

The good, the bad and the ugly of Power Automate in 2021

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In the last few years, many companies with a substantial IT footprint have recognized the importance of 'citizen developers' and how it can help alleviate the pressure on IT budget. One of the tested ways to get the citizen development ball rolling in any organization is to introduce low-code no-code platforms which are easy to use and provide substantial productivity benefits.

Hence in the last few years there has been a high demand for an easy to use low-code platform which not only helps to create intuitive UI but also a platform which can either act as an intermediary or a consumer for other platform so that citizen developers can utilize their organizations existing IT investment in platform like SAP & Dynamics 365 to create solution which can improve their productivity.

Looking at this market sentiments Microsoft developed the Power platform. They created Power Apps for UI development and Power BI for reporting & MIS while the workflow creation & logical constructs can be created in Power Automate. So, to speak, Power Automate is a workflow & integration platform provided by Microsoft as a part of its Office365 Power Platform low-code no-code offering. As Microsoft puts it:

"Power Automate is a service that helps you create automated workflows between your favourite apps and services to synchronize files, get notifications, collect data, and more."

Looking at power automate from a high level one can easily find various use-cases where power automate can be easily implemented. Not only does it provide some pretty nifty features but can drastically reduce the development timelines without the need of specialized developers.

Some might say it's a silver bullet to the various vows of IT implementation especially when it comes to automation. But along with the good, power automate can also end up creating problematic, inflexible solutions which can be quite troublesome in the long run. In extreme cases choosing power automate over other solution might end up being outright ugly and can lead to serious project slippages.

This whitepaper tries to examine the good, the bad, and the outright ugly facets of power automate. Obviously, this is not an exhaustive list and there are many others points which can be included; but these are the ones which most of the users will come across while interacting with the platform.

THE GOOD

Power automate does what it says and that is:

- Provide seamless integration between multiple platforms
- Easy to develop workflow implementation
- Easy automation with minimum IT involvement

SEAMLESS INTEGRATION

Power automate does has a vast and sprawling library of connectors which can connect to systems ranging from SMS providers to eSignature implementations. If you want to integrate a new solution with your existing system or want to integrate two existing systems who have ready-made connectors available, then you are in luck. You can get a running integration within few hours with decent amount of security and robustness.

Most of the connectors provide '*base features*' of their respective platforms out of box. Weather it is creating a new user entry in **WorkDay** or sending SMS via. **Twilio** such features can be easily integrated in you flow to create a seamless experience for your end users. With 300+ connectors and more added every day it's easy to see why many companies use it as an alternate integration platform to other integration offerings.

EASY TO DEVELOP WORKFLOWS

For most part developing solution in power automate does not require any prior development experience. To add to that, you have various in-build constructs like creating 'conditional branching' and 'variable manipulation' which can easily help you develop a substantially productive solution with little time investment.

Power platform also provides dynamic formulas which can be used for various purposes. These formulas are quite similar in syntax to the excel formulas we have all come to love. And hence, if you have worked in excel even for a bit you are bound to fill quiet at home.

Finally, power automate provides an easy-to-use interface which is targeted at novice developers. Recently Microsoft has even released a desktop version of the interface which provides all the features of the web interface and then some! All-in-all Microsoft has tried, and more-or-less succeeded in providing a beginner friendly interface and features in power automate which really makes creating workflows *EASY!*

EASE OF AUTOMATION

Probably the best use-cases for power automate are in its ability to automate various repetitive tasks. This is where power automate really shines and provide maximum advantage when it comes to improving personal productivity. A repetitive task like sending reminders or uploading files to a shared location can be done within a matter of minutes and can be scheduled to run automatically. In many cases this itself can save hours of work put in by resources which finally translates in to a better bottom-line.

This automation goes beyond just simple copy activity. Power Automate flows can be set to trigger on various events occurring in various other platforms and application. This feature of a 'connector' is called 'trigger', and as the name suggest it provides an initiation action for a flow. Thus, you can even have an even-driven automation flow rather than settling for just a schedule-based automation flow. This can provide very high dividends when you want to automate a set of activities to be executed in sequence. For example; you can have a flow setup to trigger when a new bug is created in your Azure DevOps project which can then can send email to the dev lead informing about the bug as well as create a bug-fix task and add it to the backlog with all the bug data extracted from the bug itself.

