USES CASES

OR

DON'T USE MY DATABASE

PRESENTATION FOR NOSQL ROADSHOW

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CAN WE PLEASE NOT TALK ABOUT

BIG DATA?

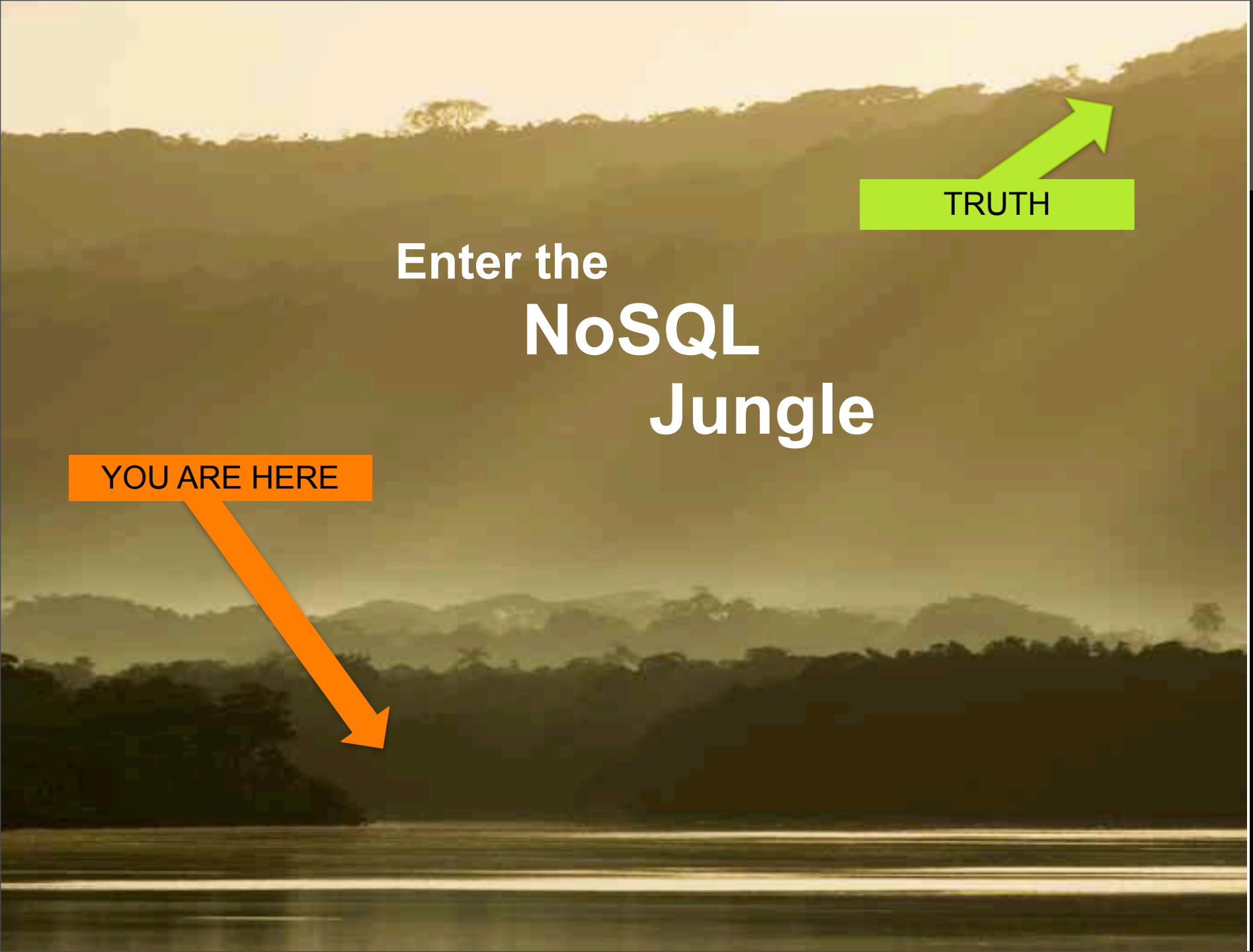
LET'S TALK ABOUT
CRITICAL DATA

Is your data
really that
critical, dude?
13

ON OFFER

- what… *is NoSQL? … Riak?*
- who *… uses Riak?*
- why *… should I NOT use Riak?*

(Or other NoSQL for that matter?)


TRUTH
Enter the
NoSQL
Jungle
YOU ARE HERE

what are you prepared to trade?

Would you trade….

Your current, familiar consistency model

for

a somewhat alien, but perfectly safe, consistency model and

better availability?

Would you trade….

Storage space

for

low latency?

Would you trade….

late night heroics

for

high availability?

Would you trade….

