

Why modernize?

INTRODUCTION TO GCP



Nabeel Imam

Content Developer at DataCamp

Digital transformation

- Integration of digital technology in all business areas
 - Operations, strategy, and value delivery
- Cultural shift towards adaptation to technology



Necessity of digital transformation

- Modern customers expect fast, seamless service on digital devices
- Digital transformation helps to:
 - Responding quickly to demands
 - Operating efficiently
 - Innovating faster



Retail transformation

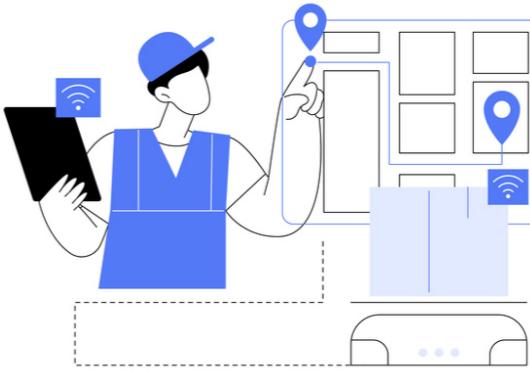
- Online sales platform expands market reach



- Improve customer service through stock info



- Digital inventory management streamlines operations



- Enhance customer engagement, brand visibility through social media



The blockers

Legacy systems

- Inflexible and inefficient
- Slow and vulnerable



The blockers

Investment and change

- Upfront investment and operational costs
- Need for cultural and organizational change



Advantages of GCP for modernization

- Leave legacy systems, embrace digital era
- Secure, scalable, and regularly updated infrastructure
- Offers different models



Google Cloud

Cloud models explained

Public cloud



Private cloud



- Offered by providers like Google, Amazon, and Microsoft
- Shared by client organizations

- Dedicated to one organization
- Enhanced security and privacy

Cloud models explained

Hybrid cloud



- Connects private and public clouds
- Better security + resources of public clouds

Multi cloud



- Avoid vendor lock-in, best possible solution
- Offers geographical redundancy
 - GCP Anthos for management

Let's practice!

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Apps on GCP

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What's an app?

A self-contained software program designed to perform specific tasks



A streaming app



- Subscription-based audio and video streaming

Spotify's needs

- Store and manage big data
 - Google Cloud Storage
- Deliver service without interruptions
 - Google Kubernetes Engine



