Serverless Computing

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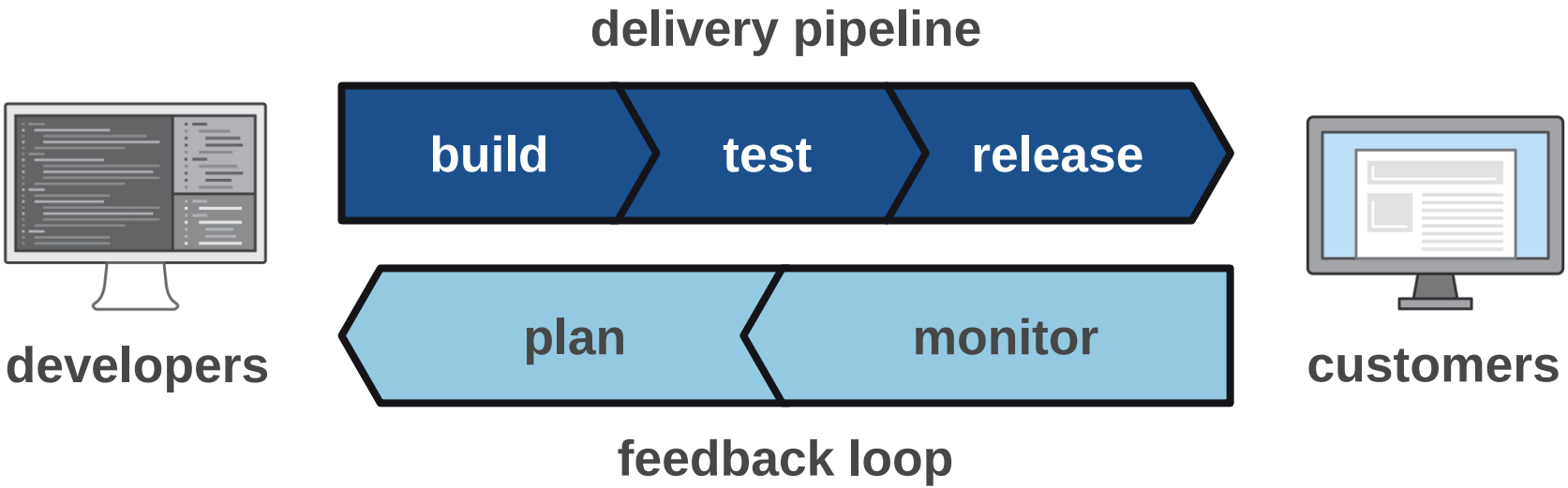
Topics to discuss

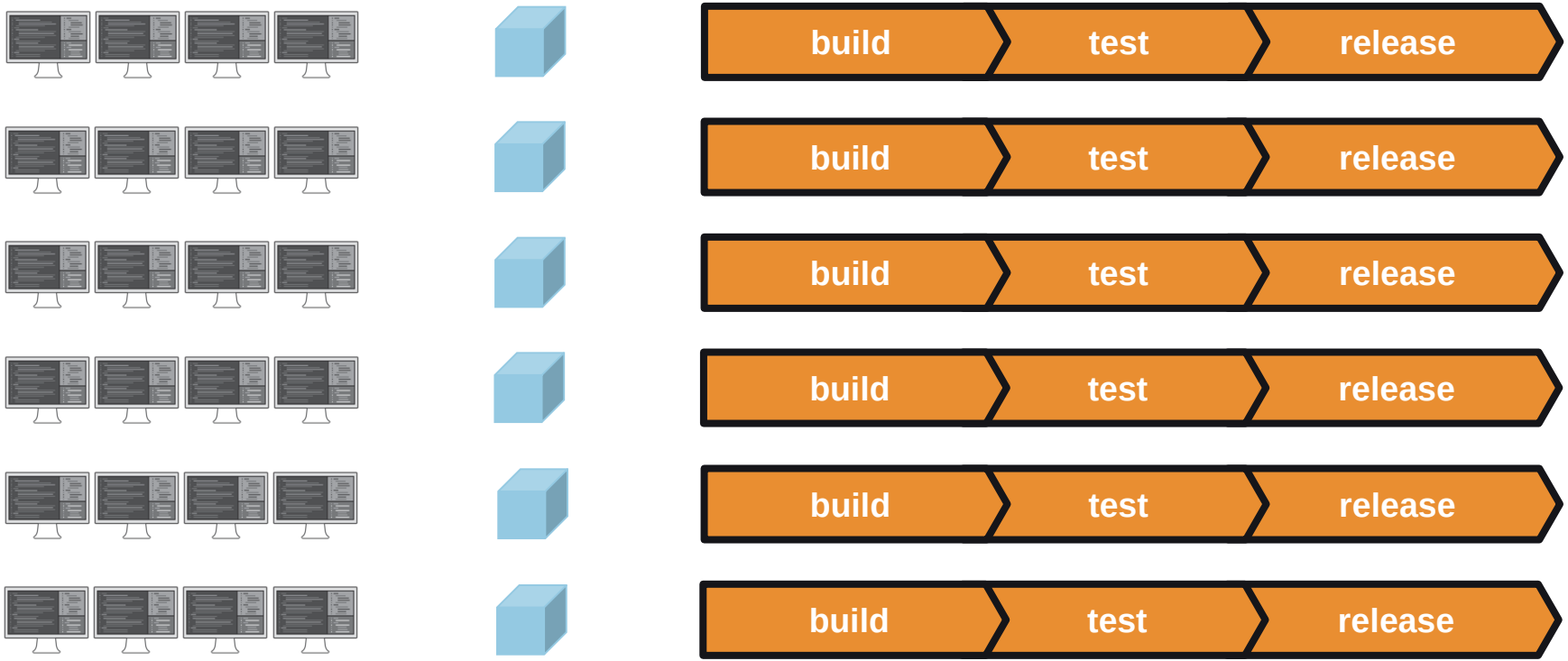
1. From Monolith to Microservices
2. Serverless computing – Lambda
3. Let’s speak – Alexa
4. Real-Time processing
5. Smart applications

