

PL22063 - Fusion Lifecycle's Evented Web Is Off the Hook

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Key learning objectives

At the end of this class, you will be able to:

- Learn how to move past custom APIs and middleware integration approaches
- Address costly product customizations
- Learn about avoiding unique specialized product integrations
- Learn how to eliminate complex point-to-point connections



GREENPOINT

Artistry Engineered



Facility Locations

Headquarters

Greenpoint Technologies
Kirkland, WA

Manufacturing

General Manufacturing
Marysville, WA

Installation

Narrowbody and Widebody
Everett and Moses Lake, WA

Cabinetry & Machining

VIP Cabinetry and Interiors
Denton, TX

MRO & Refurbishments

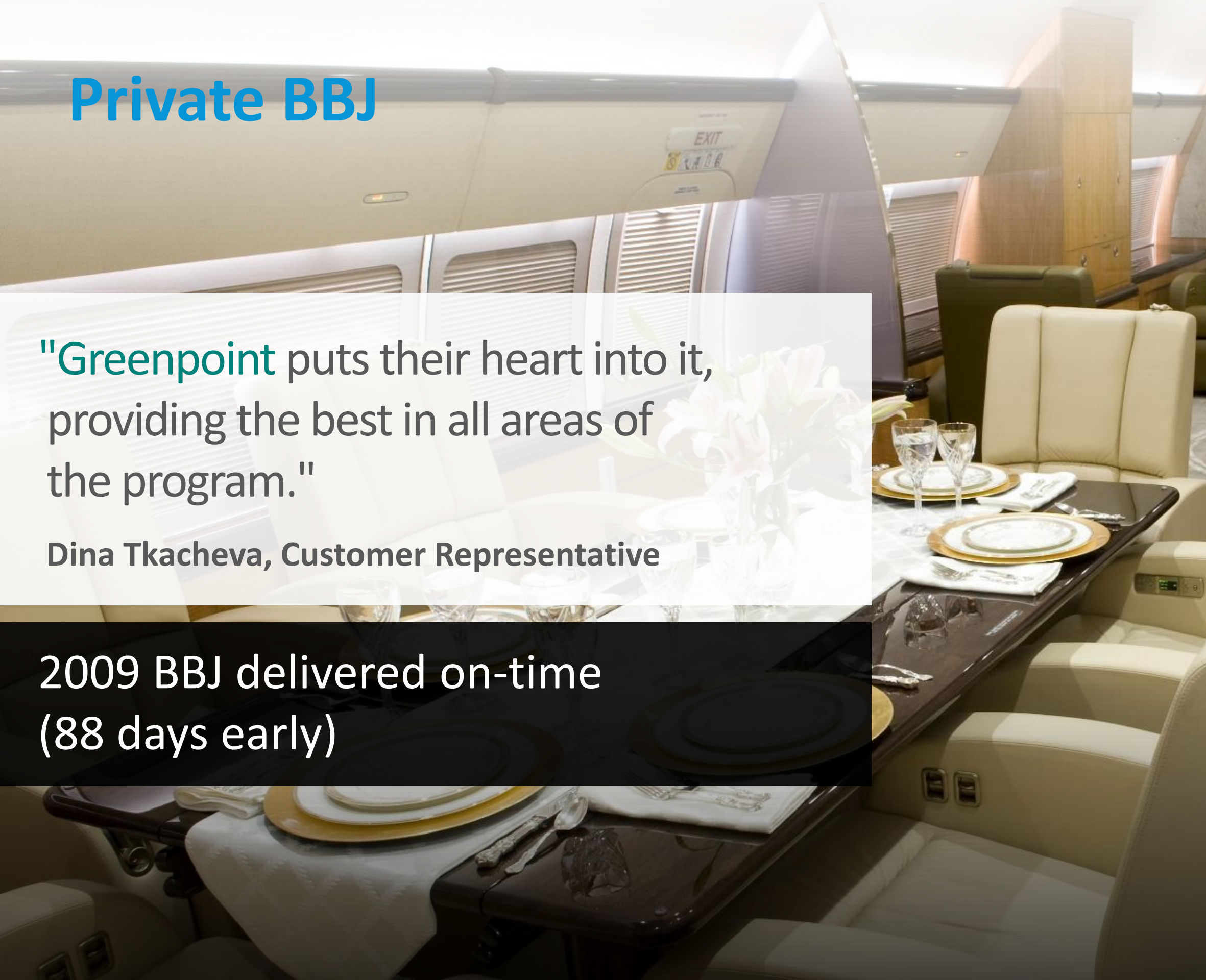
Greenpoint Aerospace, Inc.
Denton, TX

Private BBJ

"Greenpoint puts their heart into it, providing the best in all areas of the program."

