

An aerial photograph of a city street intersection. A semi-transparent white rectangular box is overlaid on the center of the image, containing the main title. The street below shows a yellow taxi, a white car, a black SUV, and a group of people on a bicycle. A Verizon advertisement pillar is visible on the sidewalk. Street signs for 'MISSION' and 'ONE WAY' are also present.

# Why Microsoft Flow and PowerApps Rock!

Boston Office 365 User Group - David Lozzi

March 15<sup>th</sup>, 2018

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Solution Architect

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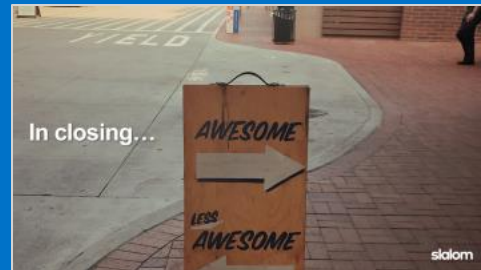
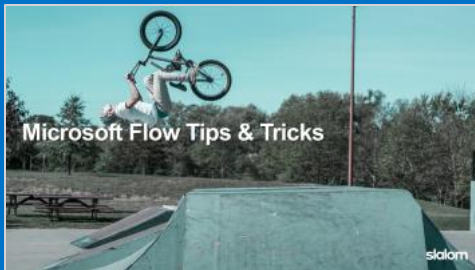
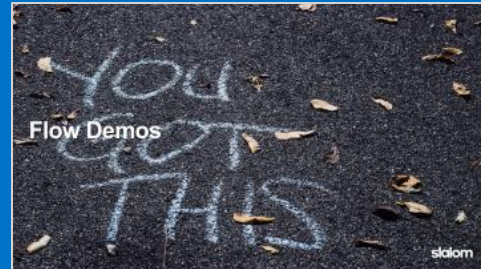
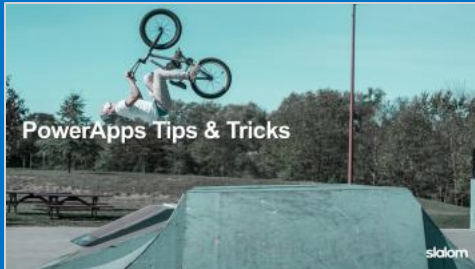
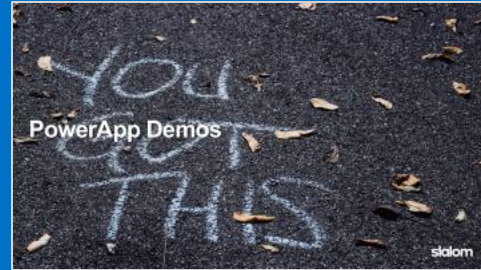


*User Group*

@Bos365

bit.ly/bos365

# Today's Goals

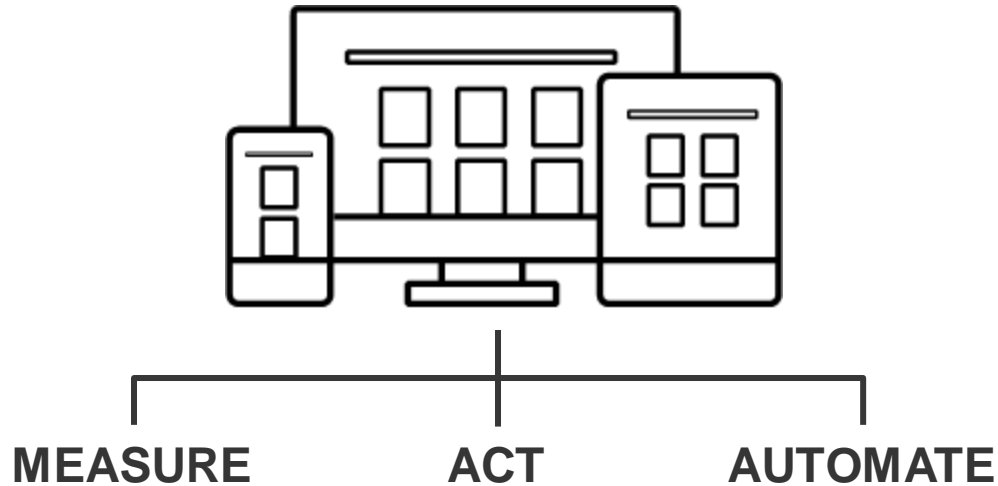


A man with a beard, wearing a white shirt, is seated at a dark wooden table in a cafe. He is holding a black smartphone in his right hand, looking at the screen. On the table in front of him is a laptop, a tablet displaying a website, and a glass of iced coffee with a black straw. Another person's arms and hands are visible in the background, also at the table. The scene is brightly lit, suggesting an outdoor or well-lit indoor setting.

# Introduction

# Business Application Platform

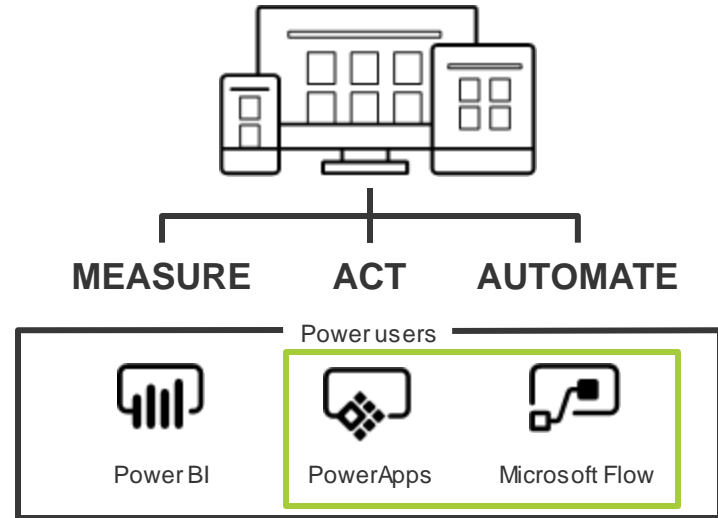
Let's innovate faster



Compose analytics, user experiences, and automation together using a complete and integrated set of services from Microsoft.

# Business Application Platform

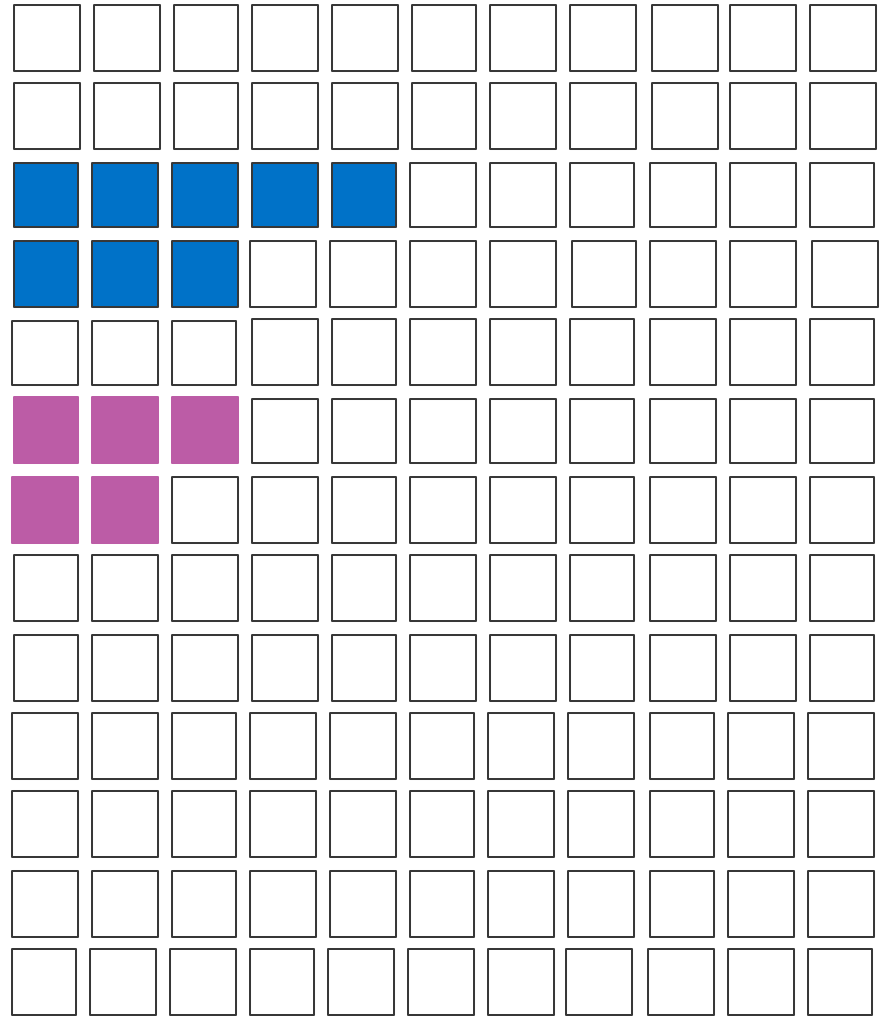
**Power users** who understand their business challenges the best can now quickly build and deliver solutions without writing code.



