

# Better Together Initiative

Kieran Petrie – Extending Model Driven Apps



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# Agenda

- 
- Model Driven App Extensibility with Managed Solutions
  - No Code
  - Low Code
  - Pro Developer
  - Designing for Extensibility



# Model Driven App Extensibility with Managed Solutions



# Reasons for Extending Dynamics 365 Customer Engagement



No Code

Low Code

Pro Code

Microsoft  
365

LinkedIn

Microsoft  
Dynamics 365

GitHub

Microsoft  
Power Platform

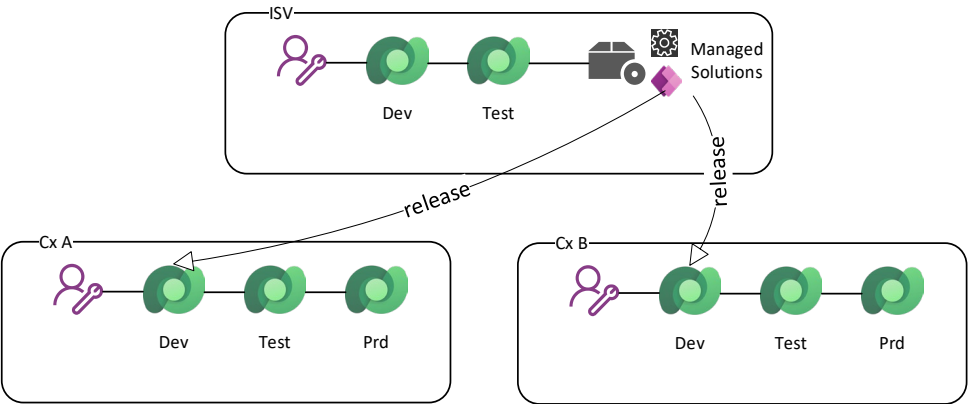
Microsoft Azure

Identity, security, management, and compliance

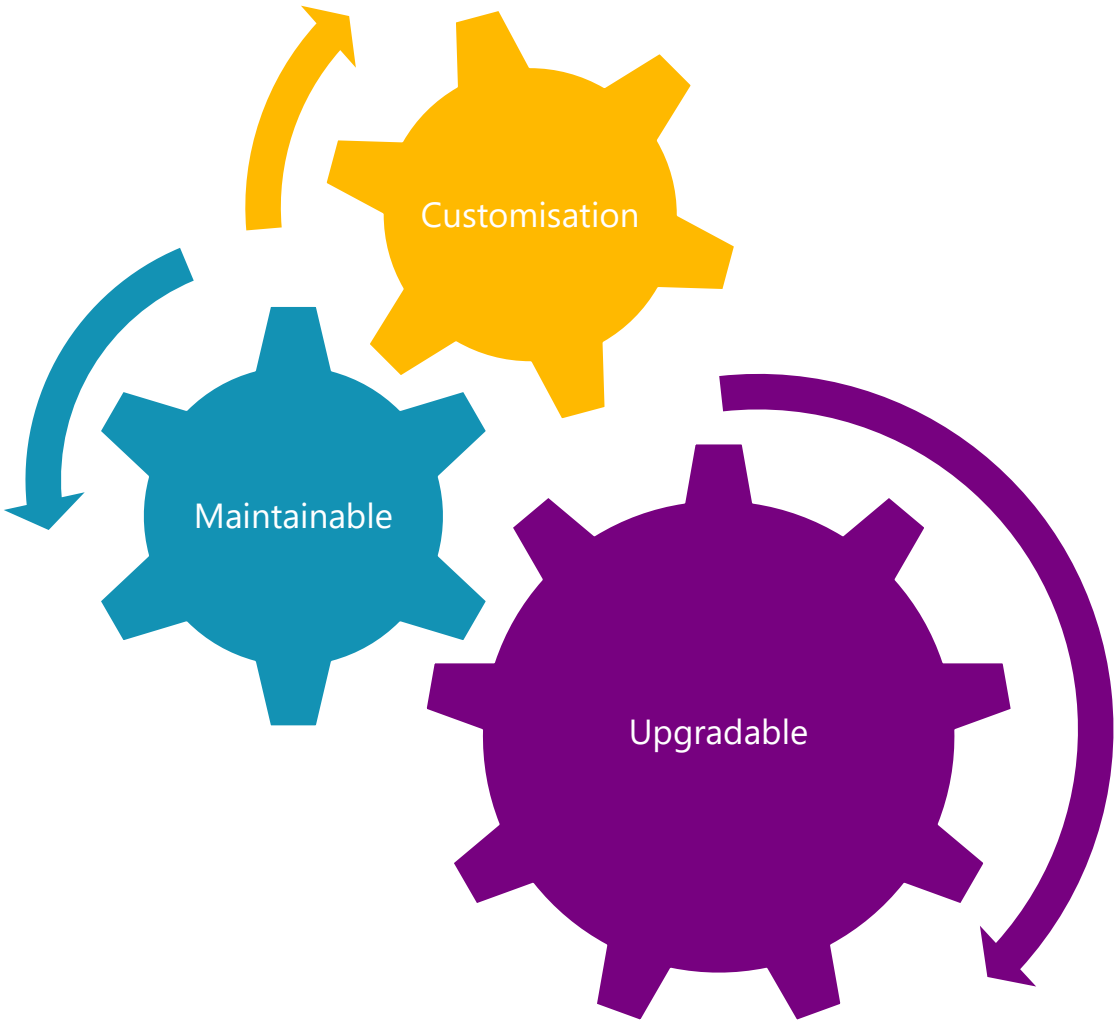
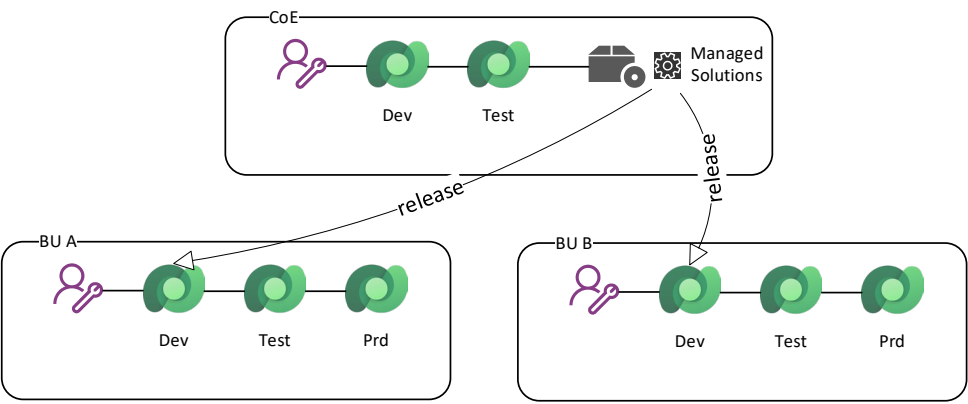


