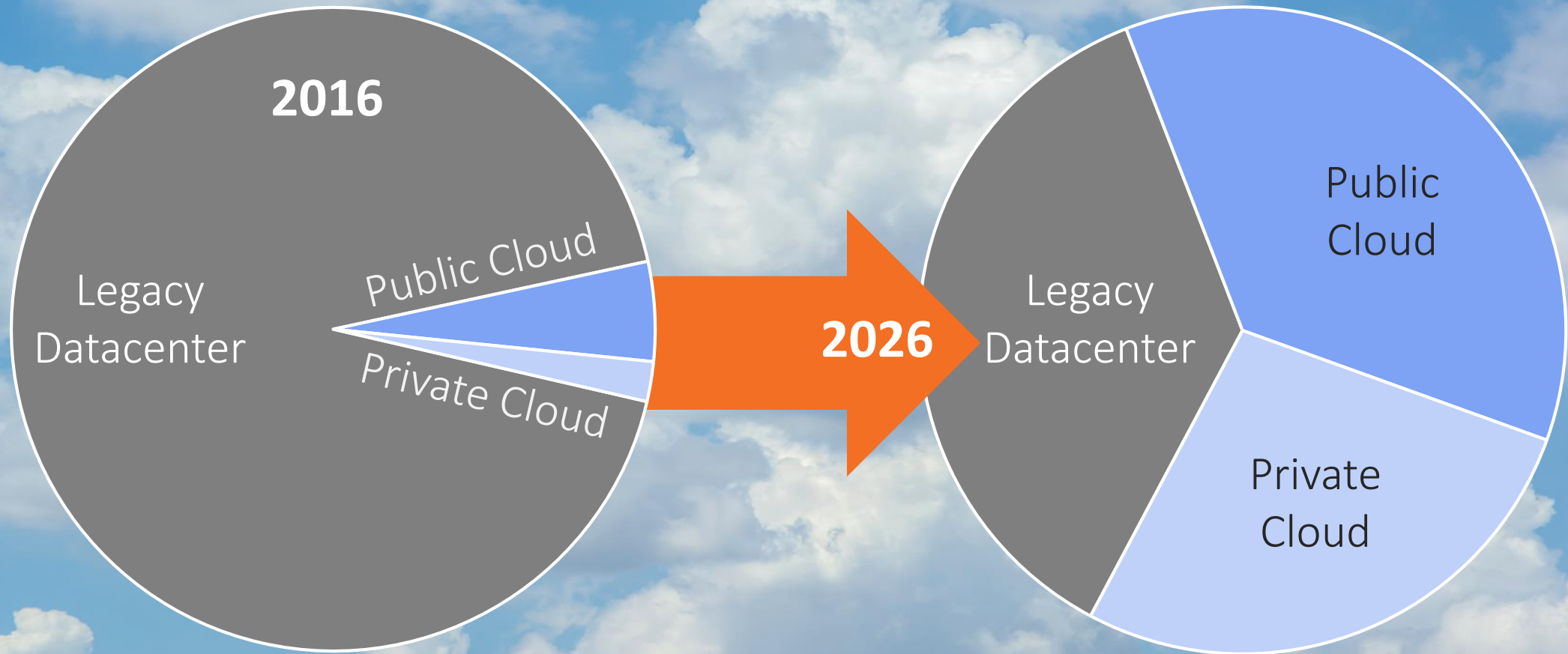


Solace Digital Data River

APIs, Microservices, ESBs, Event Driven
Architecture, Big Data Lake feeding, Pub Sub,
Request Reply, Slow consumer Isolation, HA, DR,
Hybrid Cloud and more

The shift to the cloud is on...





Open Data Movement

The Major Industry Trends

Big Data



Cloud



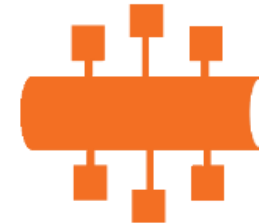
IoT



Digital
Backbone



Next-Gen
Messaging



Digital Problem Statement

**Omni
Channel -
Mobility**

Real-Time &
Very High Volume



**Straight
Through
Processing**

Digital River



Easy, Fully Integrated
Administration & Security

**Event Driven
Architecture**

**Micro
Services
API Gateways
Agility**

**Big Data In
Motion**

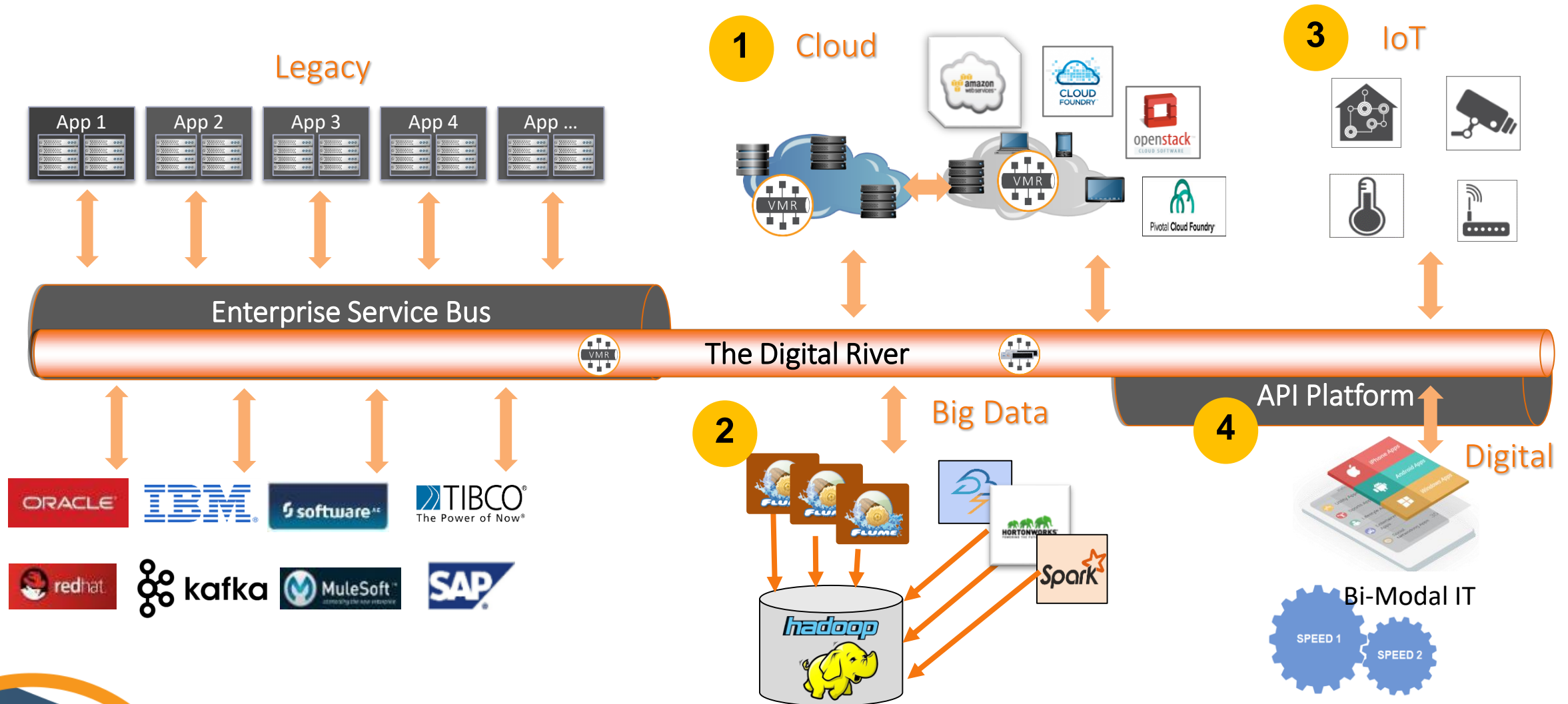
Wiretap for Analytics
Slow Consumer
Handling



