



Global **Microsoft 365**
Developer Bootcamp

A journey through Microsoft Teams development

João Ferreira | Microsoft MVP

Agenda

App Templates

Power Platform

SharePoint Framework & Native Development

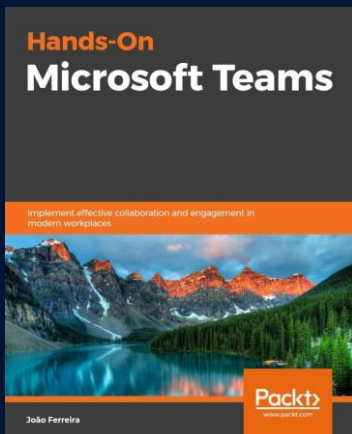


WHO I AM

With a degree in computer science I have been working with SharePoint over the last eight years, mainly focused on creating collaboration and productivity solutions that drive the adoption of Microsoft Intelligent Workplace.

João Ferreira

Microsoft MVP



What is Microsoft Teams?

Microsoft Teams is the hub for team work on Office 365

It is the fastest growing business app

Is the place where you will spend most of your time while working



Why Microsoft Teams?

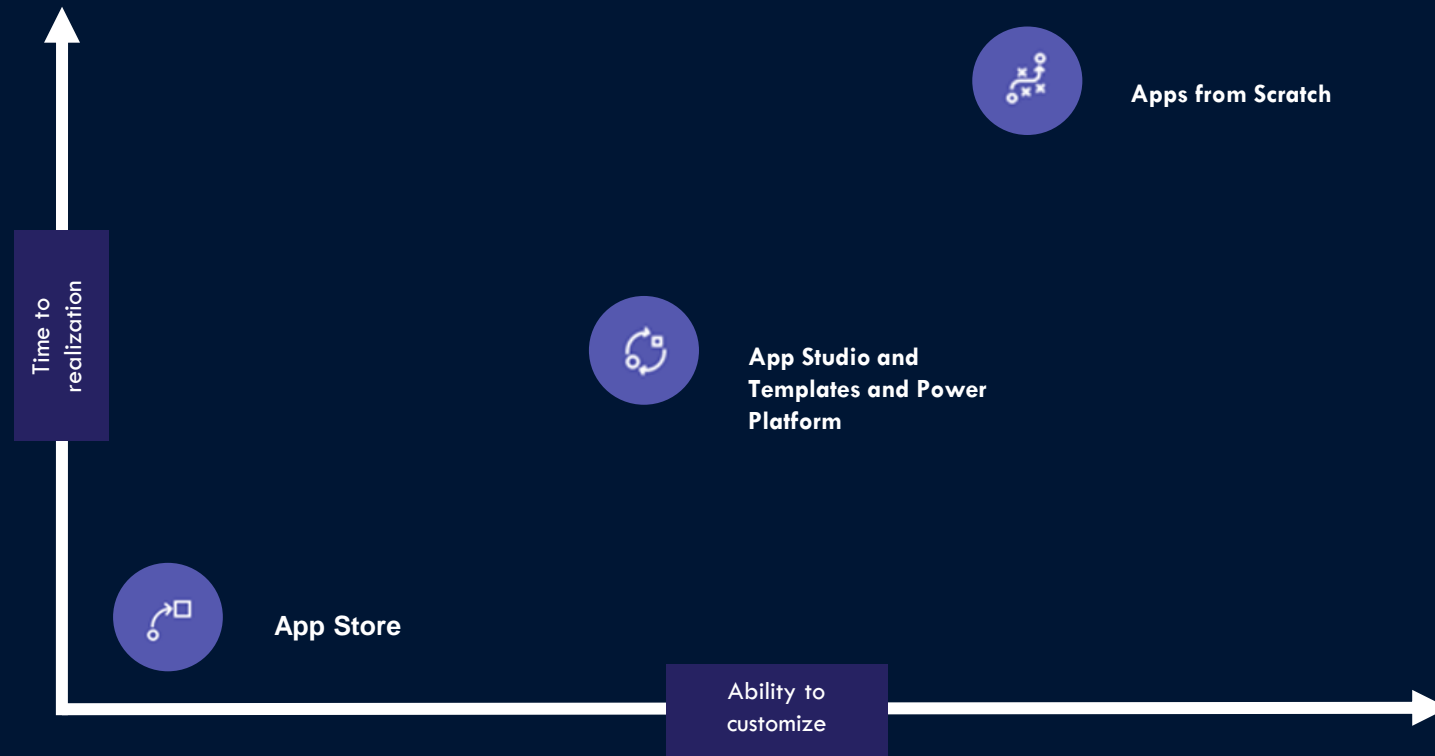
115+ Million Daily Active Users

"Here's how I think about the building blocks coming together: SharePoint can provide the storage. Power Apps enables the rapid development and deployment of tailored applications. And Teams serves as the front-end of it all, bringing the Microsoft 365 collaboration and communications experience into a single hub."

Jeff Teper



How to extend Microsoft Teams





App Templates

App Templates for Custom Company Apps

Plug n Play Experiences

Community-driven, pre-built Teams apps for common line-of-business scenarios. Minimal configuration needed and no coding required.

