

BIG DATA INTO FAST DATA

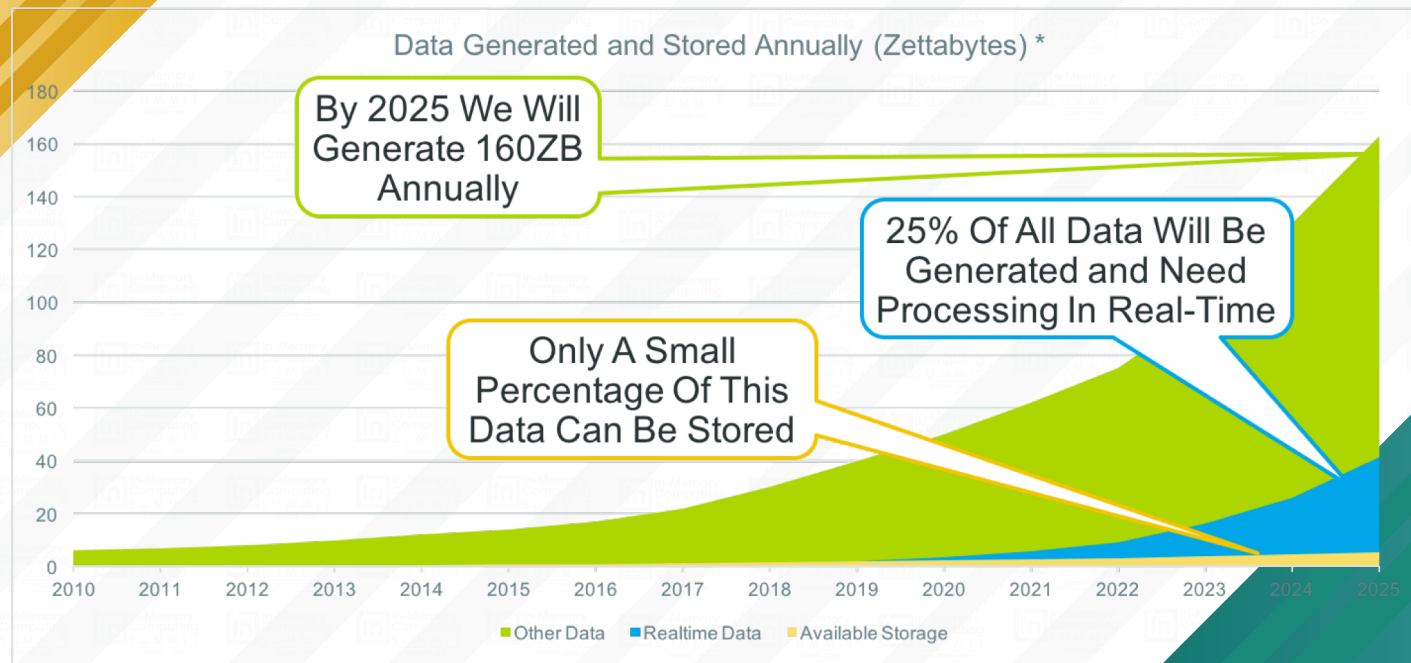
KEVIN GOLDSTEIN

NEEVE RESEARCH

WHO IS NEEVE RESEARCH?

