

goto;

# GOTO EDA Day 2022

📍 Codenode | London

📅 September 1st, 2022



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AWS AND PARTNERS



# Building event-driven apps at scale: across AWS services, existing systems and SaaS



Tom Fairbairn, Distinguished Engineer  
GOTO EDA Day  
September 2022



GOTO  
**Guide**

Let us help you

# Ask questions through the app



remember to rate the session

THANK YOU

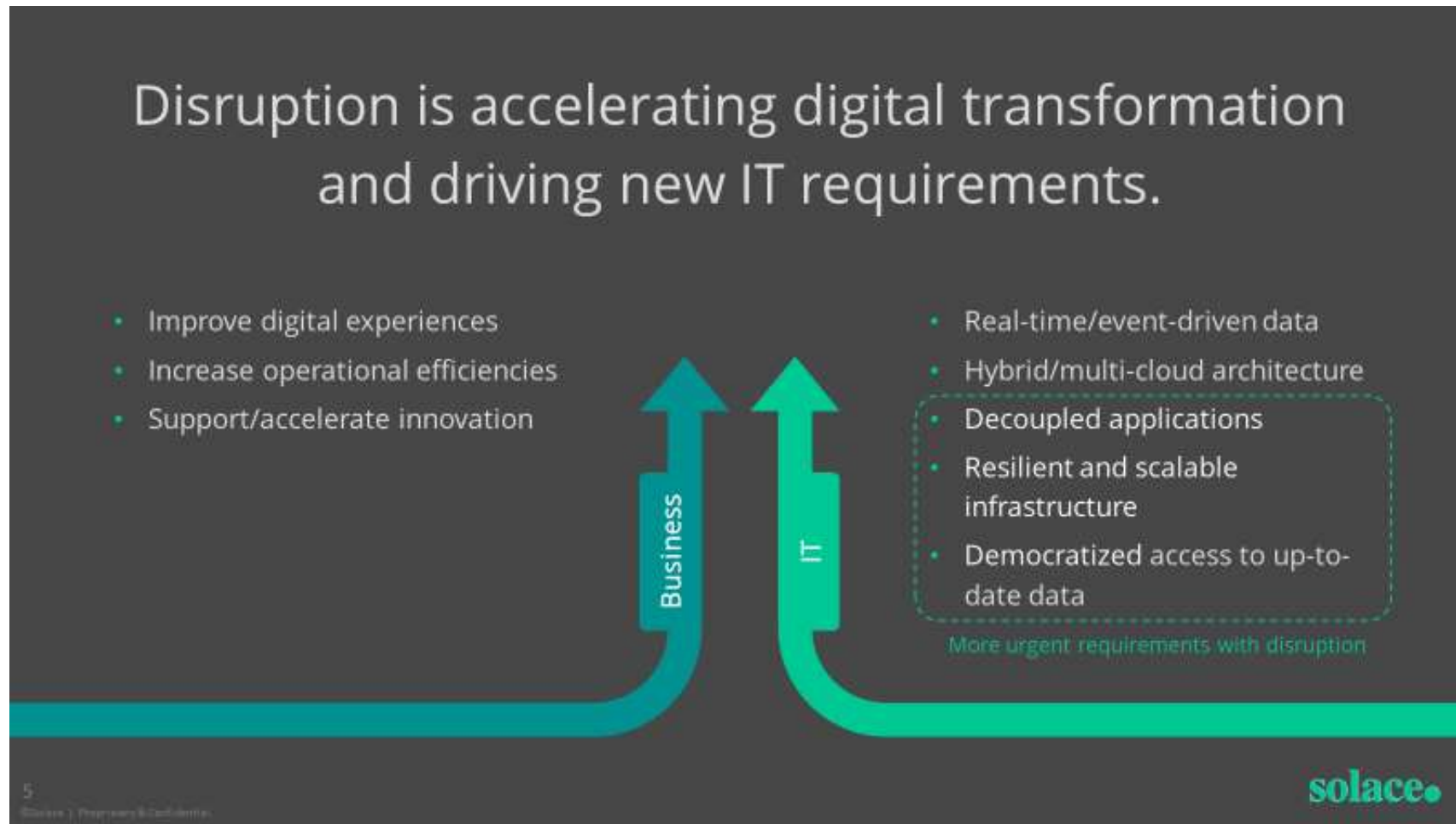




# Agenda

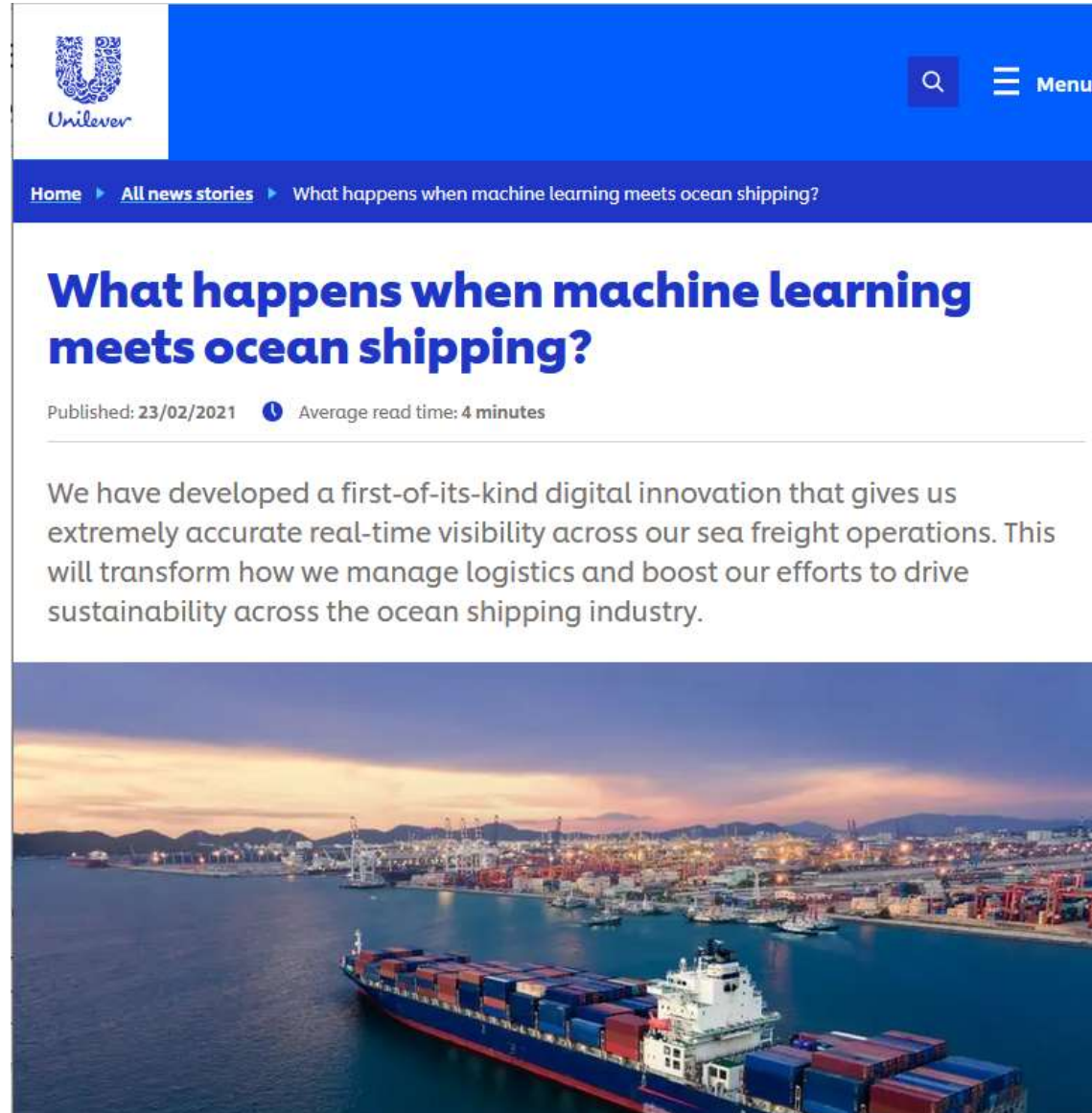
1. Why Events?
2. Where are we with Events?
3. API Products and Event API Products;
4. Creating Event API Products
5. Implementing Event API Products with PubSub+ Event Portal

# Why Events: Is anyone unfamiliar with this?



# Events in Real Life

- Savings of €Ms
- “Demurrage” and “Detention”





# Remember this?

- **Digital Twinning**
- Estimations of variability & impact
- Flexibility & fast response



# Why Events: Synchronous APIs



How many more miles?

How many more miles?

How many more miles?

36.2

36.1


Argh!






# SAP is becoming Event Driven


- SAP BTP event driven platform called “Advanced Event Mesh”
- SAP increasingly deploying EDA

 Community

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Technical Articles



Vipul Khullar   
May 11, 2022 | 3 minute read