One-Click Deployment

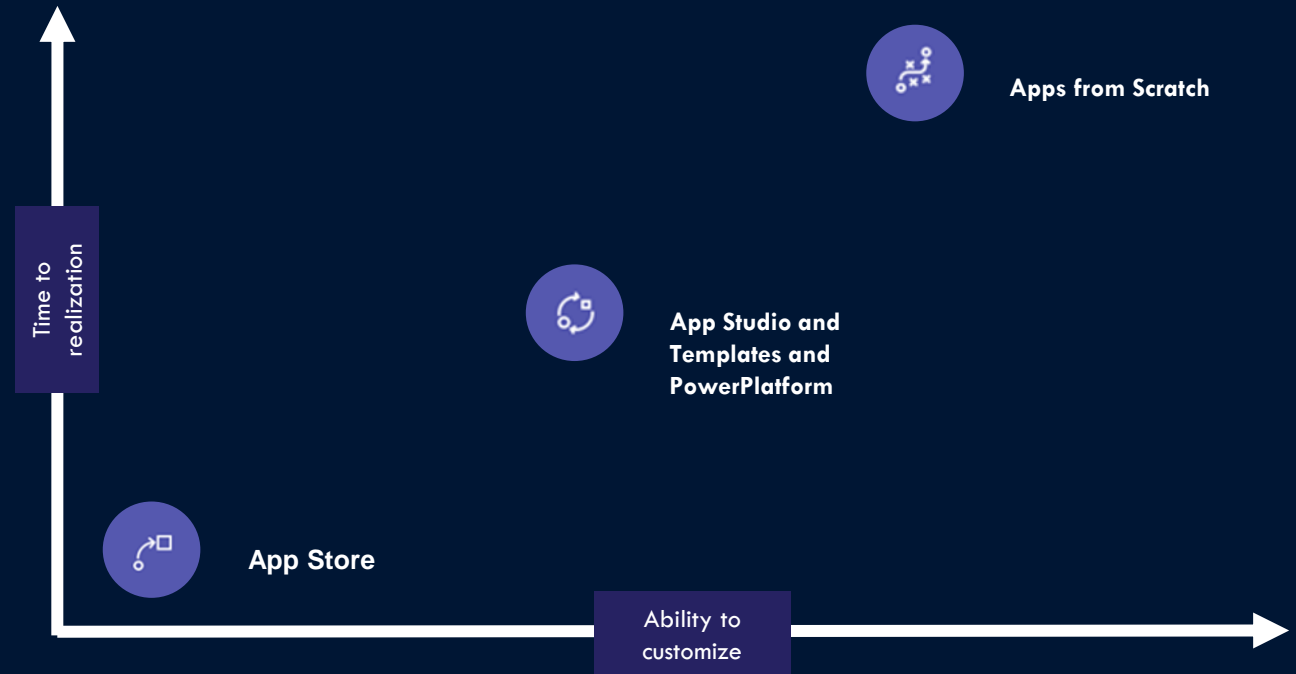
Automated experience to deploy the app to your own instance of Azure. Bring the experience to Teams seamlessly.

Secure, Configurable & Extensible

Open sourced so you can own, brand, configure and extend to your needs.

Full Catalog:

<https://aka.ms/TeamsAppTemplates>



32 Apps Available

HR Support Bot

A bot for corporate HR teams to answer commonly asked employee questions and provide support.

Activity

Chat

Teams

Calendar

Calls

Files

...

Apps

Help

Contoso HR Support

Conversation

HR Links

About

11:28 PM

Tell me about Diversity/Inclusion at Contoso?

Contoso HR Support

Here's what I found:

Diverse & Inclusive



Diversity and inclusion at Microsoft is not a program, an initiative, or a campaign—it's about how we do business and how each one of us engages one another to create healthy environments

Open article

Ask an expert

Share feedback

Type your questions here

List Search – Search and share items within SharePoint List

Customer Tracking

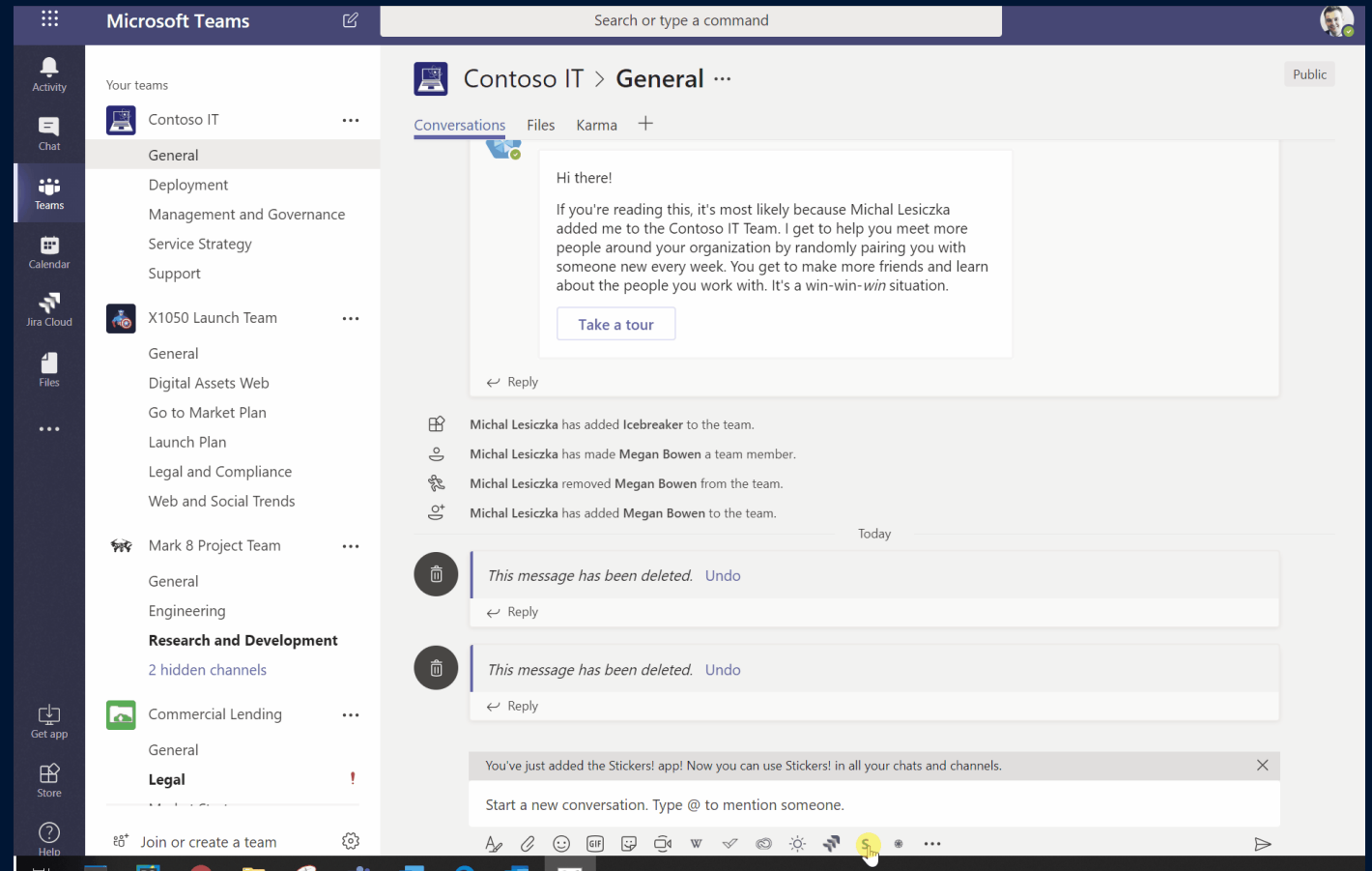
Customer tracking, issue tracking.