- Analyze and innovate
 - BigQuery



¹ <https://www.happtiq.com/spotify-on-google-cloud/>

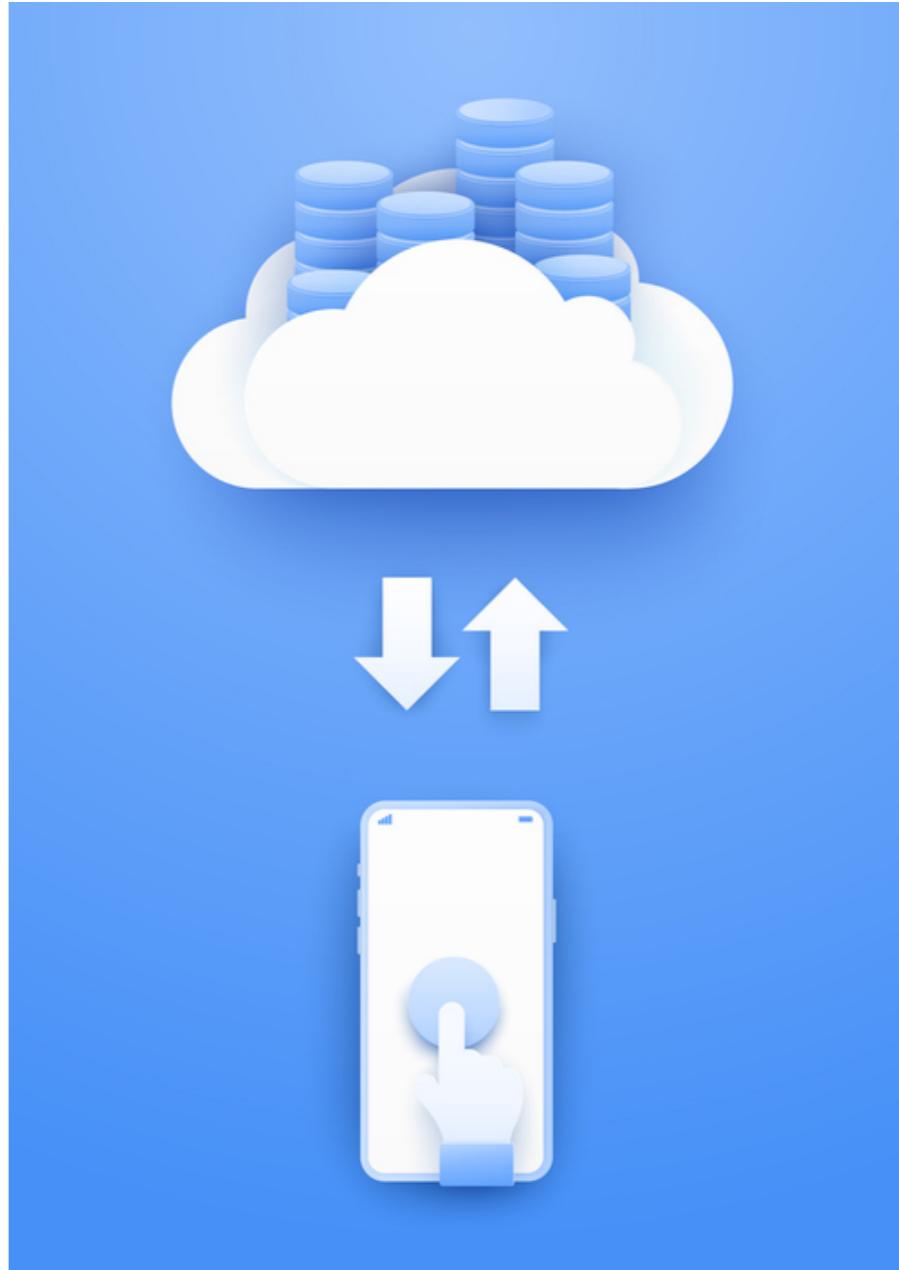
Cloud-native apps

- Designed to run in cloud environments
- Quick deployment and updates
- Highly scalable
- Rapid recovery