## [Blog Post] SAP Event Mesh – Event Driven Architecture Explained

1 15 2,079

Authors: Vipul Khullar & Ayush Kumar

This is the first blog post in the series [SAP Event Mesh – Deep Dive](#).

Before we deep dive into the technical implementation details of the SAP Event Mesh service, it is paramount to understand the general overview of the event-driven architecture and how SAP Event Mesh in BTP enables the same.

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# Where are we with events?

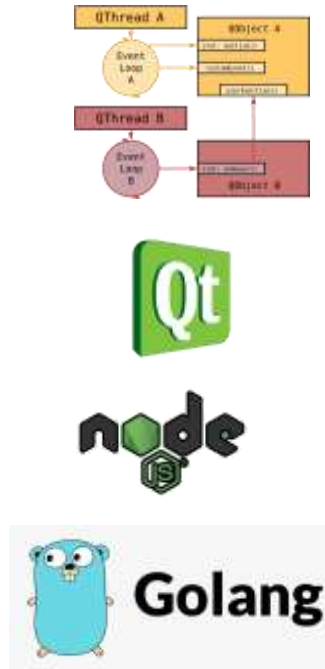
# The timeline



# Event Landscape

Scope:

Local



Distributed

REST  
Event-lite



Event Streaming



Event Processing



Event Sourcing



Complexity



# But... (the rain on the parade slide)



- **Event Sourcing:** "...a bag filled with mines designed to blow your legs off and leave you to a crippled life filled with pain..." <https://chriskiehl.com/article/event-sourcing-is-hard>
- **Event Driven Architecture:** <https://www.3pillarglobal.com/insights/disadvantages-of-event-driven-architecture/>
  1. The Double Edge of Loosely-Coupled Events
  2. Documenting the Anticipation of the Unknown
  3. Anticipating the Unforeseen
  4. Hampered Error-Handling



# The result: Event Islands

- Lack of interoperability between domains
- Operational complexity in allowing access to data
- Autonomy inside domains, not between



