



TIBCO Cloud Workshop

Virtual Workshop via Zoom

28th May 2020

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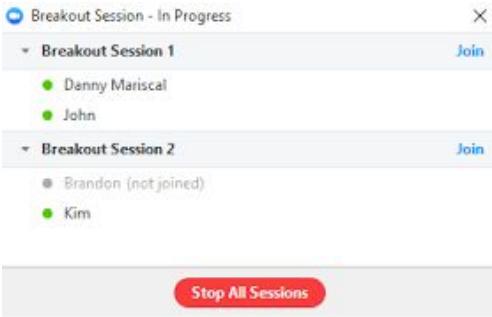
About TIBCO

TIBCO Software unlocks the potential of real-time data for making faster, smarter decisions. Our Connected Intelligence Platform seamlessly connects any application or data source; intelligently unifies data for greater access, trust, and control; and confidently predicts outcomes in real time and at scale. Learn how solutions to our customers' most critical business challenges are made possible by TIBCO at www.tibco.com.

Agenda & Timings

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13:00	10 Minutes	Welcome & Introduction to the team	Bryn Garton
13:10	20 Minutes	Driving agile innovation across the Enterprise with the TIBCO Cloud Platform and our Event Based and API-led connectivity capabilities: Opportunities, challenges of connectivity and integration in today's reality	Bryn Garton
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Virtual Delivery / Digital Etiquette



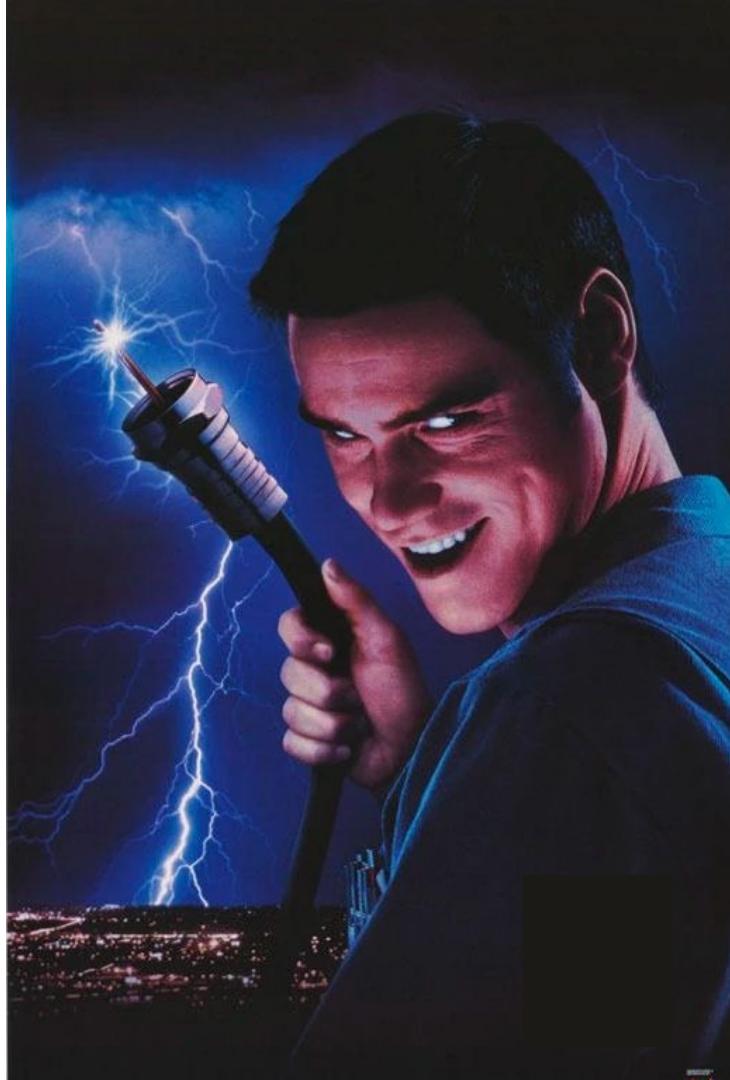
- We'll be using Video - but don't feel pressured to do so yourself!
- We'll be using a single Zoom session for the majority of the time. Breakout rooms will be available for individual help during the Labs
- Do Mute yourself when not speaking as this helps with the audio experience
- Use the "Raise Hand" button if you want to ask a question, but want to wait for a convenient point
- Put a question in the Chat window
 - Send it to everyone if you think the other participants would benefit
- Or just Unmute yourself and ask!



The important stuff

Wi-Fi

Username: **Tibco_Guest**
Password: **Visitor100**





Martyn Bedford

Senior Solutions Consultant

I have had the benefit of working for TIBCO for the last 12 years, and that has allowed me to work with a wide variety of customers – from the largest Banks, Insurance and Travel Companies in the world, to the smallest innovators and disruptors.

I have a broad experience covering all the major TIBCO capabilities including Integration, Business Process Management, Analytics , Data Science and Data Management



Guy Murphy

Principle Digital Advisor

25 year veteran of the industry, I have worked in every major sector with some focuses on Telco, Banking and Retail/CPG. I've spent the last decade acting as a Strategic Architect supporting both vendor sales teams and clients in various dimensions of digital transformation, from legacy SAP strategies adopting SOA and mobile to some of the most advanced API, hybrid strategies that have deployed agile/multi-modal operating models that have been the bench marks for Gartner and other analysts when defining industry trends. Also acted as an internal change agent on developing product, sales and marketing strategies. Can often be seen traveling the world with a Digital Camera.



Mark Mussett

Senior Solutions Engineer

Veteran IT specialist with a career spanning 21 years in the Integration industry. Joined TIBCO in 2005, with 11 years in Professional Services as Technical Architect and 3 years in Pre-Sales organisations working with our Connected portfolio of products.

Expertise in API (Mashery), Integration (BusinessWorks, Flogo), Messaging (JMS, FTL, and RV), and Golang programming.



Dave Winstone

Senior Solutions Engineer

I have had the benefit of working for TIBCO for the last 14 years, and that has allowed me to work with a wide variety of customers – from the largest Banks and Telco's in the world, to the smallest innovators and disruptors.

I specialise in our “Connect” portfolio, allowing me to work with our customers on ensuring the right solutions and architectures are employed to provide the base for Digital Transformation.



Bryn Garton

Senior Solutions Engineer

Except for a brief spell as an Electrical Engineer my entire career has been spent working for software companies. For the majority of that time I have worked in the field of middleware across its many generations, with roles in Consulting, Software Development, Product Management and most recently Presales.

Since joining TIBCO in 2005 I have worked with TIBCO's customers across many industry verticals including Finance, Energy, Logistics, Utilities and Government.



Todd Bailey

Director of Product Management

If there is a better solution, I love the challenge of finding it. Discovering new and innovative ways to provide the most favorable user experience and helping people be as productive as possible: these are my passions. This arises from 20+ years of experience, firmly rooted in the hospitality industry, where the guest experience is of utmost importance.

Over the past decade I have focused on integration in this connected world, while still remaining true to my roots. Whether it was my past position as Senior Director of Product at Lanyon (acquired by Vista Equity Partners), or my current one as Platform Product Director at Scribe and product owner of Scribe Online, I strive to solve integration challenges and provide an exceptional user experience, having fun doing what I love.



Rishikesh Palve

Senior Product Manager

I am a Senior Product Manager at TIBCO. I have over 9 years of experience working in various roles across different groups such as P&T, Customer Engineering, PreSales and Product Management.

I take keen interest in APIs, Microservices, Event-driven architectures and Cloud-Native ecosystem. At TIBCO, I am responsible for building product roadmap and vision for our Cloud-Native, Event-driven product capabilities that are part of the TIBCO Connected Intelligence platform.

Customer Challenge

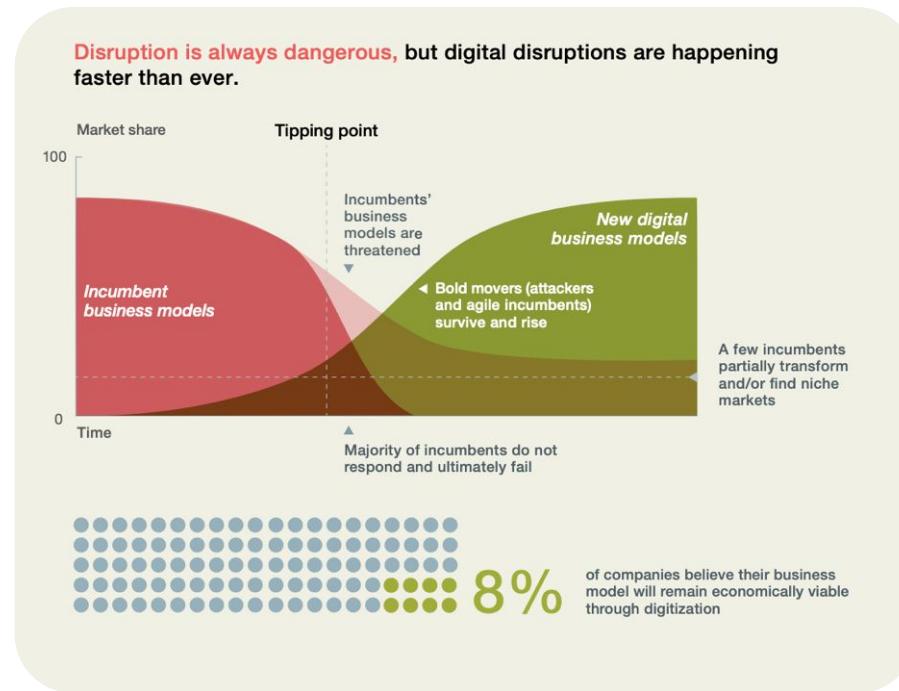
How Do You Create & Accelerate Value in the Digital World

TIBCO's Value To Our Customers

Delivering Connected Intelligence through our Digital Business Platform

Digital disruption is happening *faster than ever*

- Incumbent Models are under attack
- Agile Movers Survive & Rise
- New Models Created
- <8% believe “their biz model will remain eco viable through digitalization”



McKinsey Report available at:

<https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/Why%20digital%20strategies%20fail/Why-digital-strategies-fail.ashx>

Digitally viable
disruption
is coming
sooner than
you think

TIBC

By 2025, almost a third of total global sales will come from **ecosystems**.



68% Traditional economy

- Platforms facilitate Ecosystem Business Models
- = Business Value
- = Agility
- Businesses must be Open, API(s) will create the new models assisting new models & opportunities

Only TIBCO can guarantee its customers digital sovereignty by providing:

Comprehensive Platform

Capabilities for Digital Execution

Innovate and collaborate without constraints

Accelerated Innovation

Simplification, Automation & Agility

Deploying anywhere and everywhere at pace

Freedom

Choice & Scale

Operational Excellence From experimentation to mission critical

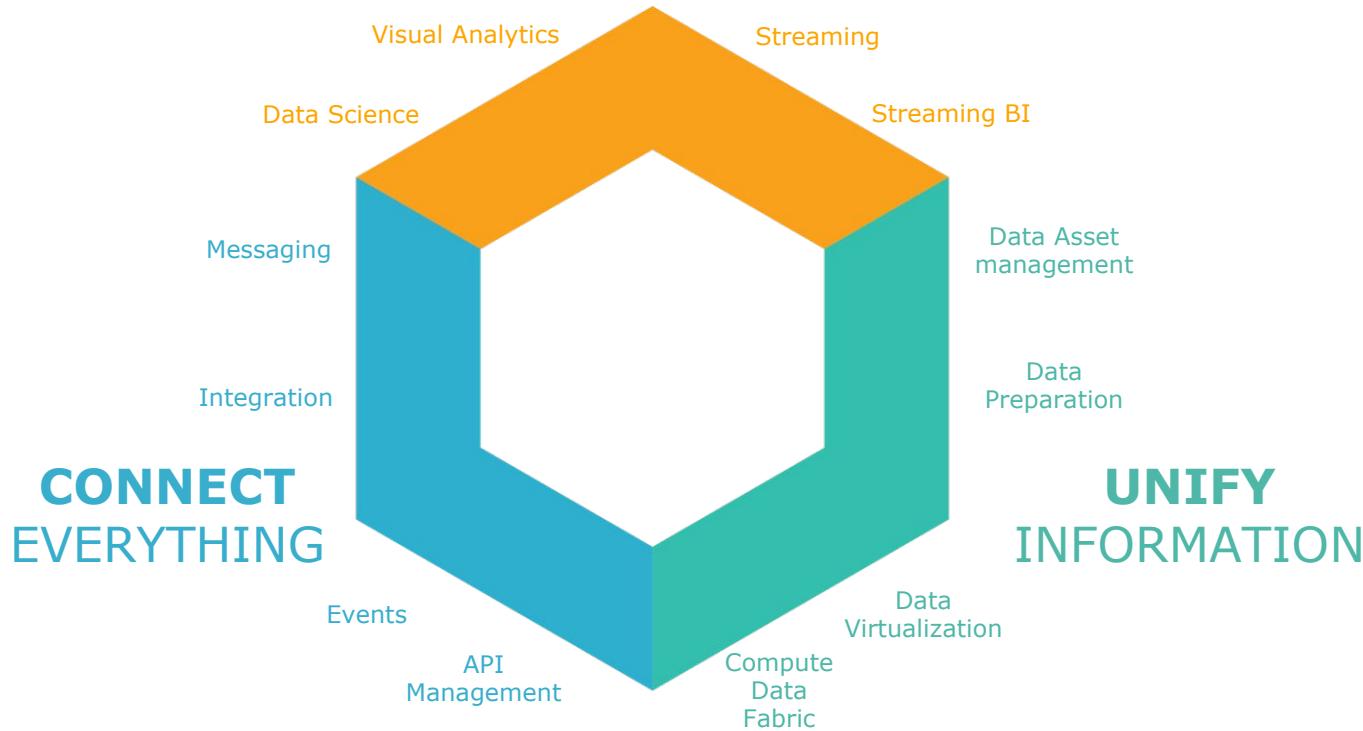


Digital is Built On This Foundation..

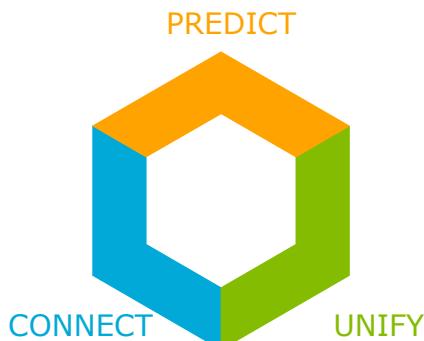


Open, Independent Platform

PREDICT



Built on Strong Core Principles



Cloud
Native



Open
Platform



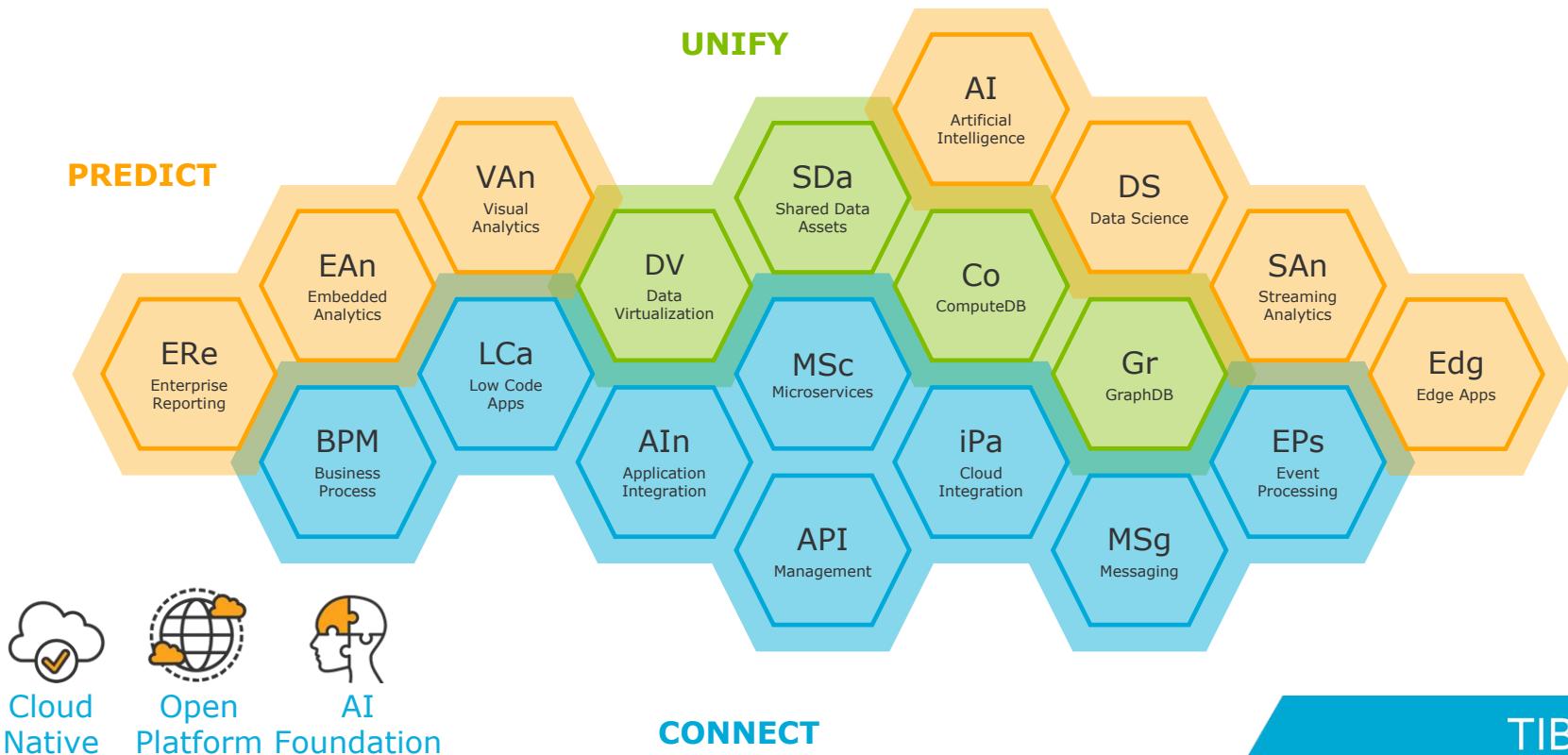
AI
Foundation

- Re-architected core capabilities as cloud-native 'engines'
- Deliver the same core cloud-native components across workloads
- Significantly reduced or removed any proprietary dependencies
- Devops/Cloudops/Dataops support delivered as open source

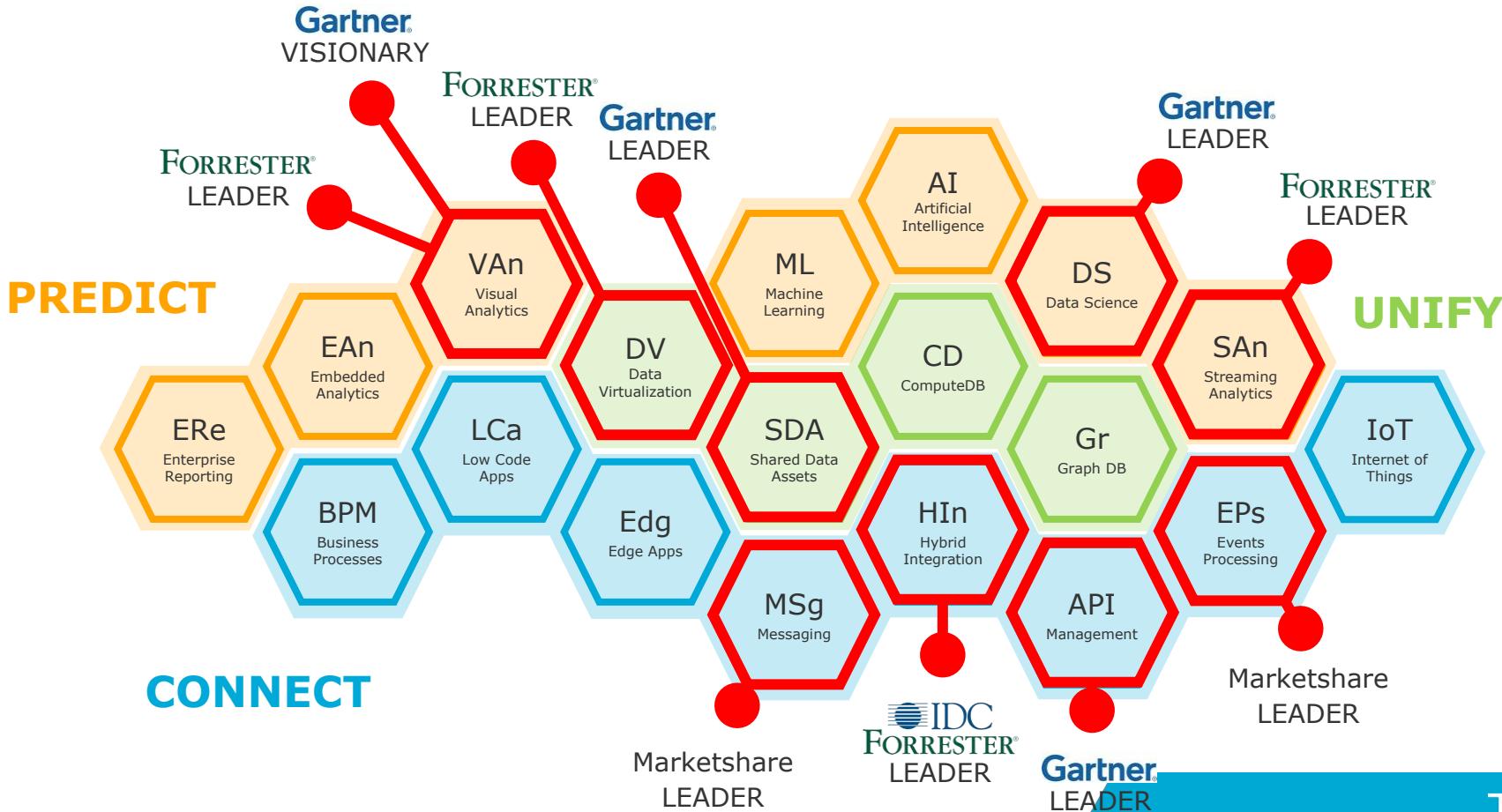
- Provide customers the same tools used internally to extend capabilities
- Open source delivery of new key capabilities like Project Flogo
- Continued adoption of enterprise and emerging open source (e.g. Kafka)
- Increasingly active engineering participation in larger scale OSS projects

- Application of AI principles and technology across capabilities to enhance workflow and user productivity
- Integration to leading AI frameworks both for real-time projects (Flogo with TensorFlow) as well as Data Science modeling and design
- Increasing use of AI as a platform for developing new capabilities such as adaptive business logic and execution

How TIBCO delivers the Connected Intelligence Vision

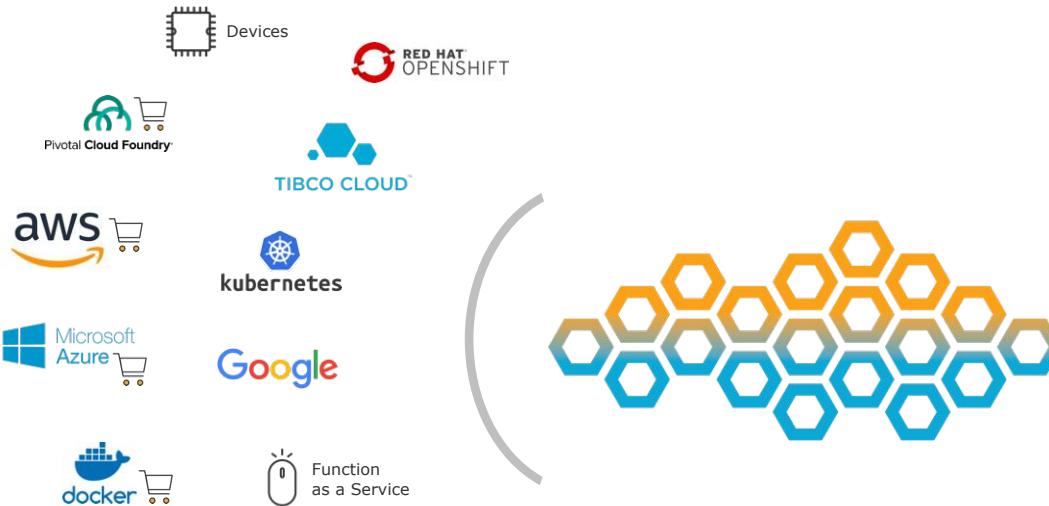


Market Leadership Across The Platform



Available anywhere, everywhere

TIBCO Connected Intelligence



 marketplaces proposing
TIBCO Cloud services

Open Source

Give developers easy access to core capabilities of the Connected Intelligence Cloud