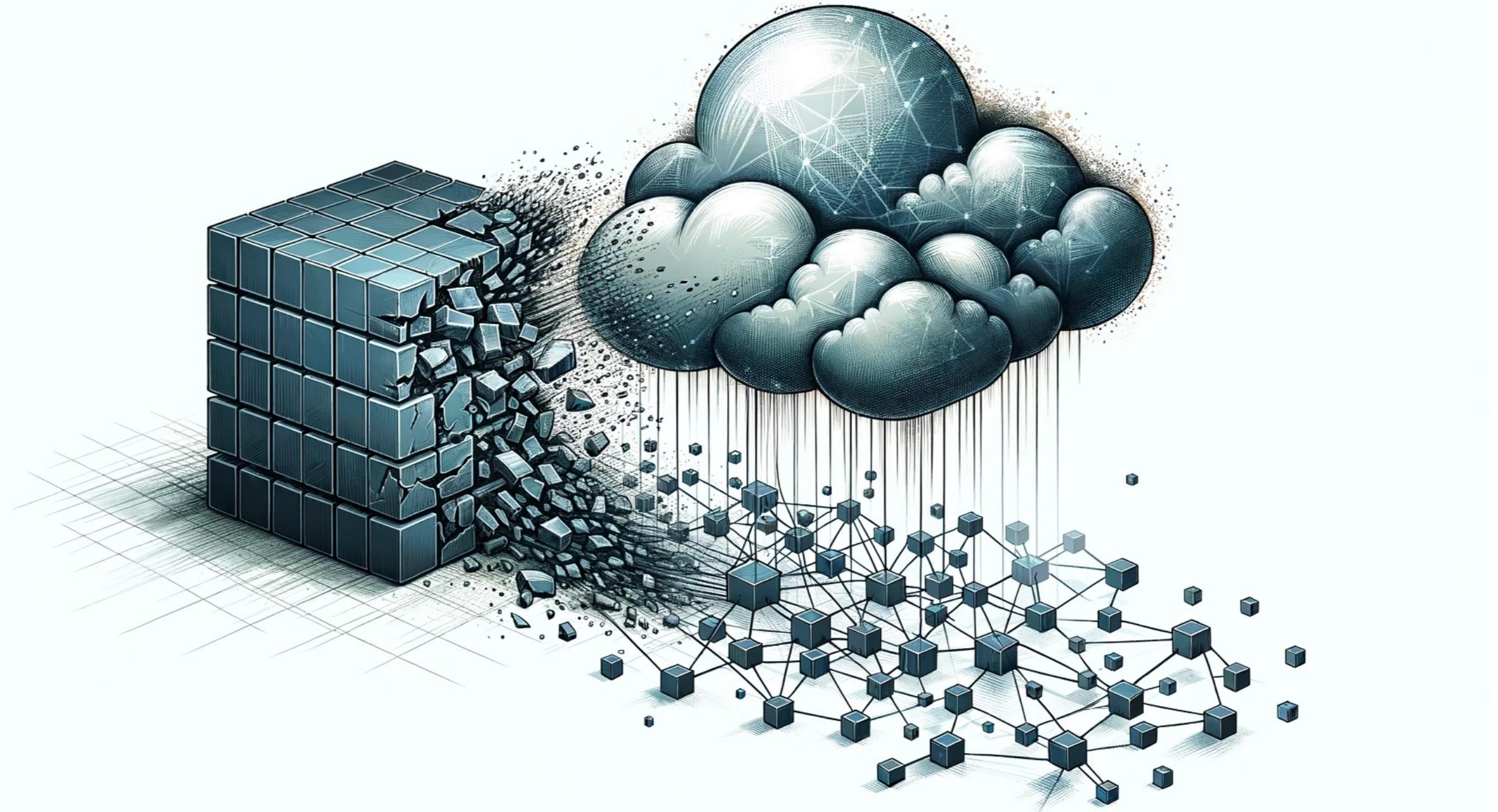


Migrating apps to the cloud

- Requires logistics and planning
- Change patterns provide structure
- Selecting appropriate change patterns requires assessment of:
 - Complexity
 - Available resources
 - Goals

