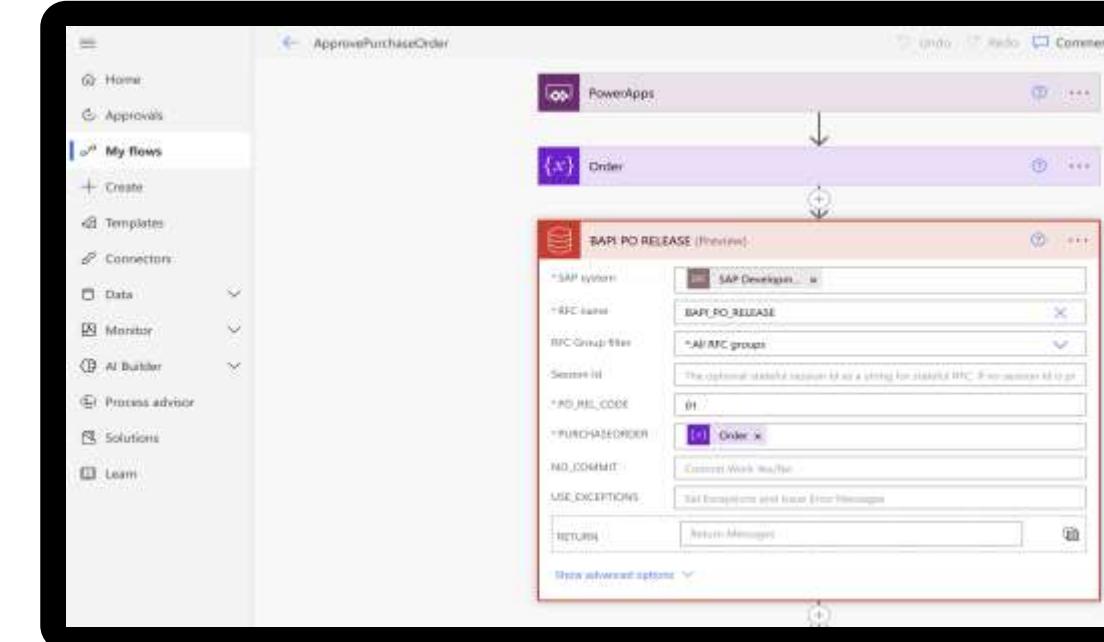
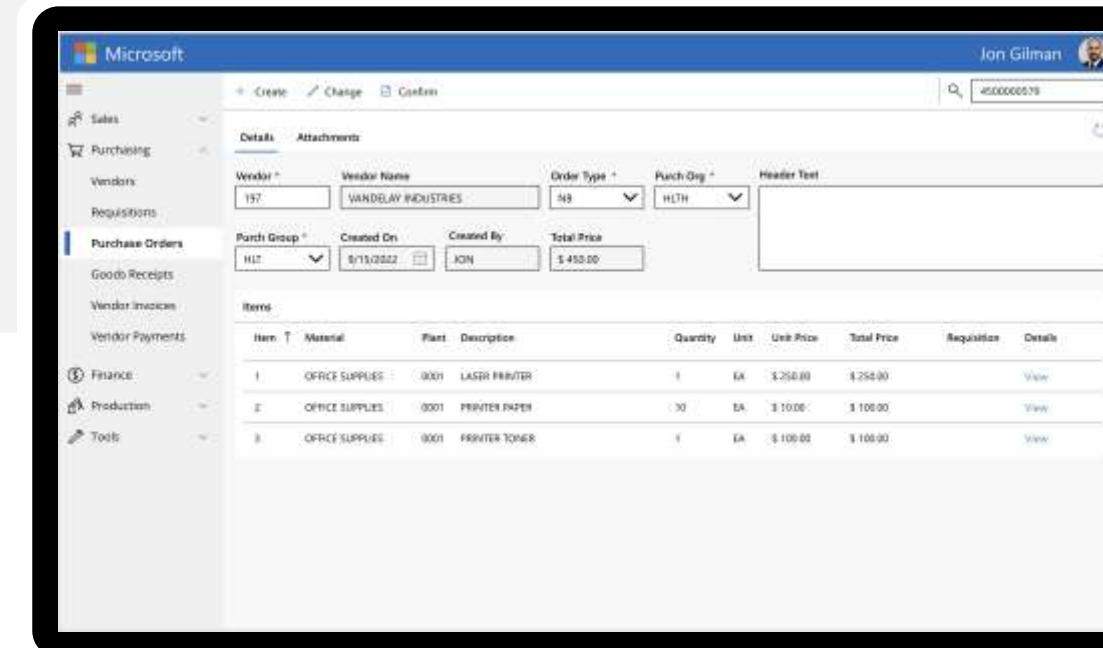
# Deeper integration with your core systems out of the box