Only so many problems can be solved with  
**off-the-shelf SaaS**

**Custom software  
development**  
is time consuming and costly

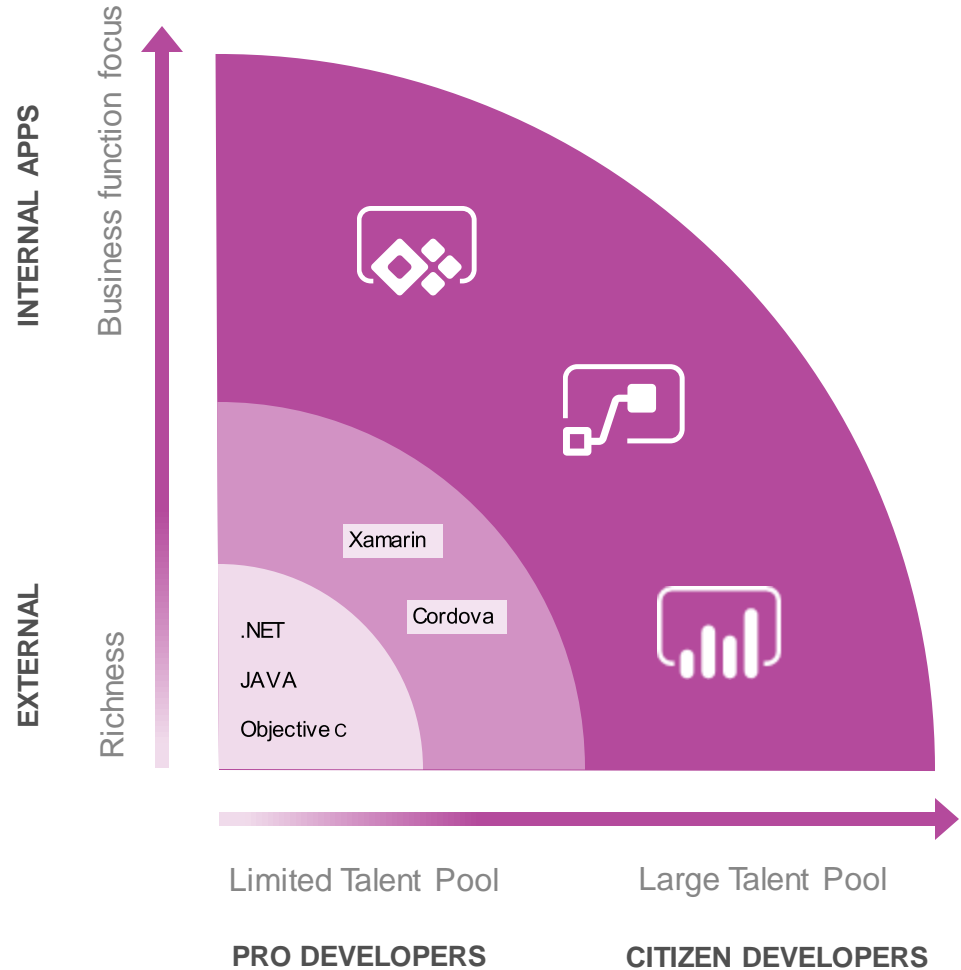
Everything else is a  
missed opportunity  
to optimize.



The platform for business apps, empowering analysts and power users

Cross platform tools for pro-developers

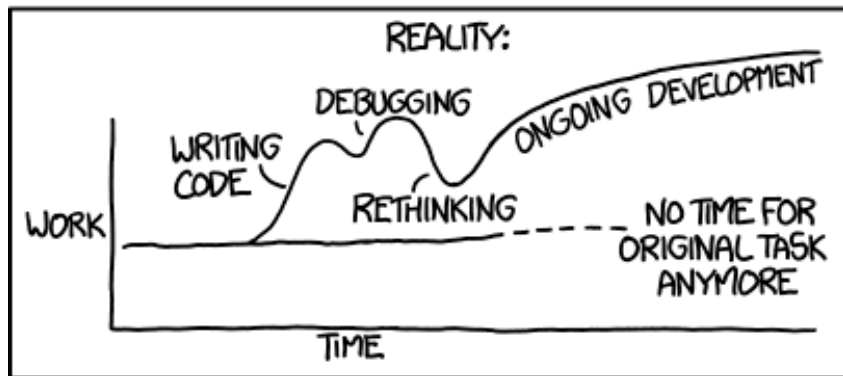
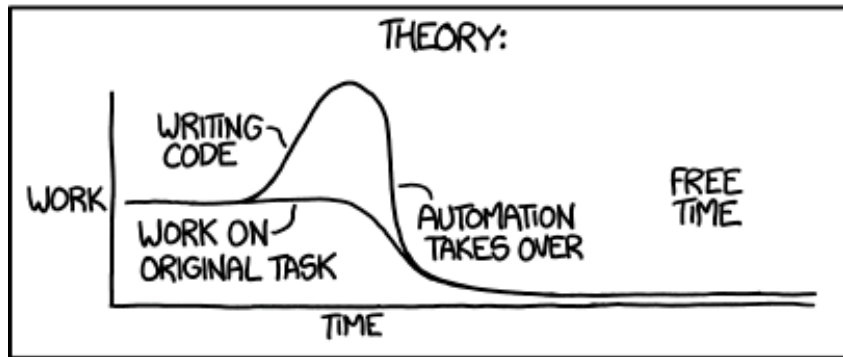
Native development for pro-developers





It's about **automation** and **ease of use** streamlining your...

"I SPEND A LOT OF TIME ON THIS TASK.  
I SHOULD WRITE A PROGRAM AUTOMATING IT!"



'Automating' comes from the roots 'auto-' meaning 'self-', and 'mating', meaning 'screwing'.

