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MIGRATE INFOPATH FORMS TO **POWERAPPS**

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Microsoft InfoPath is a simple yet powerful tool to create, design, distribute and fill electronic forms with structured data. The basic utility of them is to act as centralized forms for entering data with many customizable controls such as text boxes, radio buttons, checkboxes etc. along with hierarchical view of files and folders. However, these forms are better off to just enter data and not to store it as unlocking and uncovering the information in the forms might need some significant amount of work on their planning and architecting, that may or may not help during future extractions.

It is found that XML was emerging to be immensely popular in various organizations in 2003. Microsoft picked upon this trend and introduced InfoPath forms as part of SharePoint 2003. Its main intended purpose was to minimize the complexity of XML, specifically aimed at data entry. This made even the people without the knowledge of XML, capable of filling out the data using these forms. InfoPath forms thus became part of a larger business processes and SharePoint workflows.

Versions [edit]

Version	Included in...	Release date[17]	Support End Date[18]
InfoPath 2003	Microsoft Office 2003 Professional Enterprise	November 19, 2003	April 8, 2014
InfoPath 2007	Microsoft Office 2007 Ultimate, Professional Plus and Enterprise	January 27, 2007	
InfoPath 2010	Microsoft Office 2010 Professional Plus; Office 365	July 15, 2010	October 13, 2020
InfoPath 2013	Microsoft Office 2013 Professional Plus; Office 365	January 29, 2013	July 14, 2026

Standard SharePoint list forms serve very basic requirements. We cannot easily change the look and feel of the form. Field validations are limited to basic level, cascading drop downs cannot be achieved without code and the ability to connect to different data sources is missing. To overcome some of these problems, Microsoft has introduced all new InfoPath Form Services as part of SharePoint 2010 platfrom, that helped users to build forms with rich user controls that can be integrated with SharePoint Lists along with external data sources like web services, XML, SQL.

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INFOPATH FORMS HISTORY

2003 Launched as a part ofSharePoint 2003	INFOPATH 2003 PART OF SHAREPOINT 2003
INFOPATH 2003 AVAILABLE AS A FREESTANDING DOWNLOAD	**2005** Microsoft made it available in its download center
2007 Launched as a part of SharePoint 2007	INFOPATH 2007 LAUNCHED
INFOPATH 2010 LAUNCHED	**2010** Launched as a part of SharePoint 2010
2013 Launched as a part of SharePoint 2013	INFOPATH 2013 LAUNCHED
IGNITE 2014: INFOPATH RETIREMENT ANNOUNCED	**2014** Microsoft announced that InfoPath will be discontinued by 2026
2016 Microsoft's statement regarding PowerApps	IGNITE 2016: POWERAPPS PROCLAIMED AS INFOPATH ALTERNATIVE

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Power of InfoPath forms

- InfoPath form gets integrated with Microsoft SharePoint technology so that it can be used to submit to SharePoint lists and libraries and submitted instances from SharePoint can be opened using InfoPath filler or third-party products.

- InfoPath form lets a browser enabled InfoPath form to be hosted on a SharePoint Installation and rendering an HTML page with client – side script and post back behavior similar to ASP.NET. Its form library uses InfoPath as the designated document type and directly promote them to fields and columns in SharePoint.

- InfoPath data can easily be exported to a SharePoint list data column in views, workflows and filters, being a powerful tool to create a fillable form whose data is then filled out in central location.

- InfoPath themes change the appearance of the form without changing the layout or the function. Those who aren't visually oriented may find that themes help forms look better.

- InfoPath data connections are analogous to APIs, allowing forms to connect to other systems to access and store data from other systems. User can make use of InfoPath forms by having InfoPath Filler or InfoPath Designer installed, or by viewing the form in a browser when hosted on SharePoint server running InfoPath Forms Services.

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Challenges of InfoPath

Platform compatibility

InfoPath forms are platform dependent and cannot easily be rendered in mobiles. It will take lot of efforts to make them responsive in mobiles. Besides that, many of the InfoPath form controls are not supported in mobiles.

Browser Compatibility

InfoPath forms even have browser compatibility issues. Full functionality of InfoPath services is supported only in internet explorer and you would find restrictions in file uploads and rendering of some controls in other browsers.

Difficulty with Cross site and service transactions:

InfoPath services can be easily used to work with data from same site, but it is very difficult and complex either to deal with data from different site collections or from non-Microsoft services.
As we use code-based InfoPath forms to work with non-Microsoft services and since code-based InfoPath forms are no longer supported in SharePoint online, working with these services now with InfoPath would be a nightmare.