Bug tracking

Searching, sharing and Collaborating on software bugs

Company glossary

Searching and sharing common company acronyms



FAQs

Are these apps secure?

The app templates conform to recommended best practices around security and infrastructure, and all community submitted changes to them are reviewed to ensure continued conformance.

What would it take to take these apps and deploy them in my tenant?

All App Templates come with detailed deployment instructions and take minutes to set up. You don't require a developer to deploy and use these app templates out of the box.

Can everyone deploy these app templates?

Typically, organizations have their own review processes to upload an app to their internal catalog. Anyone with these permissions can deploy these apps.

Do these apps cost anything?

These app templates are free to use as they are open-sourced. They may incur Azure consumption charges but there are free trials available.

Coffee in the cloud - demo





Power Platform

Microsoft Power Platform



Power BI
Business analytics



Power Apps
Application development



Power Automate
Workflow automation



Power Virtual Agents
Bot builder

A low-code approach to building apps



Easily build apps with a full featured low-code / no-code platform



Connect to your existing data with 230+ pre-built connectors and custom connectors



Store your data in the Common Data Service



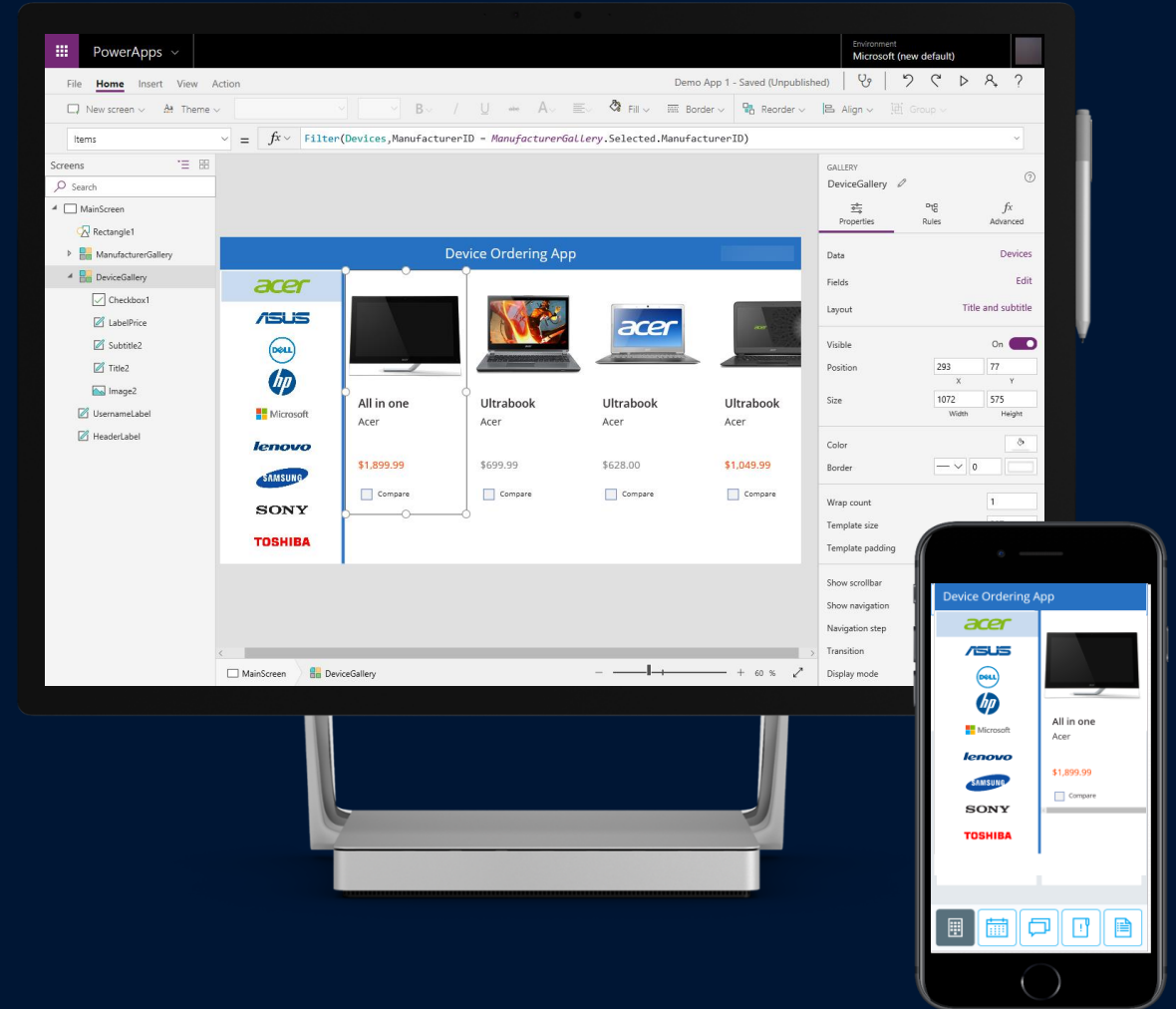
Integrated with Office 365, Azure, Dynamics 365, and Power BI



