AWS re:Invent

SVS242-P

# Selecting your first serverless pilot

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AWS

AWS re:Invent

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aws

# Agenda

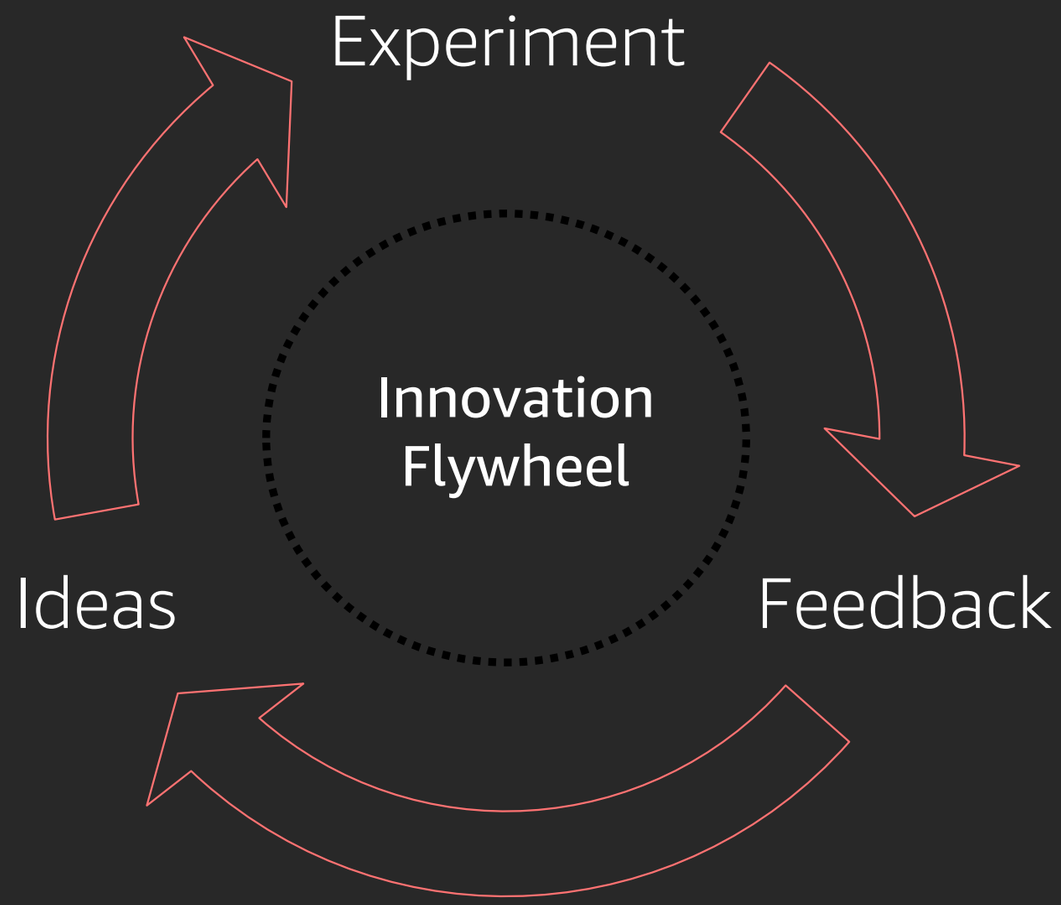
- What is *serverless*, and why should I care?
- *Adoption patterns*
- Criteria to help select your pilot
- Measuring success and scaling

# What is Serverless, and Why Should I Care?



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# To maintain competitive advantage, digital businesses must innovate as rapidly as possible



