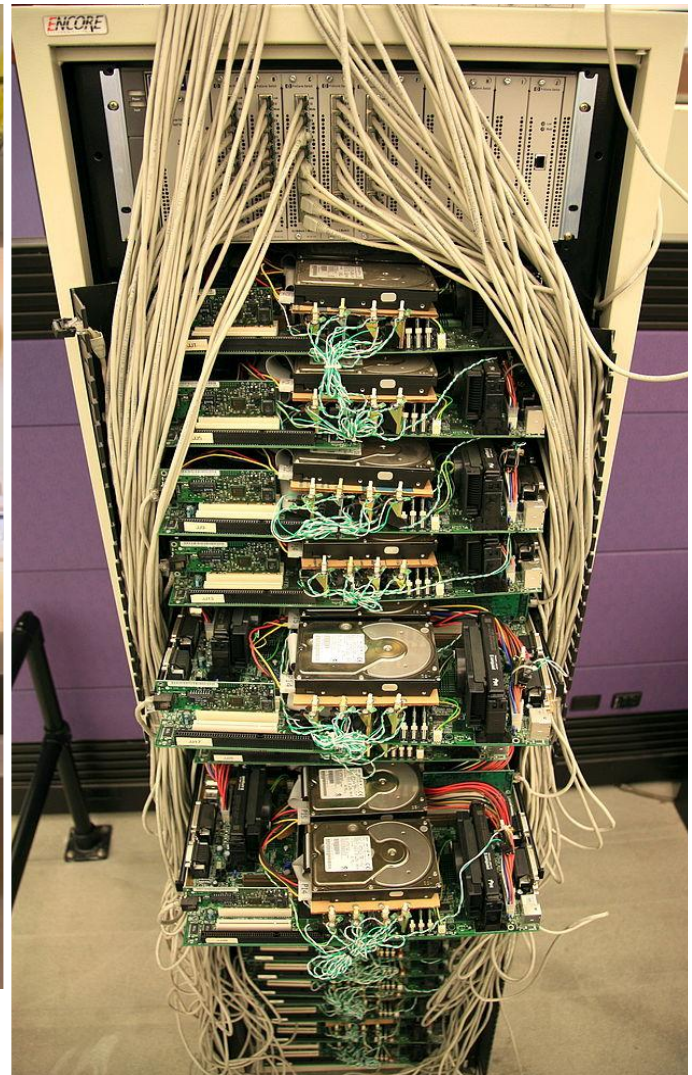
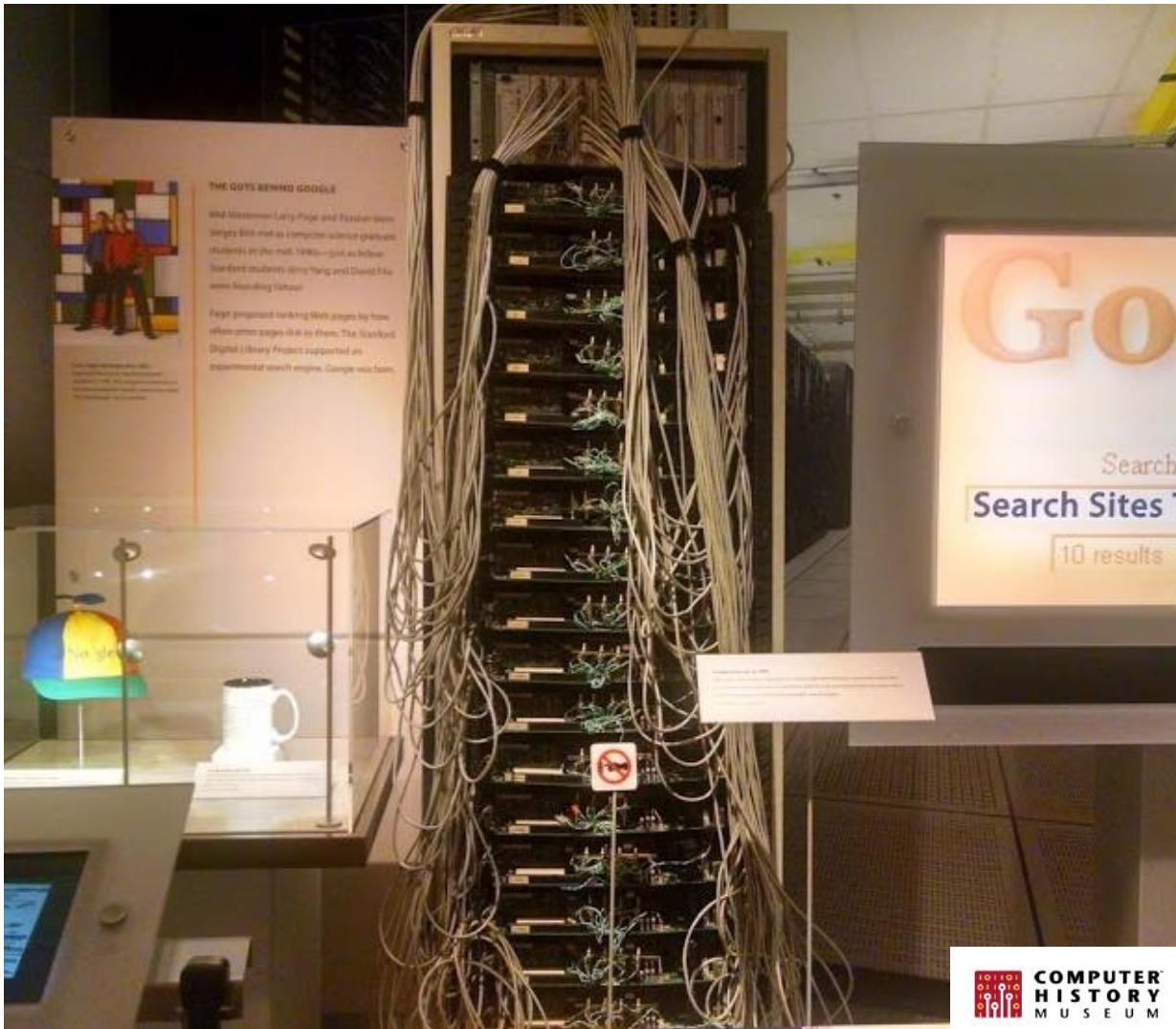


Innovation. Not Infrastructure.