Dina Tkacheva, Customer Representative

2009 BBJ delivered on-time
(88 days early)



VIP 787

Artistic rendering concepts

Delivered in 2016



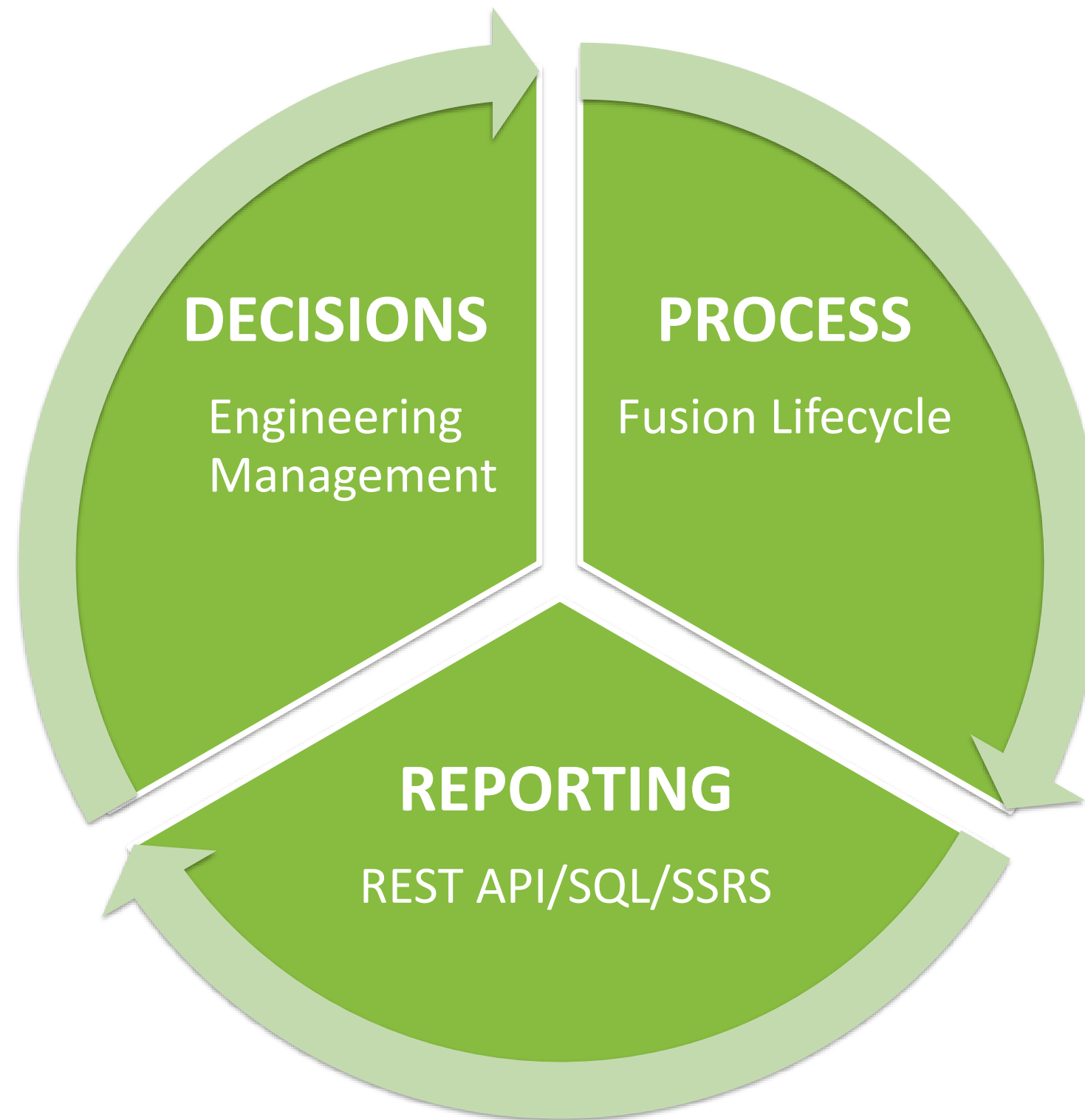
747-8 Aeroloft®

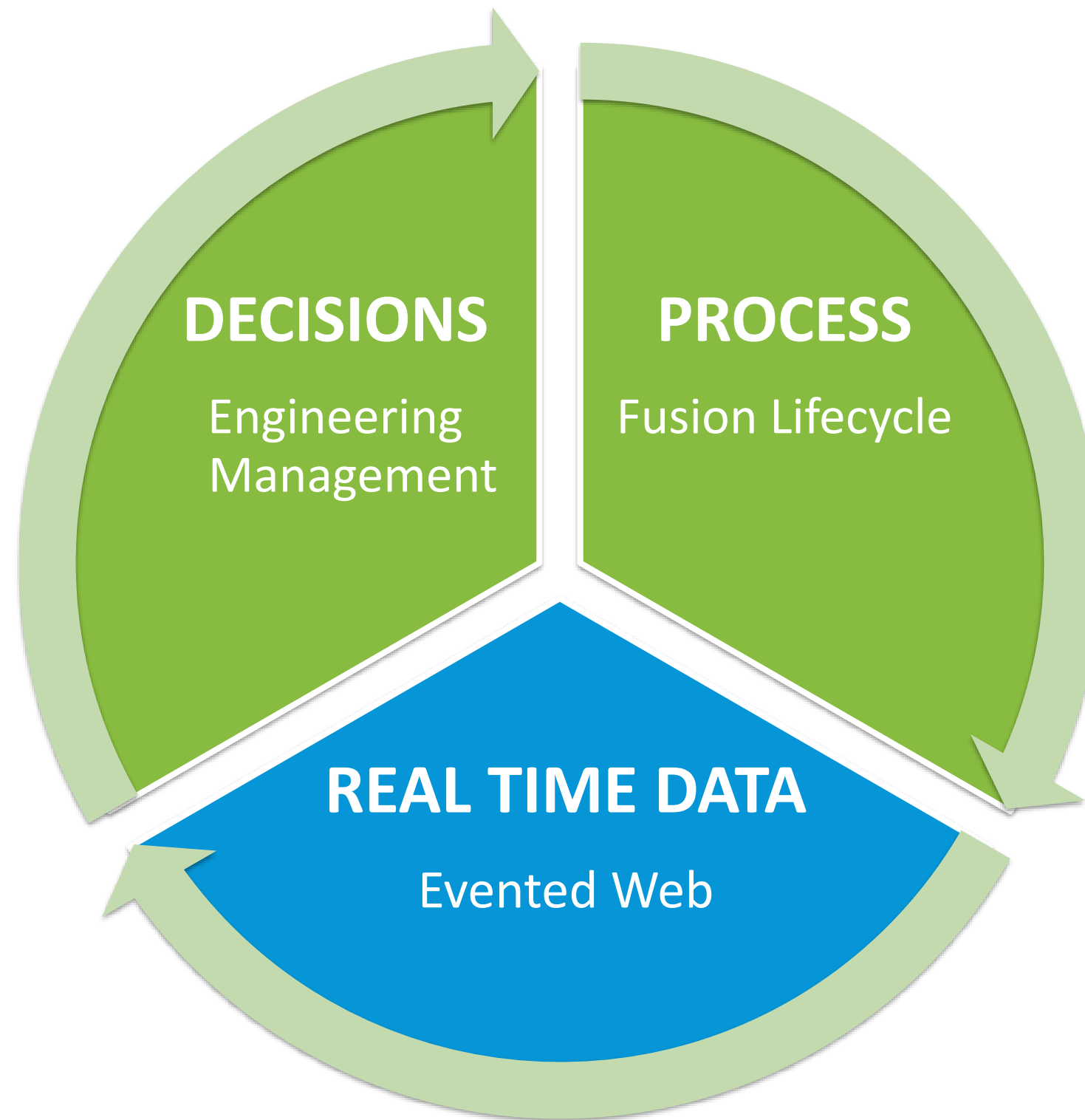
Delivered in 2012



747-8 Aerolift™







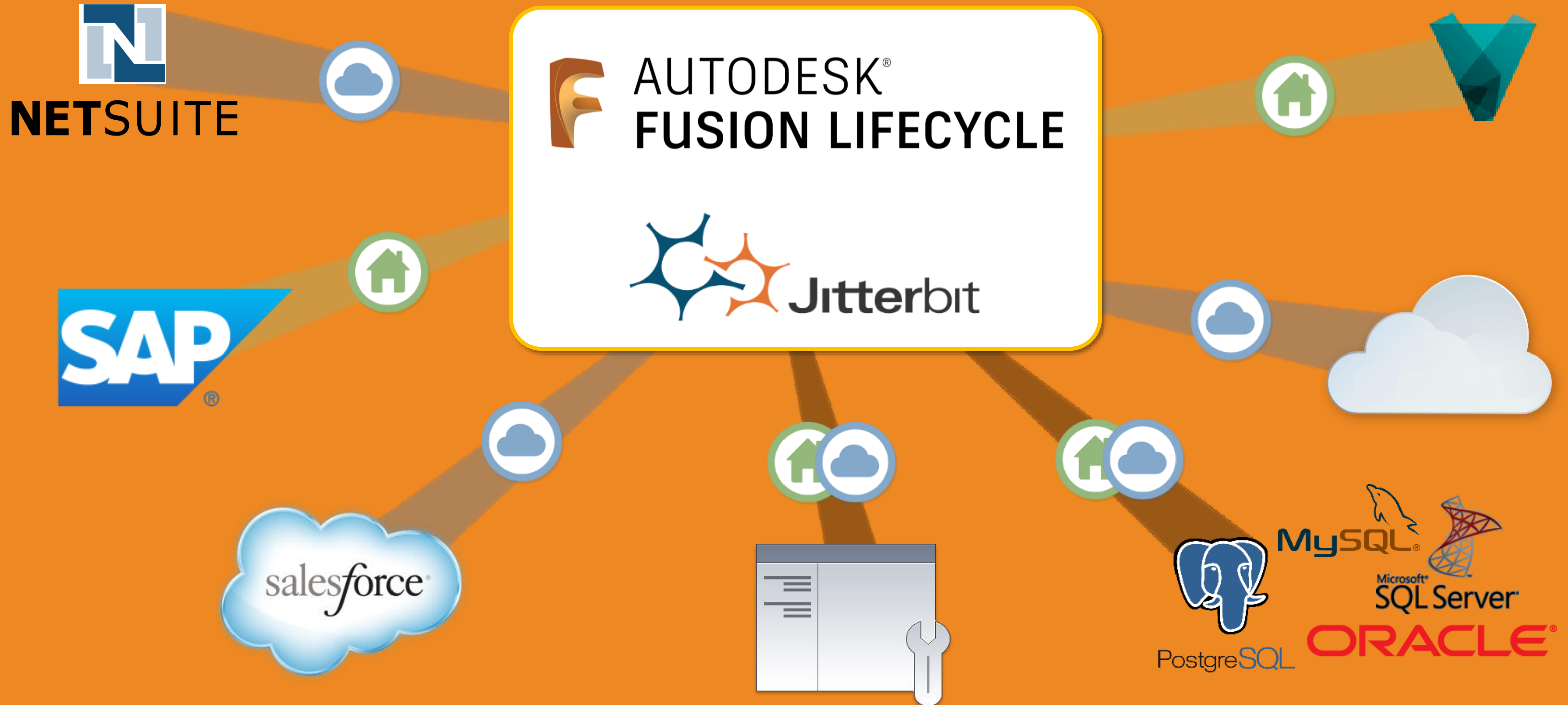
ONE DOES NOT SIMPLY

POINT AND CLICK AND INTEGRATE SYSTEMS


imgflip.com



Integration is Key



Integrate with Everything

 AUTODESK
FUSION LIFECYCLE

[Dashboard](#)

[Workspaces](#)

[Events Manager](#)

[Reports](#)

[Import](#)

[Administration](#)

[Help](#)

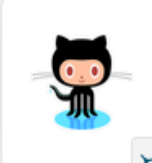

Events Manager



Choose Data Source



Select a Recipe



Setup



CHOOSE THE EXTERNAL DATA SOURCE OR TARGET




Powered by 
GitHub




Powered by 
Salesforce




Powered by 
Zendesk


Powered by 
Geckoboard


Powered by 
Jira


Powered by 
Box


Powered by 
Slack

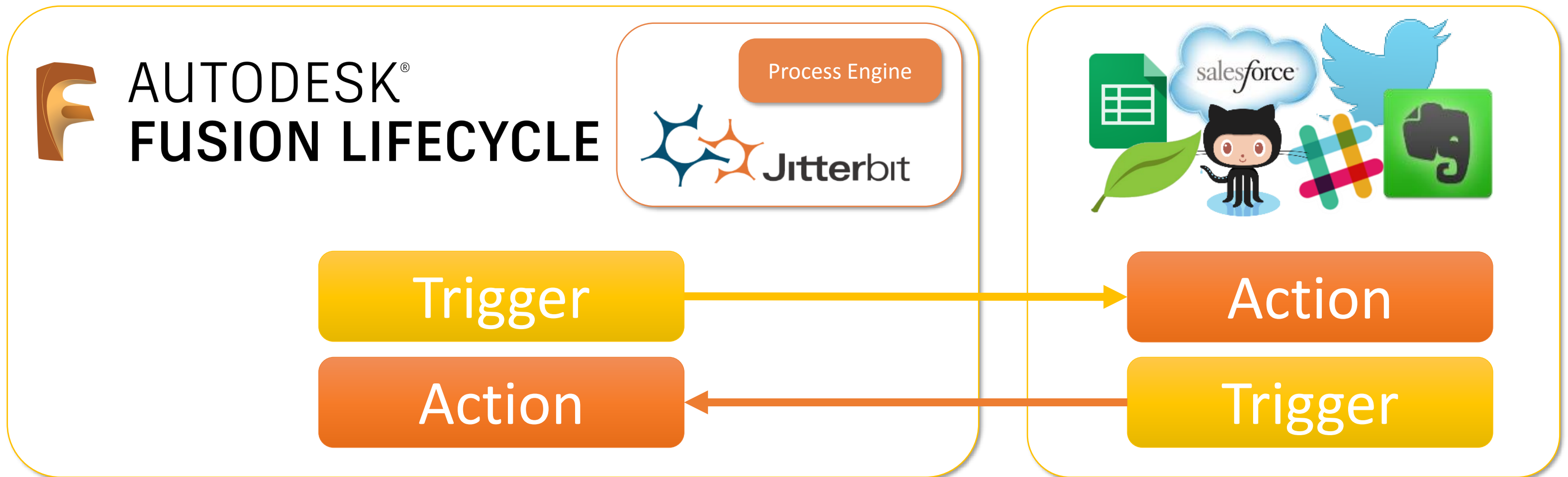

Powered by 
SAP

Evented Web

**Affordable, easy to deploy and use
integration solutions!**

Addresses these major obstacles:

- Costly customizations
- Unique integration implementations
- Numerous complex point-to-point connections



Three Approaches to Integration

- Scripting/Custom API
- Middleware
- Evented Web

Three Approaches to Integration

- Scripting/Custom API
 - Moderate to impossible
 - Timeouts
 - Need a Developer
- Middleware
- Evented Web

Three Approaches to Integration

- Scripting
- Middleware
 - Simple to Complex
 - Need an Expert
- Evented Web

Three Approaches to Integration

- Scripting
- Middleware
- Evented Web
 - Point and Click
 - Need a person who can point and click

Scripting – Sending a message to Slack

- Establish Incoming Webhooks Integration on Slack
- Create Action and Library Script
- Tie to Workflow Transition


The screenshot displays the Autodesk Fusion 360 interface for creating a new action and library script. The top section, labeled "Action", shows the name "AU2016_Slack_Integration_Test" and a description "Testing Slack message posting". Below this, there are tabs for "AU2016_Slack_Integration", "GTI_UserLib", and "GTI_GlobalVars". The main area contains a script with the following code:

```
1 var transitionName = item.workflowActions[0].transition.shortName;  
2 var transitionComment = item.workflowActions[0].comments;  
3 var transitionUser = getUsername(item.workflowActions[0].userID);  
4 var slackMessage = transitionName + ' has been performed by ' + transitionUser + ' on ' + item.descriptor.descriptor + ' \n\n' + transitionComment;  
5 sendMessageToSlack(slackMessage);  
6
```