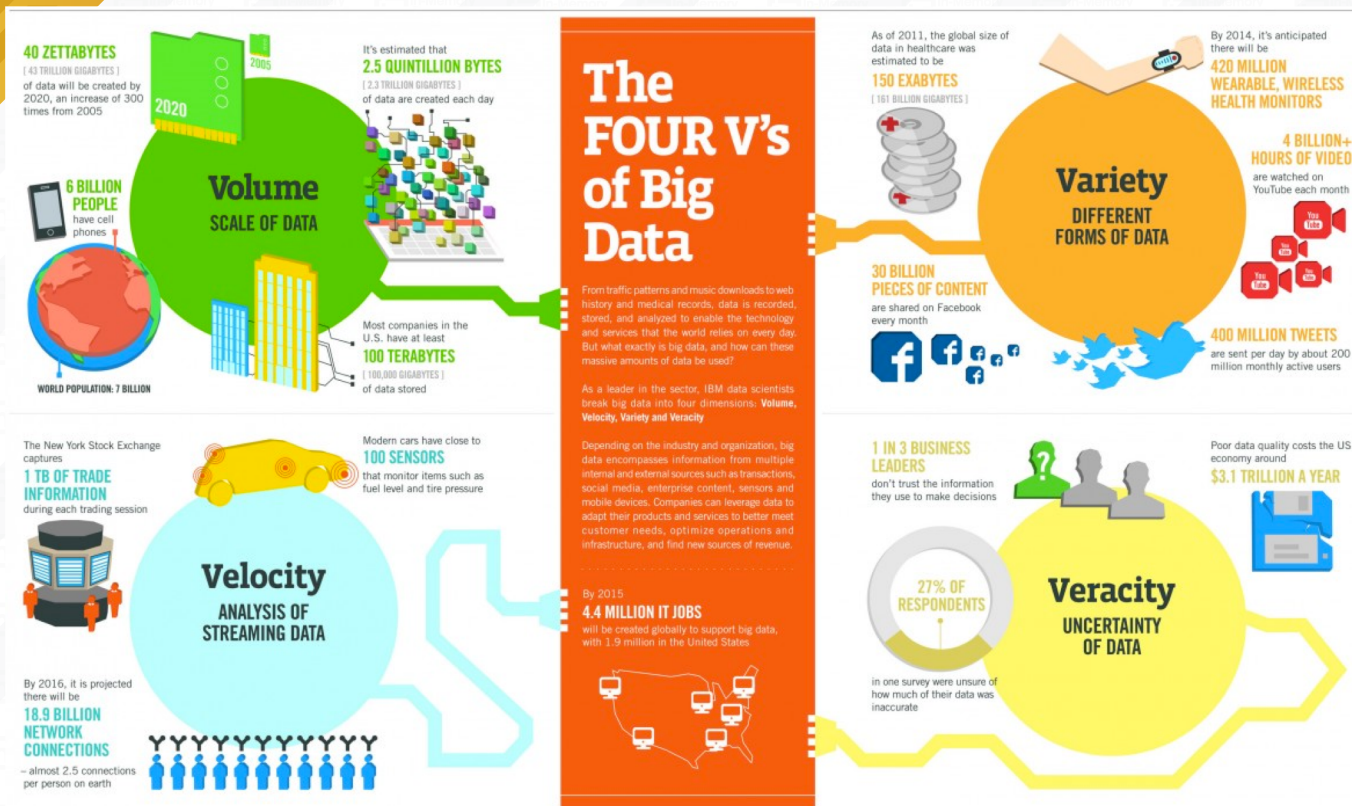
- Headquartered in Silicon Valley
- Creators of the X Platform™ - Memory Oriented Application Platform
- Passionate about high performance computing
- Running in production at Fortune 100-300