Strong enterprise governance & security



Pro-dev extensibility



PowerApps + Teams Opportunity

Enable enterprise app distribution at scale through the Teams tenant app catalog

Empower frontline workers by enabling easy access to PowerApps from Teams mobile

Supercharge PowerApps with collaboration capabilities in Teams (chat, calling)



Education: Tacoma Public Schools

< >

Search or type a command

Activity

Chat

Teams

Meetings

Files

Assignments

...

More apps

Favorites

Manitou Park 2018-2019

...

General

0 Kinder

1st Grade

2nd Grade

3rd Grade

4th Grade

5th Grade

Academic Excellence-Early Lear...

Attendance

Community Partnerships

Monday Memo

PreK-Headstart

Scavenger Hunt

SST

Talk Moves-Best Practices

Tier II

Whole Child

5 more channels

Manitou Park 2018-2019 > General ...

Conversations Files Staff Notebook Positive Office Referral DRA 2 more +

Developmental Reading Assessment





FULL NAME

Irvin Sayers

TEACHER

Christie Cline

STUDENT FOCUS GROUP

ELL

INSTRUCTIONAL LEVEL

27

GRADE

2

TEXT TYPE

Nonfiction

READING ENGAGEMENT GOAL

Self-Assessment/Goal Setting

ORAL READING GOAL

Accuracy: Word Analysis

COMPREHENSION GOAL

Literal Comprehension

PRINTED LANGUAGE CONCEPTS

App Builder



Lauren Taylor

Assistant Principal

Company



EVERY STUDENT. EVERY DAY.

Organization size

30k+ Staff & Students

Industry

Education

Country

United States

"When I learned about PowerApps that changed the game for me. I found Flow and OMG this is a life-changer!"

– Lauren Taylor, Assistant Principal, Manitou Park Elementary, Tacoma Public School district

Not for Profit: American Red Cross

The screenshot displays the Microsoft Teams interface for the 'Training Services Logistics' team. The left sidebar shows the team's structure with categories like 'Your teams', 'Chat', 'Teams', 'Meetings', 'Calls', 'Files', and 'Apps'. The main content area is titled 'Training Services Logistics > General' and includes tabs for 'Conversations', 'Files', 'Wiki', 'Projects & Initiatives', 'Supply Order', and 'Skedulo Report'. The 'Supply Order' tab is active, showing the 'American Red Cross Training Services' logo and a 'Welcome to the Supply Hub' message. Below the welcome message, there is a prompt 'First, select your territory:' with a dropdown menu labeled '(Select Territory)'. A 'Begin New Order' button is visible at the bottom. On the right side, an 'Order History' panel lists four orders with their IDs, FedEx Tracking numbers, order dates, and statuses.

Order ID	FedEx Tracking #	Order Date	Order Status
6078		8/5/2019 3:43 PM	New/Awaiting
6077		8/5/2019 2:56 PM	New/Awaiting
6076		8/5/2019 12:39 PM	
6075	788913817000	8/5/2019 12:35 PM	Fully Shipped

“The app allows instructors to add supplies to a shopping cart, provide the address where they would like the supplies shipped and then checkout the items when ready, an intuitive online ‘shopping’ experience we are all already familiar with”

Nick Gill, National Manager of Service Delivery

Every Power App is a Teams App!

Benefits:

PowerApps are available in Teams where critical work and collaboration already happen.

IT admins can distribute PowerApps in a scalable manner by publishing them to the tenant app catalog in Teams.

Front line workers can access PowerApps in Teams mobile.

Make Your Power App a Teams App

Option 1: Add as a channel tab

Option 2: Upload as a custom personal or team app

Option 3: Upload to the tenant app catalog, and provision as a personal app using setup policies