Software development lifecycle



Monolith development lifecycle

Microservice development lifecycle

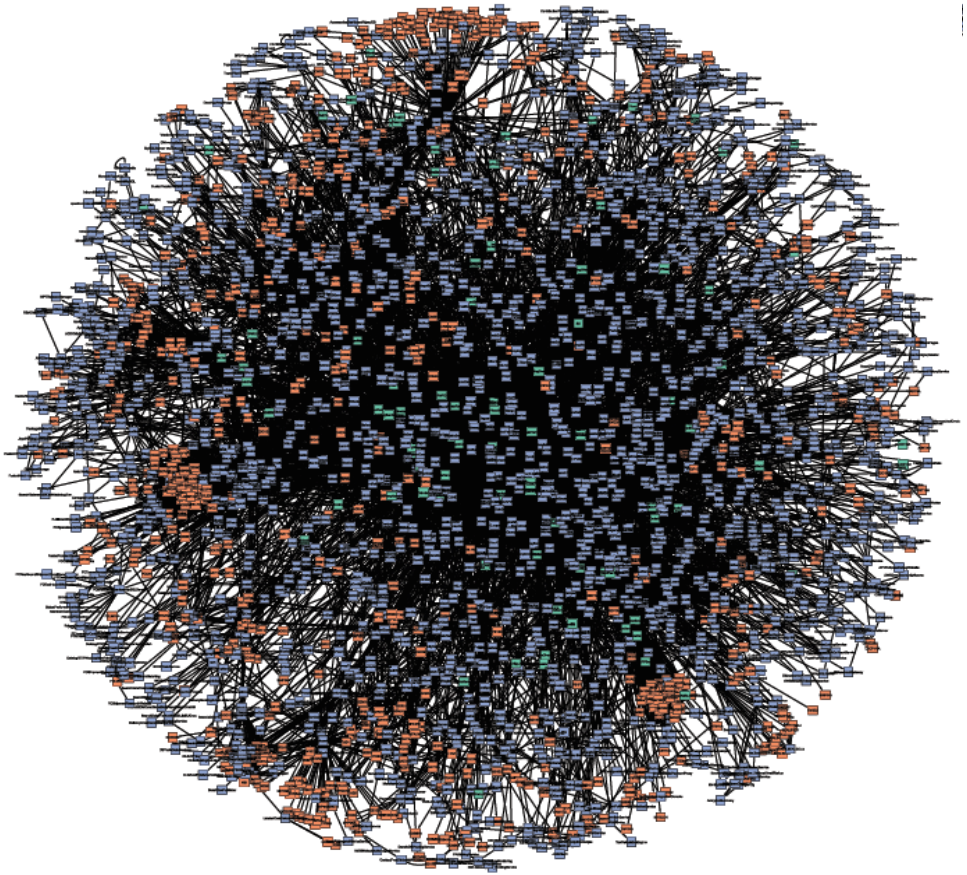


Decouple into small building blocks

The **looser** they are coupled,
the **bigger** they scale,
the more **fault tolerant** they get.

The less **dependencies**,
the faster you **innovate**.

Amazon.com microservice architecture



Microservices

Single-Purpose

Connected through APIs

Highly decoupled

CONTINUOUS DEPLOYMENT

SMALL, FREQUENT CHANGES CONSTANTLY INTEGRATING INTO PRODUCTION.