# Capabilities of a modern application



Secure



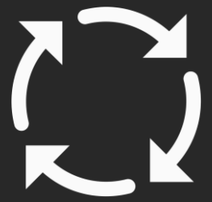

Resilient



Elastic



Modular



Automated



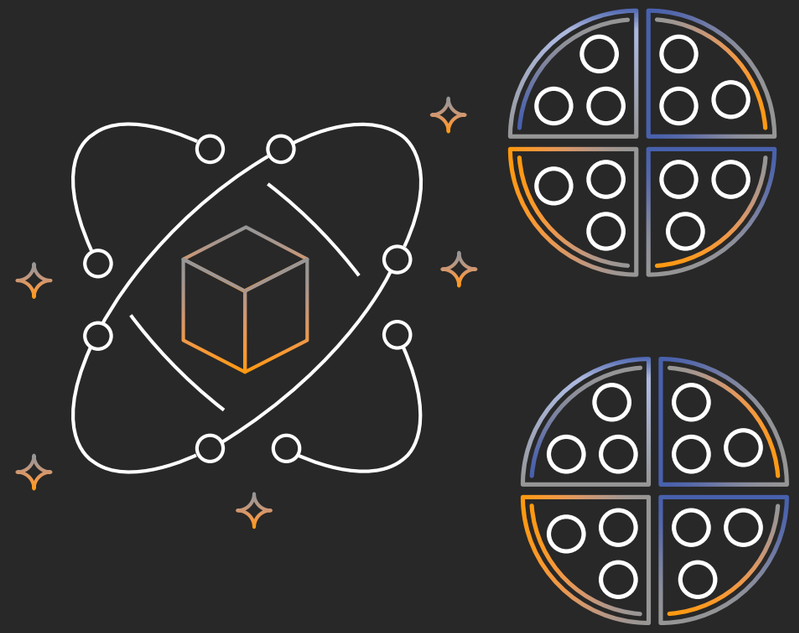
Interoperable

# Modern application checklist

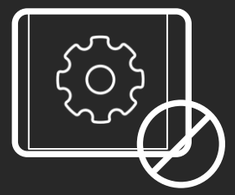
- ☐ Enable security and compliance across the entire app lifecycle
- ☐ Structure apps as collections of microservices
- ☐ Build with serverless technologies as much as possible
- ☐ Use code to model applications and infrastructure
- ☐ Rapidly release high-quality features with CI/CD
- ☐ Gain insights into application behavior with monitoring

# Microservices best practices

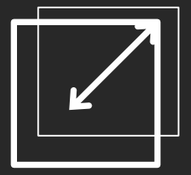
- ✓ Independently deployable
- ✓ Owned by a single team
- ✓ APIs define a contract
- ✓ Committed and measured SLAs