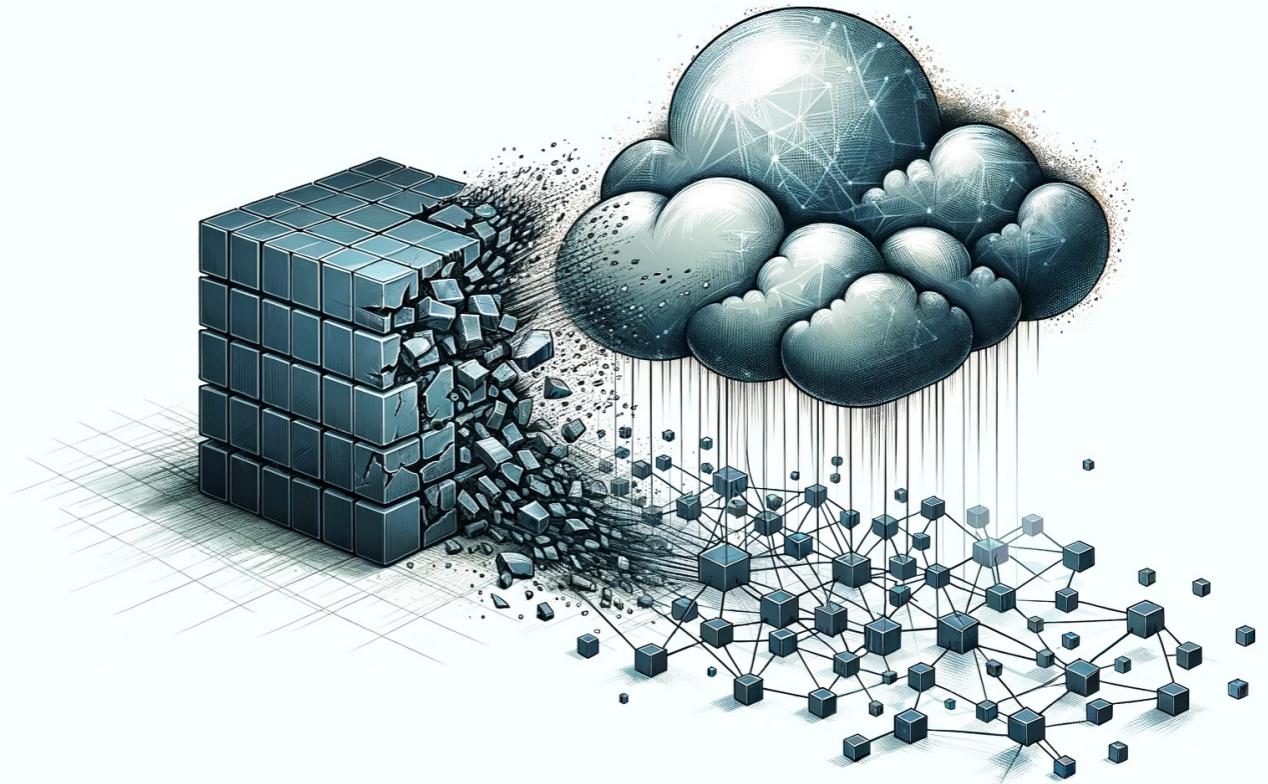


Strangler fig pattern



Strangler fig pattern

- Perform the following on a complicated legacy app:
 1. Modernize a single function of the app
 2. Disable that functionality from the app
 3. Repeat steps 1 and 2 until all functions are on cloud
- Allows scalability, quick updates, consistency



Modernizing a banking app



Modernizing a banking app

Containerized digital wallet



- Deployed as microservice on Google Kubernetes Engine
- Digital wallet in original wallet replaced with microservice

