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School of Computing

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Cloud Computing – Coursework (Axiom Arcade Enterprise Cloud Adoption)

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Introduction

This Introduction is about Transformation of Axiom Arcade Full Shopping Mall Physical Experience to Online Based Shopping.

Operation and Platform Perspective (Senuk Dias – COHNDNE23.2F–031)

Platform Perspectives

When talk about Platform Perspectives, we focus on accelerating the delivery of workloads through cloud with enterprise-grade, scalable, cloud environment. Need of cloud platform in our mall we need systems for sell items to customers and buy stocks from business.

Platform as a Service Definition

Platform as a Service, a cloud computing concept, provides a comprehensive and integrated platform for testing and deploying applications without the headaches of managing the underlying infrastructure. Cloud platforms provide a variety of services, including networking, AI, machine learning, storage, databases, and computation. Using this approach, developers can focus on creating innovative solutions because the cloud provider handles the middleware, infrastructure, and other required components.

Key Features of the Platform

1. Abstraction of Infrastructure

   Using cloud Infrastructure is more cost efficient one than local based infrastructure because local one costs every device for buying but when cloud computing it's just like renting it even company don't have huge configurations for create an infrastructure, cloud provider gives companies to ready-to-use prebuild platforms for easy use.

2. Scalability and Flexibility

   Enterprise can Scale Platform easily as they need. Once you fully created a platform for company It is hard to scale if it is physical, but when implementing Cloud Infrastructure, It will be more easy to scale the environment within several steps.

3. Integrated Development Tools

   PaaS providing systems enables the development environments with tools, that is way more easier than implementing a development kit one by one into machines. Those development tools can enable from PaaS within few clicks and ready for developers to work with them.

Examples in Action

1. Azure/AWS Cloud Oss

   These companies give Operating systems for Cloud Instances so Enterprises can use those Systems for their Developing and hosting environments securely and efficiently.
2. Cloud Storages and Backups

   Cloud Storage features gives you a Secure, reliable Storages for valuable prices. Those storages can use anytime anywhere from any device.

   Enterprises can use Cloud storages for backups, it will also be helpful to protect backups from Physical errors and Attacks.
3. Heroku

   Heroku is a platform That Provide Cloud Based Container System and powerful ecosystem that comes with Integrated data services for Developing and Running Modern Apps using native cloud. [1]
4. Google App Engine

   Google app engine helps users to host their Java, Ruby, Python, Go, NodeJS, C# and PHP Applications in Cloud [2]

Benefits of Platform as a Service

1. Cost Efficiency
   - PaaS helps Enterprise to reduce cost for development environments by offering prebuild systems and services. Just need to pay as you use it. When you stop using it automatically it will stop costing you itself.
2. Enhanced Collaboration

- Cloud infrastructure helps to collaborate with developers and System admins to work on updates simultaneously and monitor activities on same time.

3. Easy Access
   - PaaS have remote access for all services from any whare, anytime, any devices. it will be more helpful for anyone who engages with the cloud system.
4. Increase Development Accuracy
   - Using PaaS is more accurate than Company hosted system because Cloud infrastructure powered with 24/7 to internet and anyone with authentication can log and manage development platforms so it more accurate than local systems. Also comes with larger Speeds for connect to services and provide functions within minimum buffering time.

SECURITY PERSPECTIVE OF INFINITE SKY ORGANIZATION'S CLOUD ADOPTION

Our organization's decision to adopt cloud computing to increase effectiveness and power of our systems. Introducing cloud computing to our systems creates new security challenges. Our organization must prioritize creating a secure cloud computing system to get all benefits and mitigate all internal risks.

1. Data Security

   Data Security is the main part of cloud computing security. Encryption is one of the main concepts of data security to safeguard from unauthorized access. Add Access Control and Multi-factor Authentication make system data security more powerful. Implement data monitoring system save data from data breachers and add highest protection to the system from internal and external risks.

2. Identity and Access Management

   Identity and Access Management is the best security concept for cloud resources. This concept adds an extra level of security to the cloud computing system. Make strong passwords and implement multi-factor authentication to the cloud. This process can reduce and limit the risk of unauthorized access and potential data leaks and data breaches.