Open Data Movement lets you migrate your business to the cloud and connect any device anywhere

A single data sharing fabric that links
all of your applications across all of
your environments

Solace as a Digital River – from APIs to Core to Cloud to Big Data



Data Movement Patterns – Not Just Req Reply

In Only

In Out



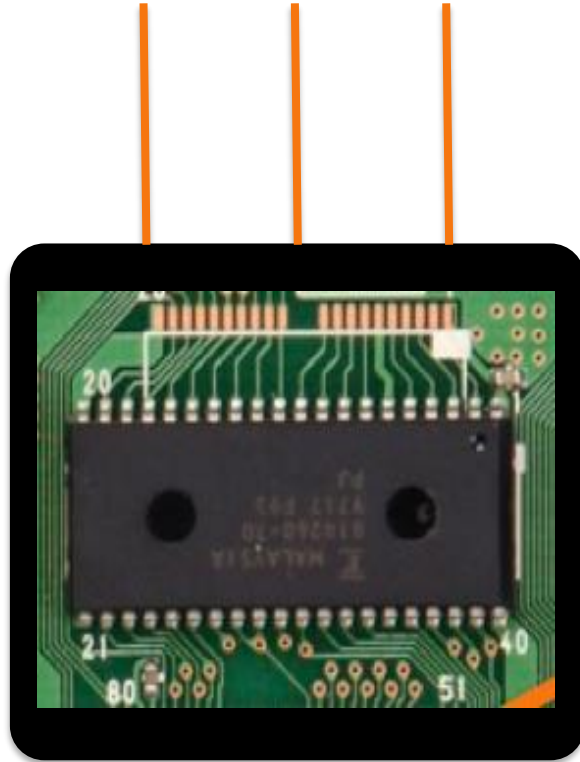
API GWs, REST Typically only handle this
How about the other data exchange patterns?