The bottom section, labeled "Library", shows the name "AU2016_Slack_Integration" and a description "Function to post json message request in a slack channel". Below this, there is a script with the following code:

```
1 function sendMessageToSlack(messageText){  
2 var SlackURL = 'https://hooks.slack.com/services/';  
3  
4 var xhr = new XMLHttpRequest();  
5     xhr.open('POST', SlackURL, true);  
6     xhr.setRequestHeader('Content-Type', 'applicaton/json');  
7     xhr.send(JSON.stringify({"text": messageText}));  
8 }
```

Jitterbit Harmony API



Menu

Welcome Michael

Greenpoint Technologies (101816)

Help

Edit Jitterbit Custom API Services

Base URL: GreenpointTechnologies.jitterbit.net

Service URL: http://GreenpointTechnologies.jitterbit.net/GreenpointDev/1.0/AU2016.html

Summary

Environment: Greenpoint Dev (GreenpointDev)

Description: Used for AU 2016 Demo

Name: AU2016

Service Root: AU2016.html

(i.e. Public API Name)

Version: 1.0

Assigned Operations

Method	Project	Operations to Trigger on Request	Response	Action
ALL	AU2016	MAIN Incoming Webhook	system variable	Edit Delete

Assign New Jitterbit Operations

Authentication

Select Profile: Assign

Profile Name	User Name	Action
No Authentication Profiles Assigned, Anonymous Access Enabled		

Settings

SSL Only: ☐

Enable CORS: ☐

Debug Until: 11/11/2016

Timeout: 60

Seconds

Update Cancel

Assigned Operations

Method	Project	Operations to Trigger on Request	Response	Action
ALL	AU2016	MAIN Incoming Webhook	system variable	Edit Delete

Method Type: -All Unassigned Types-

Project: AU2016

Operation: MAIN Incoming Webhook

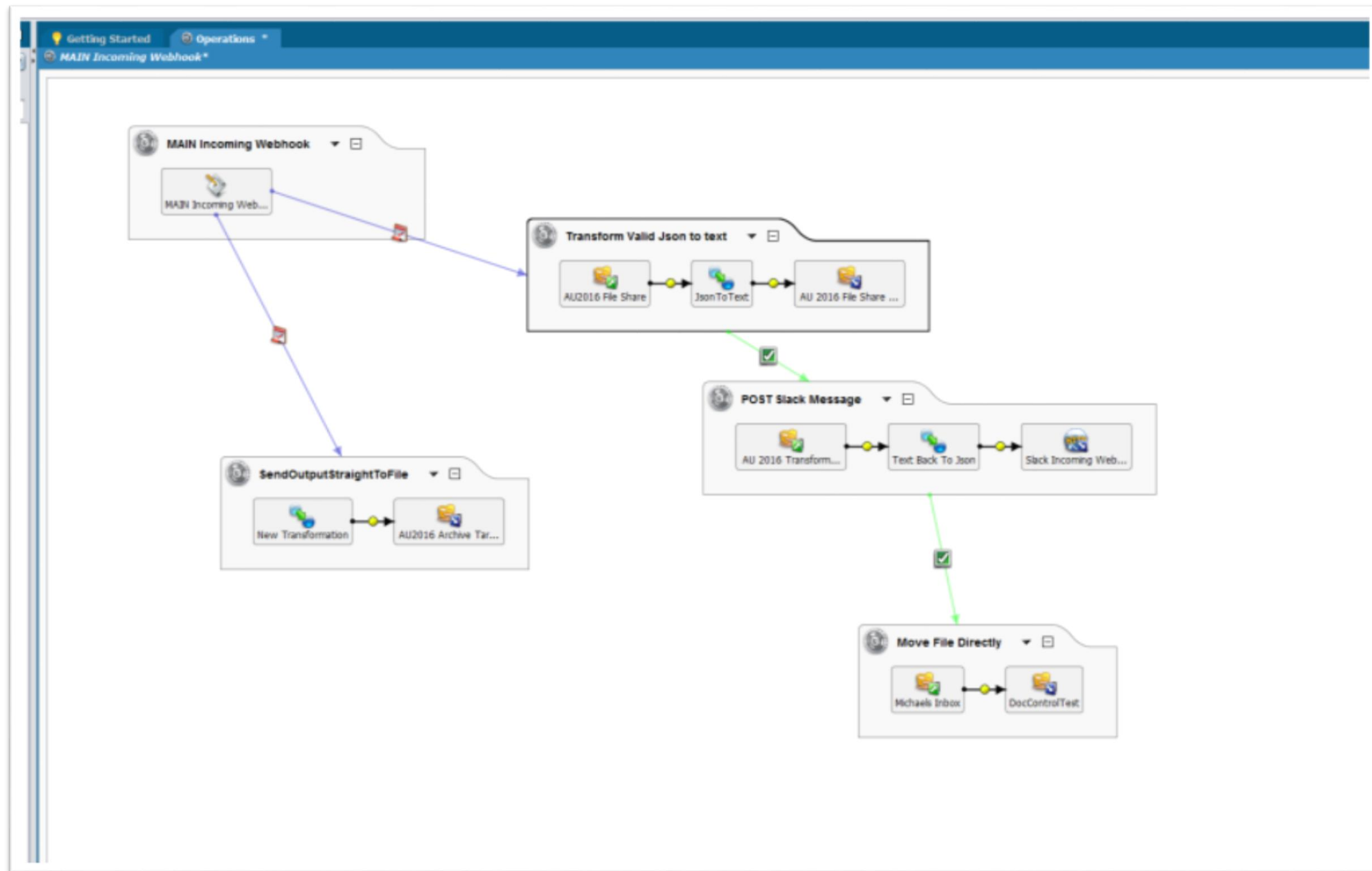
Response: ☐ final target ☒ system variable ☐ no response

Update Cancel

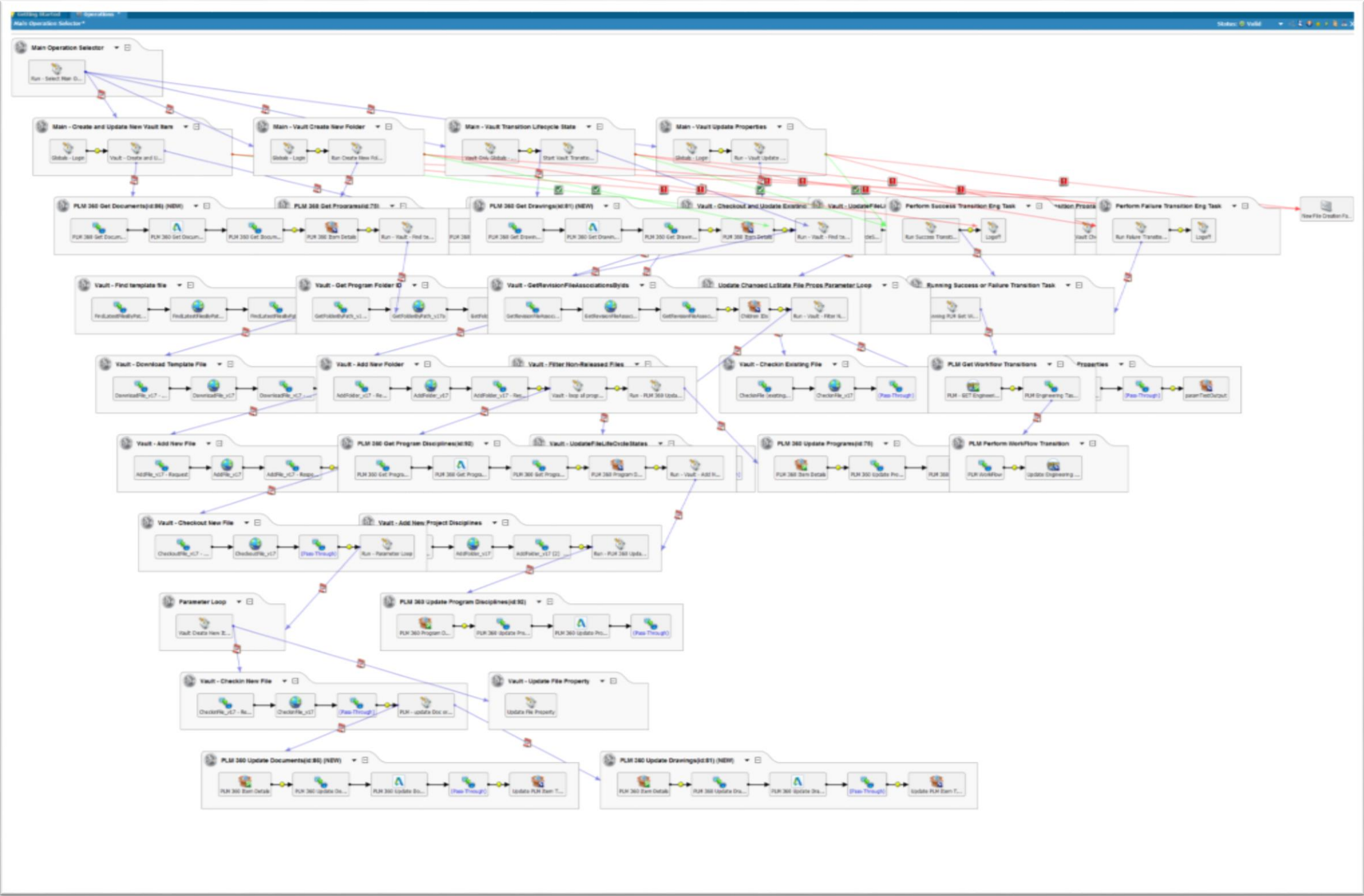
Assign New Jitterbit Operations



Middleware can range from simple



To complex



Jitterbit - Sending a message to Slack

The image displays the Jitterbit interface, showing a workflow and a target configuration.

