



Extending Microsoft Viva Connections with SPFx

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BIWUG



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About me

- Solution Architect, Consultant, Trainer
 - PiaSys.com based in the USA and in Italy
- More than 50 Microsoft certification exams passed
 - MCSM – Charter SharePoint
 - MVP Office Servers and Services
 - Microsoft 365 PnP Team Member
- Focused on SharePoint, Teams and Microsoft 365
- Author of many books about XML, SOAP, .NET, LINQ, SharePoint, and Microsoft 365
- Speaker at main IT conferences worldwide
- Follow me @PaoloPia - <https://piasys.com/TechBites>



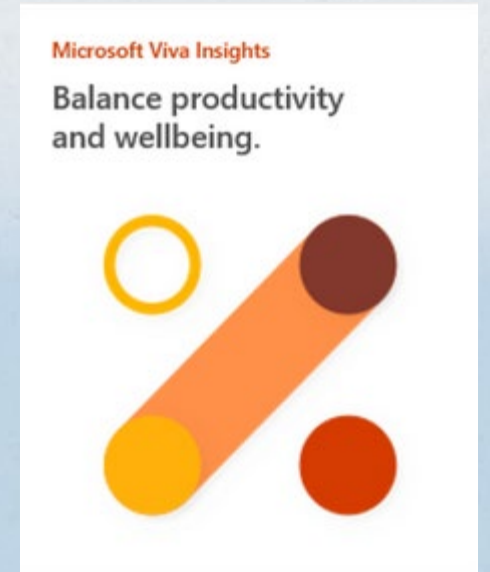
Understanding Microsoft Viva

Microsoft Viva in a nutshell

- Employee experience platform (EXP)
 - Introduced by Microsoft on Feb 2021
 - <https://aka.ms/Viva/Blog>
- Main components
 - Microsoft Viva Insights
 - Microsoft Viva Topics
 - Microsoft Viva Learning
 - Microsoft Viva Connections

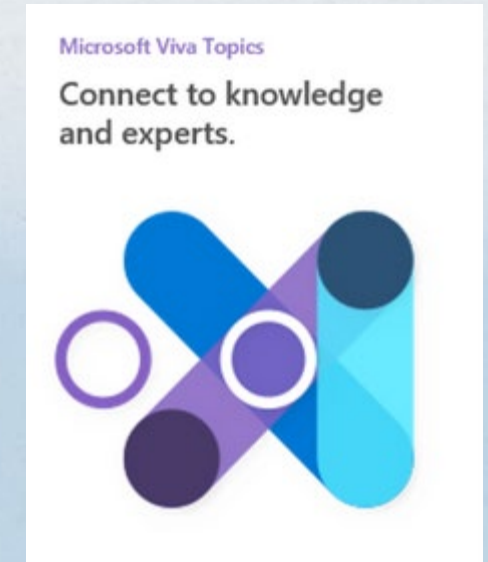
Microsoft Viva Insights

- Help people achieve a better work life balance
- Provides personalized insights to
 - Individuals
 - Managers
 - Leaders
- Respectful of people' privacy
- Included in Microsoft Teams as a personal app
 - Available on desktop and mobile
- Provides proactive insights via email, too



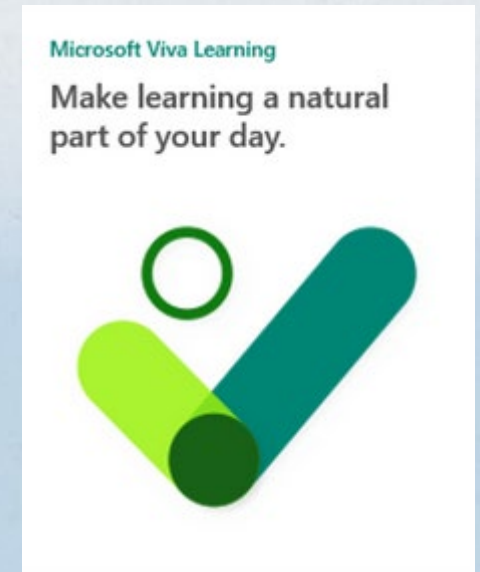
Microsoft Viva Topics

- Help people organize, find, and protect content and expertise across the whole organization
- Leverages AI for a better knowledge management
- Built on top of content and platform services of Microsoft Teams and Microsoft Graph
 - Leverages Graph Content Connectors to integrate with external systems and content
- With security in mind
 - Users can only see the content where they already have access