Building Tomorrow's Cloud

Nir Chinsky - Head of MEA Cloud Platform

nirch@google.com



Google

Google Search

I'm Feeling Lucky

A large, multi-level server room with a complex network of metal racks and cables. The floor is a light-colored tile, and the ceiling is a dark, industrial structure with many lights. The Google logo is superimposed in the center of the image. Below the logo is a white search bar, and below that are two buttons: "Google Search" and "I'm Feeling Lucky".

Google

Google Search

I'm Feeling Lucky



You Tube



Google at scale



1.8 million devices activated
Every Day



7 billion hours watched
Every Month

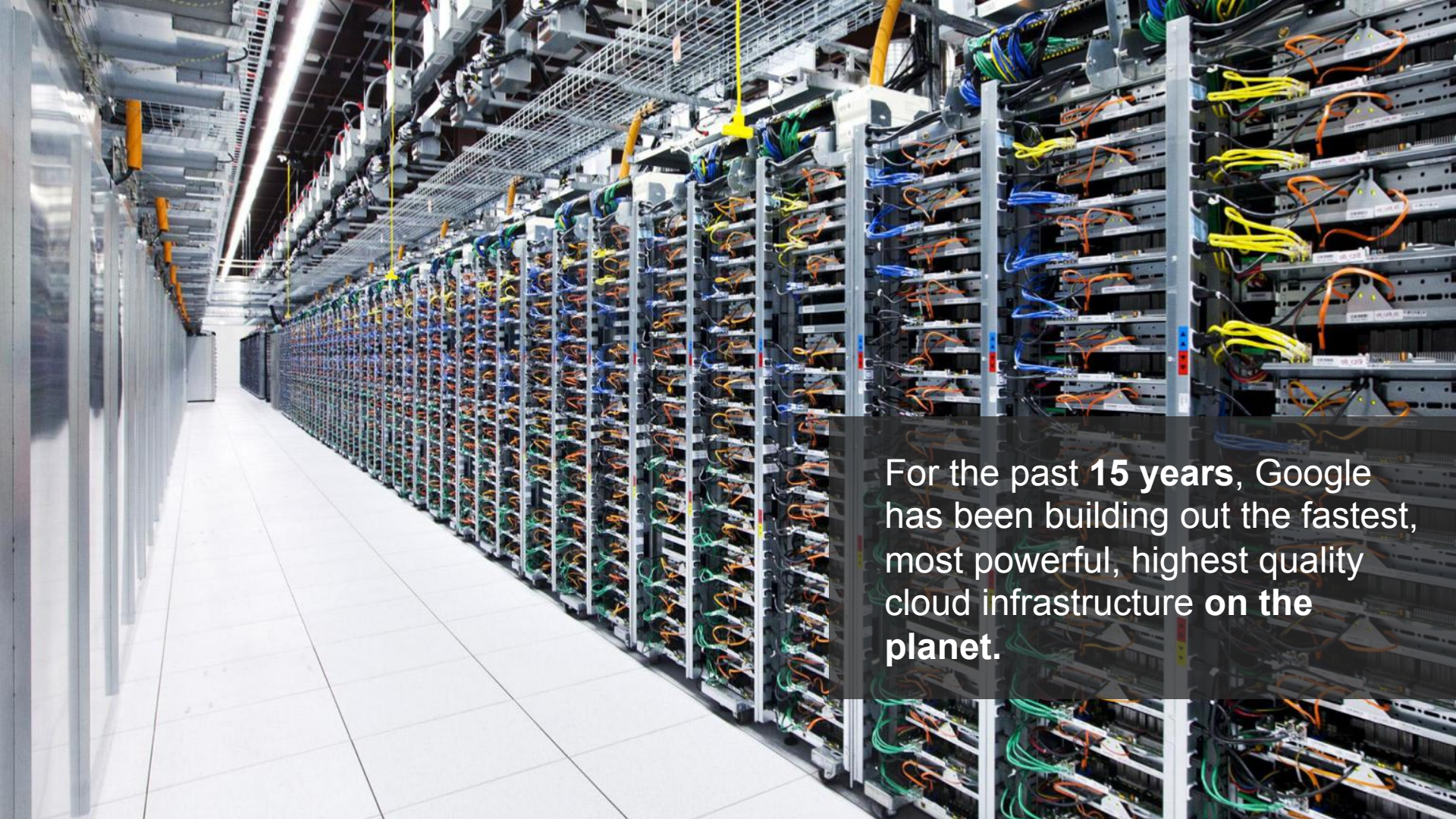


25 billion pages crawled
Every Day



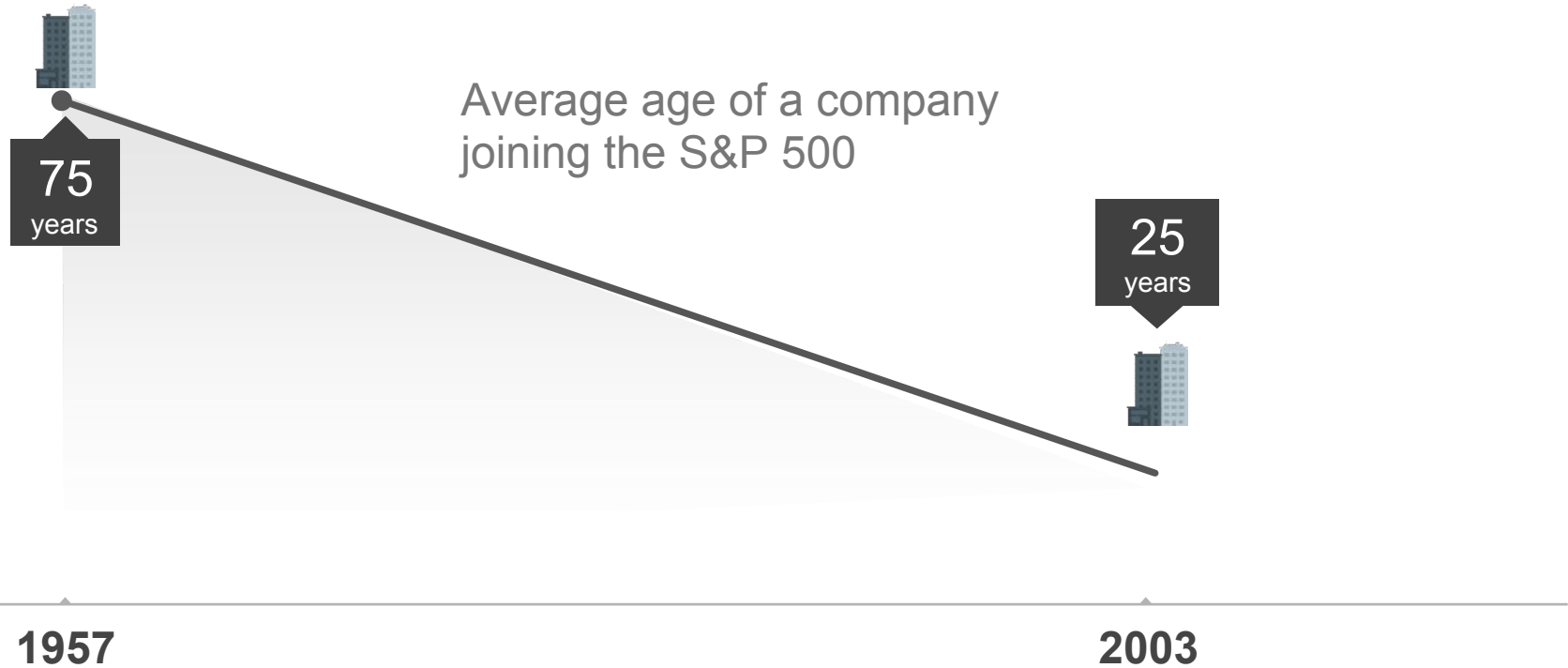
Google Cloud Platform



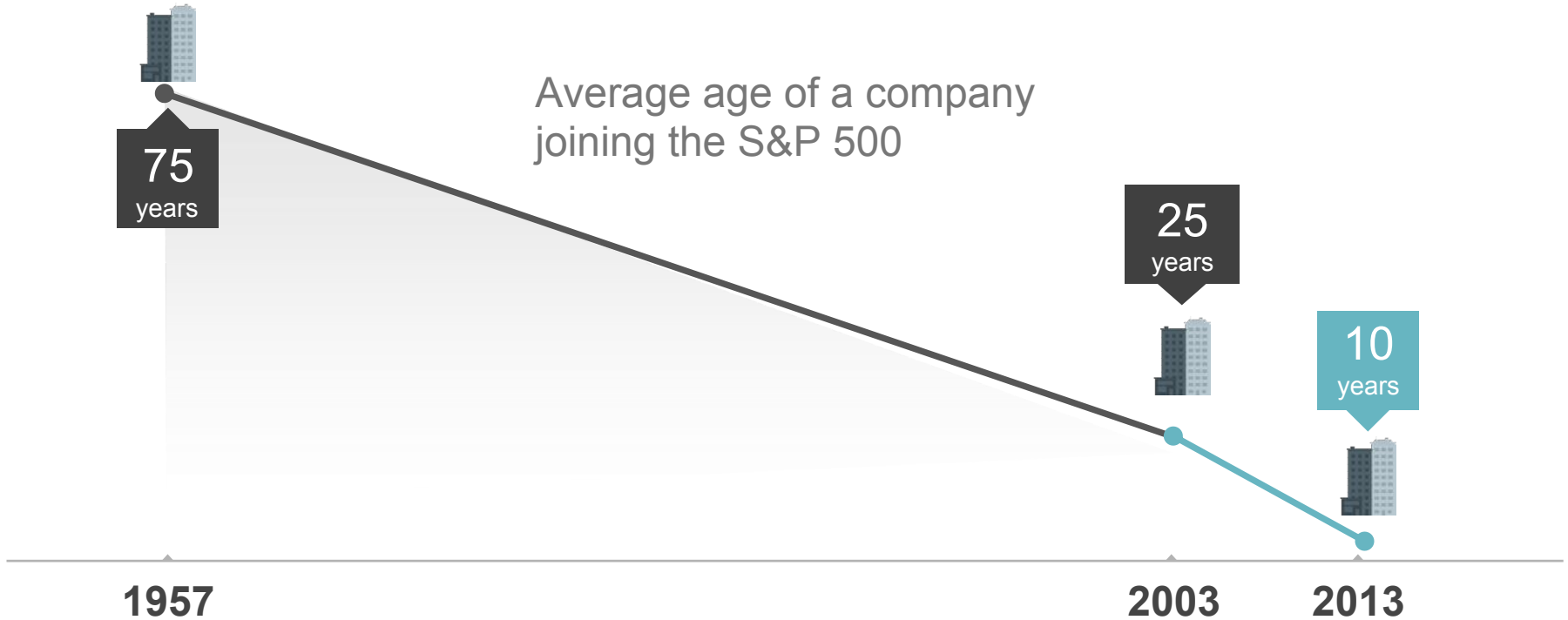


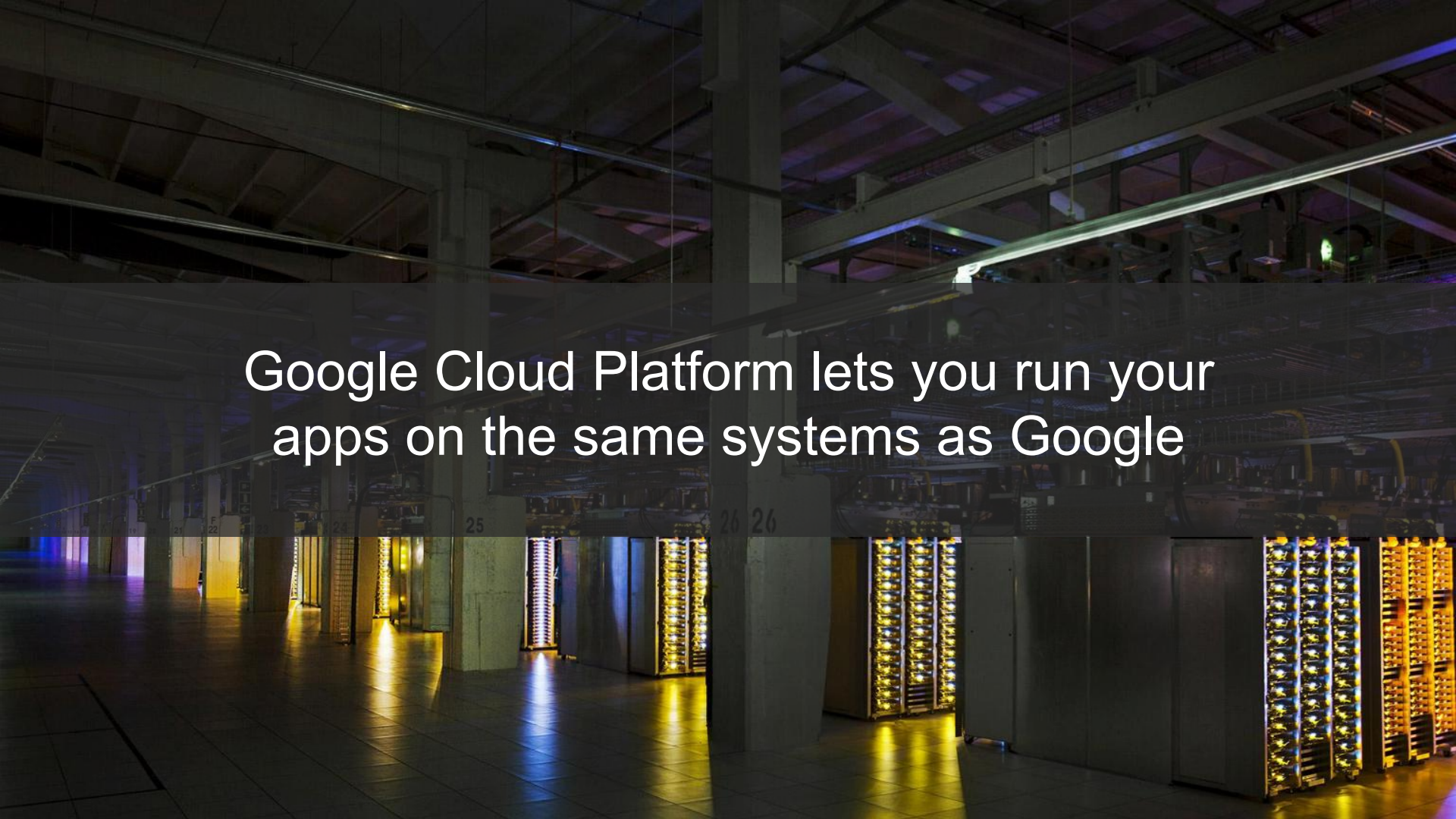
For the past **15 years**, Google has been building out the fastest, most powerful, highest quality cloud infrastructure **on the planet.**