SaaS

Quickly get up and running with a fully TIBCO hosted and managed service

Hybrid

With all options for self-host, multi-cloud, or edge deployments

Dynamic Cloud

Optimize cost by dynamically scaling on cloud infrastructure such as Amazon Web Services

API-Led Strategy Is the Connective Tissue of Digital Business

App Dev & Integration

Internal Agility
Standardize services



Cloud-native
Microservices & microgateways



Integration
SaaS and Hybrid Services



Digital Business Platform

Channel Expansion
New Distribution



B2B & B2C Innovation
Partner Collaboration

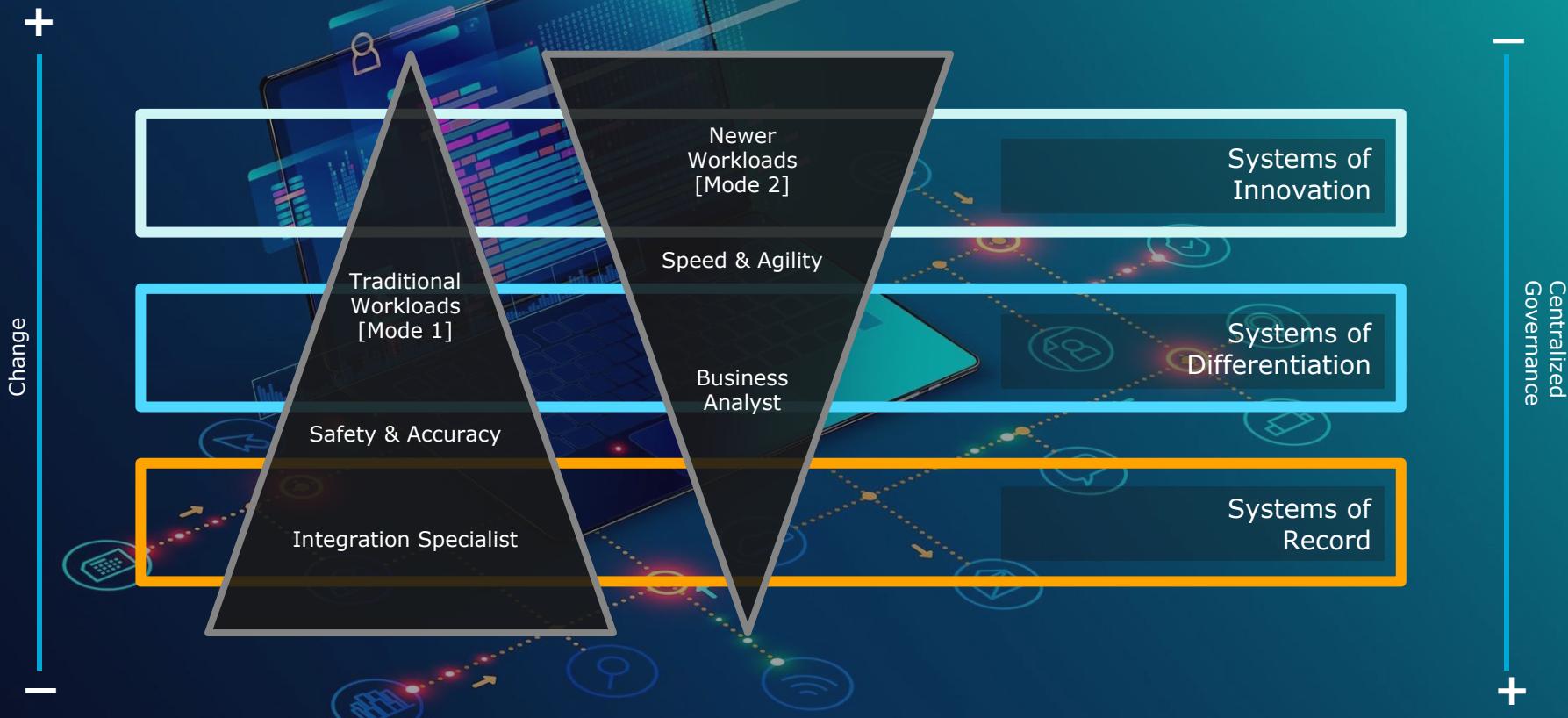


New Business Models
Becoming an ecosystem platform



Enterprise Data, Services,
and Applications

The BiModal approach to API development



The BiModal approach to API development APIs for Differentiation and Innovation



TIBCO Connected Intelligence Cloud

Capabilities

PREDICT



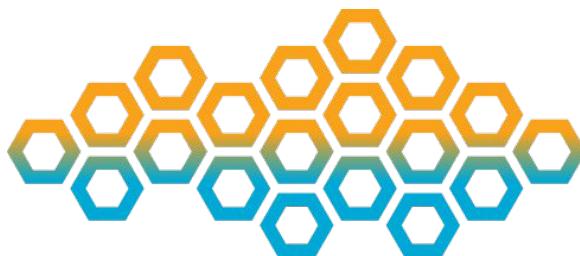
Data Management



Advanced Data Visualization



Streaming Analytics



Shared services



Billing



SSO



Account Management



Customer Servicing



Service Registry



Integration and
API
Management



Messaging and
Events
Processing



Digital
Process
Automation

**INTERCONNECT
EVERYTHING**



TM

TIBCO CLOUDTM Platform

TIBCO[®]

TIBCO Cloud in a Nutshell



ACME Parent Production ...

Oregon



Todd B

Home

Team Members

Subscriptions

Settings

Downloads

Welcome to your TIBCO Cloud™



Discover a new way
to get started with
the power of TIBCO
Cloud



TIBCO®

Capabilities available on TIBCO Cloud

- TIBCO Cloud Nimbus
- TIBCO Cloud Live Apps
- TIBCO Cloud Integration
- TIBCO Cloud Mashery
- TIBCO Cloud AuditSafe
- TIBCO Cloud Events
- TIBCO Cloud Messaging
- TIBCO Cloud Spotfire



TIBCO Cloud Services

At-a-Glance



High Availability



Disaster Recovery



Security, Privacy, & Compliance



PKI Management



Role-based Access



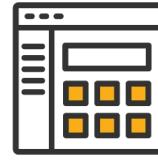
Auditability



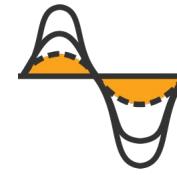
Service Level Agreement



Reporting



Operational Dashboard

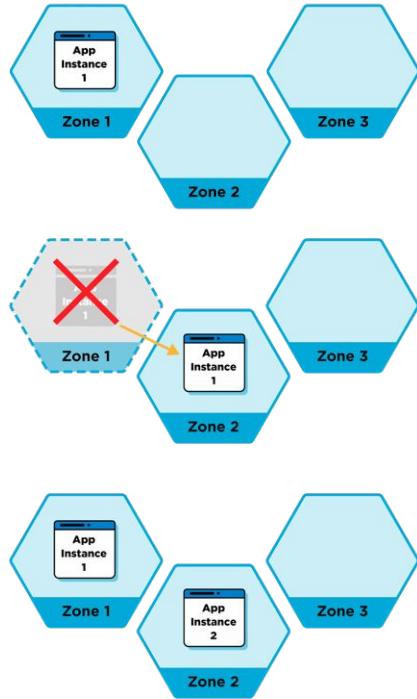


Transaction Tracking



Support

High Availability

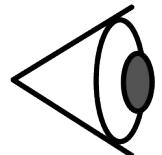


- Each application is executed in an availability zone automatically selected based on available resources.
- Automatic switch-over of apps to new zone if they go down or stop reporting status.
- Scale apps across multiple zones for high availability - load is distributed evenly by the system.

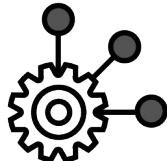
Security, Privacy and Compliance



Customer traffic, secrets and encryption



Authentication and Authorization

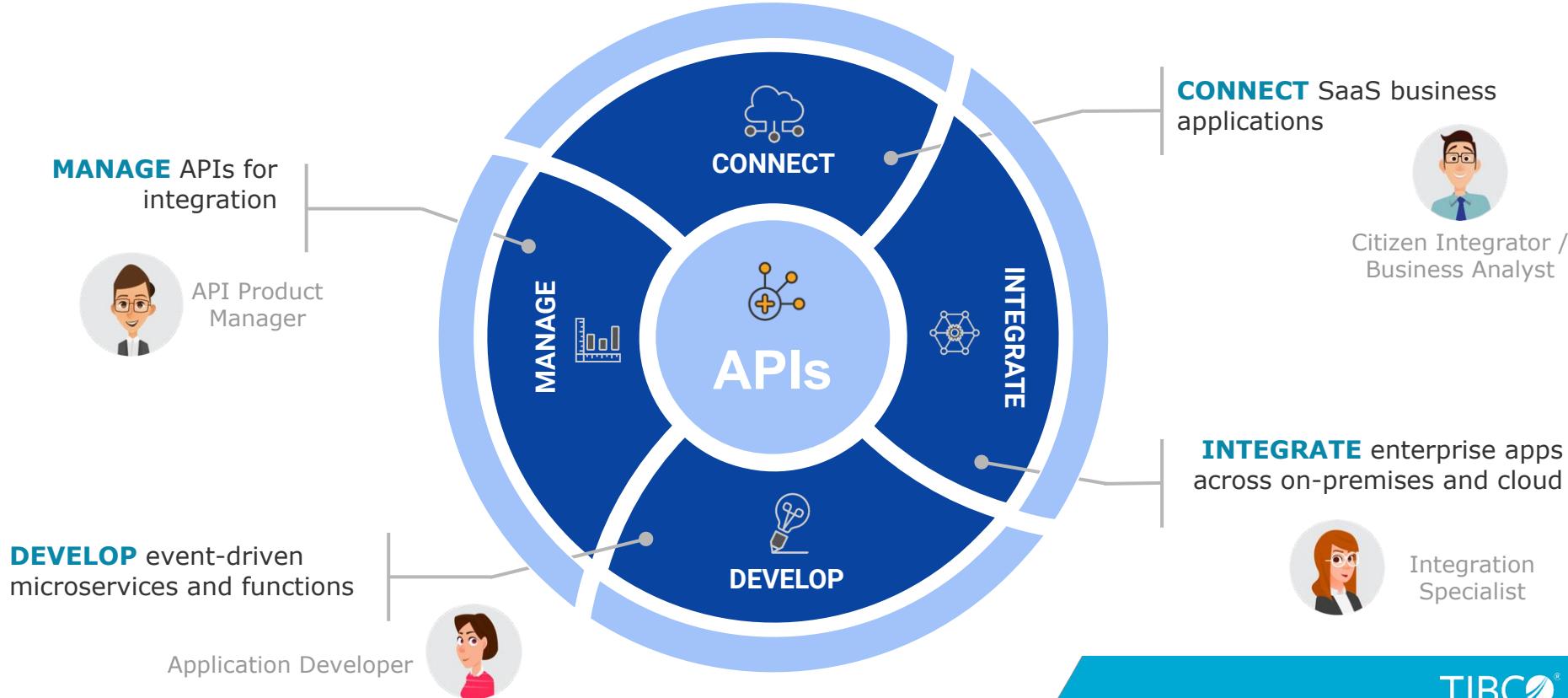


Secure API's for Mobile and Command line interface

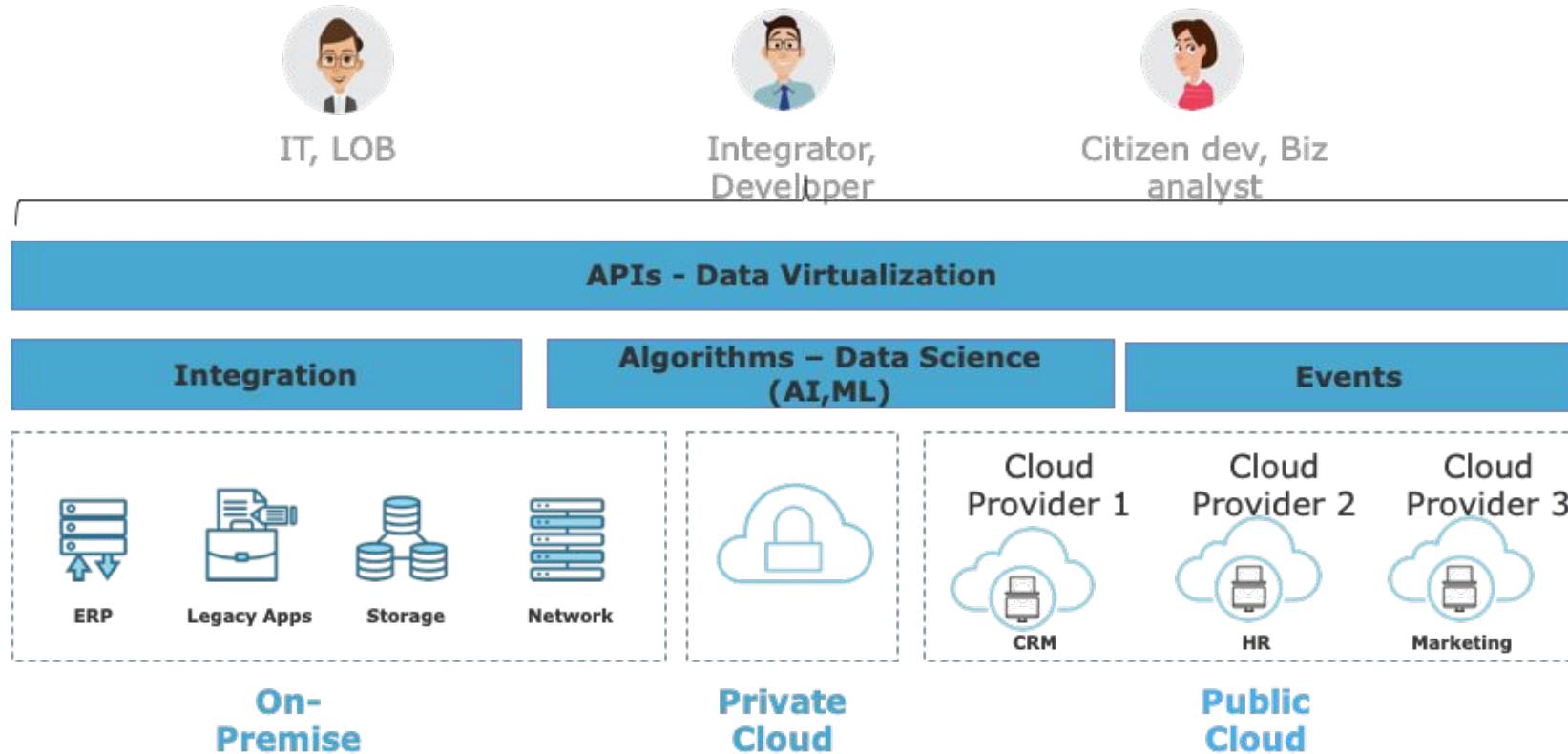
- Multi-tenant platform with logical separation of customers.
- Built with privacy and security in mind.
- Encrypted network traffic and data storage.
- Hybrid Connectivity

Accelerate Integrations Across Your Business

Enable Collaborative Integration for Everyone through Tailored User Experiences



Digital Reference Architecture



How Are TIBCO's Customers Innovating for the Connected Intelligence Era?



\$600,000

Anticipated OR cost savings PA

"In real time, we are able to alert our rapid response team to go to the bedside of a patient who is likely to go into cardiac arrest. So far, we've successfully reduced the number of cardiac arrests in the hospital by an estimated 15 to 20%."

Chief Enterprise Architect, Christine Watts

Use Case

Integrated systems and centralized data to more effectively measure services and predict risks

<https://www.tibco.com/customers/scottish-environment-protection-agency>
<https://www.tibco.com/customers/university-chicago-medicine>
<https://www.tibco.com/formula-one-competitive-advantage>



60%

Saving of time compared with previous technologies used

"The software's ability to cover the [full data science development lifecycle](#): data retrieval, preparation, transformation, analysis, and final interactive dashboard presentation, meant it could easily meet the aspirations of our proposed agile informatics process," Informatics Head of Unit SEPA, Mark Hallard

Use Case

Evidence-based decisions and efficient and automated analytics



6 Years

Time to deliver own visualizations vs. 2 months

"The driver changes gears about 100 times a lap. Every time there's a gear change, we collect around [1,000 data points](#). Those gear changes can be categorized into how fast they were, and how much stress they put on the gears. When you visualize that data, you can actually make the gear box last longer, or more importantly, make harsher gear changes. You can then find that if you put the gear box into one particular mode, it's [roughly 50 milliseconds faster per lap](#). Cars that were fourth and fifth in qualifying were one one-thousandth of a second different, so 50 milliseconds [matters](#). So for us to be able to make those harsher gear changes is important. We spent six years creating our own visualizations. TIBCO turned up, and in a matter of two months, did better work." Head of IT, Matt Harris

Use Case

Real Time Car Dynamics Changing, Continuous Improvement

Agenda & Timings

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The Labs

TIBCO Cloud Integration Blueprint

Standard, secure interface for service consumption



B2B Interface



Internal API Catalogue



TIBCO Mashery

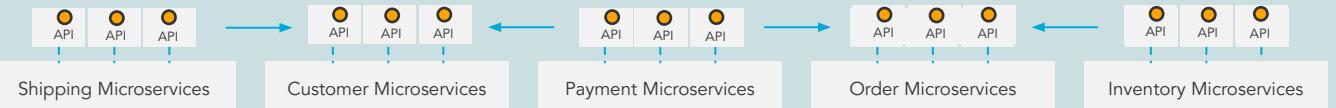
APIs are secured and governed

API Platform



TIBCO Flogo

Interface doesn't change as services are updated



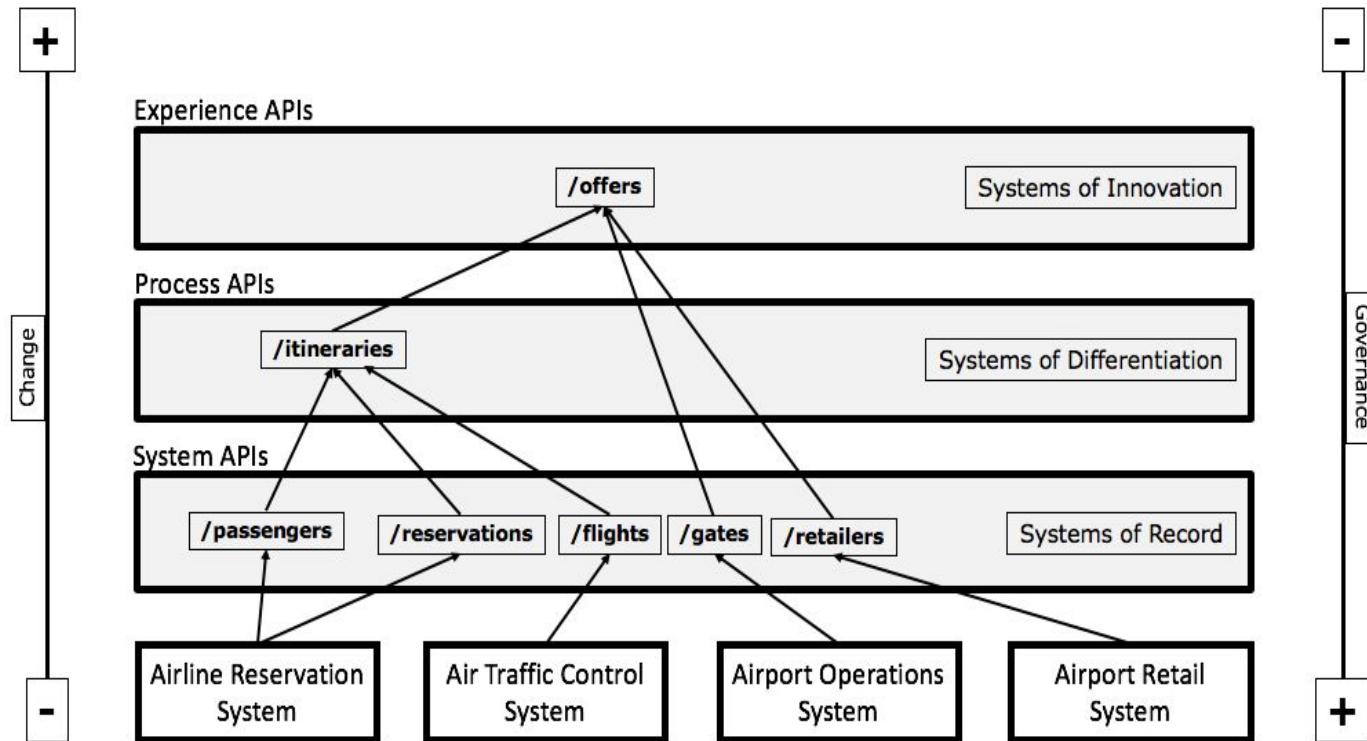
TIBCO BusinessWorks

Complexity of Legacy is abstracted



TIBCO

API Network Pattern



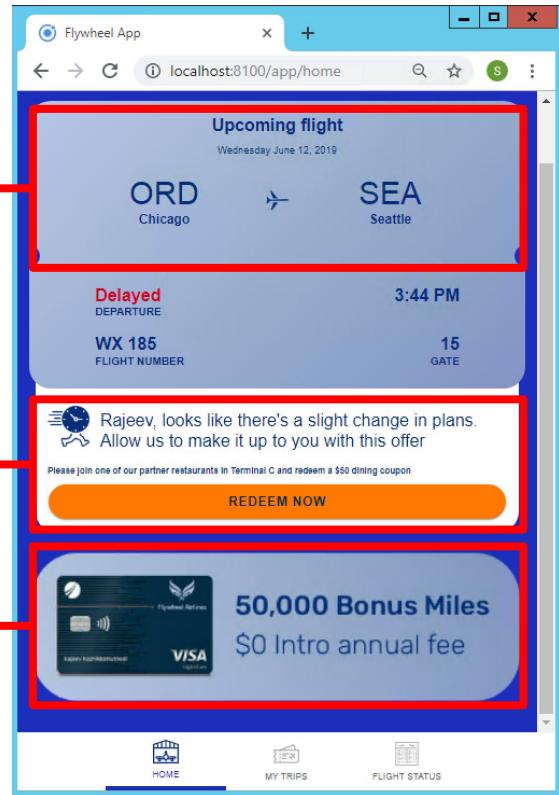
Connected Customer Experience APIs Are Everywhere

- Customer iPhone App
 - Drive additional revenues for Airport by connecting Airport and Retailers with Airlines
 - Increase Customer Satisfaction by Providing Relevant Real-time information
 - Real-time Offers and Status to Drive Customers from Gates to Retailers
 - Seamless experience for your customers

Flight Details

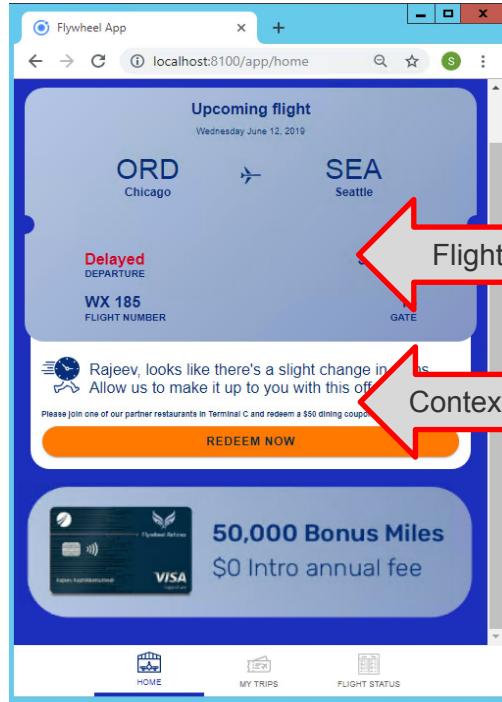
Dynamic Experience

Contextual Offers



Event Driven API-Led Integration Drives Customer Engagement

Passenger Request
Flight Status



Flight Status

Contextual Offer

Offers

Itineraries
Responds with Flight Status, Reservations and Passenger details.

Offers
Responds with contextual offer based on flight status, retailers and passenger loyalty.



Flights
Responds with flight status.



Reservations
Responds with reservation details.



Passengers
Responds with passenger details.