Thousands of teams

× Microservice architecture

× Continuous delivery

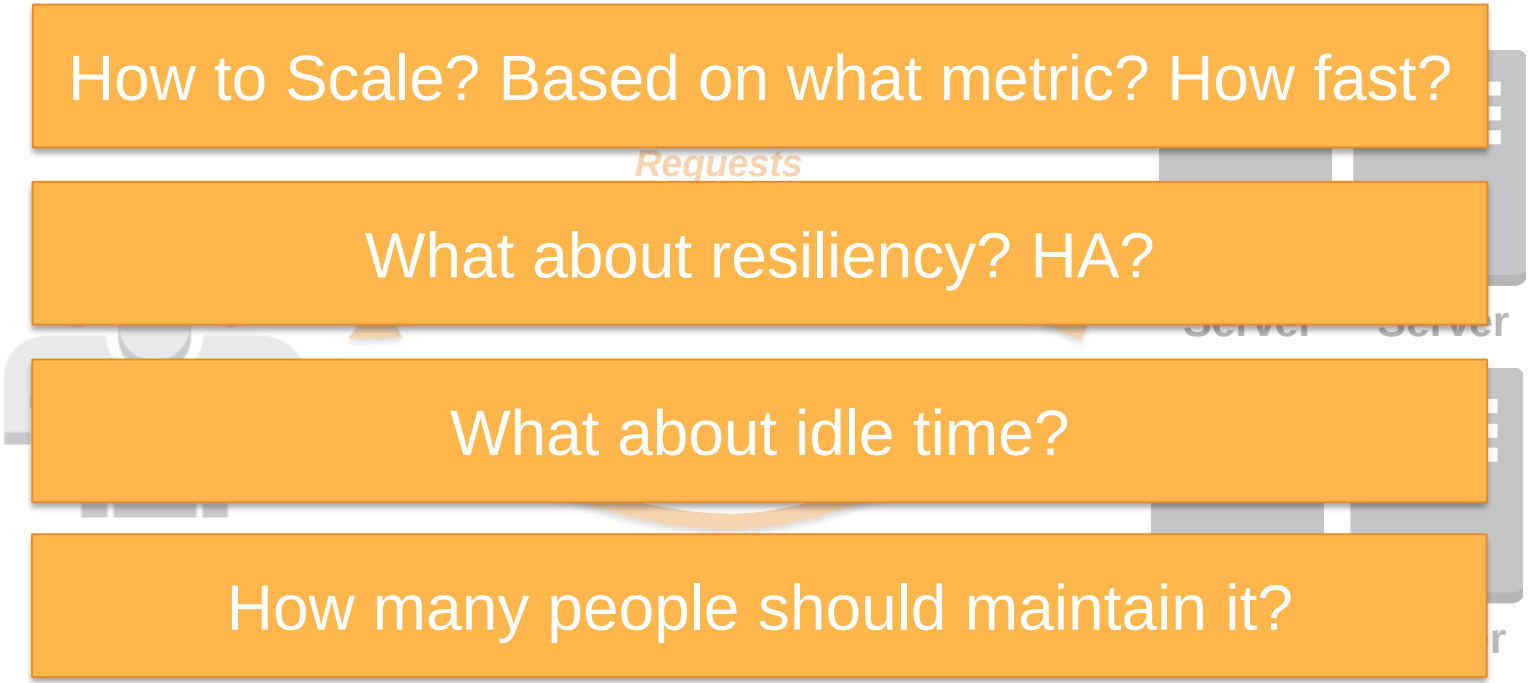
× Multiple environments

= 50 million deployments a year

Speed of deployments at amazon.com

11.6s	1,079	30,000	~0.001%
Average time between deployments (weekday)	Max number of deployments in a single hour (or approx every 3 seconds)	Max number of instances simultaneously receiving a deployment	Software deployments cause an outage

Traditional way…

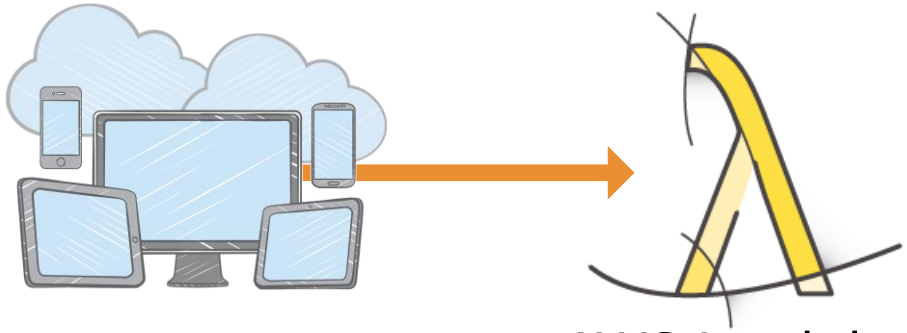


No Server is Easier to Manage Than “No Server”

Werner Vogels, Amazon CTO

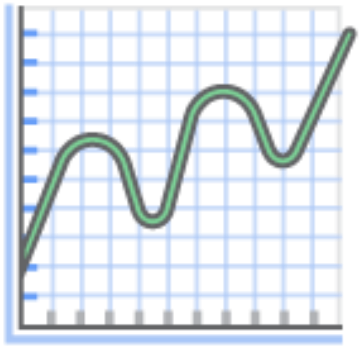
An Amazon definition of “Serverless”