# What's Needed

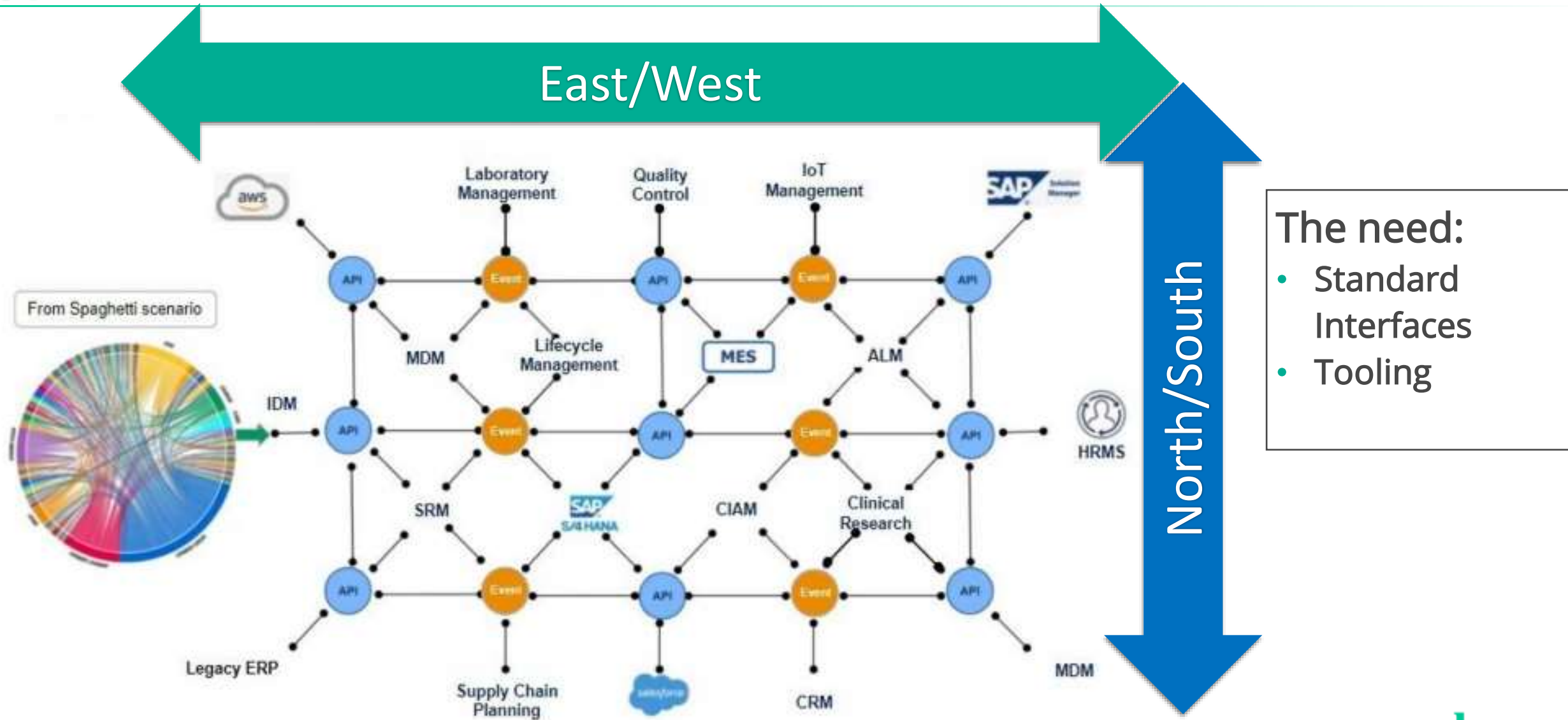


- **Balanced Autonomy**
  - Local Event Distribution and Governance for Local Events
  - Global Event Distribution and Governance for Global Events
  - A Way to promote and demote between the two
  - Implies stratification between local (system) and global (enterprise) events
- **Standardisation**
  - Schemas, meta-data, addressing
  - Interfaces
- **Tooling**
  - Governance
  - Documentation
  - Interfaces

AsyncAPI  
Specification

  
cloudevents

# Roche: Complimentary Approaches to Architecture



Source: EDA Summit "Product Mindset for APIs & Events"

<https://edasummit.com/videos/product-mindset-for-apis-events-with-roche/>

# Event Landscape

Scope: Local



Distributed

REST  
Event-lite



Event Streaming



RabbitMQ



solace.



Event Processing



Event Sourcing



Complexity

solace.