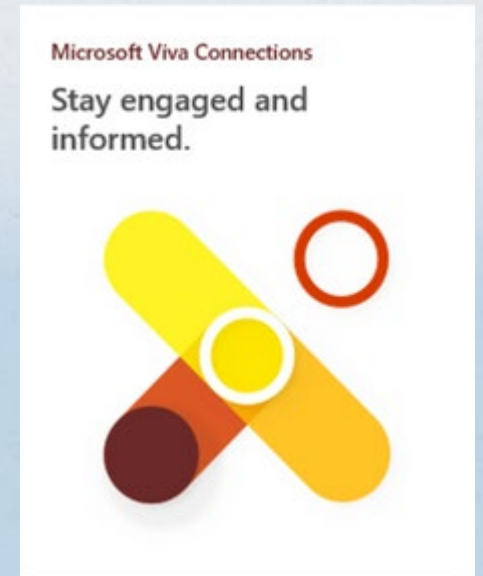
Microsoft Viva Learning

- Provides a central hub for learning
 - Makes learning content available in one place!
- Helps people upgrading their skills
 - Assigning and targeting goals
 - Browsing content libraries
- Integrated in Microsoft Teams
 - Supports chats, channels, tabs, search, etc.
- Supports third-party learning providers
 - LinkedIn Learning
 - Microsoft Learn
 - Coursera
 - Pluralsight
 - And others ...



Microsoft Viva Connections

- Company-branded experience
 - Personalized dashboard
 - Extensible with ACE (Adaptive Card Extensions)
 - Relevant news
 - Relevant conversations
 - Custom resources
- Fully integrated with Microsoft Teams
 - Provided as an app to install
 - Supported on desktop and mobile
- The new entry-point for your company



Extending Microsoft Viva Connections

Extending Microsoft Viva Connections

- SharePoint Framework is THE extensibility framework for the Microsoft 365 ecosystem
- You can use SPFx to build ACEs
 - You need SFPx 1.13.x
 - It's been released in GA
 - You can start playing with it right now!
- You can use SPFx to build Web Parts and Application Customizers
 - Already globally available and released

Introducing Adaptive Card Extensions (ACEs)

- Cards targeting the Viva Connections Dashboard
 - Target desktop and mobile experience
 - Can implement any kind of custom logic
- ACEs in SPFx
 - Are just a new flavor of SPFx Extensions
 - Can have property pane for settings
 - Can render different views
 - Card View
 - Can have image, text, button(s)
 - Can be medium or large size
 - Quick View
 - Rendered using Adaptive Cards JSON
 - Typically bound to a data source

DEMO

Building ACEs with SPFx

CardView types for Adaptive Card Extensions (ACEs)

- SPFx provides different flavors of CardView base types
 - BaseBasicCardView
 - primaryText
 - BaseImageCardView
 - imageUrl
 - primaryText
 - BasePrimaryTextCardView
 - description
 - primaryText
- All inherit from
 - BaseCardView<TProperties, TState, IBasicCardParameters>
- There can be many for one single ACE

QuickView(s) for Adaptive Card Extensions (ACEs)

- Are fully customizable cards
- Can be activated by
 - Clicking on a CardView
 - Clicking on a button in a CardView
- Leverage a class for the databinding and management logic
- Leverage a JSON template of an Adaptive Card for rendering
 - <https://www.adaptivecards.io/>
 - Documentation
 - Schema
 - Samples
 - Designer
- There can be many for one single ACE

Managing Properties and State with ACEs in SPFx

- We can manage both
 - Properties
 - State
- The Extension base type requires interfaces for both Properties and State
- CardView(s) and QuickView(s) share those interfaces and their instances
 - The ACE and its cards have the same State and Properties
 - The binding is automatic thanks to the SPFx ACEs architecture