# Extending Managed Solutions

## ISV – Use Case



## Enterprise – Use Case

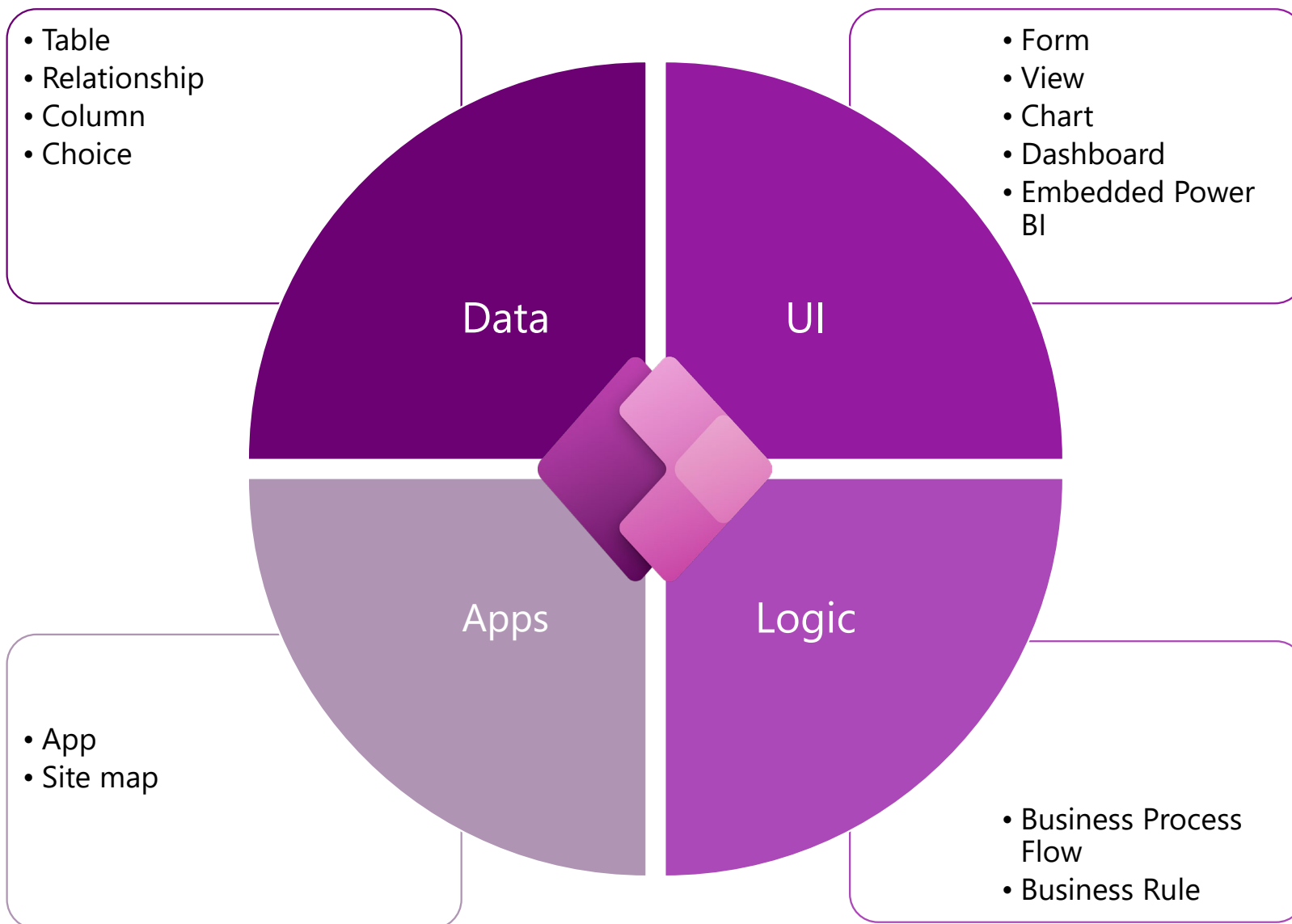


No Code





# No Code aka Configuration



Benefits of a configuration first approach:-

- Rapid creation of apps
- Simplified migration between environments
- Automatic benefits of a responsive and accessible design across devices
- Inherited extensibility



