



Apigee Insights

Anant Jhingran
@jhingran



Agenda



- What's new in the world of Digital Transformation – change and context
- New analytics capabilities needed to address this changing world
- Agility in Analytical Process
- Insights Architecture
- Insights Services

What's New



Self-Optimizing Digital Business

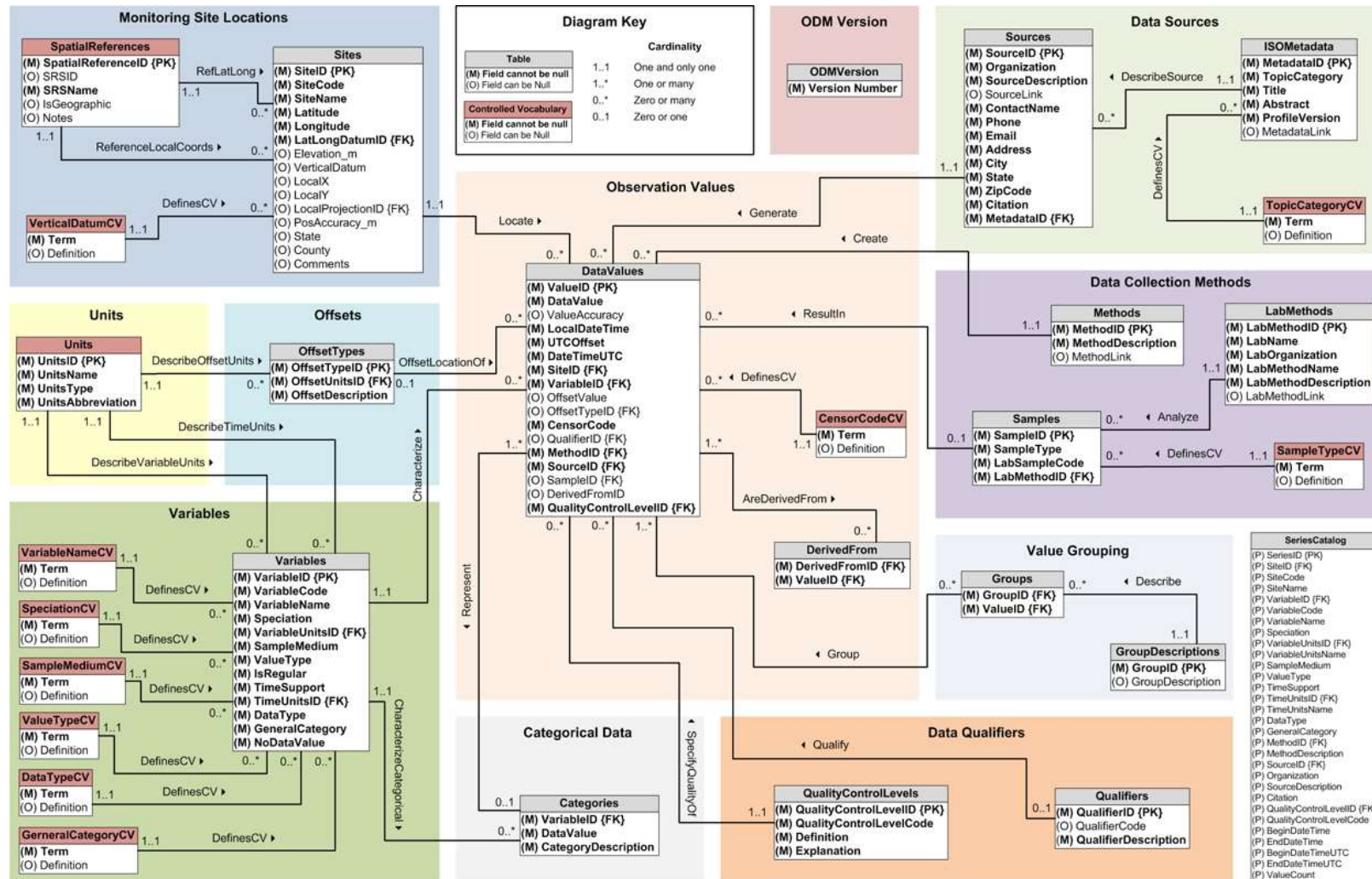
Optimize your digital business
by making
every customer interaction **smarter**
across every digital channel,
in **real time**,
using all
relevant **contextual business insights**



Pace of change is increasing

- After an initial startup, we saw > 1 new API every 10 days
- After 150 days, we observed slowdown in less than 10% of organizations
- Median number of APIs per organization: 14