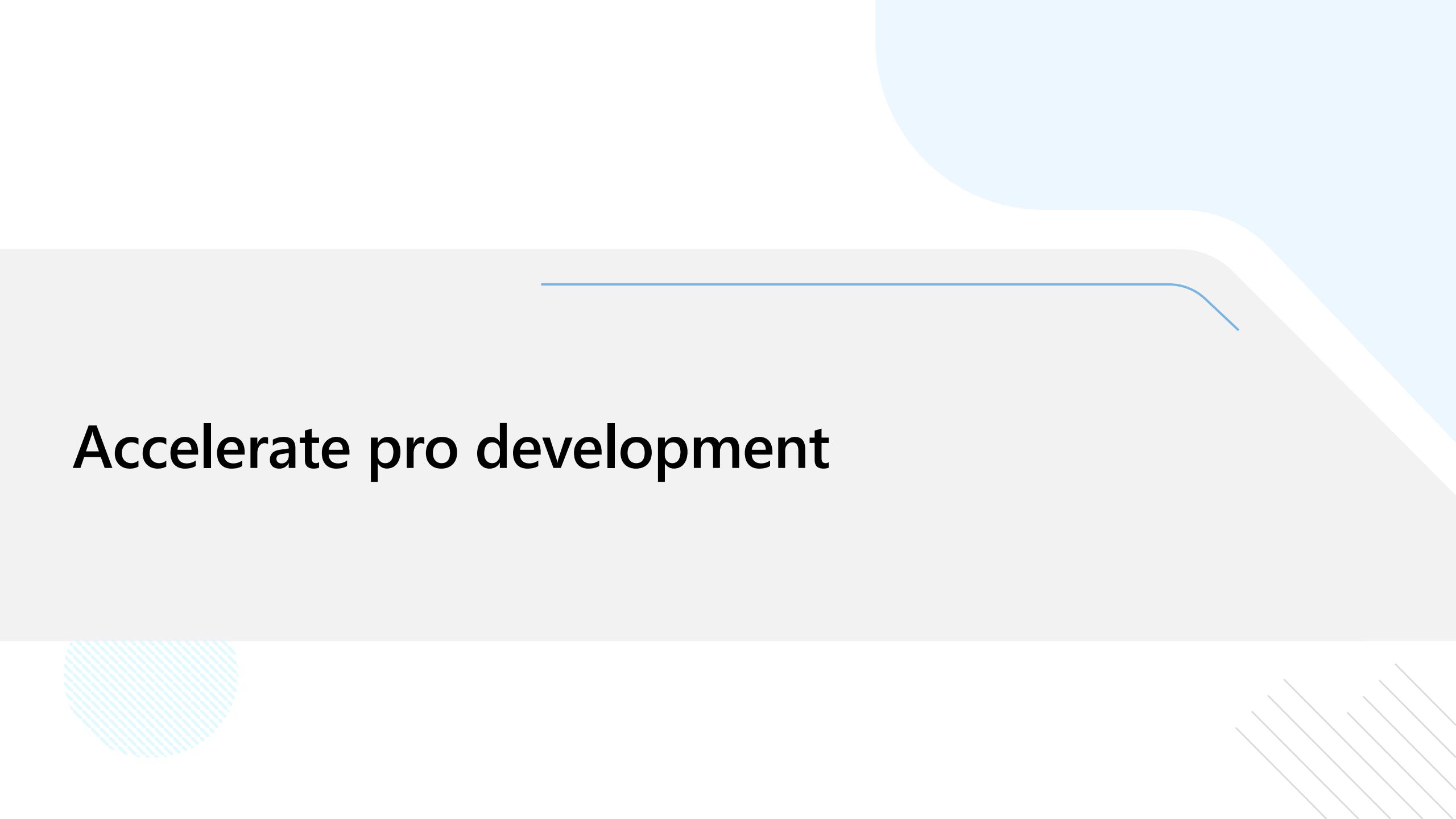
Quickly build solutions on top of your core systems data with 1000+ prebuilt connectors

Build custom connectors to consume and expose data through a secure gateway

Prebuilt templates and flows enable makes to quickly build solutions for common process

Extend your core systems with native integration to the Microsoft ecosystem including Azure and Microsoft 365





A horizontal blue line swooshes across the slide, starting at the center and curving towards the right edge. In the bottom left corner, there's a circular graphic with a light blue background and a darker blue diagonal striped pattern.

# Accelerate pro development

# Build complex solutions faster with low code



**Reduce time and effort** needed to create new solutions with low code to accelerate development and enable faster time to value.



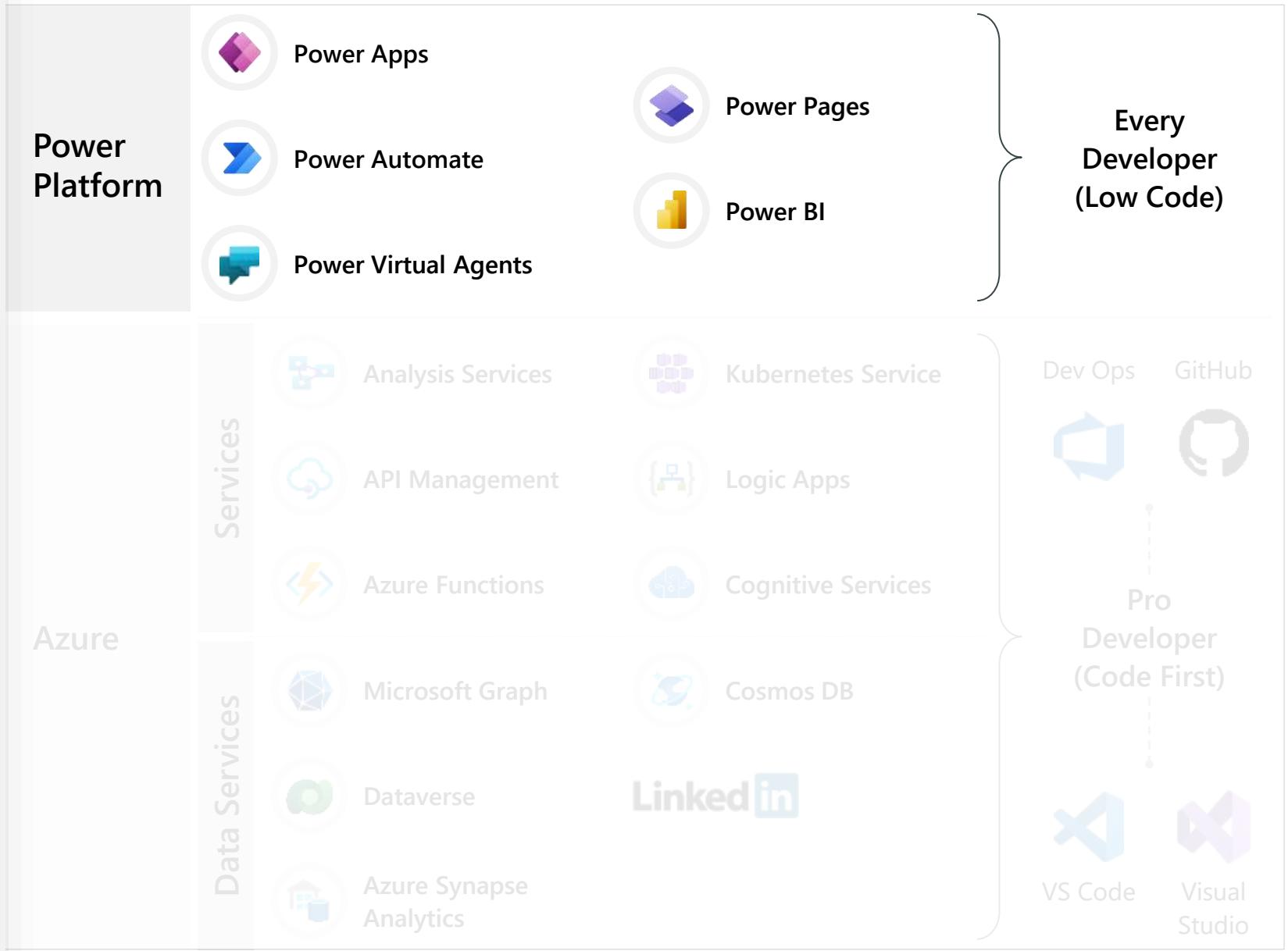
**Extend and integrate** your solution with professional developer tools to create complex solutions quickly and easily.