Out Only

Out In

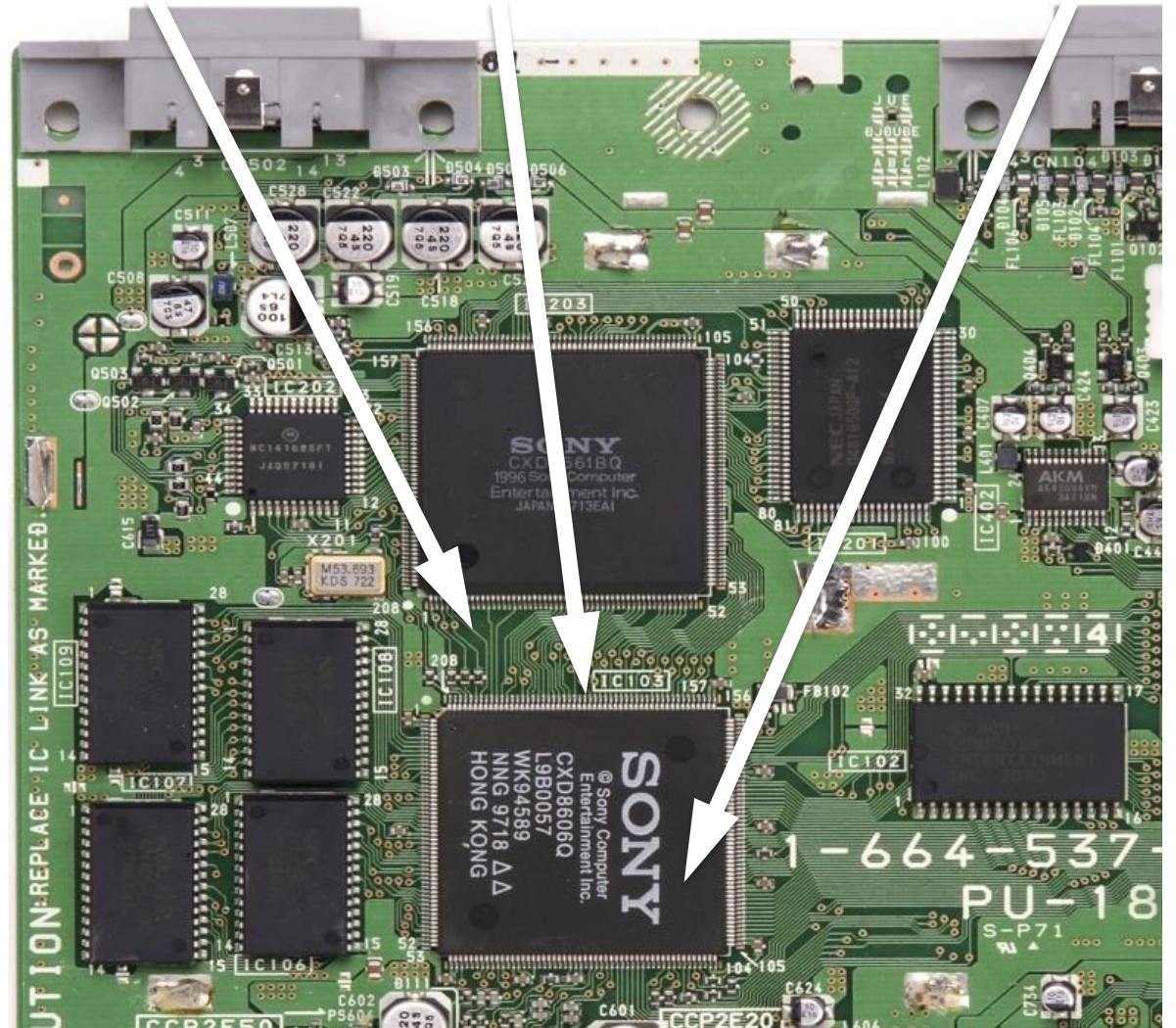
Microservices

REST AMQP MQTT



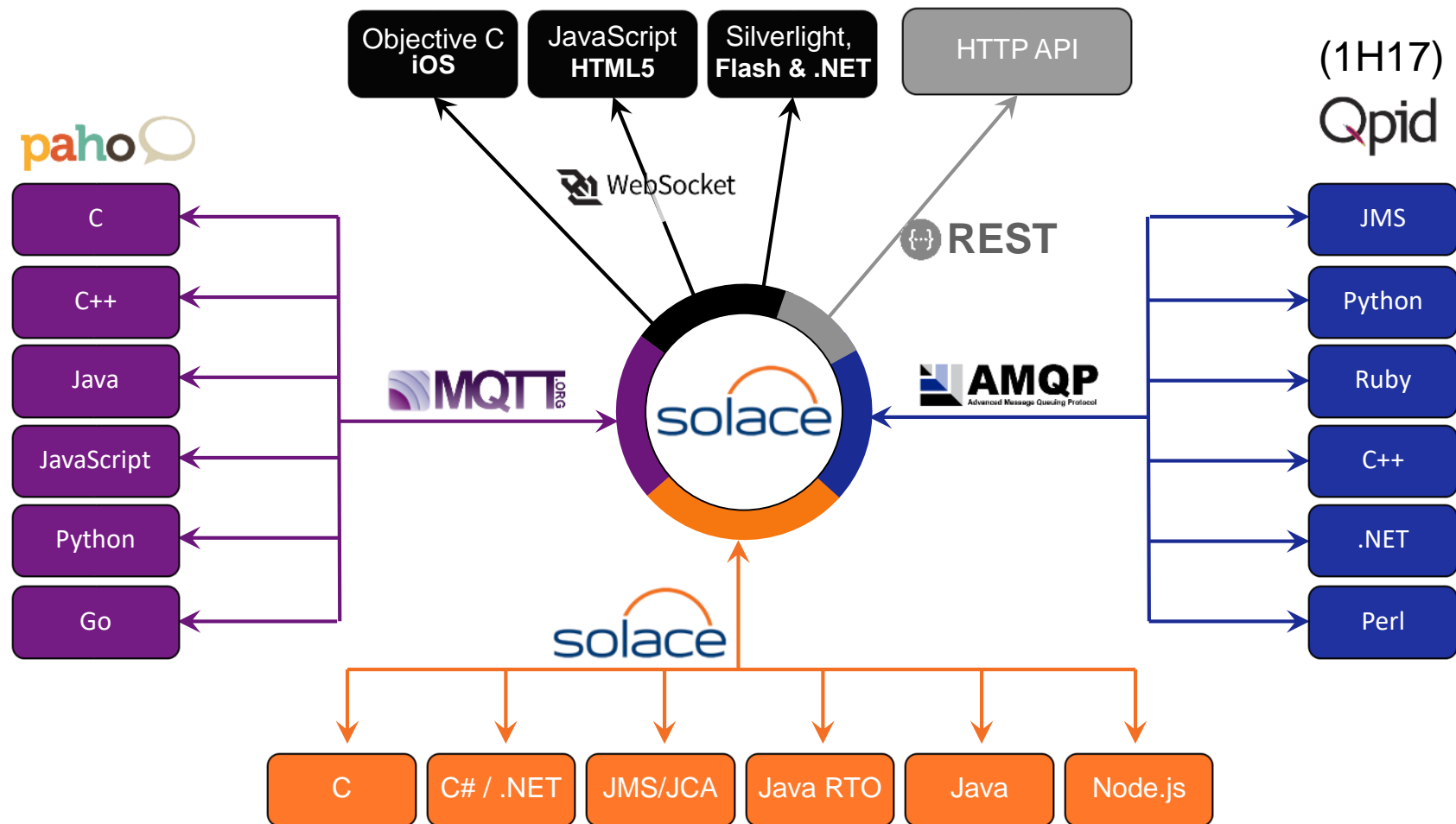
Solace is the “glue” which allows
Microservices to self orchestrate in an
Event Driven Architecture

Data River Endpoints Business Logic



Open APIs & Protocols

- Data movement is MANY problems
- Use the right tool for every job
- Bridging between all APIs



REST Assured and Waiter Pattern – Better Response Time at Scale

Income Tax eFiling - The Waiter Pattern - Sync Waiter Restaurants Don't Work This Way!!



Income Tax eFiling - The Efficient Waiter

Efficient waiters are not “request reply”, but “async”

Take Next Order



Submit To Kitchen

Async



Dish Ready?