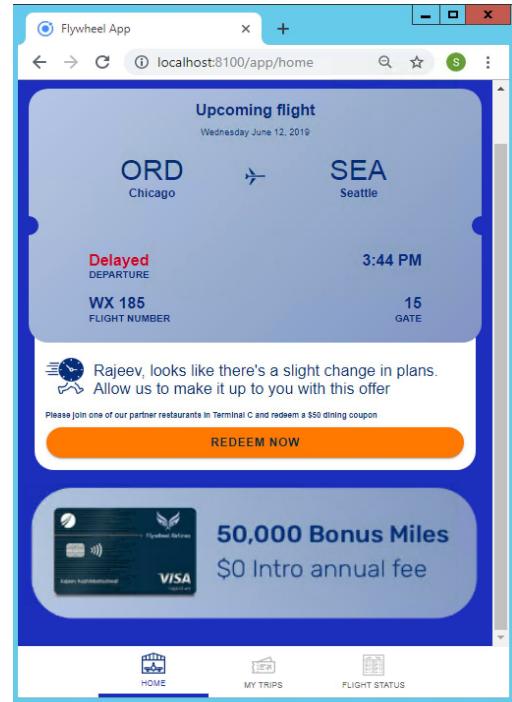
Retailers
Responds with average wait time.



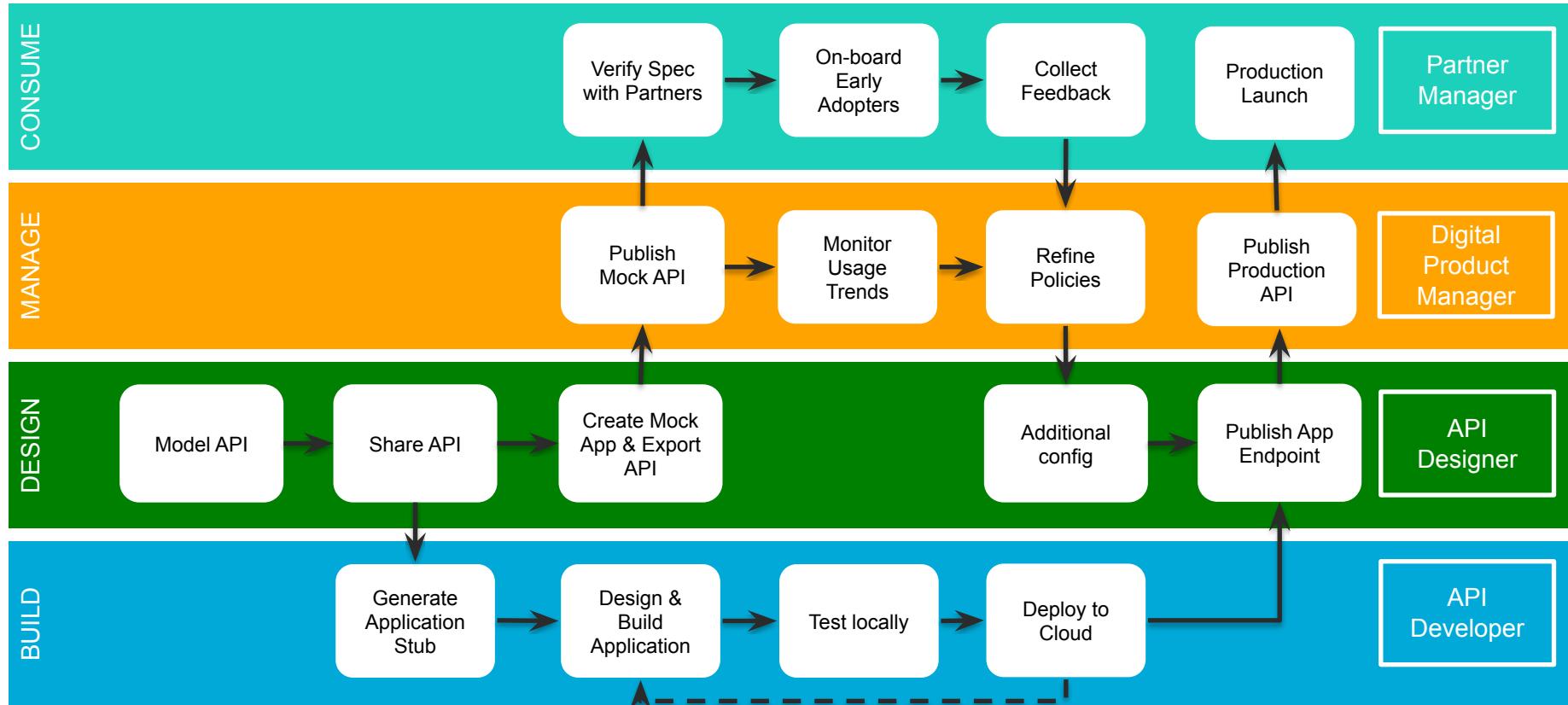
Decisions
Responds with contextual offer based on loyalty, retailers near gate, wait times.

Use Case: Connected Customer Experience

- We will be exploring and building the APIs for Connected Customer Experience Airport iPhone App
- We will concentrate on speed and agility
- We will focus on Process and Event APIs
- The persona will be an IT savvy business analyst
- We will construct new process and experience APIs with readily available APIs



Empowering an agile, productive API lifecycle



Connected Customer Experience App



The TIBCO Cloud

Sign in and get familiar with the TIBCO Cloud Platform



Import and Explore APIs

Import existing Spec. Explore API and Extend for our App.



Mock APIs

Fake it before you make it! Get Digital Teams working against your Mock APIs whilst you do the real work.



Implement & Test APIs

Build out your API by implementing a Flo(go) application that orchestrates and re-uses existing APIs



Contextual Offers

Use Cloud Events to create Contextual Customer Offers in your Event Driven Cloud Architecture



Cloud Analytics

Explore Analytics in the Cloud

Connected Customer Experience App



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Cloud Analytics

Explore Analytics in the Cloud

Key Resources



Download and extract the Hands On Lab : <https://github.com/TIBCOUK/Keys2Cloud>

Make sure you open the scratchpad.md file for easy cut/paste in the Labs:
<https://github.com/TIBCOUK/Keys2Cloud/blob/master/scratchpad.md>



TIBCO Community :

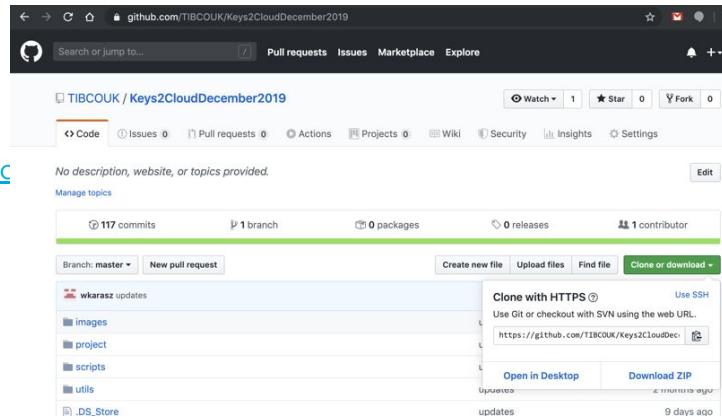
- <https://community.tibco.com/products/tibco-cloud-integration>
- <https://community.tibco.com/products/tibco-activematrix-businesswc>



Docs TIBCO : <https://docs.tibco.com/>



TIBCO Flogo : <http://www.flogo.io/>



Sign Up



The TIBCO
Cloud

- Go to cloud.tibco.com
 - <https://cloud.tibco.com>
 - Register
 - Login: your email address
 - Password: your password
 - Region: **EU (Ireland)**
- Check your email for activation email
 - And Junk folder!

The screenshot shows the TIBCO Cloud Services homepage. The top navigation bar includes links for Overview, Cloud Services, Cloud Solutions, Status, SIGN IN, and TRY NOW. The main content area is titled 'TIBCO Cloud™ Services' and features a section for 'TIBCO Cloud™ Integration'. Below this, there is a description of the product's purpose and a 'FREE TRIAL' button. A red arrow points to the 'FREE TRIAL' button.

Add Subscriptions to the Trial



TIBCO CLOUD™

Home Team Members **Subscriptions** Settings Downloads

Subscriptions in Oregon

Integration TRIAL

Named users **Unlimited** Expires in **1** MONTH

AVAILABLE

[Details](#) [Upgrade](#) [Launch](#)

Mashery® TRIAL

Named users **Unlimited** Expires in **1** MONTH

AVAILABLE

[Details](#) [Upgrade](#) [Launch](#)

Add subscription +



2 0

TRIAL ACTIVE

[Add subscription](#)



Add Spotfire and Events



[View plans](#) 

TIBCO Cloud™ Spotfire® is a smart visual analytics solution with built-in data wrangling, geo-analytics and predictive analytics.

[Free trial](#)

[Add or upgrade](#)



Events

[View plans](#) 

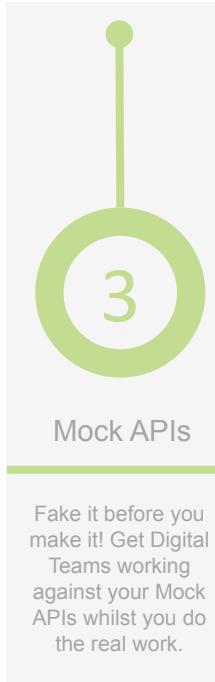
TIBCO Cloud™ Events is a cloud-native solution for improving business outcomes by detecting key events and moving automated decision-making closer to the source

[Free trial](#)

[Add or upgrade](#)



Connected Customer Experience App



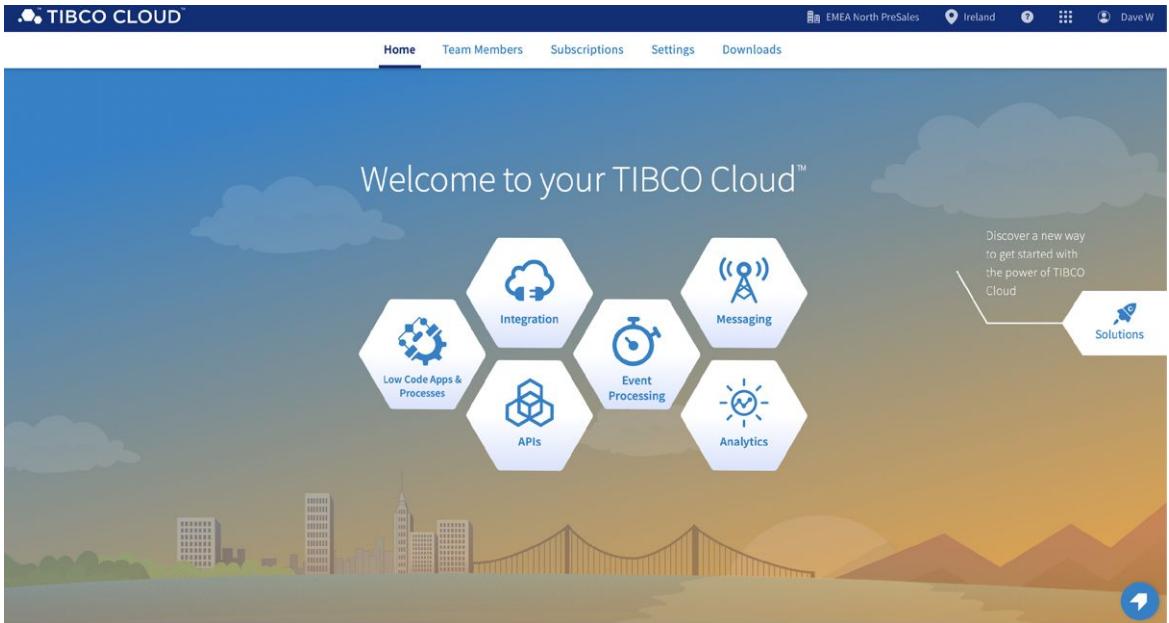
Log into TIBCO Cloud



Import and
Explore APIs

Main Home Page

- Shows which Capabilities are available to your subscription
- Can change Regions
- See and Manage Team Members
- Subscribe to new Capabilities
- Access Help



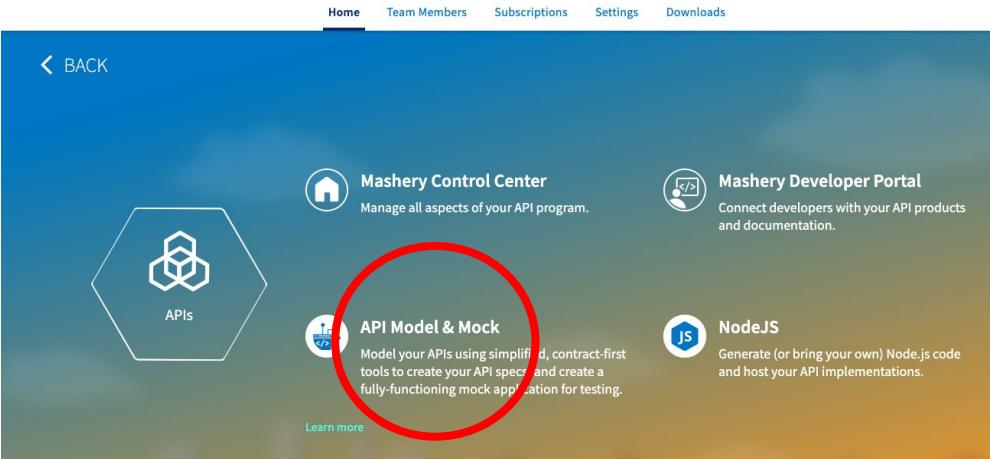
Importing API Specs.



Import and Explore APIs

Navigate to APIs from the TIBCO Cloud

- Click on “API Model & Mock”



APIs allows us to

- Create new APIs
- Import existing APIs
- Create Mock Applications
- Generate Application Skeletons in NodeJS

Importing API Specs.



Import and Explore APIs

Create a new Group (Click the + sign)

- Call it CustomerExperienceAirport
- Select the new Group
- You'll see an empty list



Import API Spec

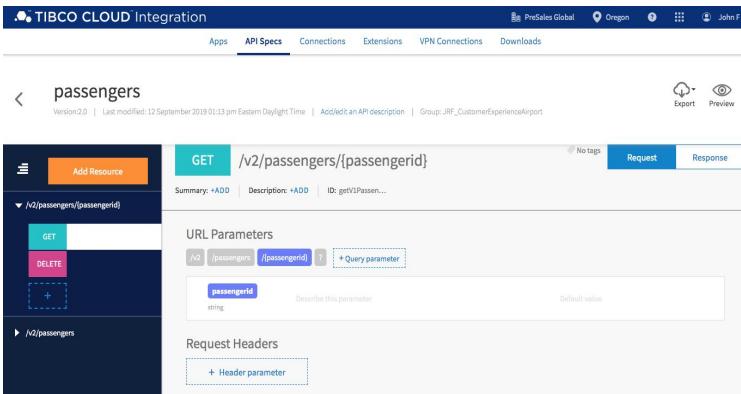
- Import from Filesystem and navigate to where you extracted the connected customer experience artifacts
- Choose project/apispecs/APISpecs/v2/passengers.json

API name	Version	Description	Group	Last modified
TIBCO Cloud Integration ...	1.1	To get you started with the API Modeling and Mock capa...	Default	18 May 2020 11:24 am

Exploring the API.

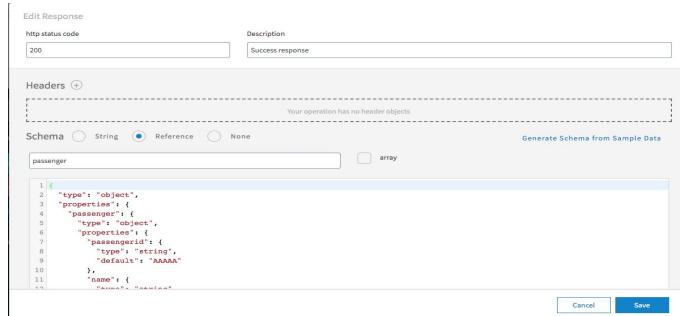
2

Explore the new API



The screenshot shows the TIBCO CLOUD Integration interface with the 'API Specs' tab selected. A resource named 'passengers' is displayed, version 2.0. The 'GET /v2/passengers/{passengerid}' method is selected. The 'Request' and 'Response' tabs are visible. The 'Request' tab shows 'URL Parameters' with a 'passengerid' parameter and 'Request Headers'. The 'Response' tab is currently empty. The left sidebar shows other resources like 'Add Resource', 'GET /v2/passengers/{passengerid}', 'DELETE /v2/passengers/{passengerid}', and 'GET /v2/passengers'.

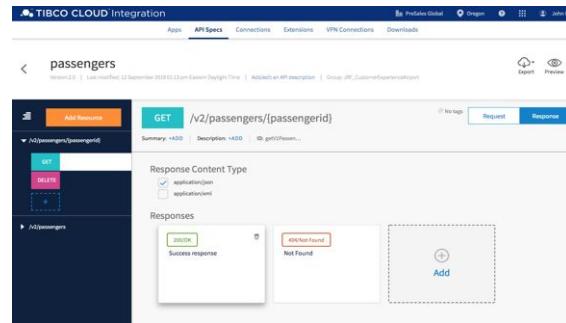
Example Success Response



The screenshot shows the 'Edit Response' dialog. The 'http status code' is set to 200, and the 'Description' is 'Success response'. The 'Headers' section is empty. The 'Schema' section shows a 'String' type with 'None' selected. The 'passenger' schema is defined as an array of objects. The schema definition is as follows:

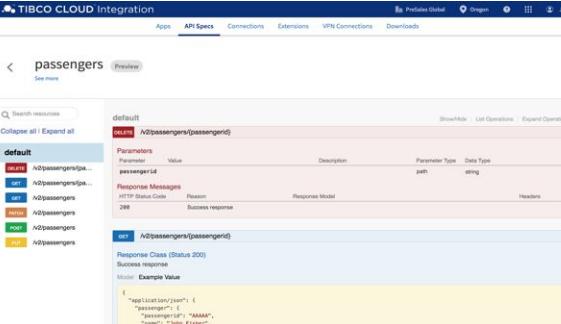
```
1  "type": "object",
2  "properties": {
3    "passenger": {
4      "type": "object",
5      "properties": {
6        "passengerid": {
7          "type": "string",
8          "default": "AAAAAA"
9        }
10      }
11    }
12  }
13  "name": {
```

Responses



The screenshot shows the 'Responses' section for the 'passengers' API. It displays two responses: a 'Success response' (status 200) and a 'Not Found' response (status 404). The 'Success response' is a simple JSON object with a 'passenger' key. The 'Not Found' response is a standard 'Not Found' message. The 'Request' and 'Response' tabs are visible at the top.

Preview API



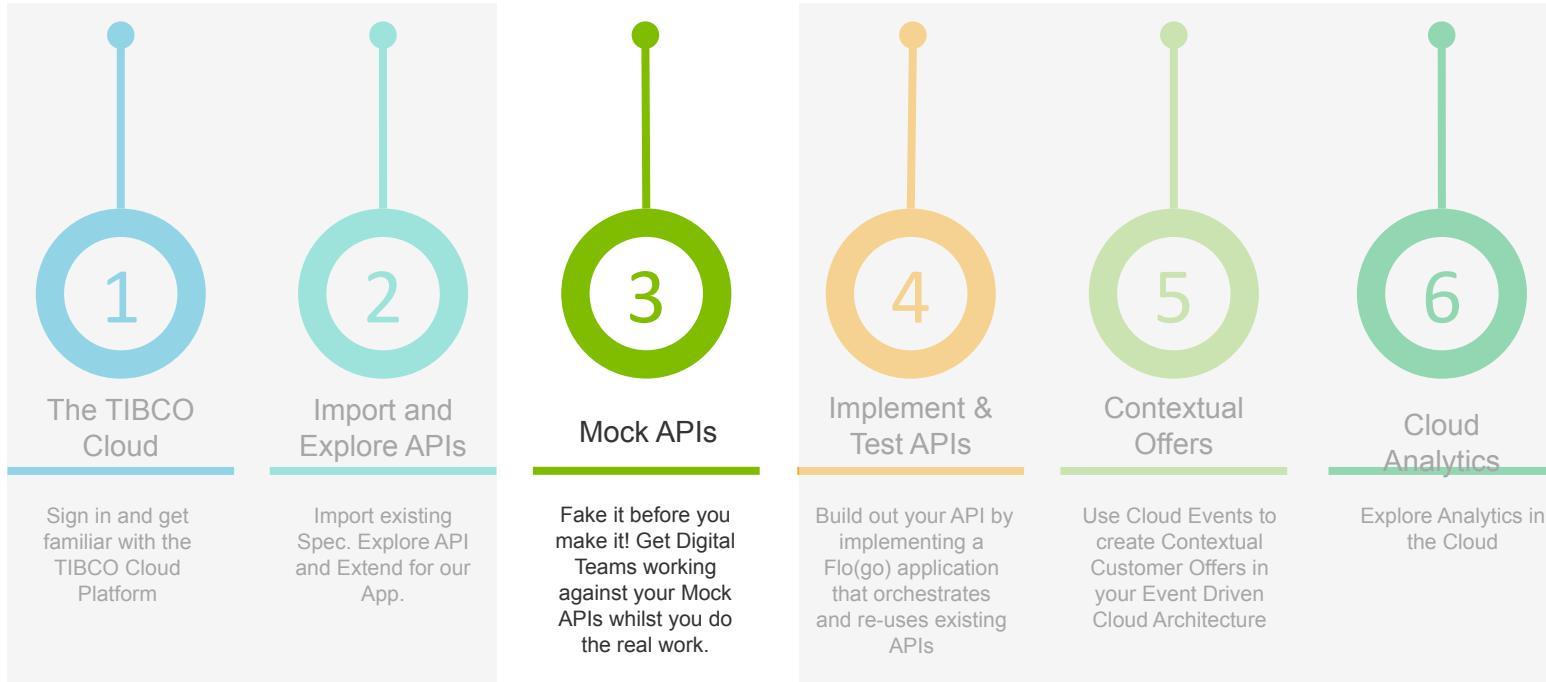
The screenshot shows the 'Preview' section for the 'passengers' API. It displays the API schema for the 'GET /v2/passengers/{passengerid}' method. The schema includes parameters for 'passengerid' (path, string) and 'Response Messages' (200: Success response). Below the schema, a preview of the response is shown as a JSON object:

```
1  {
2    "passenger": {
3      "passengerid": "AAAAAA",
4      "name": "John Fisher"
5    }
6  }
```

Import and
Explore APIs

TIBCO

Connected Customer Experience App



Mock APIs

3

Mock APIs

Create a Mock API

- Allows you to test quickly
- Provide Developers with an Endpoint
- They can start developing their application straight away
- Click on the 3 dots next to the API and click "Create Mock App"
- Give your app a Name
- Wait until the App shows "Running"

The screenshot shows the TIBCO Cloud Integration Platform interface. On the left, a sidebar displays 'All API specs (2)' and 'Default (2)'. The main area shows a list of 'All API specs' with two entries: 'passengers' (Version 2.0, Default group, last modified 26 May 2020 3:09 pm) and 'TIBCO Cloud Integration ...' (Version 1.1, Default group, last modified 18 May 2020 3:09 pm). A context menu is open for the 'passengers' entry, with the 'Create Mock app' option highlighted and circled in red. Below this, the 'passengers_2_0_mock_app' details are shown, including a 'Running' status indicator (circled in red) and a 'Simple Mock Responses' section. The TIBCO logo is in the bottom right corner.

TIBCO

Mock APIs

Test your Mock API

- Click on the Endpoint
- Click on View and Test
- Select Try it out!
- Under GET /v2/passengers.

The screenshot shows the TIBCO Cloud Integration interface for a Mock API named "passengers_2_0_mock_app". The "Implementation" tab is selected, showing a list of operations for the "passengers" API:

- GET /v2/passengers
- PATCH /v2/passengers
- POST /v2/passengers
- PUT /v2/passengers
- DELETE /v2/passengers/{passen...}
- GET /v2/passengers/{passen...

On the right, a "Simple Mock Responses" section displays a "Success response" with a 200/OK status and the message "Success response". A red circle highlights the "Endpoint" button in the top right corner of the interface.

Result returned (from Success response)

The result of the GET /v2/passengers operation is shown in a detailed view:

- Response Class (Status 200):** Success response
- Model:** Example Value
- Response Content Type:** application/json

```
application/json: {
  "passenger": {
    "city": "Philadelphia",
    "name": "John Fisher",
    "passengerId": "AAAAA",
    "street": "1 Market Street",
    "zipcode": "19358"
  }
}
```

The "Try it out!" button is visible at the bottom of the response view.