Meanwhile, pace of disruption gets faster...



Meanwhile, pace of disruption gets faster... and faster



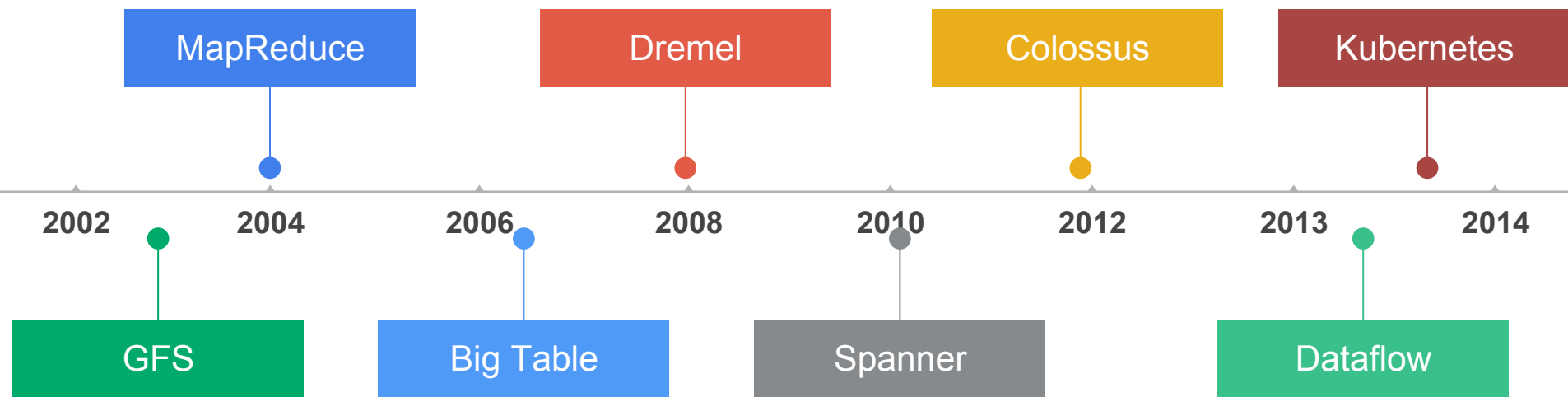
A wide-angle photograph of a server room. The room is filled with rows of server racks. The racks are illuminated with a mix of blue and yellow light, creating a futuristic and industrial atmosphere. The ceiling is high with visible structural beams and pipes. The floor is made of large, light-colored tiles. The overall scene is dimly lit, with the primary light sources being the server racks themselves.

Google Cloud Platform lets you run your
apps on the same systems as Google

A photograph of a server room. The room is dimly lit, with the primary light source being the glowing yellow and orange lights from the server racks. The racks are arranged in long rows, with a central aisle. The ceiling is high and features a complex network of pipes and structural beams. The floor is made of dark, square tiles. The overall atmosphere is industrial and technical.

So you can focus on what matters to your
business

Google Innovations in Software



The future of cloud

Disruption

x86 & Linux

Virtualization

Public Cloud

...

1999

2001

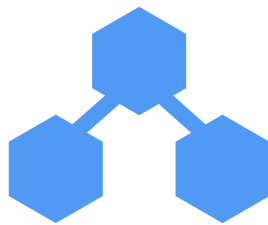
2008

2015

The Network Advantage

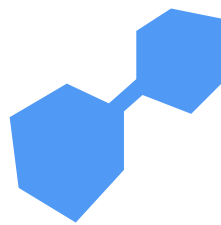
More than 70 edge locations
in 33 countries creating the
broadest reaching network
of any Cloud provider

Connect Your Place to Our Place.