ref: <https://xkcd.com/1319/>

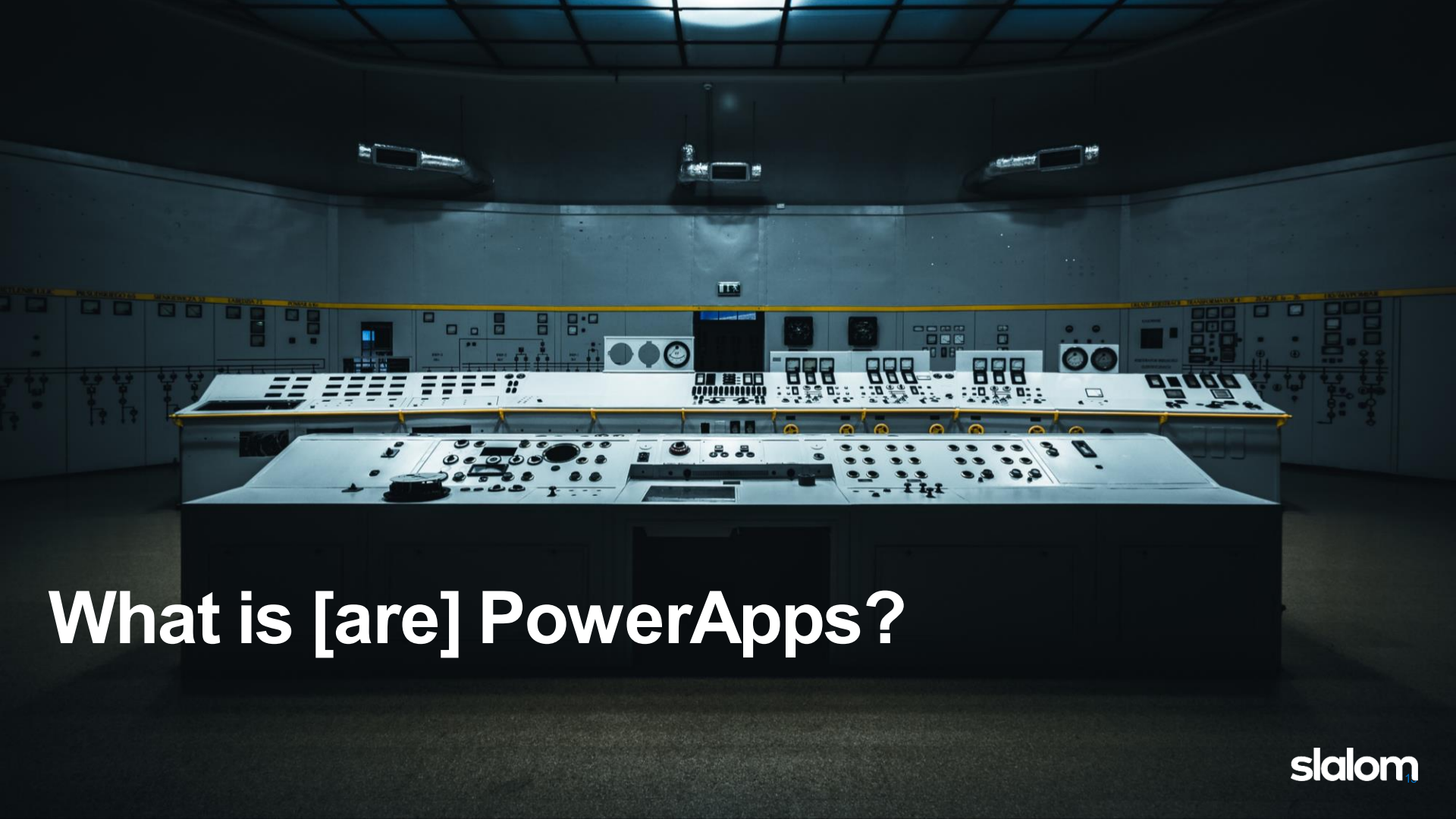
## What is changing now?

Nearly half of all jobs face losses to automation from software robots that complete increasingly complex tasks.

## What will happen by 2020?

Humans will work alongside software robots, and leaders will manage workforces that are part robot and part human.

These robots don't herald a **gloomy future for jobs**. As we showed in our report *The Future Of Jobs, 2027: Working Side By Side With Robots*, automation will replace some jobs and **create others**...

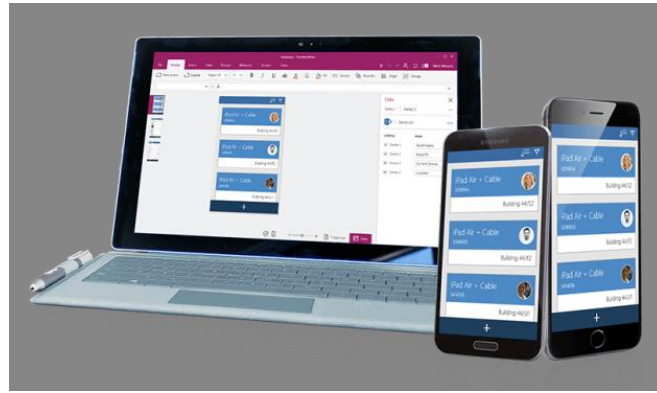


# What is [are] PowerApps?

# Microsoft PowerApps is a service for creating and using custom business apps across platforms



**Connect** to data & systems you're already using; create the data you need



**Create** apps, forms, and workflows without writing code

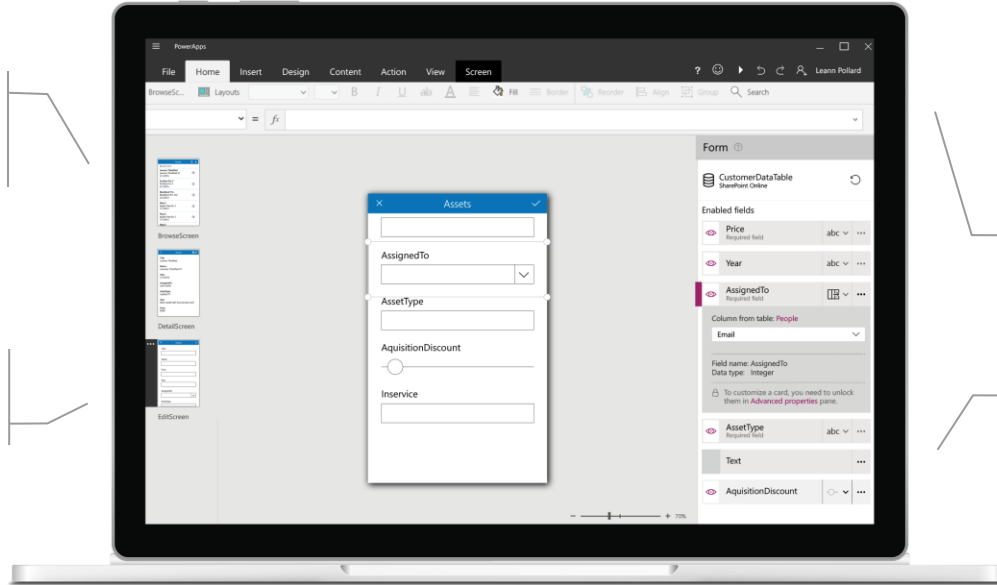


**Use** apps on web and mobile

# Build useful apps without writing code

Craft forms and screens in a visual designer that helps you see exactly what you'll get

Take advantage of device capabilities like cameras, GPS, and pen controls



Build business logic into your apps with an Excel-inspired expression language

Extend the capabilities of connected data sources, or focus just on the bits you need



## Connect to the systems you're already using

Quickly generate and customize apps based on SharePoint Online lists, SQL Databases, Dynamics 365, Salesforce records and more. You can even connect to any restful APIs via custom connectors.

