aws PUBLIC SECTOR SYMPOSIUM

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AWS Symposium

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How to create the right cloud resiliency with AWS

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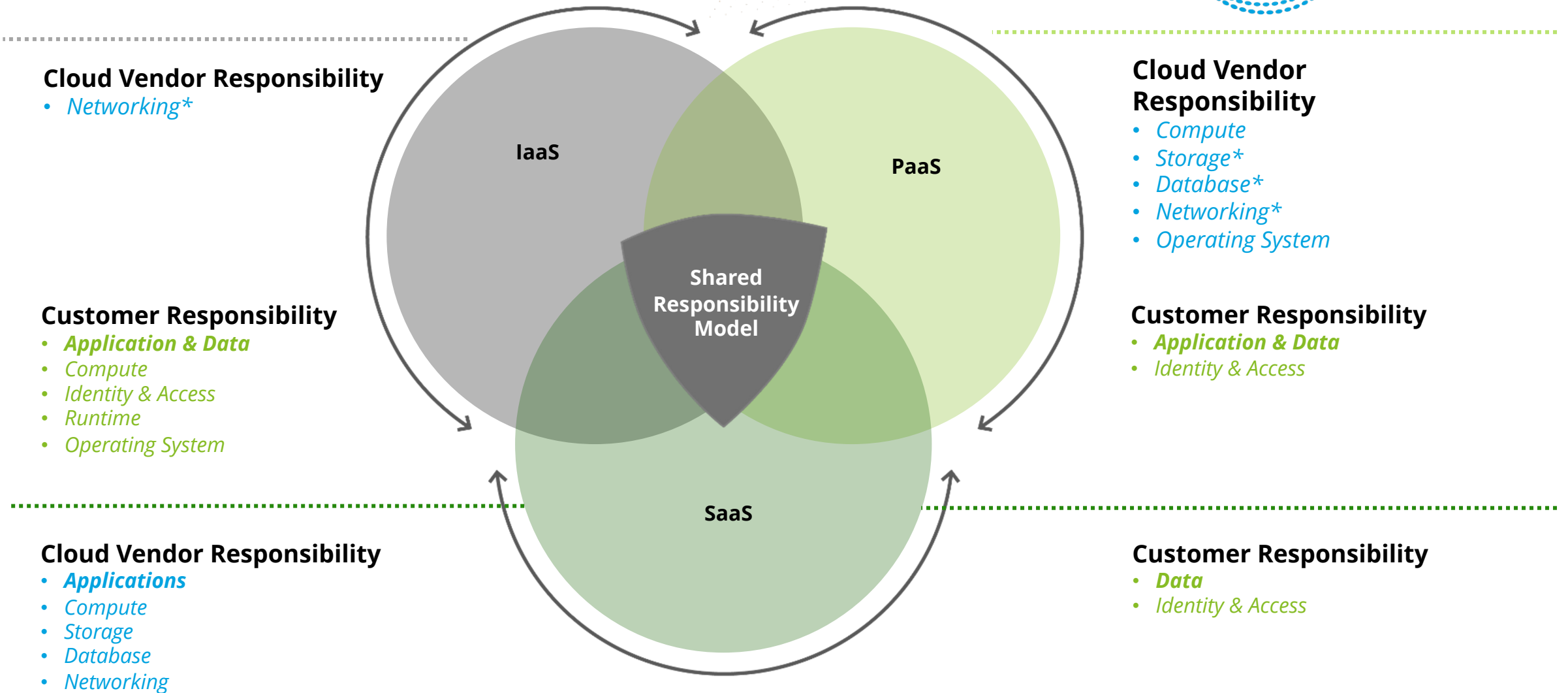Director, Cloud and Emerging Technology

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AWS Global Infrastructure

Shared Responsibility Model for Resilience

Cloud Vendor Responsibility
- *Networking**

Customer Responsibility
- ***Application & Data***
- *Compute*
- *Identity & Access*
- *Runtime*
- *Operating System*

Cloud Vendor Responsibility
- ***Applications***
- *Compute*
- *Storage*
- *Database*
- *Networking*

IaaS

PaaS

Shared Responsibility Model

SaaS

Cloud Vendor Responsibility
- *Compute*
- *Storage**
- *Database**
- *Networking**
- *Operating System*

Customer Responsibility
- ***Application & Data***
- *Identity & Access*

Customer Responsibility
- ***Data***
- *Identity & Access*

Key Lesson of building resilient application

Lesson Number 1 – Disaster Recovery

CONTEXT

- Organizations migrate applications to the cloud and want to implement the right redundancy

OBSERVATIONS

- No clear view on the mission critical applications.
- Fails to prioritize applications recovery in the event of disaster

SOLUTIONS

- **Identification of Mission critical** applications
- Define **RPO** (Recovery Point Objective), **RTO** (Recovery Time Objective), **SLA**
- Define the **relevant threats** for the organization

Lesson Number 2 – Logical Segregation

CONTEXT

- Logical Segregations (accounts, network etc.) are **not the** priority.

OBSERVATIONS

- Deployment of **Production & Test or Backup servers** in same network or account
- Easier **lateral movement** for the attackers.

SOLUTIONS

- Implement **Segregation.**
- Isolate backups in dedicated logical environment.
- Implement **Chinese Wall** model for production and test environment.

Lesson Number 3 - Automation

CONTEXT

- Businesses invest time and resources in **manual deployments**, manual policy enforcement, and repetitive tasks.

OBSERVATIONS

- **Misconfiguration** and **Non-uniform policy** enforcement due to human error.
- Introduces **security gaps**
- Wastage of money

SOLUTIONS

- Move to **DevSecOps**
- Use **Infrastructure as Code** & **Policy as Code.**
- Implement no cloud portal policy.
- **Automate** Disaster Recovery process.

Lesson Number 4 – Immutable Infrastructure

CONTEXT

- Companies utilizes **public AMI** for compute instance deployments.
- **Shared AMI** across different teams.

OBSERVATIONS

- Non-standardized **configurations**
- Inconsistent **Security**
- Increase in **attack surface**

SOLUTIONS

- Implement process of **Golden AMI** creation with security assessment tool bundled in.
- Implement **continuous assessment, hardening** of the AMI.

Lesson Number 5 – Crisis Management and Planning

CONTEXT

- Lack of **training** and **awareness** session
- Unclear/Undocumented **Incident Response Plan**

OBSERVATIONS

- Vague plan leads vague decisions which leads to **unclear result**.
- Who is **responsible** and **accountable** ?
- Conflict between teams.

SOLUTIONS

- Create **Incidence Response plan and procedures**.
- Define **RACI** in case of emergency (including backups).
- **Periodic review, tabletop exercises, simulations.**

Lesson Number 6 - People

CONTEXT

- Companies are **understaffed**, lack of skilled professionals
- Critical tasks such as "Backup" **depends on one resource**.

OBSERVATIONS

- Unable to **respond correctly** during an incident.
- **Decision fatigue** leads to poor judgement.

SOLUTIONS

- Hire right people with right skills.
- **Avoid dependency.**
- Have all process and procedure well **documented** and **reviewed periodically**.
- Automation

Lesson Number 7 – Resilience Engineering

CONTEXT

- Cloud is resilient by nature.
- Applications are moving from monolithic blocs to microservices

OBSERVATIONS

- Organizations are still building resiliency based on old paradigms.
- Resilience should be included in the design as of day 1.

SOLUTIONS

- Create more resilient by design architecture.
- Test resiliency periodically.
- Use the full potential of the cloud.

Thank you.

Q&A

Thank you!

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