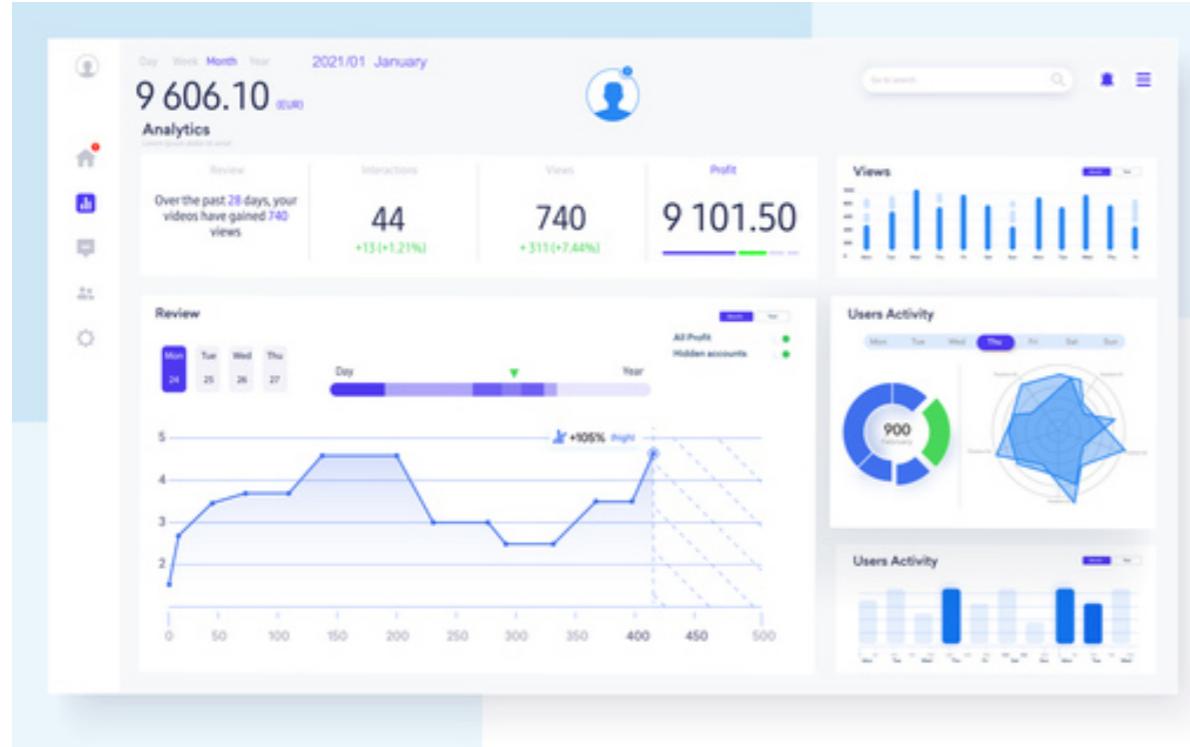
Processing transactions



- Digital wallet data is captured by Google Cloud Spanner
- Fully scalable, handles concurrent transactions
- Original app function replaced

Modernizing a banking app

Dashboard on the cloud



- BigQuery and Looker replace the old dashboard

And so on...

- All functionality replaced
- Modern cloud-native app!

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Business in the cloud

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The business difference

On-premises



Cloud



- Own and maintain hardware
- Full control, higher cost
- Hosted and managed by provider
- Less control, lower cost

The finances

On-premises

- High upfront investment in software and hardware (CapEx)

Cloud

- Subscription requires little upfront investment
 - But more operational cost (OpEx)
- Start small, go big or downscale
- Could lower Total Cost of Ownership (TCO):
 - Total cost of implementing, using, and retiring a technology

Responsibility

On-premises



- Infrastructure maintenance is the responsibility of the business

Cloud

- Different service types:
 - Infrastructure as a Service (IaaS)
 - Platform as a Service (PaaS)
 - Software as a Service (SaaS)

Cloud service types

Infrastructure as a Service (IaaS)

- Provider manages infrastructure only
- Customer manages everything else

Platform as a Service (PaaS)