35 years of RDBMS success

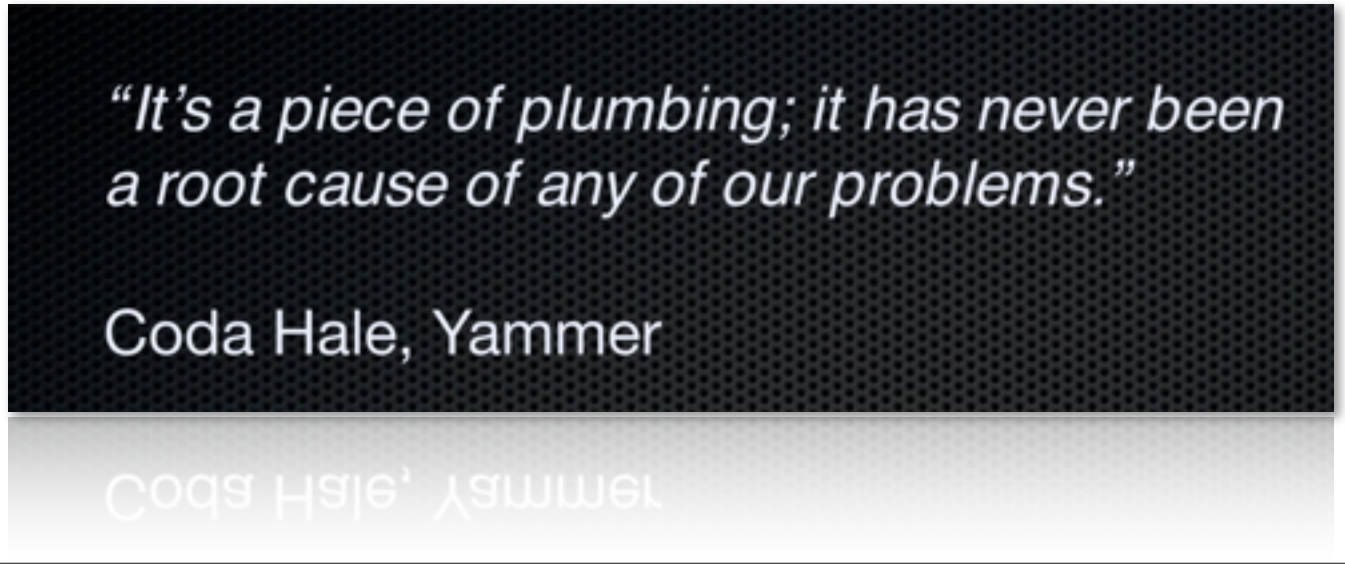
for

technology used by a few companies of which you may have heard?

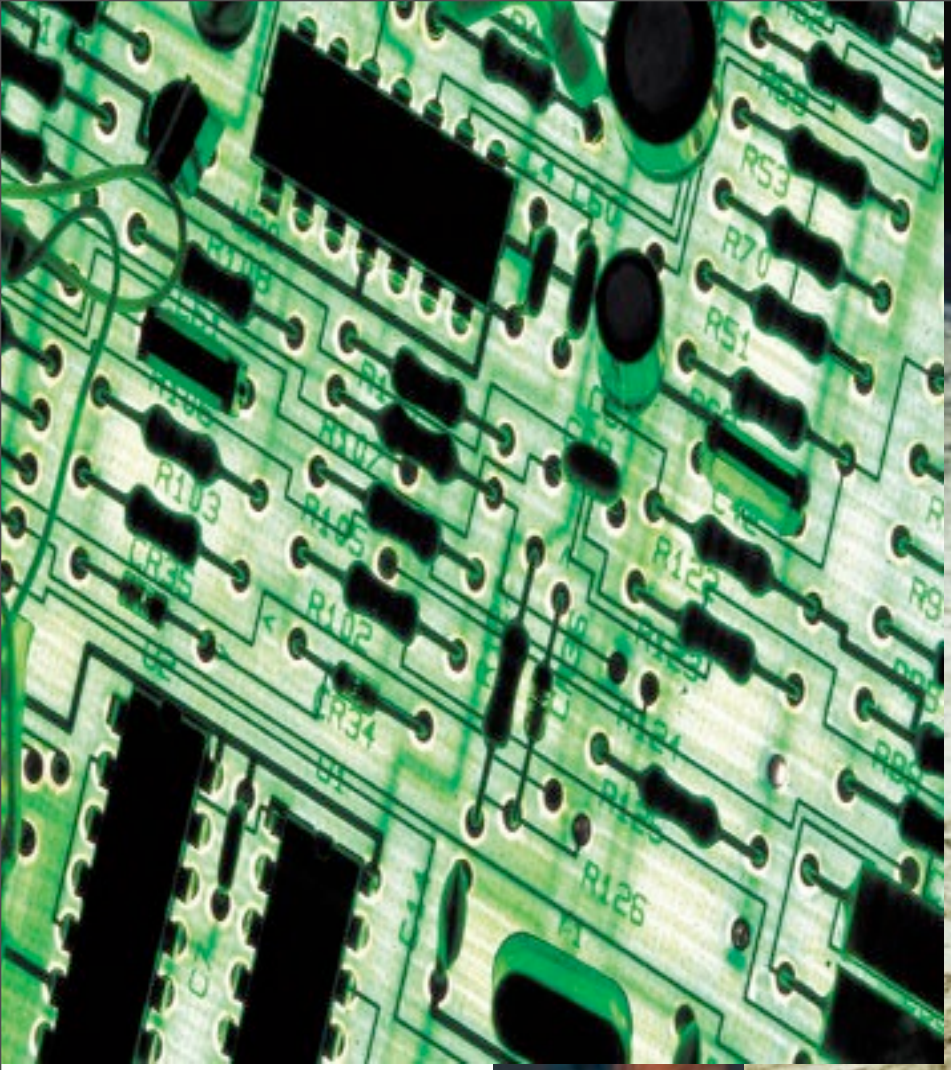
Would you trade….