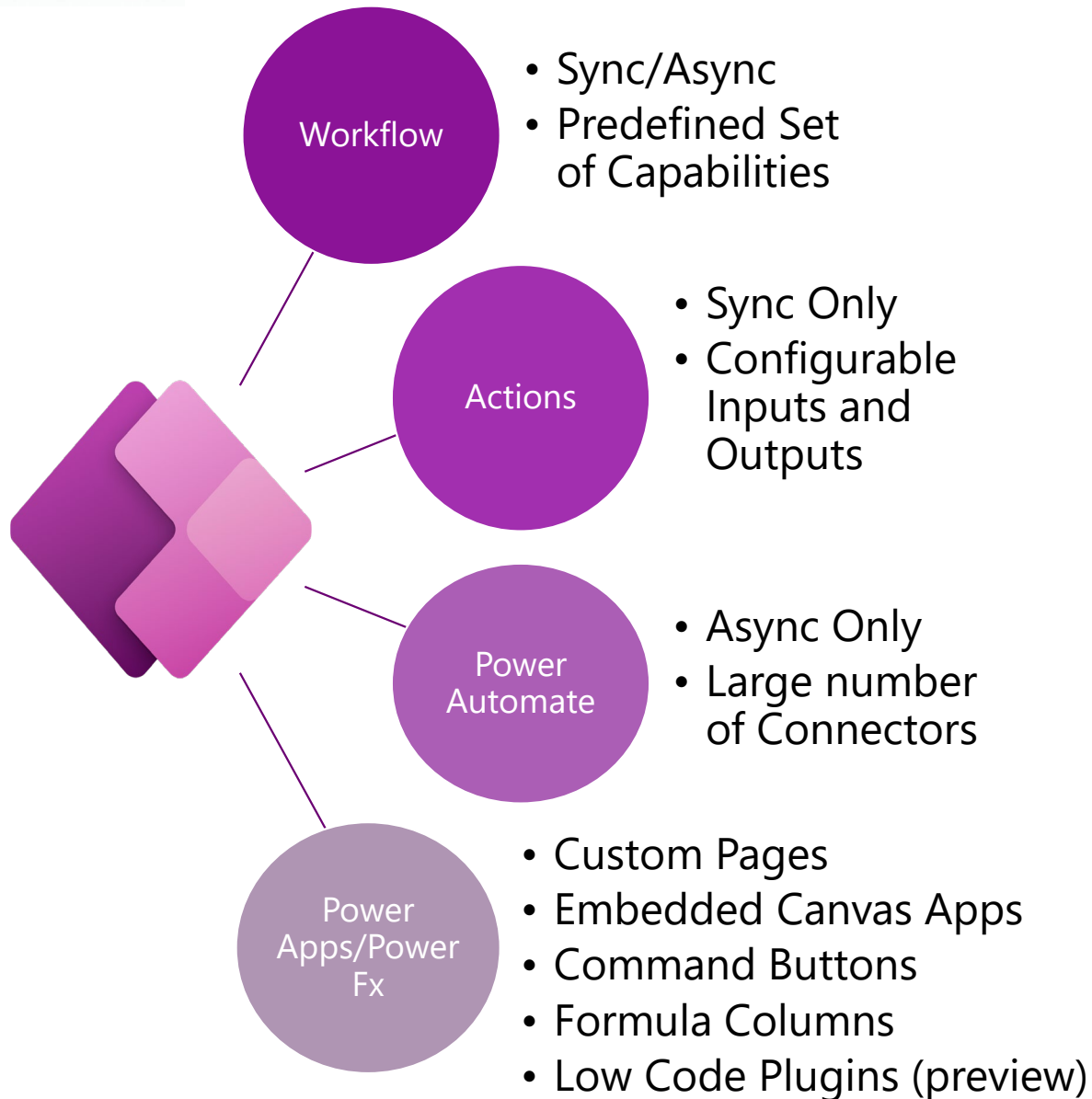
# Low Code







# Low Code



## Benefits of low code :-

- Provides large amount of flexibility with a low skill level of entry
- Provides extensibility and integration via Power Platform Connectors
- Greater UI & Business Logic flexibility
- Inherited extensibility



Pro Code





# Pro Code Extensions for Model Driven Apps

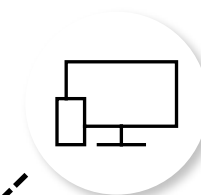
## Client-Side Scripting

- Customize commands and ribbon
- Apply business logic using scripting
- Build custom components using PCF



## Server-Side Extensions

- Extend core platform operations with
  - Plugins
  - Custom Workflow Activities
  - Virtual Data Providers
  - Actions and Custom API's