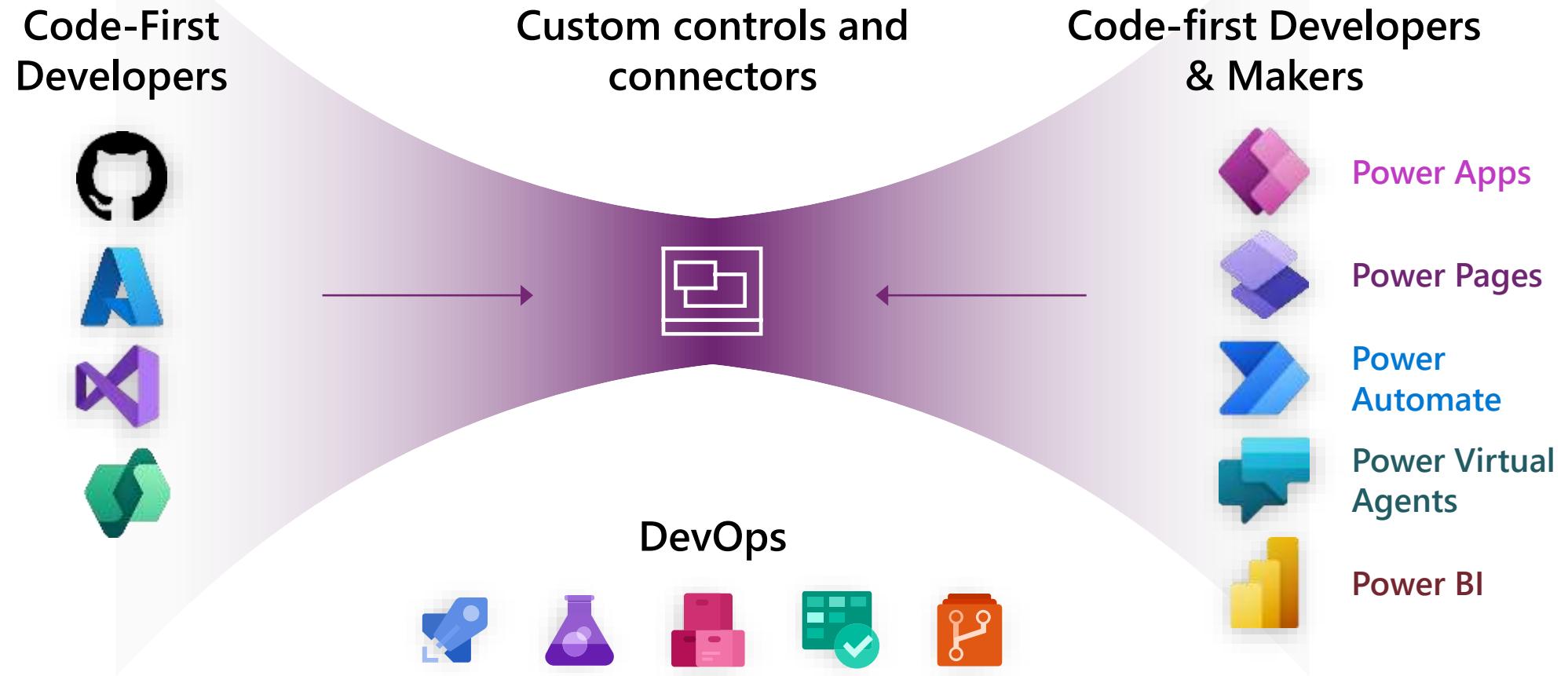
**Maintain governance and control at scale** with built in administration and security tools that work across all your solutions.

Power Platform and Azure helped reduce costs by 24% due to increased developer efficiency, increased DevOps efficiency, and reduced spending on third-party solutions.<sup>1</sup>

# Integrated experience



# Azure + Power Platform = Rapid Application Development



Power Apps provides a low-code approach to rapidly build apps for any device, while seamlessly working with your Azure-based services through a rich professional developer extensibility model.