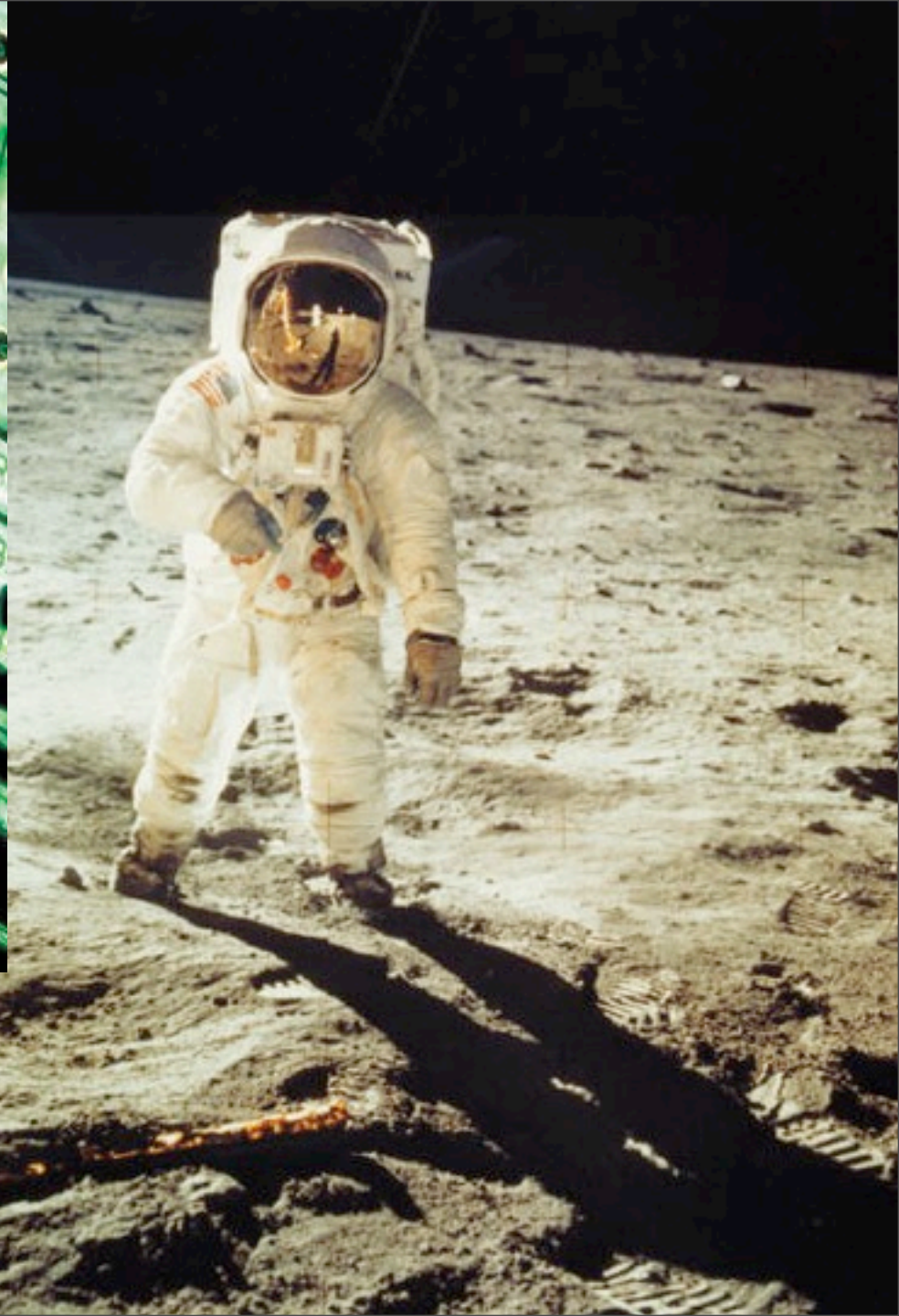
Two million developers worldwide

for

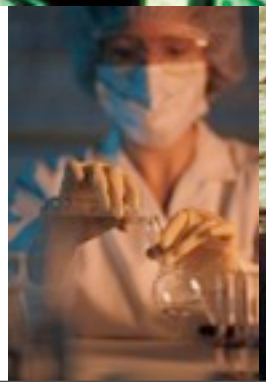


BEFORE YOU ANSWER,
CONSIDER….