OUR GROWING NEED FOR *DATA*

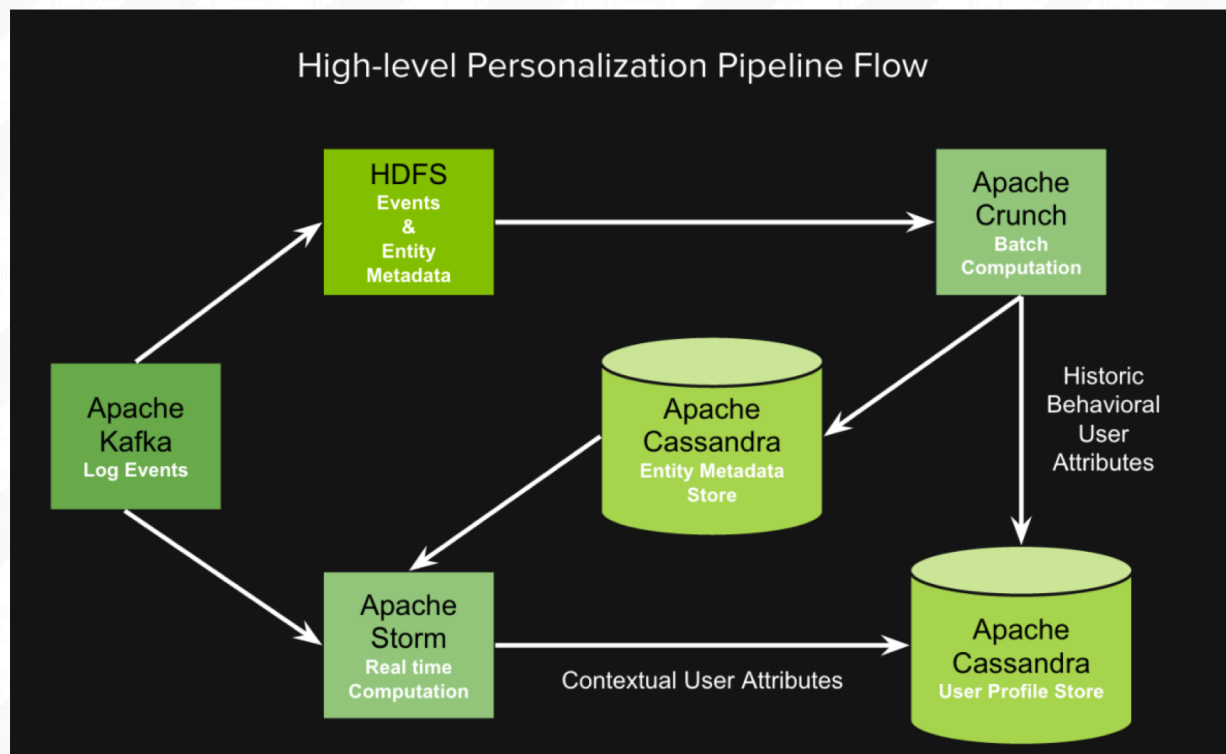


* Data Age 2025: The Evolution of Data to Life-Critical. An IDC White Paper, Sponsored by Seagate