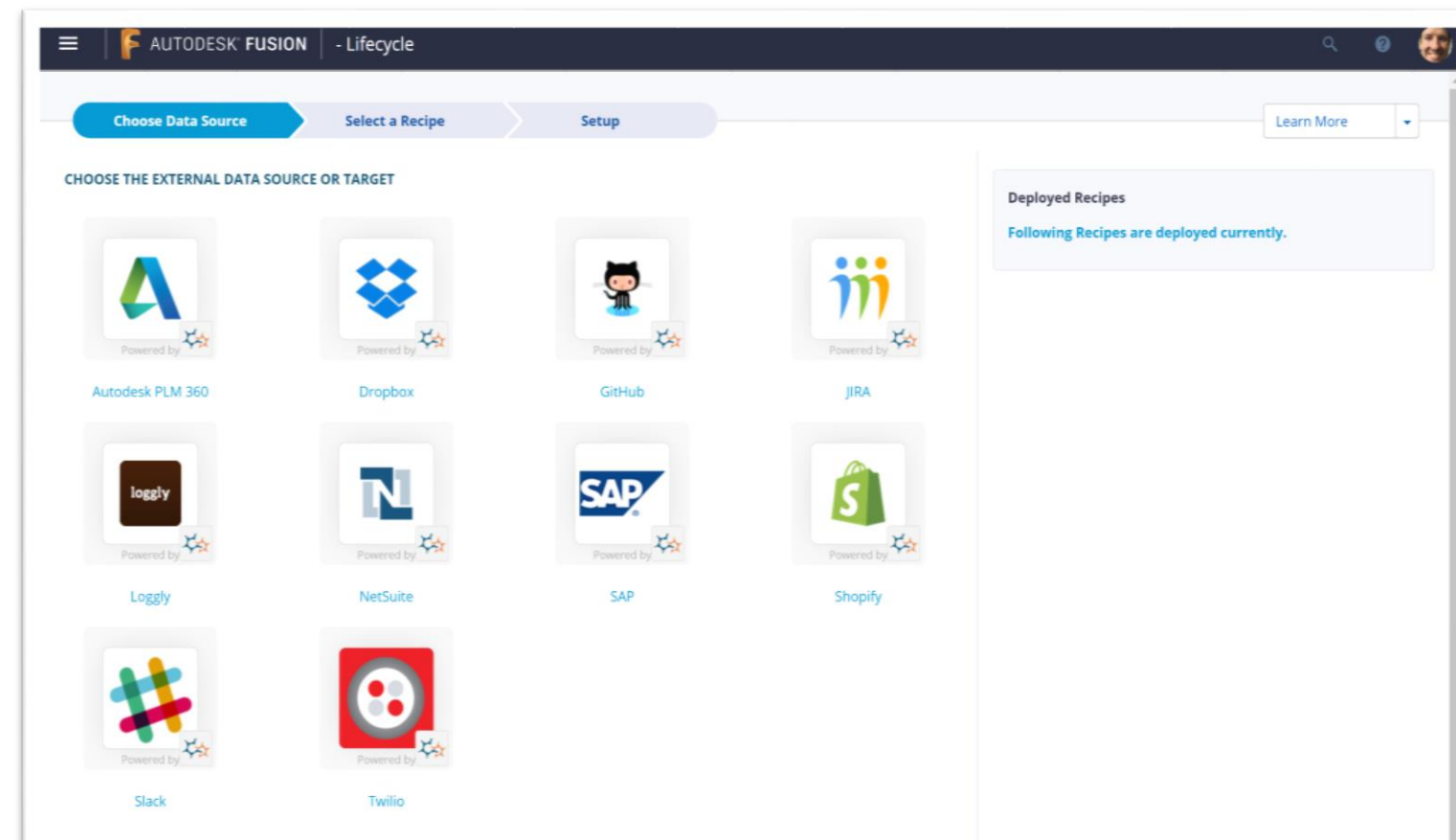
Workflow (Left Panel):

- POST Slack Message** (Workflow Name)
- AU2016 Text Source** (Source)
- Compose Slack Mess....** (Operation)
- Send to Slack Incom...** (Target)

Target Configuration (Right Panel):

- Name:** Send to Slack Incoming Webhook
- Type:** HTTP
- Connection Parameters:**
 - URL:** https://hooks.slack.com/services/
 - Login:**
 - Password:**
 - HTTP Verb:** POST
- Options:**
 - Content-Type:**
 - ☐ Use default Content-type:
 - Content-Type:** application/json
- Security Options:**
 - Certificate:** None
 - ☐ Use Basic HTTP Authentication
- Write response to (optional):** None
- Advanced Properties...**

Evented Web – Sending a message to Slack



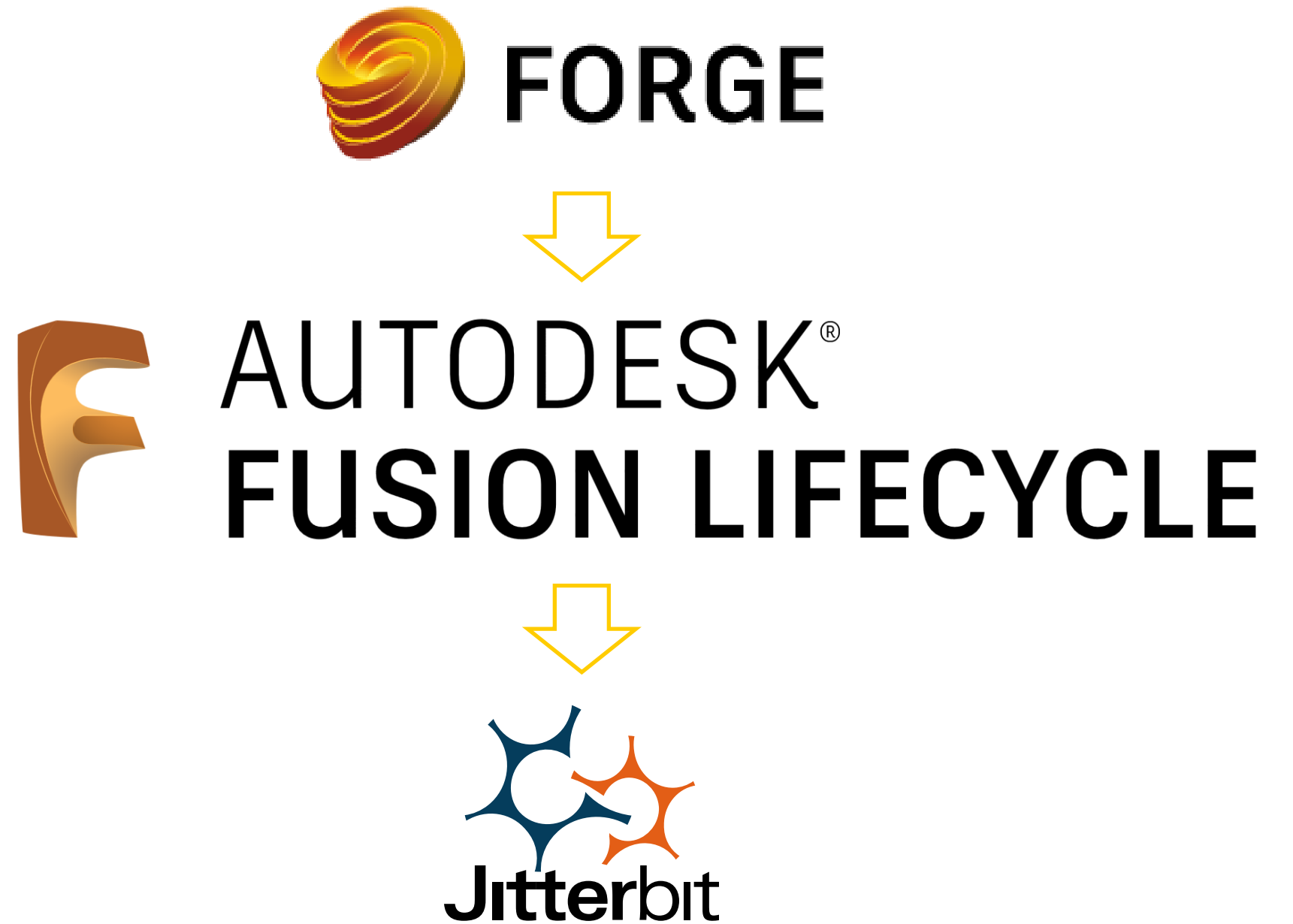
This screenshot shows the 'Setup Connection' screen in the Autodesk Fusion Lifecycle interface. The top navigation bar includes the Autodesk Fusion logo and the text '- Lifecycle'. Below the navigation bar, there are three tabs: 'Back to Select a Template', 'Setup' (active), and 'Learn More'. The main area is titled 'SETUP CONNECTION' and contains a section for 'Setup "Create Slack Message from new PLM Customer" Connection'. This section includes three input fields: 'Name' (with the value 'Create Slack Message from new PLM Customer'), 'Slack Token' (with the value '*****'), and 'Slack Channel' (with the value 'au2016'). A 'Save and Finish' button is located at the bottom right of the section.

There is no simpler way



The ART of Evented Web

- **Authenticate**
- **Register**
- **Transform**



The ART of Evented Web

- **Authenticate**
 - Create an App on [forge.Autodesk.com](https://forge.autodesk.com)
 - Request a token using App Client ID and Secret
 - Enter credentials and receive token
- Register
- Transform

FORGE

APIs ▾ Pricing Support ▾

Michael Pares
michael.pares@greenpnt.com ▾

Create App

Select the APIs you want to use in your app

BIM 360 API ✓ Data Management API ✓ Design Automation API ✓ Model Derivative API ✓