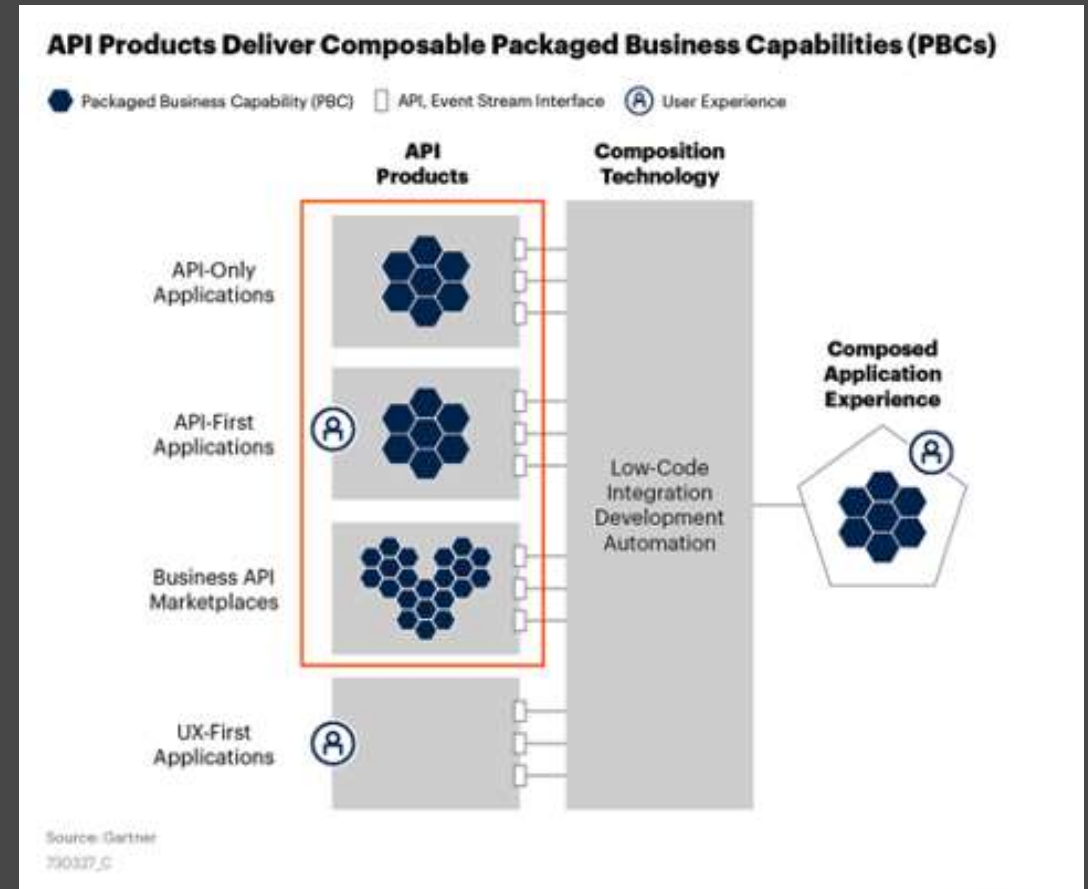


# What are API Products?



# API Products Help Others Consume Your Business Capabilities

- Bundles of related APIs that meet the needs of developers who serve different business functions
- Deliver synchronous/REST APIs for long-term value vs. one-time projects
- Produced, shared and consumed through a developer portal
- Managed by a product manager - roadmap, price, lifecycle



Gartner

Source: Gartner "Kick-Start Your Composable Business Journey With 2 Key Strategies",  
15 Dec 2020, Yefim Natis, Mark O'Neill, John Santoro

# What about Event-Driven APIs?

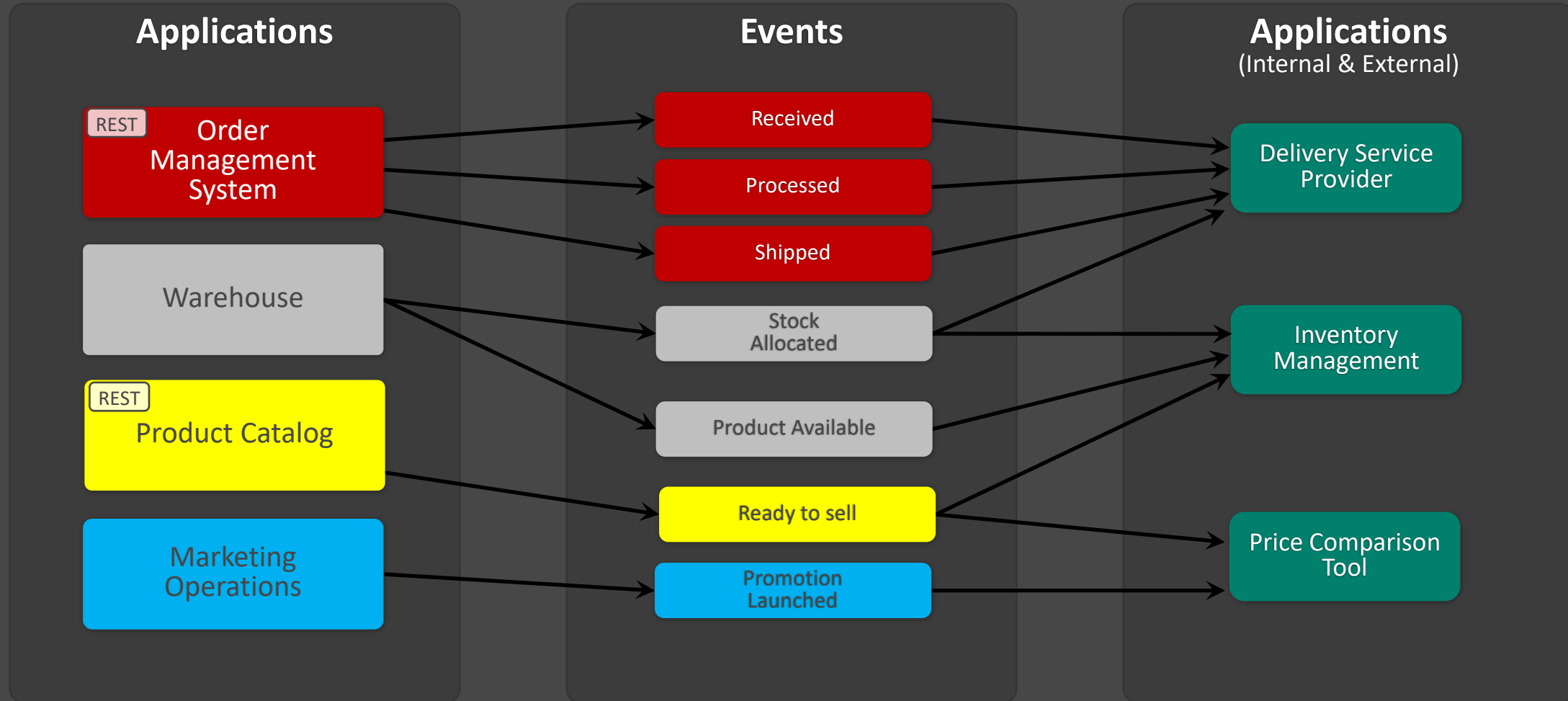
“Event-driven APIs are a new style of API that uses a subscription “push” model rather than the request-response model of conventional RESTful APIs. Architects must develop new approaches to mediating and governing event-driven APIs, because API management platforms designed only for RESTful APIs may not be sufficient.”