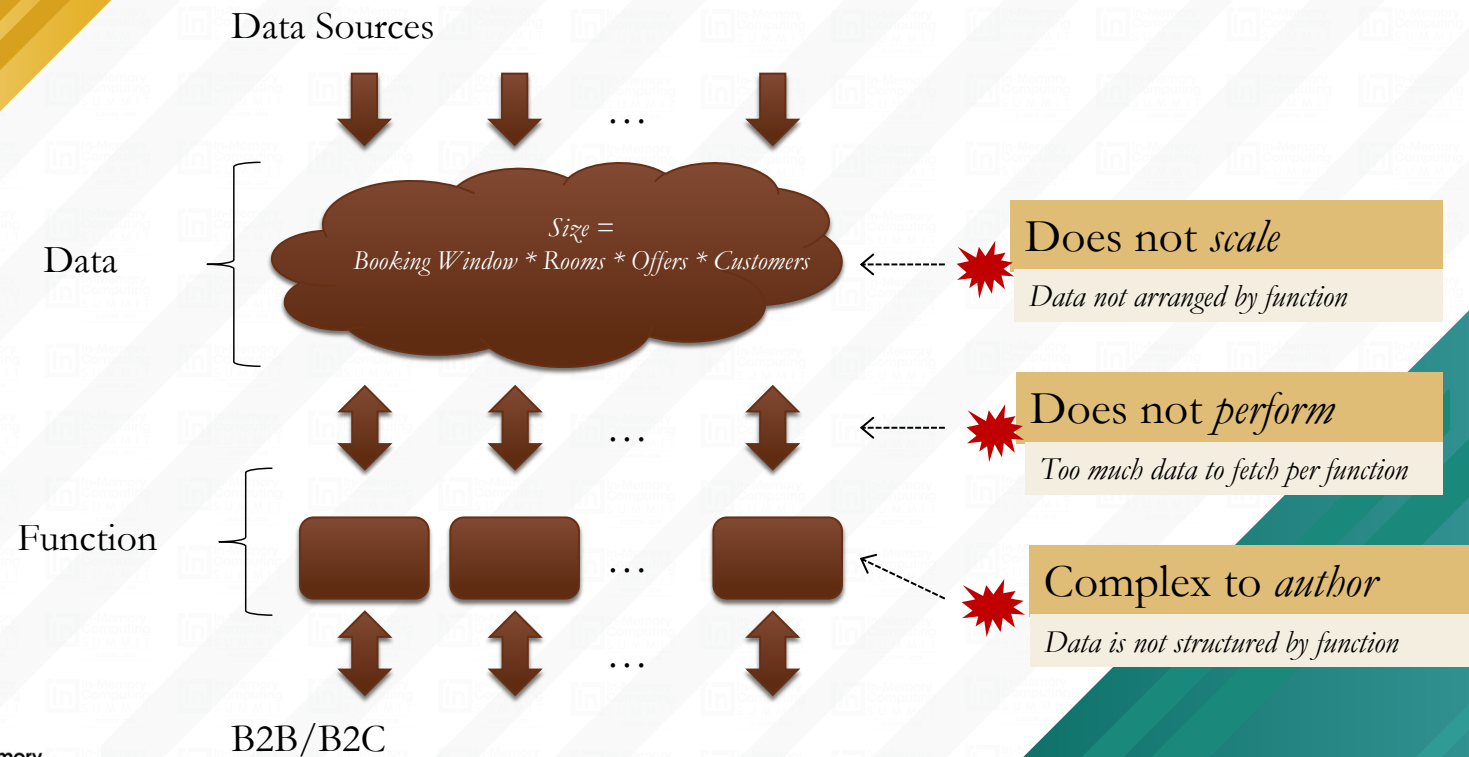
OUR GROWING NEED FOR DATA



SPOTIFY: OUR GROWING NEED FOR *DATA AND SPEED*



WHAT'S THE PROBLEM?



WHAT'S THE GOAL? REAL-TIME INTELLIGENCE

Complex business functions that operate on *disparate* and *large* volumes of data in *real-time* to produce *intelligent*, customer focused results

WHERE WE ARE PROGRESSING, AND STUMBLING

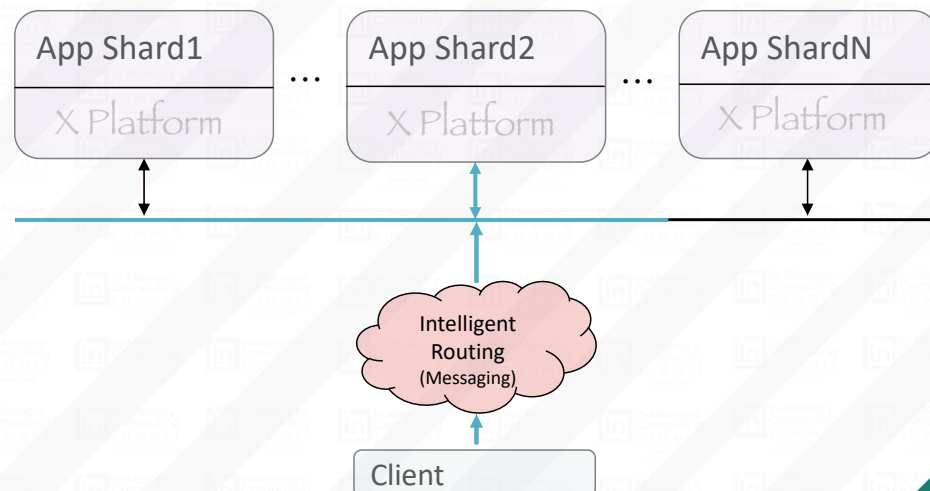
- We are already moving into the paradigm of cooking in flow & keeping data in motion.
 - Cook in flight (capture and aggregate)
 - ✱ ■ Then route (Push not Pull with messaging)
 - ✱ ■ Then compute
 - ✱ ■ Then store (Transform and Store)

HOW TO REALLY CLOSE THE GAP?

