# CSIS 232 Current topics in cloud computing Case study

Currently, there are 4 big “players” in the field of cloud computing: Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform (GCP), and Oracle Cloud. There are other providers, however, these four have established themselves as foundational technologies.

In this case study, we explore two topics with relating to concepts common to each of the cloud environments.

We will focus on AWS case studies and resources, since their case studies and supporting resources are more consistently available. The concepts and terminology apply comparably to the other cloud vendors.

The first portion of the case study covers the global and regional (geographical) infrastructure of cloud platforms and how they help organizations reduce and mitigate risk related to disaster recovery and business continuity issues.

The second portion of the case study covers how organizations achieve cost optimization in via their cloud environments.

You can include your responses in the response boxes provided or on a separate page. Whatever is easier for you.

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## CLOUD Infrastructures

Explain how AWS’s cloud is structured (e.g., physically/geographically and logically).

1. In your research, explain regions, availability zones, and edge locations, what they are and how they relate and connect to each other.  
     
   <https://aws.amazon.com/about-aws/global-infrastructure/>
2. Read the following Southern Oregon case study.  
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   <https://aws.amazon.com/solutions/case-studies/southern-oregon-university/>  
     
   Why did Southern Oregon choose the AWS region they choose?  
     
   Using your research from Step #1, how do availability zones help provide resiliency within the AWS region they chose?
3. Southern Oregon used several popular AWS services. List and briefly describe each service and explain why Southern Oregon chose each service and how they use each service to facilitate a business process.  
     
   List of AWS Services:  
   <https://docs.aws.amazon.com/index.html>

**Cloud Infrastructures Response:**

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| AWS Cloud regions are physical locations around the world that Amazon has gone and set up clusters at Data Centers for application and service delivery in AWS availability zones, there are currently a total of 32 geographical regions around the world, North America is one and will be one will be focusing heavily on. For AWS Cloud availability zones, they enable a end user to operate production applications and databases providing a high availability rate and providing fault tolerance and scalability when possible while using a single data center. There is total of 102 102 availability zones along with 600+ points of presence currently. So, AWS Cloud edge locations are AWS data centers that are created to help create delivery services with lowest latency as possible, there is total\.  of 44 edge locations. Kansas City, MO is one of the edge locations I got to visit the data center that is currently hosting AWS for Kansas City that’s the Netrality Data Center. At the time of my vist they had half of a floor taken up already and had another floor that they where having strictly for AWS and was informed that there was in the work for giant AWS Data Center was in process being built form data center build, they had bought out so that would be only provider. Each piece, whether it is the region or availability zone, or edge location is needed you can not have one without the other they work in tamed together just a traditional network would.  Since Southern Oregon is on fault line and prone to earthquake’s and could have a site-level disaster, they need place sperate form west coast, by having on other side of the country in Northen Virgina, it allows them to have safe redundancy. Having it where they do it would only take three to five hours to have everything back up, instead of taking days or week or months or even year depending on how bad it is.  Southern Oregon used AWS Storage Gateway, Amazon S3 and Amazon Glacier.  AWS Storage Gateway is a set of hybrid cloud storage services that provides on-site access to an unlimited amount of cloud storage. By using AWS Storage Gateway, it allowed them get ride of the headache of keep track of physical tapes, which could be prone to hardware failures, and off-site storage cost by getting rid of it allowed them save money and not have worry about constant maintenance needs.  Amazon Simple Storage, also known as Amazon S3 is an object storage service that provides industry leading scalability along with data availability on top security and performance. Amazon S3 Glacier storage classes are known for their long term secure, durable storage classes for data archiving at the lowest cost possible and providing fast as possible access down to milliseconds. Using both of these in conjunction with each other Southern Oregon reduced the cost and risk while being able to allow their IT staff freedom to focus on important task then having to manage tapes. |

## Six Advantages of Cloud Computing

Read the Kiko case study.  
  
[Kiko Case Study](https://aws.amazon.com/solutions/case-studies/kiko-case-study)  
https://aws.amazon.com/solutions/case-studies/kiko-case-study

Next, review the Six Advantages of Cloud Computing.  
[Six Advantages of Cloud Computing](https://docs.aws.amazon.com/whitepapers/latest/aws-overview/six-advantages-of-cloud-computing.html)  
https://docs.aws.amazon.com/whitepapers/latest/aws-overview/six-advantages-of-cloud-computing.html

1. The Kiko case study mentions several current and potential benefits (business and/or technical) Kiko realized from their AWS migration.  
     
   Provide a brief summary of 3 benefits (current or potential) Kiko achieved with their migration.  
     
   For each benefit you identify, indicate which cloud computing advantage(s) (there may be more than one) you think it corresponds to and why or how it corresponds to that advantage.
2. The Six Advantages of Cloud Computing relate significantly to optimizing costs. Optimizing costs does not necessarily mean reducing expenses but rather correlating expenses to the business processes they support. Cloud Advantage #1 (Trade fixed expense for variable expense) reflects this concept.  
     
   Provide examples of fixed expenses you think Kiko reduced?  
   Provide example of variable expenses Kiko now incurs with their cloud environment?
3. The case study indicates Kiko’s variable costs may increase throughout the year.  
     
   What business processes or metrics drive the increase in Kiko’s variable costs?  
   How has the AWS migration helped Kiko optimize their costs relative to these variable expenses?

**Six Advantages of Cloud Computing Response:**

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| Since doing the migration to AWS Kiko with their new setup it helped them lower the cost, they were paying keep their shops online and was able to increase the availability of their essential system and |
| It also gave them the opportunity to have affordable disaster recovery solution. It also gave them access to tools that allowed them to organize and work, providing better security for their vital corporate data. The switch over was really quick only took them fourth months to get all their core  work loads onto Amazon Elastic Compute Cloud; it allows them to go through this process quick and seamlessly without any real issues. This allowed them to make sure there was no disruption for any of the Kiko critical systems, meaning they were able keep sales and operations as normal.  Some examples that I think that Kiko reduced was paying for infrastructure of the data center since they swapped over to AWS they could scale there cloud network to as big or small as they need, it also free up the employee’s. For variable expenses Kiko can now incur only one I can think of is if they deiced to scale up then they have pay for that’s really only variable expense.  With them switching to Amazon EC2, VMware Cloud on AWS, Amazon Aurora, helped reduced KIKO  Infrastructure costs by 20 percent and by moving their workloads to CloudFront it helped them reduce the running costs as well. Since the swap it helped them met rising demand and performance which helped keep their customers happy especially on major shopping holidays like Black Friday and Cyber Monday. During the time that they swapped over was right when covid started this also allowed them  keep making profits why lock down where taking place allowing people to shop online on there site. |
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