3. Compliance and Legan Concerns

   Our Organization Cloud Adoption has some regulations and standards. It makes more strong organization's cloud computing system. Always updating security policies and requirements of system make less damage to the system. Without this if some failure happens it leads to legal consequences and damage to the organization's reputation. Making Audits will always help to save the company from some disasters save data in cloud storages.

4. Provider Security

   Service Providers' security will always depend on what company we choose. Always checking their security measures and monitoring systems with industry standards are very important steps to ensure service providers security. And cloud service providers security practices make it easy to mitigate the risks and take responsibility and safeguard all data breaches and make secure cloud-based system environment to our organization.

5. Response and Monitoring

   The cloud-based system security monitoring system will be always responsive and detect all the all the new world cyber threats. Installing a real time monitoring system, intrusion detective system and trained staff are very important components in this system. Always checking company cloud security monitoring system using simulation attacks is a very essential part. This makes more effective security systems of cloud-based infrastructure.

6. Cloud Infrastructure Security

Protecting Cloud-Based organization’s’ system from today’s new world cyberthreats is a very difficult process. Always updating patching system, configuring firewalls, and implementing network segmentation are the main part of the cloud infrastructure security. We always must consider cloud access security brokers to improve security, visibility, and control of all over the data in cloud storages.

People Perspective

Today businesses need to constantly improve and be creative to stay ahead. So Cloud computing helps them do this quickly and easily. But to use it well everyone in the company needs to be on board. That means leaders need to support the change, employees need to be comfortable with new things, and the overall company culture needs to be open to adapting. So companies need to consider from the people's perspective to make their move to the cloud successfully**.**

In order to moving to the cloud computing companies must assess, modify, and formalize their operational culture in the ever-changing world of cloud computing. It helps companies be independent, grow easily, understand things clearly, and adapt quickly, which is important for handling the challenges of moving to the cloud. Also customer success should be the cornerstone of any cloud strategy, ensuring every decision prioritizes their needs and satisfaction. To do that companies have to play big to win big in this digital space.

Adapting to the digital landscape requires a skilled and adaptable workforce, making talent building critical. The biggest hurdle to using cloud computing isn't the technology itself it's finding and keeping the right people with the right skills and move.So If we use the resources well,we can teach people the right tech skills quickly.To do that we can use virtual classrooms, real-world simulations, and microlearning modules.Also we can introduce mentoring, coaching, shadowing, and job rotation initiatives.And we can reward and recognize individuals, and build a structured system for learning from each other.

To do the workforce transformation we can Invest in the staff and reimagine job descriptions to attract, develop, and keep a highly productive and flexible group of digitally fluent individuals.And adopt a forward-thinking personnel development plan that goes beyond traditional HR procedures for a successful cloud shift.Also we can get involve the C-suite leadership in proactive talent enablement planning and updating processes for hiring, career mobility, performance management, inclusion, learning, and leadership. To change acceleration we can ensure that everyone is in agreement for the cloud to function properly to make it happen, collaborate, cut down on time wastage, and give leaders from all sectors more authority.

As we move through the transformation process, we can make sure make sure the organization's structure is in line with the changing practices of cloud-based operations.That make sure that the organizational architecture we choose for our cloud-based digital transformation initiative aligns with the company's primary strategies, its workforce, and the operational environment. That will make a strong argument for change and consider if the structure of the company truly reflects the roles, behaviors and culture that are essential to the success of the enterprise. And also we should consider the trade-offs of distributed, decentralized, and centralized architectures, and adjust the organizational structure to maximize the strategic value of your cloud workloads. and in order to improve operational performance and collaboration is important to clearly define the relationships between internal and external teams.

At the end we should ensure that everyone is aware of our cloud goals and we can Clarify objectives, collaborate, and pick up new abilities to keep getting better.

BUSINESS PERSPECTIVE ON ORGANIZATION'S CLOUD ADOPTION

Cloud adoption has act as very special strategy for organizations infrastructure to enhance their operational efficiency, agility, and overall competitiveness in the new world digital era. The business perspective of using cloud adoption on organization is extremely valuable benefit and the transformative impact on its business operation.