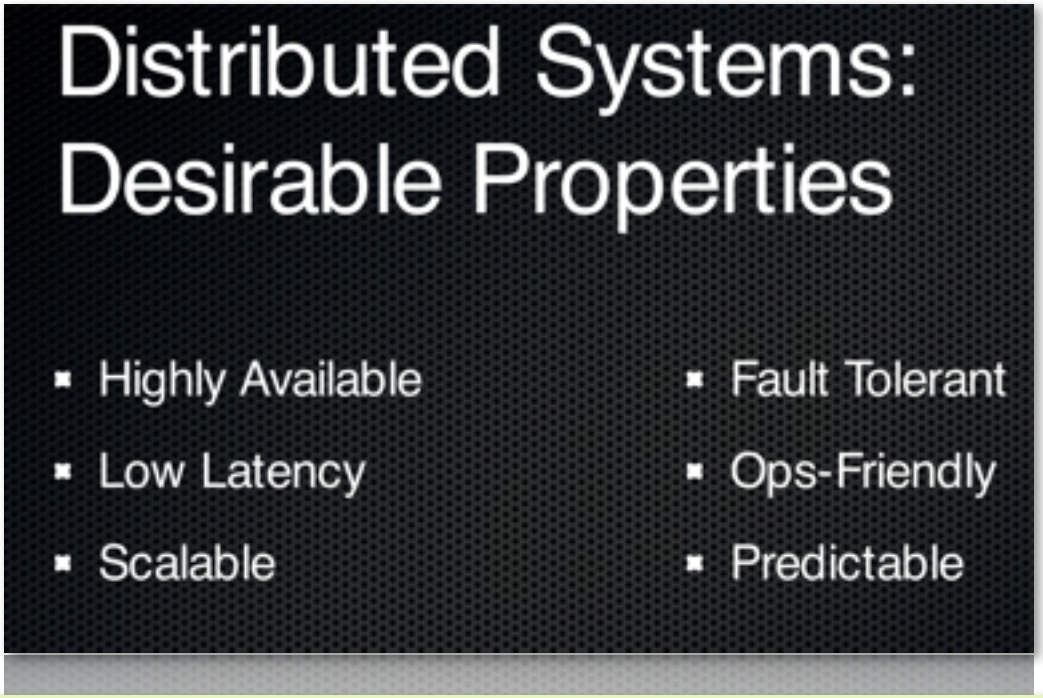
Can anyone call RDBMS a failure?



IF ANYONE MAKES THESE TRADE-OFFS SEEM *EASY*…..

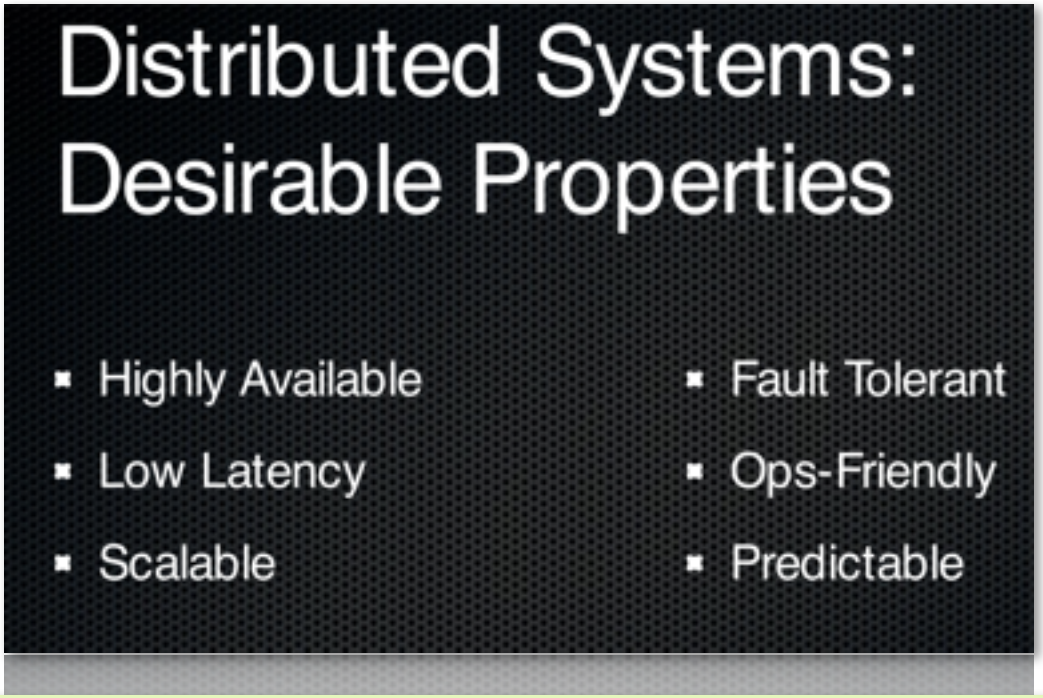
THEY ARE
LYING!!!