Lambda = MicroService without servers

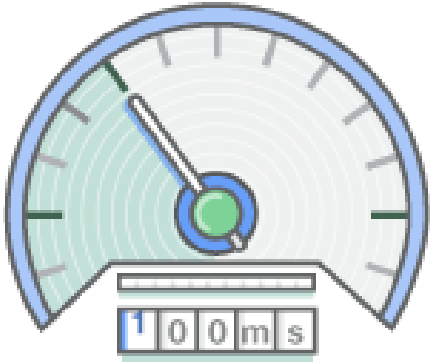


Benefits of AWS Lambda

No Servers to Manage

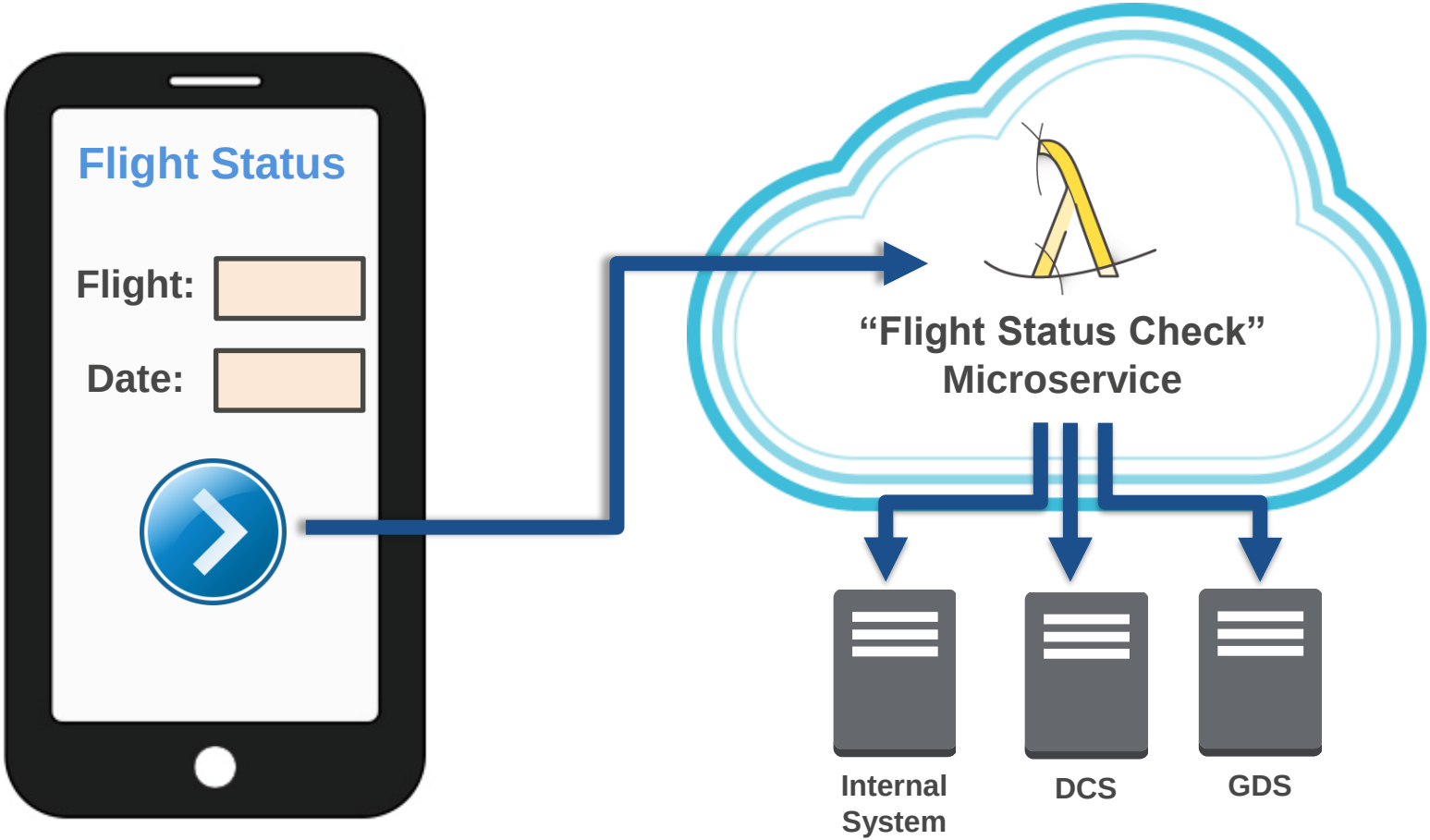


Continuous scaling



Never pay for idle – no under-used servers

LETS IMAGINE…



LETS IMAGINE… EXAMPLE 2

Enabling voice-based interactions

ALEXA - LET’ S SPEAK WITH APPLICATIONS

SkyScanner

My Airport Info

KAYAK

UBER

"Alexa, open Skyscanner"

"Alexa, ask Skyscanner to find me a flight to London tomorrow"

"Alexa, ask Skyscanner where I can go this weekend"

THE ALEXA ECOSYSTEM

amazon echo

amazon fireTV

ALEXA VOICE SERVICE

Unparalleled Distribution:

AVS allows your content to be everywhere

Lives In The Cloud

Automated Speech Recognition (ASR)

Natural Language Understanding (NLU)

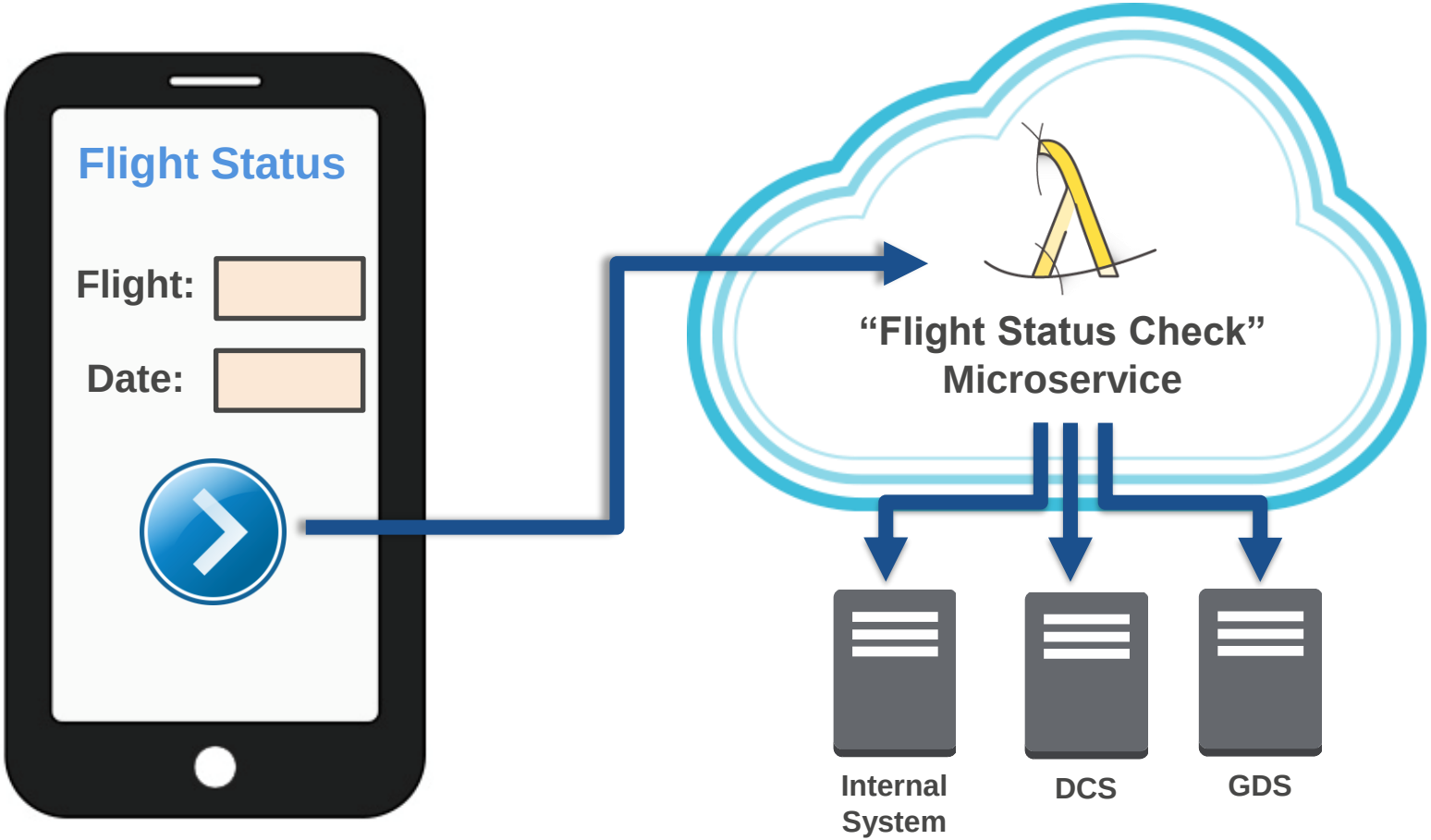
Always Learning

ALEXA SKILLS KIT

Create Great Content:

ASK is how you connect to your consumer

LETS IMAGINE… EXAMPLE 1



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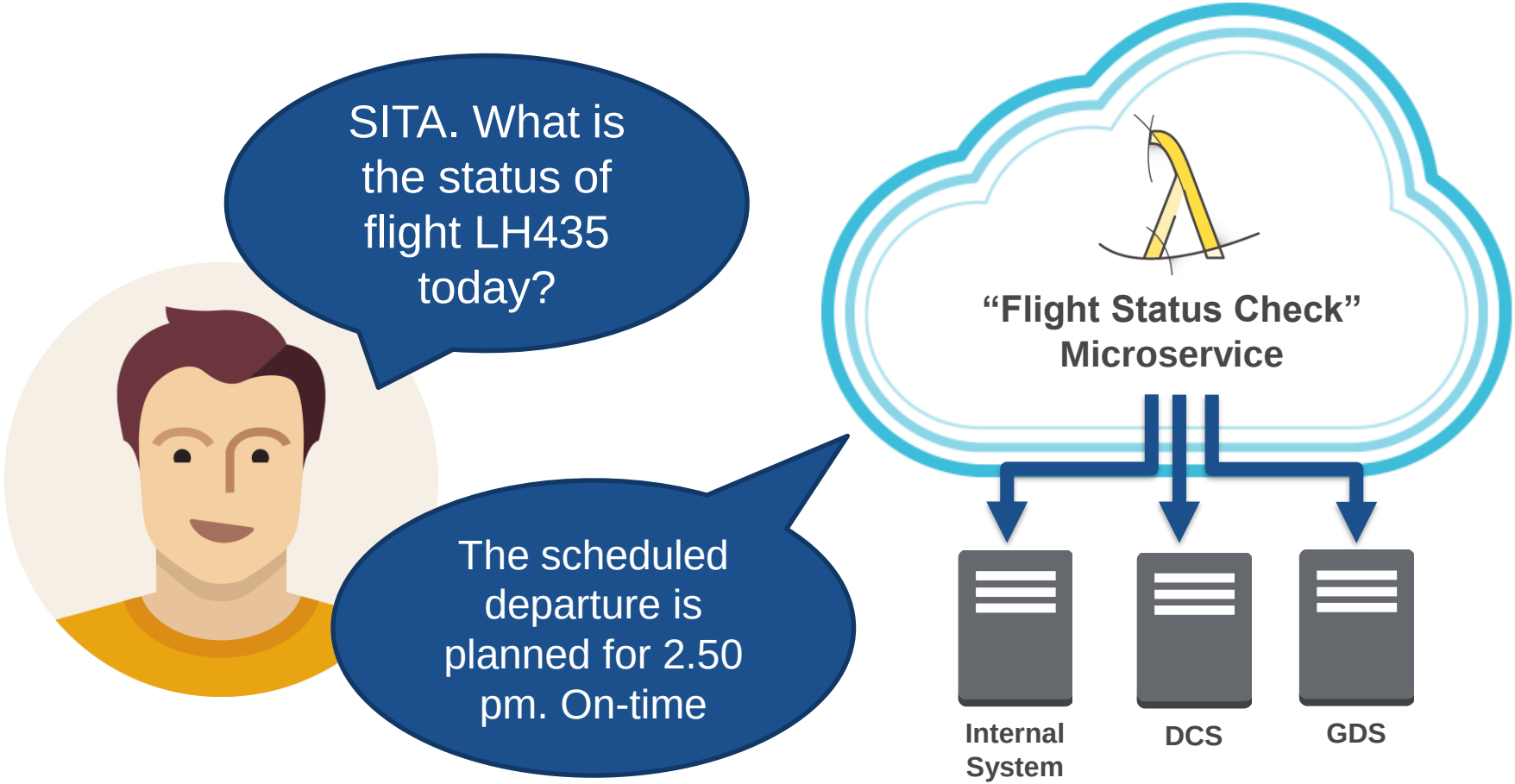
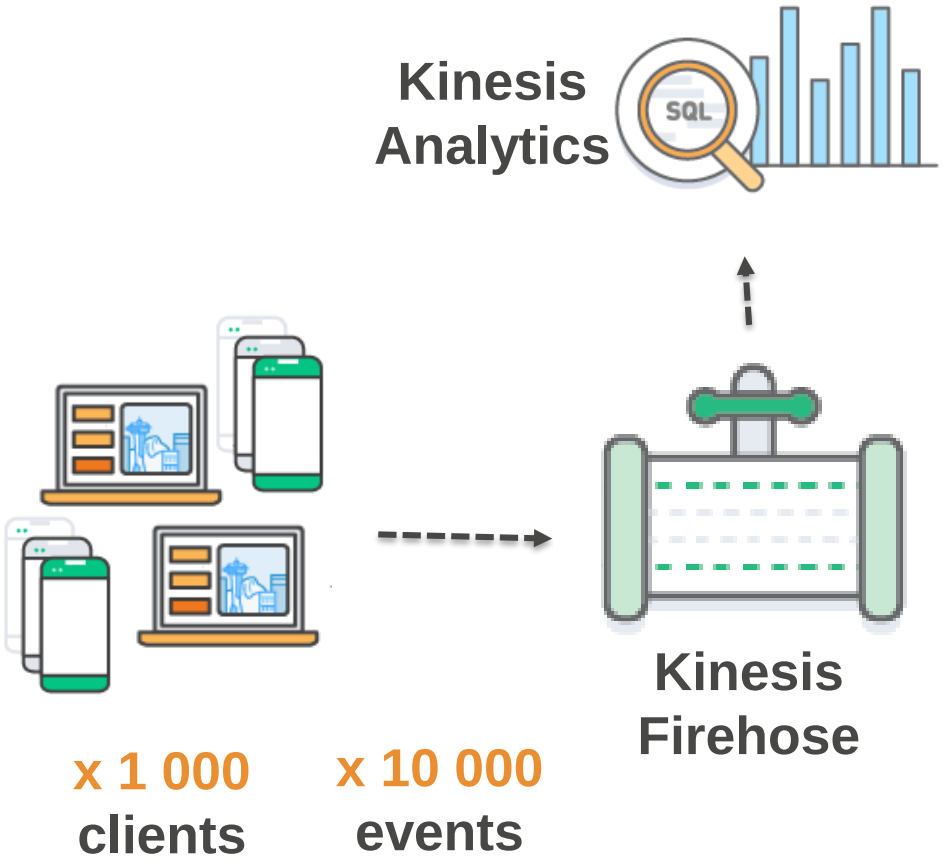