Data Modeling is dead, so is ETL



New rapidly changing contextual signals occur

User



Developer

Time

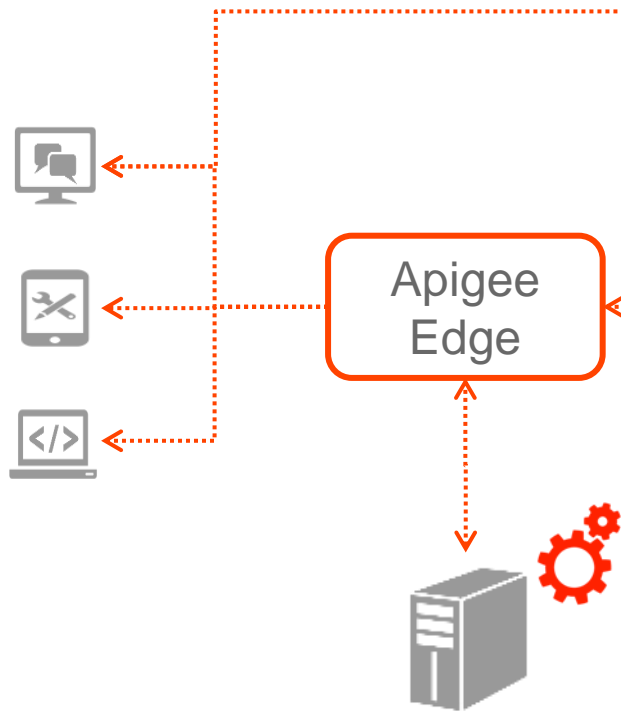


Location

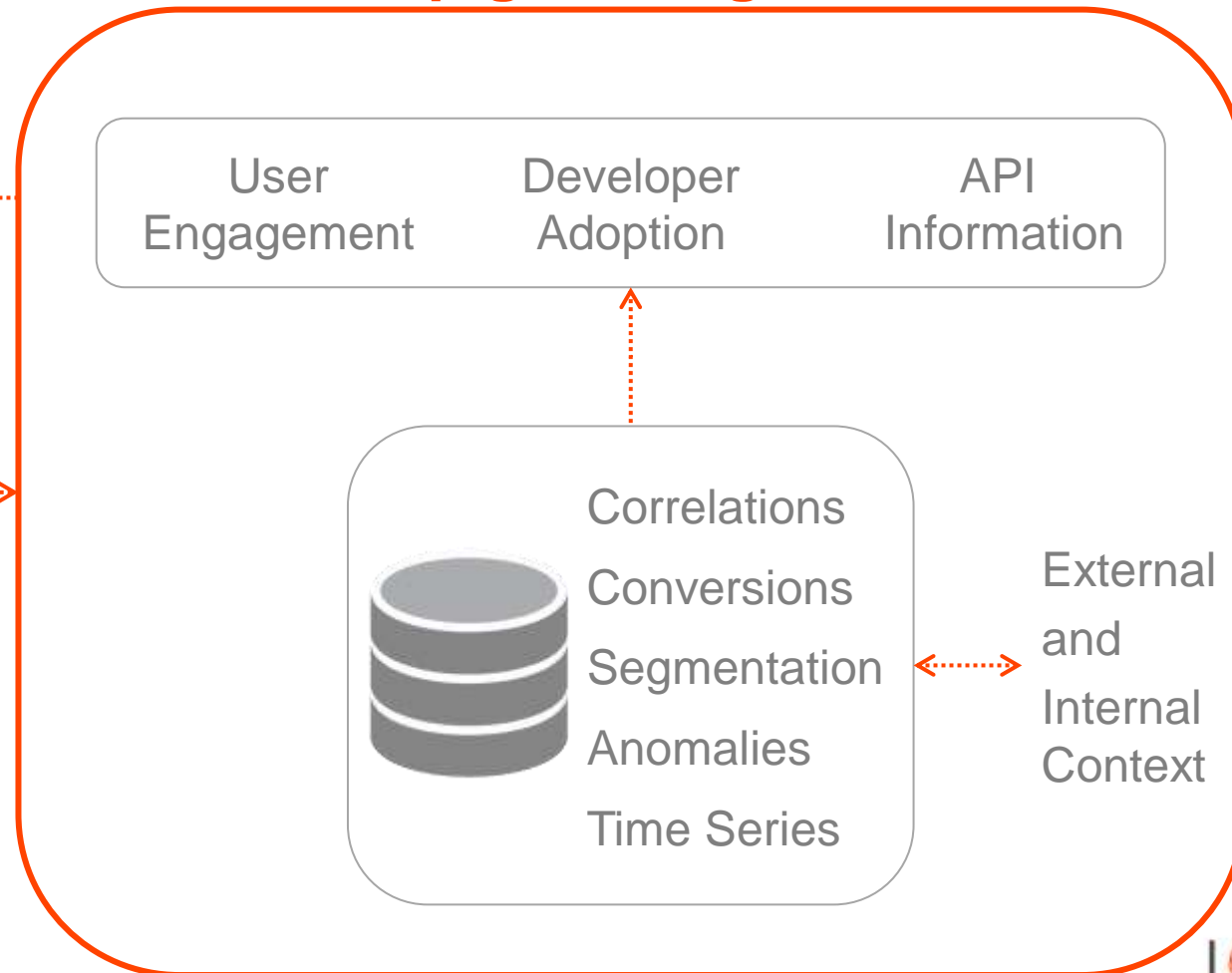