Power Automate

Automate processes with Microsoft Flow



Model business processes and automate workflows and your apps and services



From simple automations to advanced scenarios with branches, loops, and more



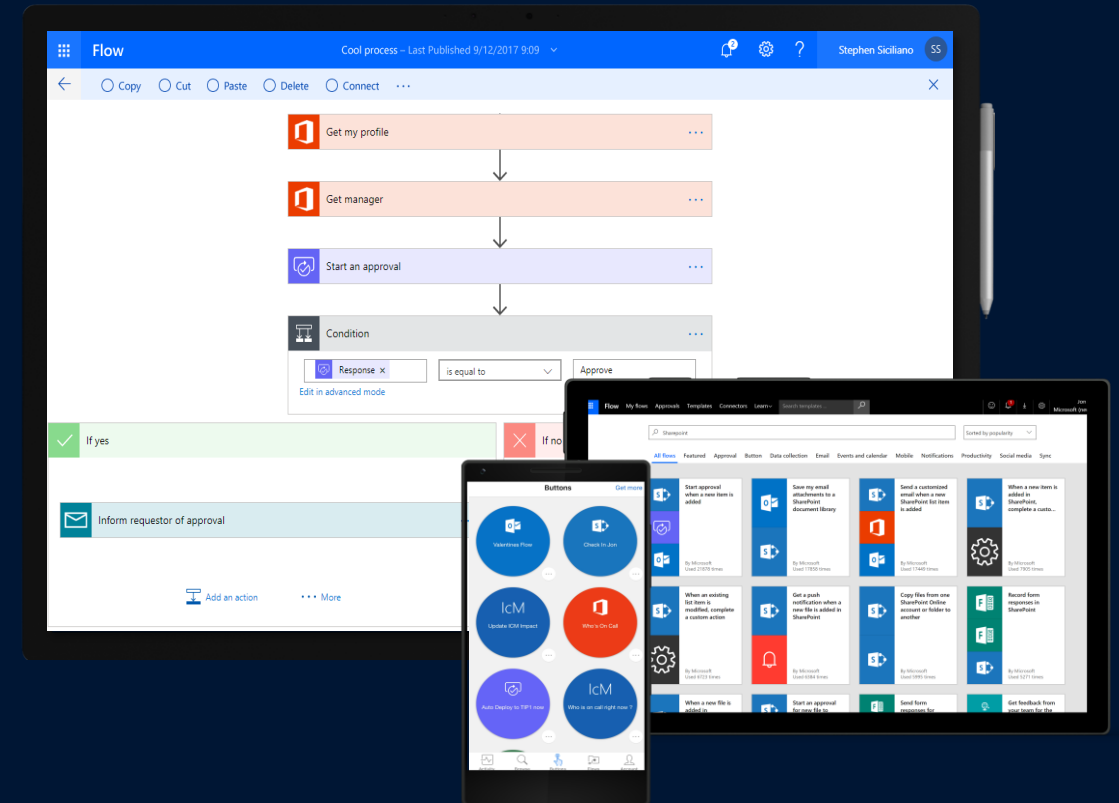
Connect to all your data with 230+ pre-built connectors and custom connectors



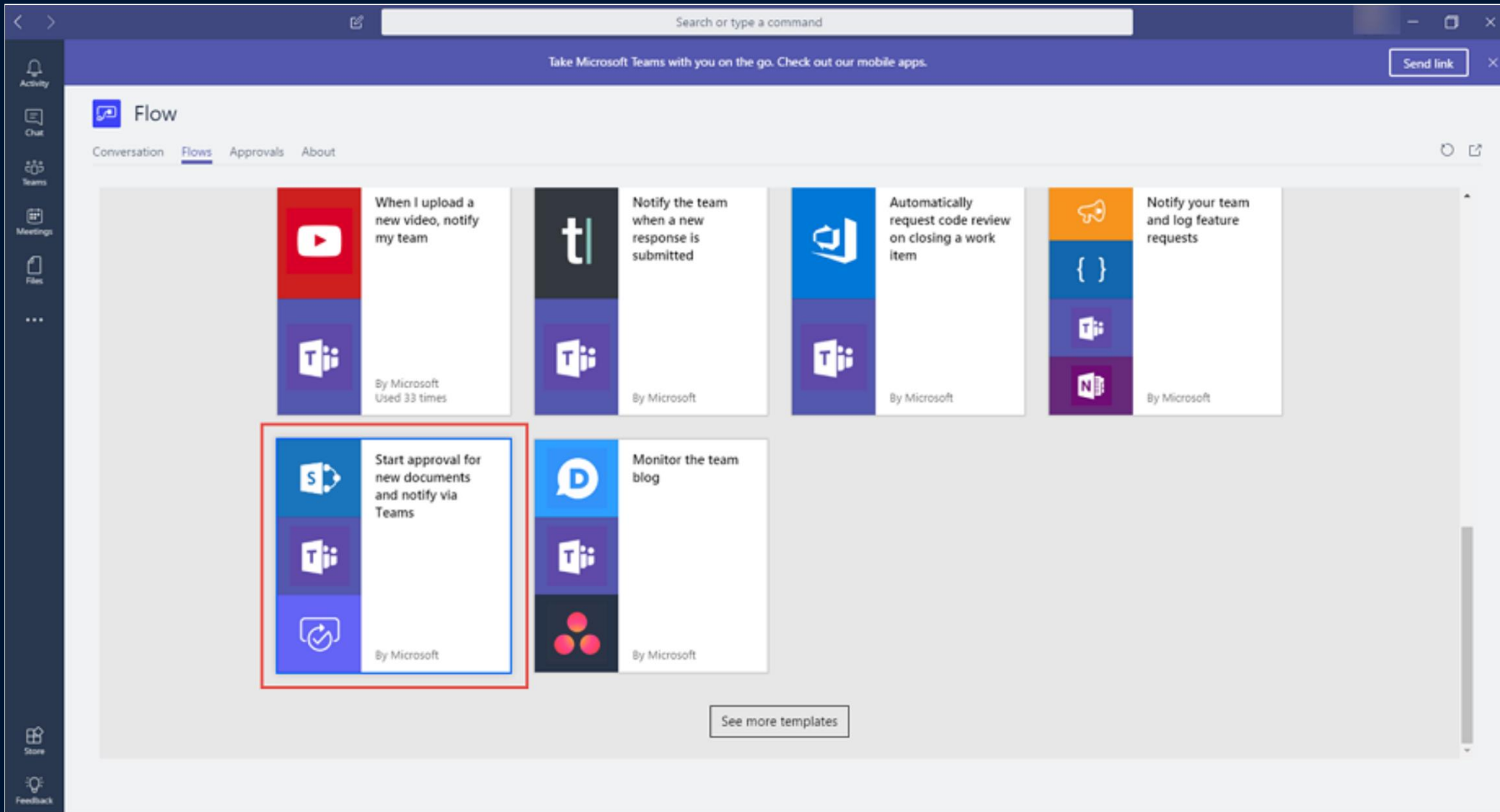
Strong enterprise governance & security



Pro-dev extensibility with Azure and custom logic



Create Flows from inside Teams



Use the Flow bot to trigger Flows

The screenshot shows a Microsoft Teams chat window with the Flow bot. The bot's header includes a search bar and tabs for Conversation, Flows, Approvals, and About. The chat history shows two messages from the Flow bot. The first message, timestamped 5:48 PM, lists capabilities: listing flows for the default environment (command: *List flows*) and running scheduled flows (command: *Run flow index*). It also includes a link to the Microsoft Privacy Statement and Microsoft Services Agreement. The second message, also timestamped 5:48 PM, states it can run any flow that is triggered on a schedule. For the default environment, it lists one flow: 'Due diligence items'. This second message is highlighted with a red rectangular border. A 'Learn more' button is visible next to the first message, and a 'List flows' button is visible next to the second message.