# What is Serverless?



No infrastructure to provision or manage



Automatically scales by unit of consumption




Pay for value billing model



Highly available and durable

# Serverless is more than compute

COMPUTE


AWS
Lambda


AWS
Fargate

DATA STORES


Amazon
S3


Amazon Aurora
Serverless


Amazon
DynamoDB

INTEGRATION


Amazon
API Gateway


Amazon
SQS


Amazon
SNS


AWS
Step Functions


Amazon
Kinesis

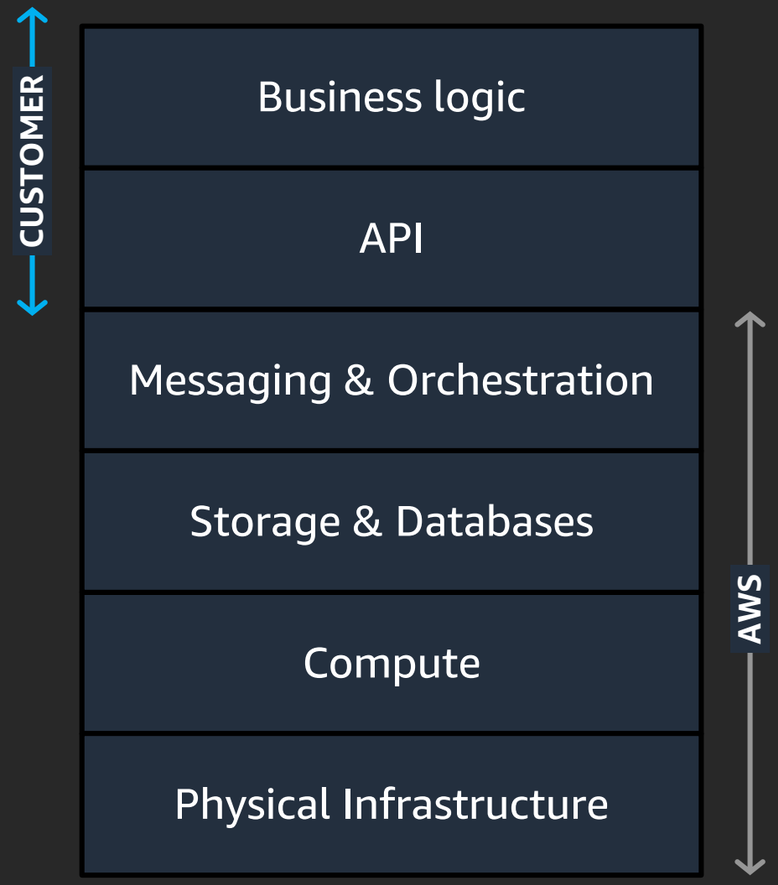

AWS
AppSync



Amazon
EventBridge

# Serverless architectures provide the greatest agility with the least effort

Focus on creating
**business value**




Remove heavy lifting with
**serverless everything**

# Comparison of shared operational responsibility



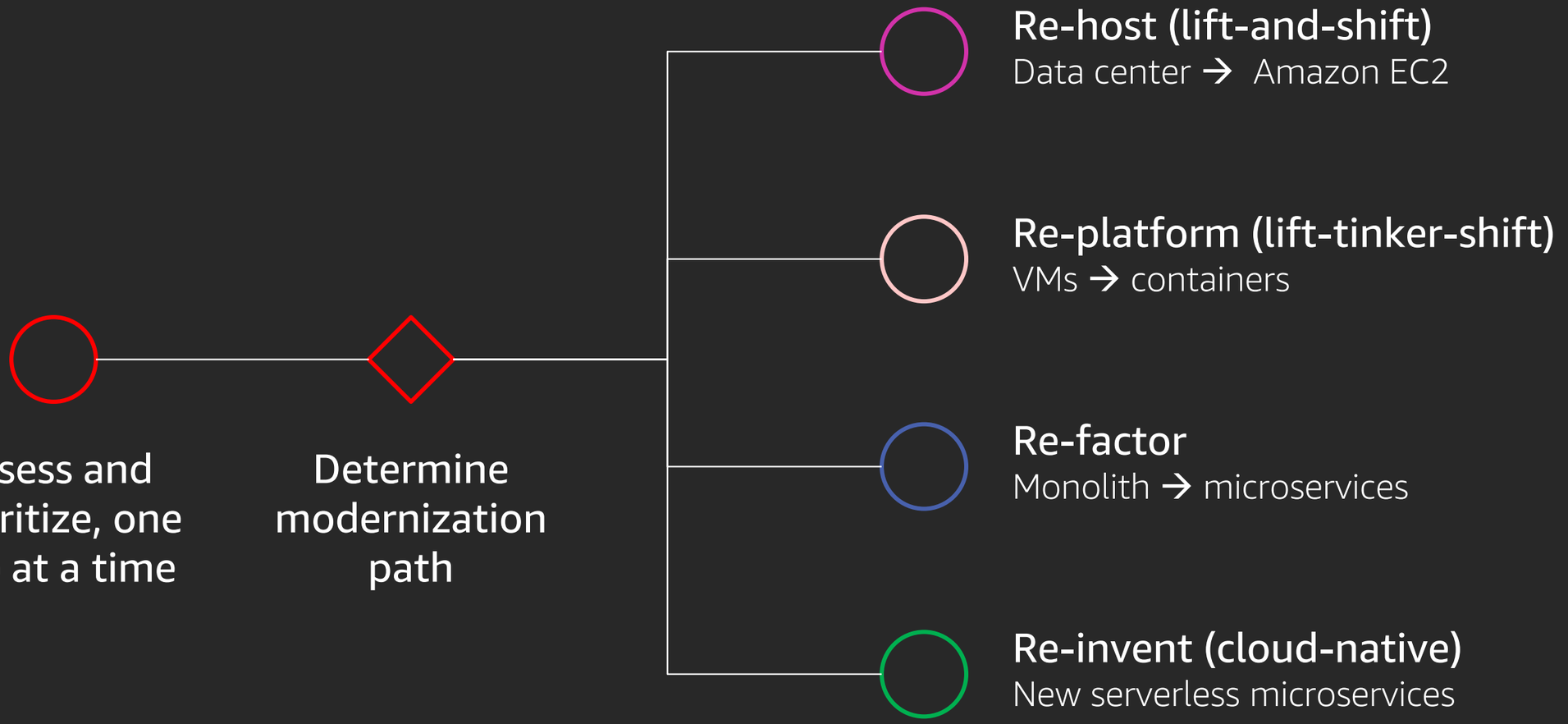

| | AWS manages | Customer manages |
|---|---|---|
| **AWS Lambda**<br>Serverless functions | • Data source integrations<br>• Application-level runtime and updates<br>• Physical hardware, software, networking, and facilities<br>• Provisioning | • Application code<br>• Security and network configuration |
| **AWS Fargate**<br>Serverless containers | • Container orchestration, provisioning<br>• Cluster scaling<br>• Physical hardware, host OS/kernel, networking, and facilities | • Application code<br>• Service scaling<br>• Data source integrations<br>• Security config network config, management tasks, application runtime updates |
| **Amazon ECS/ Amazon EKS**<br>Container management as a service | • Container orchestration control plane<br>• Physical hardware software, networking, and facilities | • Application code<br>• Data source integrations<br>• Worker hosts and service scaling<br>• Security config and updates, network config, firewall, management tasks |
| **Amazon EC2**<br>Infrastructure as a Service | • Physical hardware software, networking, and facilities | • Application code<br>• Data source integrations<br>• Instance scaling<br>• Security config and updates, network config, management tasks<br>• Provisioning, managing scaling and patching of servers |