Outdated technology

Unlike other forms available today, InfoPath forms are complex to build and lag in good user interface.
They are not responsive and scalable in nature and don't stand out in today's standards. So,
Microsoft decided to abandon these services.

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Licensing

In order to work with InfoPath forms in browser, we need SharePoint Enterprise license. SharePoint enterprise license is costly as compared to the foundation license and choosing it only to use Info-Path forms is not a good idea.

No Code based InfoPath Forms

Code based InfoPath forms are no longer supported in SharePoint Online. Without code-based InfoPath forms, it's highly irrelevant to achieve many custom and required functionalities.


What are you presently using to develop applications in SharePoint?

Forms in Forms library

All the InfoPath forms data that are stored in document libraries will be stored in XML format.

As of now, they can be viewed and edited with InfoPath form

services which are available on SharePoint On-Premise platform

only. Once Microsoft deprecates this service, it would become very complex to directly work with these

files and converting them into list items is also a complicated task.
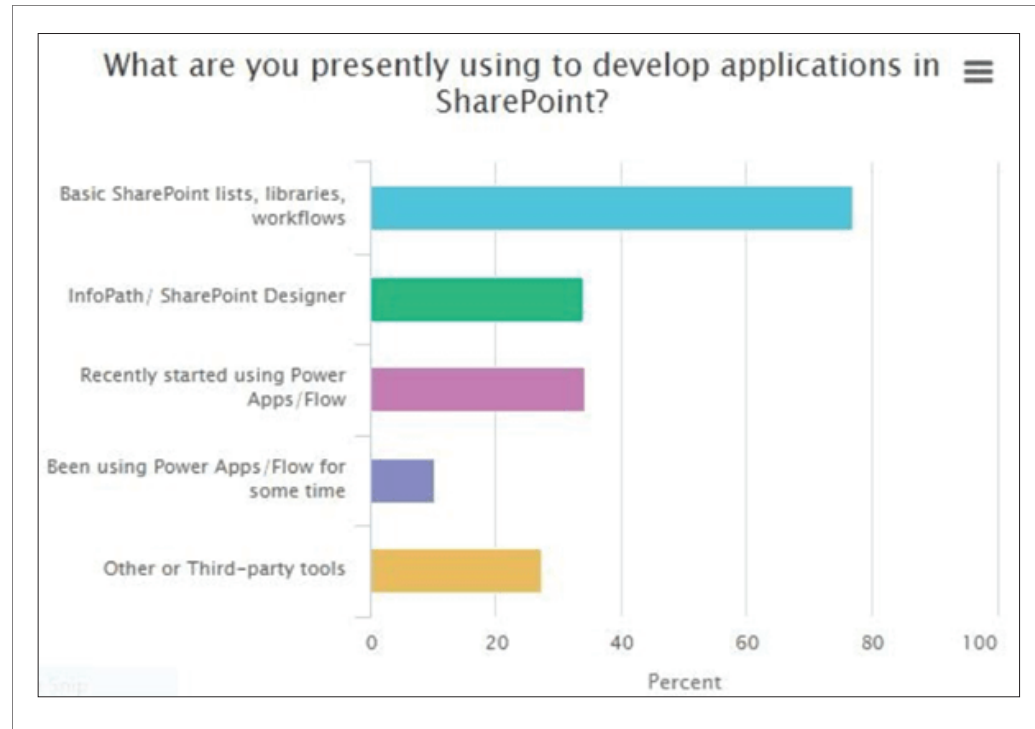
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Limited compatibility with SharePoint Online