Search or type a command

Flow

Conversation Flows Approvals About

5:48 PM
Learn more

Flow 5:48 PM
Here's what I can do:

- List flows for the default environment, command: *List flows*
- Run flows that run on a schedule, command: *Run flow index*

By continuing, you agree to the [Microsoft Privacy Statement](#) and [Microsoft Services Agreement](#).

5:48 PM
List flows

Flow 5:48 PM
I can run any flow that's:

- triggered on a schedule

For the default environment, I can run:

1 : Due diligence items

Create your own Flows for Teams

Triggers

When a new message is added to a channel

When a user is mentioned in a message in a particular channel

Actions

Create a channel

Post a message or reply (as a user or with the Flow bot)

Option sets

Adaptive cards

Rich text

List teams or channels



SharePoint and SPFx

Microsoft Teams SharePoint

Platform architecture

Endless integrations

Files

News

Landing pages

SharePoint Lists

SharePoint Framework

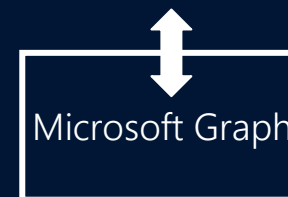
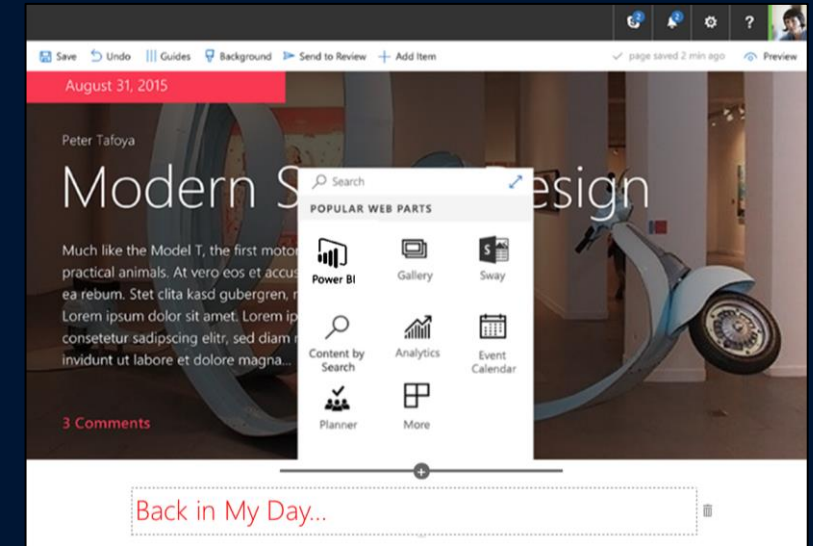
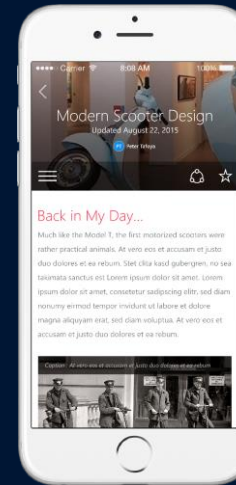


Modern client-side development

Lightweight web and mobile

Supports open source tools & JavaScript web frameworks

Built-in Graph support, Azure Active Directory secured APIs and free hosting on SharePoint



Common needs

End user

Information the team cares about should be available regardless of the tool / workload