Provide basic information about your app

App Name

App description

Provide a brief description of your app

Callback URL ⓘ

(example) https://www.yoursite.com

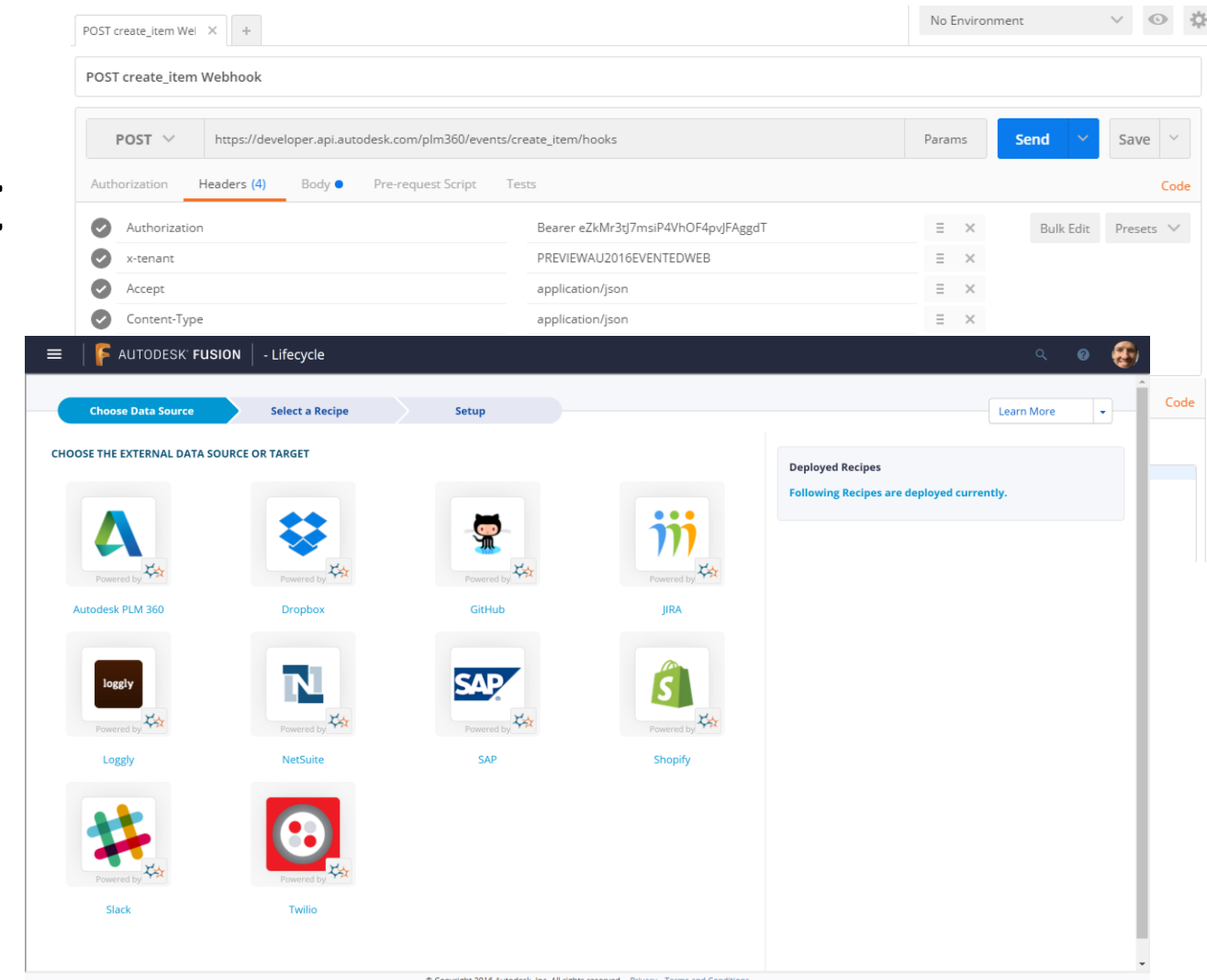
Your Website URL

http:// ▾ Your website URL (Optional)

CREATE APP >

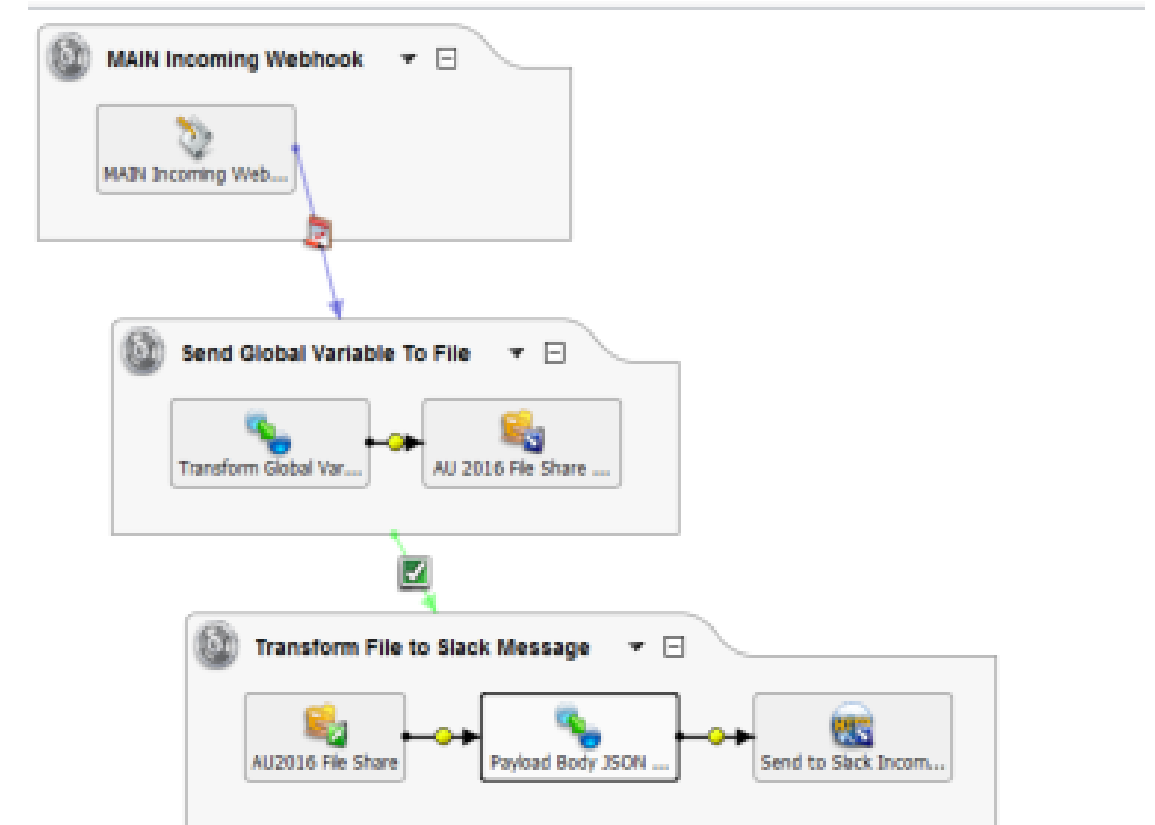
The ART of Evented Web

- Authenticate
- Register
 - Use token in header
 - POST a webhook for a specific event type
 - Specify callbackUrl, tenant name, workspace id in body
 - Specify workflow transition id using filter
- Transform