Serve

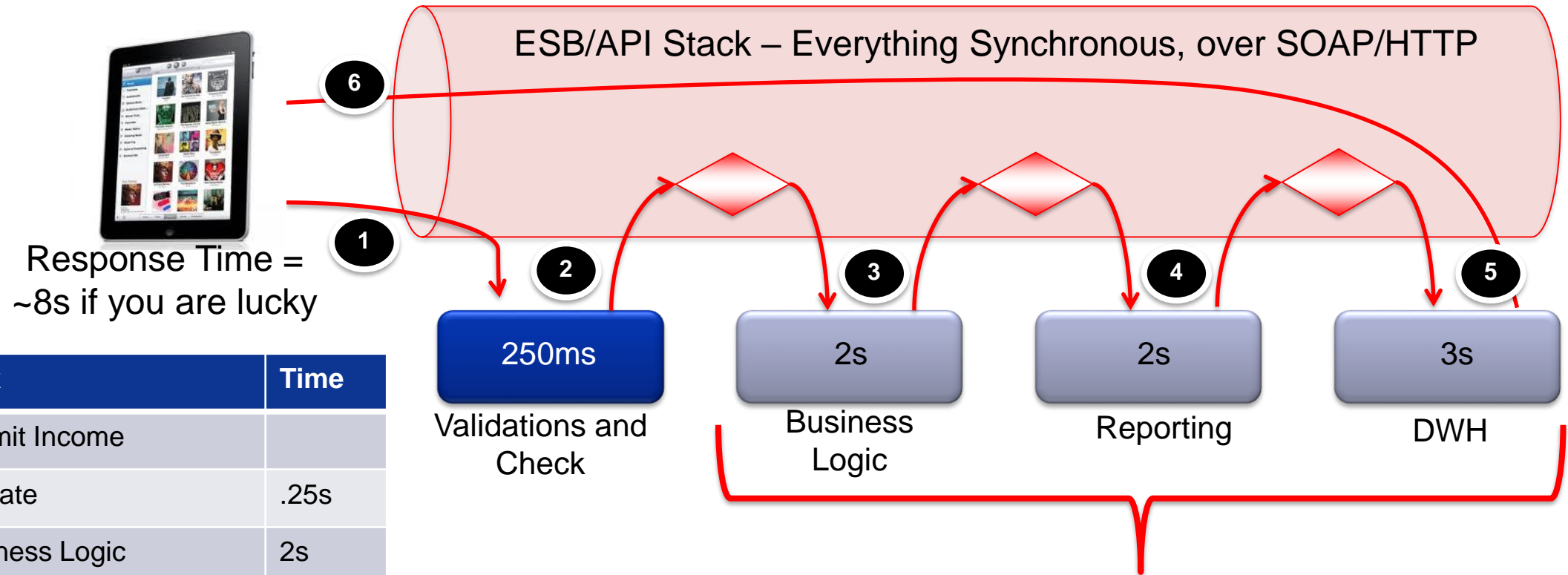
- Waiters take the order, validate and move to the next table
- Food is served via a *callback*
- This proven pattern is the only one with which mobile apps scale



*So why do ESBs/API GWs work differently?
Because they were built with HTTP shortcuts*

Payment, Flight Booking, Telco Orders etc – The SOA Way

An order is an order is an order – Payment, Telco, Mining

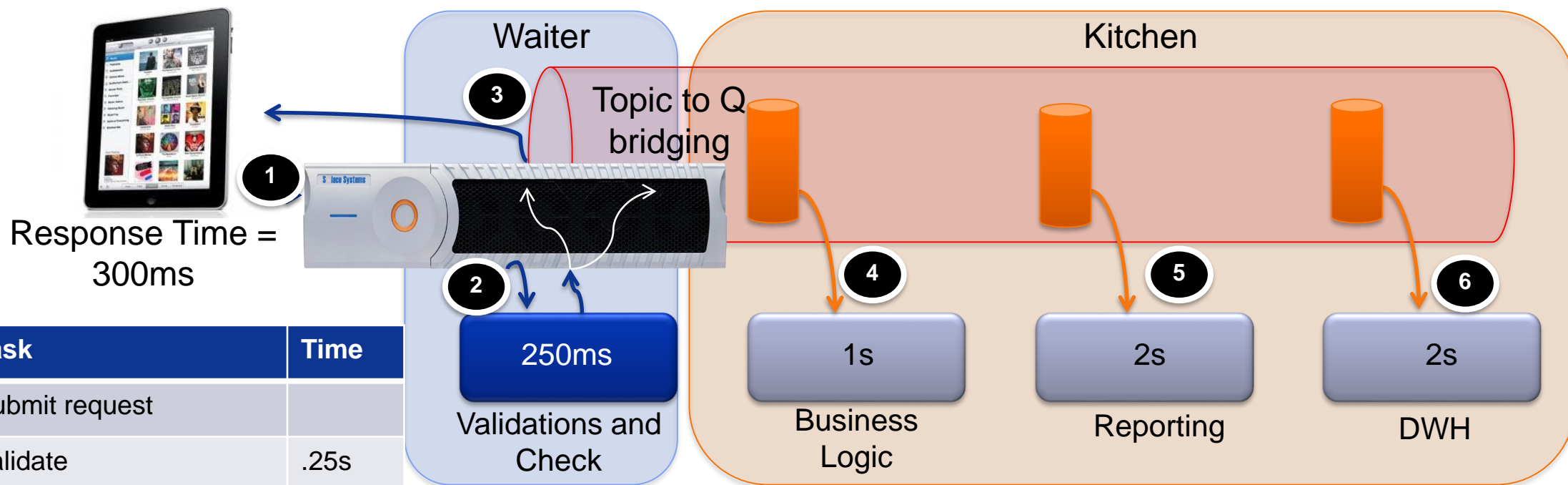


Response Time =
~8s if you are lucky

	Task	Time
1	Submit Income	
2	Validate	.25s
3	Business Logic	2s
4	Reporting	2s
5	Data Ware House	3s
6	Total Response Time	~8s

Responsive APIs - Waiter Pattern – The Event Driven Way

Much Higher Throughput, Much Better Response Time and Stability



	Task	Time
1	Submit request	
2	Validate	.25s
3	Reply and Queue	20us
	Total Response Time	300ms
4	Business Logic	2s
5	Reporting	2s
6	Data Ware House	3s

Order Taking
and Ack
Shock
Absorber

Kitchen Decoupled = Happy Customer
Throttling, Load Balancing,
Slow Consumer Handling