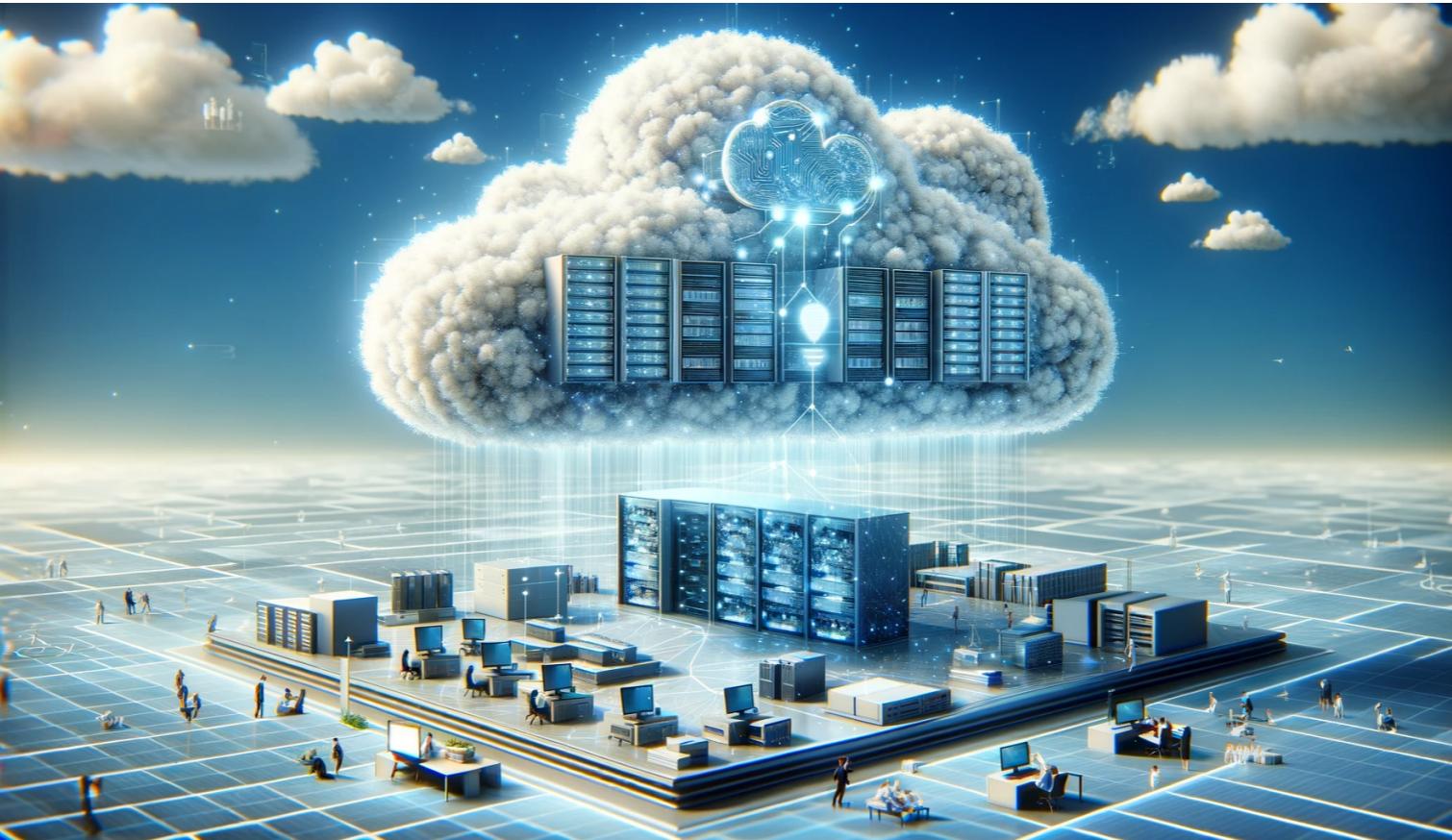
- Provider manages infrastructure + operating system + middleware
- Customer handles applications, user access, and data

Software as a Service (SaaS)

- Provider manages everything except:
 - Data and user access (handled by customer)

Each model caters to different needs...

IaaS: flexibility and control



- Reduces TCO but requires in-house expertise
- For companies that require custom infrastructure

PaaS: balancing ease and flexibility



- TCO is lower than IaaS
 - Suitable for application development
- Less control compared to IaaS

SaaS: minimum effort



- Lowest TCO
- Suitable for businesses with low IT resources
 - Offers least control but most user-friendly

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The GCP transformation

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What can the cloud do?

- Modernize apps and infrastructure
- Helps utilize advance technology at lower cost



The "cloud" transformation

- Covers key areas that accelerate digital transformation
- Offers operational and strategic benefits
 - Adapting, competing, and innovating in digital markets



The GCP promise

Scalability

- Scale up or down based on demand
- Ideal for growth or varying workloads



The GCP promise

Flexibility

- Ability to adapt to change
 - Set up new computations in a few clicks
 - Deploy advance tools without buying hardware

Agility

- How quick is the adaptation?
 - Latest technology is available to all clients

Dark side of the cloud

- Security has been a major hazard for the cloud
- GCP offers advanced security:
 - Threat detection
 - Regular updates
 - Compliance standards
 - Trusted transactions