Real-Time processing

Real-Time processing - Kinesis



EXAMPLE: INTERNET BOOKING ENGINE

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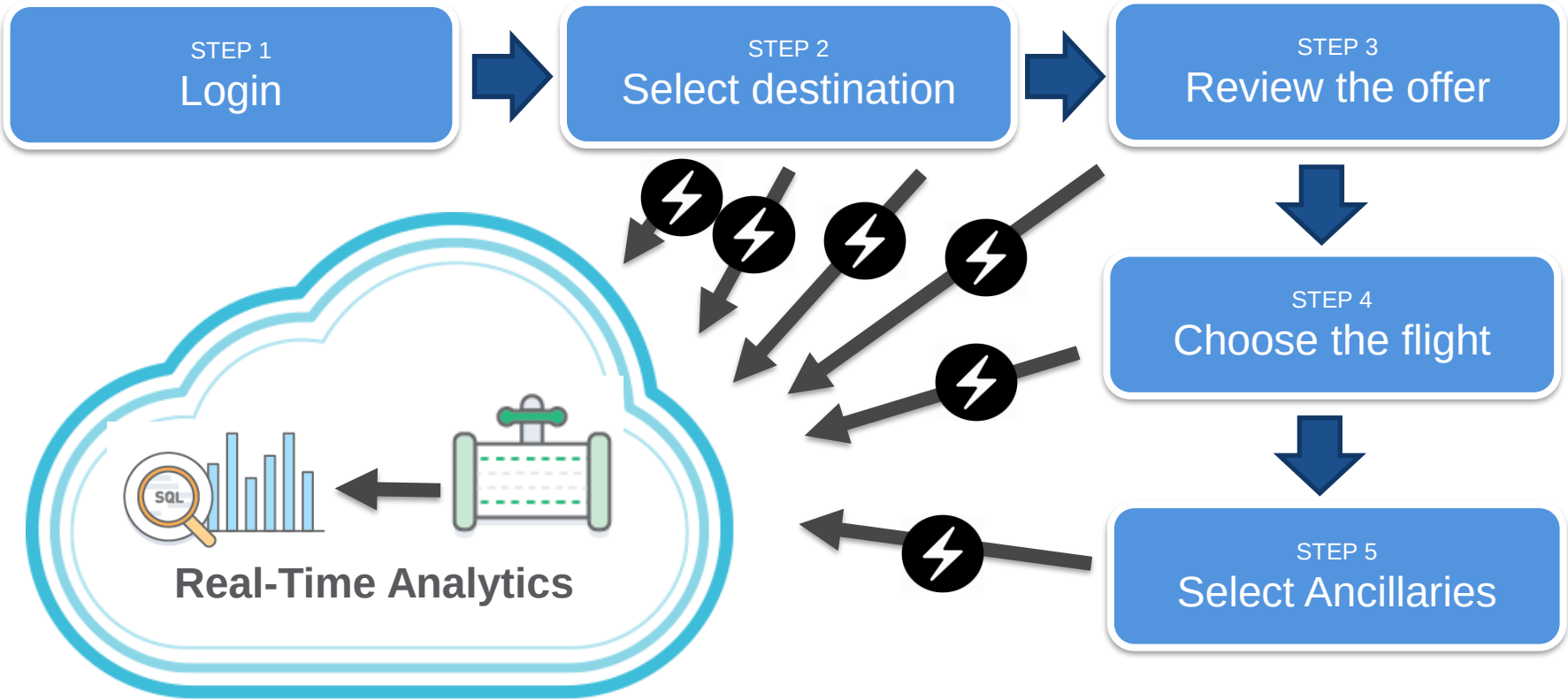