Event Driven Architecture

Self Orchestrating MicroServices

In the beginning there was no REST

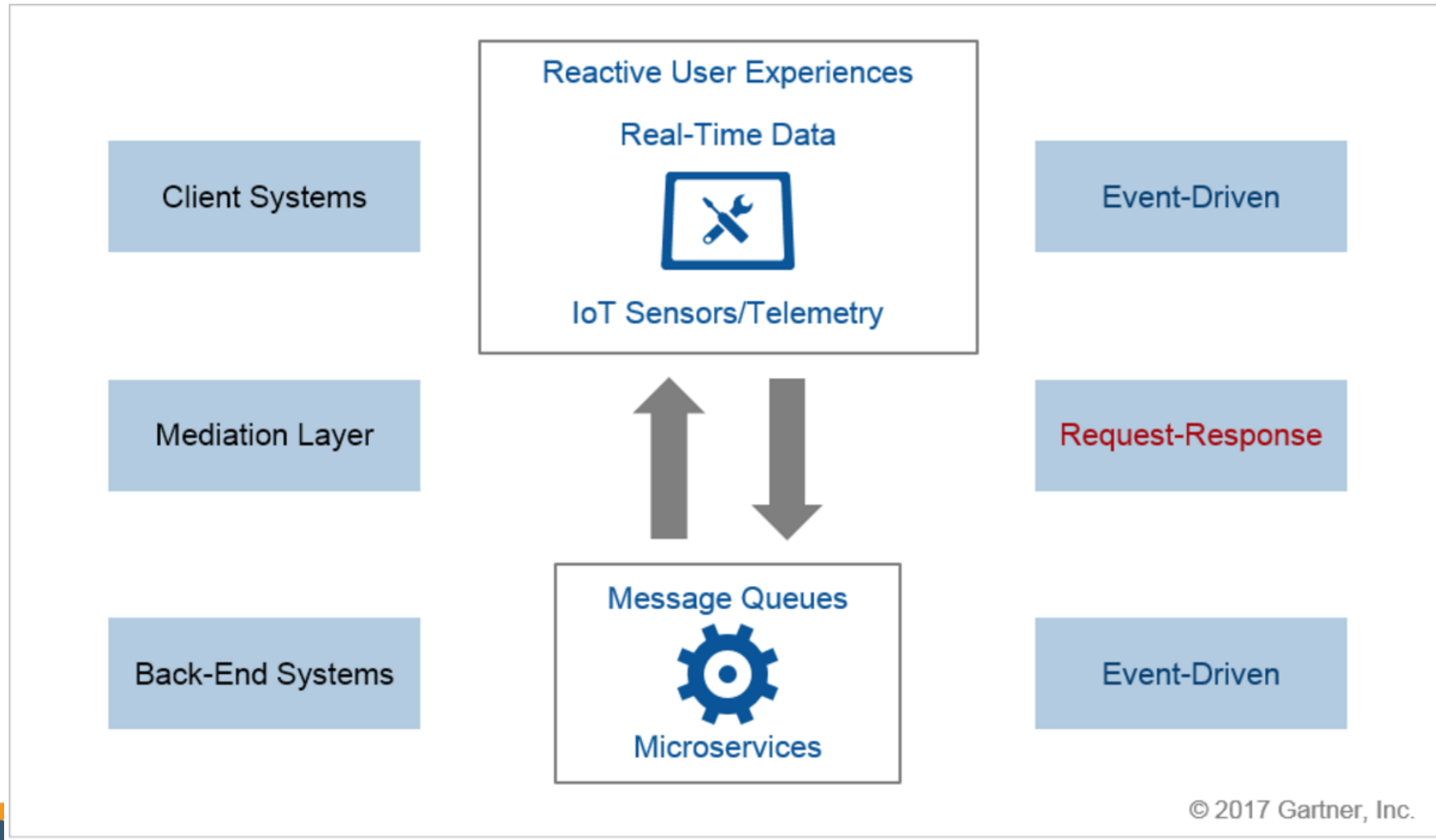


RESTless days and nights

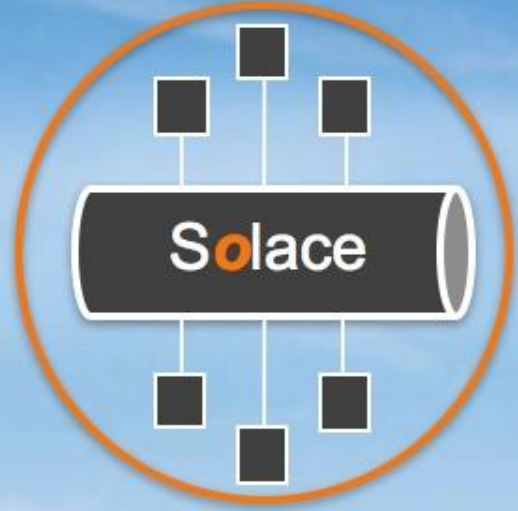
DIVISION	REGION	GROSS	EXPENSE1	EXPENSE2	COUNT
10001	10	4,537,955.30	5,100.00	.00	2
10001	18	-2,086,572.19	-1,940.73	1,000.00	19
10001	30	(182,279.43)	(30.00)	.00	
10001	42	8,781,387.65DB	.00	1,500.00	
10001	43	209,763.01DB	.00	.00	
10001	46	374,581,409.14CR	57,430.54DB	1,677,766.72	5
10001	47	94,607,014.40CR	.00	168,304.39	
10001	48	38,316.54	.00	.00	
10001	56	10,270,859.01	31,631.67DB	16,141.61	1
10001	57	14,807,781.38	.00	.00	
10001	58	478,384.64	.00	.00	
10001	59	7,510,763.24	.00	1,000.00	
10001	60	42,050,759.13	290,277.32CR	127,815.39	565
10001	61	56,692,016.18	11,040.64CR	85,622.08	217
10001	62	3,487,976.09	1,526,739.16	204,677.42	2
10001	64	15,058,472.40	6,281.97	3,313.60	8
10001	65	124,752,634.30	55,680.22	15,825.35	6
10001	71	70,907.89	.00	.00	
10001	73	5,866,884.77	22.00	.00	
10001	75	2,858,257.56	.00	.00	
10001	76	64,515,051.00	7,947.09	.00	1
10001	79	.00	.00	.00	
10001	80	7,988,907.67	16,931.23	3,564.73	29