With the increase in the popularity of SharePoint online, the popularity of InfoPath forms has gradually declined as they don't amalgamate quite well together. SharePoint online being the most used version of SharePoint now, the fact that it doesn't support code-based InfoPath turns out to be quite a severe challenge.
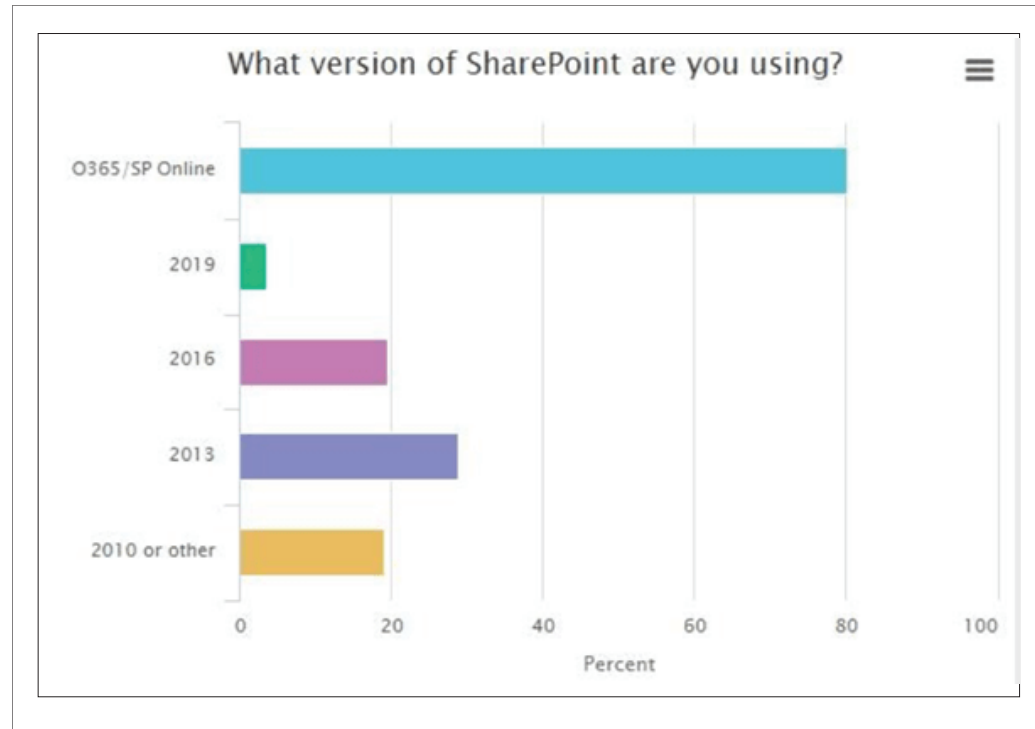
Error Prone & high cost of maintenance

InfoPath forms are buggy by its nature and not scalable. Every time any change is made to an InfoPath form, respective changes are needed to be made to the old ones too, that skyrocket the maintenance costs and timeline.

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Microsoft's declaration about InfoPath Form retirement

Microsoft announced in 2014 that InfoPath will be discontinued by 2026. There is no InfoPath 2016 but InfoPath 2013 itself can continue to be used for the higher SharePoint versions until 2026. Users can continue to use InfoPath for XML documents, ECM and offline scenarios. Ever since then, Microsoft has been trying to sway away the SharePoint users from InfoPath, but in vain, due to the absence of any reliable alternative to it.

With its end of life approaching and its non-compatibility with the SharePoint Online version, continuing the use of InfoPath Forms surges the maintenance costs to notch higher. Thus, it is advisable to go for its alternatives as soon as possible.

Modern Alternatives of InfoPath forms

InfoPath services are going to die soon and many of its functionalities have already stopped working. It's time for us to start modernization them.

Since there are no direct substitutes for InfoPath forms, we must find the best alternative for them that not only supports all the functionalities of InfoPath forms but also provides the additional functionalities that are vital to meet today's demand.

Let's look into the top alternative platforms & solutions for InfoPath forms and finally decide the right one to be used.

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Custom Forms using SPFx

We can build and customize the entire form as you need using Microsoft SharePoint Framework (SPFx). SPFx allows us to use any of our favorite modern web technology and tools and preferred development environment to build apps that are responsive and mobile-ready from day one. The complete development being in our hands, we can control and choose how the forms should look, render and work. SPFx based custom forms development can be rich and powerful but also needs specially skilled team to build and manage.

Nintex Forms:

Nintex forms enables us to easily and quickly design forms with its simple drag and drop designer. They allow form designing for any device and are mobile ready. Their simple visual design and drag and drop features makes form design very easy. HTML and JavaScript knowledge is not mandatory but to work with some complex validations, you may have to depend on them.

As Nintex forms are third party solutions, you must consider the licensing model and pricing before choosing it as an alternative to InfoPath forms.

PowerApps

Power Apps is Microsoft's solution to provide a rapid application development environment to build custom apps. It allows us to quickly build business apps with its simple drag and drop designer and to rapidly develop forms that are responsive from day one and are mobile ready without anycoding. It can be attributed as an all-in-one suite of apps, services, connectors and data platform that can be used to quickly build custom business apps that connect to your business data stored either in the underlying data platform or in various online and on-premises data sources like Microsoft SharePoint, Microsoft Excel, Microsoft Office 365,

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Microsoft Dynamics 365, SQL Server and so on. PowerApps can connect to multiple data resources, add multiple controls, media and forms to create an app that will work on web and mobile.