3

Mock APIs

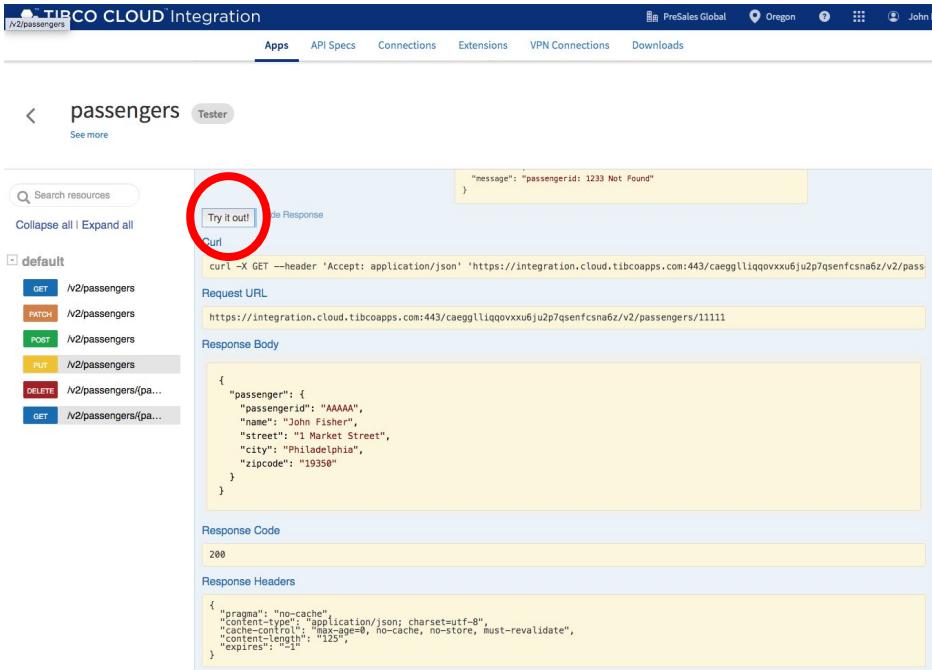
TIBCO

Mock APIs

3

More Testing

- Try testing `/v2/passengers/{passengerid}`.
- Select or scroll down to `/v2/passengers/{passengerid}`. Enter 11111 in passengerid parameter and select Try it out!

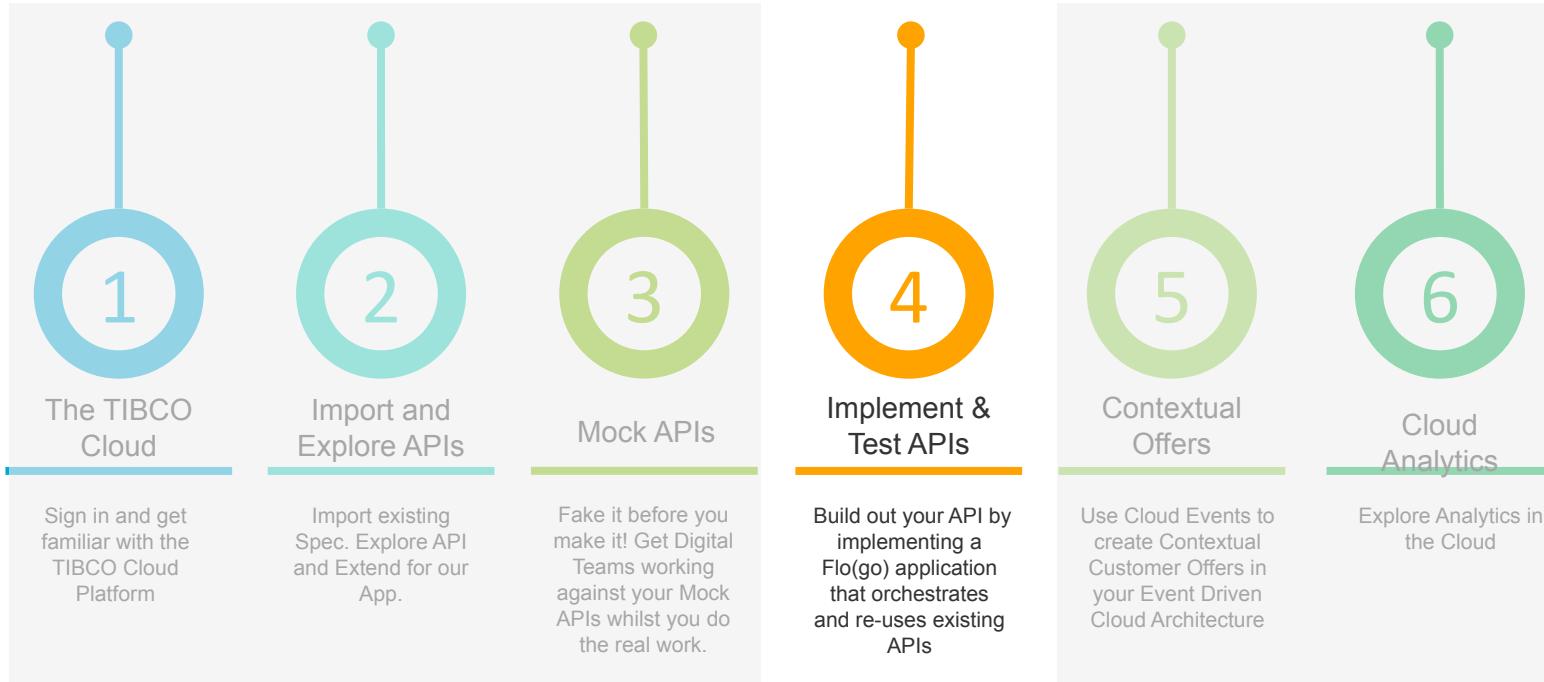


The screenshot shows the TIBCO CLOUD Integration API Tester interface. The URL in the address bar is `/v2/passengers/11111`. The main panel displays the `passengers` resource with a `default` configuration. A red circle highlights the `Try it out!` button. The response message is: `"message": "passengerid: 1233 Not Found"`. The Request URL is `https://integration.cloud.tibcoapps.com:443/caegllliqqovxxu6ju2p7qsenfcna6z/v2/passengers/11111`. The Response Body shows a JSON object representing a passenger with ID 1233. The Response Code is 200, and the Response Headers include `pragma: no-cache`, `content-type: application/json; charset=utf-8`, `cache-control: max-age=0, no-cache, no-store, must-revalidate`, `content-length: 125`, and `expires: -1`.

Mock APIs

TIBCO

Connected Customer Experience App



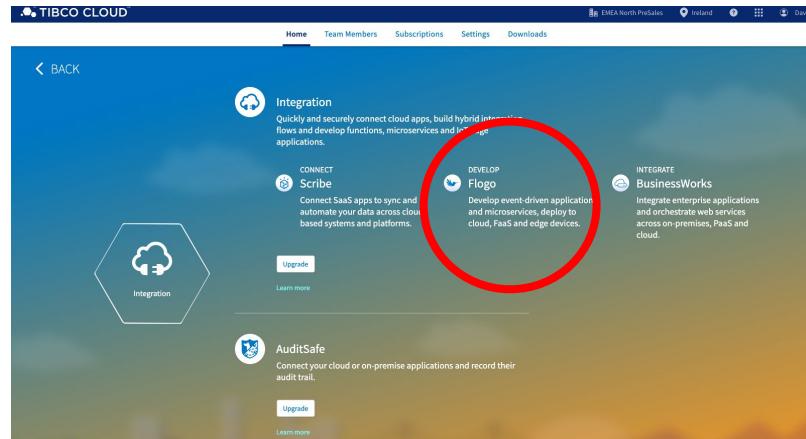
Implement API

4

Implement &
Test APIs

Extend API implementation by
re-using existing API to include Aircraft
Details

- We'll use an existing Flogo Application
- Add new steps to call Flights API



- Navigate back to the TIBCO Cloud Home Page (Click on TIBCO Cloud in the top left)
- Click on “Integration”
- Followed by “Flogo”

Implement API

4

Implement & Test APIs

Extend API implementation by re-using existing API to include Aircraft Details

- We'll use an existing Flogo Application
- Add new steps to call Flights API

- Navigate back to the TIBCO Cloud Home Page (Click on TIBCO Cloud in the top left)
- Click on "Integration"
- Followed by "Integration Apps"

The image shows two screenshots of the TIBCO Cloud interface. The top screenshot is the Home page, featuring a central 'Welcome to your TIBCO Cloud™' message and a grid of hexagonal icons representing different cloud services: Integration, APIs, Low Code Apps & Processes, Event Processing, Messaging, Data Management, and Analytics. The 'Integration' icon is circled in red. The bottom screenshot is a detailed view of the 'Integration Apps' section, showing a list of applications including 'Integration', 'Integration Apps' (which is also circled in red), 'AuditSafe', and 'AuditSafe'. Below these are smaller icons for 'Connect', 'Integrate', and 'Develop'. The TIBCO logo is visible in the bottom right corner.

Implement API

TIBCO CLOUD Integration

TCI 20 Launch - Child Org 1 Oregon Tcidemo11

Apps Marketplace Connections Environment & Tools

Apps

Search app name 



Status	Apps	Instances	Job/Row executions	Last 24 hours
Good	1 20%	0	45	
Error	0 0%	0	0	
Warning	0 0%	0	0	
Not running	4 80%	1	45	
Total	5 1	1	45	

 Hide dashboard  Create/Import

 Refresh

Top executions Last 24 hours

 Sample Connect App 45 

Filters

Category

- All (5)
- On schedule (1)
- Develop (4)

App Owner

- All Apps in Org (5)
- My apps (5)

Category	Name	Last Modified	Last Run	Instances	Status
Develop	MyFirstApp	26 May 2020 3:28 pm		0	 Not deployed 
Develop	New_Flogo_App_0	26 May 2020 2:25 pm		0	 Not deployed 
Develop	New_Flogo_App_1	26 May 2020 2:54 pm		0	 Not deployed 
Develop	Sample_Develop_App	14 May 2020 1:48 am		0	 Not deployed 
On schedule	Sample Connect App	14 May 2020 1:52 am	26 May 2020 11:27 am	1	 Ready 

Page 1 of 1

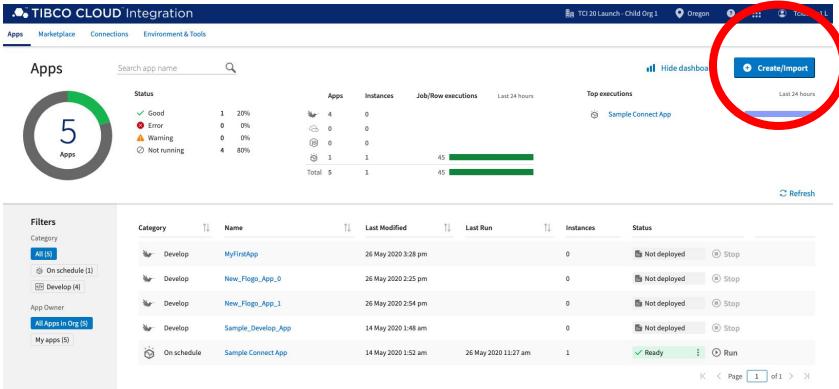
4

Implement &
Test APIs

- This is the main Apps. Dashboard
- Major stats. for all applications
 - Application State, Errors, Warnings etc.
- Create/Import new applications of any type
 - Connect, Develop, Integration Applications
- Detailed monitoring/logging capabilities, common across all applications

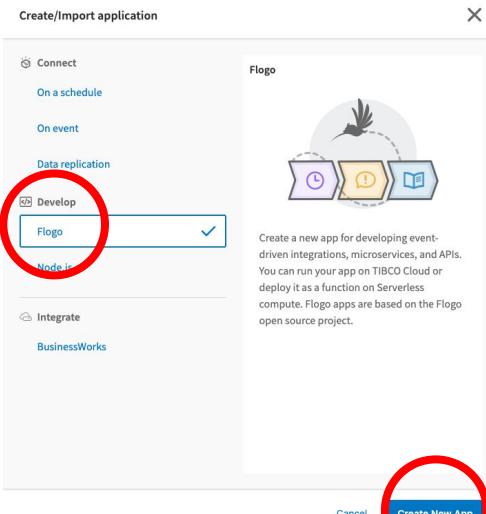
Implement API

- Click on “Create/Import”
- Under “Develop”, click “Flogo”
- Then Click “Create New App”



The screenshot shows the TIBCO CLOUD Integration dashboard. At the top right, there is a large orange button labeled "Create/Import". This button is circled in red. Below the dashboard, there is a table of applications with columns for Category, Name, Last Modified, Last Run, Instances, and Status. One application, "Sample.Connect.App", is highlighted with a green checkmark in the Status column and a green "Run" button.

Category	Name	Last Modified	Last Run	Instances	Status
Develop	MyFirstApp	26 May 2020 3:28 pm		0	Not deployed
Develop	New_Flogo_App_0	26 May 2020 2:25 pm		0	Not deployed
Develop	New_Flogo_App_1	26 May 2020 2:54 pm		0	Not deployed
Develop	Sample_Develop_App	14 May 2020 1:48 am		0	Not deployed
On schedule	Sample.Connect.App	14 May 2020 1:52 am	26 May 2020 11:27 am	1	Ready



The screenshot shows the "Create/Import application" dialog box. On the left, there are several categories: "Connect", "On a schedule", "On event", "Data replication", "Develop", "Integrate", and "BusinessWorks". The "Develop" category is selected and highlighted with a red circle. Within the "Develop" category, "Flogo" is selected and highlighted with a red circle. At the bottom right of the dialog box, there is a blue button labeled "Create New App" which is also circled in red.

Implement & Test APIs

4

Implement API



Implement & Test APIs

Import pre-built Application...

- Click on Import App

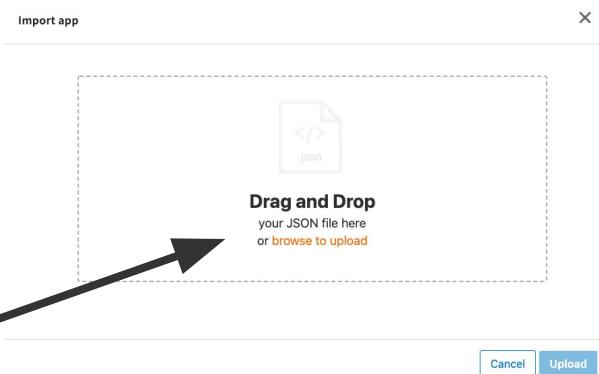
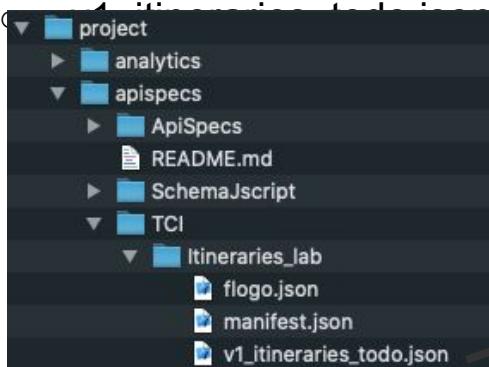
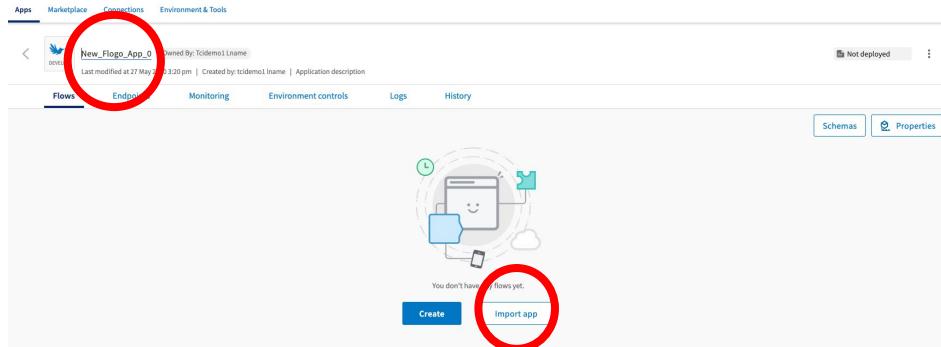
The screenshot shows the Anypoint Platform interface for managing APIs. At the top, there's a navigation bar with 'Apps', 'Marketplace', 'Connections', 'Environment & Tools'. Below that, a sub-navigation bar for the 'New_Flugo_App_0' application shows tabs for 'Flows', 'Endpoints', 'Monitoring', 'Environment controls', 'Logs', and 'History'. The 'Flows' tab is active, displaying a placeholder message: 'You don't have any flows yet.' with 'Create' and 'Import app' buttons. Below this, a specific flow named 'v1_itineraries_to_do' is listed, showing it was modified on 29 November 2019, created by Dave Winstone, and owned by Dave Winstone. The flow status is 'Stopped'. The interface includes sections for 'Import app' (with a 'Drag and Drop' area for a JSON file), 'Environment controls' (with an 'App Properties' button), and a preview of the application structure on the right.

- Navigate to where you extracted the connected customer experience artifacts and drag project/apispecis/TCI/itineraries_lab/v1_itineraries_todo.json into upload files and select Upload.

Implement API

Change the default name of the App

- Click on the default name and type ‘FlightItinerariesApp’ as the new name.
- Click on “Import App”
- Upload semi-complete application



Implement API



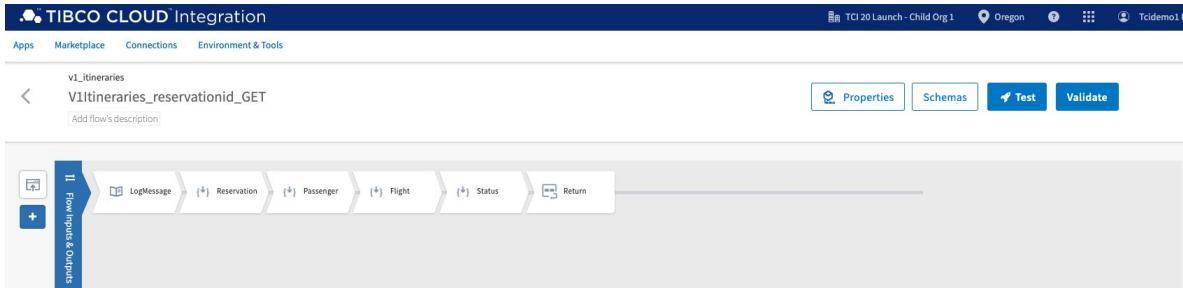
Implement & Test APIs

Flogo Application implements the API we used earlier

- Click on `V1Itineraries_reservationid_GET` to view the implementation

Flogo Implementation of the GET method

The screenshot shows the TIBCO Cloud Integration interface. The top navigation bar includes 'Apps', 'Marketplace', 'Connections', and 'Environment & Tools'. The main area is titled 'v1_itineraries' and shows 'Flows', 'Endpoints', 'Monitoring', 'Environment controls', 'Logs', and 'History' tabs. A 'Create' button and a 'Trigger View' dropdown are also present. The 'Flows' tab is selected, displaying a flow named 'V1itineraries_reservationid_GET'. The trigger for this flow is 'ReceiveHTTP'. Below the flow, there are buttons for 'Properties', 'Schemas', 'Validate', and 'Push'.

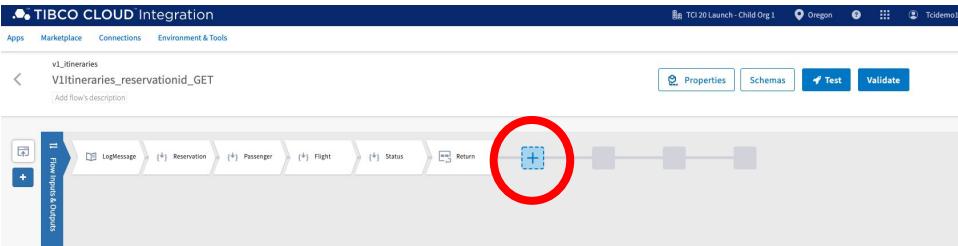


Implement API

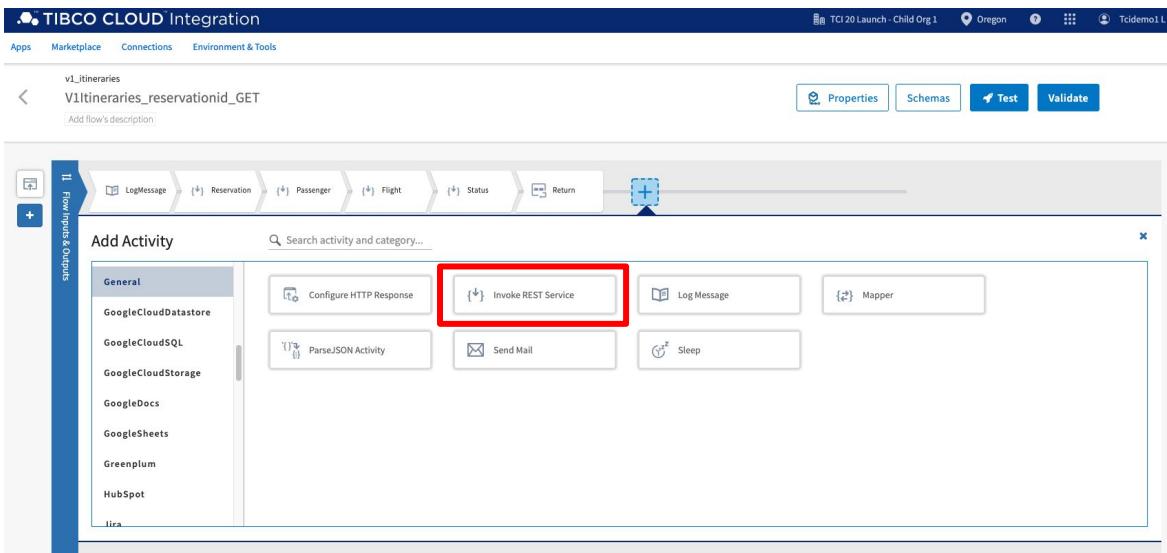
4

Implement &
Test APIs

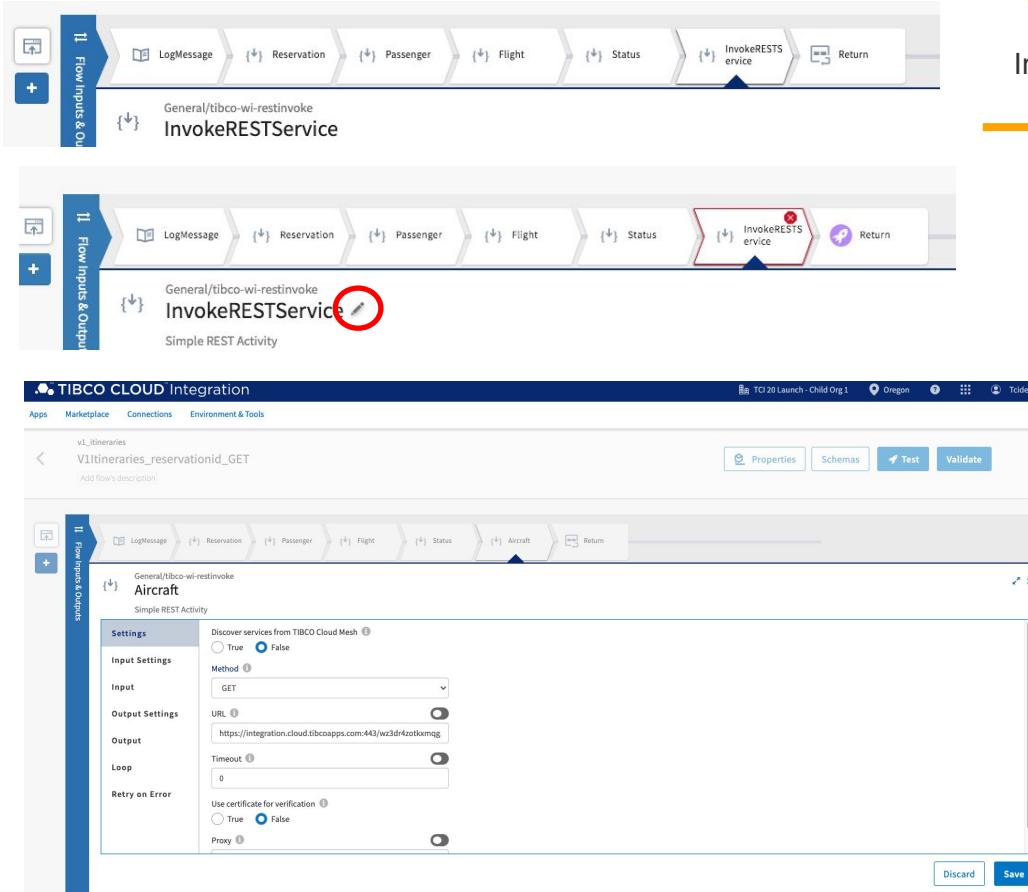
- Hover over the box to the right of “Return” to reveal a + sign and click on it to add a new Activity



- From Add Activity, scroll down, select General, select Invoke REST Service.