The Impact of Event-Driven IT on API Management



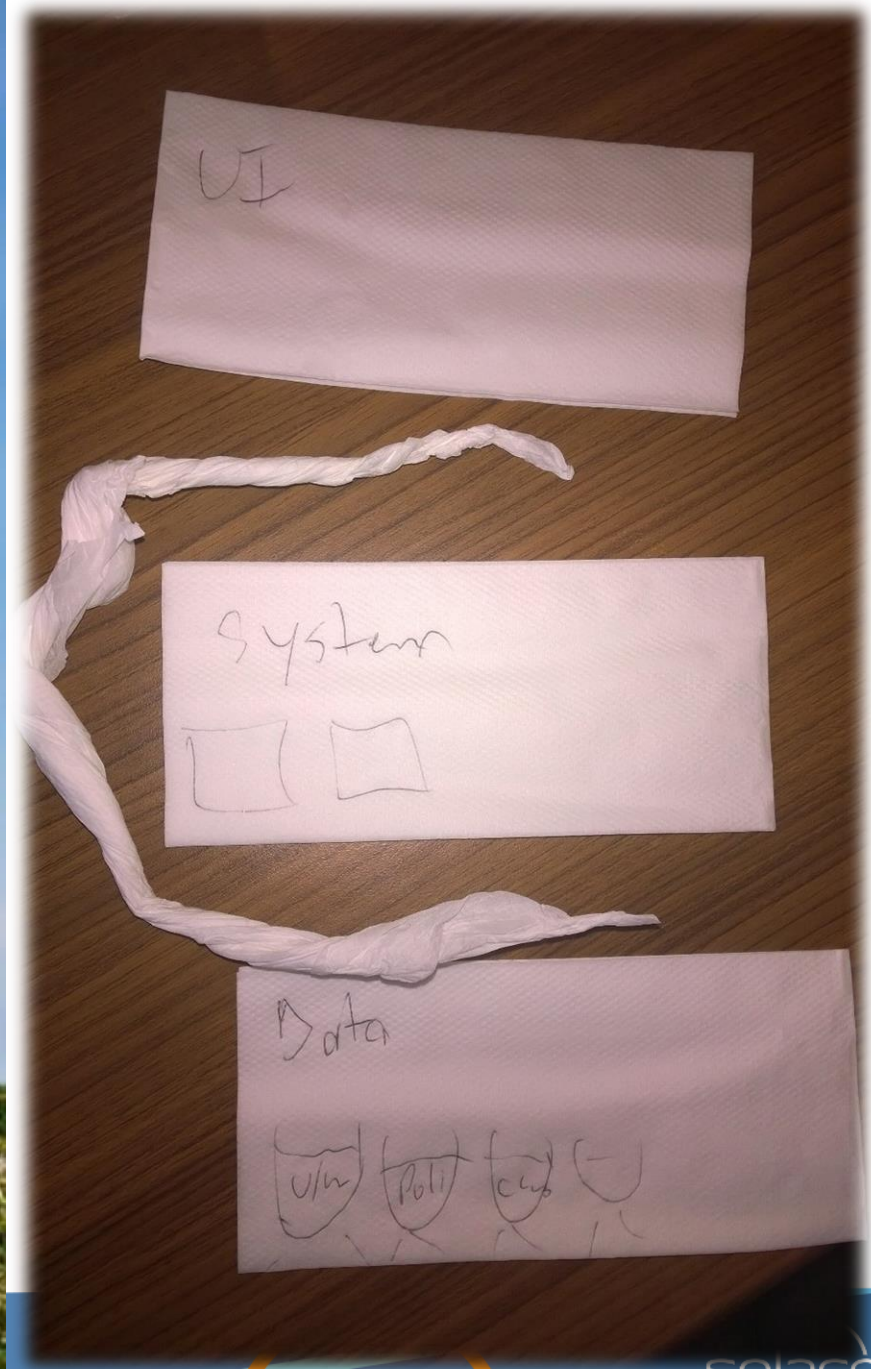
Command
Query
Responsibility
Segregation



REST Assured!

Zero Downtime, Zero Message Loss
Lossless REST - Never lose an Order

Simple – No Web/App Servers
Performance & Reliability
Standards Based, Cloud Ready