Lie # 1:



Any new app must use this newfangled NoSQL.

Lie # 2:



Non-distributed databases provide these properties.

Lie # 3:

MongoDB

CouchDB

Neo4J

Cassandra

Riak

Voldemort

Words like “distributed” have “relative” meaning.

Lie # 4: The Big One

I say I want:

1. safety
2. scale out
3. speed

When really I want:

1. speed
2. speed
3. speed

The lie developers tell themselves.

REMEMBER

At small scale everything works.

REMEMBER

At small scale everything works.

At large scale things start to break

RIAK – THE TECHNOLOGY

An open-source, globally distributed database with trade-offs

DISTRIBUTE

Replicate client data to your Riak clusters anywhere in the world

Clients run Riak clusters in Your data centers

RIAK DETAILS

Dynamo-inspired

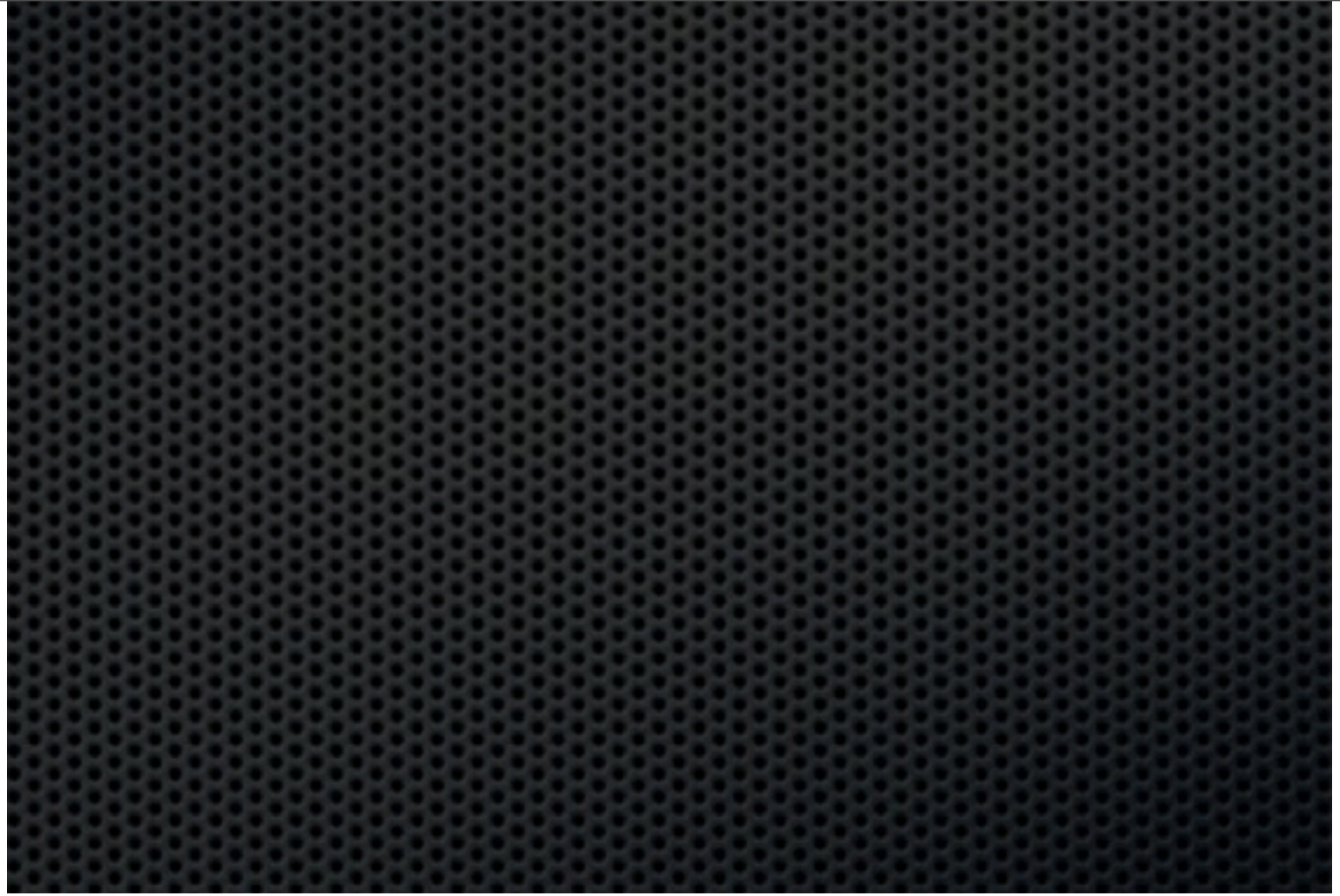
modular – core plus storage (or…)