Carrier interconnect

Enterprise-grade connections provided by carrier service providers



Direct peering

Connect your business directly to Google

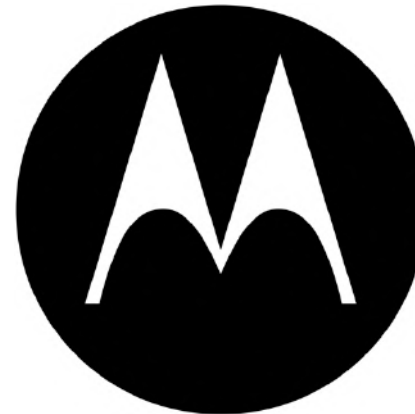
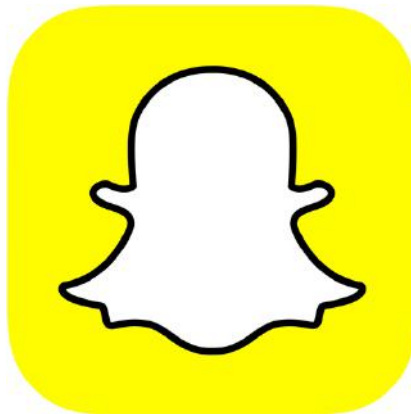


Cloud VPN

Secure connection over the internet

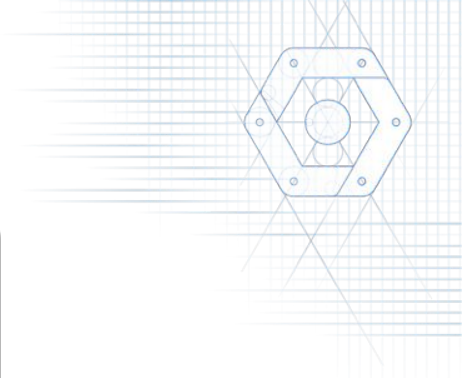
Mobile

Cloud Platform for mobile



Mobile

Multi-device world



Google for mobile developers

Google Cloud Messaging

App Engine, Compute Engine & Container Engine

Cloud Endpoints

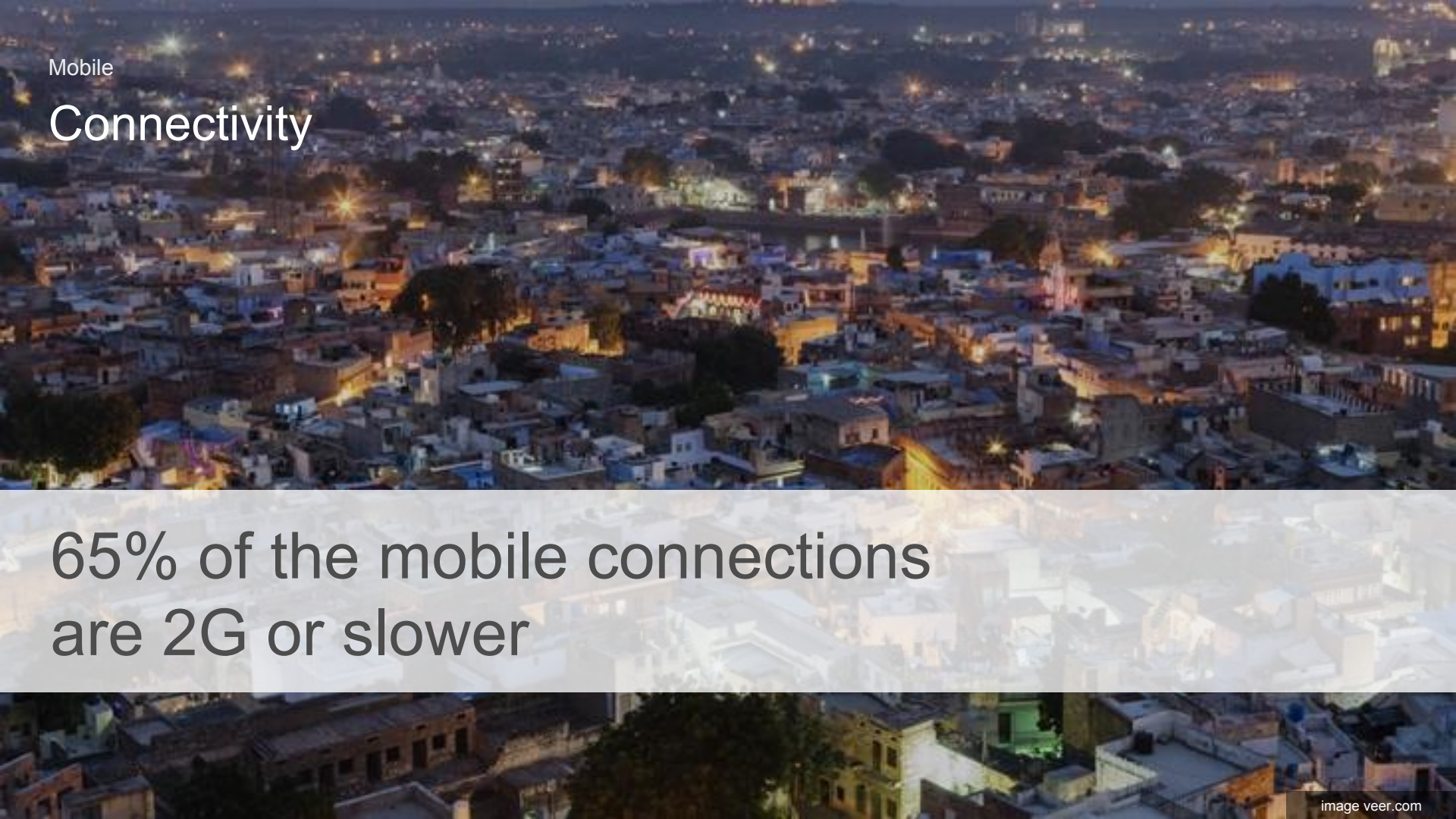
Cloud Datastore, Storage, SQL & BigQuery

Android: TV, Cars, Wear and Phones

100 Public Mobile API's (e.g Geo, YouTube)

Identity Toolkit (GitKit)



An aerial night view of a densely populated city, likely in India, showing a mix of traditional and modern architecture. The city is illuminated by streetlights and building lights, creating a warm, golden glow. The background is dark, suggesting dusk or night. The text 'Mobile Connectivity' is overlaid on the top left, and a large text box with a white background and semi-transparent border is in the center, containing the statistic '65% of the mobile connections are 2G or slower'. The bottom right corner has a small watermark 'image veer.com'.