Event Driven Orchestration



B2B APIs – Multi Protocol

Event: Book Flight
Check Availability

Event: Book Flight

Event: Make Payment

REST AMQP MQTT

Real-Time &
Very High Volume



Digital River



Easy, Fully Integrated
Administration & Security

SYNC

SYNC

ASync

ASync

SYNC

ASync

Seats
Availability

PNR Booking

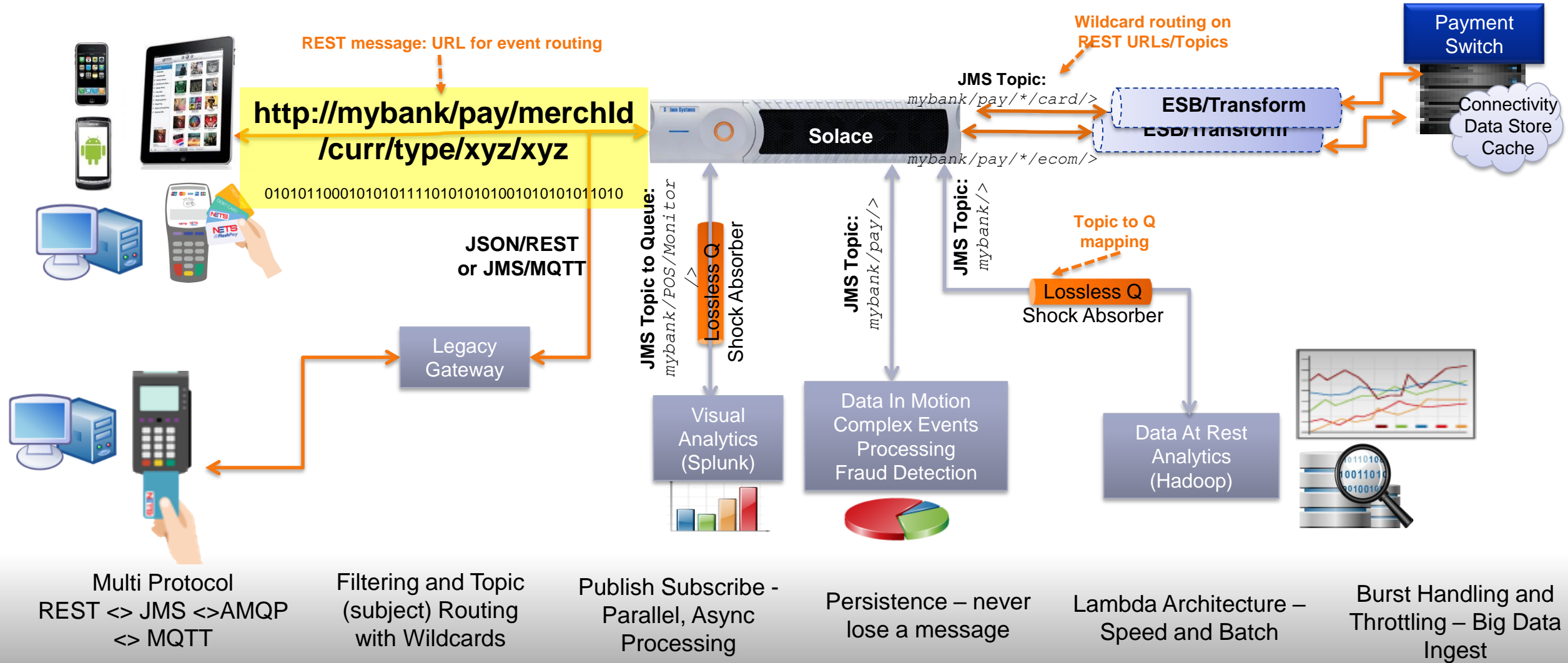
Seat Selection

Meals
Management

Payment

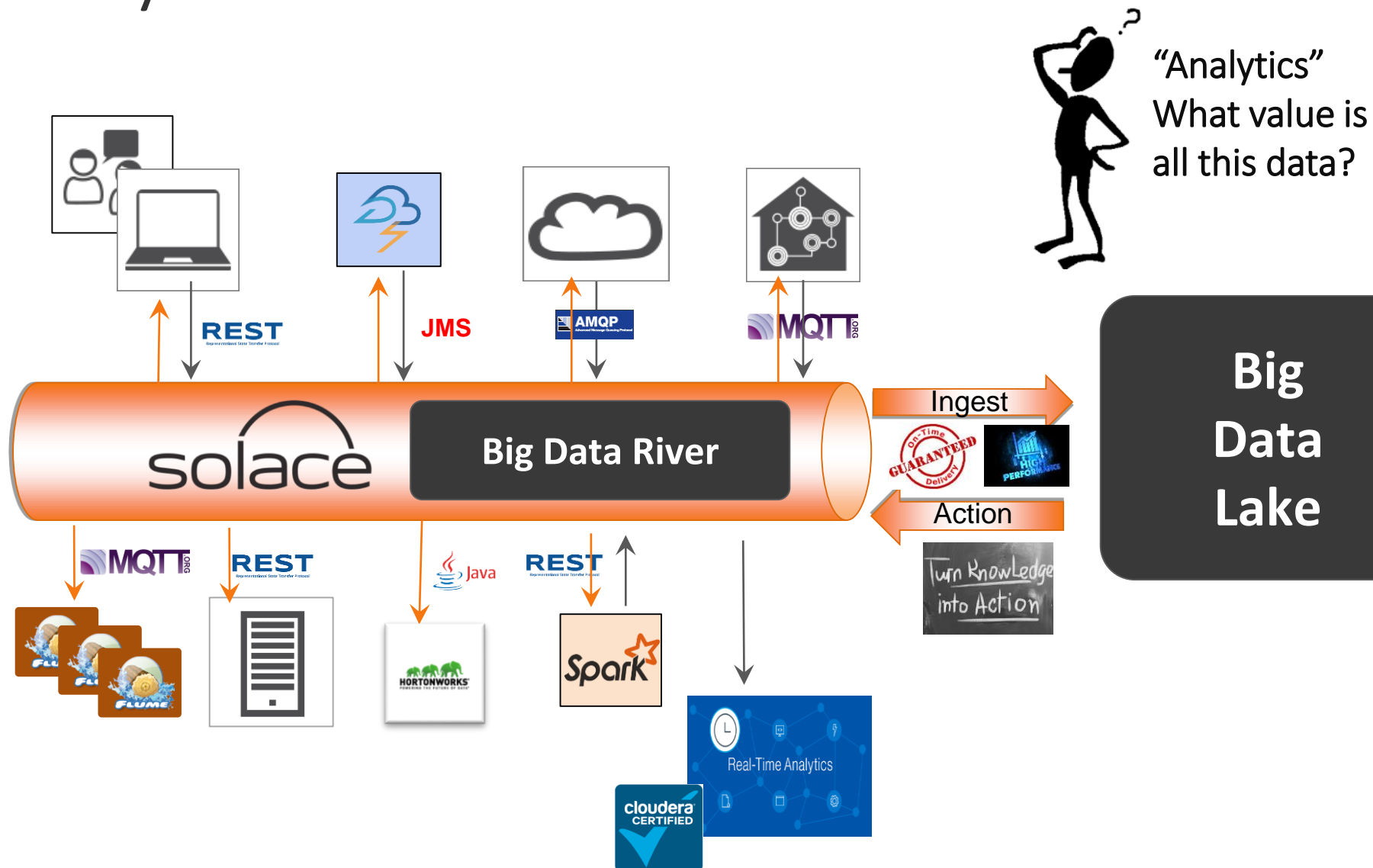
Warehouse
Analytics

Scenario – Payments - Messaging as a Digital Backbone



Big Data – Any Lake needs a River

- Volume
 - Up to 26 M / sec
- Velocity
 - μ Sec Latency
- Variety
 - All API/Protocol
- Veracity
 - Integrity