- Four things are necessary:
 - Simplicity for business agility
 - In-memory for performance
 - Micro-Services for scalability, agility and reliability
 - Compute for performance and reliability

GET THIS RIGHT, #1

- You have to have both agility and speed since you are working with intelligent systems that involve big data.



GET THIS RIGHT, #2

- In-memory brings you speed!

Memory	Latency
L1 Cache	~1ns
L2 Cache	~3ns
L3 Cache	~12ns
Remote NUMA Node	~40ns
Main Memory	~100ns
Random SSD Read 4K	150μs
Data Center Read	500μs*
Mechanical Disk Seek	10ms

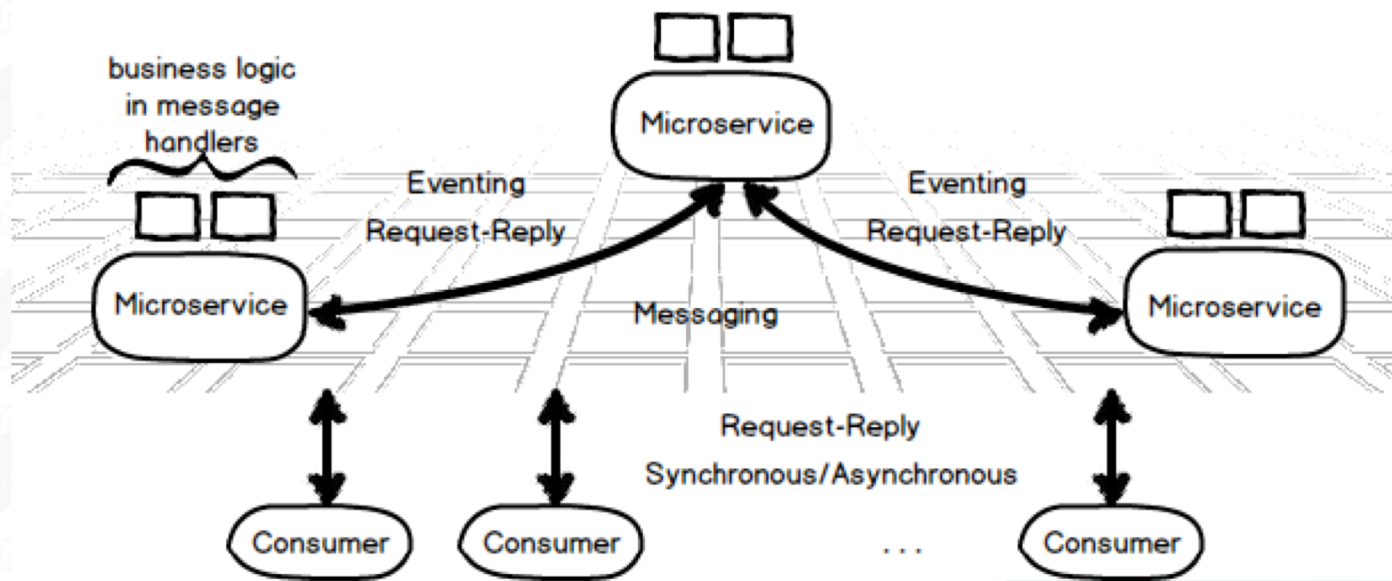
MEMORY ORIENTED COMPUTING!

All State in Memory All The Time!

Non Starters For Performance
We're Talking About!