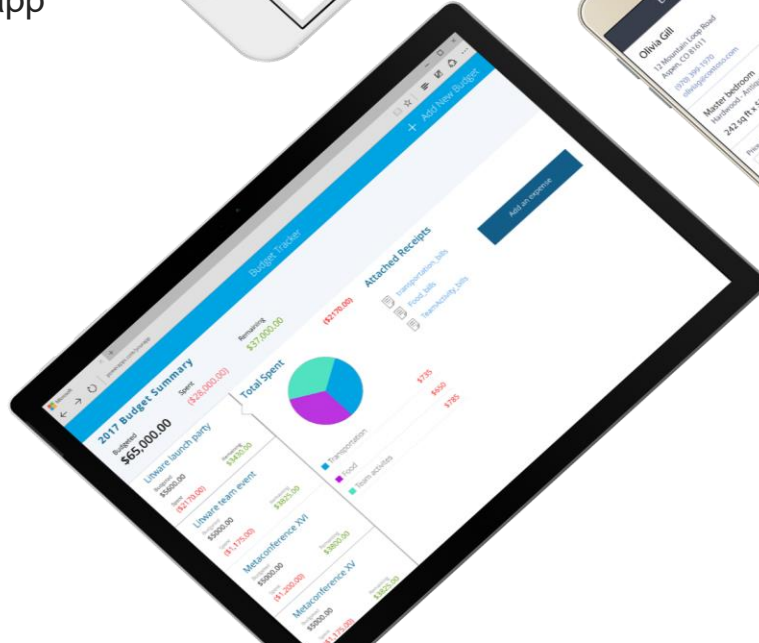
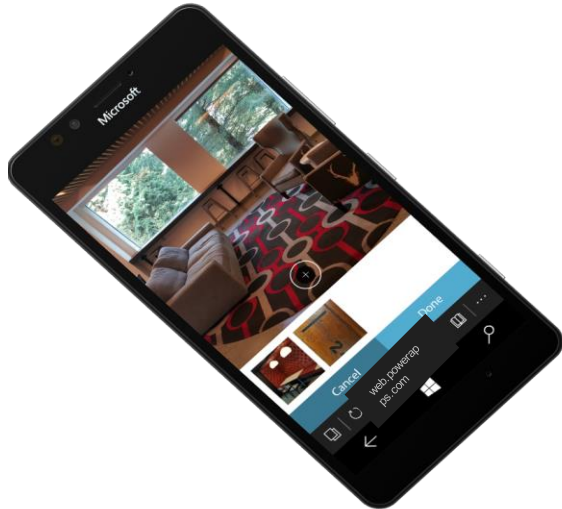
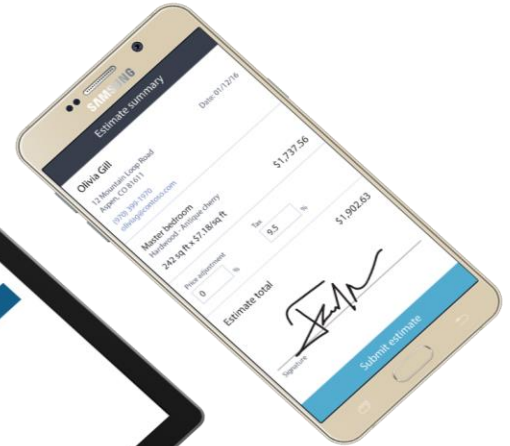
Even connecting to data in your on premise systems through a common Data Gateway.

Your apps will be able to fully interact with underlying sources and will respect the permissions you've already established in them.



# Publish apps instantly for web and mobile

Get apps to your team when and where they're needed, whether that's on the web, Windows, iOS or Android—no app store required.



A chalk drawing of a person is drawn on a dark asphalt surface. The drawing is made with light blue or white chalk and shows a person's outline, including a head, torso, and legs. The drawing is somewhat faded and surrounded by several scattered, dry, brown leaves. The overall scene is outdoors, likely on a sidewalk or street.