DEMO

Managing Properties and State in ACEs

Adaptive Card Extensions (ACEs) Data Binding

- We can store data in
 - Properties
 - State
- The CardView(s) can only render a limited set of information
- The QuickView(s) can render as much data as we like
 - Lists, tables, forms, etc.
 - We simply need to define the Adaptive Card JSON accordingly to our needs

DEMO

Data Binding in ACEs

Consuming SharePoint Online data in ACEs

- In SPFx you can easily consume SPO data (lists and libraries)
 - Via SPFx context object
 - Using PnPjs fluent syntax
 - Via low-level REST requests
- Personally, I use PnPjs
 - But it is up to you ...
- Regardless how you retrieve data
 - You can easily bind data in ACEs
 - Using the state property
 - Binding data to the UI of CardView(s) and/or QuickView(s)

Consuming Microsoft Graph in ACEs

- In SPFx you can easily consume Microsoft Graph
 - Via SPFx context object (*MSGraphClient*)
- Configure *webApiPermissionRequests* in package-solution.json file
- Grant permissions via SPO Admin UI
- Consume Microsoft Graph via *MSGraphClient*
 - Eventually bind data to the UI of CardView(s) and/or QuickView(s)

Consuming 3rd Party APIs in ACEs

- You can consume 3rd Party/Custom APIs
 - Can be Azure Functions, ASP.NET Core REST APIs, etc.
- Register them in AAD
 - Register an app
 - Expose an API
 - Configure *WebApiPermissionRequests* in the package-solution.json file
- Consent the AAD app in your target tenant, if the app is multi-tenant
- Grant permissions via SPO Admin UI
- Consume the API via SPFx context and *AadHttpClient*
 - Eventually bind data to the UI of CardView(s) and/or QuickView(s)

Collecting data with ACEs

- Any QuickView in an ACE can collect data
- Using the Adaptive Cards syntax/schema
 - You can define Input items to collect data
 - You can define Actions to submit data
- In the QuickView class you handle the *onAction* method
 - *public onAction(action: IActionArguments | any): void*

DEMO

Collecting data with ACEs

Managing Navigation within an ACE

- Every ACE has navigation properties
 - cardNavigator
 - quickViewNavigator
- They can be used against cards, CardView(s) and QuickView(s), to
 - Register
 - Push
 - Pop
 - Replace
 - Read the current item ID
- You can rely on these object to manage the ACE navigation flow

DEMO

Navigating cards within ACEs

Extending Microsoft Viva Connections Desktop

Microsoft Viva Connections Desktop

- It is a desktop app that extends Microsoft Teams
 - Actually, it is a Teams personal app
- Is the gateway to the modern employee experience
- At the moment, must be manually installed on the target tenant
 - <https://docs.microsoft.com/en-us/sharepoint/viva-connections>
- Can be extended not only via ACEs in the Dashboard
 - But also, with custom SPFx Web Parts
 - Or with custom SPFx Application Customizers

DEMO

Microsoft Viva Connections Desktop

Wrap up

- Microsoft Viva Connections can be extended using SPFx
- You can create Adaptive Card Extensions (ACEs)
 - They rely on CardView(s) and QuickView(s)
 - You can consume SPO, Graph, 3rd Party API (single-tenant or multi-tenant)
 - You can create navigation flows and “dynamic” cards
 - You can collect data via QuickView(s)
- You can extend Microsoft Viva Connections Desktop with
 - SPFx ACEs
 - SPFx Web Parts
 - SPFx Application Customizers
- Have fun!

References

- <https://aka.ms/m365/dev/learn/connections>
- <https://piasys.com/TechBites>
- <https://docs.microsoft.com/en-us/sharepoint/dev/spfx/viva/overview-viva-connections>
- <https://docs.microsoft.com/en-us/sharepoint/dev/spfx/viva/get-started/build-first-sharepoint-adaptive-card-extension>



Thank you!