- Drag the InvokeRESTService to the right of Status.
- Rename the activity. Select InvokeRESTService, hover your mouse over the name InvokeRESTService and select the edit icon. Call it “Aircraft”
- Add REST URL - Select “Settings” and past the following URL in the URL field.
- <https://integration.cloud.tibcoapps.com:443/wz3dr4zotkxmqg5au6yhc526iw2otlc2/v1/aircrafts/{aircraftid}>



Implement API

- Now let's map activity input. Select "Input", expand pathParams and select aircraftid.
- Expand Upstream Output->Reservation->response Body->reservation and select aircraftid.
- This maps the output of previous steps in the Flogo application
- Functions etc. can be used to manipulate the data

The screenshot shows the TIBCO Cloud Integration interface for configuring a REST API. The flow is named 'V1Itineraries_reservationid_GET'. The 'Activity Input' section is set to 'pathParams' with 'a. aircraftid' selected. The 'Upstream Output' section is set to 'reservation' with 'a. aircraftid' selected. A search bar at the top right contains the expression '\$activity[Reservation].responseBody.reservation.aircraftid'. The interface includes tabs for Properties, Schemas, Test, and Validate.

Implement API



Implement &
Test APIs

- We now need to configure the Output Schema of the API Call
- Configure the Output settings. Select Output Settings
- Set Configure Response Code to False
- Paste the following example data to create a Response Schema.
- Click “Save” when completed

```
{"aircraft":  
  {"aircraftid":"111",  
   "type":"767",  
   "seatcapacity":"280"}  
}
```

The screenshot shows the TIBCO Cloud Integration interface with the following details:

- Header:** TIBCO CLOUD Integration, Apps, Marketplace, Connections, Environment & Tools, TCI 20 Launch - Child Org 1, Oregon, Tcidemo11.
- Flow Name:** V1_itineraries_reservationid_GET.
- Flow Steps:** LogMessage, Reservation, Passenger, Flight, Status, Aircraft, Return.
- Activity:** General/tibco-wi-restinvoke, Aircraft, Simple REST Activity.
- Output Settings:** Configure Response Codes (False), Response Type (application/json), Response Schema (JSON code):

```
1: {"aircraft":  
2:   {"aircraftid": "111",  
3:    "type": "767",  
4:    "seatcapacity": "280"}  
5: }
```
- Buttons:** Properties, Schemas, Test, Validate, Discard, Save.

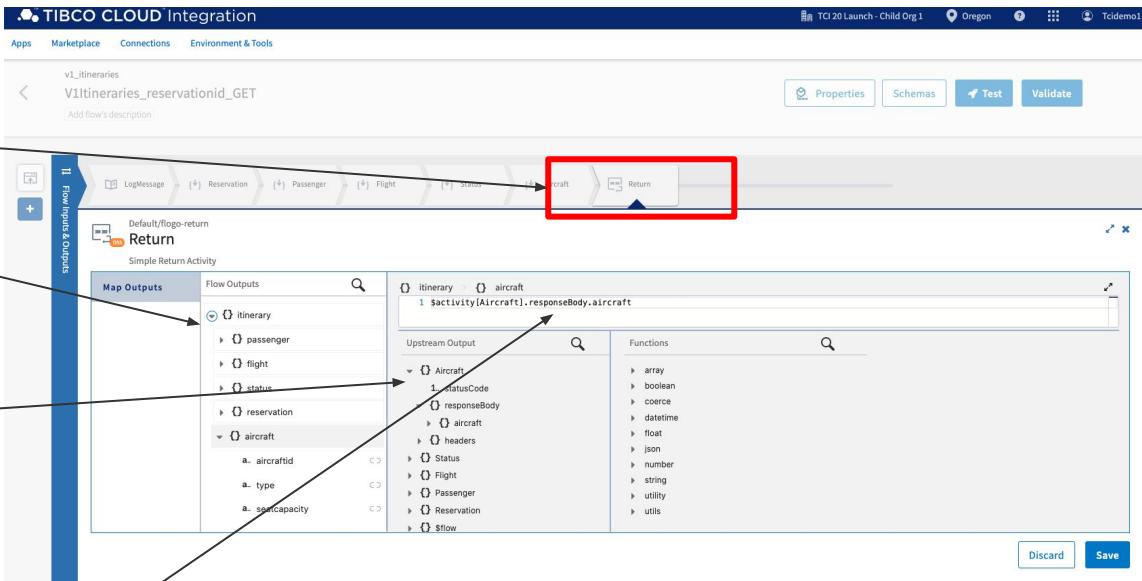
Implement API



Implement & Test APIs

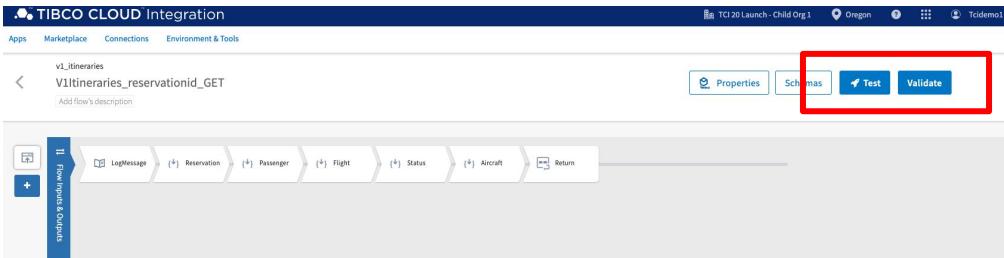
- Next – we need to map the response of the Aircraft API to the final return value of the Itinerary API

- Select Return activity
- Expand Flow Outputs itinerary and select aircraft
- Expand Upstream Output
- Navigate to Aircraft and expand the responseBody
- Select aircraft, to map the complete response from the aircraft activity into the response object

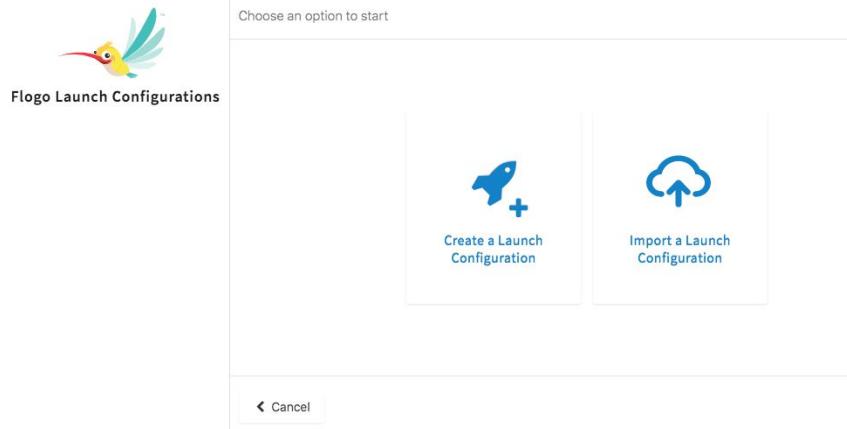


Test API

- Click on “Validate” to check for Errors
- When ready, click “Test”

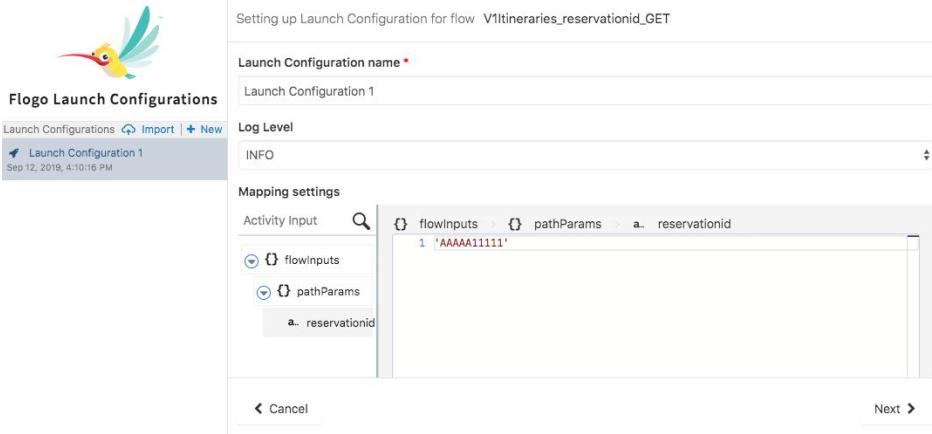


- Create a “Launch Configuration” to set up some test input data (Next page)



Test API

- Expand Activity Input
flowInputs->pathParams->reservationid.
- 'AAAAA11111' into reservationId.
Use quotes.
- Click Next then Click Run.



- Detailed Logging shows testing results
- You will see the “Aircraft” data from our new REST call



Deploy API

- Go back to the main App screen
- Select “Push”
- This will deploy the application
 - Does not start the application
- Wait until Deployment completed
- When the application reaches the “Stopped” state, set the number of instances of the application you want
- Click “Scale” to start the required number of instances.

The image consists of two screenshots of the TIBCO CLOUD Integration application interface. Both screenshots show the same application details: 'TCL_WORKSHOP_30th_April_2020' (Owned By: Dave Winstone, Last modified at 26 May 2020 11:31 am, Draft, Public). The top screenshot shows the 'Push' button in the top right corner of the toolbar highlighted with a red circle. The bottom screenshot shows the application in a 'Stopped' state, with the 'Scale' button in the top right corner of the toolbar highlighted with a red box.

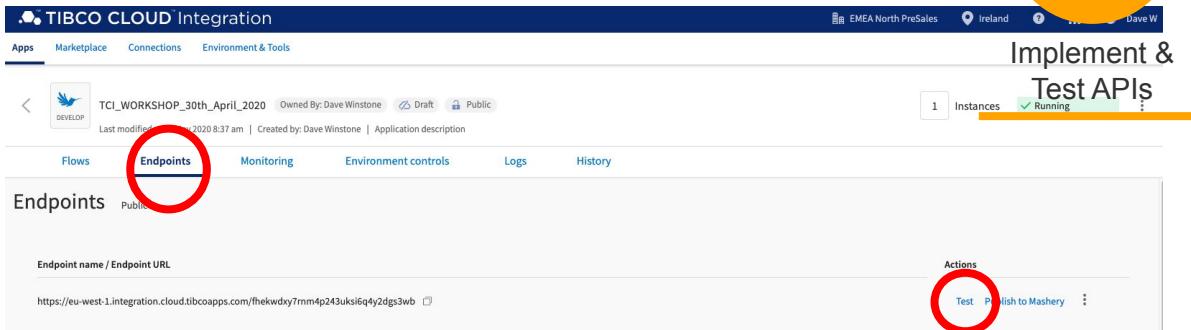
4

Implement & Test APIs

Test Deployed API

4

- Test your live endpoint by selecting Endpoints, and then under “Actions” click on “Test”
- Expand the “Get” method
- Click “Try it out”



TIBCO CLOUD Integration

TCI_WORKSHOP_30th_April_2020

Last modified at 28 May 2020 8:37 am | Created by: Dave Winstone | Application description

Flows Endpoints Monitoring Environment controls Logs History

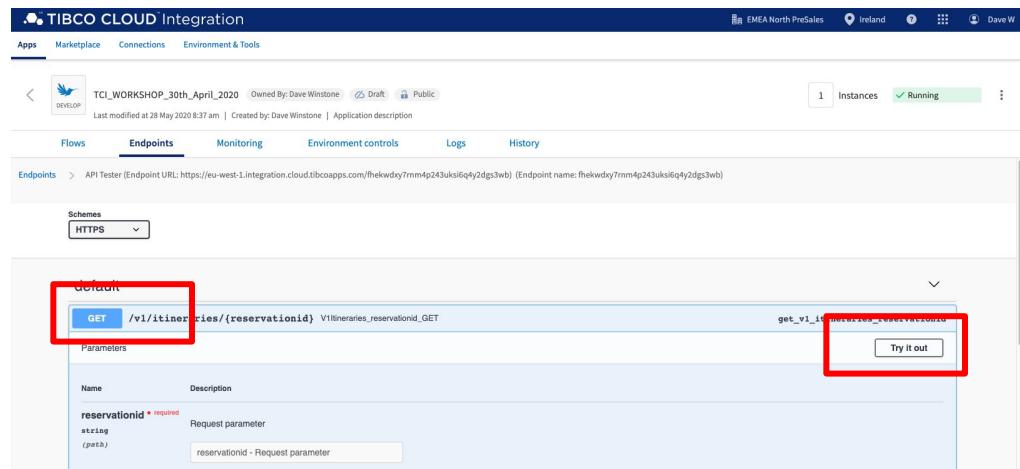
Endpoints Public

Endpoint name / Endpoint URL

https://eu-west-1.integration.cloud.tibcoapps.com/fhekwdx7rmn4p243uksi6q4y2dgs3wb

Actions

Test Publish to Mashery



TIBCO CLOUD Integration

TCI_WORKSHOP_30th_April_2020

Last modified at 28 May 2020 8:37 am | Created by: Dave Winstone | Application description

Flows Endpoints Monitoring Environment controls Logs History

Endpoints > API Tester (Endpoint URL: https://eu-west-1.integration.cloud.tibcoapps.com/fhekwdx7rmn4p243uksi6q4y2dgs3wb) (Endpoint name: fhekwdx7rmn4p243uksi6q4y2dgs3wb)

Schemes

HTTPS

Default

GET /v1/itineraries/{reservationid} V1itineraries_reservationid_GET

Parameters

Name	Description
reservationid * required	Request parameter
string	
(path)	

get_v1_itineraries_reservationid_GET

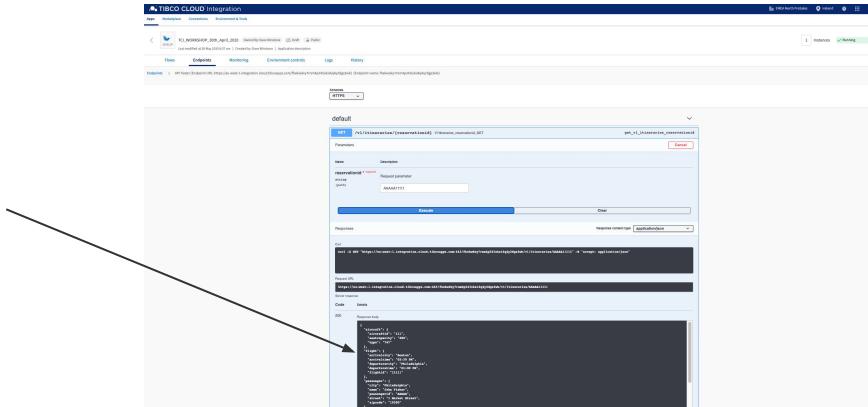
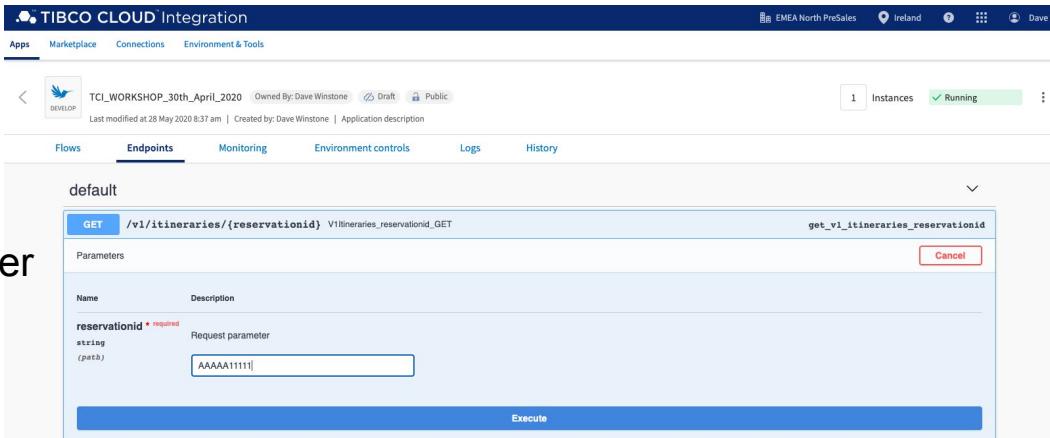
Try it out

Test Deployed API

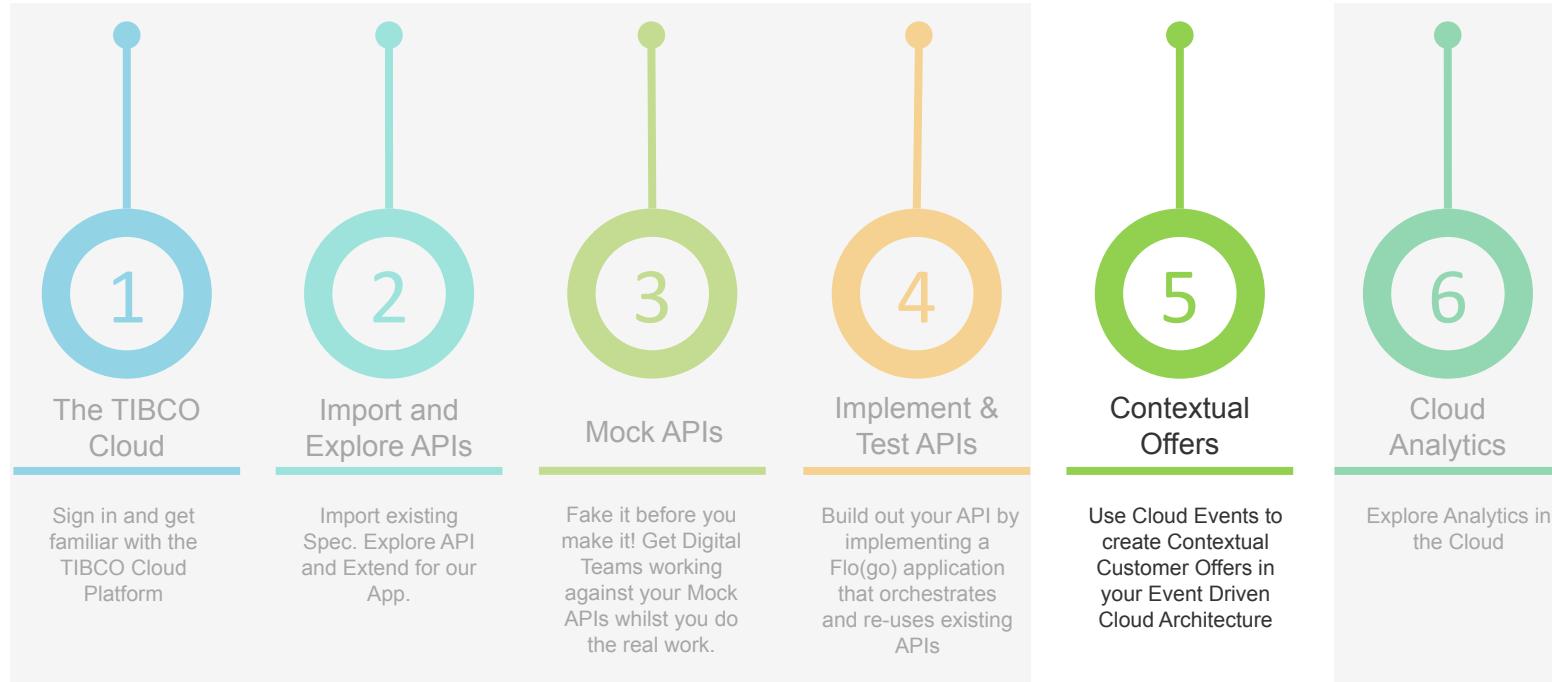
4

Implement & Test APIs

- Enter AAAAA11111 for reservationid request parameter
 - Click “Execute” to send the request
 - The correct result should be displayed (as per the original Test when we were developing the App)

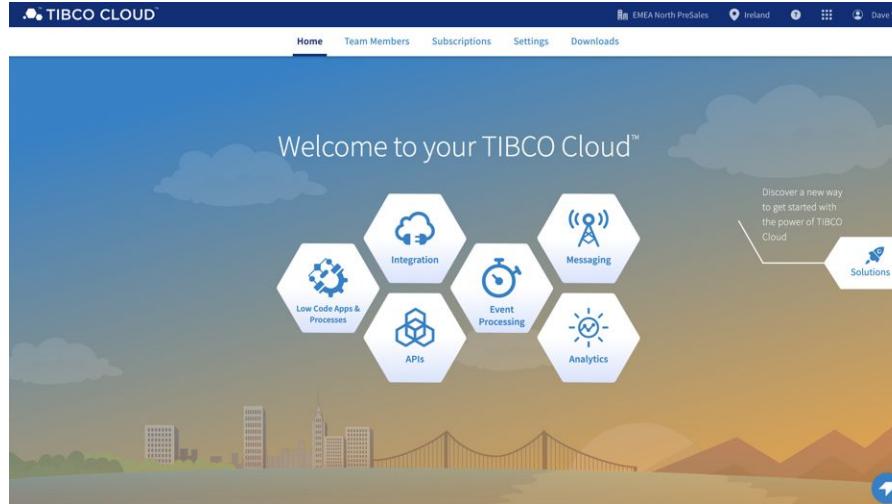


Connected Customer Experience App



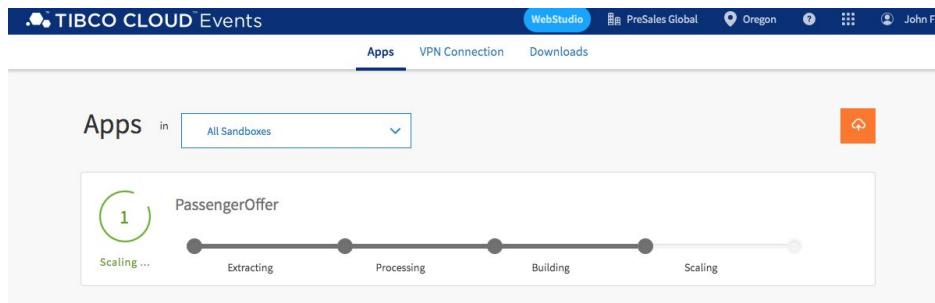
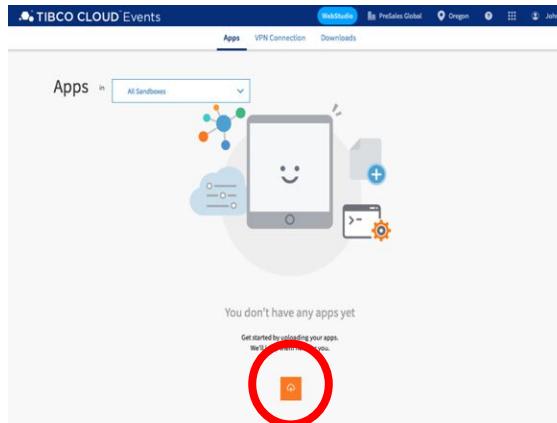
Event Driven APIs to provide Contextual Offers

- We'll start with a prebuilt solution. This solution will create an API that makes an offer decision based on passenger loyalty and flight status.
- From the TIBCO Cloud Home Screen – select Event Processing, followed by “Events”



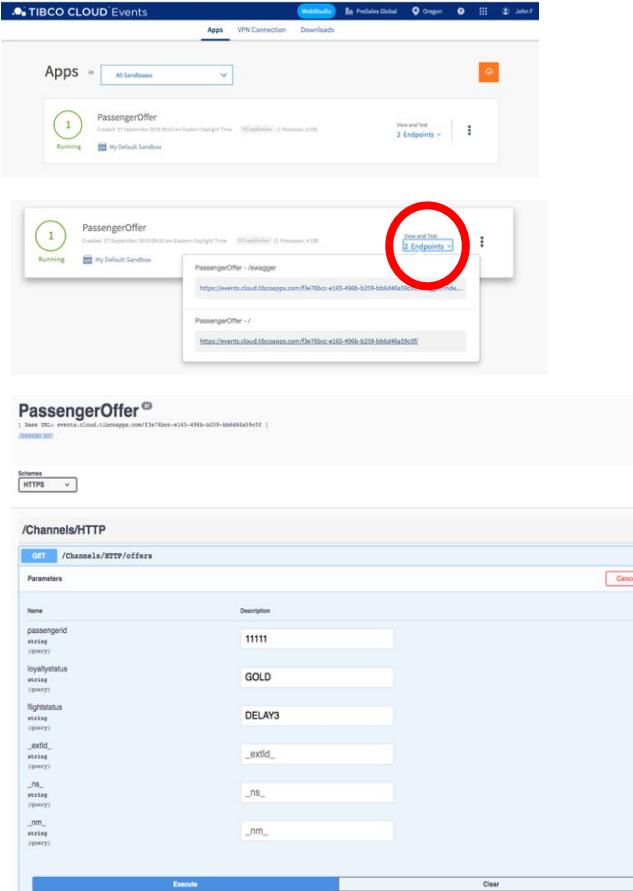
Event Driven APIs to provide Contextual Offers

- The “You don’t have any apps yet” page should be opened.
- Select Upload, cloud with up-arrow.
- Navigate to where you extracted the connected customer experience artifacts and drag project/CloudEvents/PassengerOffer.ear into Drag and Drop and select Push.
- The PassengerOffer project files will be pushed to the cloud and started.