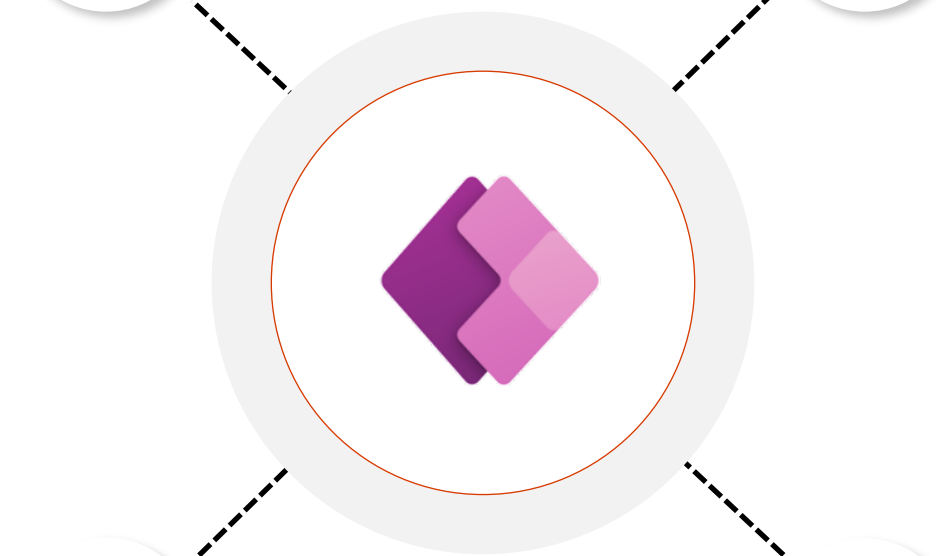
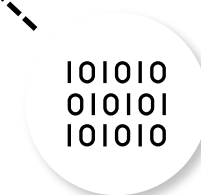
## Extend Integration and Connectivity with Azure

- Extend capability with the Power of Azure
  - Azure Service Bus
  - Webhooks
  - Fabric
  - Azure Functions/Logic Apps