# Easily publish your custom APIs to Power Platform

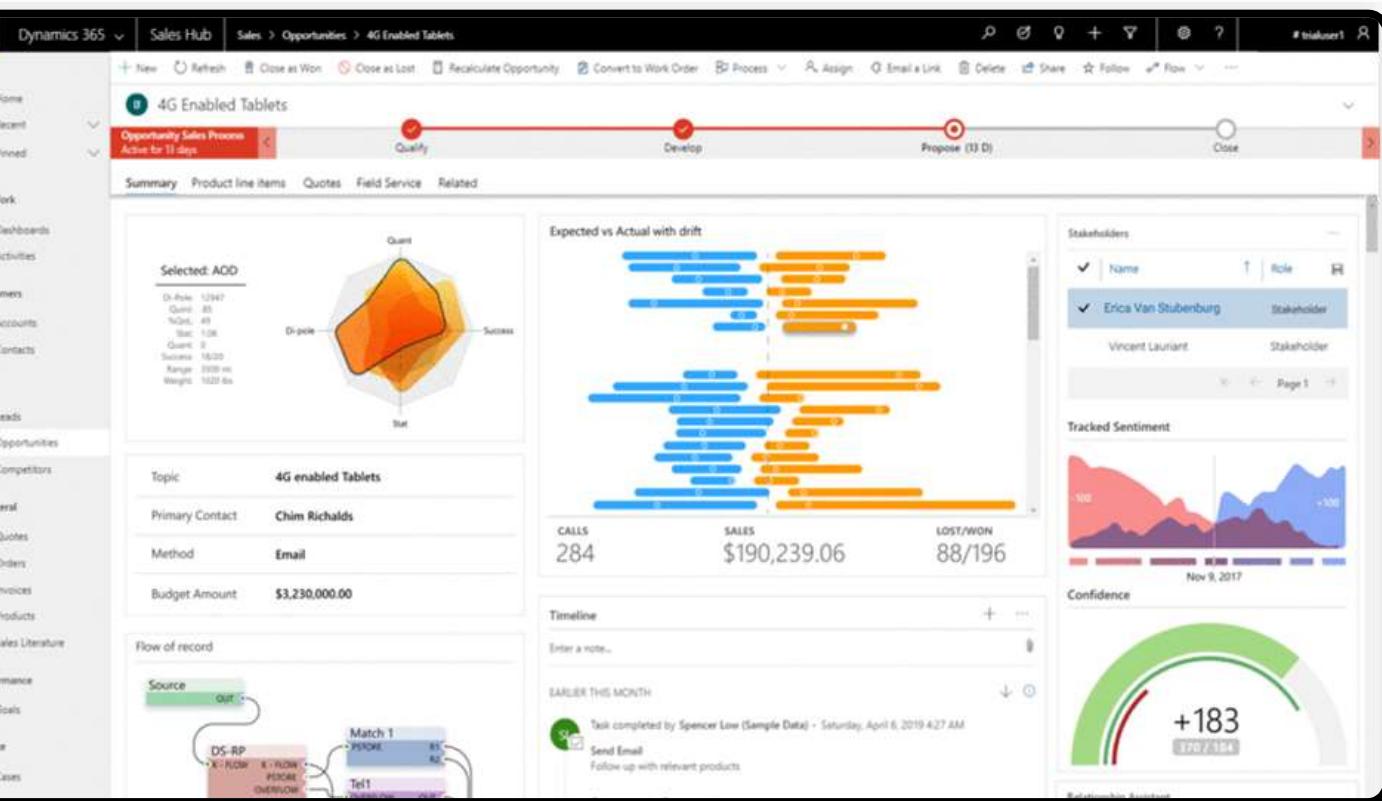
**Azure API Management** enables professional developers to publish their backend service as APIs, and easily export these APIs to the Power Platform

With this capability, citizen developers can use the **Power Platform** to create and distribute apps that are based on internal and external APIs managed by API Management.

[Learn more](#)

The screenshot shows the Azure API Management interface for creating a connector to the Power Platform. The left sidebar lists various management options: APIs, Products, Subscriptions, Named values, Backends, API Tags, and Power Platform. The 'Power Platform' option is highlighted with a red box. The main right-hand pane is titled 'Create a connector' and contains sections for selecting an API and a PowerApps environment. The 'API' section shows 'Demo Conference API' selected. The 'PowerApps' section shows 'Personal Productivity' selected as the environment to publish to, and 'MyAPIMConnector' entered as the API display name. A checkbox for 'Create subscription key connection parameter' is checked. At the bottom are 'Create' and 'Back' buttons.

# Build Custom Components with the Power Apps Component Framework



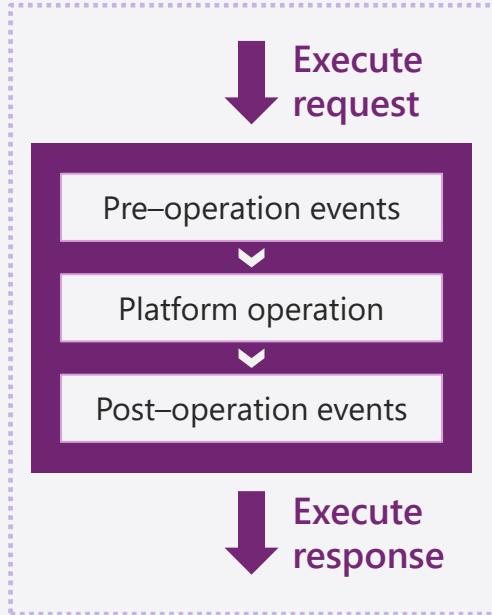
Developers can build compelling visual components for Power Apps