*Source: Gartner “Emerging Technologies and Trends Impact Radar: IT Services”, 24 Sept 2020, Twiggy Lo, Brendan Williams*



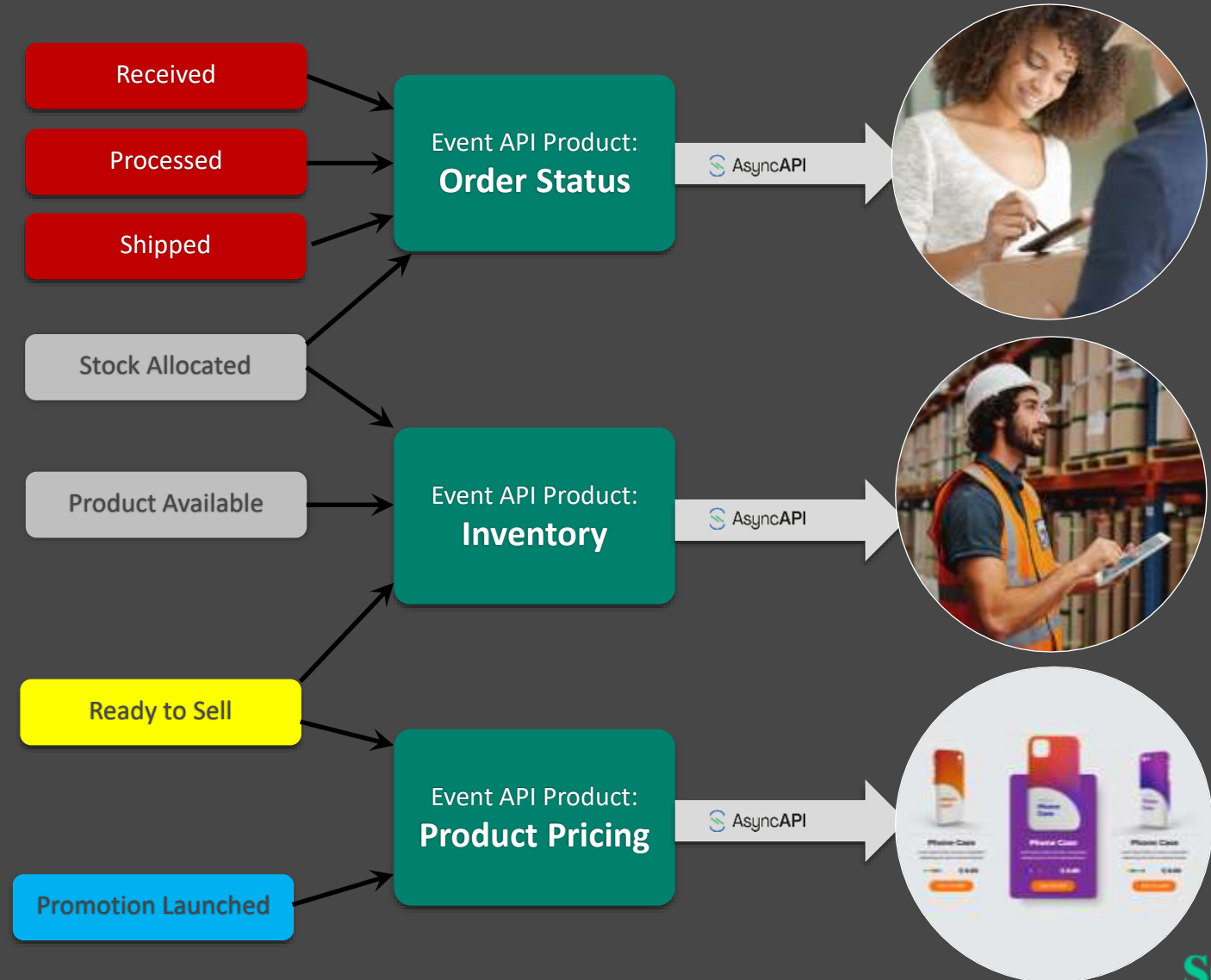
# What are *Event* API Products?

# High Value Events can be Consumed Individually by Many Application Consumers



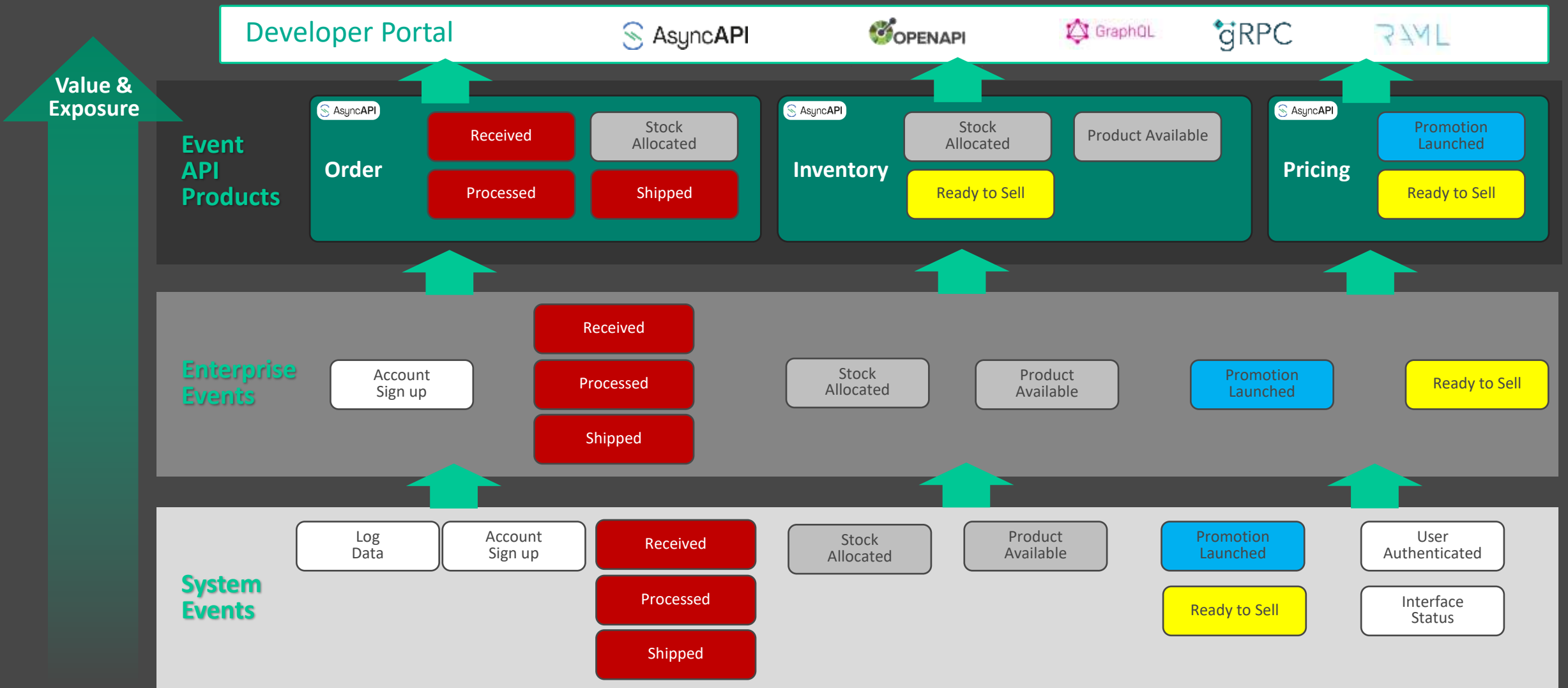
# Or Use **Event API Products** To Make It Easier to Consume and Add New Value