Need for a new Big Data Platform

Apigee Insights

All Channels



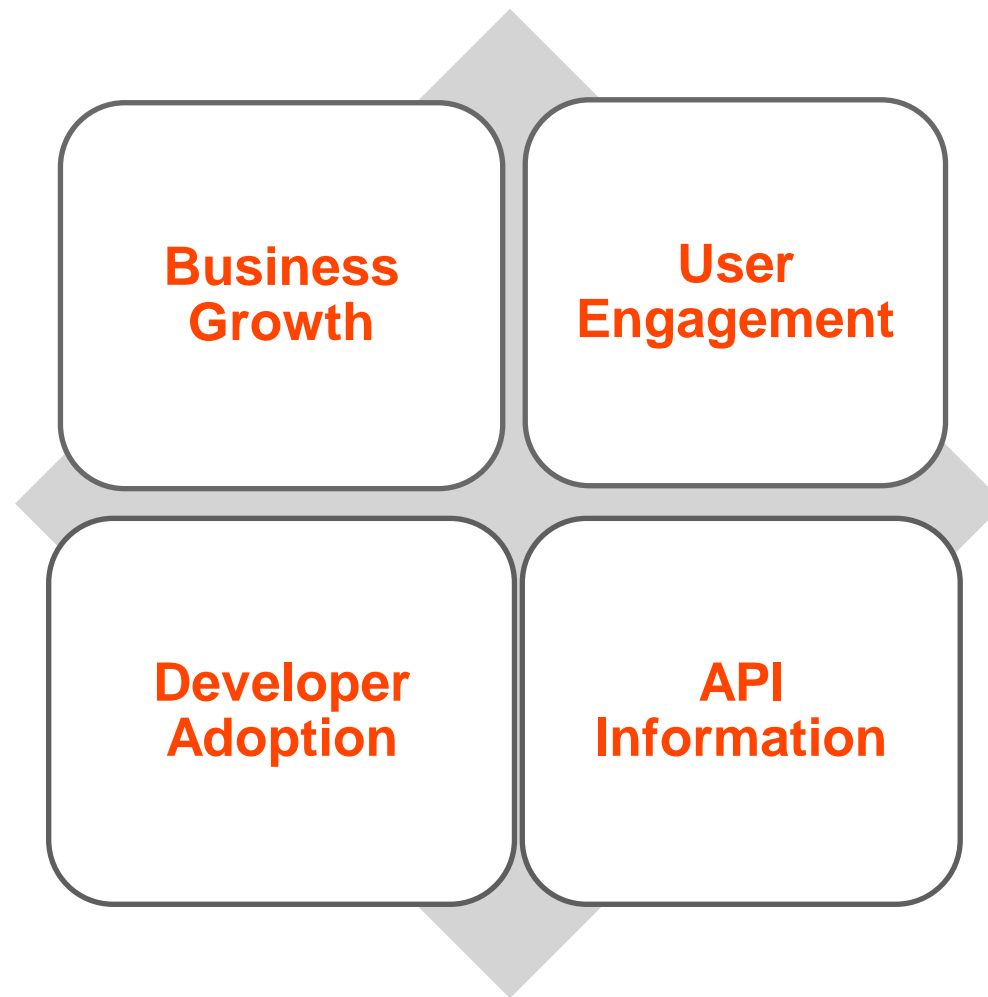
All Backends



Business and Technical Problems

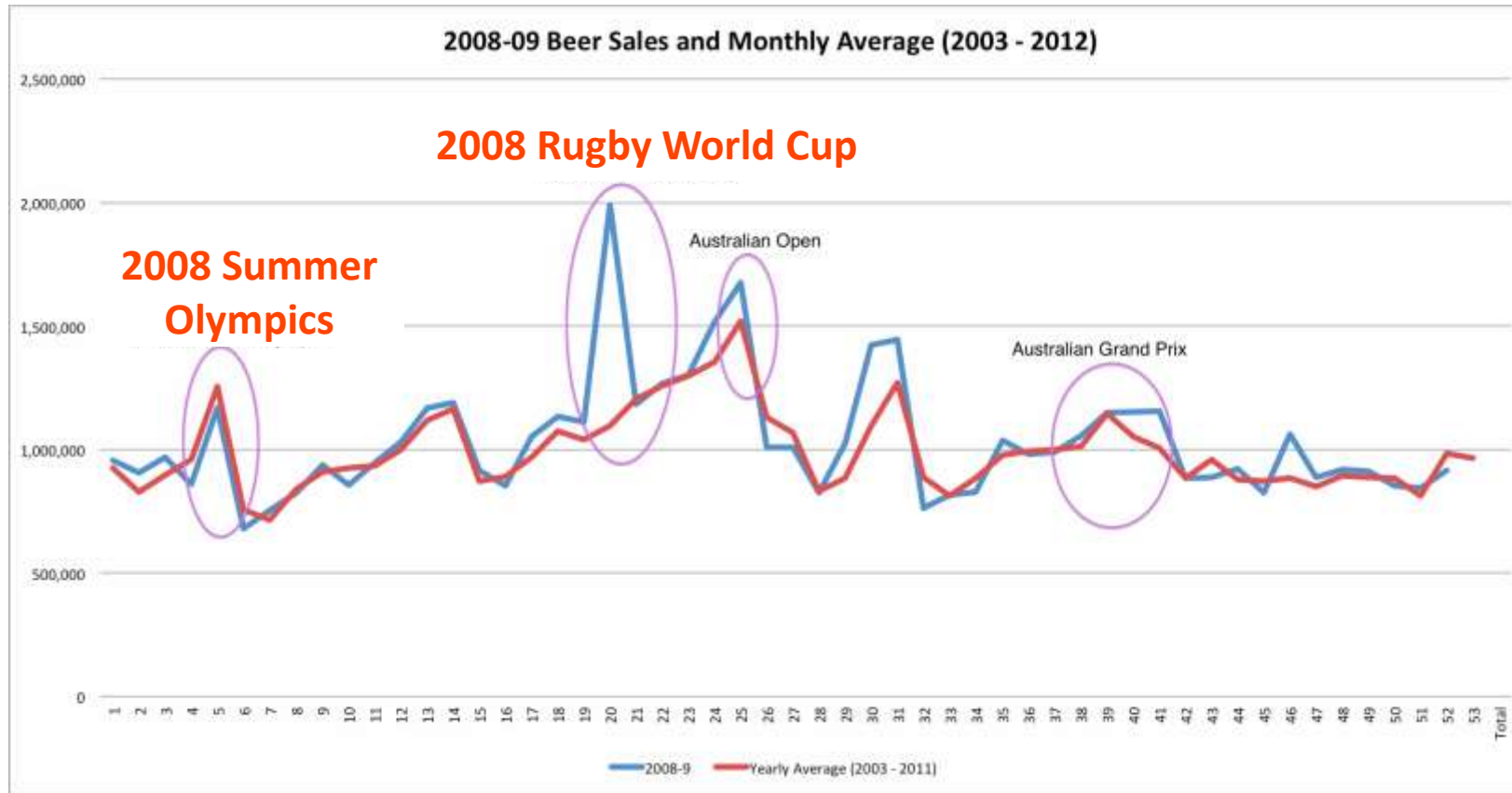