THE BAD

As we discussed earlier power automate can really help accelerate personal productivity and team integration. Due to the flexibility offered by power automate many users try to use the platform in scenarios for which the platform is actually designed for. Unfortunately, power platform does not provide any indications or guidelines for such use-cases and the only way a developer understands these limitations is by actual experience. Unfortunately, this experimentation can be costly sometimes and can set the team back quite a bit.

Below are some of such scenarios where users might experience these limitations.

INCOMPLETE SET OF TRIGGERS & ACTIONS IN CONNECTORS

It's true that power automate connectors library consist of 300+ connectors for various system and platforms. But many of these connectors do not have all triggers & actions provided by the underlying platform. Novice users generally check if the connector for a product exist, but do not actually check if the required actions are available in the particular connector (even thoe the API of the action might be published by the base system).

This scenario generally ends up in developer having to create custom connectors to the system which are a bit difficult to develop if you don't have development knowledge; plus, most organizations DLP policy will not allow a user to create custom connectors in their default environment or shared environment. Hence decent amount of understanding of DLP & environment setup knowledge is required to pull this off successfully.

DEPLOYMENT HELL!

Most organization will create multiple environments like dev, test, UAT & production and will move the completed piece of software / code /workflow from one environment to another during the development / testing phase. This can be done manually; but in many cases this process is completely automated and is a part of the larger deployment process. During the movement of the package from one environment to another there are config files created which hold connection & configuration data specific to the environments and either the platform or the software itself will have intelligence to pick-up the appropriate configurations.

In Power automate (as a matter of fact in power apps as well) the developer or the deployer of the flow has to manually open the workflows and update the connections. This leads to many user errors as well as unintentional updates to flow which generally end-up creating bugs & issues in the flow. Microsoft has provided set of ALM tools & scripts which can automate some of the deployment steps, but the connections still need to be updated manually.

This generally is not an issue when you are deploying few flows but if power automate is used as a true business layer for the solution, then the count for even a simple application might drastically increase which unfortunately becomes counterproductive as each and every flow needs physical attention when moving from one environment to other.

NASCENT AI & RPA IMPLEMENTATION

Microsoft recently rebranded 'Flow' to 'Power Automate' and brought slew of shiny new AI & RPA features into the fold along with it. It introduced AI implementation as a part of 'AI builder' while RPA was integrated into the newer Power Automate Desktop.

Power Automate Desktop is a wonderful addition to the power automate capabilities and adds some interesting RPA capabilities which provide a versatile alternative to create RPA flows for small & medium level productivity tasks. As this is a new offering, various features are under development and features which are expected to be available in all RPA solutions are missing. Many developers make a mistake of not understanding these limitations and dive head-on with creating enterprise level solutions on this platform. This generally ends-up in them hitting a wall and then having to core-correct or circumvent these limitations via. either custom development or tweaking the scope or process. Some of the biggest missing pieces for the RPA implementation like dynamically passing test data for multiple runs either from a database or excel which are quite common in offering from other providers are sadly absent here.

On the similar line, AI builder adds various AI features to the fold like data extraction from documents (OCR), etc. In simple, well-defined scenarios these flows can be build quiet easily with little coding efforts. But as we move on to the more complex and intricate solution the limitations of the AI builder start showing off. Especially affected is the precision and overall performance of the output. Microsoft has done a phenomenal job in addressing these concerns but as of now it lags behind other offering (In many cases, the precision & performance of its own cousin, Azure Logic Apps which provide the same features too is far superior in real life cases [unfortunately it's not a low-code platform])

THE UGLY

LICENSE AHOY!

Microsoft has tried to lower the entry barrier to Power platform by integrating basic Power platform licenses in many of its Office 365 & Dynamics 365 licenses. This results in decent adoption numbers in an O365 based organization. Unfortunately, the more the developers dig into the system the more complex and advance features they want to use. After a certain point (which generally occur when users try to implement use-cases bigger than personal productivity cases), it becomes imperative to get a higher-level license.