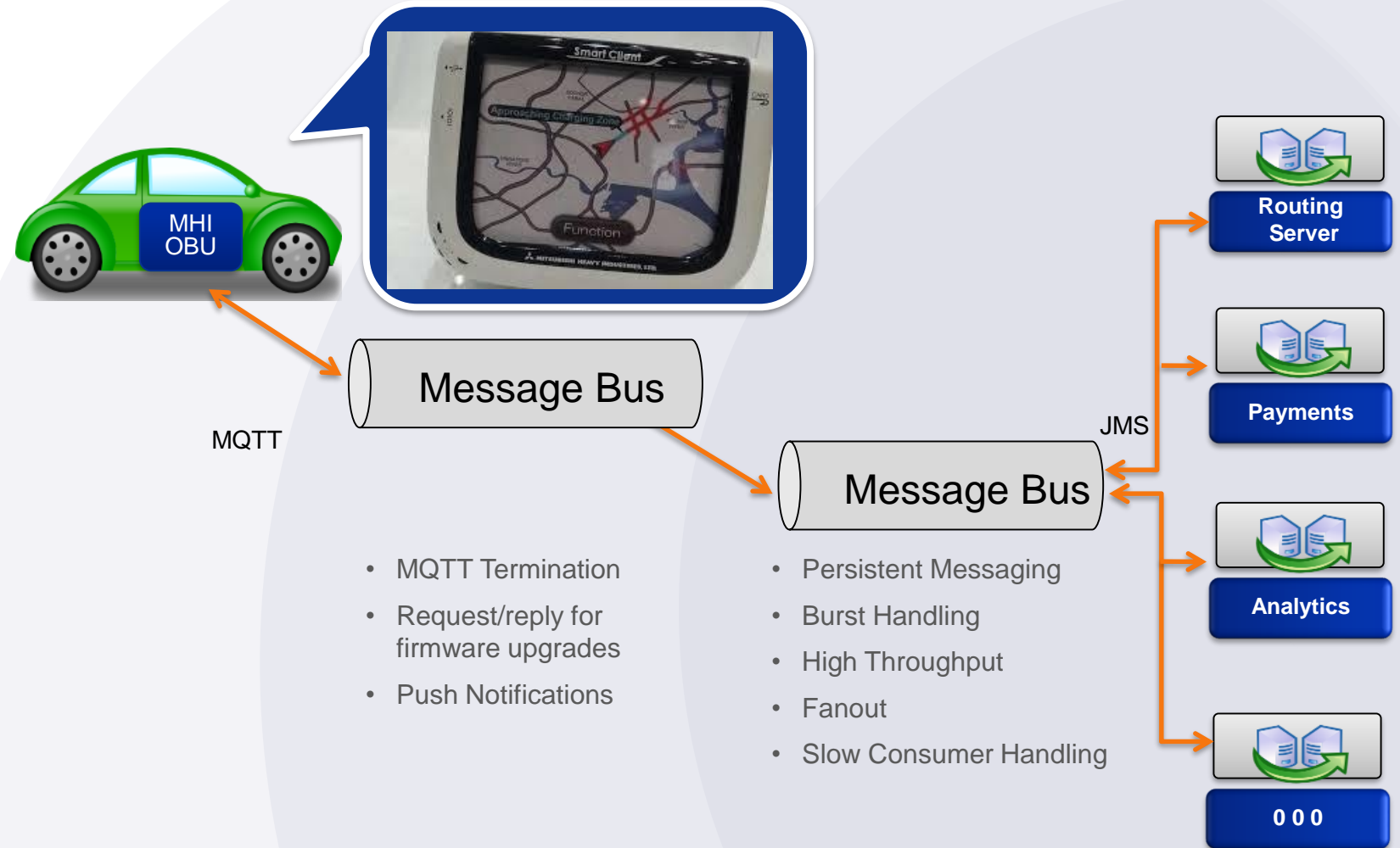


Data River and IoT

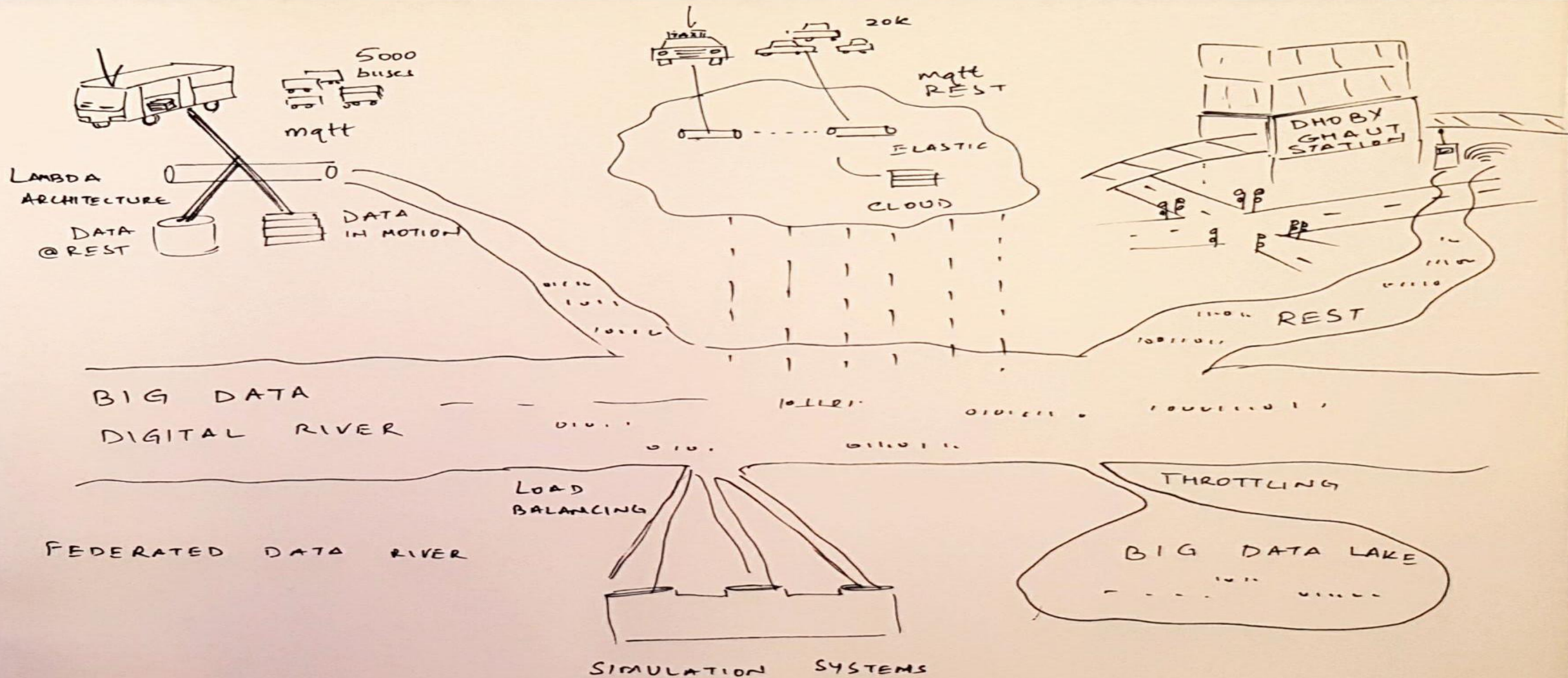
Smart Cities: LTA Next Generation ERP

Use Case

- Connect 1.5M vehicles (200K at a time) in real time for pay per use road tolls
- Suggest better routes, traffic management – real time and long term and value added services/analytics



Data River Advanced Analytics



What is Open Data Movement ?

Any Protocols

Any Platform

Any Cloud

Any Pattern

REST
MQTT
JMS
AMQP
WebSocket

Enterprise
Big Data
IoT
Mobile

Public
Private
Hybrid
XaaS

Pub/Sub
Request/Reply
Streaming
Fanin/Fanout
Alerting

The Digital River
Any to Any Data movement in Real-Time

Thank You

Sumeet.puri@solace.com

<http://dev.solace.com>

www.solace.com