- Bundle related sets of events for specific business purposes
- Curate and expose high value, real-time data for rapid decision-making
- Innovate and personalize offers based on evolving customer needs





# Elevate High Value Events

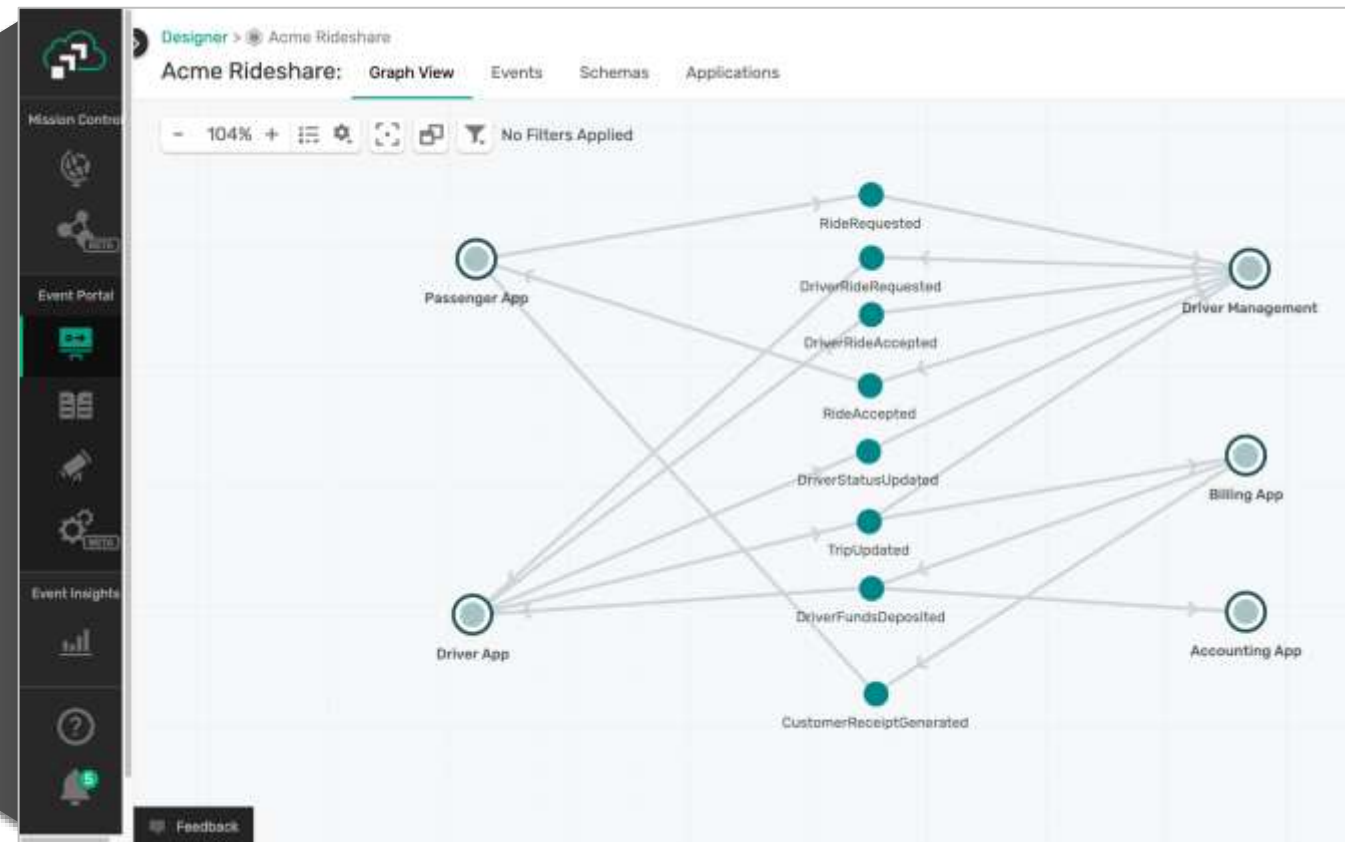
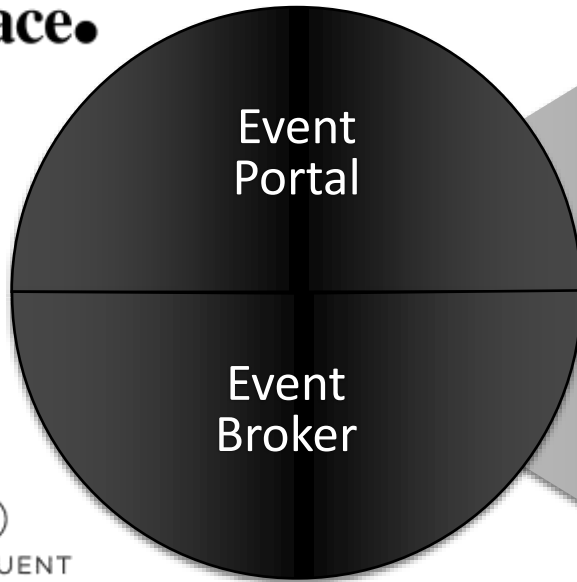