## Work directly with Microsoft Dataverse data

- Use Web API
- Use organization services
- Query data

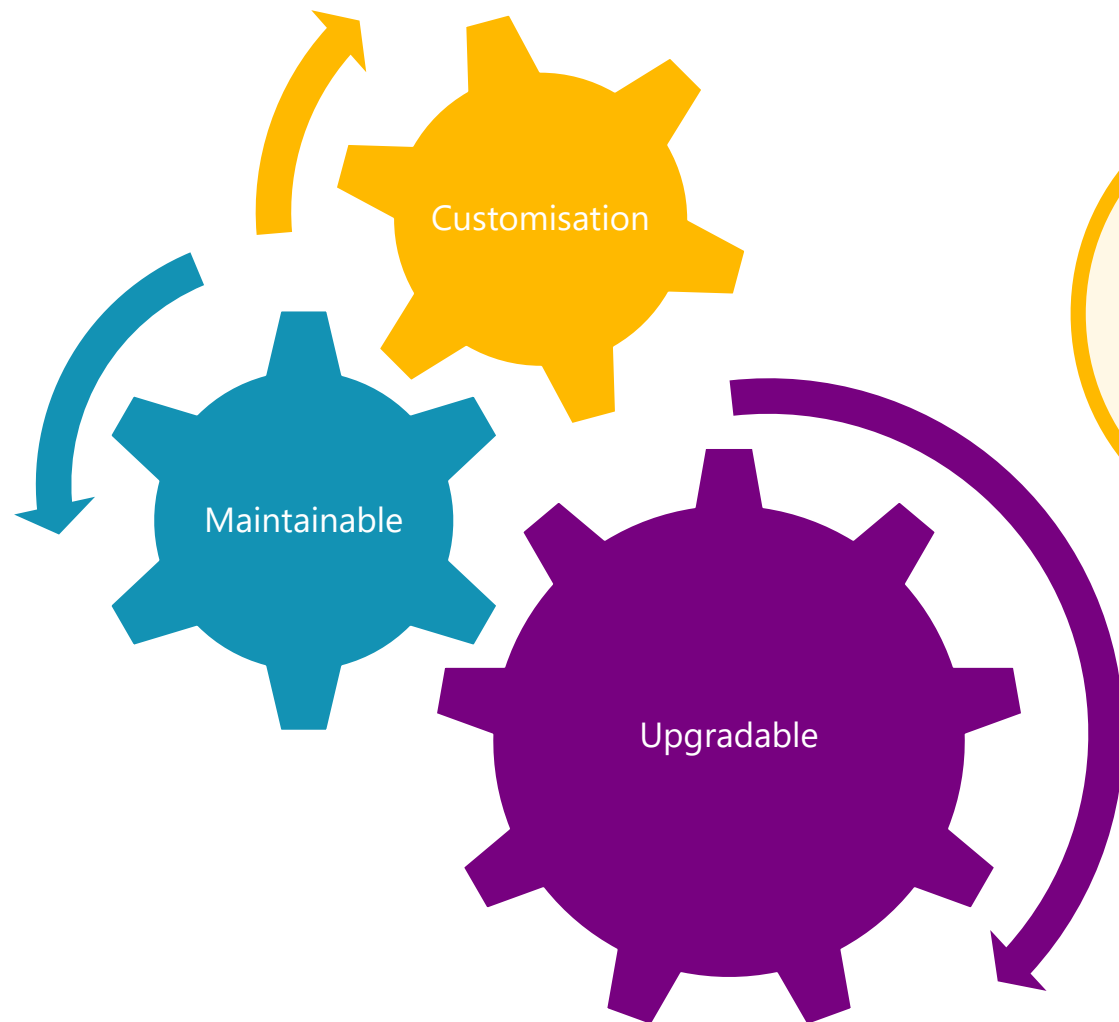


# Designing for Extensibility





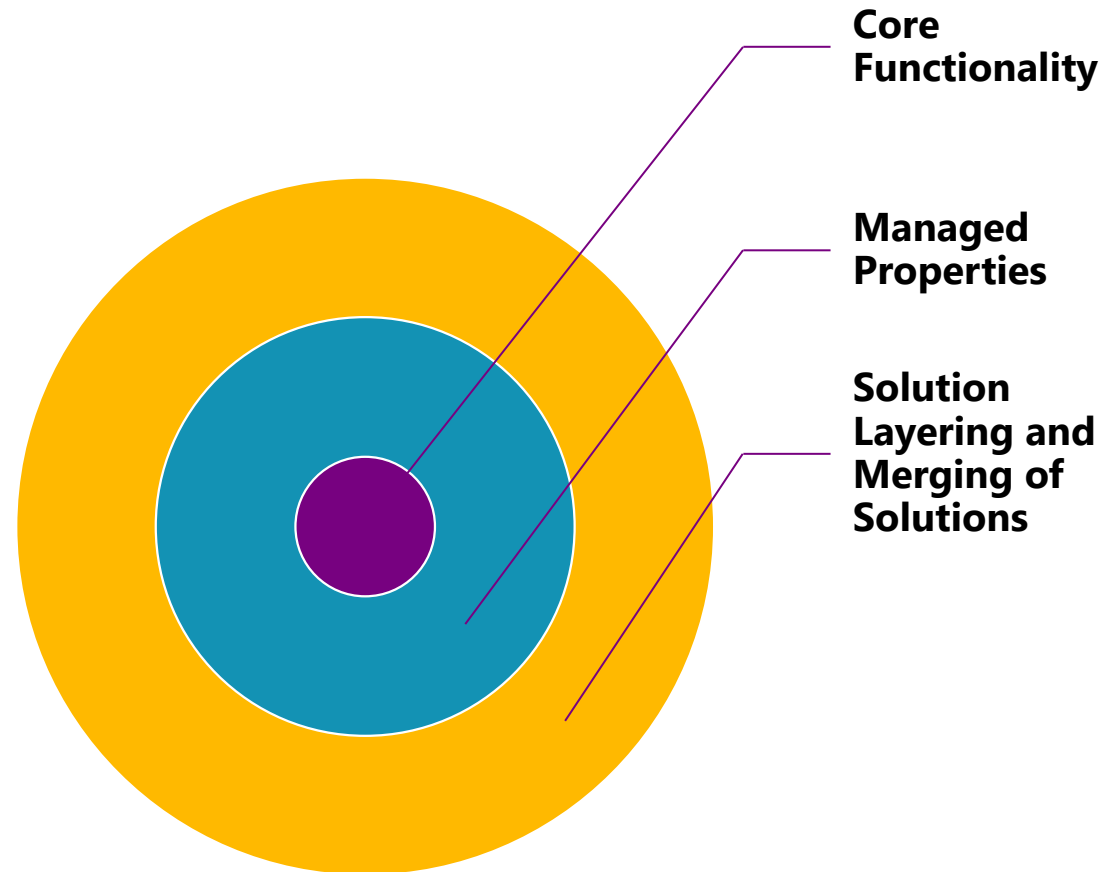
# Considerations



# Configuration & Low Code

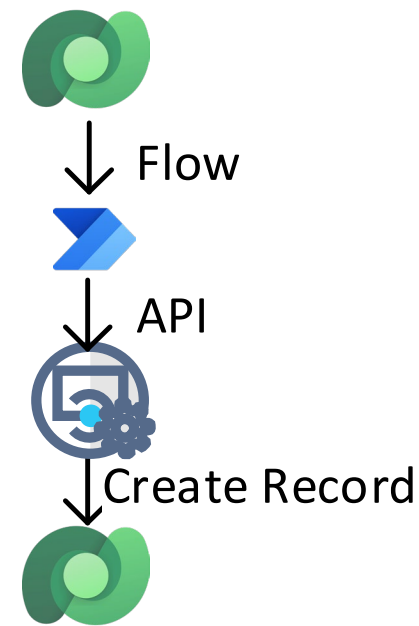


Therefore, the important considerations for extensibility of configuration and low code components included in the managed solution are:-



# Low Code Business Logic

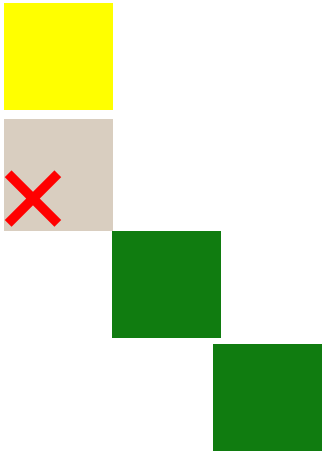
Method	Extensibility/Modification
Workflow	<div>Change the Definition</div> <div><div>Platform Extensibility</div><div>Solution Packaged</div><div>Solution Layering</div></div>
Power Automate	
Business Rules	
Business Process Flows	
Actions	
Custom API	<div>Addition Server-side logic</div> <div>Additional Parameters and Logic</div> <div><div>Platform Extensibility</div><div>Solution Packaged</div><div>No Solution Layering</div></div>