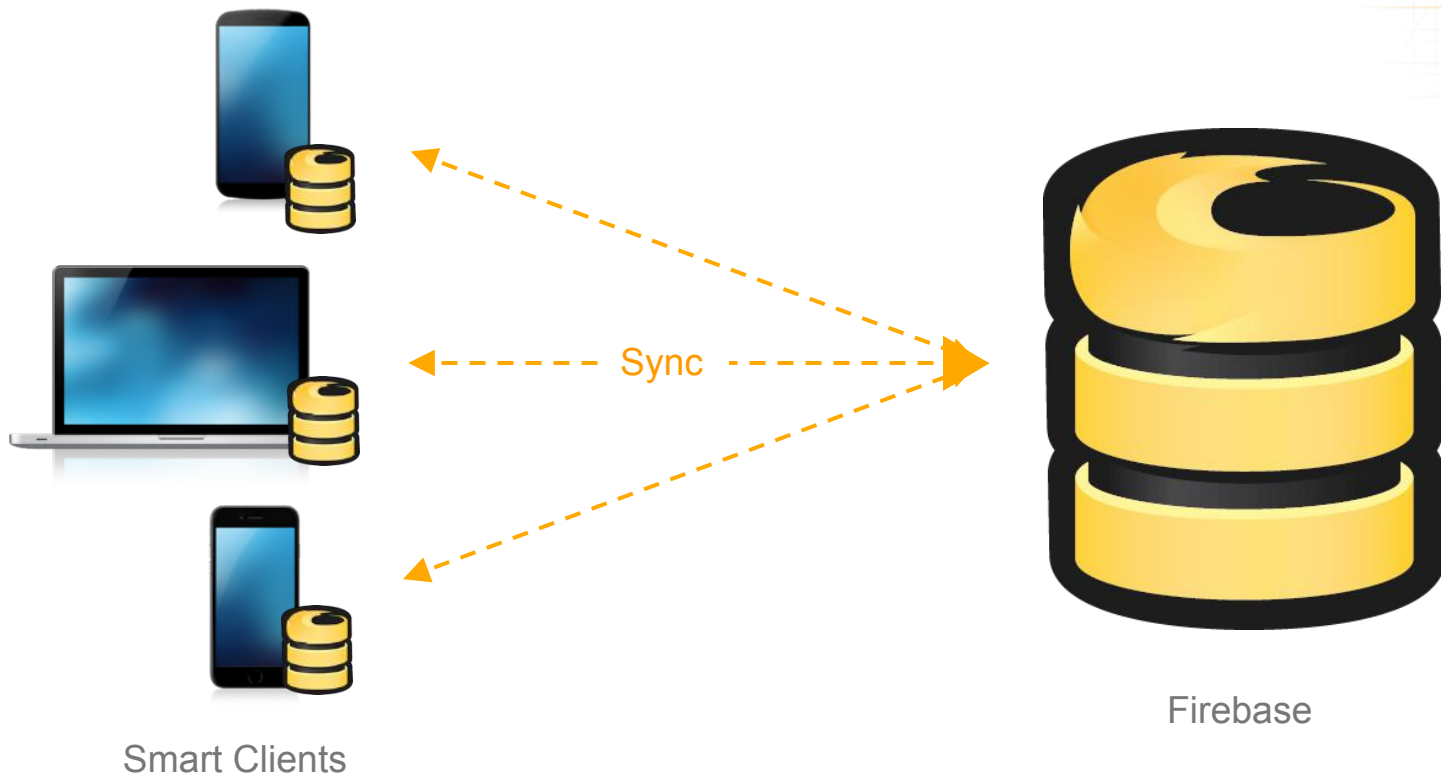
Mobile

Connectivity

65% of the mobile connections
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Firebase

The realtime app platform



I dare you say
“Big
Data”
one more
time



2005



Luca Bruno / AP

2013



“

We don't really use Map

Reduce anymore”

Urs Hölzle
SVP Technical Infrastructure
Google

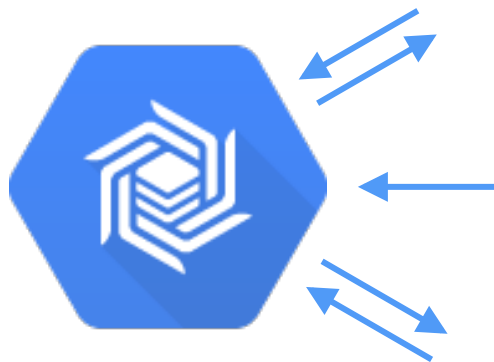


“

*Google is living a few years in
the future and sending the rest
of us messages”*

Doug Cutting
Co-Creator Hadoop

Big Data



Cloud Bigtable



Data API

Data can be read from and written to Cloud Bigtable through a data service layer like: Managed VMs, the HBase REST Server, a Java Server using the HBase client. Typically this will be to serve data to applications, dashboards and data services.



Streaming

Data can be streamed in (written event by event) through a variety of popular stream processing frameworks like: Dataflow Streaming, Spark Streaming, Storm.



Batch Processing

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Analyze Data. Fast. With Zero Admin.



BigQuery

Ingest data at 100,000
rows per second



Pub/Sub

Scalable & flexible
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GCP Big Data Platform



Pub-Sub



BigQuery



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Google is making Big Data accessible

Easy
Big Data is ~~Hard~~



Use the technical and product skillsets you already have

No complex data architecture required

Query within seconds and get real-time results

Affordable
Big Data is ~~Expensive~~



Pay on-demand for only the resources you use

Reduce infrastructure management burden

Take advantage of falling prices & Moore's Law

Containers



Google Innovation

Container-Based Computing

Containers are powering a revolution

For Developers:

- Easy dev-test environments

- Easy to compose micro-

services

For Ops/IT:

- Deploying becomes file-copy

- Highly portable

- Paves way for better efficiency



Shipping Containers At Clyde, by Steve Gibson

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Kubernetes

Open-source container orchestration

Broad industry support

Supports multi-cloud, on-prem VM, bare metal

Based on Google's internal experience with containers



Container Engine

Fully managed and hosted Kubernetes

Create and deploy clusters with one-click

If You Only Remember Three Things...