Contextual Business Insights



Sporting Events and Beer Consumption in AU

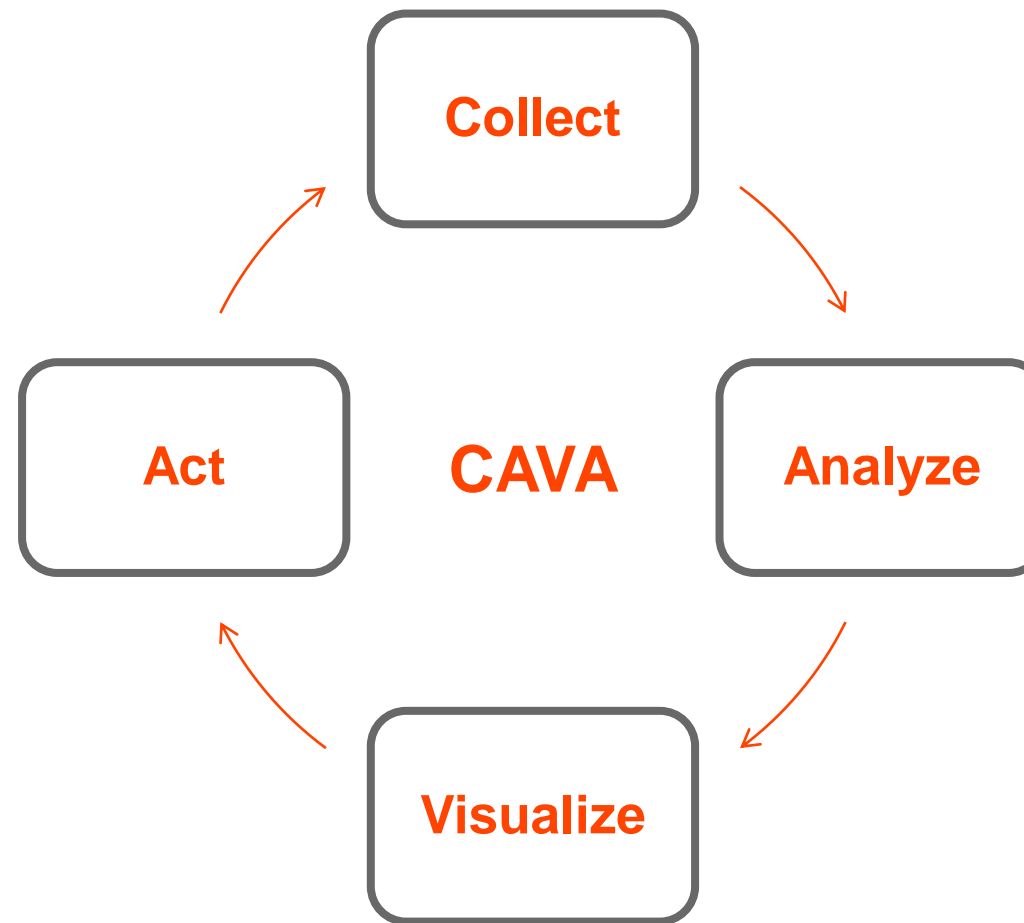
Adjust on-hand stock of beer (by brand and packaging) for each type of sporting event