# Event Framework - Plugins

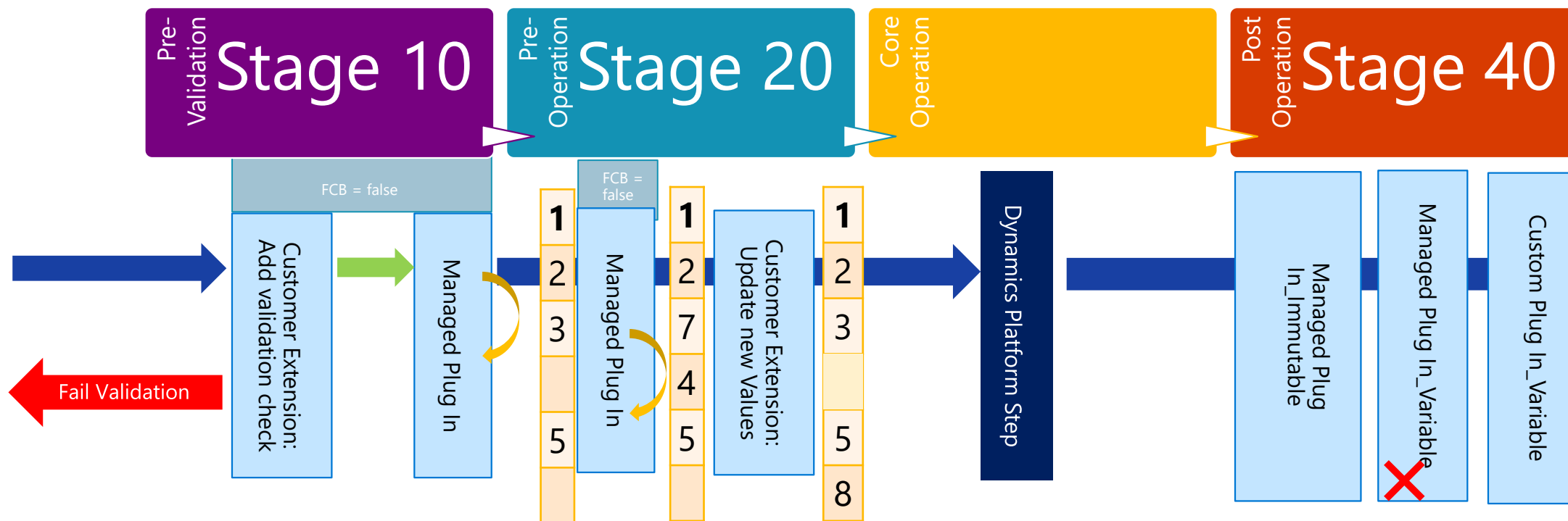


Stage	Images	Create	Update	Delete
Pre-Validation	Pre Image	✗	✓	✓
	Post Image	✗	✗	✗
Pre-Operation	Pre Image	✗	✓	✓
	Post Image	✗	✗	✗
Main Operation	N/A			
Post-Operation	Pre Image	✗	✓	✓
	Post Image	✓	✓	✓





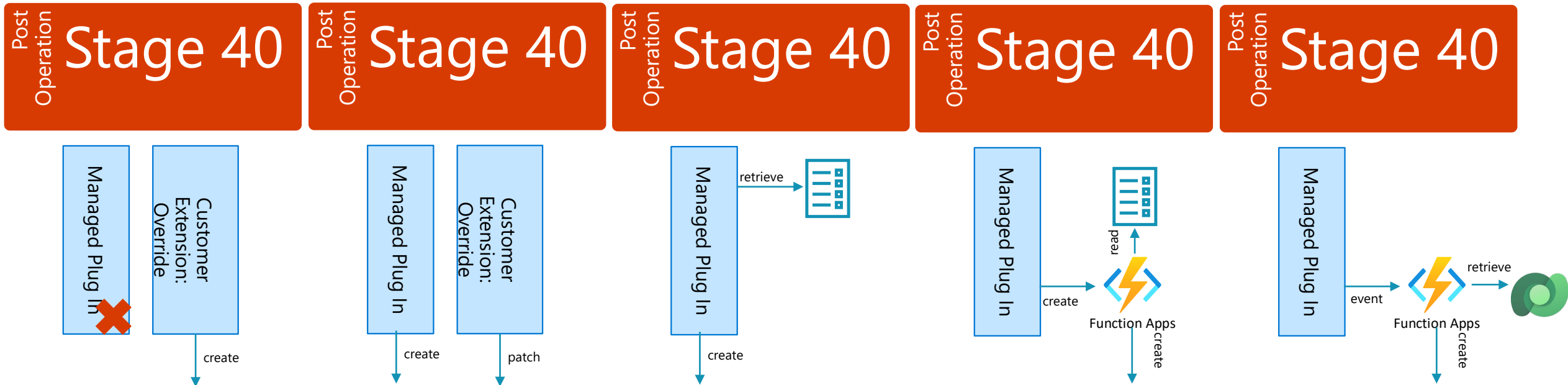
# Plugin Use cases – Validating/Augmenting Data



Use Case	Target	Overriding	Extending
Validating Data e.g. check required values have been provided  Changing Data (Calculating fields or creating other data)	Pre-Validation	<div> <div>Platform Extensibility &amp; Design</div> <div>Solution Packaged &amp; Config</div> <div>No Solution Layering</div> </div>	