# PowerApp Demos

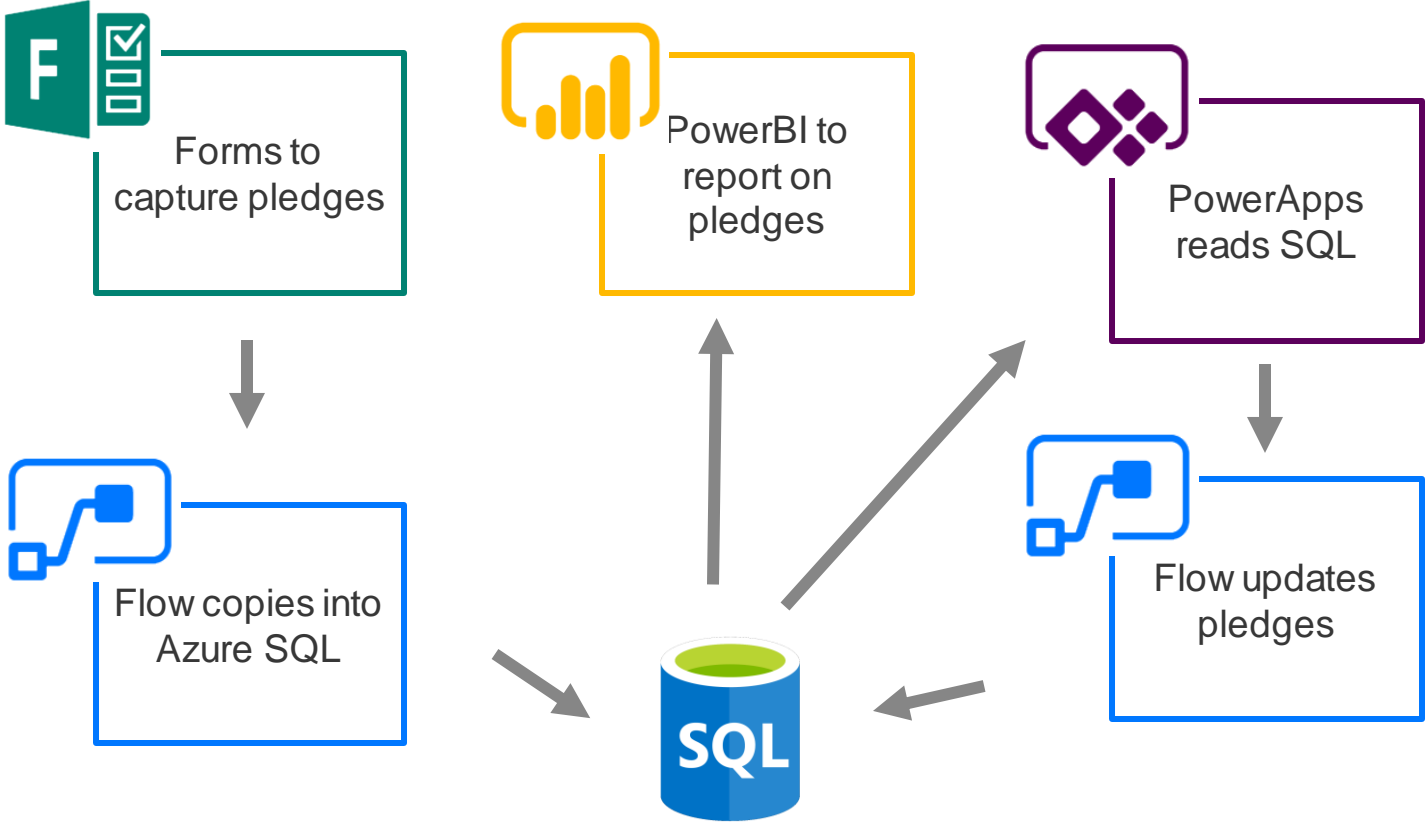
# Starting fresh - Demo

# Gates Foundation Demo

# Ordering Device Demo

# Green Scene Demo

# Across the Office 365 Stack



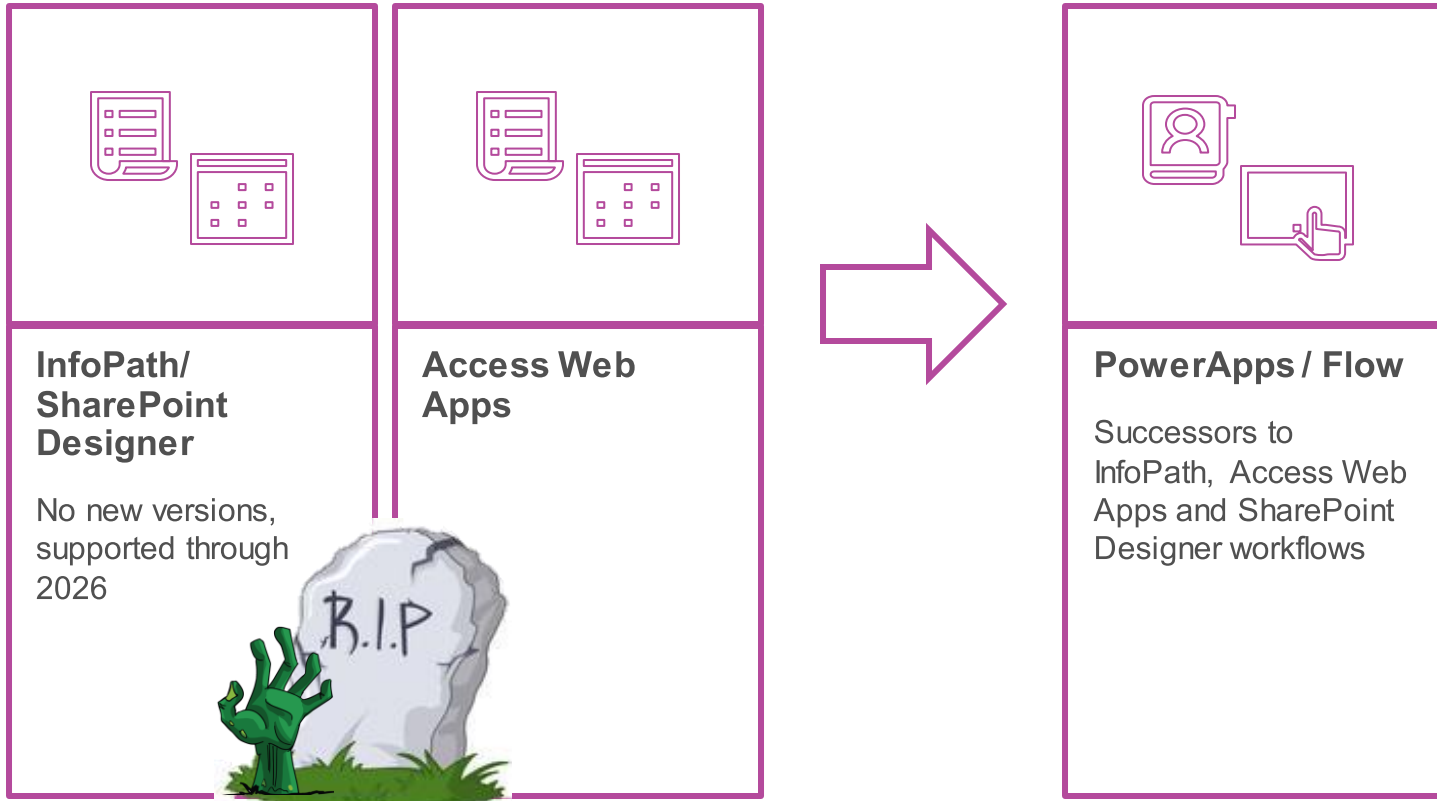
# Across the Office 365 Stack





**What about SharePoint Online?**

# InfoPath and Access Web Apps



# Starting fresh on SharePoint - Demo

A person in a white t-shirt and light-colored pants is performing a backflip with a bicycle at a skatepark. The person is upside down, holding the handlebars, with the bicycle wheels pointing upwards. The background shows a clear blue sky, green trees, and a green ramp in the foreground. The text "PowerApps Tips & Tricks" is overlaid in white on the left side of the image.

# PowerApps Tips & Tricks

# CSS – Cascading Style Sheets

- Not possible, true CSS is not available in PowerApps
- Custom Style Sheets – CSS :)
- Set OnVisible of main screen to set properties for the app
- More at <http://bit.ly/PowerAppsCSS>

```
Set(BrandColors,{
    Primary:RGBA(0,114,200,1),
    Secondary:ColorValue("#3CB3E7"),
    Tritary: ColorValue("#B34A9B"),
    Highlights: ColorValue("A6CE38"),
    GrayDarkest: RGBA(129,130,131,1),
    GrayDarker: RGBA(193,195,197,1),
    Gray: RGBA(223,226,225,1),
    GrayLighter: RGBA(236,238,240,1),
    GrayLightest: RGBA(244,245,246,1)
})

;Set(BrandTypography,{
    Normal: Font.Arial,
    Subtitle: Font.Georgia,
    Title: Font.Georgia,
    Note: Font.Arial,
    Input: Font.Arial
})

;Set(AppFonts,{
    NormalFont: BrandTypography.Normal,
    NormalFontSize: 18,
    InputFont: BrandTypography.Input,
    InputFontSize: 18,
    TitleFont: BrandTypography.Title,
    TitleFontSize: 22,
    TitleFontWeight: Bold,
    TitleColor: BrandColors.Primary,
```

# Property Dependencies

HoverFill

Font

Size

FontWeight

Top

X

Y

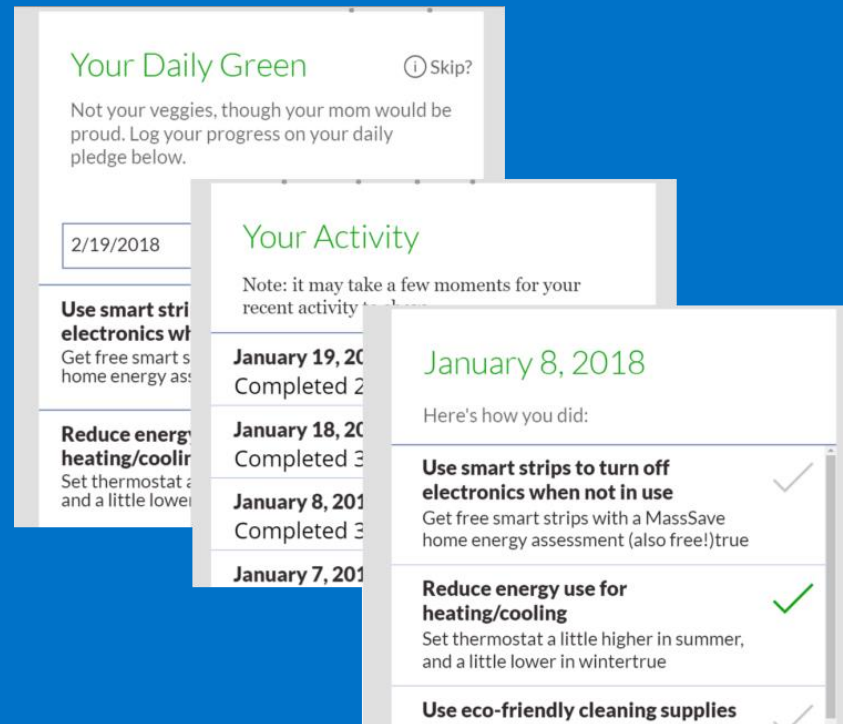
Width

- Let your controls rely on each other.
- Streamlines layouts and changes.

# Copy & Paste is your Bae

Bae - a person's boyfriend or girlfriend

- Copy & Pasting controls copies everything about it: formatting, layout, actions, etc. including property dependencies



# Performance

- PowerApps can feel a little sluggish
- Query your data and load into an object, only load from source when needed
- Handles 500 items by default, can increase

```
;ClearCollect(QuestionGroups,GroupBy('[dbo].[Questions]','Group','ID'))  
  
;ClearCollect(Pledge,Filter('[dbo].[UserPledges]',UserID = CurrentUser.ID))  
  
;Set(TotalPledgeQs, CountRows(Pledge))  
  
;If(DateDiff(Date(2017,12,16),Today()) >= 0,  
    Set(AllowDaily,true),  
    Set(AllowDaily,false))  
  
;Set(AppLoaded,true)
```



A close-up, high-contrast photograph of a person's hands operating a drill press. The hands are positioned on a metal workpiece held in a vise. A drill bit is positioned above the workpiece, ready to drill. The scene is dimly lit, with the primary light source highlighting the hands and the metal surfaces, creating a dramatic, industrial atmosphere. The background is dark and out of focus.