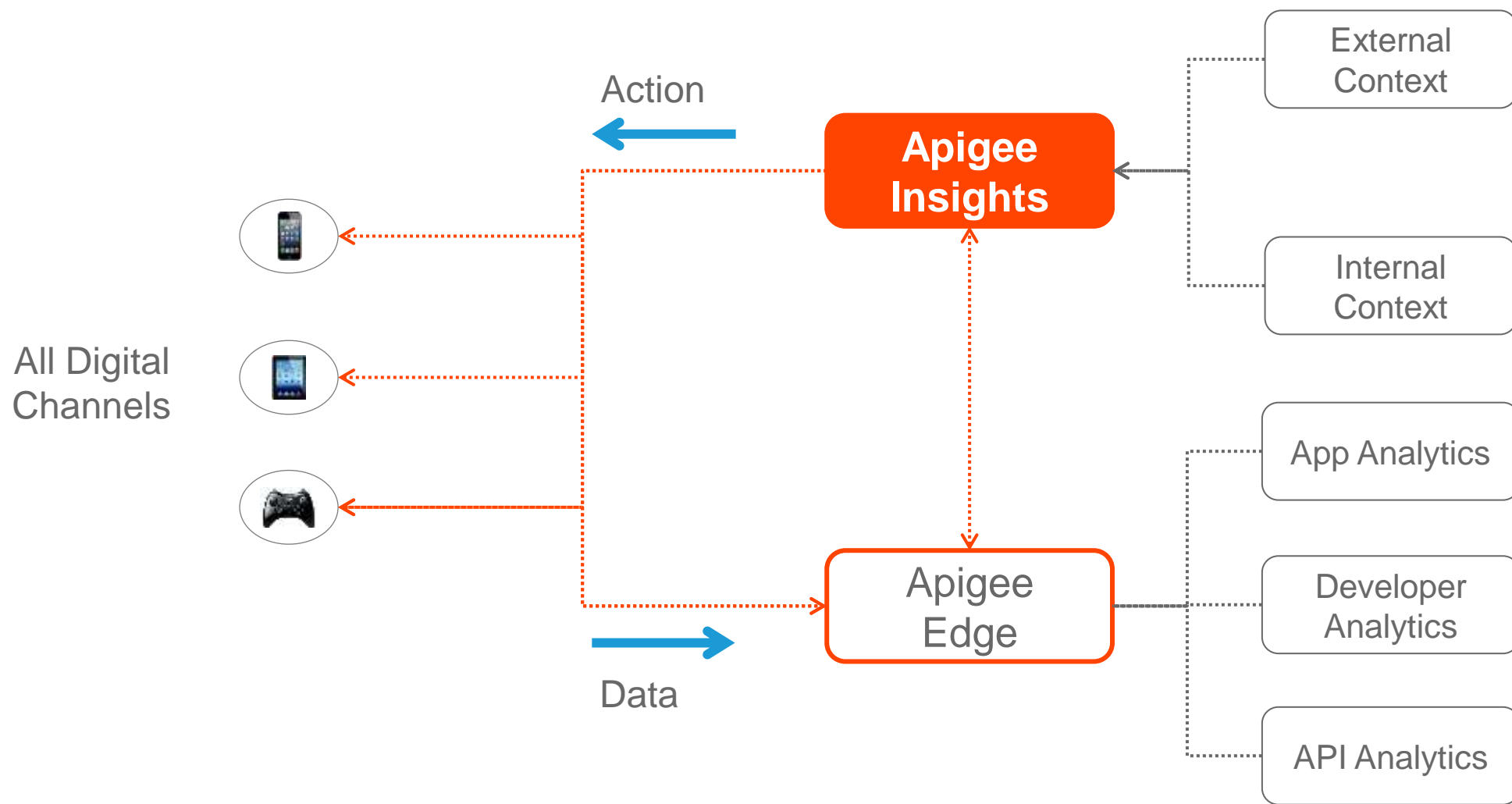
Speeding up the Analytical Process



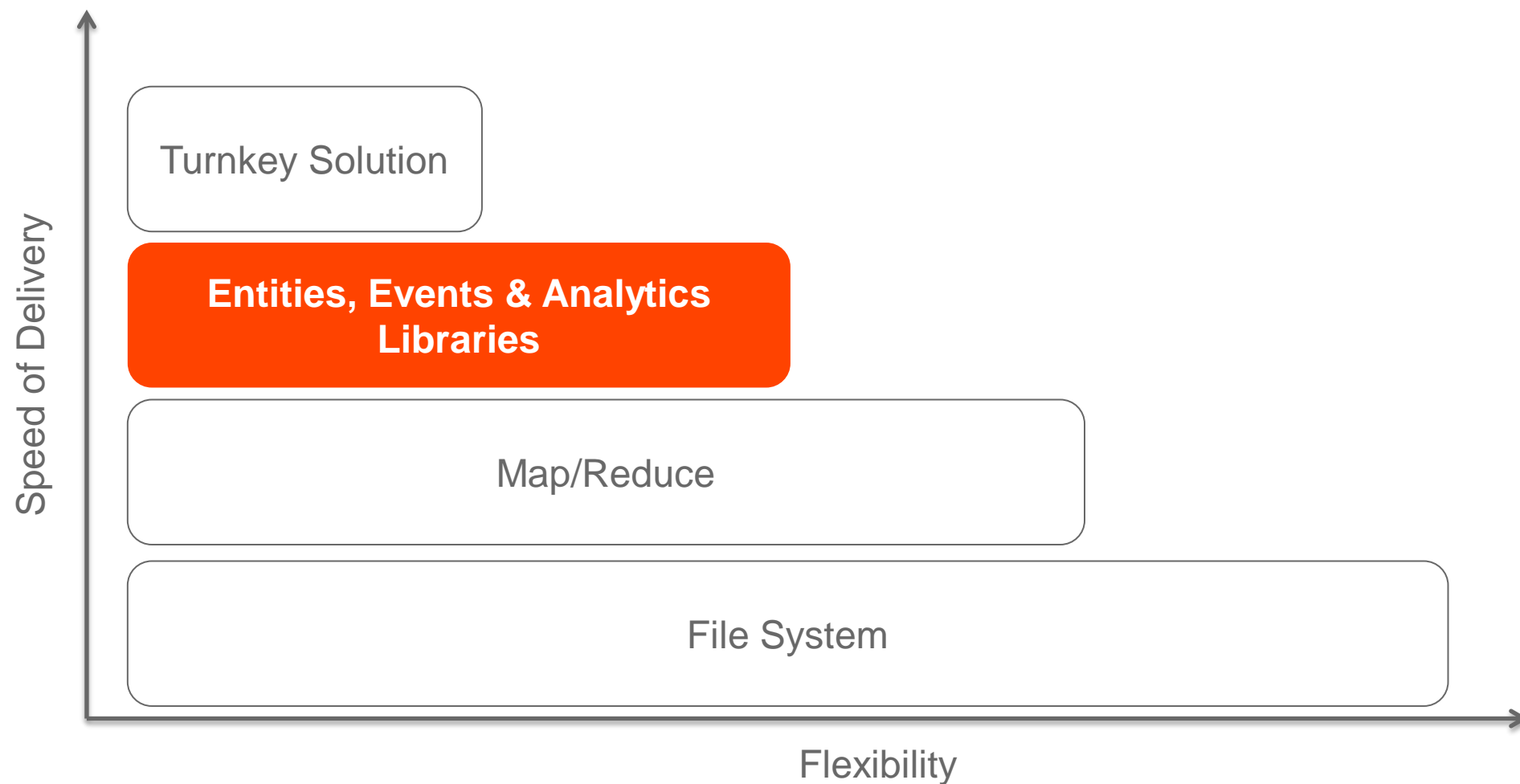
Speed up delivery of business insights



Collect and Act faster






Analyze faster: Abstractions



Analyze faster: Widely used technologies

Easy access to skills (Javascript) accelerate development time

Top Partners



Job Details

Id 4a5b3f31-0519-437c-940d-d04770fb60ff

Description Get Top Partners

Created 09/17/2013 15:29:07

Last Updated 09/17/2013 15:29:07

Job Arguments

Data Source ChannelPartnerDemo1

Start Date 05/08/2013 00:00:00

End Date 05/09/2013 00:00:00

Current Status

Idle

```
1 // MapReduce "map" function to be ran.
2 //
3 // @param options - Object containing map function options
4 //                  Contains two attributes: "timestamp"
5 //                  the timestamp the data was recorded
6 //                  and "data", the data recorded.
7 // @param context - Job context API. Contains one function
8 //                  "write(key, value)" used to output
9 //                  key/value pairs.
10 function map(options, context) {
11     var tmp = {partner:options.data.partner}
12     context.write(JSON.stringify(tmp), 1);
13     var tmp = {service:options.data.service}
14     context.write(JSON.stringify(tmp), 1);
15 }
16
17 // (Optional) MapReduce "reduce" function to be ran. If
18 // you want to run a map-only MapReduce, omit the "reduce"
19 // function declaration.
20 //
21 // @param key       - The key collected in your map phase
22 // @param values     - Iterator of values collected for the
23 // @param context    - Job context API. Contains one function
24 //                  "write(key, value)" used to output
25 //                  key/value pairs.
26 function reduce(key, values, context) {
```

History (Last 1 records)

Time Submitted	Time Completed	Status	Map Records In	Map Records Out	Reduce Records In	Reduce Records Out
09/17/2013 15:29:07	09/17/2013 15:38:39	Succeeded	16,240,079	32,480,158	32,480,158	419