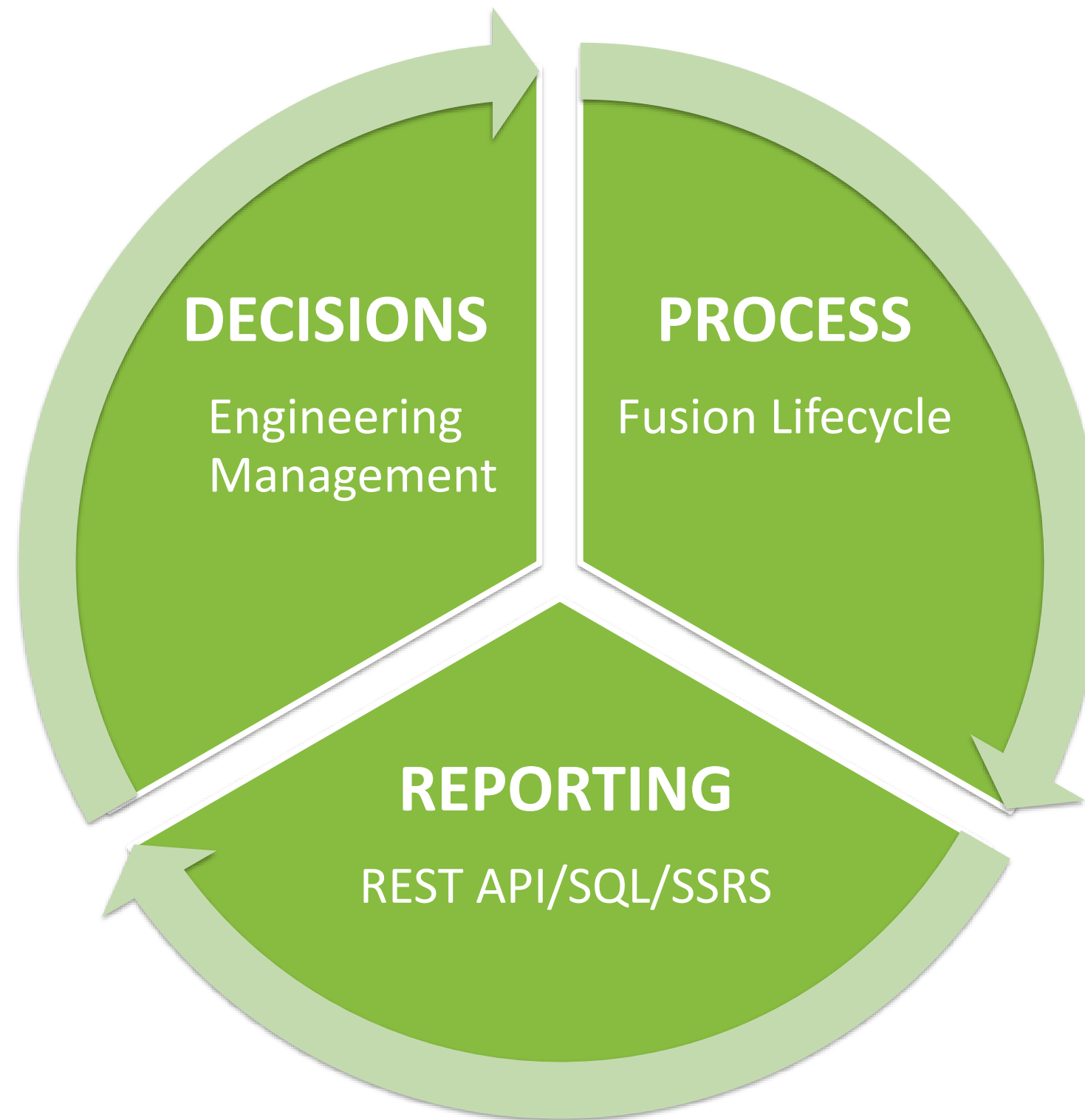


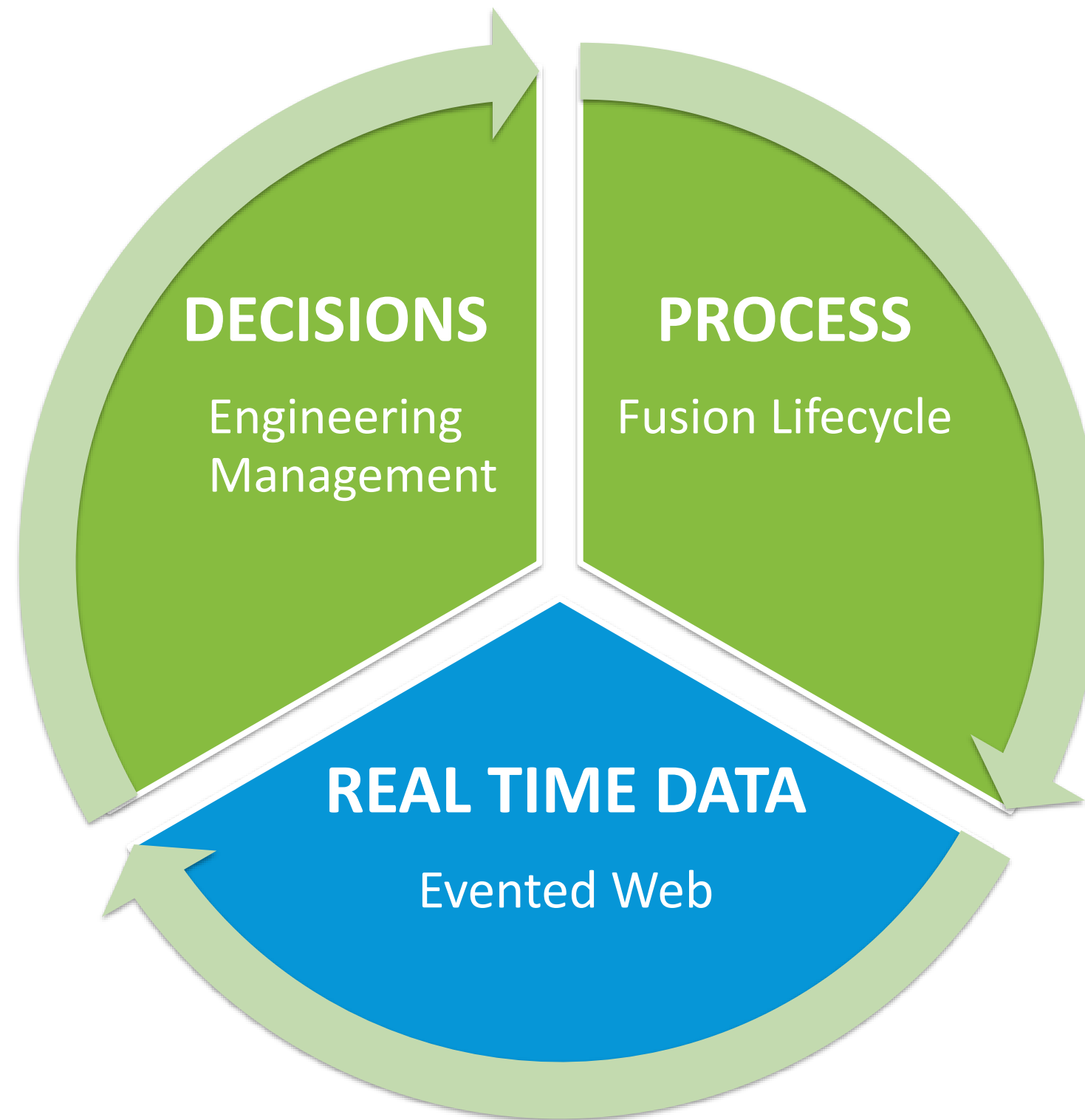
The ART of Evented Web

- Authenticate
- Register
- **Transform**
 - Fusion Lifecycle Triggers an Event
 - Receive the payload at the callbackUrl
 - Transform the payload to utilize as data source
 - Send api requests or data to any target you choose



Demo





Here is what I expect

Help Home

F

AUTODESK® FUSION LIFECYCLE

+

What's New

+

Get Started

+

Learning Center

+

User's Guide

+

Administrator's Guide

+

Developer's Scripting Guide

+

REST API v1 Reference

+

Evented Web API (Preview Only)

+

Reference

+

Autodesk Drive

+

Support

Evented Web API Preview Terms of Service

Overview

Evented Web Tutorial

1. Create an Application

1. Sign in to the Autodesk Forge Platform.

2. Read the overview of the Forge platform.

3. Create an application.

4. Request a 3-legged token with your own type of access token.

GET NEW ACCESS TOKEN

Request a new access token to add it to your list of tokens

On clicking Request Token, you will be redirected to the Auth URL where you can enter the user's credentials and request for a token

Callback URL

https://www.getpostman.com/

Set this as the callback URL in your

Token Name

JBAccessToken

Auth URL

api.autodesk.com/authentication/v1/authorize

Access Token URL

api.autodesk.com/authentication/v1/gettoken

Client ID

Cf98fgOQAnMmjg00aXvebVAoGLh

Client Secret

Scope (Optional)

Grant Type

Authorization Code

Request access token locally

Cancel

Request Token

A token is returned.

ProdAccessToken01

Delete

Use Token

Add token to

Header

token_type

Bearer

expires_in

1799

refresh_token

hVARYV2sIbGwtQ23i075NdAly71HNIDImSrLv4tyY

access_token

C9aABR7NnL3RazAXJ9FeJOec8K2i

id

8f9af1d4-c850-af6c-34bb-1df5d2a9bec

name

ProdAccessToken01

2. Call the Fusion Lifecycle Webhooks End Points

In the Fusion Lifecycle header, add:

the authentication token

the x-tenant context

Accept = "application/json"

HTTP Example

GET https://developer.api.autodesk.com/plm360/events/create_item/hooks/

Host: developer.api.autodesk.com

Headers

Authorization: Bearer [your access token]

x-tenant: [your tenant name]

Accept: application/json

Content-Type: application/json

cURL Example

curl -X GET -H "Authorization: Bearer [your access token]" -H "x-tenant: [your tenant name]" -H "Accept: application/json" -H "Content-Type: application/json" https://developer.api.autodesk.com/plm360/events/create_item/hooks/"

Note: If authentication fails, request a new token.

This isn't helpful for postman. If we are giving a code only example then we should provide the entire example here instead. If we are providing a postman example we should speak to it directly. The code in the link takes away from the simple postman screenshots on this page

Explicitly mention that you can choose any name you wish

Make it clear that the full url is needed when requesting a token.

https://developer.api.autodesk.com/authentication/v1/authorize and

I had to disable this in order to get a token successfully

Using this button was the easiest and fastest way to apply the token to the header.

Had to change this to Header in postman

Include a cURL Example on every page. This was most useful to validate each request. Instruct them on how to view the cURL code in postman.

Help Home

F

AUTODESK® FUSION LIFECYCLE

Sign In

English

Enter a keyword

+

What's New

+

Get Started

+

Learning Center

+

User's Guide

+

Administrator's Guide

+

Developer's Scripting Guide

+

REST API v1 Reference

+

Evented Web API (Preview Only)

+

Reference

+

Autodesk Drive

+

Support

Evented Web API Preview Terms of Service

Overview

POST Webhook

GET Webhook

GET Webhook ID

DELETE Webhook

Evented Web Tutorial

POST Webhook

Create a webhook.

Endpoint

http:post:: \$BaseUrl/events/{eventType}/hooks

Request Headers

Header	Required	Value
Content-Type	Yes	application/json

Parameters

Parameter	Description
callbackUrl	The URL at which you want to receive the API push for your request. Example: http://mycallback_url.com:8082
{eventType}	The event type that triggers the callback; for example, create_item or workflow_transition.
filter	Refine the request based on event ID; for example: YOURSITE.9.388
scopes	The tenant is not WEBHOOKSDEV. The tenant is YOURSITE as suggested in the example.

Example

In this example, a webhook is created in workspace 9. A filter is used to specify that the webhook applies to transition ID 388. The tenant is WEBHOOKSDEV (must be upper case in the payload).

```
**Example success request**  
POST https://developer.api.autodesk.com/plm360/events/workflow_transition/hooks  
{  
  "filter": "[?@.transitionID == 'urn:mycompany.plm:tenant.workflow.transition:YOURSITE.9.388']",  
  "callbackUrl": "http://mycallback_url.com:8082",  
  "scopes": {  
    "workspace": "urn:mycompany.plm:tenant.workspace: YOURSITE.9"  
  }  
}
```

Response

HTTP Status Code	Reason
201 Created	Webhook created successfully

You can find the parameterized ID of the new hook in the Location header of the response; for example:

https://developer.api.autodesk.com/plm360/events/workflow_transition/hooks/ac6af2c0-c08d-234x5-2f5x-1bc2c3d6f9f6

Parent topic: Reference

What Gartner says

Strategic Planning Assumption

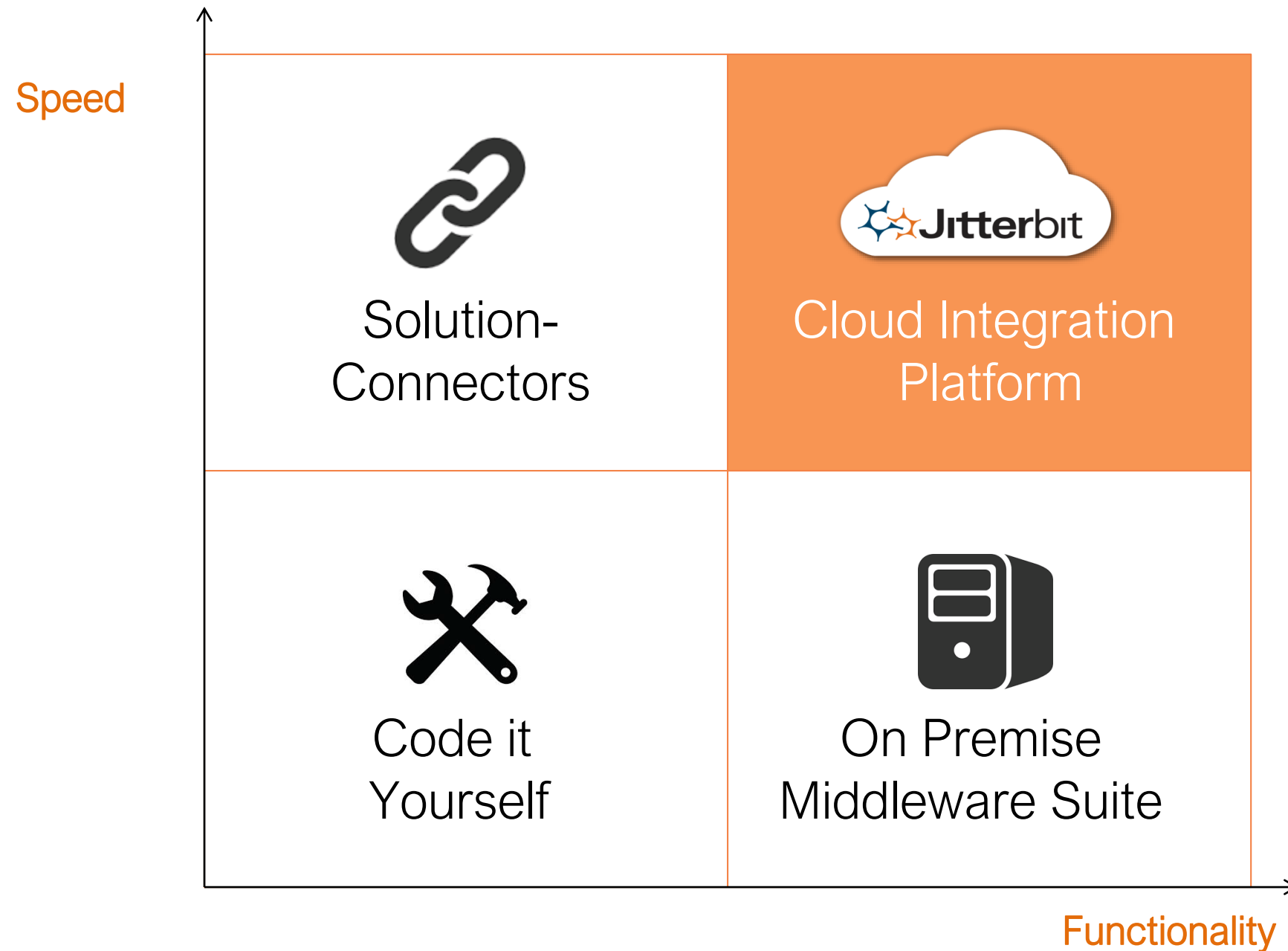
By 2019, iPaaS will be the integration platform of choice for new integration projects, overtaking the annual revenue growth of traditional application integration suites on the way.