Custom components are responsive, reusable and support multiple form factors

Reuse your current IP and skills—framework is based on standard web technologies  
TypeScript/JS, CSS and HTML5

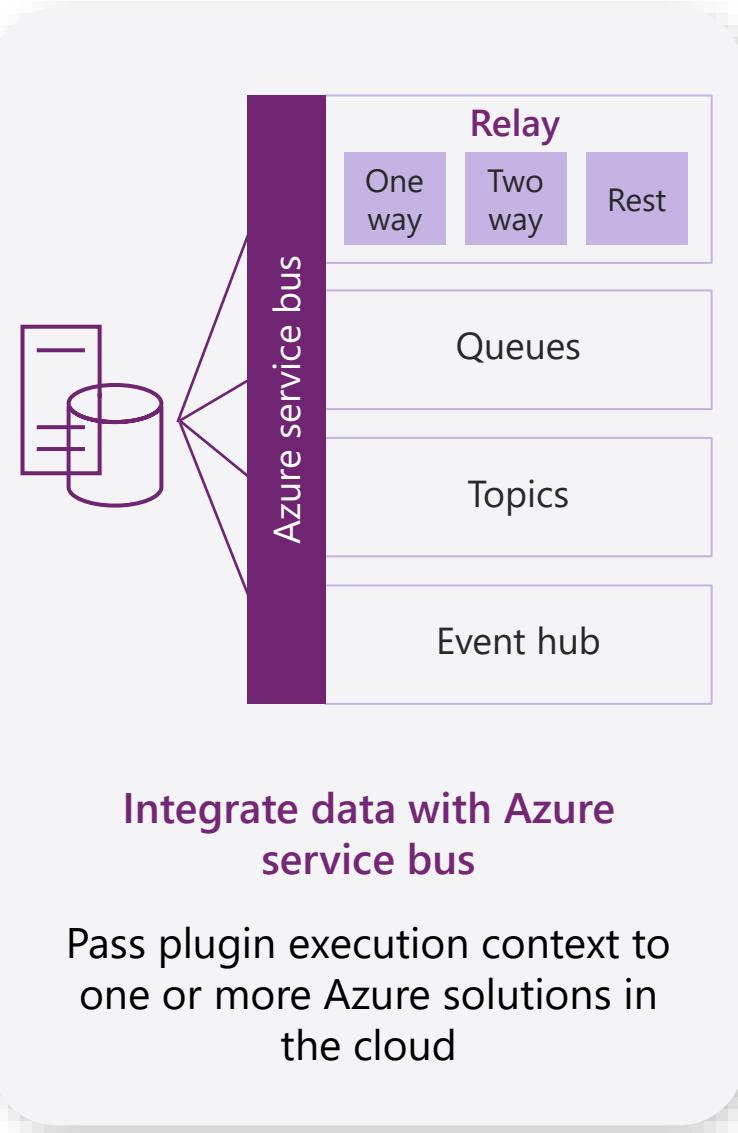
React and fabric support available in preview

# Service-side Extensibility for Dataverse



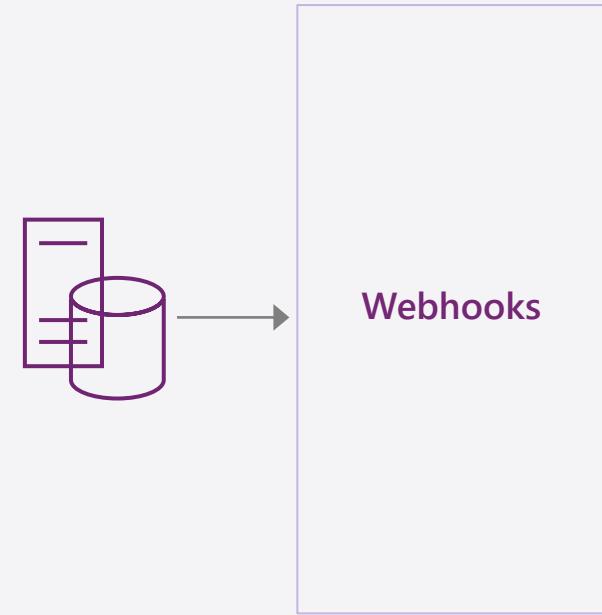
**Extend logic with custom code**

Use plugins to add custom code before or after platform operations



**Integrate data with Azure service bus**

Pass plugin execution context to one or more Azure solutions in the cloud



**Integrate data with webhooks**

Pass plugin execution context to web APIs and services using a lightweight HTTP pattern