# Adoption Patterns

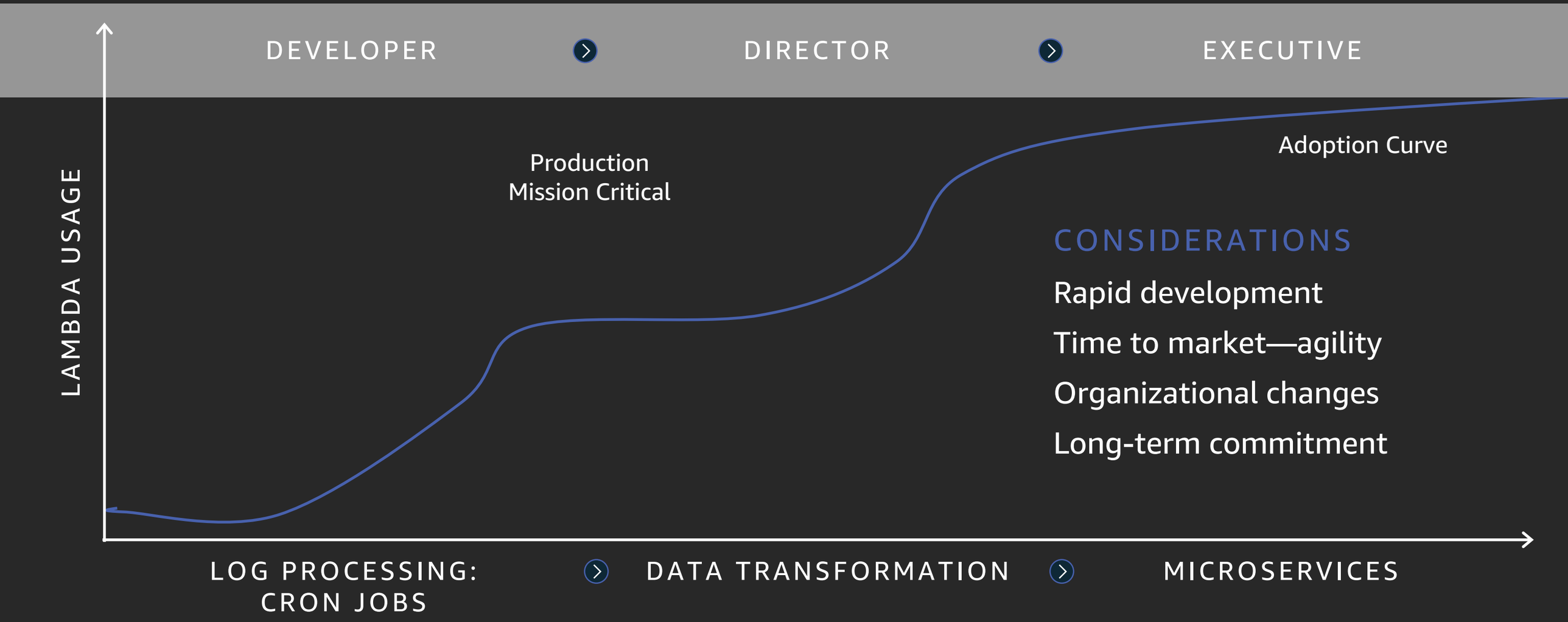


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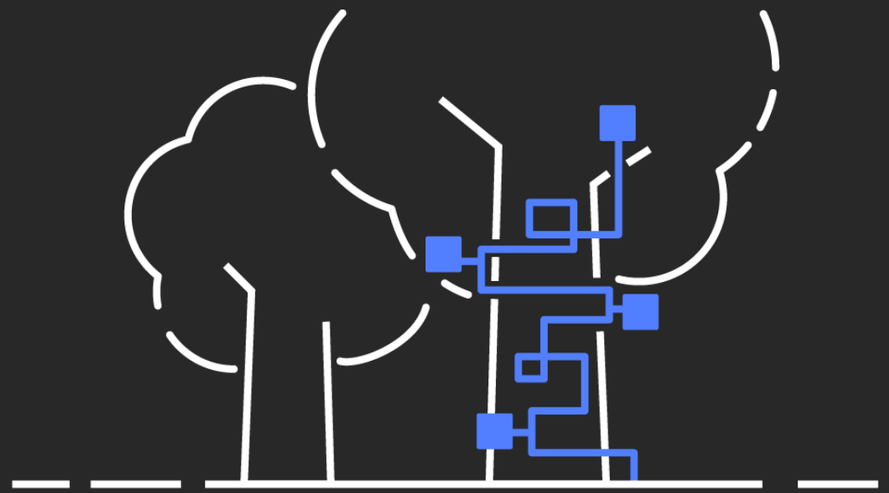
# AWS customers modernize applications one at a time



# Organic Adoption



# Incremental Refactoring



The Strangler Pattern

Moving monolithic applications to microservices by gradually creating events and APIs for various components on of the legacy application

# Selecting Your Pilot

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# Goals of a Pilot

- The desired, ideal next step after a pilot, should drive the selection of the pilot itself
- Objective metrics are important, but don’t forget to consider qualitative traits
- If TCO is a goal, consider a pilot that can be easily related to your company’s ‘traditional architecture’

# Suggested Selection Criteria

- Does the pilot represent broader efforts in the org?
- Which team members are included on the pilot?
- Executive buy-in is critical for being able to drive follow-on actions, post-pilot
- Should be significant in scope, but not mission-critical
- Are there meaningful metrics that can be captured?

