Application Development through Google’s Cloud Computing Platform

# Abstract

# Introduction

This report will contain a definition of cloud computing; however, the primary focus will be on the adoption and utilisation of cloud computing technology in the domain of application development. The aspects of adoption that will be covered in this report involve infrastructure and technology, delivery models, issues and challenges, the impact on stakeholders, and consumer needs and specifications. Google will be used as the cloud provider with their service “Google Cloud Platform”. A comparison between Google Cloud Platform and Amazon Web Services (AWS) will be made while determining which provider is better suited for the domain.

# Background

Cloud Computing is a collective service that encapsulates many computing resources including storage, security, networks, application software, databases, servers, etc. This allows for fast and easy access to any resources and services that a user may need through the internet without the need for one off payments and installations. Using the cloud requires little communication with the service provider (Mell & Grance, 2011).

There are four models of deployment for cloud computing, private, community, public and hybrid. Google Cloud Platform is categorised as a public cloud model as it is available for use by the general public while staying under ownership of a private company, with that being Google (Krishnan & Gonzalez, 2015; Mell & Grance, 2011).

# Discussion

## Infrastructure and Technology

Google Cloud Platform benefits from being developed by Google due to their enormous infrastructure that is also being used for all of their services including Google Search. Google’s infrastructure is one of the most wide-ranging networks across the world, this allows them to fully support and maintain their cloud network for all the consumers. Their infrastructure has plenty of resources to allocate between Google Cloud Platform and other services. (Krishnan & Gonzalez, 2015)

Google Cloud Platform offers consumers a variety of more than 90 services, their major services include app engine for app development, compute engine offering virtual machines, cloud storage for storing objects, and cloud SQL offering MySQL and PostgreSQL databases. The services on offer can be used individually or in unison with the other services. Automatic scalability based on traffic is a function of numerous services that reduces the cost of deployment and improves their efficiency in use. (Orvas, 2018; ‘Products & Services’, n.d.).

## Delivery Models

## Issues and Challenges

Due to the enormous nature of a public cloud it requires a large amount of monetary backing to maintain, and so organisations such as Google usually run them. A survey done by (IDG Communications, 2018) shows that “The average cloud budget is up from $1.62 million in 2016 to $2.2 million today” and “by comparison, enterprise organizations (1,000+ employees) average cloud spend has risen just 15% to $3.5M”.

## Impacts on Stakeholders

Stakeholders consist of the individuals and organisations that are directly affected by the implementation of cloud computing. They can include consumers, employees, corporate owners, employers, governments, providers and vendors. Governments are required to stay up to date with constantly evolving technology as a means to develop laws and regulations that other stakeholders will need to follow when involved with cloud computing. (de Bruin & Floridi, 2017)

Large organisations like Google can benefit by reducing the price of implementation and maintenance for software across all of their computers, with this process needing to be done individually. This is due to the easy access of software on the cloud that only requires users to operate an account. However, for smaller organisations this benefit is not as apparent with them having less computers to work with but the difference in cost between one off payment and pay as you use could still be positive for smaller companies. (de Bruin & Floridi, 2017)

Stakeholders that are not as prevalently affected by the implementation of cloud computing involve people and organisations whose data is stored in the cloud by business’ that they cooperate with. An example being that a patient’s medical records could be stored in a cloud database by the hospital they are with. (de Bruin & Floridi, 2017)

## Consumer Needs and Specifications

## AWS Comparison

# Conclusion

# References

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