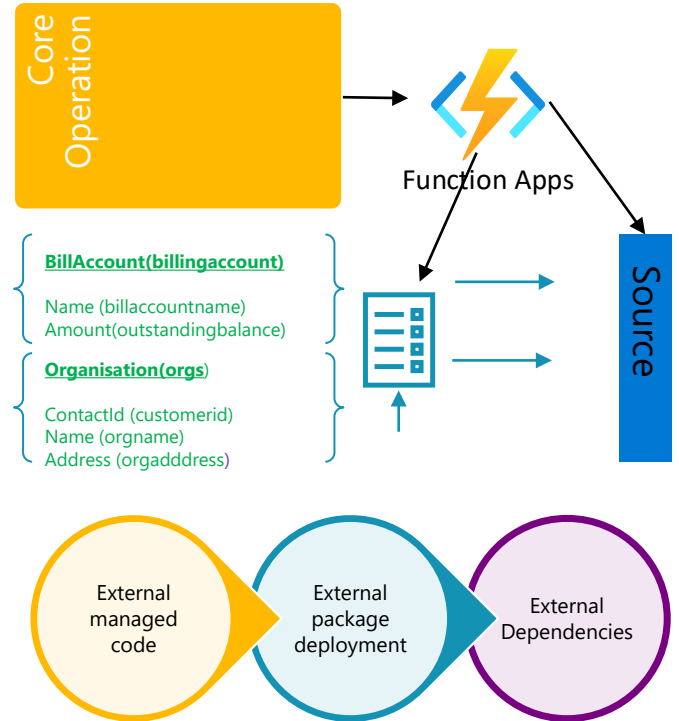
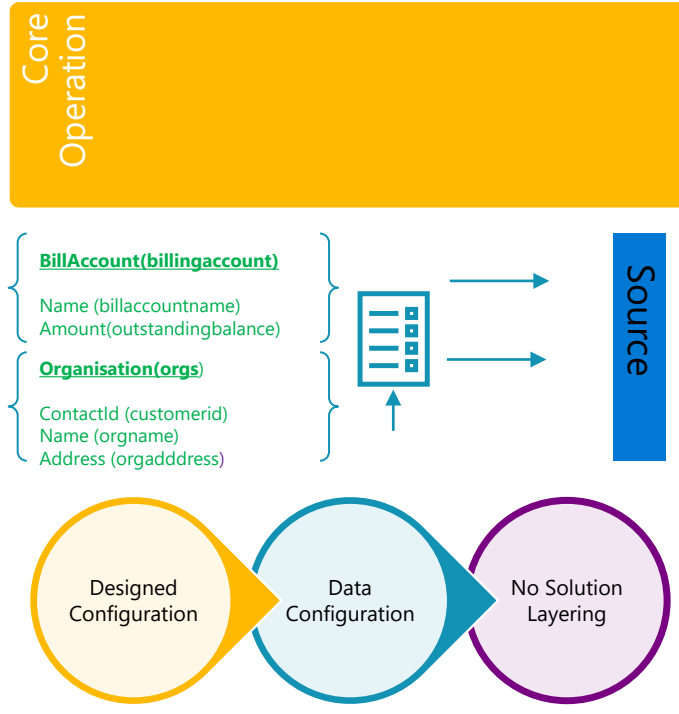
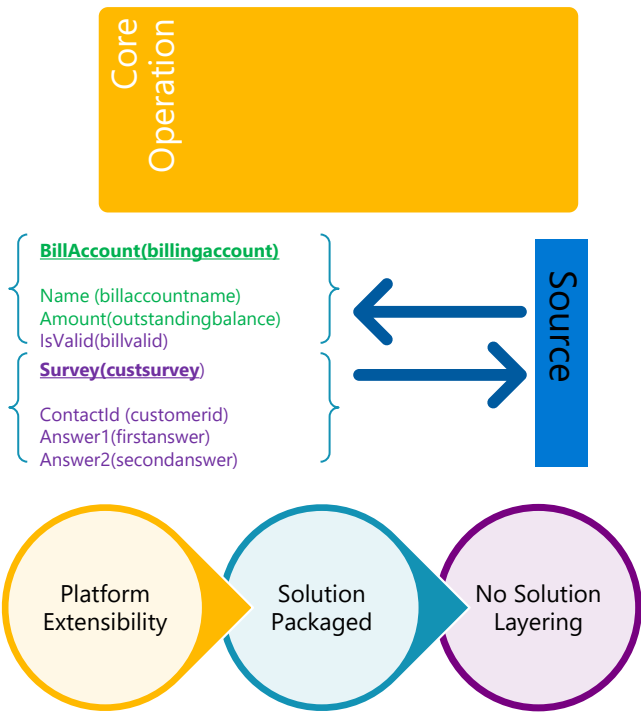
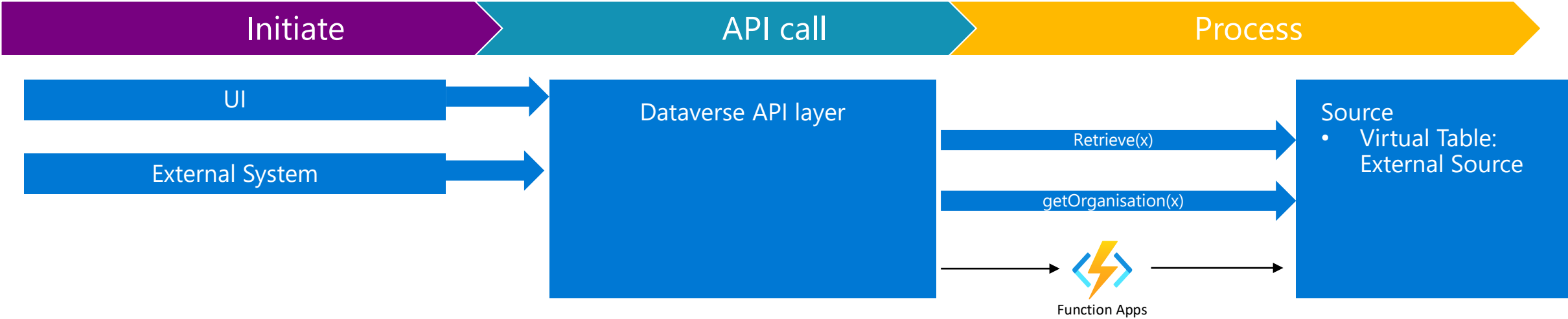
# Plugin Use cases – Integration Scenarios