The Power Platform comprising of PowerApps, Power Automate and Power BI provides rich business logic and workflow capabilities to transform your manual business processes to digitally automated processes. Its ability to connect to any data source, custom connectors, workflow capabilities, simple drag and drop design, rich and responsive user interface and support for coding to achieve complex requirements makes it the best alternative for InfoPath forms.

PowerApps: The Modern Solution

Power Apps turns out to be the most appropriate alternative to the InfoPath forms. It provides the same flexibility, capability and development aspects as InfoPath forms.

In Microsoft Ignite 2016 (Microsoft's Premier Tech event), they officially proclaimed PowerApps as the successor to the InfoPath forms.

If you are considering to move and automate your manual business processes, the rich business logic and workflow capabilities provided by the Apps built using Power Apps can prove to be your perfect aid. Further, apps built using Power Apps have a responsive design, and may run seamlessly in browser or on mobile devices (phone or tablet). Power Apps "democratizes" the custom business app building experience by enabling users to create feature-rich, custom business apps without writing code. Power apps also lets the pro developers programmatically interact with data and metadata, apply business logic, create custom connectors and integrate with external data.

" We've talked about 'we want you to get off InfoPath' but we never gave you a good answer before. We've really learned from that. And now we have the answer, and the answer is PowerApps and Flow. They are the successor to the InfoPath / SharePoint Designer model. "

Microsoft Senior Product Manager
Chris McNulty

What's More to Power Apps than Infopath forms

AI POWER AUTOMATION

AIML TEXT GRADING

MOBILE RENDERING

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PowerApps carry out the work of InfoPath forms efficiently along with many other added functionalities. Unlike InfoPath forms, these are much more powerful and are capable of functions a lot more than just entering data. Being compatible across a very wide range of platforms too makes it a great choice for the developers and businesses alike. You can just easily connect to data, use Excel-like expressions to add logic and run it, irrespective of the platform- be it the web, iOS, or Android devices. It lets you build powerful end-to-end business solutions within hours instead of months by connecting Power Apps across the entire Microsoft Power Platform as well as Microsoft Office 365, Microsoft Dynamics 365, Microsoft Azure, and hundreds of other apps to drive innovation across the entire organization.

362%
ROI over three years

70%
Reduction in app development costs

15%
Average improvement in business process efficiencies in year three

Modernization of InfoPath forms`

Power Apps can be classified into two types:

- Canvas Based
- Model Driven

Canvas Based:

Canvas based PowerApps let us design and build a business app from a canvas in Microsoft PowerApps without writing code in a traditional programming language such as C#, Java, JavaScript. We can design the app by dragging and dropping elements onto a canvas, just as we would design a slide in PowerPoint.

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Create Excel-like expressions for specifying logic and working with data. Build apps that integrate business data from Microsoft or other third-party sources and then we can further Share our app so that users can run it in a browser or on a mobile device. Further, we can embed our app so that users can run it on SharePoint, Microsoft Power BI or Microsoft Teams. After generating an app automatically,