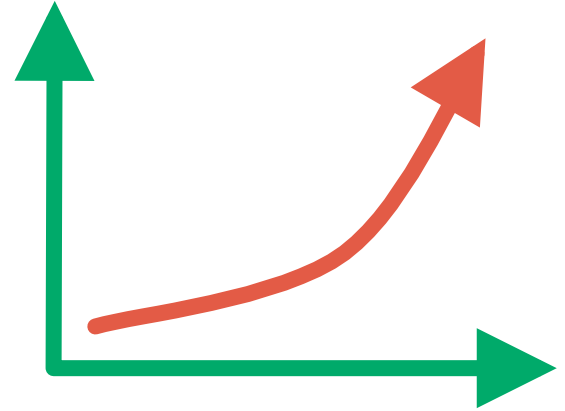
Full Platform

Complete set of services for building, hosting, and managing apps and services



Leading Infrastructure

Industry-leading hardware and services unavailable on-prem or other clouds



Innovation Platform

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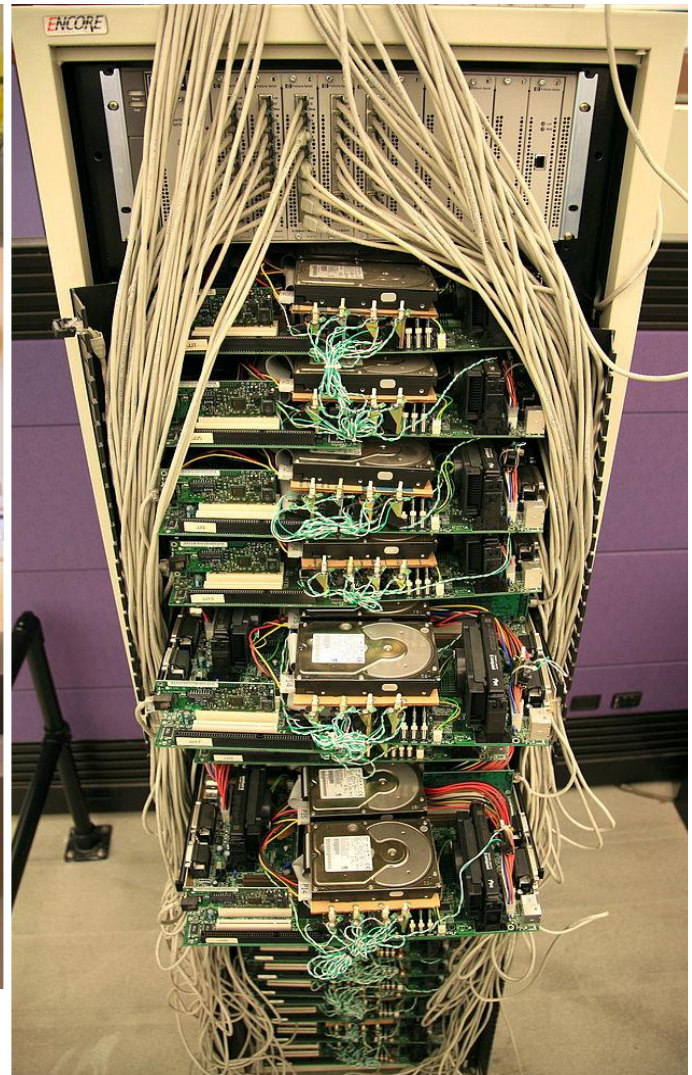
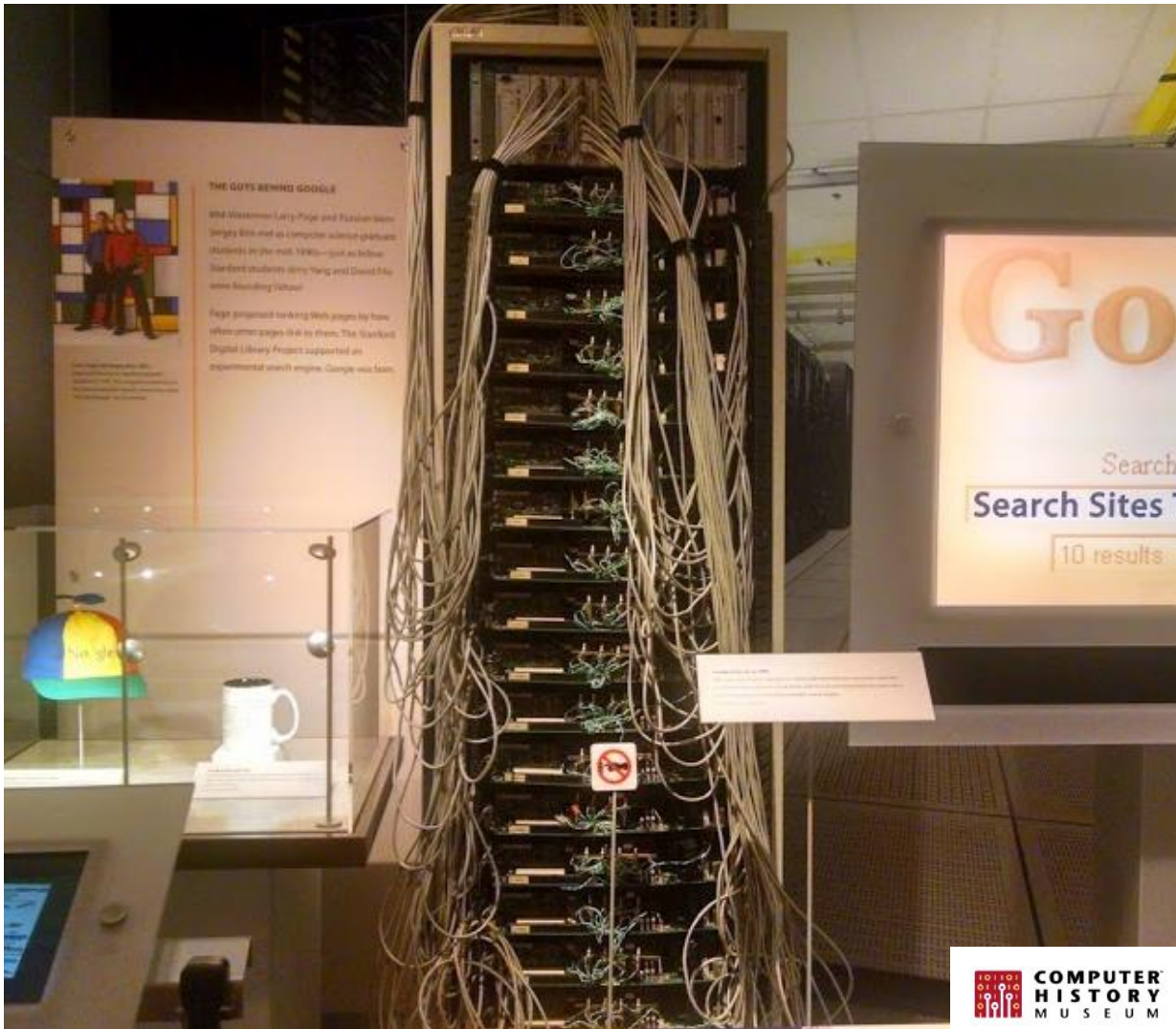
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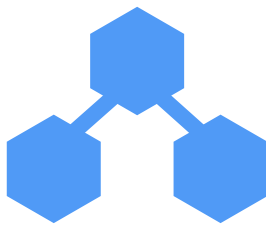
nirch@google.com

Not so long ago ...