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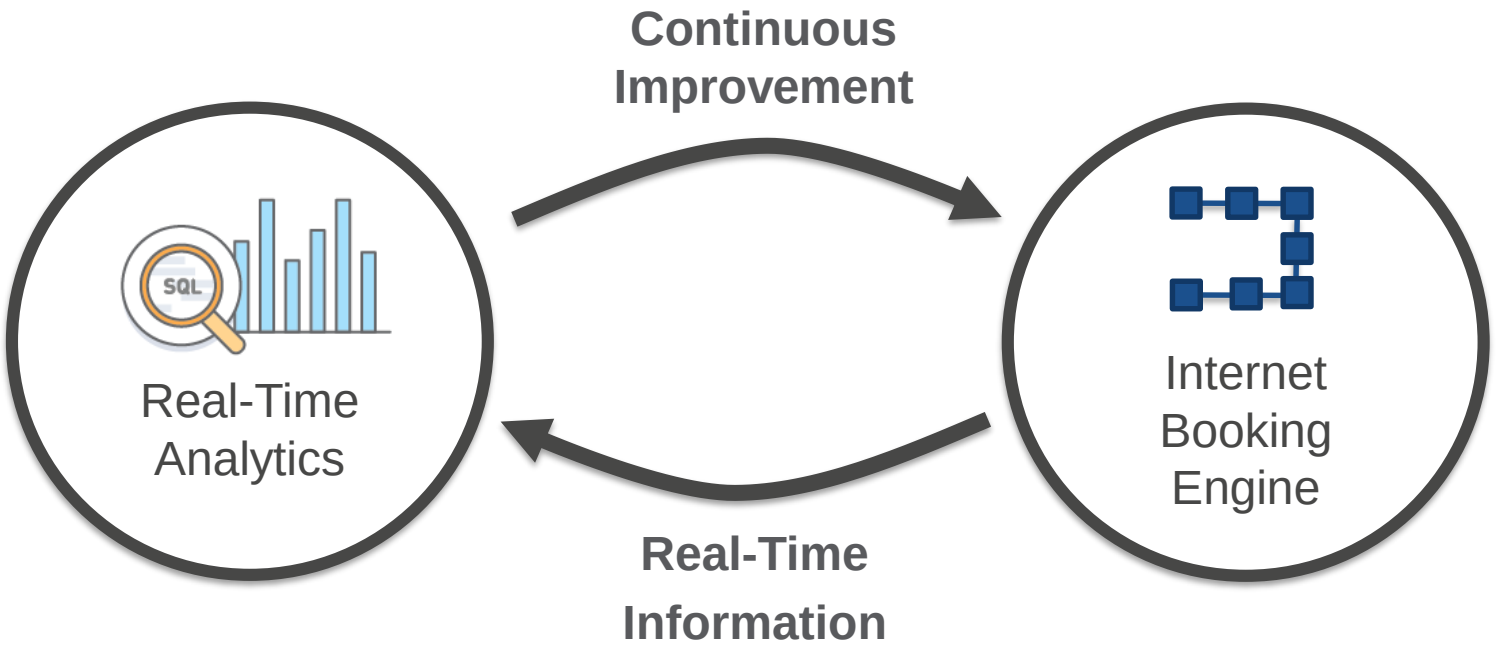
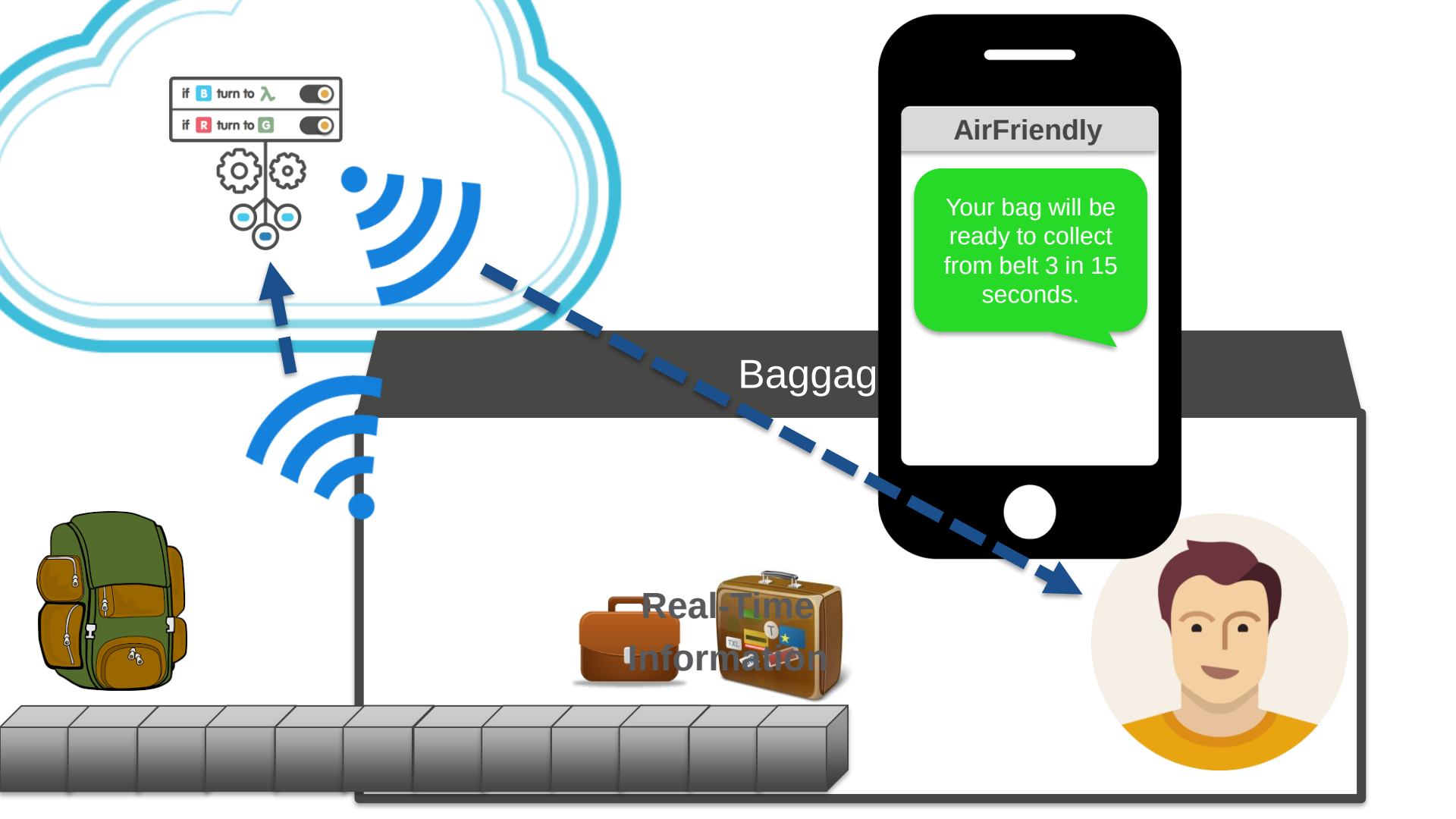