Event Driven APIs to provide Contextual Offers

- Wait until the application is running
- Select 2 Endpoints and choose PassengerOffer Swagger link.
- Expand the GET Method and select “Try it out”
- Enter the values as shown and press “Execute”



The screenshot shows the TIBCO Cloud Events interface. At the top, there is a navigation bar with 'TIBCO CLOUD Events', 'Webhooks', 'PreSales Global', 'Oregon', and a user profile for 'John F.'. Below the navigation bar, there is a search bar with 'Apps' and a dropdown menu set to 'All Sandboxes'. A list of applications is displayed, with 'PassengerOffer' being the only one listed, showing it is 'Running' in 'My Default Sandbox'. Below this, a modal window for 'PassengerOffer' is open, showing its details and a 'Swagger' link. A red circle highlights the 'View and Test 2 Endpoints' button. Below the modal, a detailed view of the Swagger API for 'PassengerOffer' is shown, specifically the 'GET /Channels/HTTP' method. The 'Parameters' table lists several query parameters with their values: 'passengerid' (11111), 'loyaltystatus' (GOLD), 'flightstatus' (DELAY3), and 'extid' (extid). At the bottom of the Swagger interface, there are 'Execute' and 'Clear' buttons.

Event Driven APIs to provide Contextual Offers

- The offer, shown below, is Dinner At Chilis.
- Try different input options

passengerid	loyaltystatus	flightstatus
11111	BRONZE	DELAY1
11111	SILVER	DELAY1
11111	GOLD	DELAY1
11111	BRONZE	DELAY2
11111	SILVER	DELAY2
11111	GOLD	DELAY2
11111	BRONZE	DELAY3
11111	SILVER	DELAY3
11111	GOLD	DELAY3

Execute Clear

Responses Response content type: application/xml

Curl

```
curl -X GET "https://events.cloud.tibcoapps.com/f3e76bcc-e165-496b-b259-bb6d46a59c0f/Channels/HTTP/offers?passengerid=11111&loyaltystatus=GOLD&flightstatus=DELAY3" -H "accept: application/xml"
```

Request URL

```
https://events.cloud.tibcoapps.com/f3e76bcc-e165-496b-b259-bb6d46a59c0f/Channels/HTTP/offers?passengerid=11111&loyaltystatus=GOLD&flightstatus=DELAY3
```

Server response

Code	Details
200	Response body

```
<?xml version="1.0" encoding="UTF-8"?>
<event id="18">
<message>!!!! Offer 11111 Dinner At Chilis</message>
</event>
```

Download

Response headers

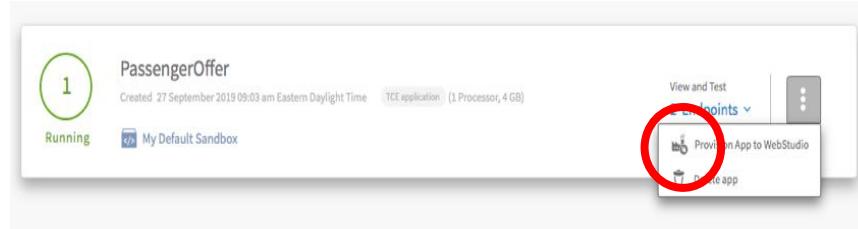
```
cache-control: max-age=0, no-cache, no-store, must-revalidate
content-length: 114
content-type: application/xml; charset=ISO-8859-1
date: Fri, 27 Sep 2019 14:46:19 GMT
expires: -1
pragma: no-cache
status: 200
strict-transport-security: max-age=31536000; includeSubDomains; preload
x-content-type-options: nosniff
x-frame-options: deny
x-xss-protection: 1; mode=block
```

Responses

Code	Description
200	200 success
400	400 Bad Request

Updating Real-time Decisions

- We are going to use WebStudio to make changes to the Cloud Events decision table.
- To do this, we need to provision the PassengerOffer App to WebStudio.
- Click Back on your Web Browser to return to the home screen of TIBCO Cloud Events



Contextual Offers

5

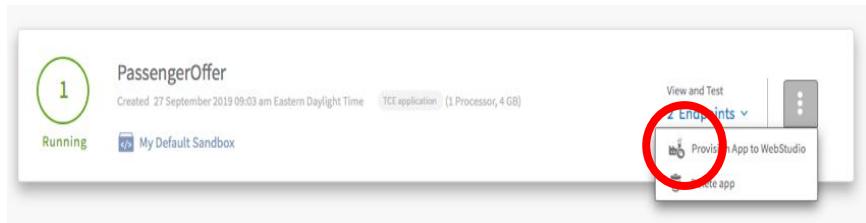
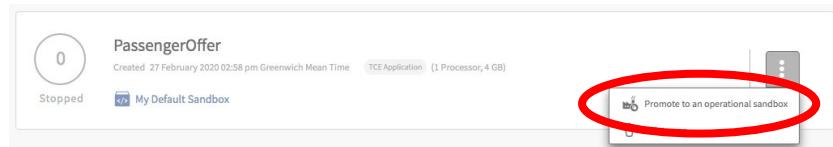
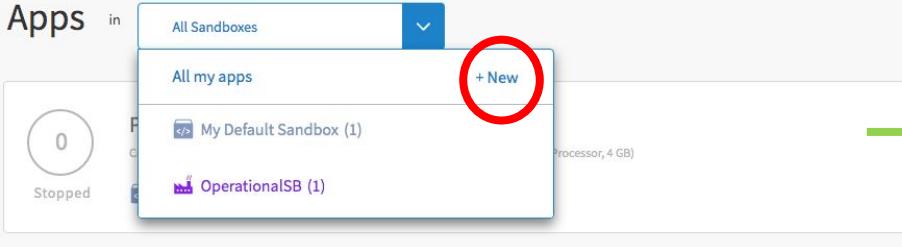
Updating Real-time Decisions



Contextual Offers

To use WebStudio the app needs to be running in an Operational Sandbox.

- Create an Operational Sandbox from the Sandboxes dropdown (Click on +New)
- From your running PassengerOffer App, select Promote to an operational sandbox. Choose the one you have just created
- If necessary start the App using Scale Instances
- Select Provision App to WebStudio from the dropdown and wait for dialog indicating the provisioning was successful.



Updating Real-time Decisions

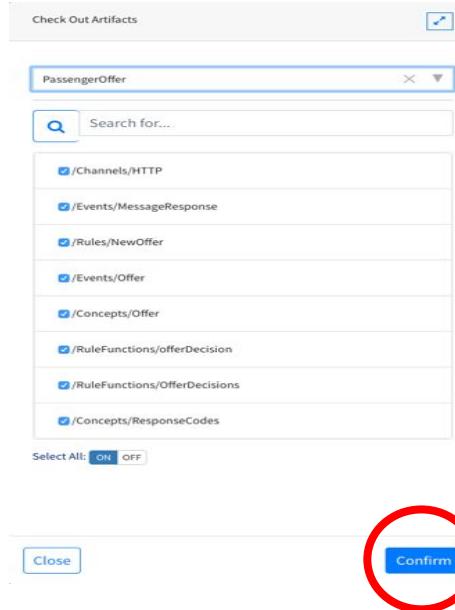
- Select WebStudio. Navigate to Dashboard.
- The dashboard shows all recent activities.
- Navigate to Workspace.
- We are going to check out project artifacts and make changes. Select +

The image shows two screenshots of the TIBCO Cloud Events interface. The top screenshot is the 'TIBCO CLOUD Events' dashboard, showing a list of 'Apps' in 'All Sandboxes'. It lists two entries: 'PassengerOffer' (Running, 1 instance, 4 GB) and 'PassengerOffer' (Running, 1 instance, 4 GB). The 'PassengerOffer' entry in the second row has a red circle around the 'WebStudio' link in the top right corner. The bottom screenshot is the 'Events WebStudio' workspace. It shows a 'Recent User Activity' section with a log of user actions for 'Mussett, Mark' on May 28, 2020. The 'Workspace' tab is selected in the top navigation bar, which also includes 'Dashboard', 'Settings', and 'Management'. A red circle highlights the 'Workspace' tab. The 'Events WebStudio' interface includes sections for 'Recent User Activity', 'Project Snapshots', and a 'PassengerOffer' project summary.

This screenshot shows the 'Events WebStudio' workspace. The top navigation bar includes 'Workspace', 'Dashboard', 'Settings', and 'Management'. The main area features a 'Welcome to the TIBCO Cloud Events WebStudio' message with a central icon of a smartphone and a gear. Below this, a message says 'You have not checked out any artifacts' and 'Get started by checking out some artifacts into your workspace'. A red circle highlights the orange '+' button at the bottom center of the workspace area.

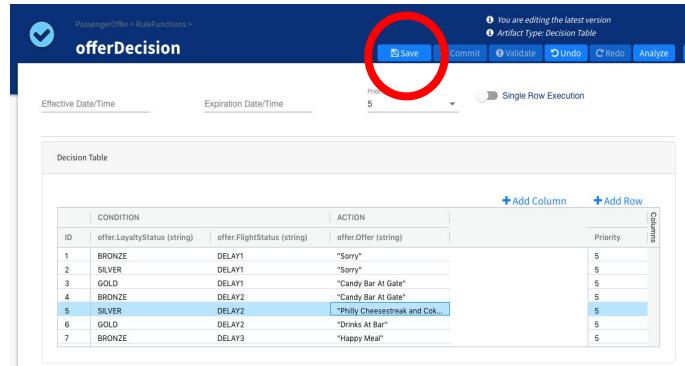
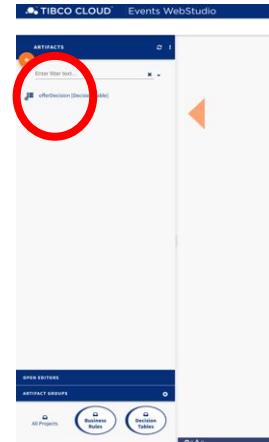
Updating Real-time Decisions

- Select PassengerOffer and select Confirm.
- This will check out all PassengerOffer artifacts.



Updating Real-time Decisions

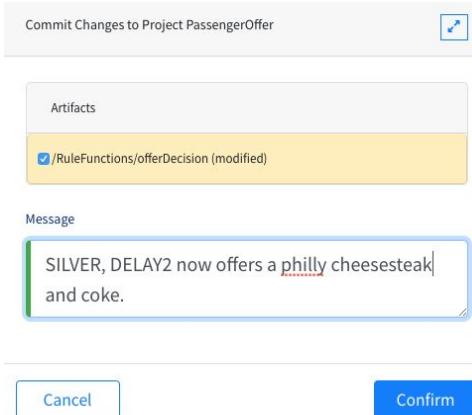
- We are going to make changes to the PassengerOffer decision table.
- Select offerDecision from ARTIFACTS list.
- In the offerDecision table scroll down to row 5 where SILVER, DELAY2 and “Happy Meal” is displayed.
- Change “Happy Meal” to “Philly Cheesesteak and Coke”.
- Select Save.



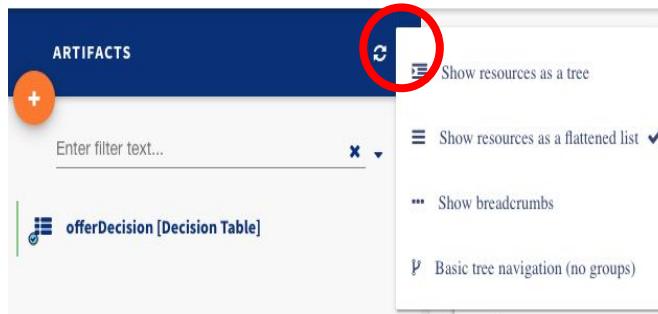
Decision Table		+ Add Column	+ Add Row
CONDITION	ACTION		
ID	offer.LoyaltyStatus (string)	offer.FlightStatus (string)	offer.Offer (string)
1	BRONZE	DELAY1	"Sorry"
2	SILVER	DELAY1	"Sorry"
3	GOLD	DELAY1	"Candy Bar At Gate"
4	BRONZE	DELAY2	"Candy Bar At Gate"
5	SILVER	DELAY2	"Philly Cheesesteak and Coke"
6	GOLD	DELAY2	"Drinks At Bar"
7	BRONZE	DELAY3	"Happy Meal"

Updating Real-time Decisions

- Commit your changes. Select Commit, add a message and select Confirm.

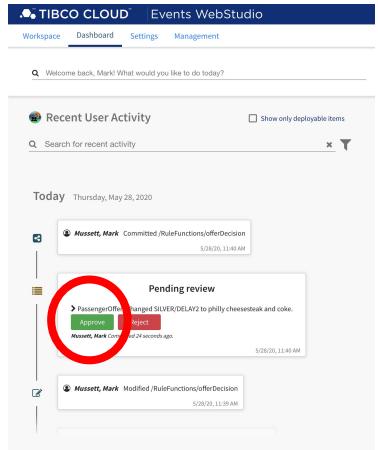
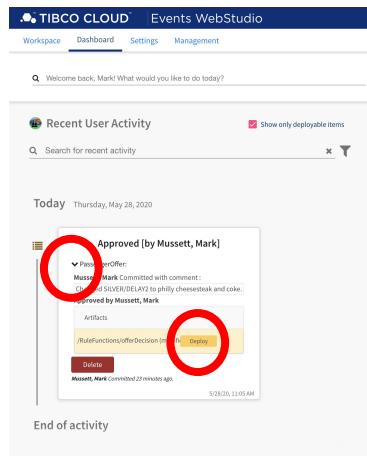
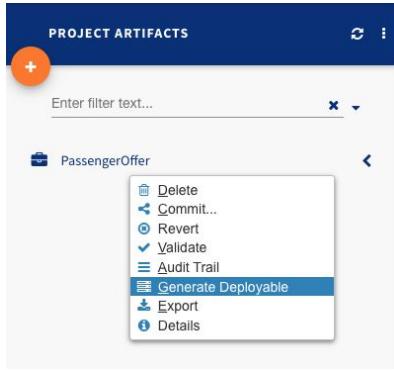


- Select show resources as tree.



Deploying Real-time Decisions

- Right-click on PassengerOffer and select Generate Deployable.
- Select PassengerOffer and select Confirm.
- Select Dashboard.
- Approve the change.
- Select >PassengerOffer from recent approved activity and select Deploy.



Testing Real time Decisions



Contextual Offers

- Navigate to Cloud Events Apps Home Page and select 2 Endpoints PassengerOffer - /swagger.

The screenshot shows the TIBCO Cloud Events Apps interface. The 'PassengerOffer' app is selected. A red circle highlights the 'Endpoints' link in the context menu. Below, the Swagger UI displays a POST request to the '/Channels/HTTP' endpoint. The request body contains parameters: passengerId (1111), arrival (SILVER), loyaltyStatus (DELAY2), and flightStatus (extid_1, ms_, nm_). The response shows a JSON object with the message: "Offer: 1111 offer 1111 Philly Cheesesteak and Colon message".

```
curl -X POST "https://events-cloud.tibcoapps.com/2e7fbcc-e151-49b0-9259-1a6d44a9cc12/Channels/HTTP/offer?passengerId=1111&loyaltyStatus=DELAY2" -H "accept: application/json"
```

Request URL: <https://events-cloud.tibcoapps.com/2e7fbcc-e151-49b0-9259-1a6d44a9cc12/Channels/HTTP/offer?passengerId=1111&loyaltyStatus=DELAY2>

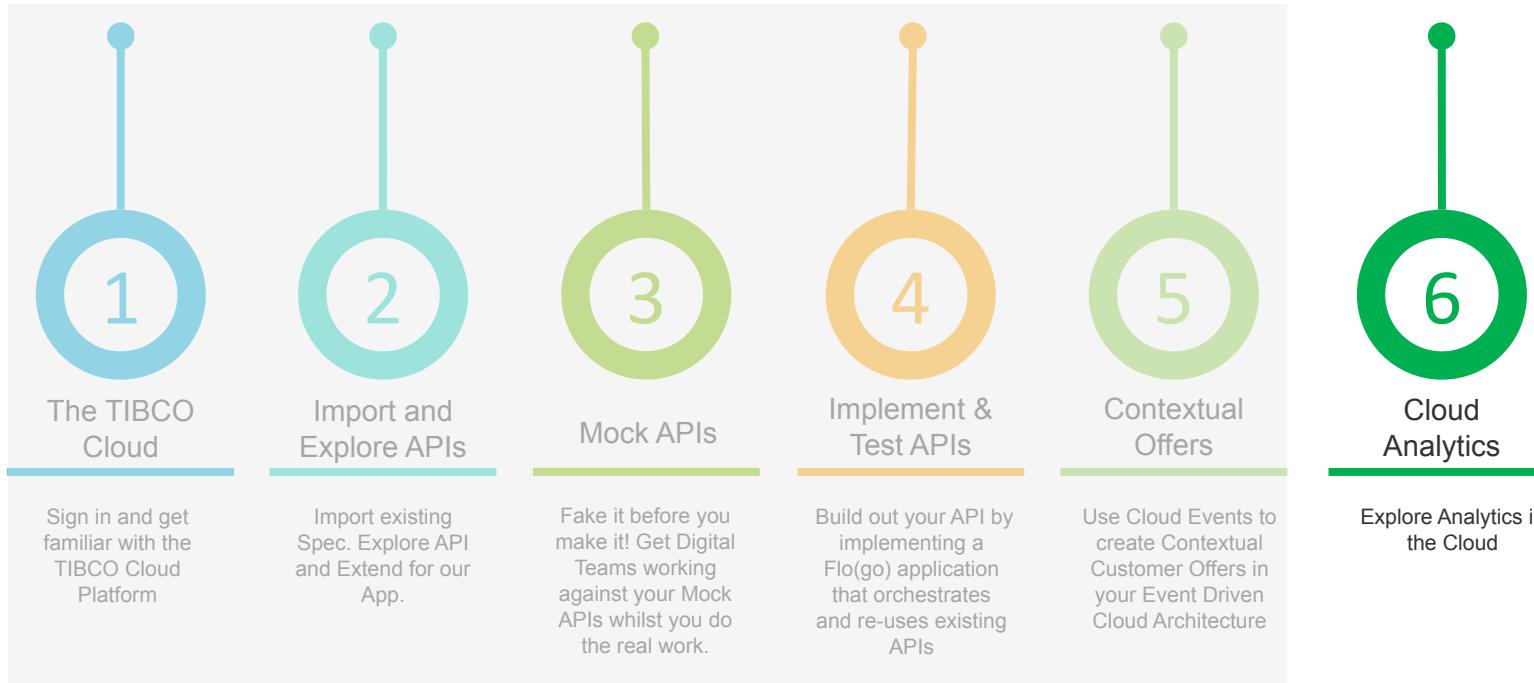
Server response

Code	Details
200	Response body

```
curl -X POST "https://events-cloud.tibcoapps.com/2e7fbcc-e151-49b0-9259-1a6d44a9cc12/Channels/HTTP/offer?passengerId=1111&loyaltyStatus=DELAY2" -H "accept: application/json"
{
  "Offer": "1111 offer 1111 Philly Cheesesteak and Colon message"
}
```

- Expand GET Method and select Try it out.
- Fill in the values as shown
- New offer should be shown

Connected Customer Experience App

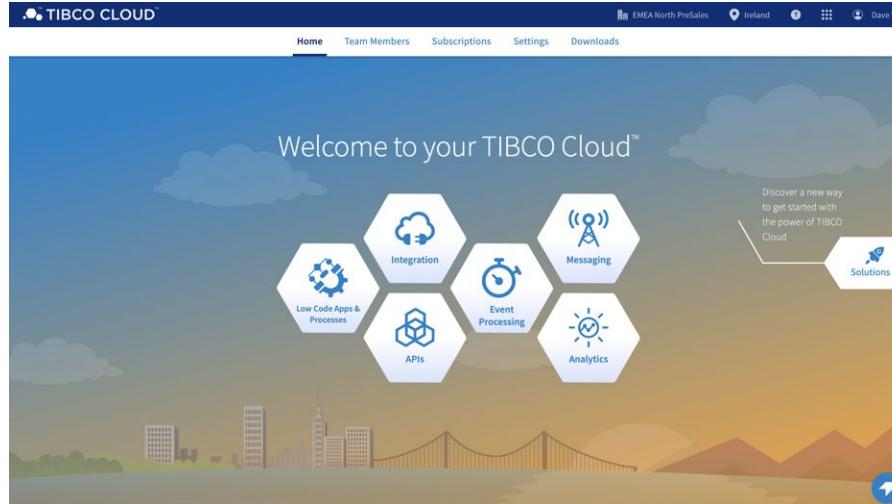


Cloud Analytics



Cloud
Analytics

- We'll start with a prebuilt Dashboard with embedded Data.
- From the TIBCO Cloud Home Screen – select Analytics Processing, followed by "Spotfire"

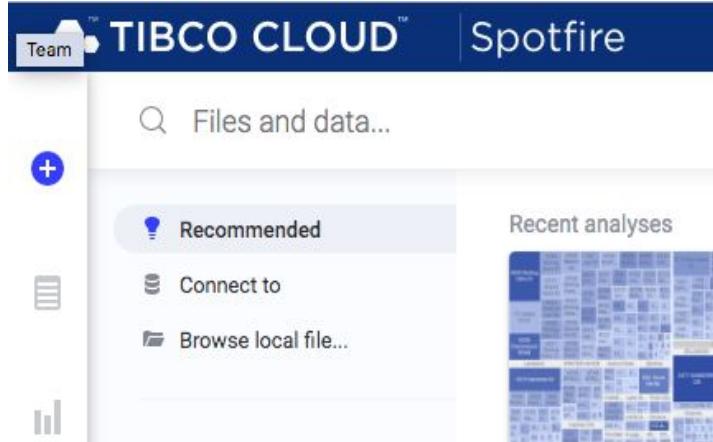


Cloud Analytics



Cloud
Analytics

- Select “Browse Local File”
- Navigate to where you extracted the connected customer experience artifacts and select project\Analytics\SFO GIS Analysis.dxp
- Select open.



Cloud Analytics

- Dashboard shows the results of a customer satisfaction survey.
- Select a category such as Restaurant.
- You will see the geo map of the airport highlight only Restaurants.
- Click on the background to select all categories.
- Now under Top Promoters select art work. The map will reflect the selection.
- Click on the tabs to see Terminal View and Survey Data.
- To save this analysis click on Viewing and select Editing.

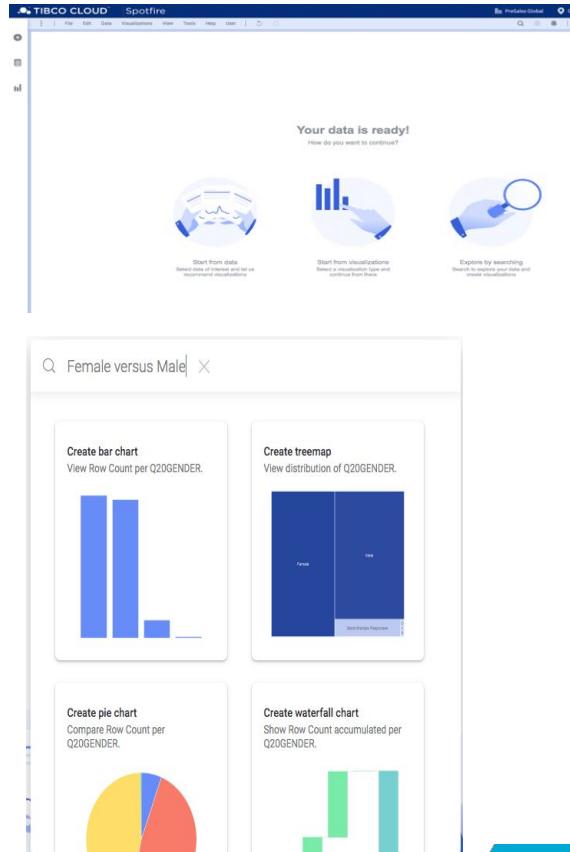


Create New Visualisations

6

Cloud
Analytics

- In this exercise you will be using natural language processing to create a pie chart to show survey Responses.
- Click on + to add a new tab.
- Select Explore By Searching
- In What are you interested in? type Female versus Male and select create pie chart.