**What is Microsoft Flow?**

if

t



that

# Microsoft Flow helps **non-developers** work smarter by automating workflows across apps and services



**Connect** to data & systems you're already using; create the data you need

[slalom.com](https://slalom.com)



**Create** workflows using triggers & actions without code or scripts



**Edit** flows on web and mobile



**Approve** requests or manage them on web and mobile

# What makes up a Flow?

## Example: Notification Flow

Trigger – the event that kicks off the flow:

- Manually
- on a schedule
- on an event in the cloud

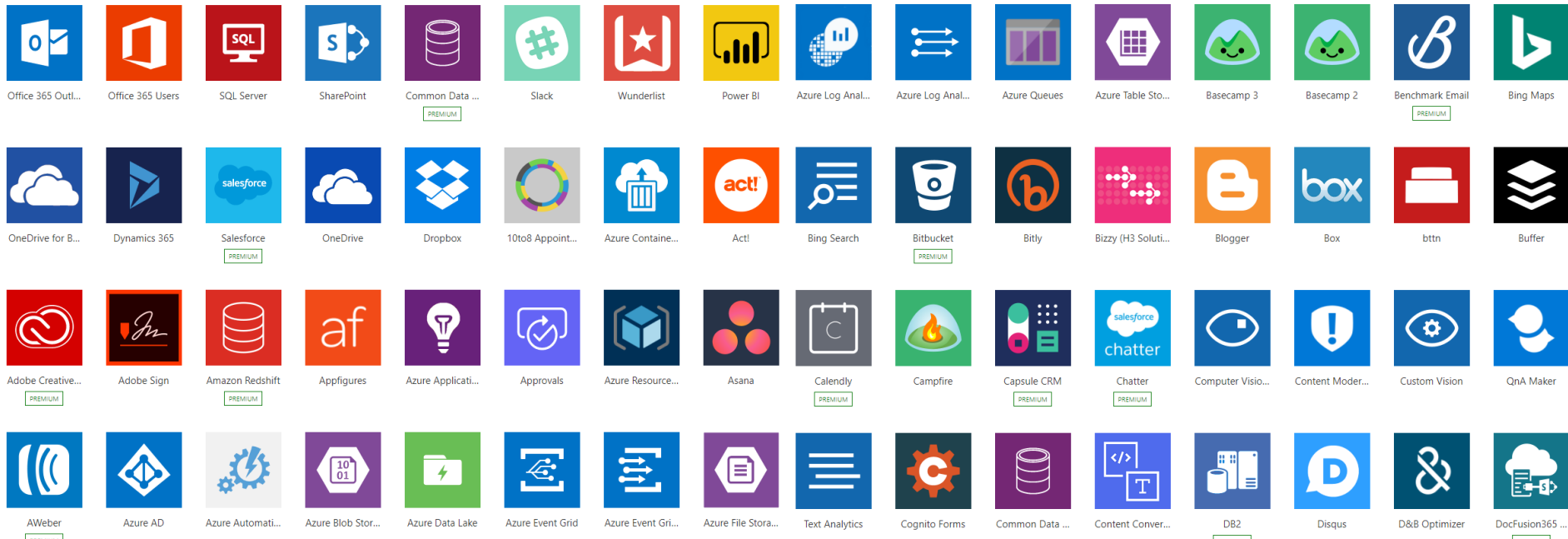
Actions – what the flow does

*Uses data from the trigger*















































































The screenshot displays a Microsoft Power Automate flow configuration. The top section is the trigger, titled "When a record is created", which is configured with "Organization Name" set to "PowerAppsMSITest1" and "Entity Name" set to "Leads". An arrow points down to the action section, "Send an email". The "To" field contains "Owner", and the "Subject" is "Follow up on Lead". The "Email body" contains the text "Don't forget to follow up with the lead: " followed by a dynamic content field "Topic" and ". The last name is: " followed by another dynamic content field "Last Name" and ".". A "Show advanced options" link is visible at the bottom.

# Connect to cloud and on premises data

Nearly 150 out of the box connectors with new connectors every week  
Use Custom Connectors to connect to any custom REST endpoint  
Connect to on-premises data using gateways



# Templates help users to get started

 Save Office 365 email attachments to OneDrive for Business  By Microsoft Used 203370 times	 Get a push notification when you receive an email from your...   By Microsoft Used 120567 times	 Send myself a reminder in 10 minutes   By Microsoft Used 69999 times	 Get today's weather forecast for my current location   By Microsoft Used 74634 times	 OneDrive Files to Google Drive Files  By Paulmichael Contreras Used 7139 times	 Get a push notification when a new file is added in SharePoint  By Microsoft Used 6482 times	 Copy files from one SharePoint Online account or folder to another  By Microsoft Used 6092 times	 Get daily weather reports delivered to your email and phone   By Microsoft Used 5979 times
 Save Outlook.com email attachments to your OneDrive  By Waleed Ahmed Used 58411 times	 Get a push notification with updates from the Flow blog  By Microsoft Used 43932 times	 PowerApps button  By Microsoft Used 37903 times	 Start approval when a new item is added   By Microsoft Used 22727 times	 Track your work hours and work location   By Microsoft Used 5953 times	 Record form responses in SharePoint   By Microsoft Used 5554 times	 Copy files from one OneDrive account or folder to another  By Microsoft Used 5254 times	 Create new Outlook Task  By Microsoft Used 5246 times
 Get updates from the Flow blog  By Microsoft Used 22167 times	 Get a daily digest of the top CNN news   By Microsoft Used 20849 times	 Send me a push notification with my current location  By Microsoft Used 18772 times	 Save my email attachments to a SharePoint document library  By Microsoft Used 18271 times	 Get daily reminders in Email  By Microsoft Used 5164 times	 Save tweets to an Excel file  By Microsoft Used 4785 times	 Create new events on Google Calendar from Office 365   By David Longstaff Used 4644 times	 Create tasks in planner for new Outlook Tasks  By Microsoft Used 4223 times
 Send a customized email when a new SharePoint list item is added   By Microsoft Used 18258 times	 Send approval and follow up via email   By Microsoft Used 16169 times	 Track Outlook.com emails in an Excel spreadsheet  By Microsoft Used 14639 times	 Track your working hours   By Microsoft Used 13850 times	 Email notification for survey responses   By Microsoft Used 4204 times	 Get a push notification for important emails  By Microsoft Used 4028 times	 Outlook.com calendar to Google Calendar   By Microsoft Used 3942 times	 Create a to-do item in Wunderlist for important emails  By Microsoft Used 3846 times

A top-down view of a dark asphalt surface. In the center, a stick figure is drawn in light blue chalk. The figure has a circular head, a rectangular torso, and two rectangular legs. Scattered across the asphalt are several dry, brown leaves of various shapes and sizes. The text 'Flow Demos' is overlaid on the left side of the image in a white, sans-serif font.

# Flow Demos

**Create a Flow from a Template**



# Create a Flow from Scratch Demo

# Notify Teams of new Group Event Demo

<https://davidlozzi.com/2018/01/26/update-your-team-with-events-from-your-outlook-group-calendar-using-microsoft-flow/>

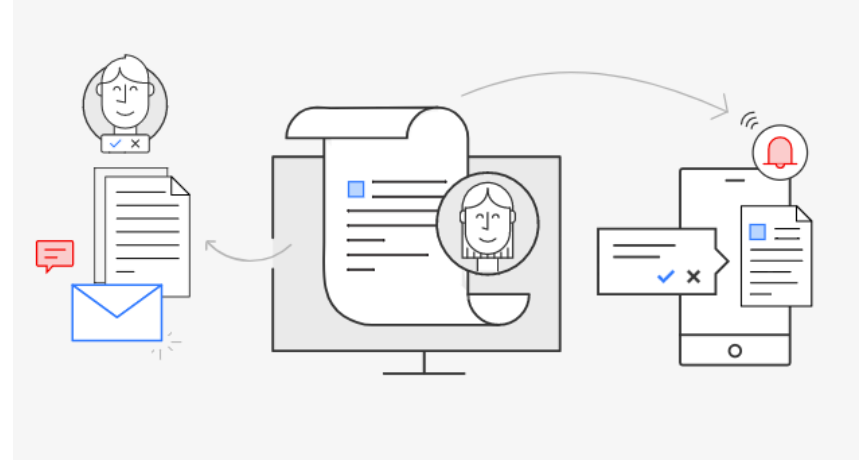
# Green Scene Flows Demo

# Manage Outlook Flagged Emails as Tasks in Wunderlist Demo

**What about SharePoint Online?**

# Automating approvals

- Approval processes are an integral part of all businesses
  - HR request forms – vacation requests, travel authorization, travel expense, mileage reimbursement, equipment rental, equipment inspections, etc.
  - Document approvals – contracts, specs, designs, sales quotes
  - Issue tracking
  - Lead generation
- Flow is the successor to SharePoint designer workflows and approvals were the most common workflow scenario in SPD