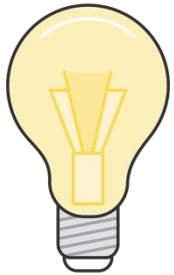
Example - AWS IoT


Baggage Hall
TXL
LHR


if B turn to λ
if R turn to G
AirFriendly
Your bag will be ready to collect from belt 3 in 15 seconds.
Baggag
Real-Time Information

Smart applications

Machine learning and smart applications



Machine learning is the technology that automatically finds patterns in your data and uses them to make predictions for new data points as they become available

Your data + machine learning = smart applications

Traditional way of targeting clients…

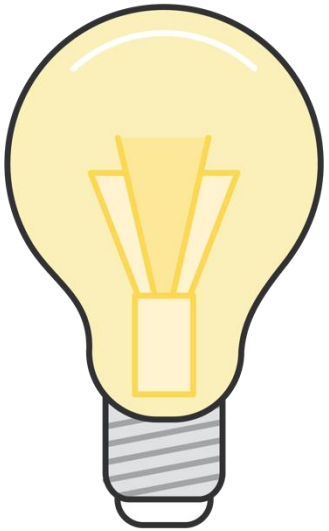
Dear Mr. Smith,

We have got new awesome holiday promotion.
2 weeks on Majorca in 5 start hotel for just $499.99!

Traditional way of targeting clients…

How to choose clients from our database? Lets select those customer who already:

Introducing Amazon Machine Learning



Easy-to-use, managed machine learning service built for developers

Robust, powerful machine learning technology based on Amazon’s internal systems

Create models using your data already stored in the AWS Cloud

Deploy models to production in seconds

EXAMPLE: ANCILLARIES

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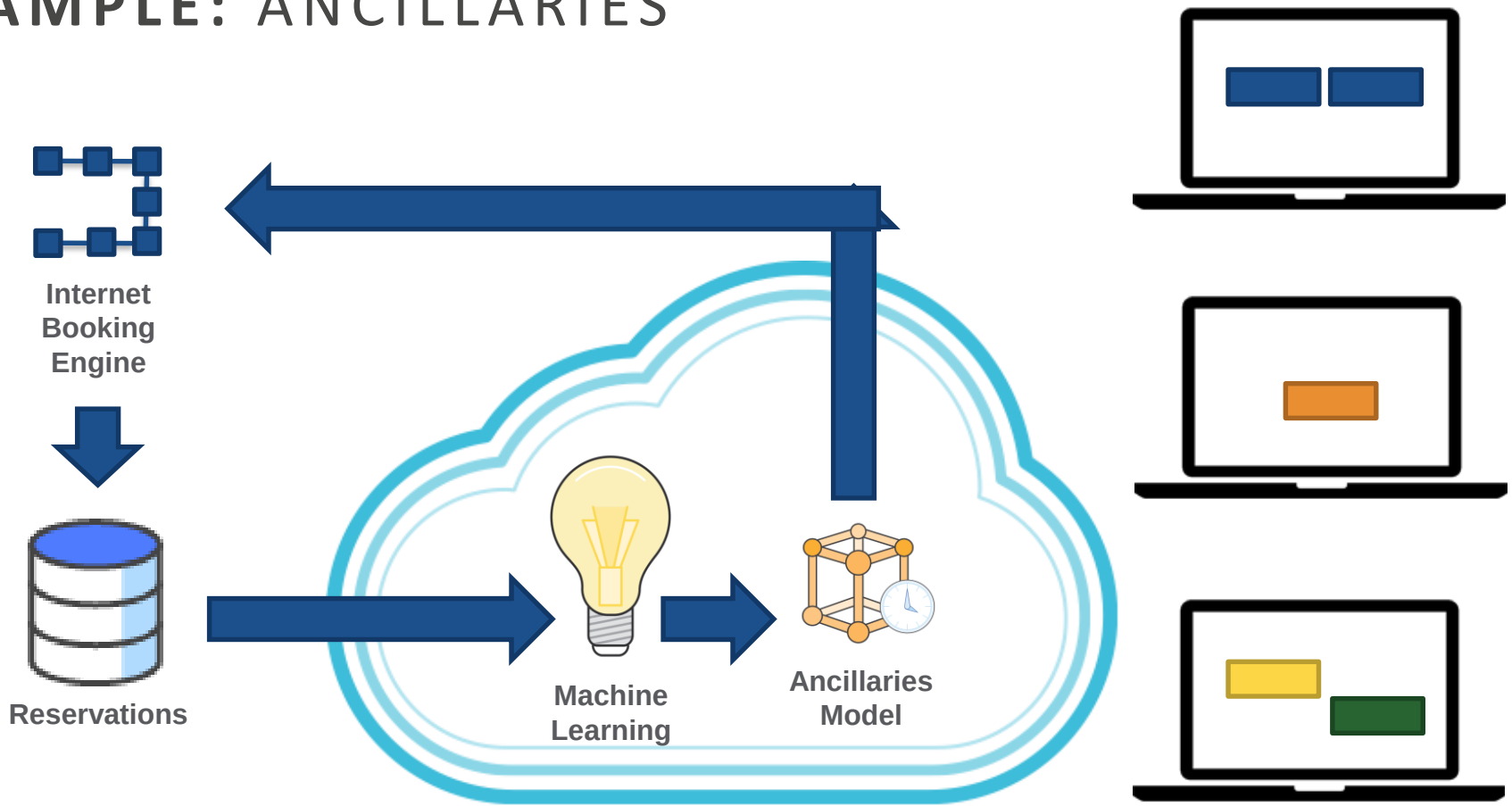

Questions?

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