Unfortunately, many aspects of the licenses are not clearly mentioned on Microsoft portals and admins must go digging deep in annals of Microsoft Pricing document to find the correct information. In many cases, this results in users developing and implementing a solution and then understanding the actual run cost when the solution is being running for a month or so. Microsoft does show notification for insufficiencies in license but does not provide a direct mechanism to check what will be the run cost of the flows. In addition to this, if we compare the run cost of Microsoft's own Logic Apps platform, then the run cost of in many scenarios is substantially higher. Users have to bear this extra premium as power platform provides some intuitive features for novice users while LogicApps needs some level of development acumen. Estimating the overall license cost is quite easy for most power automate scenarios but estimating run cost is a real challenge and requires detailed understanding of stepwise billing.

Finally, one major aspect to keep in mind is the frequency of the flow being run is determined by your licenses as well. Hence lot of due diligence is required for determining the flow's velocity / usage even before design can even start. This sometimes makes the solution difficult to scale not to mention the limits to the number of API's calls available per account.

TESTING TESTING TESTING

Power platform is relatively new; hence some of the features are still being developed. One of the areas where power automate (and in fact most of the power platform) severely lacks is a robust in build testing & review framework.

When a package is being deployed, there are checks in place which ensure erroneous flows are not deployed to the environment. But testing these flows individually and as a group is a challenge. Users need to depend on other custom flows or 3rd party apps to test the solution thoroughly.

Microsoft has made great strides in achieving this by introducing selenium like 'test run' implementation for canvas app but an elaborate solution is lacking for power automate. Power automate does provide some debugging tools and an elaborate step-by-step detailed input/output flow interface to review the flow execution but extracting & aggregating these issues is not available. Hence reporting at higher levels (dashboards, etc.) do need manual processing and intervention.

GOVERNANCE, ENVIRONMENTS & CONNECTIONS

Power Automate being a low-code / no-code platform aims at creating a simple to use app environment with high Impetus on user comforts and ease of use. Most of the solutions developed in Power automate are targeted at internal users and relies on organizations Azure active directory to provide security implementation. Hence there is sort-of 'organization trust' based security model which is used by power platform in which users are associated with particular power platform environments except for the default environment to whom every user with license has access to.

Each connection created in a power automate flow in this shared environment are shared too. Hence a connection created by one user can be used by other who have access to that environment as well. Though the above implementation is quite simple to use it exposes one user's connection to another which generally is not preferred from security perspective.

A by-product of such implementation is that there is a huge overhead of creating & managing multiple environments to isolating various teams and implementations. In a decently sized organization with good adoption rate of Power platform the IT team actually has to employ a team of admins to support this. This indirectly increases the run cost of any app being developed.

To top it all off, there is a dearth of governance and management tools when it comes to managing these environments and monitoring the flows which are being executed inside them. Microsoft admin-centre & Microsoft's CoE Toolkit does provide some respite, but they fall inadequate in many high velocity systems. Thus, the IT team needs to rely upon custom developed app & reports or hacky shell-scripts to extract and process the monitoring & governance information. This not only increases the human intervention but also adds extra run cost to maintain and manage these secondary systems & script. Alternatively, firms hire experience consultant's or buy packages like Sogeti's Power Boost Library fill in the gaps required for such activities.

Hence even though Microsoft has tried to provide a self-contained & inexpensive platform; but these other costs actually increase the overall investment number hence making the overall implementation less lucrative.

CLOSING REMARKS

Power automate has come a long way from its humble beginning. The width of features provided by Power automate is its strength as well as its downfall as users try to create solutions which are not actually meant to be created on this platform.

Power automate can be an absolute game changer for an organization if it uses it in its correct place for small / non-LOB integrations, basic RPA & AI, and most importantly personal productivity. Microsoft is aggressively pursuing improvements to the platform and hence it's pretty safe to say that though there are some bad and ugly facets which are hampering power automate adoption; we can foresee a future where these issues would be eliminate thus actually making power automate the real Silver Bullet!

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