Make it possible to bridge team collaboration and external communication

IT admin

Reduce the number of places and ways to manage and deploy solutions to end users

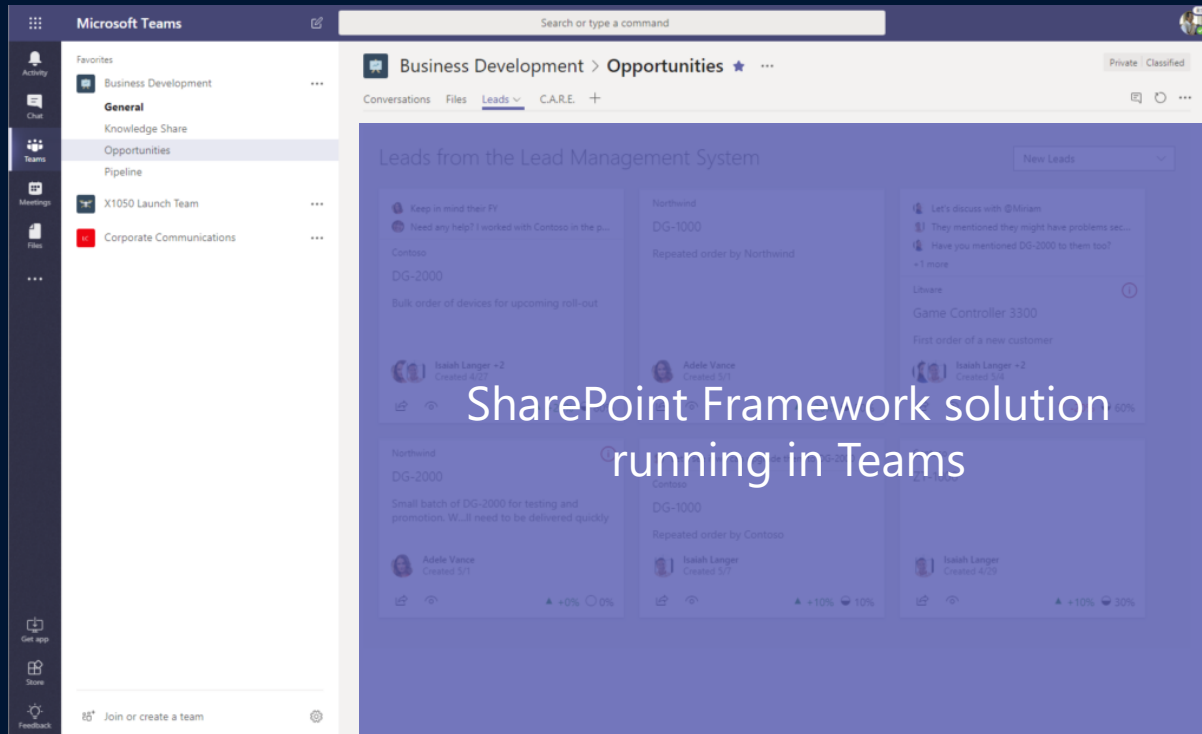
Developer

Reach multiple workloads with a single solution

Reduce number of developer concepts and experiences



SharePoint Framework + Teams



SharePoint Framework solution
running in Teams



SharePoint Framework web parts
can be exposed as Microsoft Teams
tabs

Tabs are automatically hosted and
executed in the context of the
SharePoint, so there's no additional
complexity on hosting or
deployment

You can take advantage of all
SharePoint Framework capabilities
in the Teams tab

Authentication + Graph

Silent authentication between Teams client and SharePoint Online

- Teams provides the token client side to SharePoint

- We convert it to cookie server side

- The _layout system page that hosts the SPFx solution renders: no additional auth required

- Full access to SharePoint REST APIs

When / if the component requires to access Graph / Web APIs:

- We get the auth token from the client: no permissions there, we use it as bootstrap token

- SPFx client libraries understand that the call is coming from a Teams rich client environment

- Bootstrap token is sent to AAD using the “on behalf of” flow to obtain an access token for the requested resource in exchange for the bootstrap token

- AAD returns the access token to SPO. The component can now execute the Web API call.

Surfacing SPFx in Teams

SPFx Teams solutions are deployed to Office 365 tenants using the “tenant app catalog”

1

Teams manifest file is created and deployed in the Teams LoB Catalog

2

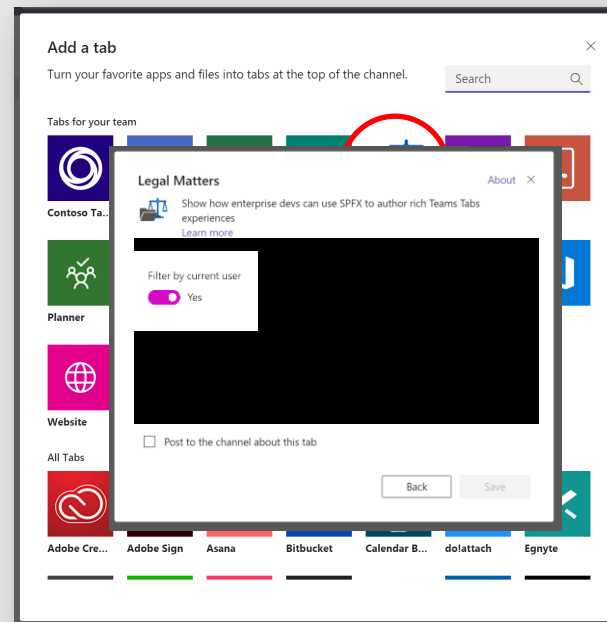
User selects the SPFx application like any other tab in MS Teams “Add a tab” experience

3

Configuration panel is displayed and, once saved, information are stored in the SPO site connected to the group

4

Microsoft Teams



SharePoint Online



Tenant App catalog



SPFx solution



Configuration List



Surfacing SPFx in Teams

SPFx component renders in a dedicated _layout page which is iFramed inside of Teams

5

Teams and SharePoint site context are available to developer

6

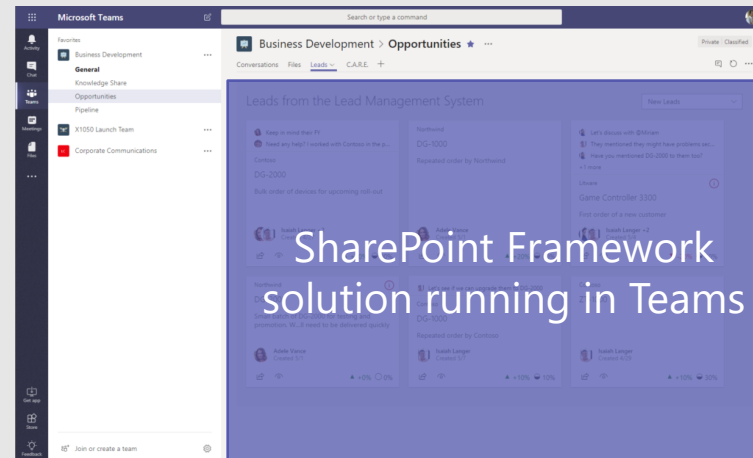
Code is loaded from SharePoint asset library where it was deployed at time of package upload

7

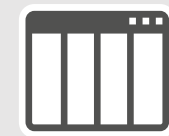
Alternatively, code can also run in different CDN location