we can customize its default appearance and behavior based on our users' workflow.
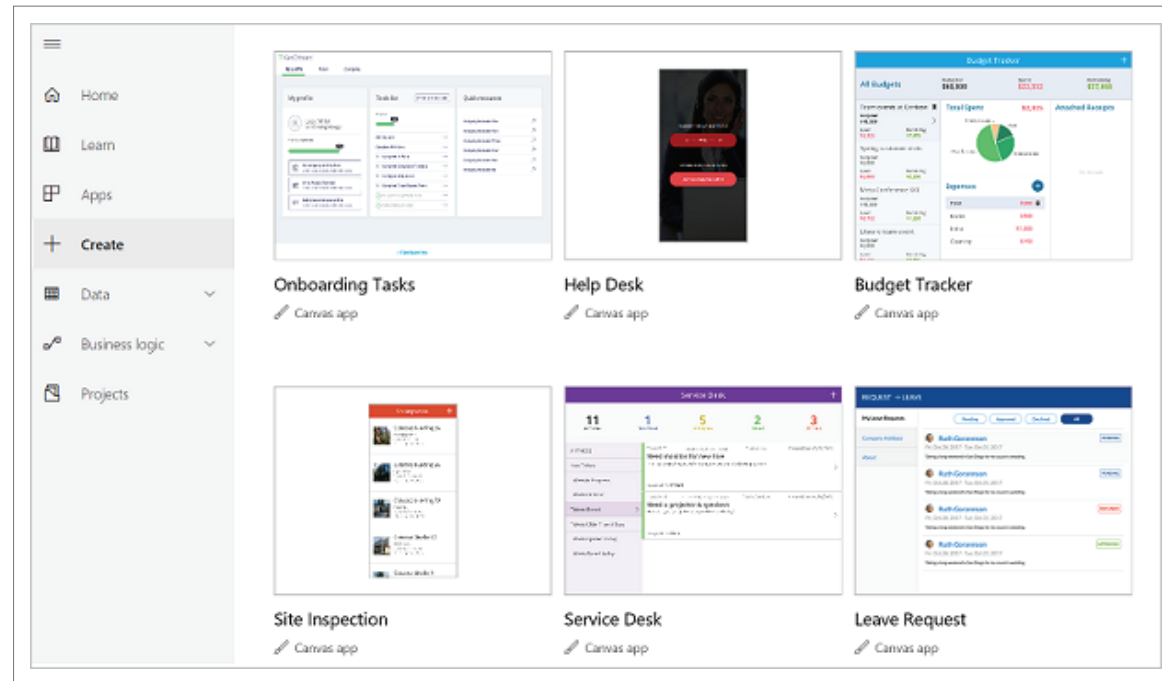
Model Driven:

If we don't need a custom design and our data is in Common Data Service, we can automatically generate a model-driven app from our business data and processes. This type of app can model forms, views and other components, and the default UI automatically adjusts to phones, laptops and other devices. Model-driven app design is a component-focused approach to app development. It doesn't require code and the apps we make can be simple to very complex. Unlike canvas app development where the designer has complete control over app layout, with model-driven apps, much of the layout is pre-determined and largely designated by the components we add to the app.

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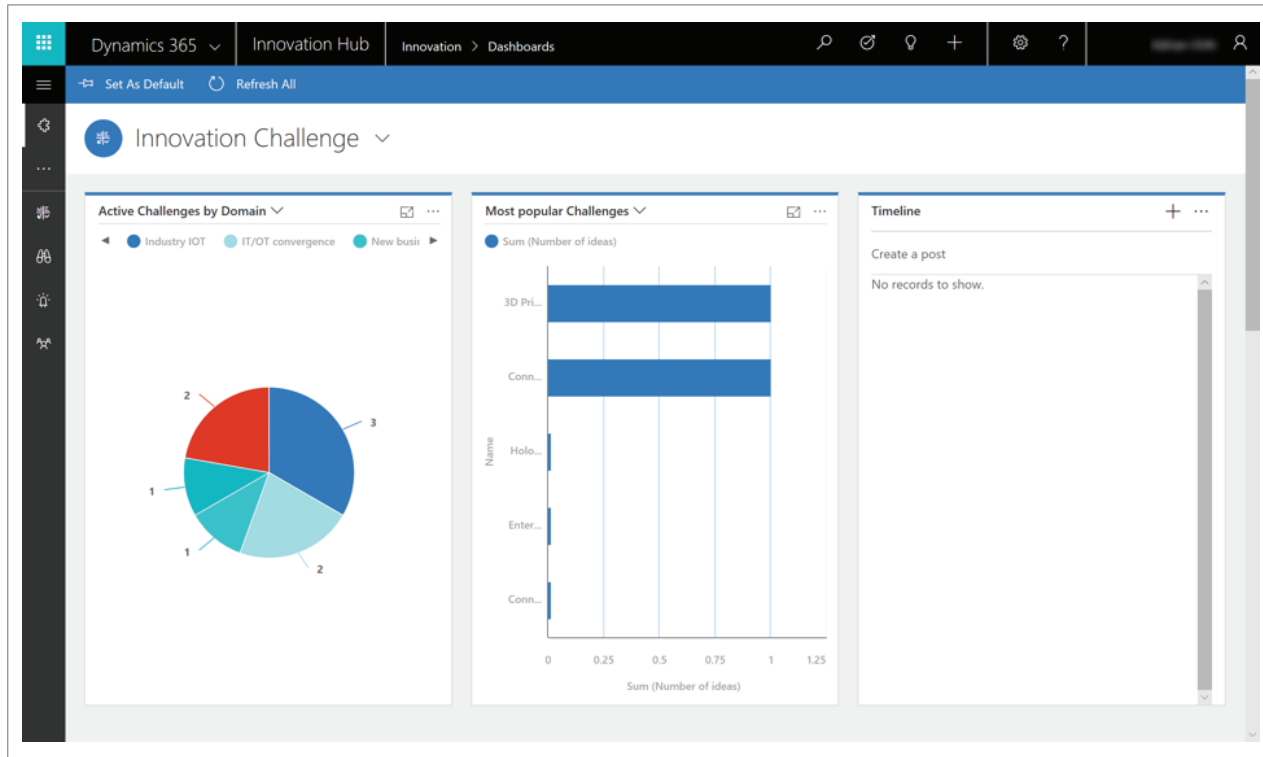
Canvas based Power apps are more appropriate to be used as InfoPath alternative.