Market Definition/Description

Integration platform as a service (iPaaS) is a cloud service that provides a platform to support application, data and process integration projects, usually involving a combination of cloud-based applications and data sources, APIs and on-premises systems. Integration PaaS delivers some combination of the capabilities typically found in enterprise service buses, data integration tools, B2B gateways, managed file transfer products and API management platforms. IT departments, line-of-business developers, mobile application development teams, **application teams and even business users (aka "citizen integrators") leverage these capabilities to develop, execute and manage integration interfaces (or "integration flows").**

Source: Gartner Magic Quadrant for iPaaS 2016

The Options: Four Choices for AUTODESK. Integration

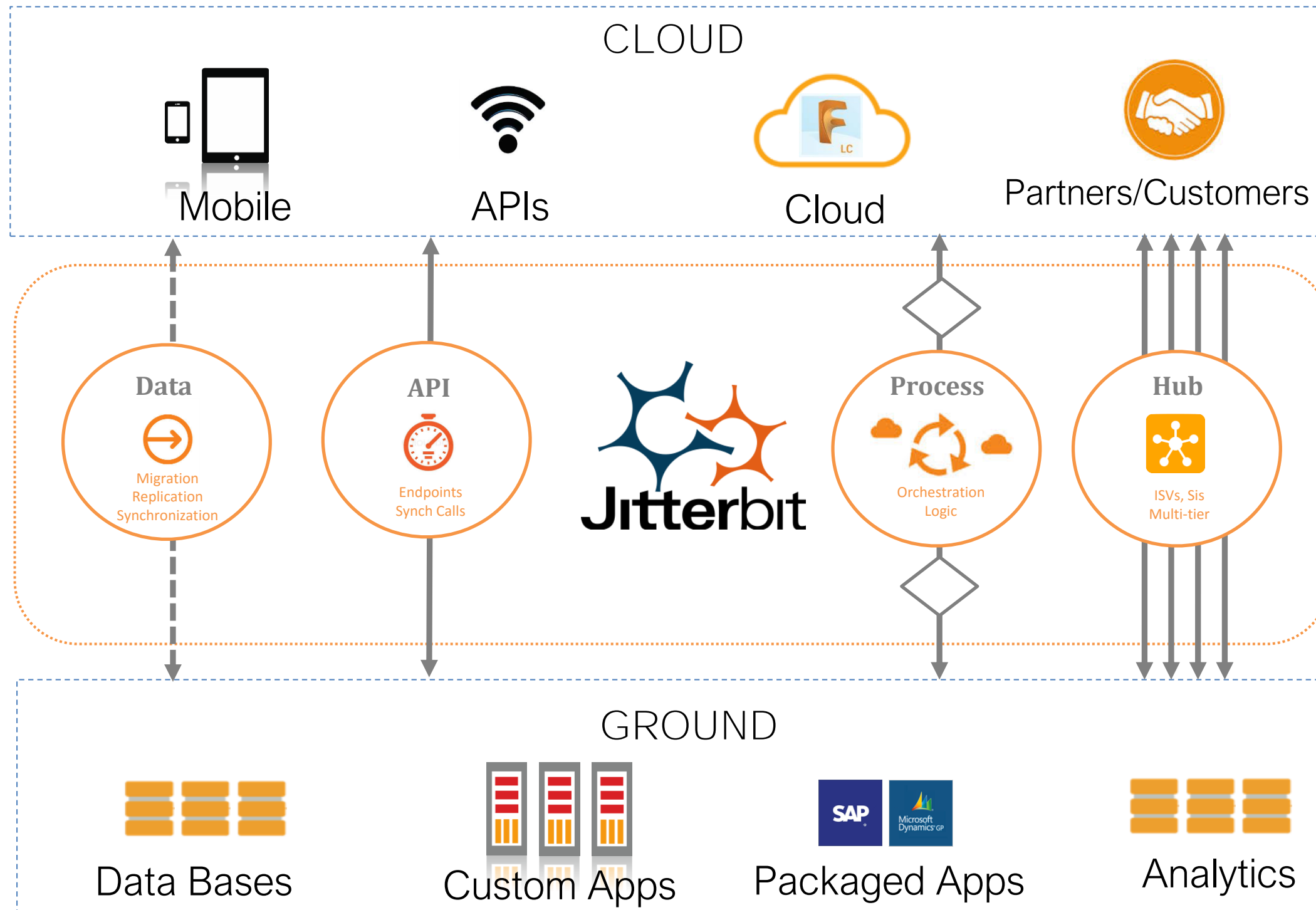


Modern Cloud Integration

- ✓ Most advanced Cloud platform
- ✓ 75% Live in less than 30 days
- ✓ 60% Less than 1 FTE to maintain
- ✓ 80% Real-time Projects

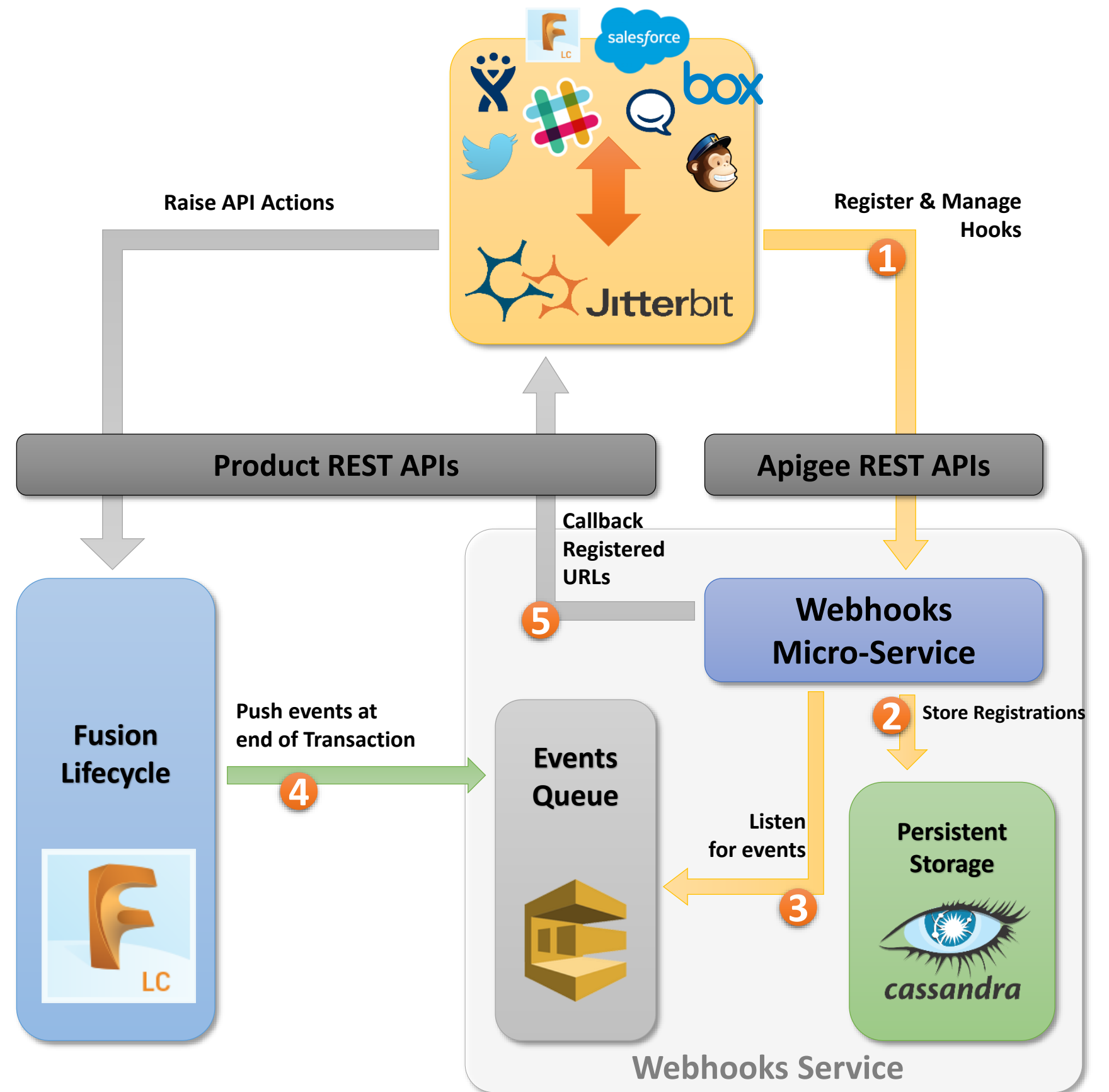
“The **consolidation of middleware has simply failed**...deep and complex capabilities for on premises integration represent the exact opposite of the simplicity expected from cloud-based solutions”