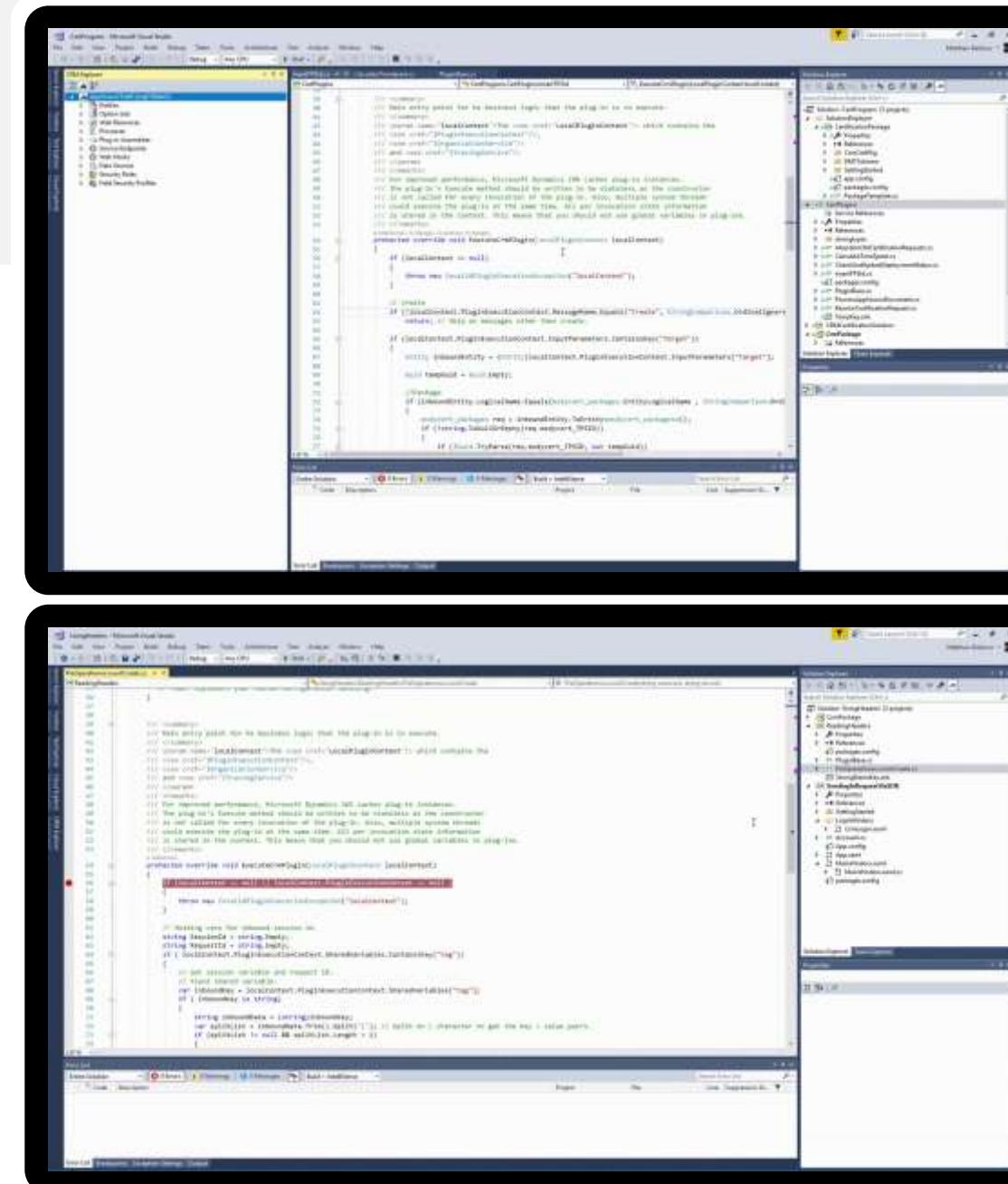
# Leverage code-first tools

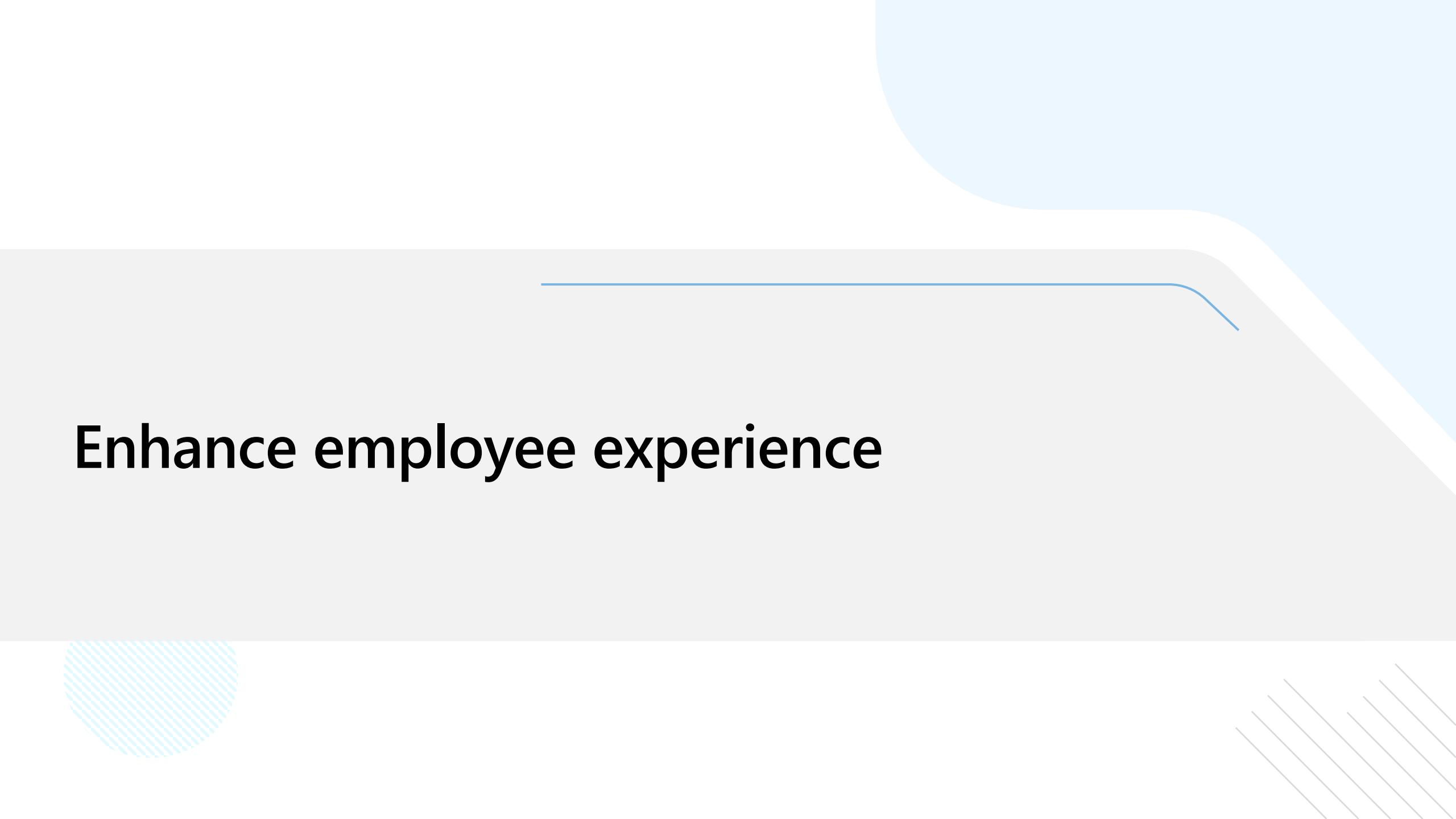
Full range of **customization and development experiences** with rich pro developer tools