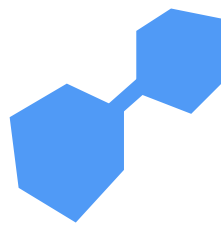


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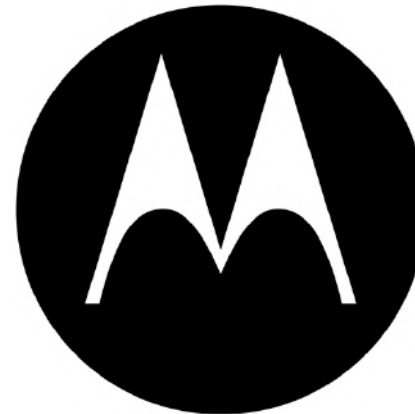
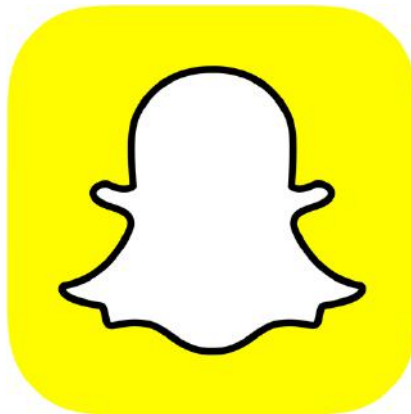


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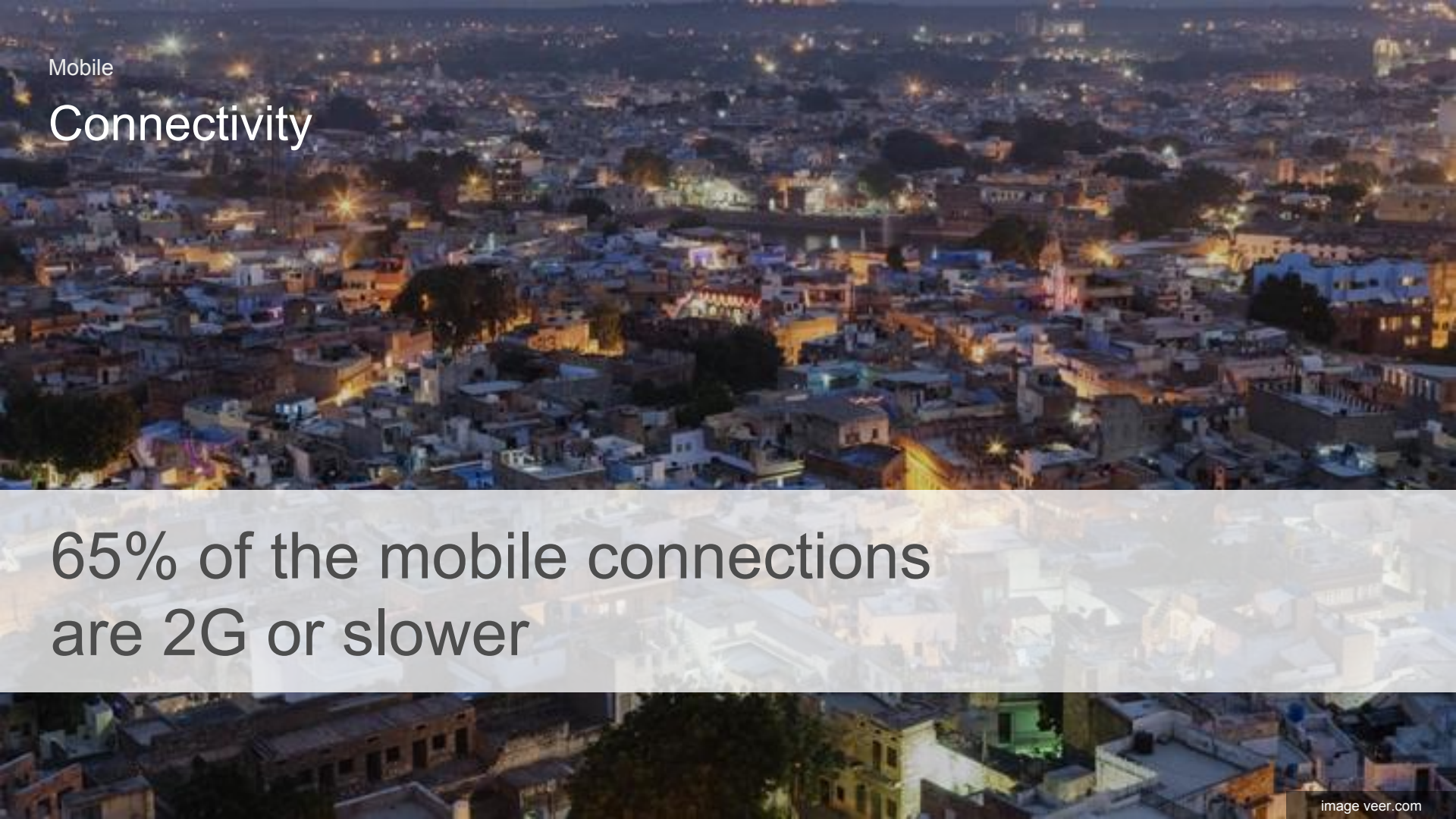
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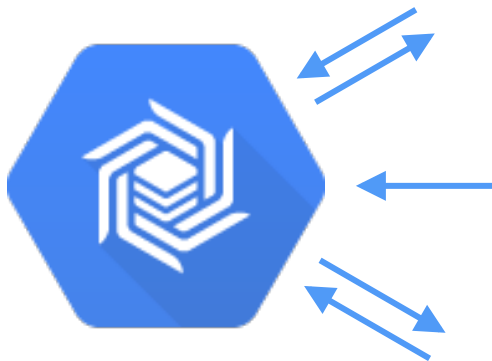
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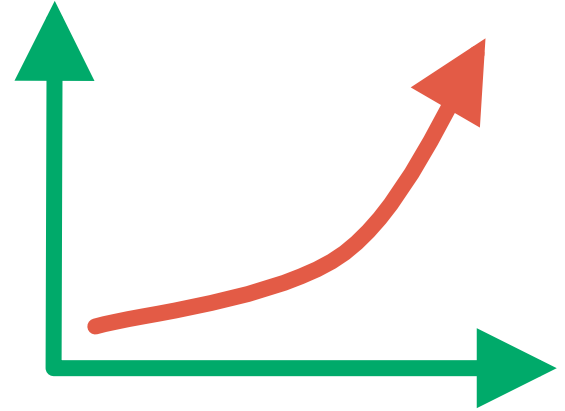
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