# Measuring Success and Scaling

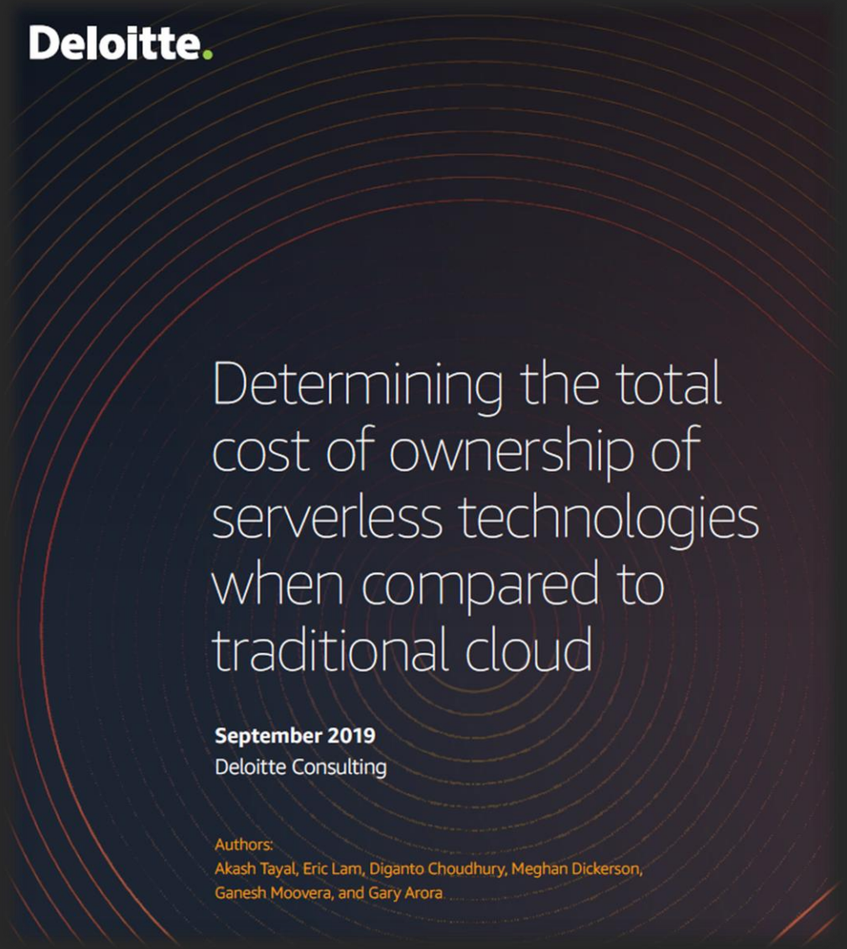
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# Measuring Success

- Objective metrics are helpful, but capture qualitative feedback from the team
  - People and process changes are the most challenging, and important to navigate
  - Can we make the case that the processes and effort expended for the pilot can scale in your organization? What new skills can our teams learn to help?
- Be careful not to focus too heavily on infrastructure cost/savings as a primarily driver for success.
  - Team effort, time to market are often most impactful
- Document lessons learned – and be honest but factual
  - Sometimes existing processes impede more agile/desired practices