Integrated with professional development tools such as Visual Studio

Extend and distribute Azure APIs in Power Platform and leverage Azure API Management

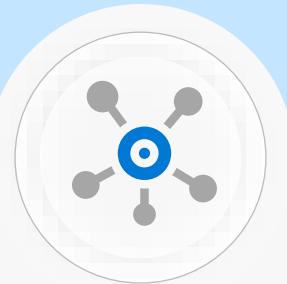
Build compelling and responsive **custom components** for reuse





**Enhance employee experience**

# Boost employee engagement & productivity



**Connect your internal and external data sources** and give employees information they need to decide & act fast.



**Improve communication, focus, and collaboration** with apps, workflows, and bots available in the flow of work through Teams and M365.



**Simplify work** with applications and automations that streamline activities and experiences both in the office and on the front line.

The use of no-code or low-code platforms or apps is shown to have led to an 83% positive impact on work satisfaction.<sup>1</sup>

# Integrate with productivity tools

## Power Platform



Power Apps



Power Automate



Power Virtual Agents



Power Pages



Power BI

Connect, extend and integrate with productivity tools



Microsoft 365



Dynamics 365



Microsoft Teams



Dataverse



Outlook



OneDrive



SharePoint



Forms



Data Connectors

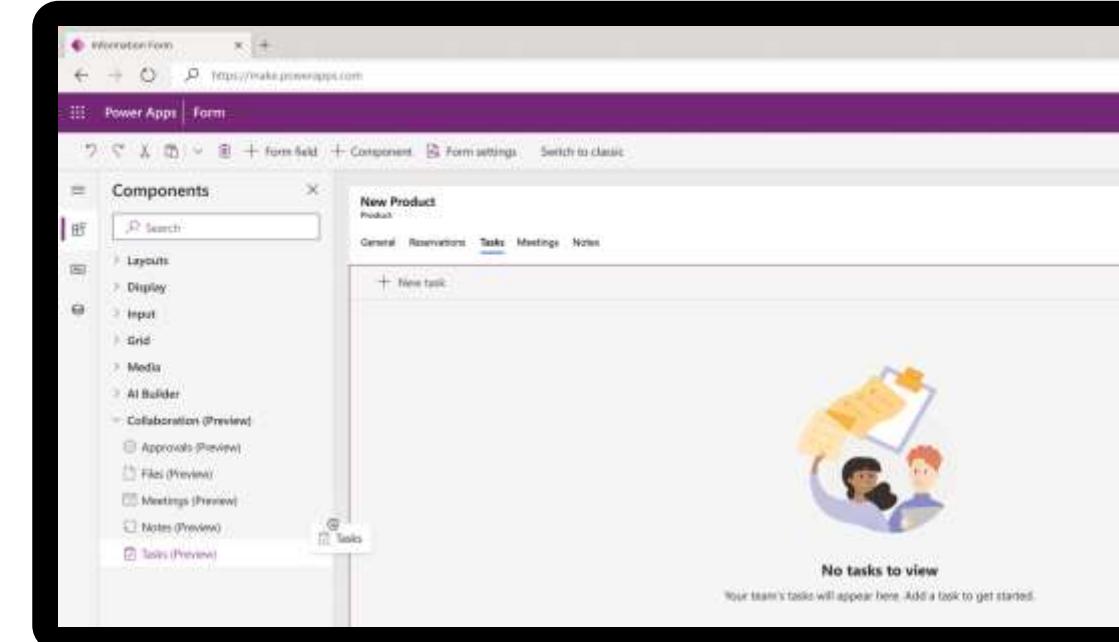
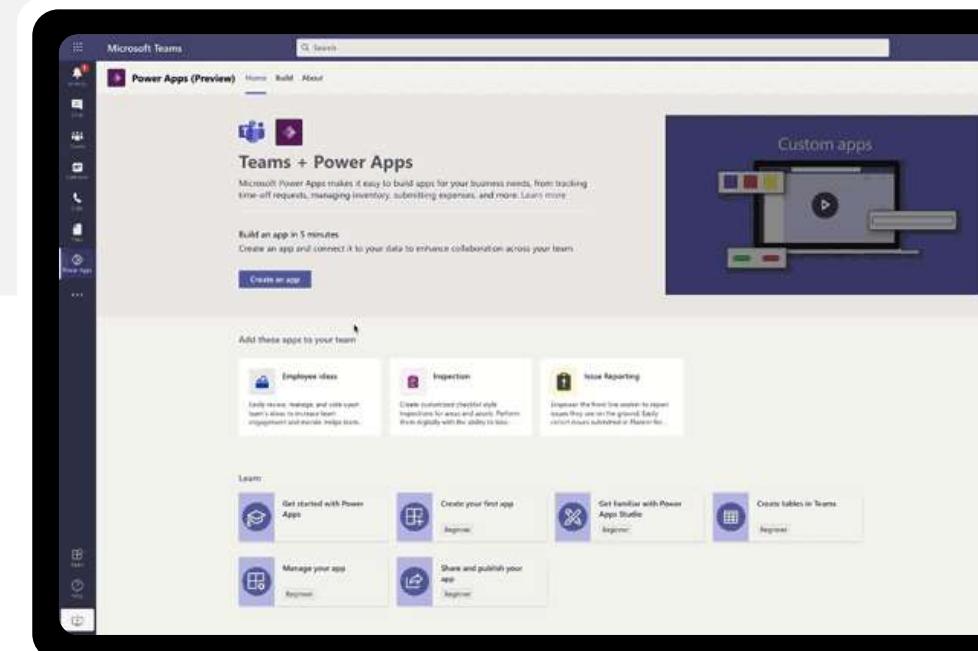
# Power Platform + Teams