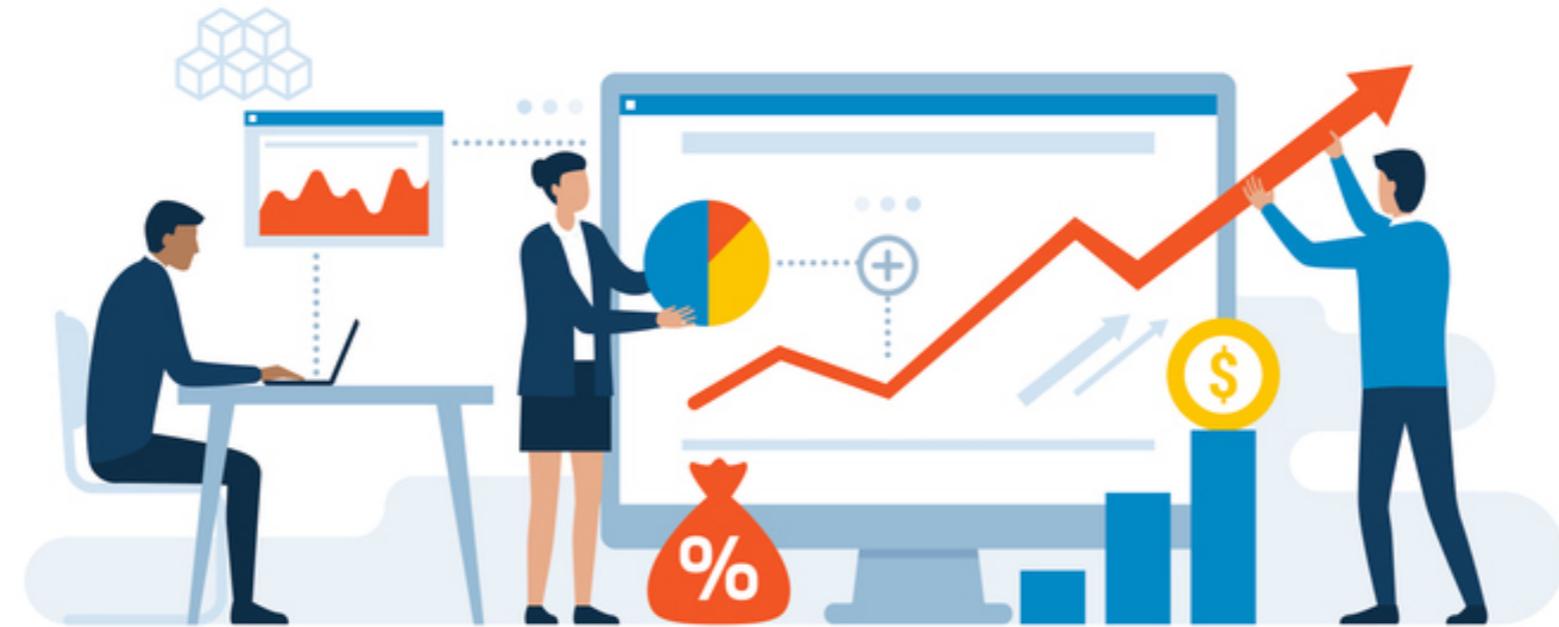
The cost benefit

- Although costs shifted towards operational
 - Still more economical than traditional IT
- Predictable pay-as-you-go model
 - Allows better financial planning
 - Frees up capital



Strategic value of outsourcing

- Outsource IT infrastructure:
 - Focus on core competency
 - Leverage data and analytics
 - Compete with much larger businesses



Breaking the silo

- Making data accessible to everyone
 - Leads to data-driven decisions
- Enhance collaboration and communication



Let's practice!

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Congratulations!

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The key concepts and services

GCP's unique proposition

- A leader in the cloud space
- Offers storage, database, and compute

Advanced architecture

- A global high throughput network
- State-of-the-art services:
 - Virtual machines
 - Container orchestration
 - Serverless compute services

Data and AI

Data on GCP

- Data types: structured and unstructured data
- Cloud Spanner, Cloud SQL and Cloud Storage for storage/database
- BigQuery and Looker for analytics

AI on GCP

- Google: a pioneer in AI
- Vertex AI: a combined platform for all AI tasks

Business transformations

Business on GCP

- Going from on-premises to cloud, to being cloud-native
- Moving from CapEx to OpEx

Different cloud flavours

- Public, private, hybrid and multi
- Different models of responsibility

GCP can facilitate the digital transformation

Cloud and beyond

For further exploration:

- <https://cloud.google.com/why-google-cloud/>
- <https://www.cloudskillsboost.google/parts>

**Thank you and best
of luck!**

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