1) **bitcask**
2) **levelDB**

Document*-oriented AND *key-value

Tuneable CAP values

Open-source and commercial



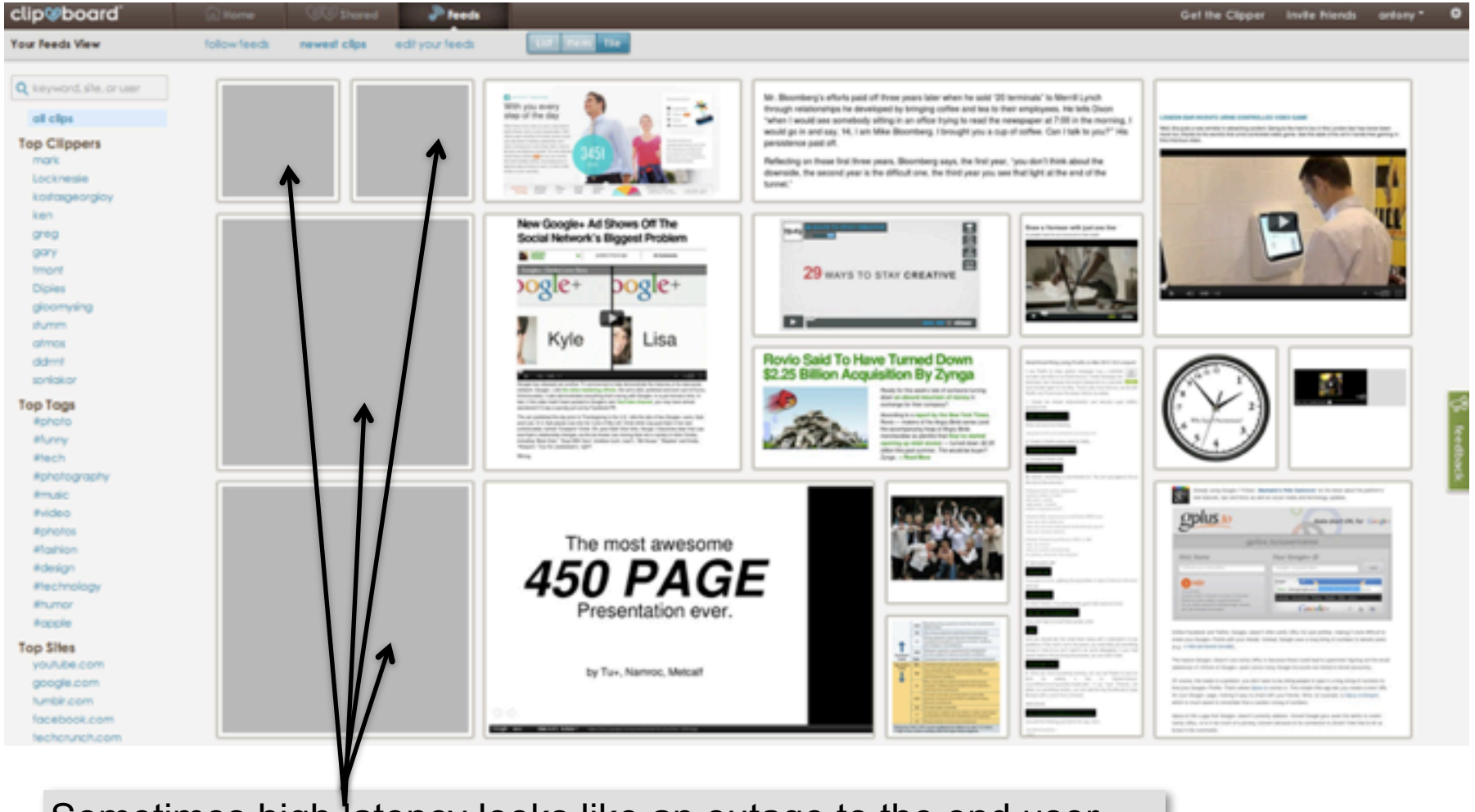
BITCASK AND THE LATENCY TRADEOFF

Low Latency: All reads = hash lookup + 1 seek

TRADEOFF: All keys must fit in memory

Who cares about latency?