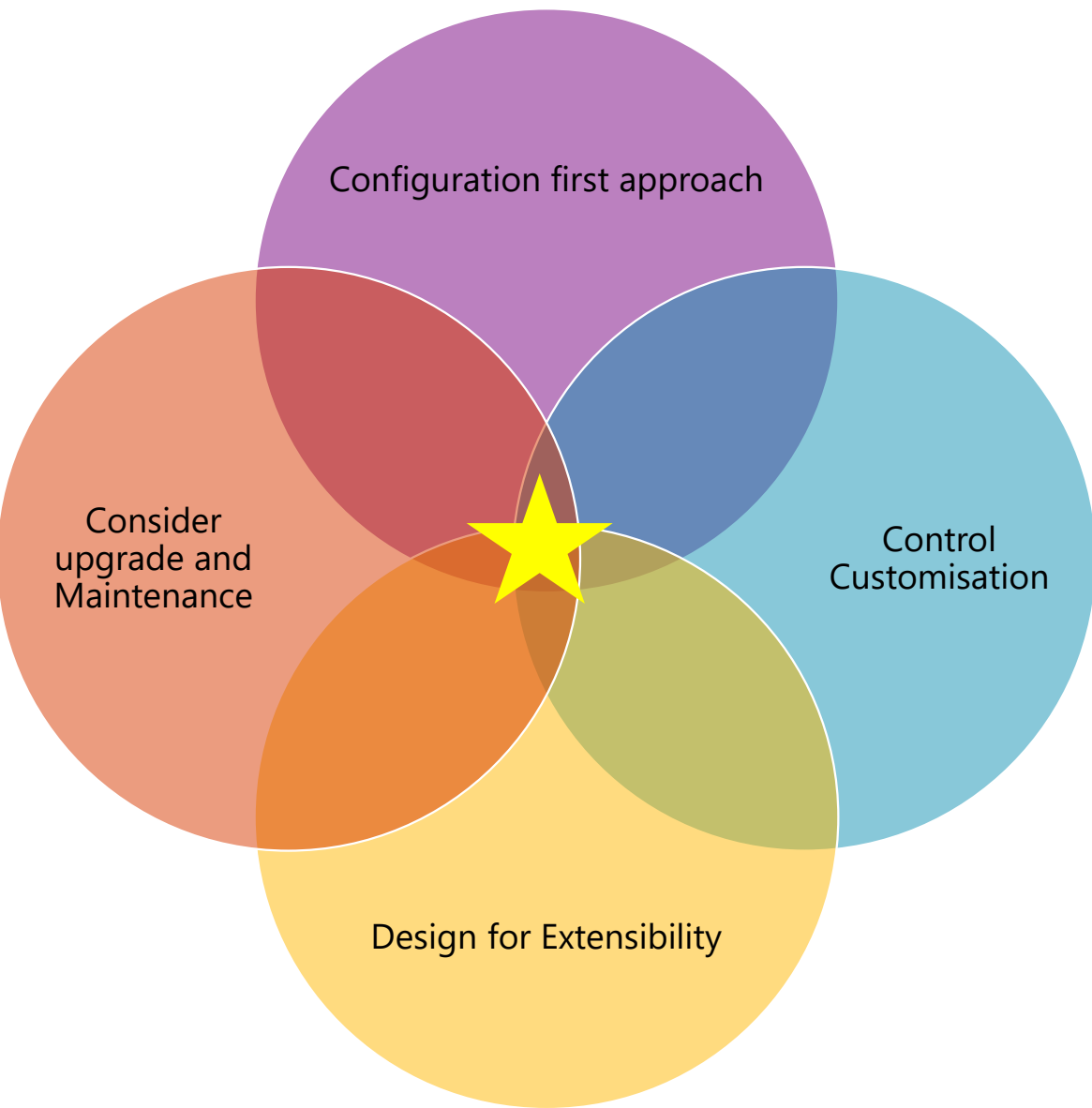
Use Case	Target	Scenario	Overriding	Extending
Integration Scenario encoded into the plugins	Post-Operation	<ol style="list-style-type: none"> <li>1. Customer Extension/Overrides by Disabling Managed Plugin</li> <li>2. Customer Patches Data in 3<sup>rd</sup> Party System</li> <li>3. Configurable mapping from source to target system stored in table config</li> <li>4. Direct call from managed plugin to external integration service</li> <li>5. Event from managed plugin to external integration service</li> </ol>		

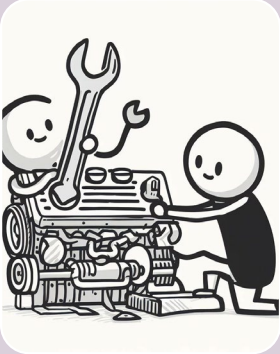





# Virtual Table – Custom Data Providers



# Key Take Aways



			
<p>Enables rapid development and extensions</p> <p>Clear Extensibility</p> <p>Known Maintenance &amp; Upgrade</p>	<p>Core capability/features should not customisable</p> <p>Use Managed Properties</p>	<p>Intentional and Clear on Extension &amp; override</p> <p>Consider customisation approach</p>	<p>Approach impact to maintenance and upgrade</p> <p>Solution Layering &amp; Merging</p>