# Modern Approvals in Flow

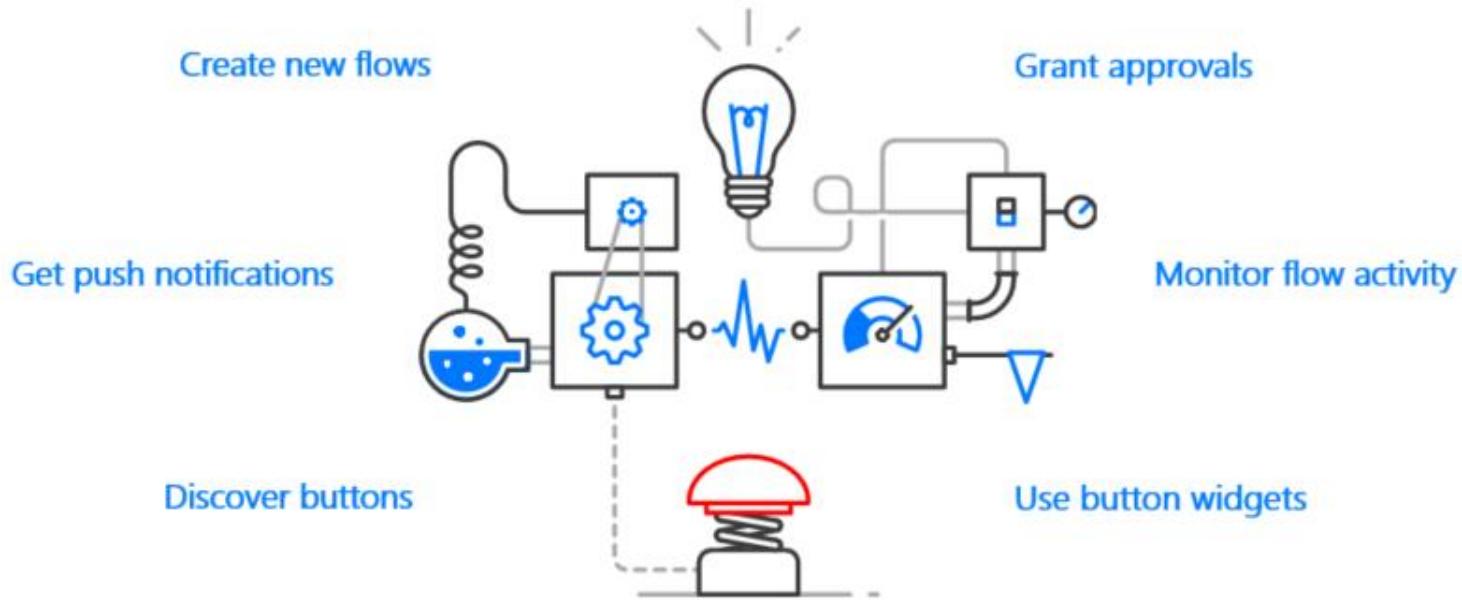
- Streamline business processes for data in SharePoint, Dynamics 365, Forms, SQL, etc.
- View sent and received requests in a unified approvals center
- Do approvals on the go - from your phone or directly from your inbox
- Customize to fit *your* business process:
  - Sequential or hierarchical approvals
  - Parallel approvals
  - All Assigned Must Approve

# Approving Content in SharePoint Online Demo



# Microsoft Flow Mobile & Devices

## *Work less and do more, from anywhere*



Create, run, and manage automated workflows between your favorite apps and services – even when you're on the go!

# Automating advanced scenarios with Flow

- Scheduling – run a flow at a particular frequency, delay, delay until
- Expressions - perform simple, inline calculations like string manipulation (e.g. substring, replace) or arithmetic (e.g. add, subtract, multiply)
- Control flow – switch-case, parallels, do until, apply to each, handle timeouts and failures
- Nested workflows

A person in a white t-shirt and light-colored pants is performing a bicycle trick at a skatepark. They are upside down, holding the handlebars, with the front wheel pointing upwards. The background shows a clear blue sky, green trees, and a green ramp. The text "Microsoft Flow Tips & Tricks" is overlaid in white.

# Microsoft Flow Tips & Tricks

# Use Variables

The screenshot displays two variable configuration panels in a flow designer interface. The top panel is for a variable named 'taskBody' of type 'String'. Its value is a JSON object representing an email: 

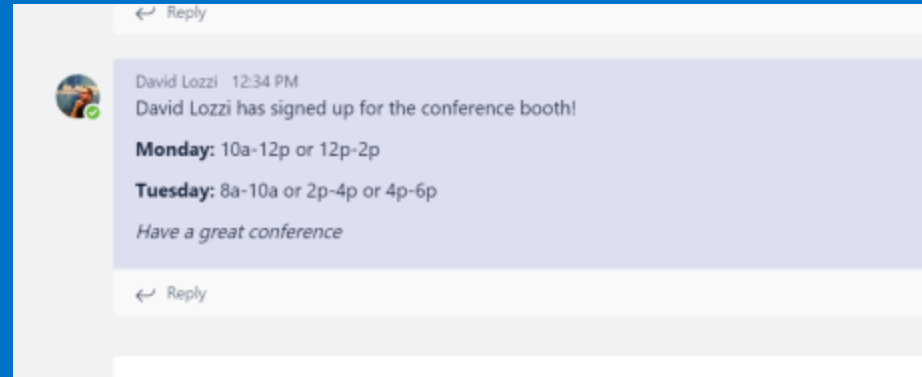
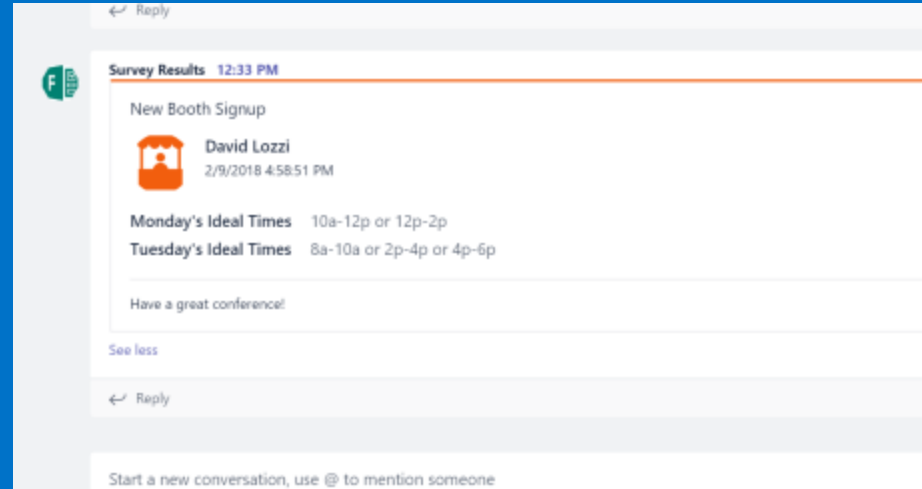
```
{ "Received": "Received Time", "To": "To", "CC": "CC", "Search outlook with": { "from": "From", "subject": "Subject" } }
```

. The bottom panel is for a variable named 'fromDomain' of type 'String'. Its value is the function `split(...)`. Both panels include an information icon and a menu icon.

- “Clean code” practices preach to use well named variables, apply here too.
- Allows for reusable values throughout your Flow

# Incoming Webhooks vs Posting

- Consider other methods of posting, i.e. to posting Teams
- Services that offer incoming webhooks will provide richer capabilities when posting.
- More at <https://davidlozzi.com/2018/03/01/posting-to-teams-incoming-webhook-verses-teams-post-message-in-flow/>



# Debugging

## RUN HISTORY

✓ Succeeded	22 hours ago
✓ Succeeded	1 day ago
✓ Succeeded	1 day ago
! Failed	3 days ago
! Failed	3 days ago
✓ Succeeded	3 days ago

- You get great detail in the run history to help debug issues.
- Use notifications actions to test data and steps, then remove once you're happy.