Move from InfoPath Form Solutions to PowerApps

InfoPath forms data can either be submitted to libraries or can be stored as items in lists.

Based on its usage and where data is stored, InfoPath forms can be classified into three types-

- List based InfoPath Forms
- Library based InfoPath Forms
- Code based InfoPath Forms

    Let's review the modernization approach for each of them

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List Based InfoPath Forms

Data submitted using these forms will be stored in the list itself as list items. These forms can be used as new, edit or display forms in SharePoint lists with options to perform complex business validations.

Their modernization is quite easy. You can migrate the data to the desired location using any of the standard migration tools and start creating the PowerApps on top of it using the below steps:

- Open your list and click Create an app under PowerApps in the command bar.
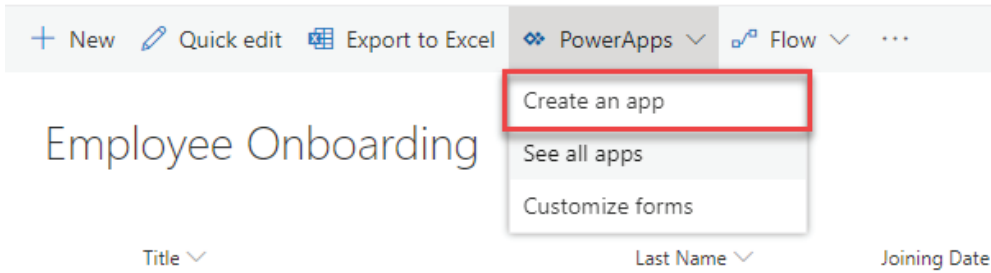
- Panel will be opened. Give a name for your app under Name field, and then click Create.

- A new tab will be opened containing the app created based on your SharePoint list.
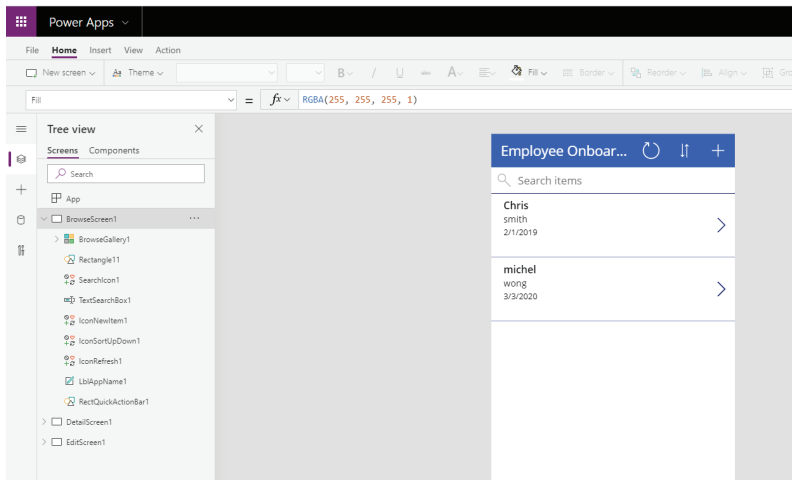
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You can customize it the way you wish and can preview your app. Once the app design is completed, you can publish your app on Microsoft SharePoint.