Motivations for Cloud Adoption:

The decision to adopt cloud technology to the organization drives the company to combine strategic goals and operational needs. Creating Cloud Adoption for the organization is the pursuit of scalability and flexibility. Cloud Services Allow Organization to expand their Infrastructure up or down on demand and provide more dynamic and adaptable and dynamic business requirements. Cost optimization is another advantage to the implementing cloud computing system. From moving to traditional system to cloud-based system, organization can eliminate the hardware investments and reduce more uses of space and time. It is always the most valuable thing to the organization. It makes organization work much easier and faster. It improves organization collaboration and accessibility are additional motivation of the implementing cloud-based system. And cloud systems always provide real-time access to the data and applications stored in the cloud. And users can access data and applications anywhere and anytime. It supports making organizations more connected and responsive work environment.

Benefits of Cloud Adoption:

Implementing Cloud Based System Bring a more benefits to the organization. One of the most significant advantage is increased flexibility. Cloud-Based Systems improves organizations Responses Rapidly. And launch new applications Faster with innovative solutions. And make organization more competitive in today's world business landscape. Another main benefit is cost efficiency. Cloud adoption allows us to create more operational systems with low cost for the organization and manage resources based on business needs. And optimize overall operations.

Security systems installed on cloud system is a critical advantage to the organization. Best Cloud Providers always try advanced security measures and data protection is compulsory part of the industry regulations. These security systems protect cloud systems from data breaches and safeguard organization's sensitive data and information.

Using Cloud Adoption in organizations we always have to need disaster recovery and backup system. It reduce the risk of data loss and system failures. This operation save organizations from disruptions.

Challenges:

After that Numerous Benefits on cloud adoption, we must face some challenges on this process. From Moving normal system to the cloud-based system we want specially trained staff for the operation of this system. And have to add frameworks and collaborate with experienced cloud service providers.

Impact on Operations:

The Adoption of Cloud-Based System on organization is operational transform for the technology and scalable improvement on environment. This System Lead organization to the highly operational, improved ability to innovate.

Operation Perspective

Operation perspective focus on how to work on cloud services and ensure that agree upon with business stakeholders. Using Cloud system helps enterprise to Automate and optimize workloads and it will effectively scale and establishing reliability on workloads. Operation Perspective comprises multiple capabilities. Those features helps including infrastructure and operations leaders, site reliability engineers, and information technology service managers.

When working in the fast paced and large scale cloud environment, it is imperative to identify problems early on, ideally before they affect the user experience. To do that we can implement logs, metrics, and traces, to gain insights into the internal condition and well-being of the workloads. Also we can Implement synthetic monitoring by crafting canaries, which are customizable scripts scheduled to run regularly, for overseeing our endpoints and APIs.

If we could filtering out extraneous information, concentrating on critical events, predicting imminent resource depletion, automatically generating alerts and incidents, and identifying probable causes and remediation ,we can enhance our capabilities. Also we can set up an event store framework and utilize machine learning (AIOps) to automate the correlation of events, detect anomalies, and determine causality.

The traditional release management is intricate, deploying slowly and posing challenges for rollback. Embracing the cloud allows for the utilization of CI/CD methods to swiftly handle releases and reversals. Establish change procedures featuring automated approval workflows aligned with cloud agility. Employ deployment management systems to monitor and execute changes. Opt for frequent, small, and reversible adjustments to minimize change scope. Monitor the performance of workloads and ensure that the capacity aligns with both present and future requirements. Despite the virtually limitless capacity of the cloud, practical constraints like service quotas, capacity reservations, and resource limitations influence the actual capacity available for your workloads. It is crucial to comprehend and adeptly manage these constraints. Identify key stakeholders and establish consensus on objectives, scope, goals, and metrics. Consistently gather and analyze performance data, and routinely assess and report performance against predetermined targets.

Explore and resolve application issues within a unified interface. Consolidating application data into a singular management console streamlines operational supervision, expediting the resolution of application issues by eliminating the. need to shift context among various management tools.

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[3]

“AWS Management Console,” *Amazon Web Services, Inc.* https://aws.amazon.com/console/

YouTube Video Link:

https://youtu.be/UNnCxabNz0E

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Appendices

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AWS Cloud Platforms

Microsoft Azure

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