Keep the focus in the flow of work with app deployment through Teams

Enable collaboration between business and technical users, decreasing costs and time to delivery

Use adaptive cards and link unfurling to take simple action directly in chat

Start with pre-built solutions to common scenarios with out of the box templates



# Empower departments

# Empower departments to solve business challenges



**Accelerate developers and empower business users** to develop solutions faster and at scale with safeguards in place.



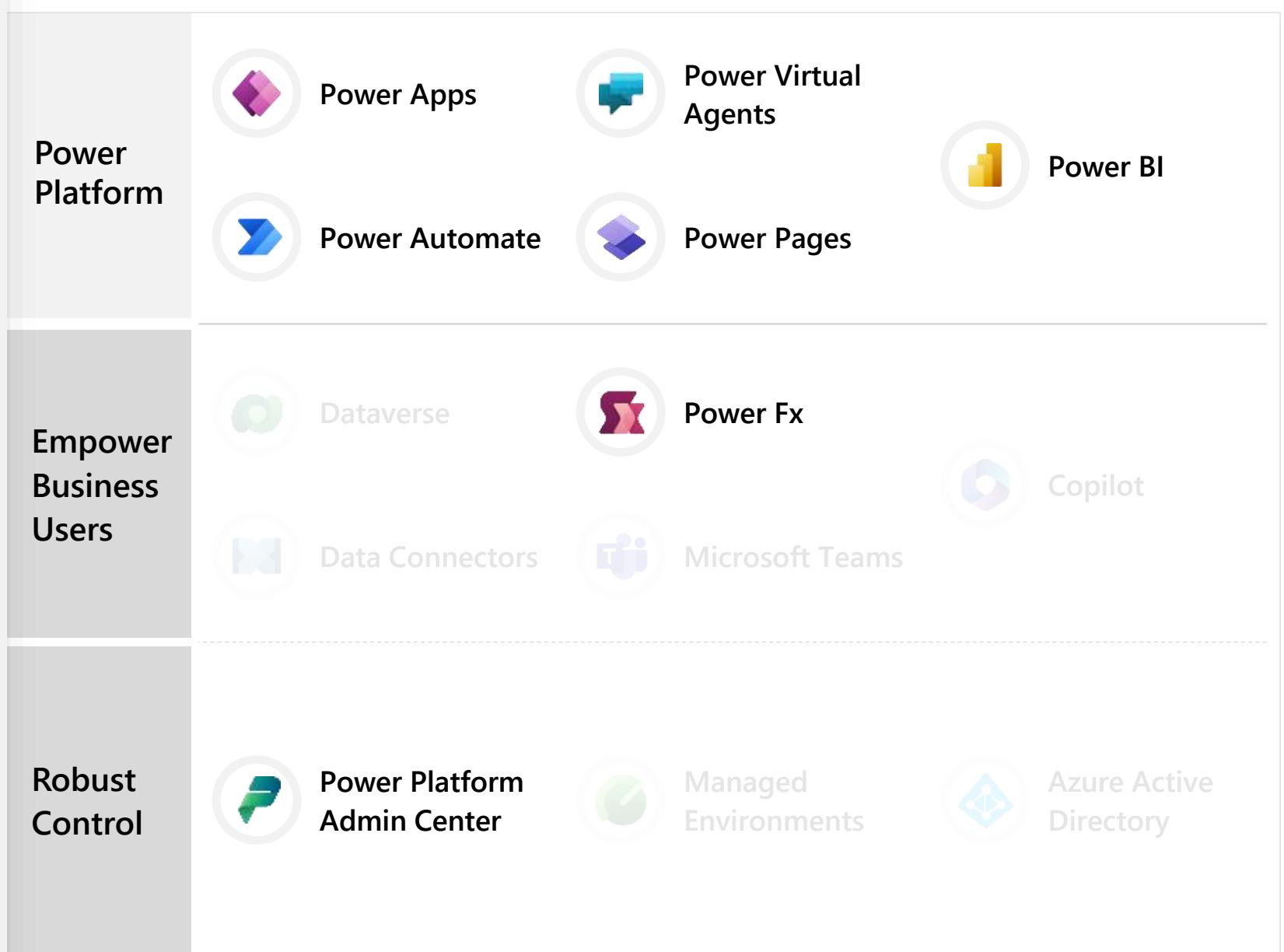
**Build solutions with less effort** with next generation AI copilot to quickly go from idea to solutions with natural language.



**Keep IT in full control** and reduce the risk of shadow IT with centralized administration and governance.

More than 80% of users and potential users of low-code or no-code platforms report that they would be more willing to work for a company that invests in their technical upskilling.<sup>1</sup>

# Enable all makers



# Empower people in your organization to create solutions with less effort

Give **developers and business makers tools** to solve problems quickly through an intuitive maker experience

**AI assisted experiences** enable natural language authoring to go from idea to solution faster

**Intuitive UI** makes it easy for more people to build productivity solutions

**Maintain control and prevent shadow IT** with built in governance and administration tools