Support for all four modern integration patterns

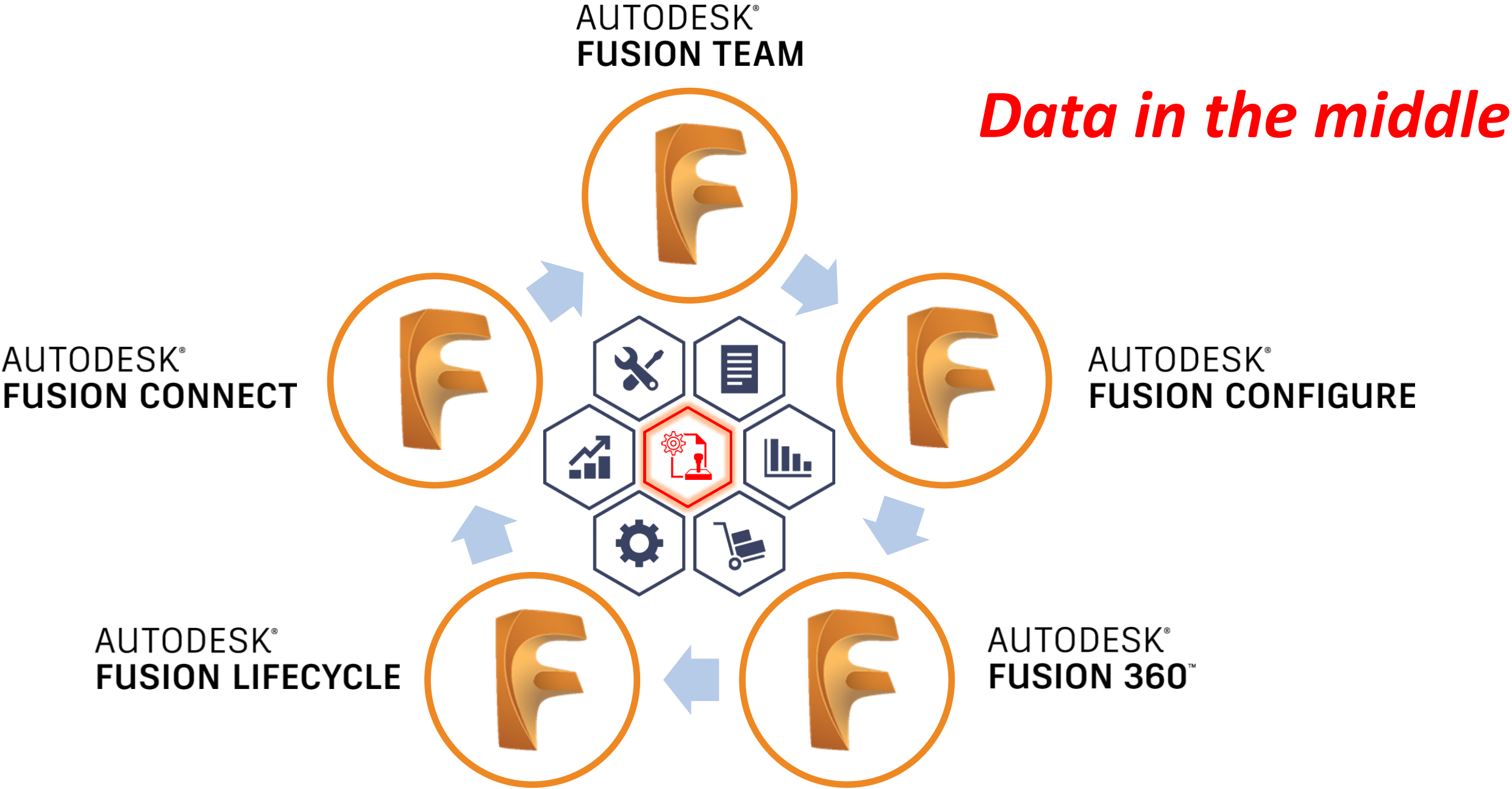


Evented Web Infrastructure

- **Embedded UI**
 - Citizen Integrators App Portal
 - Admin-only Access Control
 - Powered by Jitterbit
- **Webhooks Infrastructure**
 - Webhooks Service
 - Message Queuing Service
 - Cassandra Data Storage
- **Webhooks Bundle**
 - Hooks API on Apigee
 - Raise Event Triggers
 - Invoke ReST V3 Actions



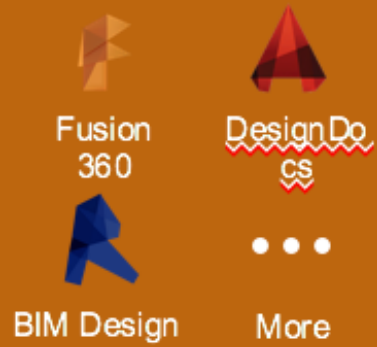
Connected Experience





FORGE

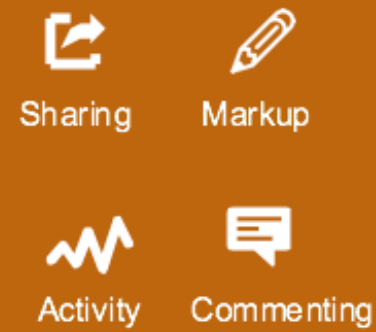
Design



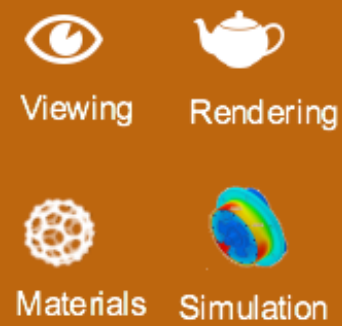
Manage Data



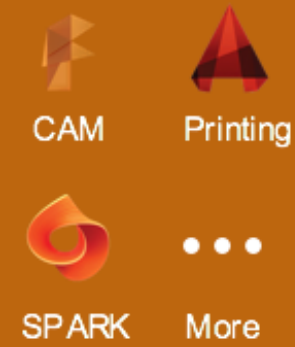
Collaborate



Visualize / Simulate



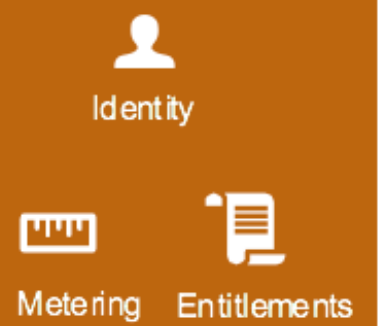
Make



Integrate/Extend



Business Enablement



Foundation Services



Access Control



Big Data Platform



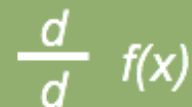
Object Store



Transfer Avoidance



Service Message Bus



Derivative Service



Translate



Machine Learning

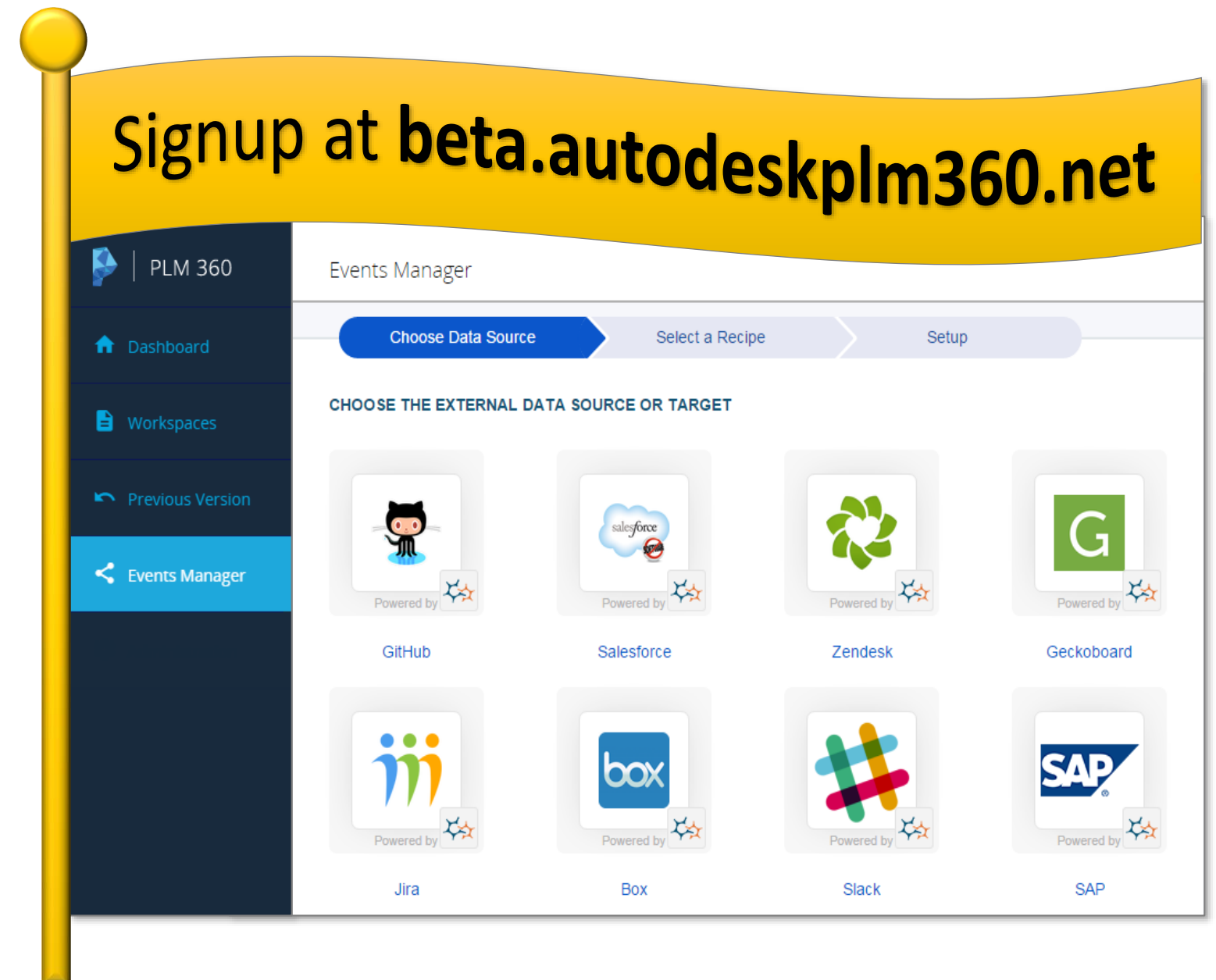


Event Services

Evented Web Coming Soon!!



- **Event Manager UI**
 - In-Product Cloud App Integrations
 - Powered by Jitterbit
- **Native Webhooks API**
 - Custom App Integrations
 - POST/GET(s)/DELETE hook endpoints
- **Supported Triggers**
 - CREATE_ITEM
 - WORKFLOW_TRANSITION
- **Supported Actions**
 - Future V3 ReST API endpoints



How did I do?

- Your class feedback is critical. Fill out a **class survey** now.
- Use the AU mobile app or fill out a class survey online.
- Give feedback after each session.
- AU speakers will get feedback in real-time.
- **Your feedback results in better classes and a better AU experience.**