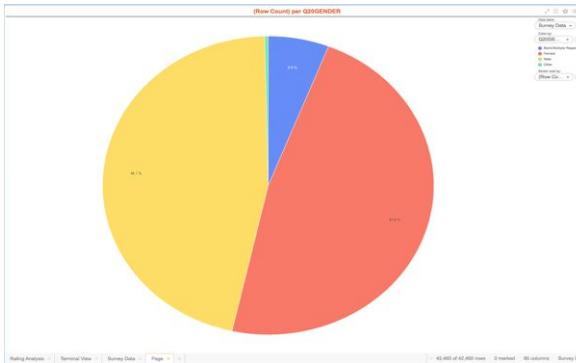


Create New Visualisations

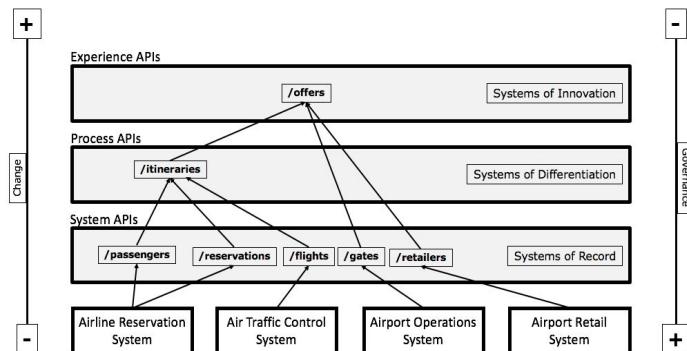
6

Cloud
Analytics

- Try creating different analysis
- Right-Click and Create Details Visualisation



Bringing it all back together



Agenda & Timings

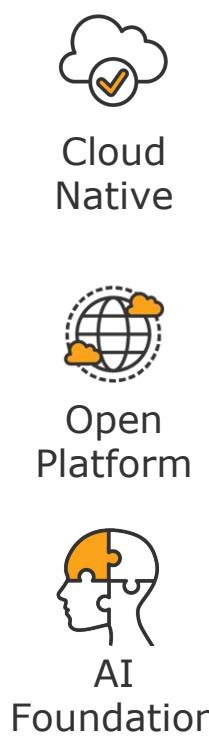
Time	Length	Subject	Presenter
13:00	10 Minutes	Welcome & Introduction to the team	Bryn Garton
13:10	20 Minutes	Driving agile innovation across the Enterprise with the TIBCO Cloud Platform and our Event Based and API-led connectivity capabilities: Opportunities, challenges of connectivity and integration in today's reality	Bryn Garton
13:30	30 mins	Product Roadmap	Rishi Palve
14:00	2 Hours	Hands-on Labs	Dave Winstone Mark Mussett Bryn Garton
		Experiencing the full Event Based, API-led connectivity lifecycle	
		Designing an API & Creating a Mock Application	
		Implement and Test your API in the TIBCO Cloud	
15:00	10 Minutes	Break	
		Event Driven Contextual Offers	
		Insights via Real-time Visual Cloud Analytics	
16:00	30 Minutes	Discussion & Wrapup <i>(adopting TIBCO Cloud, real-life examples including Low Code, FaaS, Streaming, Open Source Innovation, Citizen Integrator/Developer)</i>	Bryn Garton

Embracing Open Source,
Event-Driven, Serverless,
ML & More

Rishikesh Palve

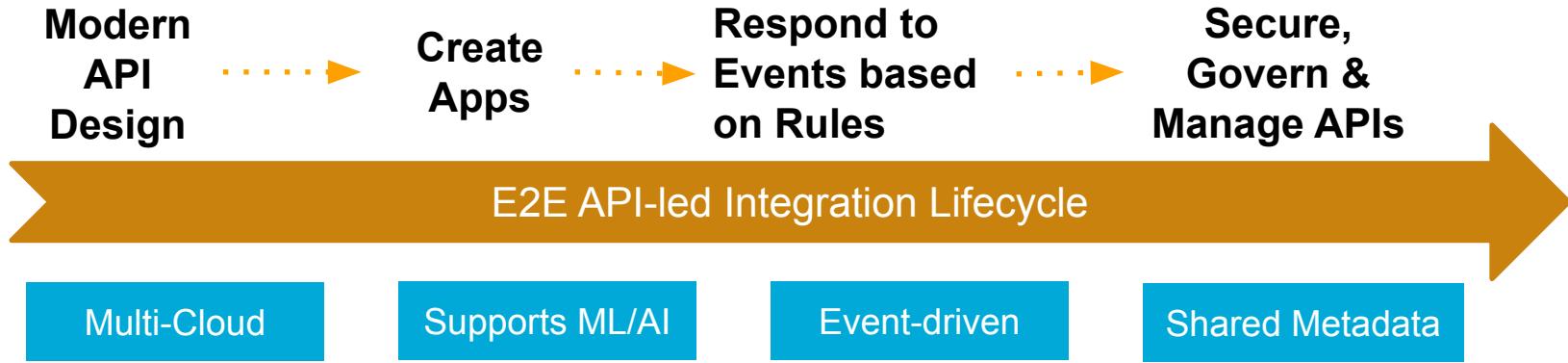
Senior Product Manager

Built on Strong Core Principles



- Re-architected core capabilities as cloud-native 'engines'
 - Deliver the same core cloud-native components across workloads
 - Significantly reduced or removed any proprietary dependencies
 - Devops/Cloudops/Dataops support delivered as open source
-
- Provide customers the same tools used internally to extend capabilities
 - Open source delivery of new key capabilities like Project Flogo
 - Continued adoption of enterprise and emerging open source (e.g. Kafka, Pulsar)
 - Increasingly active engineering participation in larger scale OSS projects
-
- Application of AI principles and technology across capabilities to enhance workflow and user productivity
 - Integration to leading AI frameworks both for real-time projects (Flogo with TensorFlow) as well as Data Science modeling and design
 - Increasing use of AI as a platform for developing new capabilities such as adaptive business logic and execution

Enterprise API-led iPaaS



Inclusive approach to an open platform

Best-of-Breed Innovation and Faster Time-to-Market



Use preferred open source projects with enterprise support from TIBCO

Embrace open standards in your product development

Build on a foundation of leading open source software



Inclusive approach to an open platform

Best-of-Breed Innovation and Faster Time-to-Market



Messaging

- Commercial Support
- Bridge into TIBCO Messaging
- Management, Monitoring
- App-Dev support through Flogo

AsyncAPI

- Handle, process APIs
- Expand to support consumption and app-dev patterns



Project Flogo

- 150+ Active Contributors
- 1200+ Contributions
- 1.2k+ GitHub Stars
- 56k+ Docker Pulls

Expanding Capabilities

- Events, Streams, Rules
- API Microgateway
- CatalystML
- Specification

Customer Adoption
AIR FRANCE KLM

JABIL **CAESARS**
ENTERTAINMENT

THINGSTREAM

TIBCO



56,000+

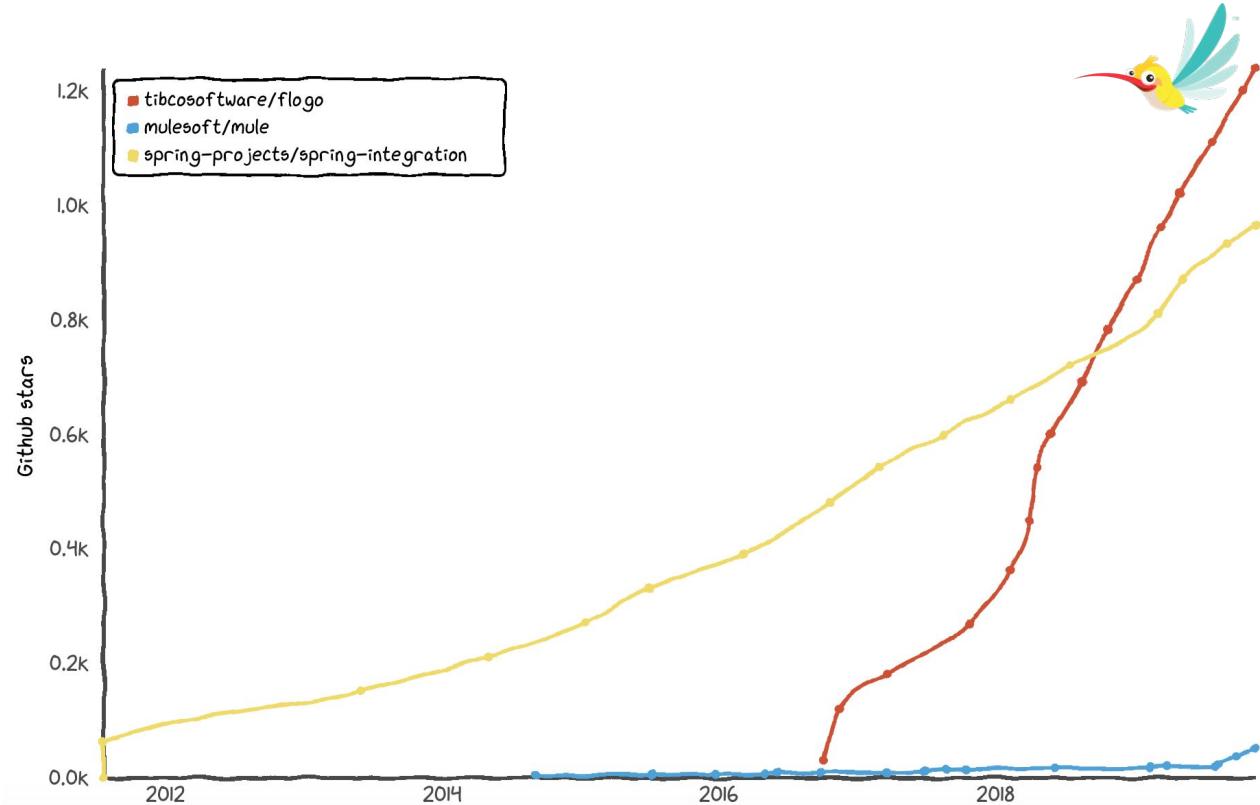


1,200+

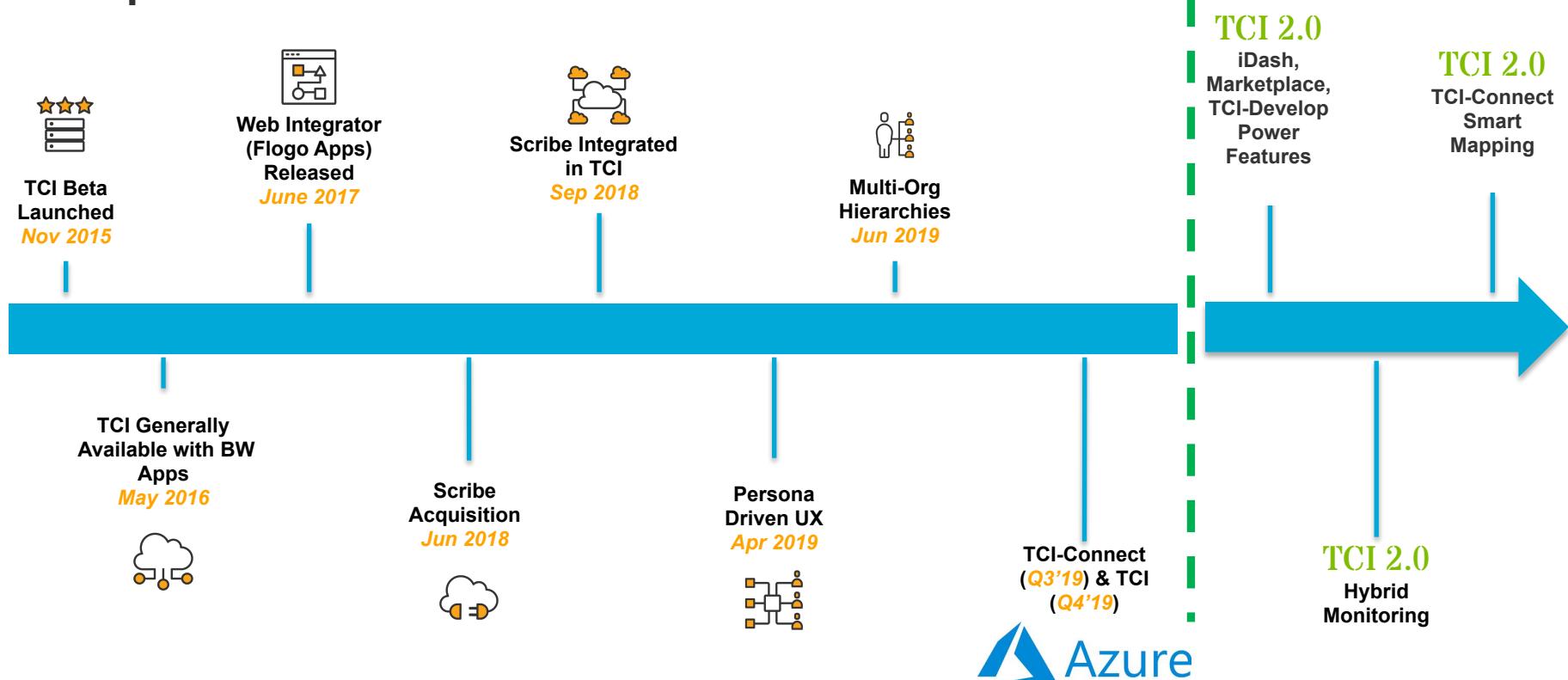


800+

Contribs



Key Product Updates Timeline



Announcing TIBCO Cloud™ Integration on Azure

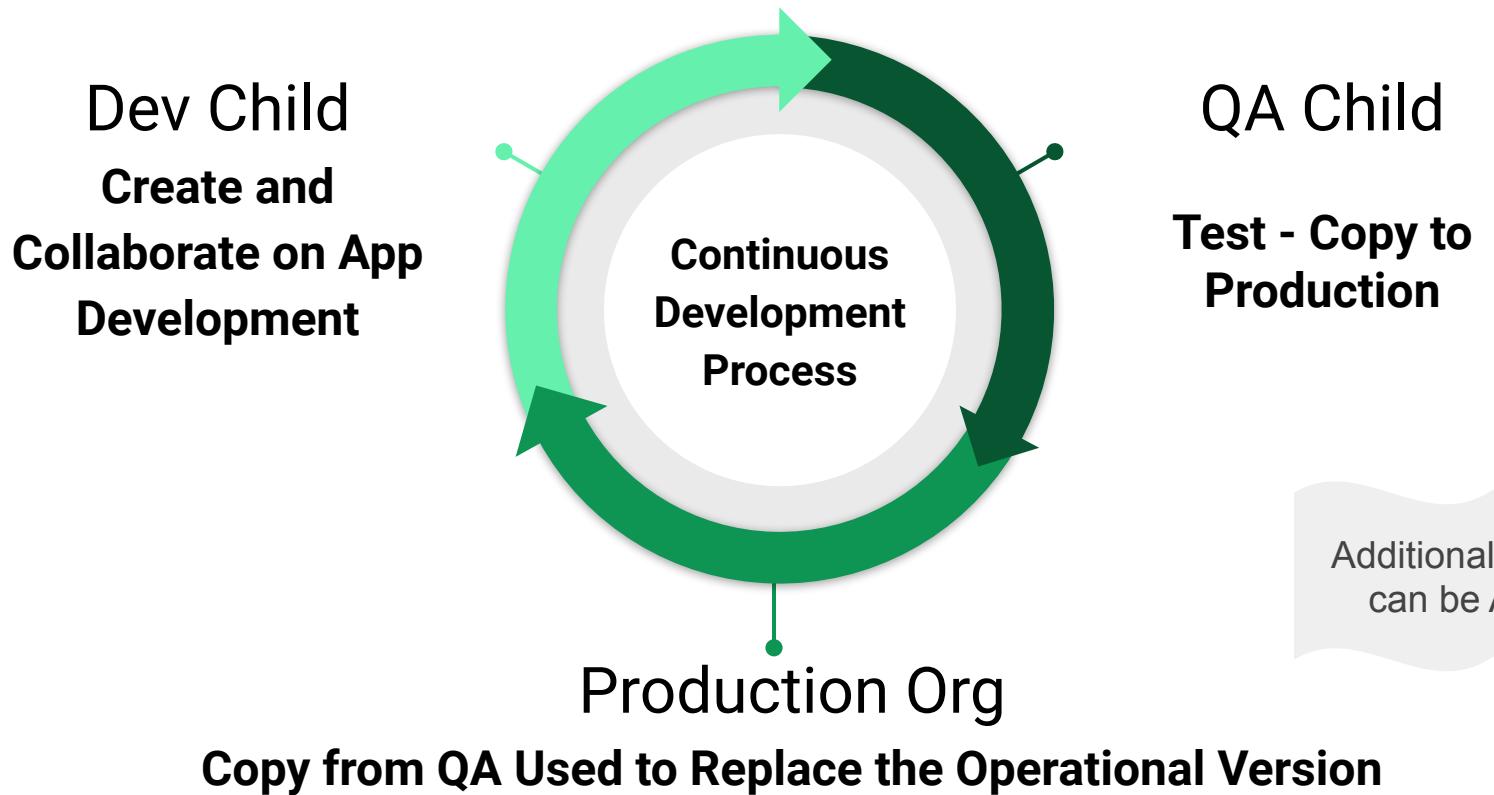
TIBCO Cloud Integration capabilities now additionally available on Microsoft Azure

Integrate your solutions all
within a managed environment
in *Microsoft Azure*

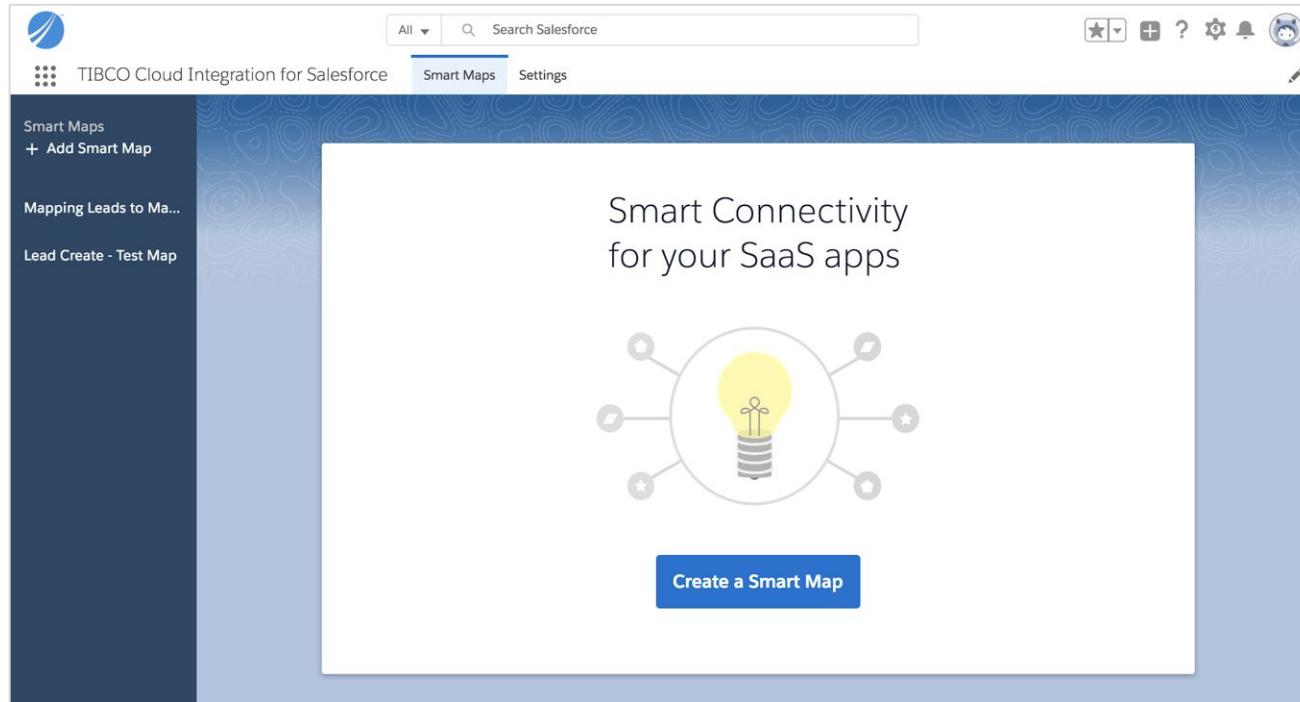
Also available on *Azure*
Marketplace



Support for multi-org hierarchies



Smart Maps – Embedded Integration



***Natively embedded capabilities
in popular SaaS Apps***

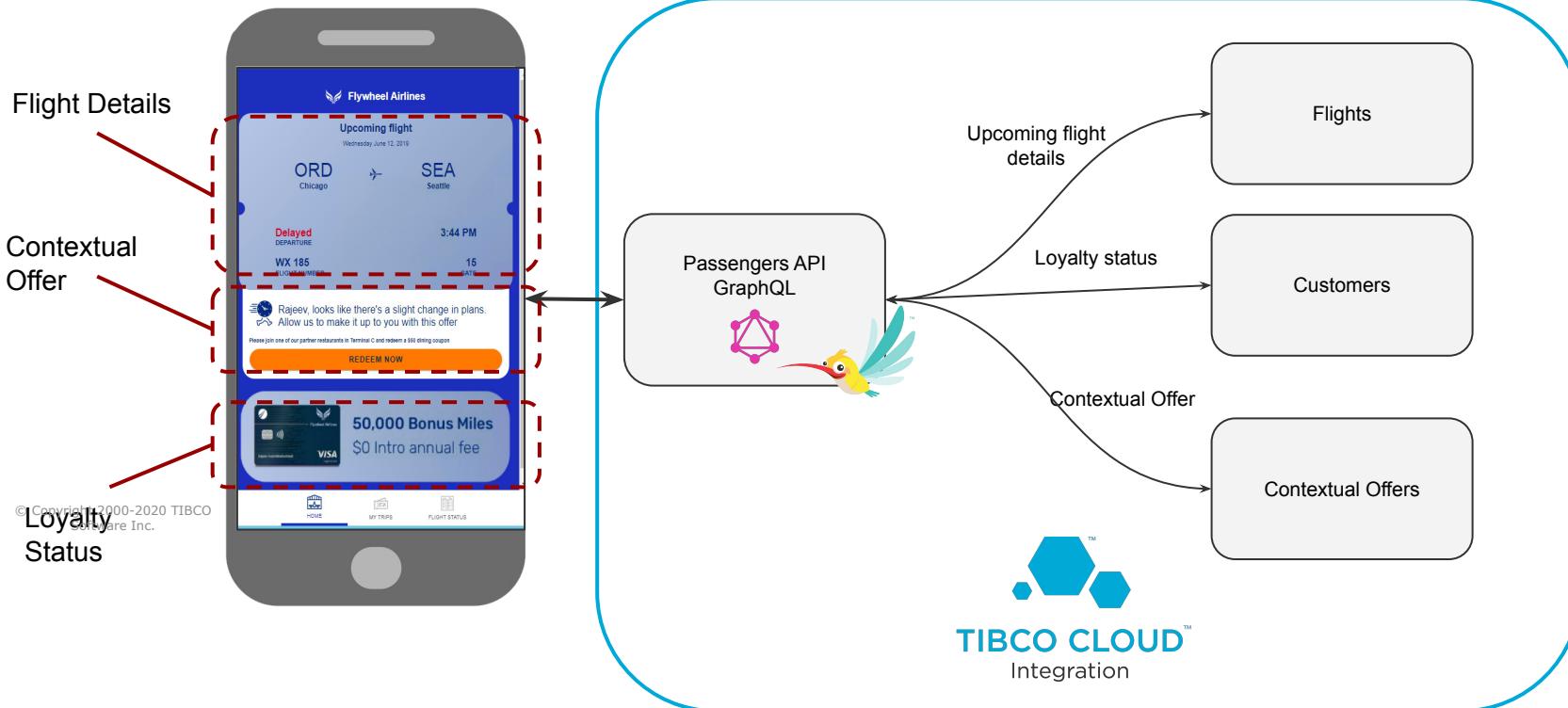
***Smart Mapping - powered by
Machine Learning***

***Backed by a FaaS runtime for
speed, scale and cost-efficiency***

***Install as an App in your
Salesforce Instance, targeted for
availability in other areas***

Native GraphQL Support

Build modern Experience APIs that unify all your data



TIBCO Cloud Integration for Serverless & FaaS



AWS Lambda



The **only** integration engine to run natively on AWS Lambda – and soon enough on Microsoft Azure Functions



First-class support for GraphQL

Native GraphQL trigger; OOTB tooling to implement server that auto-generates: trigger config, flows as resolvers, and data mappings based on GraphQL schema

Embracing Modern API & App Dev

TIBCO Cloud Integration - *Develop*



gRPC®

First-class support & tooling for implementing gRPC services; OOTB gRPC Client activity



Open API™ Specification

Swagger 2.0 support & tooling for API-first development



AWS Lambda

Deploy apps to AWS Lambda & bind to any event source; Integrated CloudWatch for logging; Native S3 & API Gateway Triggers



Kafka, MQTT & Avro

Built-in Kafka, MQTT & TIBCO Cloud Messaging connectivity for event pub/sub;
Avro Schema Registry for Kafka
Pub/Sub, Built-in Avro serialization/deserialization

Cloud-Native, Event-Driven & Serverless TIBCO Cloud Integration - *Develop*



Monitoring

OpenTracing support & OOTB Jaeger tracer; Prometheus support for Metrics; Open API & custom extensions support



Run Anywhere

Official support for CNCF certified Kubernetes, OpenShift, AWS Lambda, ECS, EKS, Fargate, Google Cloud Run, GKE, Azure Container Instances, AKS, PCF(PAS)



Application Config Management

Externalize Flogo app config using Consul, AWS Parameter Store, Kubernetes Config Maps & Secrets

TIBCO Cloud Integration - *Integrate*

Migrate, build once and deploy anywhere

BusinessWorks

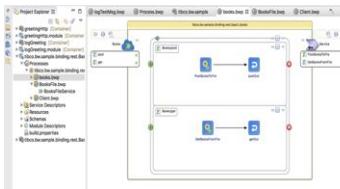
5.x

Application

Migration
Process



Migration Wizard

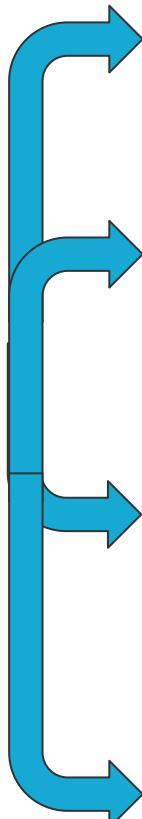


BW Studio Design Time



Maven™

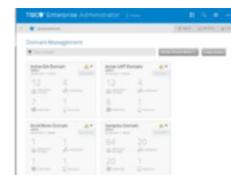
CI Pipeline



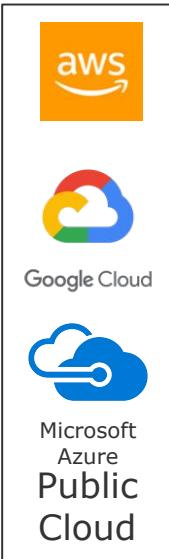
CLOUD FOUNDRY



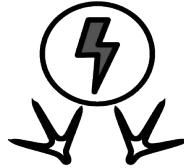
Pivotal
Cloud Foundry®



AppSpace
(On Premise)



TIBCO



Memory Optimization

Reduce JVM heap utilization with Memory Saving Mode for BW Engine

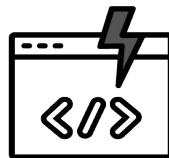


Fast Startups

Faster startups for multi-module apps, Improved Restarts

Turbo-charged Runtime Engine

TIBCO Cloud Integration - *Integrate*



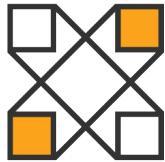
Faster XML Processing

Enhanced XML Processing Layer



Minified EAR

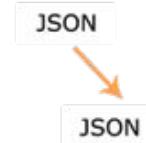
Significant reduction in EAR size



Dependency Viewer, Unused Resource Management



Unit Testing & Mocking



JSON Transformation



HTTP 2.0

TIBCO Cloud Integration - *Integrate*



Hot Updates to Business Parameters



Distributed Tracing & Advanced Process Monitoring



JWT Auth



bw-tooling GitHub



Locally Deployed Dev Portal

Fully cloud-native and on-premises developer portal for APIs



Cloud-native API gateway

Deploy completely containerized in private cloud



Full API Lifecycle Management



Async API support

Handle and process based on the Async OSS standard



GraphQL and gRPC

Advanced support for emerging protocols



Challenges

Data and Integration challenges slow digital businesses and increase operational issues

High Complexity



Information assets are broad, complex, and diverse

Rapid Pace Change



Business and technology landscapes change rapidly

IT Dependency



High IT backlog unable to satisfy requirements quickly

In the current economy cloud and SaaS are key.