# 5 Steps to Create Event API Products



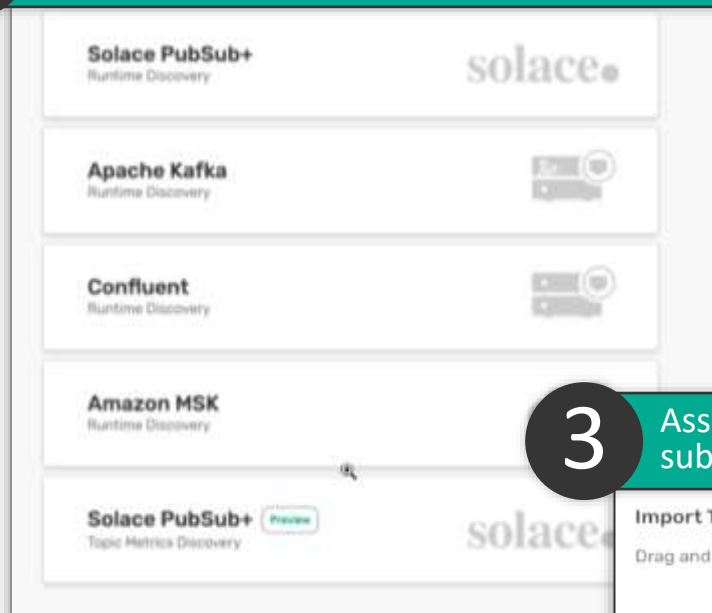
# PubSub+ Event Portal

Single place where architects and developers can collaboratively catalog, share, create and manage all the events, schemas and applications internal and external to the enterprise.

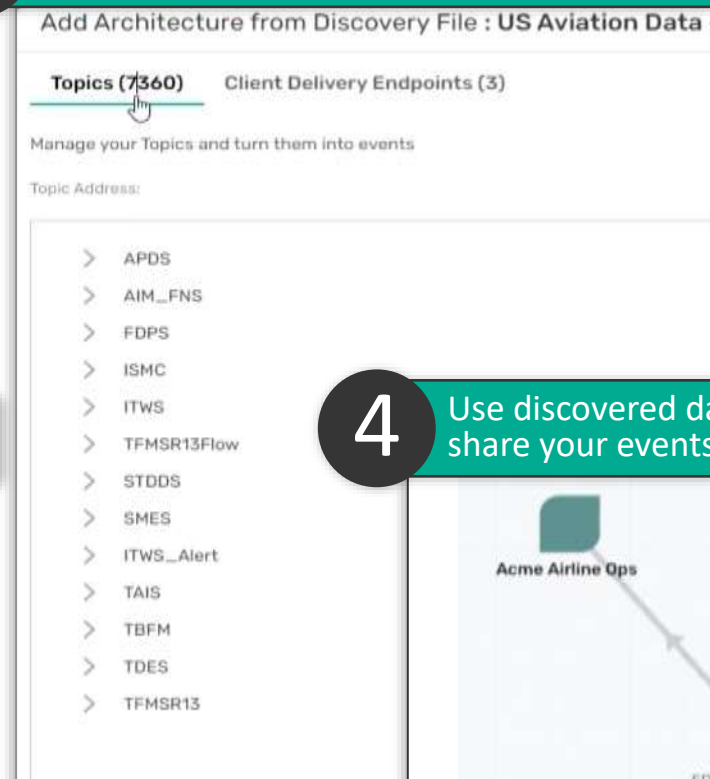


# Discover your Runtime Events

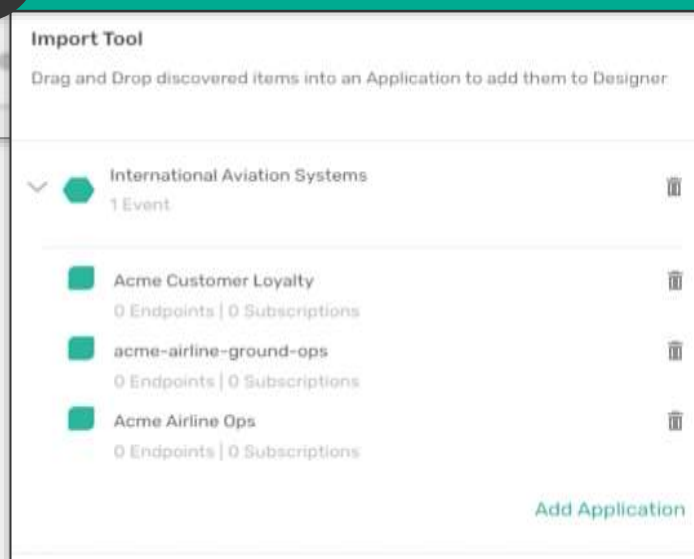
1 Run a discovery agent against your broker to discover events, schemas and app interactions



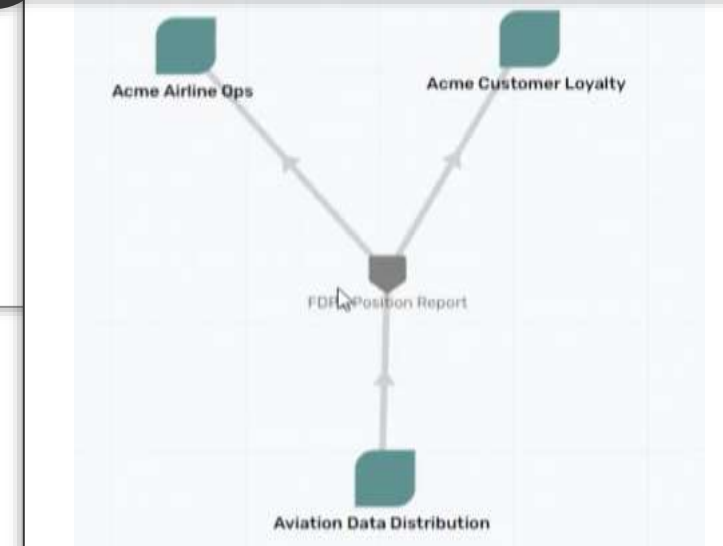
2 Upload discovered data into PubSub+ Event Portal