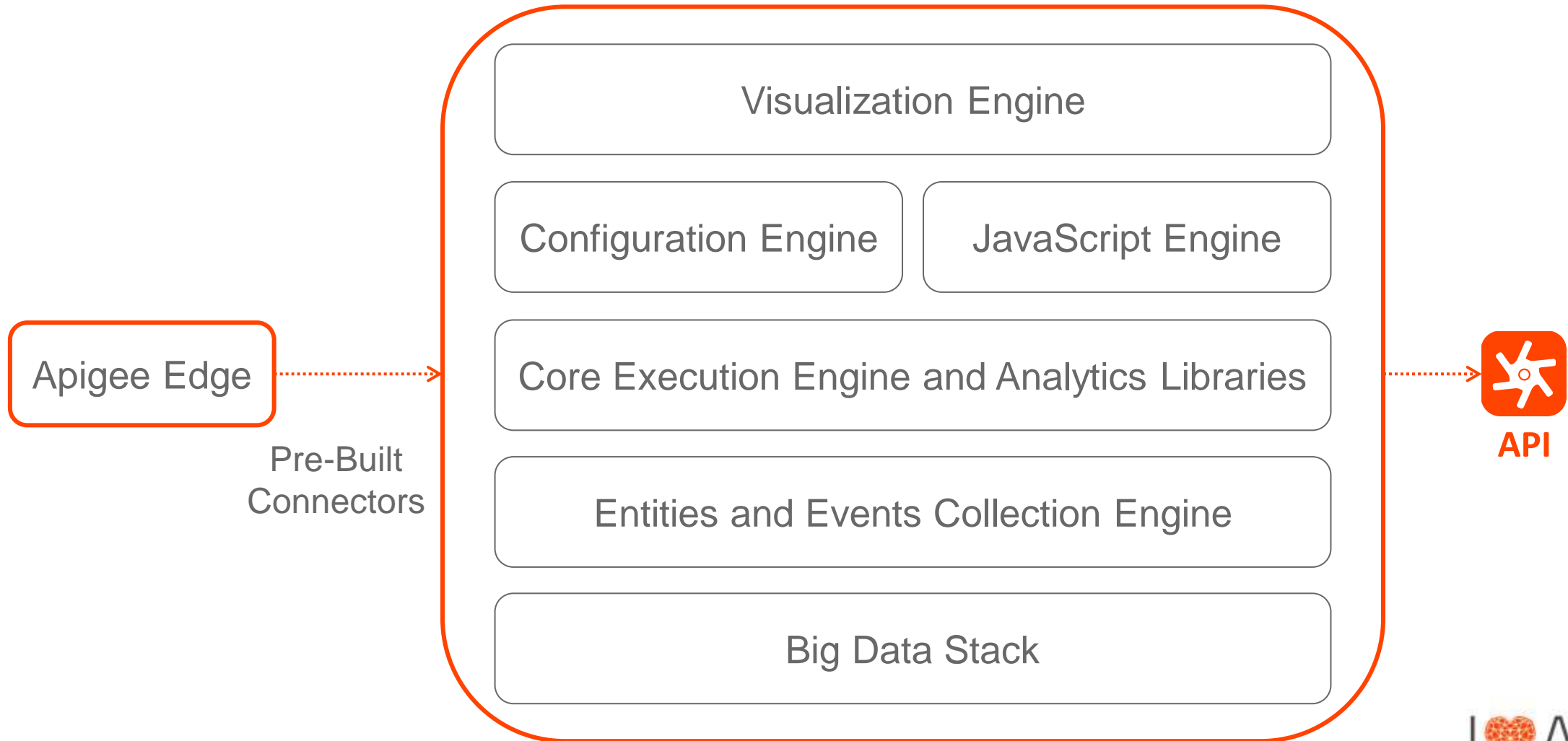
Analyze faster: Configuration, not code

```
1 Sessionizations: {  
2   'SubscriberNum': {  
3     "SessionizationKey": "subscriber_num""SessionizationSeparatorMin": "30""FilterOut": {  
4       "userid": {  
5         "lengthInCharacters": "10""type": "int"  
6       }  
7       "phonenum": {  
8         "validUSAreaCode": "true"  
9       }  
10    }  
11  'IMEINumber': {  
12    "SessionizationKey": "imei_num""SessionizationSeparatorMin": "40""FilterOut": {  
13      "userid": {  
14        "lengthInCharacters": "10""type": "int"  
15      }  
16      "phonenum": {  
17        "validUSAreaCode": "true"  
18      }  
19    }  
20  }  
21 }
```

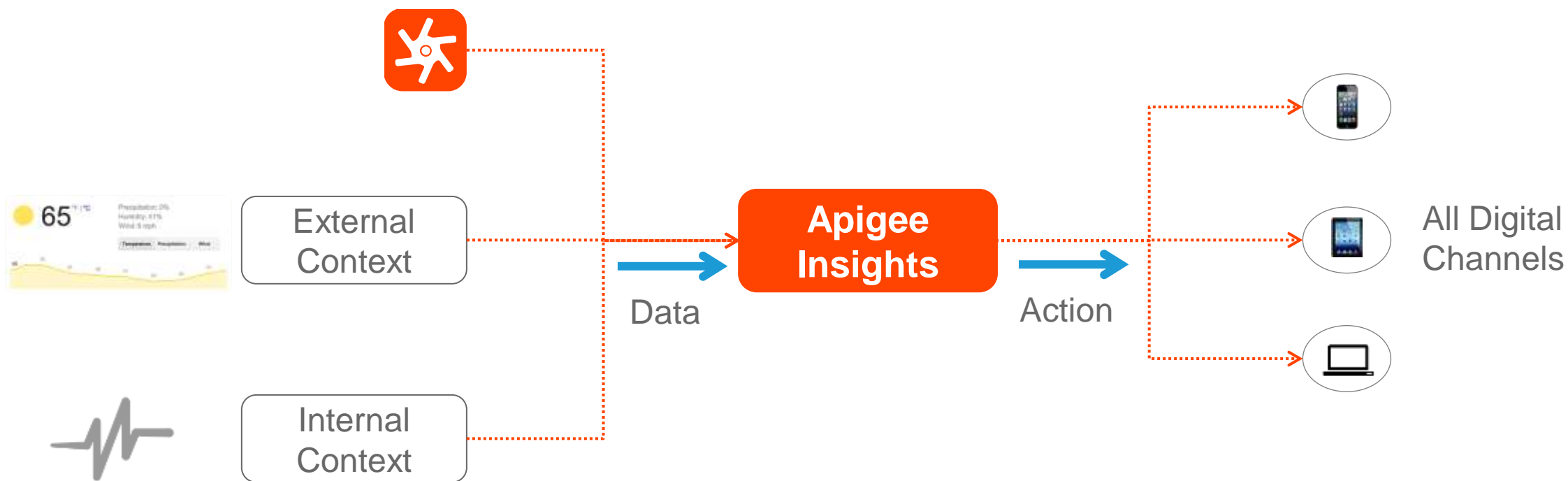
Architecture

I  APIS
CONFERENCE 2013

Insights: Architectural Components



Demo: Retail Personalization



Demo

I  API S
CONFERENCE 2013

Insights Services



Engagement Workflow



Analysis Process

Take core findings through multiple dimensions to deliver hidden insights



Raw customer
data

Service, Errors,
Time, APIs,
Status, etc.