You can explore more about Power Apps here https://powerapps.microsoft.com/en-us/
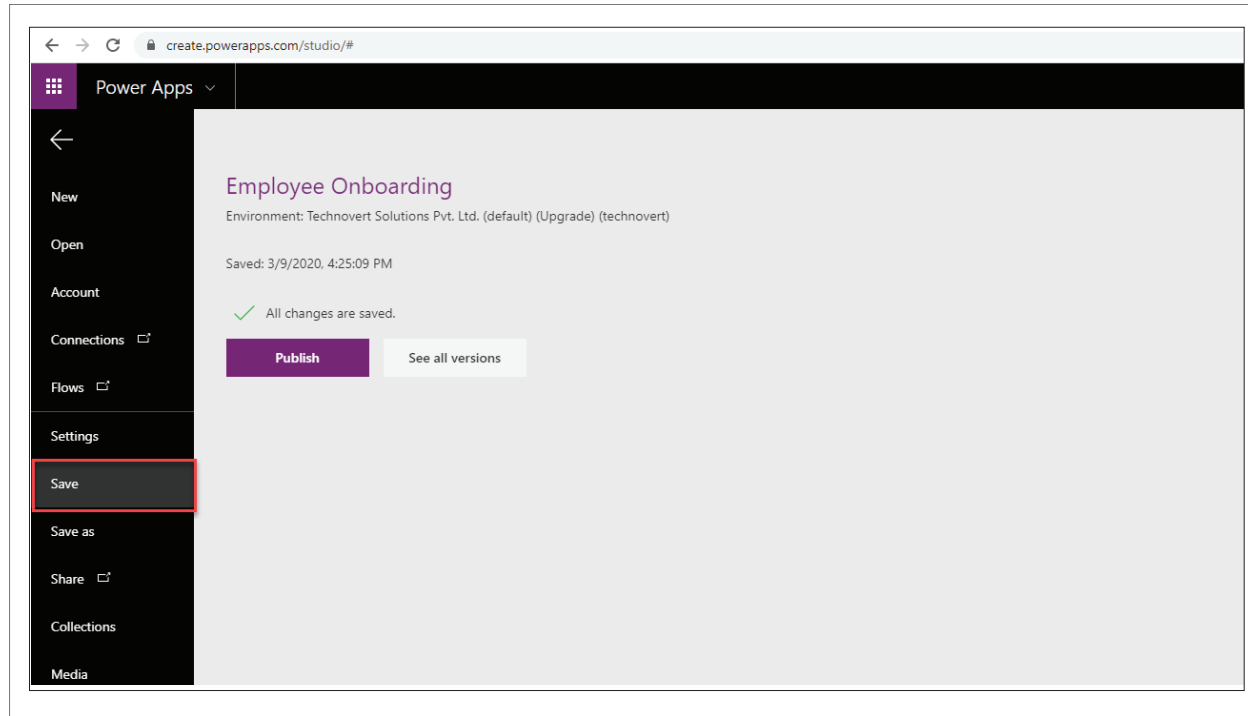
Library Based InfoPath Forms

These are the InfoPath forms that are published and used in SharePoint document libraries.

Data submitted using these forms will be saved as an XML files in the libraries. All the information stored in these files must be converted to list items in order to create PowerApps forms on top of them. Unfortunately, this cannot be achieved easily. Even with careful planning and execution, you might end up with missing fields and their values as your InfoPath form may contain complex field types that are not directly available in SharePoint lists.

Once this XML data is converted to SharePoint List items, you can start creating PowerApps on top of them.

Library based InfoPath forms may contain complex field controls which may not be directly available in

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PowerApps. For instance, repeating tables and repeating sections.

You can achieve above constraints with workarounds, but the process is time consuming and may end up with wrong architecture. Saketa Team helps in achieving this process in the best way possible and with the right architecture that enables you to perform any kind of customizations/modifications even in the future without much complexity.

Have a look at the Library based InfoPath form and its modernization version of PowerApps.

You can customize it the way you wish and can preview your app. Once the app design is completed, you can publish your app on Microsoft SharePoint.

Library based InfoPath form with repeating table

InfoPath equivalent PowerApps after Modernization

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Code Based InfoPath Forms

InfoPath forms allow you to perform business validations without writing any code. But there can be cases, where you need to achieve custom requirements or complex business validations. InfoPath allows you to write business logic in C# to achieve this kind of requirement and these forms are called code-based InfoPath forms.

PowerApps also allow you to write business logics with C# but it's not the direct way like InfoPath forms. You can achieve this using Azure functions and Custom API connector in PowerApps.

The following simple steps can be followed to build a code based app using PowerApps:

- Create an Azure function and write the business logics in it
- Create a Swagger definition for it
- Create a new connection in PowerApps for this custom API
- Add this connection as data source in your PowerApps
- Call the function in your App wherever you want

PowerApps support a vast set of connectors that include data sources supported by InfoPath forms. Few standard PowerApps connectors are SQL server, Microsoft Dynamics 365, Microsoft Office 365 Outlook, Common Data Service and Microsoft Excel. PowerApps also allow you to build custom connectors and use it in your application.