GET THIS RIGHT, #3

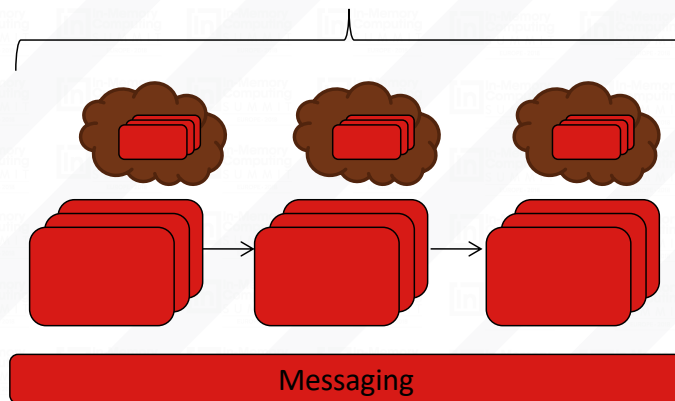
- Microservices bring you scale, agility and resilience



GET THIS RIGHT, #4

■ Live access & storage

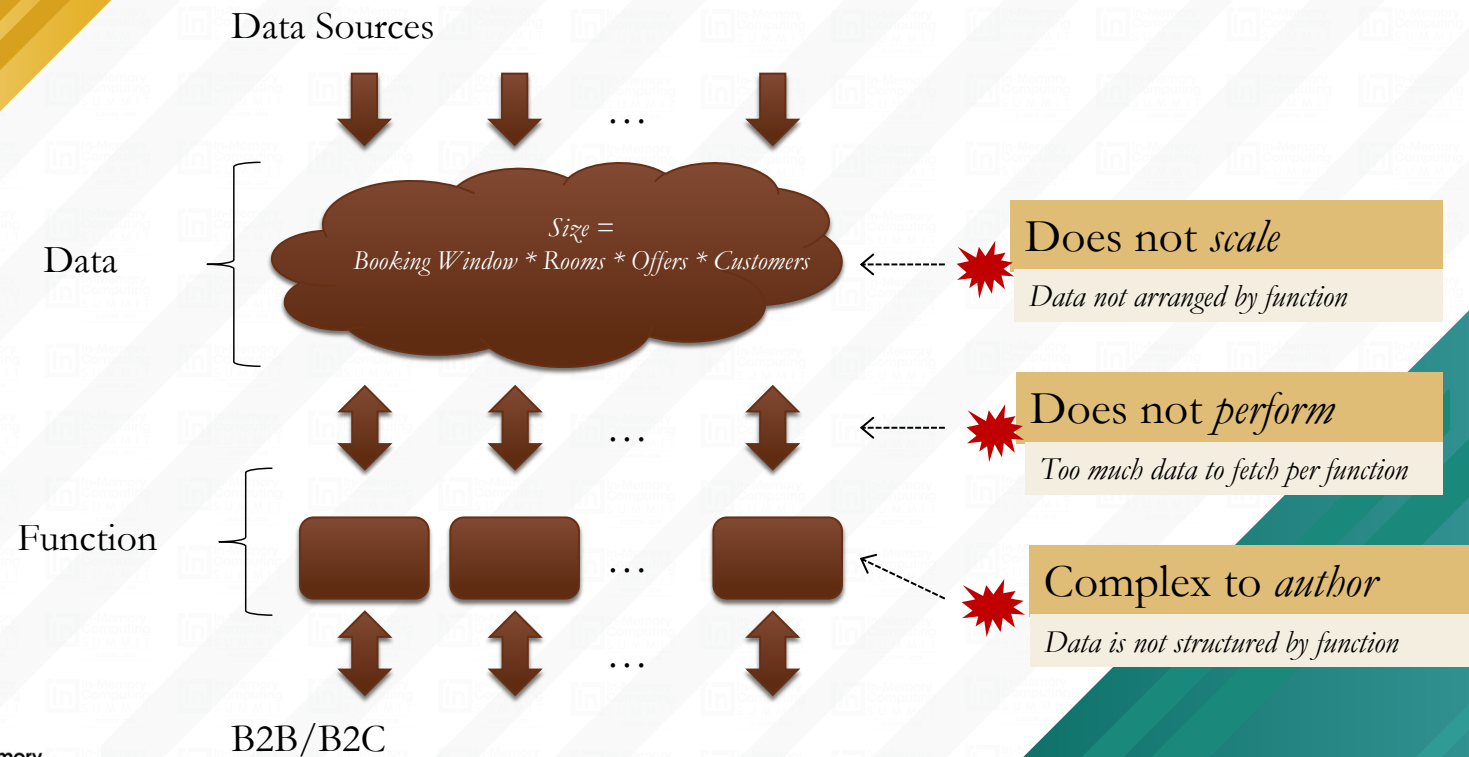
- Private State in Java collections
- Stateful scaling by entity types
- Local Data Access