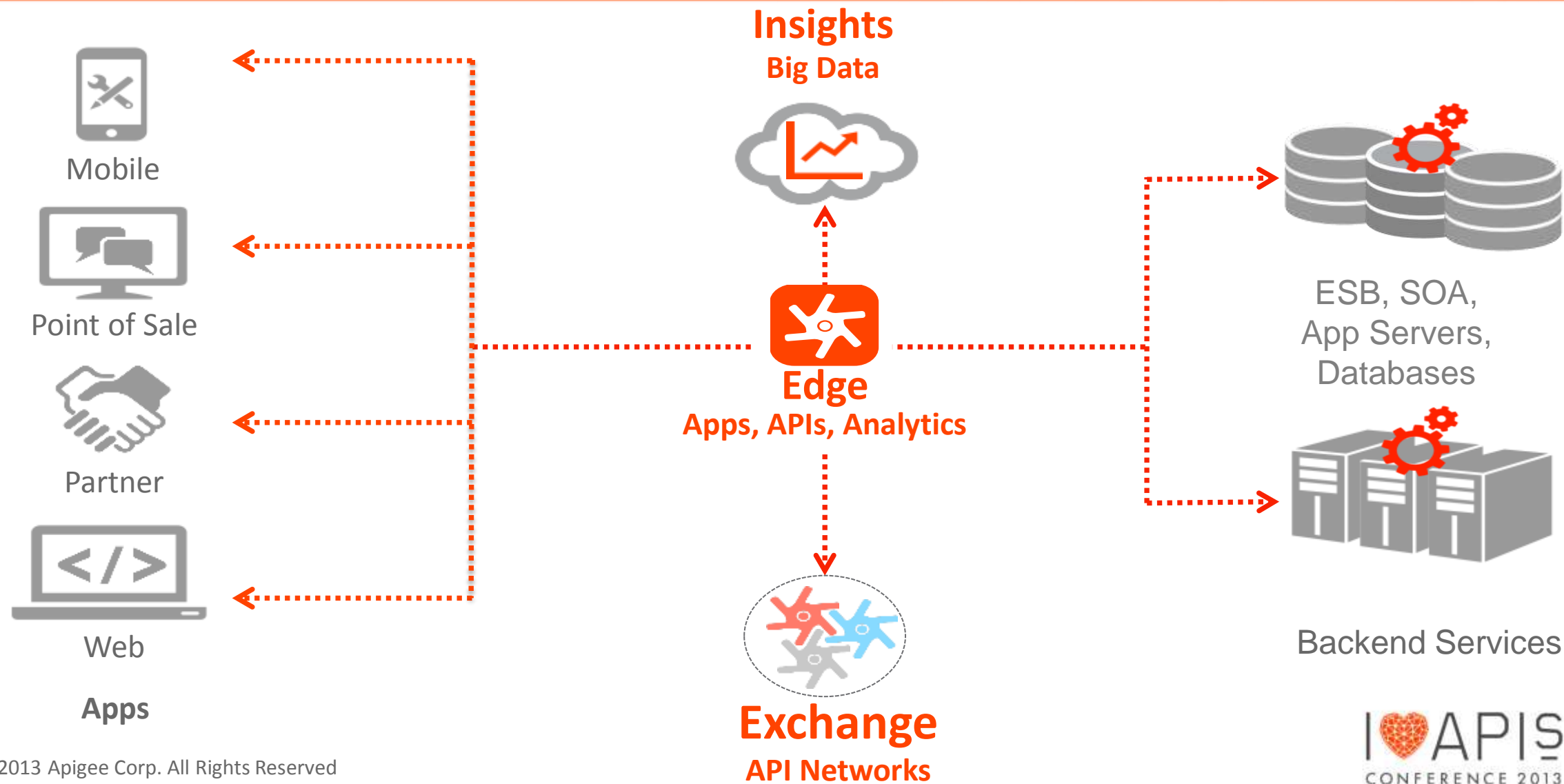
Thank you



Appendix



Apigee Digital Business Platform



Data Science Engagement Workflow

- Work with the customer to understand
 - What data they have available and its schema
 - Their technical and business goals (successes, failures, metrics, etc.)
 - Determine if there are other relevant external data sets
- Obtain a set of historical data for POC
 - Load the data into a platform instance on AWS using the bulk file importer
 - Data files are staged in S3
 - Currently support csv, web log formats but can easily add others
 - Files are stored in HDFS
 - Data can be loaded into HDFS either
 - As time series (time stamp with an event payload)
 - Or as entities (a unique identifier plus relevant characteristics)

Data Science Engagement Workflow

- View data samples in a Series Manager UI
- Run MapReduce jobs in javascript (UI or via app specification)
- Common jobs:
 - Aggregation – group the data in time and by dimensions
 - Sessionization – group the data per end user interaction
 - Bringing in context (joins with other data sets)
- Results can be written as
 - Time series
 - Entities
 - As a final result in JSON
- Final results can be downloaded via a REST API:
 - `/jobs/{jobId}/{runId}/results`

Data Science Engagement Workflow

- Final results can be visualized in Excel or any other plotting program
- For each analysis, we identify a result and an action or recommendation based upon the result
- Periodic update reports are given to the customer