The screenshot displays a workflow run history with a detailed view of a failed step. The workflow consists of the following steps:

- When an email is flagged (2)
- var taskBody (0)
- var fromDomain (0)
- var taskTitle (0)
- Get rows (5)
- If Email was Already Flagged (0)

The 'Get rows' step is highlighted in green, indicating it was the last successful step. The 'If Email was Already Flagged' step is highlighted in grey, indicating it was skipped. Below the workflow steps, a failure summary is shown:

**Failure summary**

Support  
Visit our [support page](#) to see if there are any known service outages that are impacting your flow.

**Action 'Get rows' failed**

Fix It  
If this error was temporary, you can try resubmitting the run and the issue may have been resolved.

**Error type**  
This action failed because of an error in the connector.

**Error Details**  
The error message from the service is below. This maybe useful for support:

Http request failed with status code 'ConnectFailure' and status message: 'Unable to connect to the remote server'.

**ActionConditionFailed.** The execution of template action 'If\_Email\_was\_Already\_Flagged' is skipped: the 'runAfter' condition for action 'Get\_rows' is not satisfied. Expected status values 'Succeeded' and actual value 'Failed'.

# Error Handling

- Set your actions to run only when something bad has happened
- More at <https://sergeluca.wordpress.com/2018/03/12/pattern-for-microsoft-flow-error-handling/>

When an item is created

Start an approval

Send an email

\*To: serge Luca x ;

\*Subject: Approval timeout

\*Body: The document was not approved on time

Settings

**Configure run after**

My connections

sergeluca@ShareQL.com

When an item is created

Start an approval

'Send an email' should run after:

Start an approval  
Timed out

is successful

has failed

is skipped

has timed out

Done Cancel

**Administration**



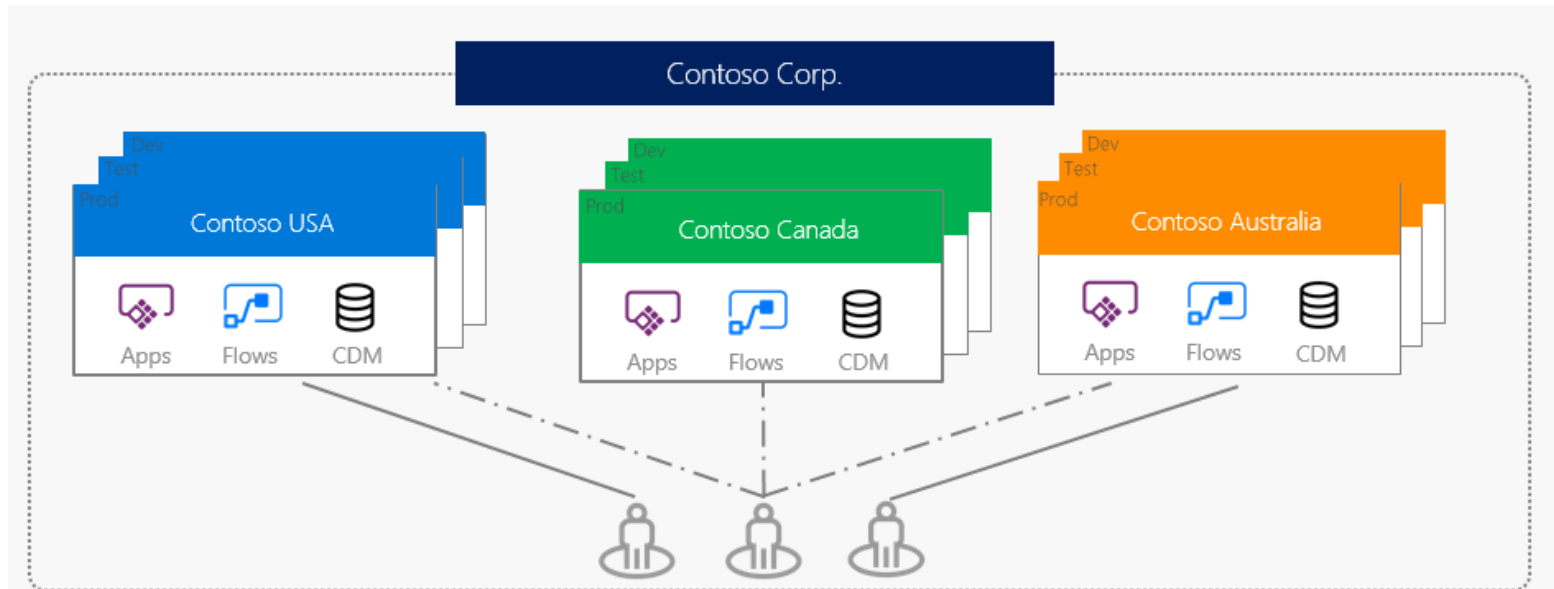


# Environments

Environment is a space to store your organization's flows, apps, and business data

Used to separate flows and apps that have different roles, security requirements, or target audiences

Move solutions across environments using packages



# Admin Center

- Environment administration
  - Lifecycle and management for all resources
  - View, delete/suspend, and add as co-owner
  - Manages roles and role membership
  - View license and quota consumption
- Data Loss Prevention
  - Provide IT-administrators with full control of how data within an organization moves
  - Set policies for classification of services
- Audit Logs in the O365 Security and Compliance Center

Data Policy Name Contoso Corp ✓ Save Policy ✕ Close

Environments • Data groups

Categorize these connectors into one of two data groups, "Business data only" and "No business data allowed". Users will be prevented from creating flows and apps that combine connectors from the "Business data only" and "No business data allowed" data groups. [Learn more](#)

Business data only ...



Add



SharePoint



Common Data  
Service



SQL Server



Office 365  
Outlook



Office 365  
Users

No business data allowed (Default) ...



Add



OneDrive



MSN Weather



Twilio















Wunderlist



















Dropbox

# Pricing and Licensing - PowerApps

	PowerApps for Office 365 & Dynamics 365	PowerApps Plan 1 \$7/user/month	PowerApps Plan 2 \$40/user/month
Flows run per month per user	2,000	4,500	15,000
Connect to Office 365 and Dynamics 365 services			
Connect to cloud-based services like Azure SQL, Dropbox, Twitter & More!			
Use premium connectors like Salesforce, DB2 & More!			
Automate workflows	Includes Flow for Office 365 and Dynamics 365	Includes Flow Plan 1	Includes Flow Plan 2
Use Common Data Service			
Create environments			
Establish company policies regarding the usage of different connections and apps			

# Pricing and Licensing - Flow

	Flow Free	Flow for Office 365 & Dynamics 365	Flow Plan 1 \$5/user/month	Flow Plan 2 \$15/user/month
Unlimited automated flows				
Maximum number of runs per month	750	2,000	4,500	15,000
Maximum flow frequency	15 minutes	5 minutes	3 minutes	1 minute
Connect to Office 365 and Dynamics 365 services				
Connect to cloud-based services like Azure SQL, Dropbox, Twitter & More!				
Use premium connectors like Salesforce, DB2 & More!				
Create environments				
Establish company policies regarding the usage of different connections and apps				

In closing...



It's about **automation** and **ease of use** streamlining **you**

# Resources

- Microsoft PowerApps
  - <https://docs.microsoft.com/en-us/powerapps/>
- Microsoft Flow
  - <https://docs.microsoft.com/en-us/flow/>
- Microsoft Power Users – PowerBI, PowerApps, Flow, Stream
  - <https://powerusers.microsoft.com/>
- Microsoft Flows on DavidLozzi.com
  - <https://davidlozzi.com/microsoft-flow/>
- Microsoft Tech Community – blogs, forums
  - <https://techcommunity.microsoft.com/>
- Friday Functions series on YouTube:
  - <https://www.youtube.com/playlist?list=PLnFZgEkUYL03vyWro12HGW6xRtNTolQlc>
- Microsoft Ignite on demand videos
  - <https://myignite.microsoft.com/videos>
- The key differences between InfoPath and PowerApps
  - <https://collab365.community/infopath-vs-powerapps-differences/>

THANK YOU

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