- Asynchronous
- Distributed
- Concurrent
- Easy Scaling
- Small Footprint
- Totally Agile

- Processing Pipelines
- Processing-Data Affinities
- Data, Function and Messaging Aware
 - *Transactional Consistency*

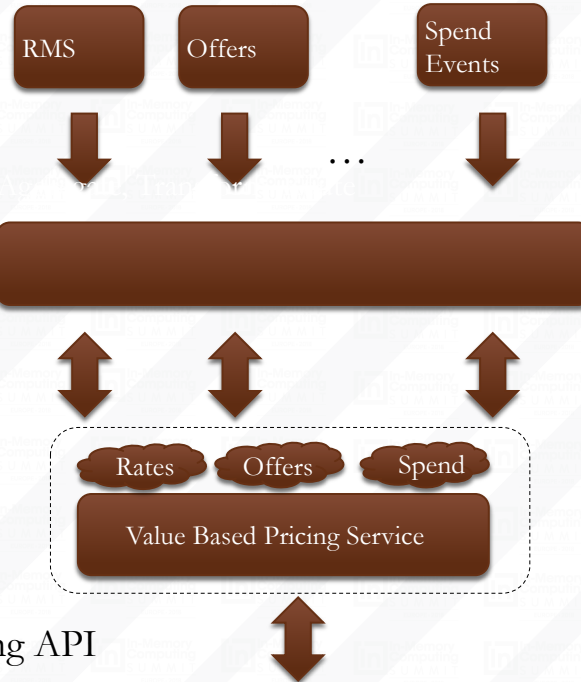
WHAT'S THE PROBLEM?



PROBLEM SOLVED: VALUE BASED PRICING TODAY



MGM RESORTS
INTERNATIONAL®



Capture

Capture Data from Source

Aggregate, Route, Transform

Aggregate, Route and Transform data to deliver in meaningful form to function

Store

Store offers, rates and aggregated spend co-located with service

Process

Compute prices on demand using rates, offers and aggregated customer spend

THE X PLATFORM

A platform that enables **intelligent** transactional systems to be **easily** built, managed and extended without compromise on the extreme **performance**, **reliability scalability** and **agility** needs of the modern enterprise

Data Capture

Data Routing

Data Visualization

Intelligent TP

In-Memory

- ✓ Speed
- ✓ Simplicity

Multi-Agency (Microservices)

- ✓ Reduced Time to Market
- ✓ Higher System Resilience
- ✓ Highly Scalable
- ✓ Continuous Business Adaptability
- ✓ High Enterprise Intelligence
- ✓ Fosters Innovation

The background of the slide features a repeating pattern of the In-Memory Computing Summit logo, which includes a stylized 'in' icon and the text 'In-Memory Computing SUMMIT'. The design is divided into three main color zones: a yellow-orange top-left corner with diagonal lines, a light gray central area containing the main text, and a teal bottom-right corner with diagonal lines and a series of overlapping arrows pointing towards the top-right.

IT IS ALL JUST FAST DATA NOW