The opportunity to tap cloud to take digital leadership is now

Everything from systems to processes to support models is ripe for digital transformation. It's time to jump on the cloud

The top Emerging technologies to watch 2017 to 2021 — Forrester

The rate of cloud adoption is increasing

70% of all software, services, and technology spend by 2020 will be cloud based

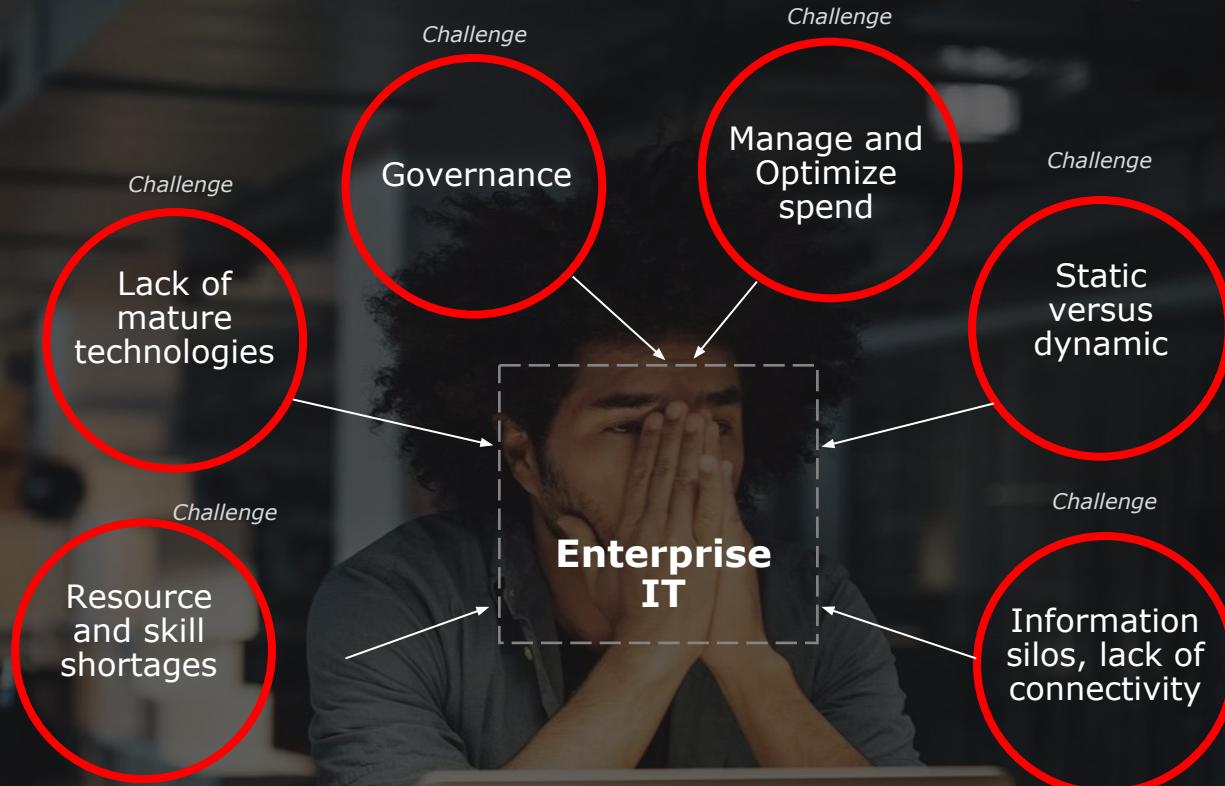
FutureScape — IDC

Cloud transition is a requirement for digital transformation

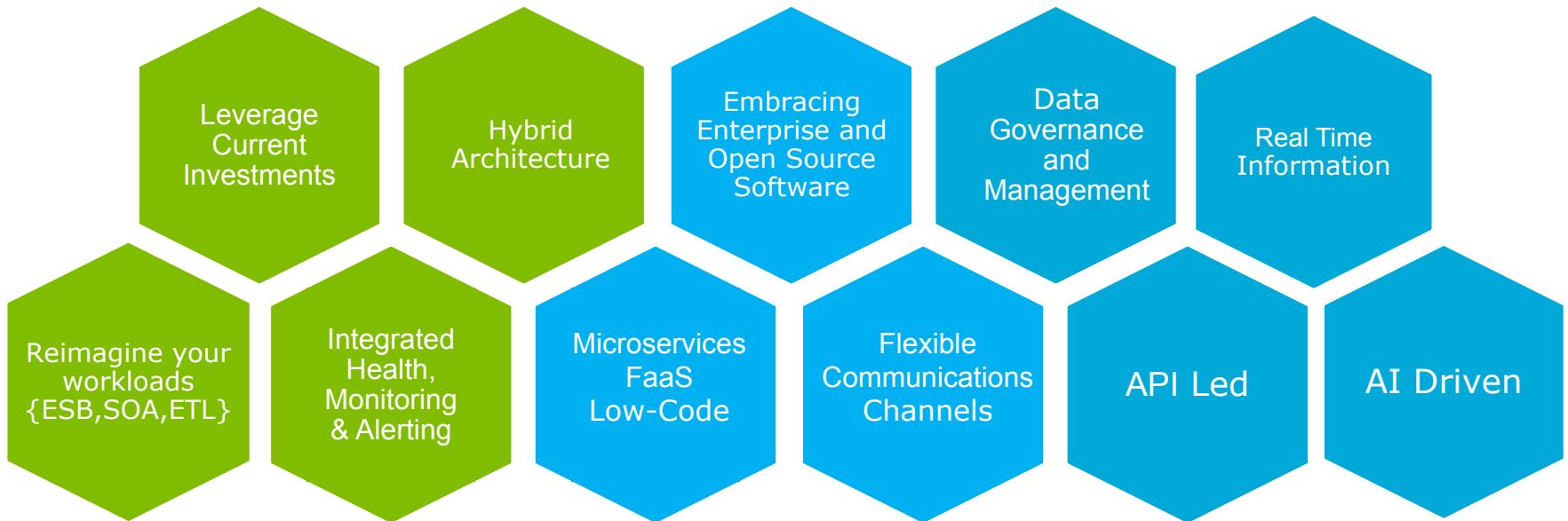
Cloud is more than just a technology transformation driver — it's a business transformation accelerator

Cloud Powers The New Connected Economy — Forrester

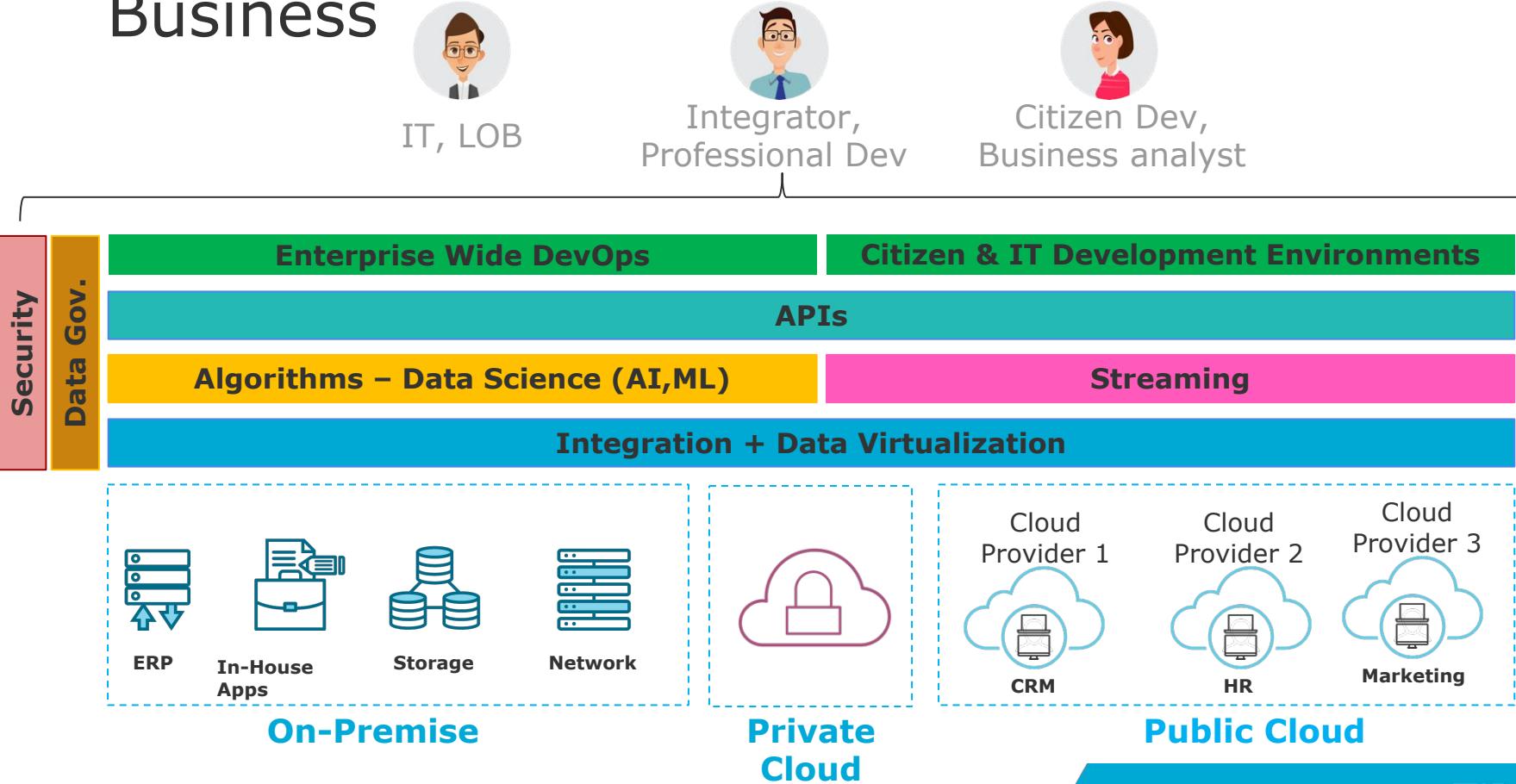
The challenges are real



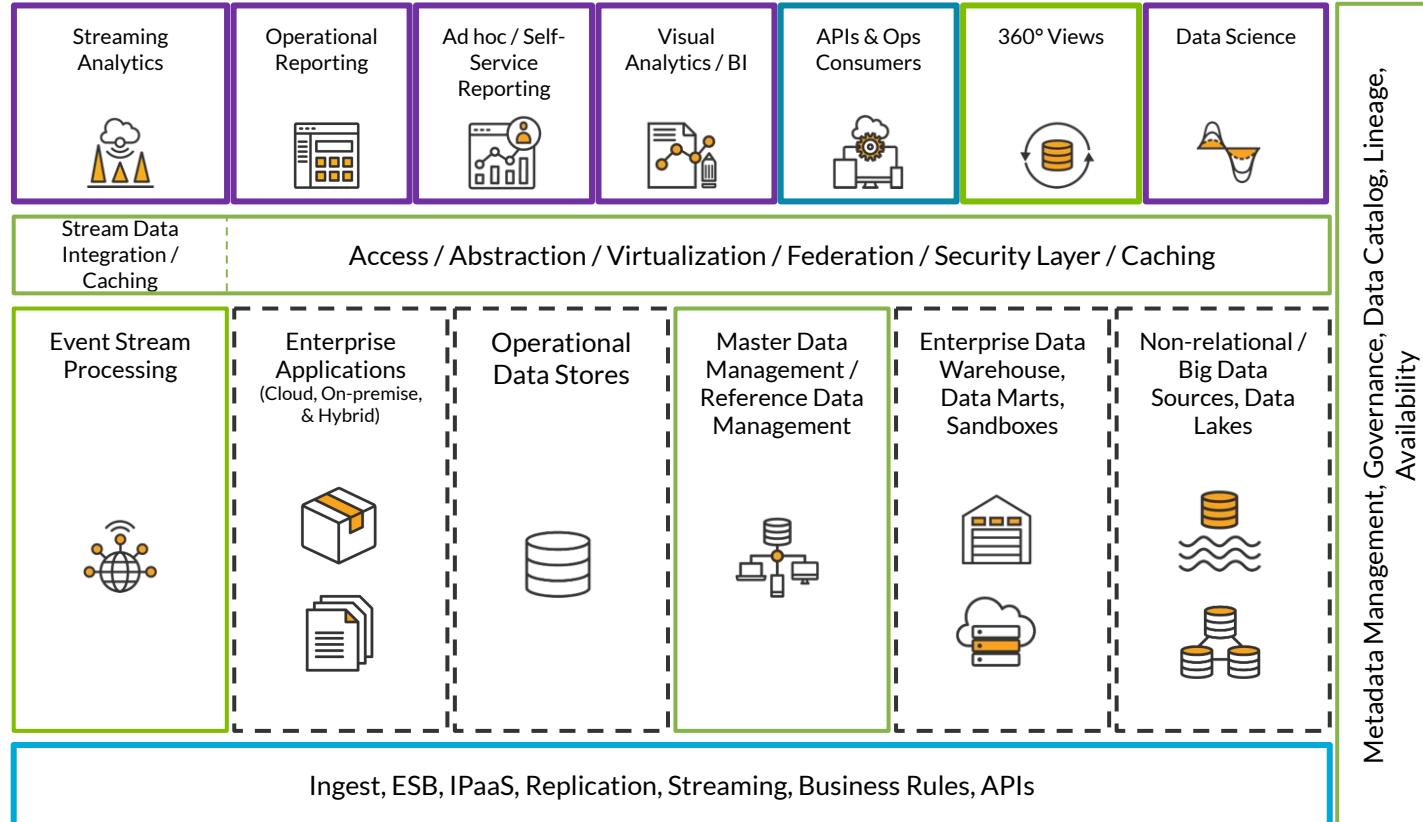
Architecture Foundations for a Digital Business



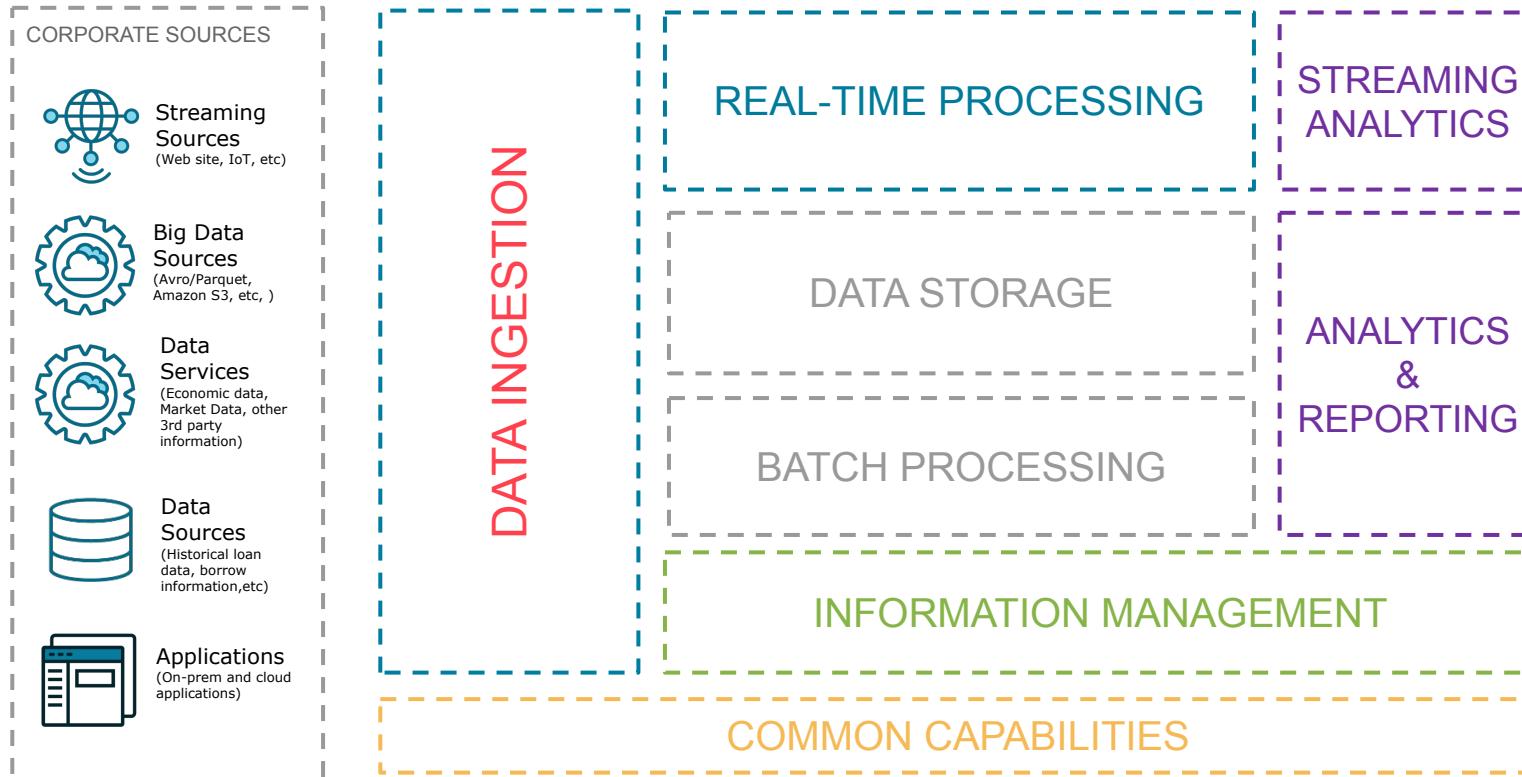
TIBCO Reference Architecture for Digital Business



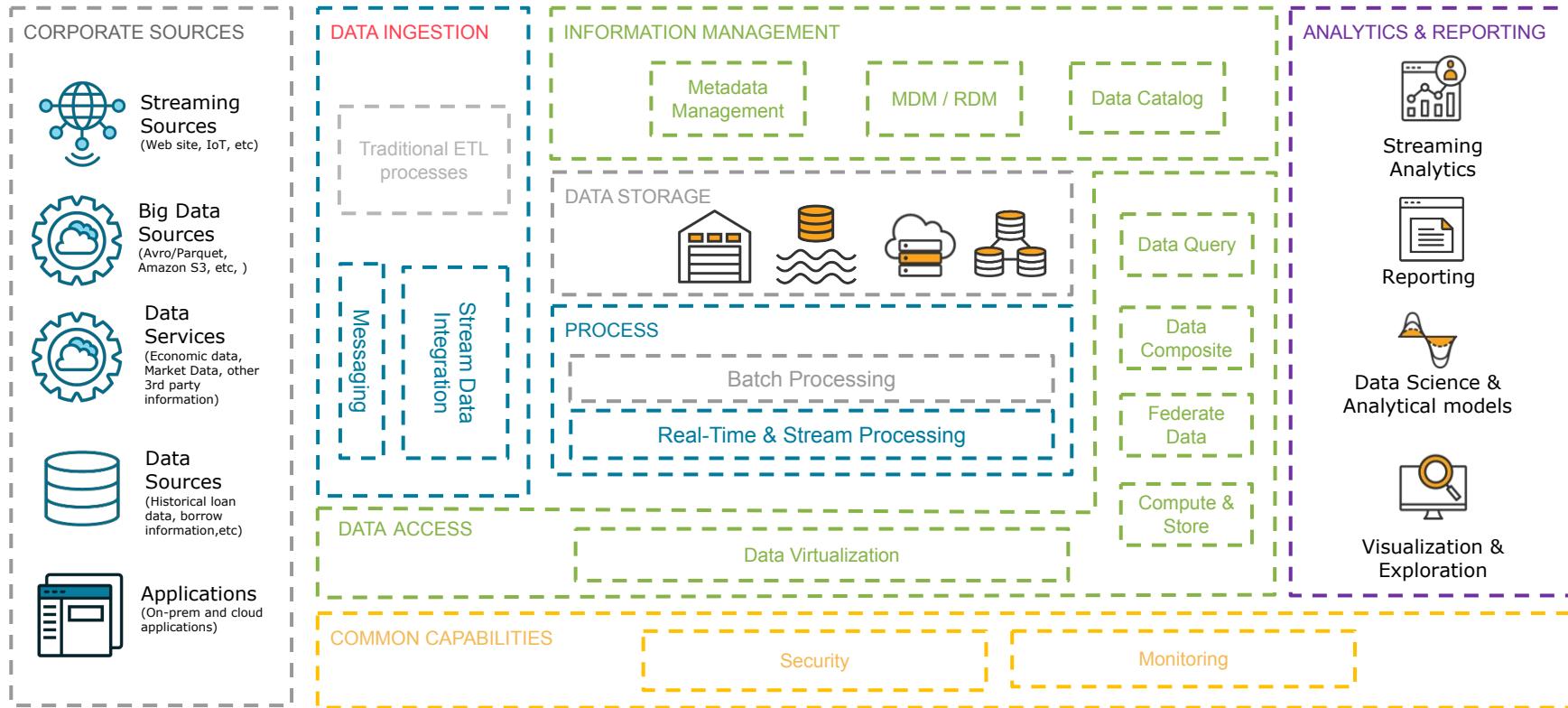
Modern Data Management Platform Capabilities



Reference Architecture for Data



Reference Architecture for Data



Your journey of innovation does not stop here...

TIBCO provides the most optimal path to digital innovation



A single platform takes you from **connected** to **intelligent**.

Thank you