# Common Dimensions of Measuring TCO

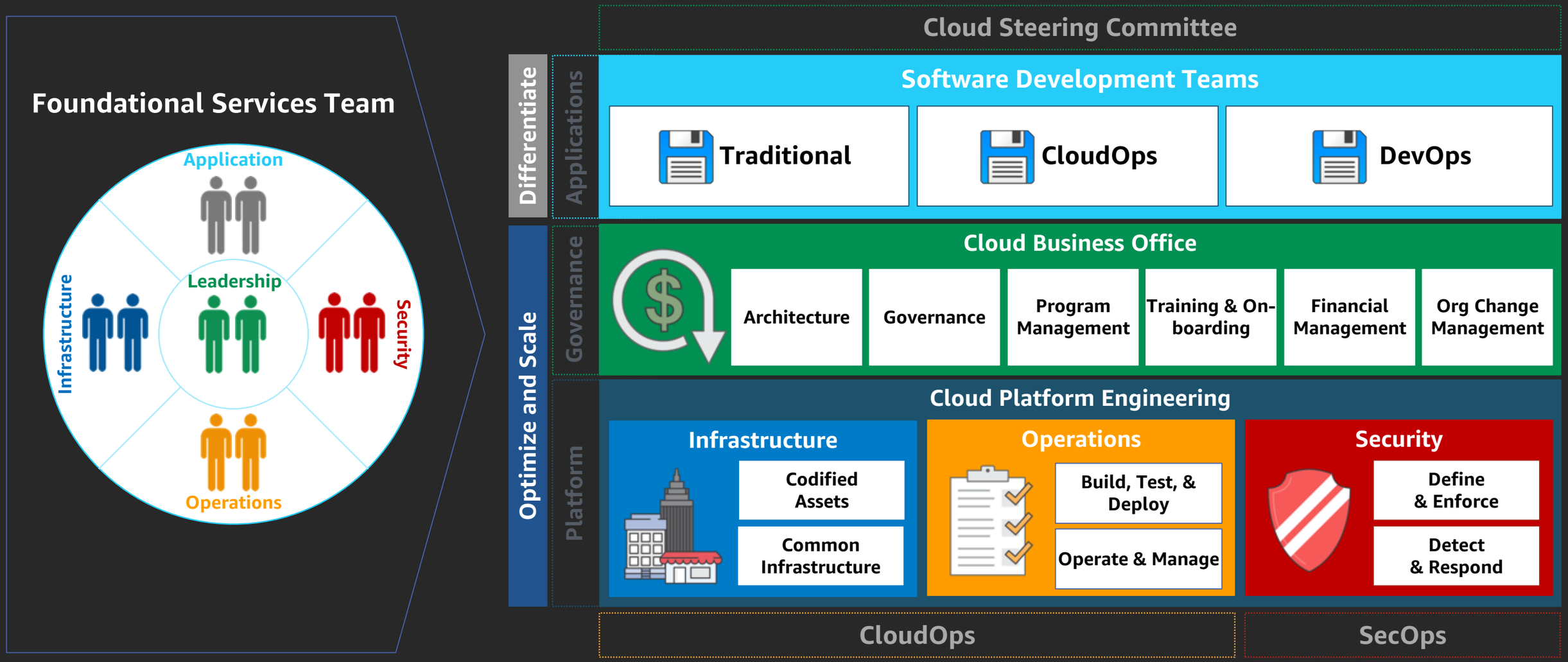
- **Infrastructure cost**
  - the charge incurred from hosting an application
- **Development cost**
  - the upfront charge of building and developing a new application
- **Maintenance cost**
  - the day-to-day operations expense associated with running and maintaining an application




https://pages.awscloud.com/NAMER-field-GC-Deloitte-TCO-whitepaper-2019-learn.html

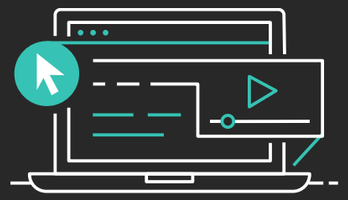
# Scale Horizontally with Your Cloud Center of Excellence

**Think big, but start small. Launch a Serverless Tiger Team and a small number of Development teams to start. Scale as the transformation accelerates and expands.**



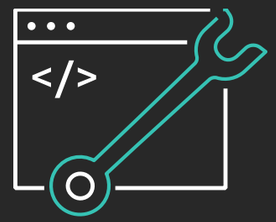
# Learn serverless with AWS Training and Certification

## Resources created by the experts at AWS to help you learn modern application development



Free, on-demand courses on serverless, including

- Introduction to Serverless Development
- Getting into the Serverless Mindset
- AWS Lambda Foundations
- Amazon API Gateway for Serverless Applications
- Amazon DynamoDB for Serverless Architectures




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aws training and certification

# Thank you!

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