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InfoPath to PowerApps Mapping

InfoPath forms provide vast set of controls and functionalities. Get to know the equivalent controls available in PowerApps as a substitute to InfoPath controls.

InfoPath Controls

PowerApps Controls

● Views

≈

● Screens

● Repeating Tables

Skills:

Information Technology

Insert item

● Galleries and Table Controls

Skills:

Information Technology

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InfoPath Controls

- ● Data Connections
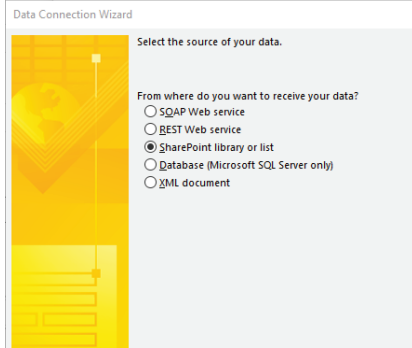
- ● Sections

PowerApps Controls

- ● Data Sources using Connectors
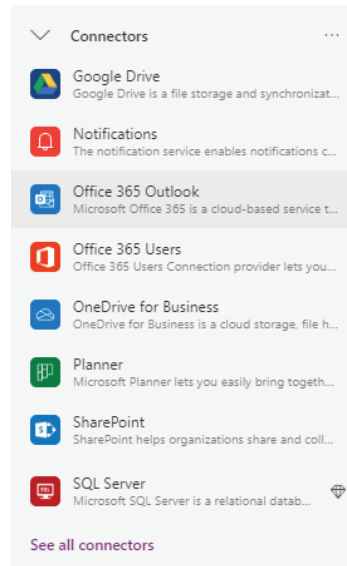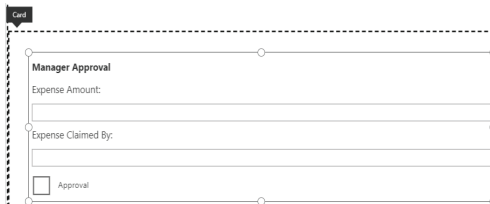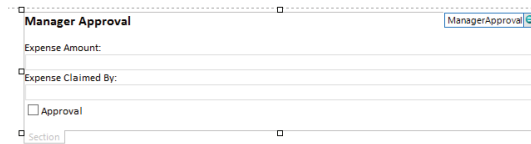
- ● Groupings

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InfoPath Controls

● Rules

● Code Based InfoPath Forms

PowerApps Controls

● Formula

● Code Support Using Custom API's

+ New custom connector ∨

Create from blank

Create from Azure Service (Preview)

Import an OpenAPI file

Import an OpenAPI from URL

Import a Postman collection

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InfoPath Controls

● Field Controls and Properties

Field or Group Properties ? ✕

Data | Merge | Details

Properties
Name: FirstName
Type: 🔲 Field (element)
Data type: Text (string)
Data namespace:
☐ Repeating
☐ Cannot be blank (*)
☐ Non-empty occurrence required

Default Value
Value: _____ *fx*
Example: Sample Text
☐ Refresh value when formula is recalculated

OK   Cancel

PowerApps Controls

● Field Controls and Properties

TEXT INPUT
FirstName   ⓘ

Properties   Advanced

Default	No value
Format	Text
Hint text	No value
Font	Segoe UI
Font size	10.9
Font weight	Normal
Font style	*I* U ⇌
Text alignment	▤ ▤ ▤ ▤
Line height	1.2
Clear button	Off ⬤
Enable spell check	Off ⬤
Maximum length	255
Mode	Single line

Conclusion

Organizations still relying on InfoPath to store important data may not realize that opening these forms in the future will be problematic due to their soon approaching end of life. Deprecation of InfoPath forms and closure of client support after 2026, will make moving to its replacement, a more powerful platform 'PowerApps', a must. But doing it manually is a complex task. Thus, organizations must accept the inevitable and act accordingly by replacing InfoPath forms to Power Apps including all attachments and metadata.

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About Tecnovert

Infopath to PowerApps migration is a tedious process. We at Technovert understand this process and our migration framework handles this complexity with ease. Our decades of experience in SharePoint migration and our SharePoint Migration tool under the Saketa brand enriches this delivery experience to give you confident, hassle free migration of InfoPath solutions.