Who cares about latency?



Sometimes high latency looks like an outage to the end user.

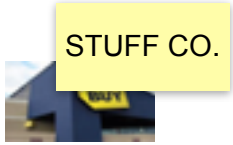
Who cares about latency?

USE CASES

“We would not have been able to build this application without node.js and Riak Search.”

Clipboard

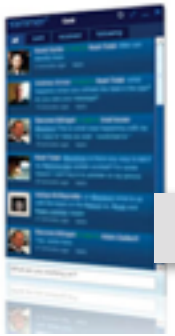
1. Cloud Storage (S3)
2. Low-latency interactive apps
3. Smartphone apps
4. CDN
5. Medical
6. Session Store
7. Gaming
8. Mobile Infrastructure



Real-time Search
US Retailer Online Inventory

Mochi – casual interactive gaming

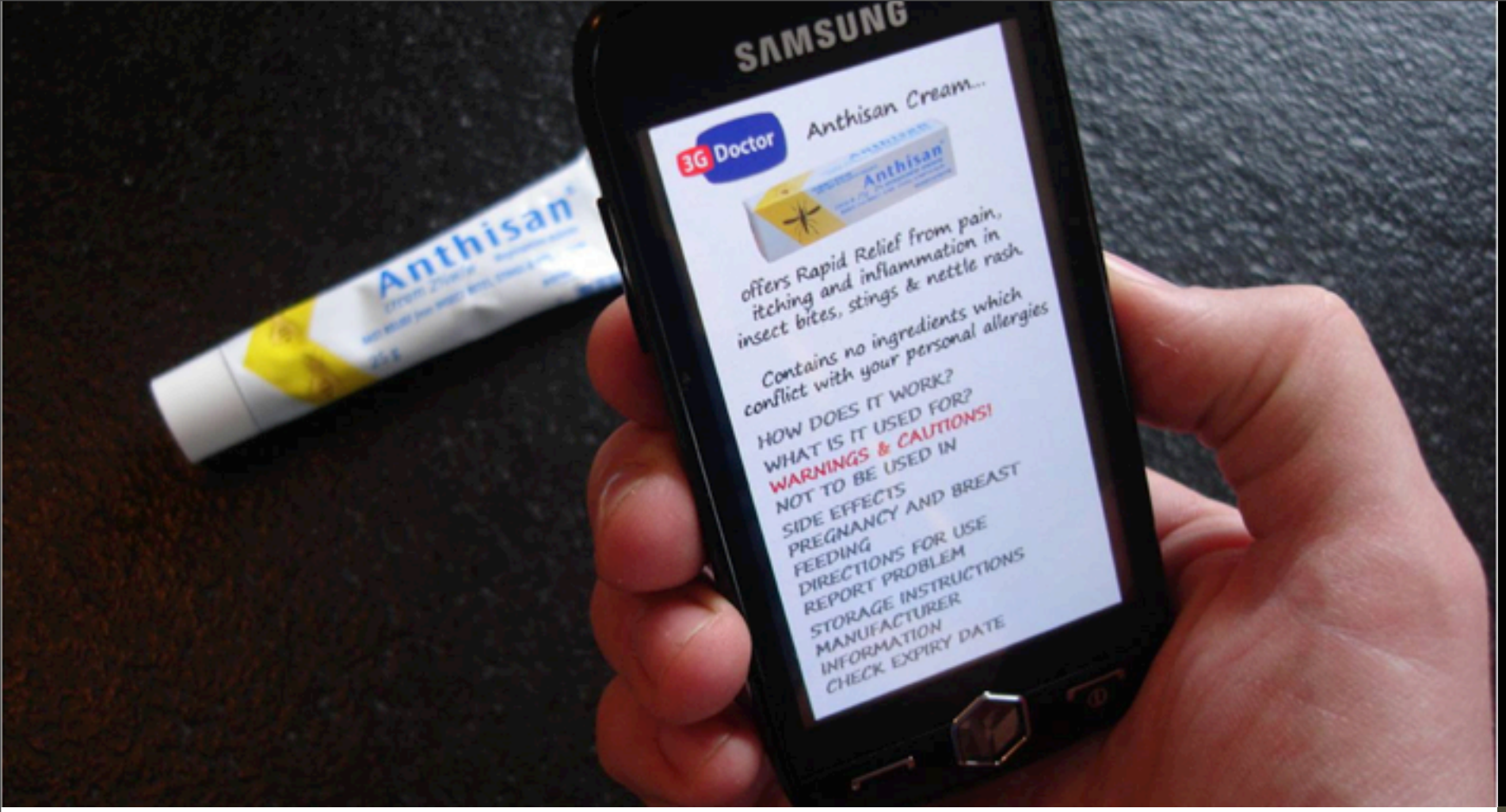
yammer



Social Media Networks

“REAL-TIME” APPS

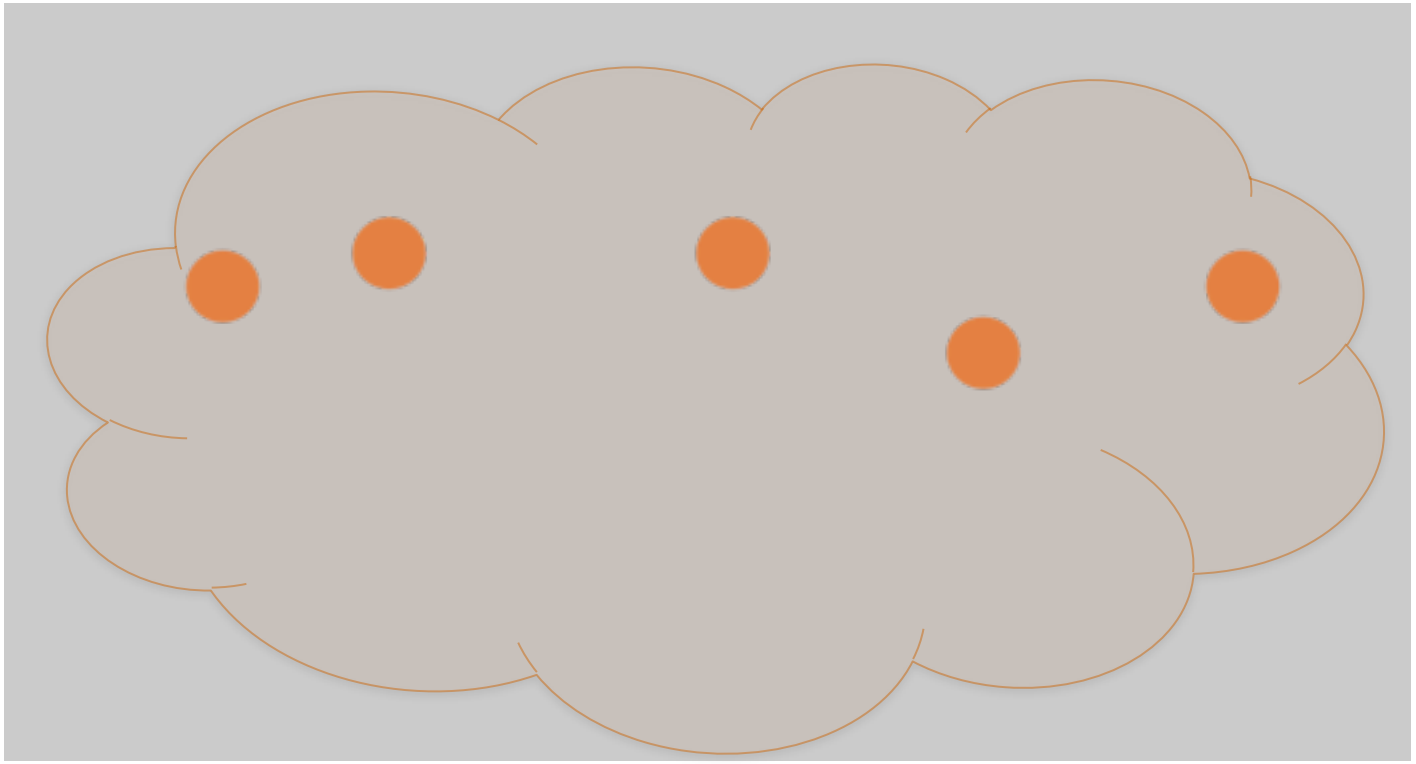
Advantages: fast, reliable, scalable. Distribute to a *global audience*.



DANISH HEALTH SERVICES

Advantages: Doctors manage prescriptions from highly-available servers and, soon, smartphones, 95% cheaper than Oracle, easier to run

Telco distributes content to 10 data centers



MULTI-TENANT OBJECT STORAGE

Advantages: build competitive services to Amazon, reliable storage, easy to operate

Write to Riak
Next…sync with each other

SMARTPHONE APPS

Advantages: better quality of service for write-intensive smartphone users; reduce infrastructure costs

A QUICK LITMUS TEST:

ARE THE TRADEOFFS WORTH IT?

USE RIAK IF YOU NEED...

Predictable latency
Predictable scaling profile
Predictable operations

and if data unavailability costs

thousands of $$$'s/minute

or is even more important.

DON'T USE RIAK IF YOU NEED...

Familiar query patterns

Familiar hiring patterns

Familiar operational problems

and if you

don't have a problem right now.

THANK YOU
CREDIT: TONY FALCO