8

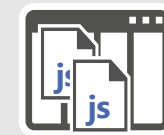
Microsoft Teams



SharePoint Online



Webpart.aspx



Asset Library

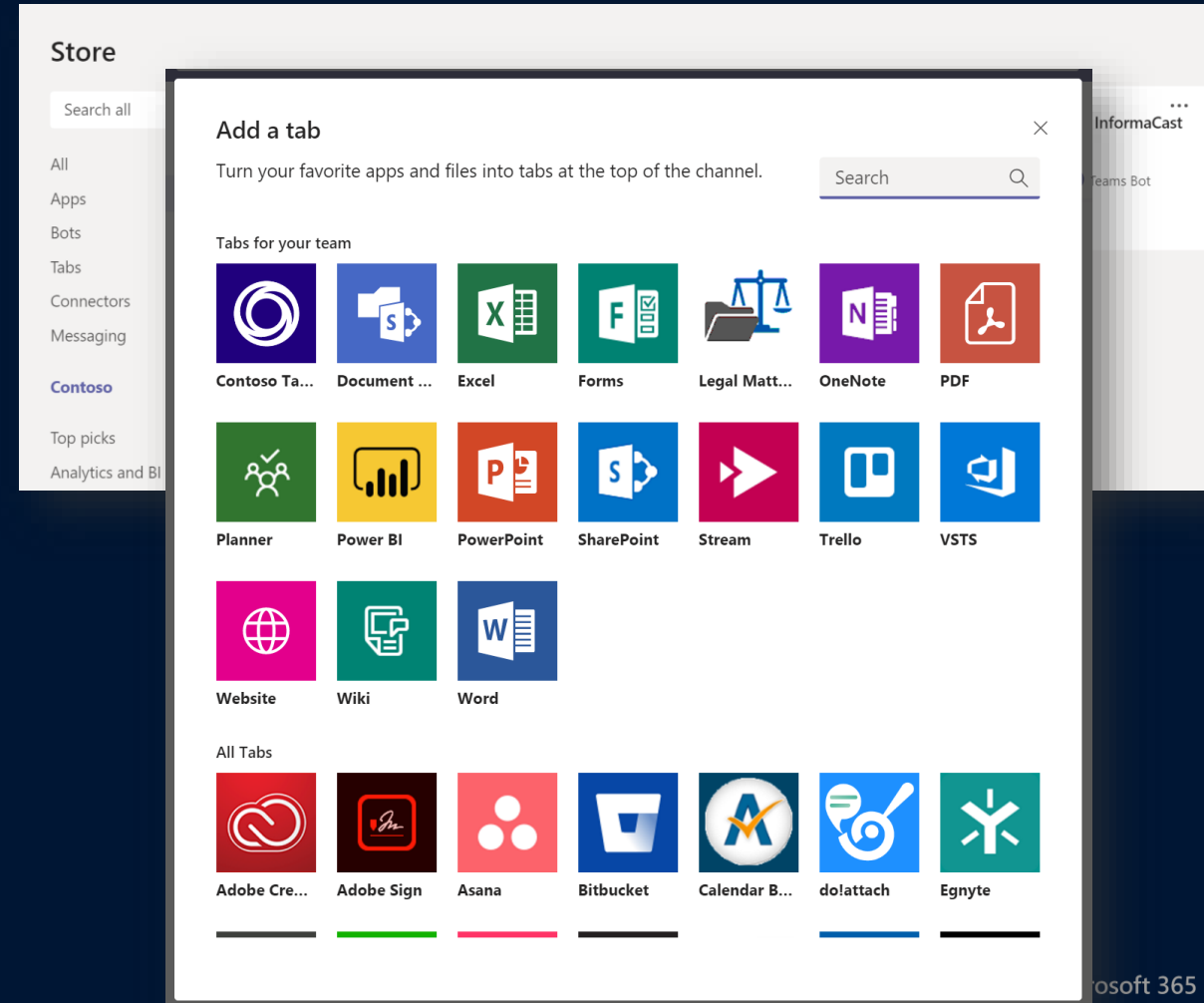


Global Microsoft 365
Developer Bootcamp

Package and distribute your web part

Publish your solution to your organization's app catalog

Users can install and configure for their teams



Teams tab in SharePoint

Your Teams tab can easily be made into a SharePoint web part

The Teams app manifest is natively understood in SharePoint

Just drag and drop your manifest.zip file onto your SharePoint app catalog and it will be made available as a web part to be used in your SharePoint pages

The screenshot displays the Microsoft Teams app manifest integrated into a SharePoint page. The Teams app is shown as a web part within the SharePoint interface, displaying job details for a Senior Software Engineer position. The Teams app interface includes a sidebar with navigation options like Business Development, General, Knowledge Share, Opportunities, Pipeline, X1050 Launch Team, and Corporate Communications. The main content area shows the job details for a Senior Software Engineer position, including the job title, location (San Francisco, CA), and a table of active applicants.

Office 365 | SharePoint

Make regular page

Search this site

Home

TT Test Team

Not following Share

Senior Software Engineer

Req ID 04057

Hiring Manager: Julian Morelli

3 APPLIED | 2 SCREENED | 2 INTERVIEWED | 0 OFFERED

Job details

We are looking for a Senior Software Engineer to produce and implement functional software solutions. You will work with management to define the software specifications and then implement them ...

San Francisco, CA

As soon as possible

Hiring team

Active applicants 3 items

Name	Date applied	Internal	Current stage
Meena Atul	09/29/2017	No	Interviewing
Kayo Miwa	09/22/2017	No	Applied
Roberto Ribeiro	09/22/2017	Yes	Interviewing

Top 10 reasons Why SPFx in Teams rocks

- 1 No need to host a web site or page
- 2 Reuse code in Teams and SharePoint
- 3 Azure AD single sign-on built in
- 4 SharePoint handles the configuration page
- 5 You know what Team and Channel you're in with the Teams SDK
- 6 Easy access to Microsoft Graph, SharePoint APIs
- 7 Store data in the Office 365 group
- 8 Manage apps centrally in SharePoint Admin Center
- 9 Deep linking allows passing context
- 10 SharePoint Community





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THANK YOU FOR JOINING US!



JOAOFERREIRA@HANDSONTEK.NET



Oporto, Portugal



JOAO12FERREIRA



HANDSONSHAREPOINT.NET



HANDSONTEAMS.NET