3 Associate events, endpoints and subscriptions with app and app domains

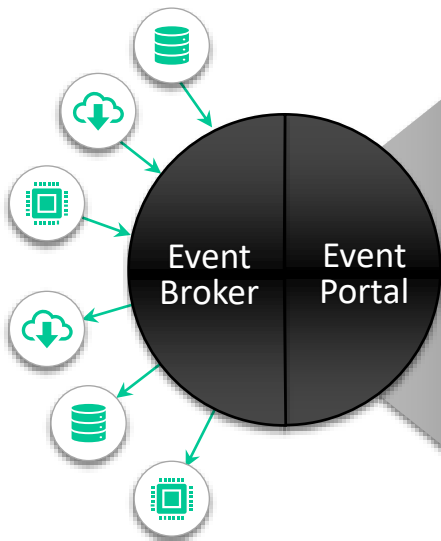


4 Use discovered data to visualize, evolve and share your events, internally and externally



# Use the Catalog to Find and Assess High Value Events

## Publishers



## Subscribers

Catalog: **Events** Schemas Applications

Search:

Shared:  Application Domain:  Owners:

<input type="checkbox"/> Event Name	Logical Event Mesh	Schema Name	Application Domain
<input type="checkbox"/> CustomerReceiptGenerated	Acme Rideshare LEM Topic Address: acme / rideshare / billing / receipt / created / {version} / {json} / {request_id}	RideReceipt	Acme Rideshare
<input type="checkbox"/> DriverFundsDeposited	Acme Rideshare LEM Topic Address: acme / rideshare / driver / funds / deposited / {version} / {driver_id} / {trip_id} / {payment_id}	DriverPayment	Acme Rideshare
<input type="checkbox"/> DriverRideAccepted	Acme Rideshare LEM Topic Address: acme / rideshare / driver / accepted / {version} / {start_latitude} / {start_longitude} / {json} / {customer_id} / {request_id} / {driver_id}	DriverRideAccept	Acme Rideshare
<input type="checkbox"/> DriverRideRequested	Acme Rideshare LEM Topic Address: acme / rideshare / driver / requested / {version} / {start_latitude} / {start_longitude} / {json} / {customer_id} / {request_id}	RideRequest	Acme Rideshare
<input type="checkbox"/> DriverStatusUpdated	Acme Rideshare LEM Topic Address: acme / rideshare / driver / status / updated / {version} / {driver_id} / {activation_status}	DriverStatus	Acme Rideshare
<input type="checkbox"/> RideAccepted	Acme Rideshare LEM Topic Address: acme / rideshare / ride / accepted / {version} / {start_latitude} / {json} / {customer_id} / {request_id} / {driver_id}	DriverRideAccept	Acme Rideshare
<input type="checkbox"/> RideRequested	Acme Rideshare LEM Topic Address: acme / rideshare / ride / requested / {version} / {start_latitude} / {start_longitude} / {json} / {customer_id} / {request_id}	RideRequest	Acme Rideshare
<input type="checkbox"/> TripUpdated	Acme Rideshare LEM Topic Address: acme / rideshare / trip / updated / {version} / {driver_id} / {trip_id} / {trip_status}	Trip	Acme Rideshare

- **Discovered events documented and tracked:**
  - Topics, schemas
  - Event meshes
  - Business moment of event
  - Pub/sub interface for each app/integration
  - Owners and points of contact
  - Changes and revisions
  - Track single source of truth
- **Determine Which Events Are High Value**
  - Increase ROI on existing Event Types
  - See what's available for consumption
  - Decrease integration time
  - Expose and create Event API Products



# Expose Event API Products: Share/Reuse High Value Data

2

Release to Application Consumers.

1

Select Events that you want to bundle and expose to internal or external Application Consumers.

BETA Event API Products > Acme Retailer Order Status

## Acme Retailer Order Status

This Event API Product consists of events related to order status - received, processed, shipped, etc so that delivery providers can consume.

[Show more details](#)

Events (2)

[Download AsyncAPI](#)

Name	Subscribe	Publish
Order Status	-	✓
Stock Status	-	✓

This Event API Product can be made externally available or shared through the following methods:

### REST API Active

External developers can call a public REST API to retrieve this Event API Product's AsyncAPI document.

[Find more details here](#)

Select format

JSON

<https://solace.cloud/api/v0/eventPortal/apiProducts/vyuy841ufeh/asyncApi.json>

[Copy URL](#)

### Website Hosted

External developers can use a website to learn about your available events. Anyone with this URL can access these events.

<https://apiproducts.solace.cloud/website/vyuy841ufeh>

[Unhost Website](#)

Last released on 2021-07-08 04:46

# Event API Products Improves Response Speed and Resilience Across Highly Distributed Systems

“Solace recently introduced an Event API Product capability to invoke individual messaging flows cataloged in the Event Portal, making it possible to subscribe to both business-level and complex types of events as well as trigger the execution of the event APIs.

“The introduction of the event API products, along with the visualization and manageability of the underlying messaging needed to execute the APIs, means that response speed and resilience improve across what can be highly distributed systems.”

*Source: IDC “Worldwide Intelligent Process Automation Market Share, 2020”, June 2021, Maureen Fleming*



# Summary

- Events and EDA have the potential to create huge value
- But Events are difficult!
- We often end up with “Event Driven Islands”
- We need ways to standardise, govern and manage events
- The API Industry have encountered and solved this problem: we can do the same with Event Driven APIs
- Tooling is needed to do this



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★★★★★

# Remember to rate the session



THANK YOU





# solace.

That's Possible

Tom Fairbairn

[Tom.Fairbairn@solace.com](mailto:Tom.Fairbairn@solace.com)

[www.linkedin.com/in/tomfairbairn/](http://www.linkedin.com/in/tomfairbairn/)

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