Microsoft

# Cloud Adoption Framework

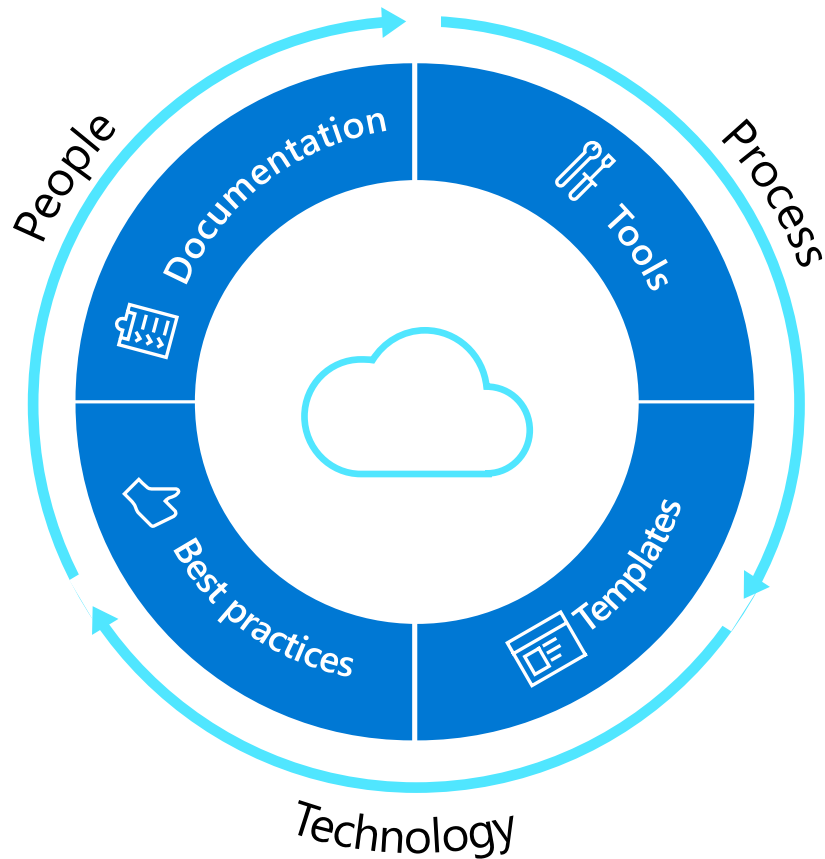Matthew Grimshaw
Matthew.Grimshaw@microsoft.com
Cloud Solution Architect for Education

# Microsoft Cloud Adoption Framework

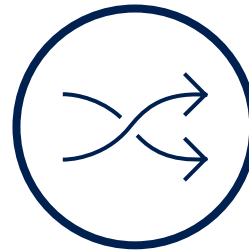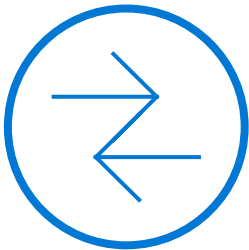*Teaches and enables enterprise customers to adopt cloud*
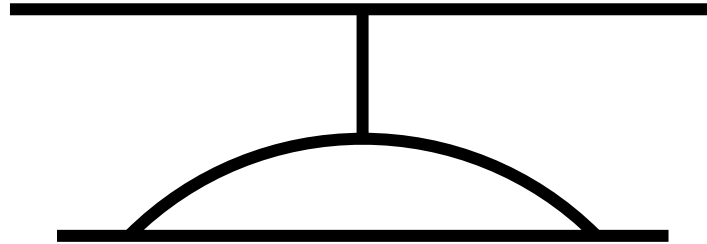


**Achieve balance**

Align **business, people and technology strategy** to achieve business goals with **actionable, efficient, and comprehensive** guidance to deliver fast results with control and stability.

# Objective of this Model: Create Balance

**Control & Stability**

**Speed & Results**

# The paradigm shift for IT
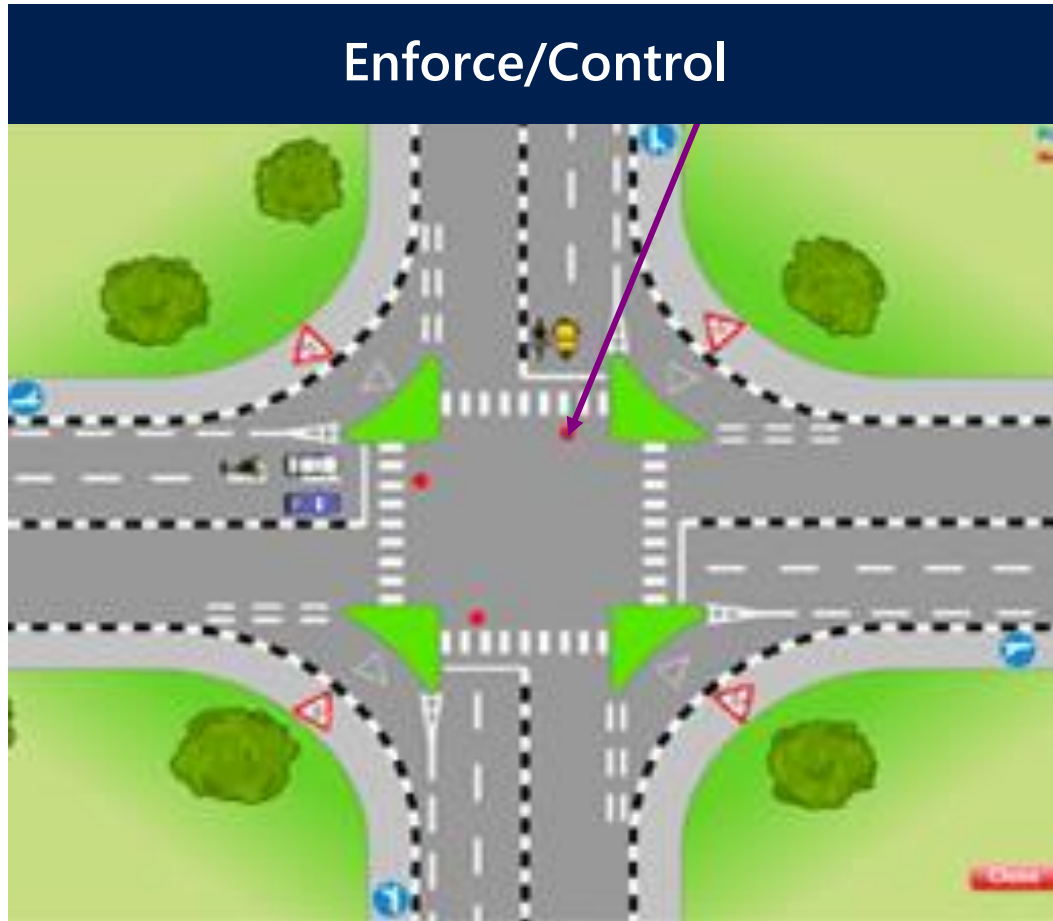


Enforce/Control — Controlled & *central* responsibility
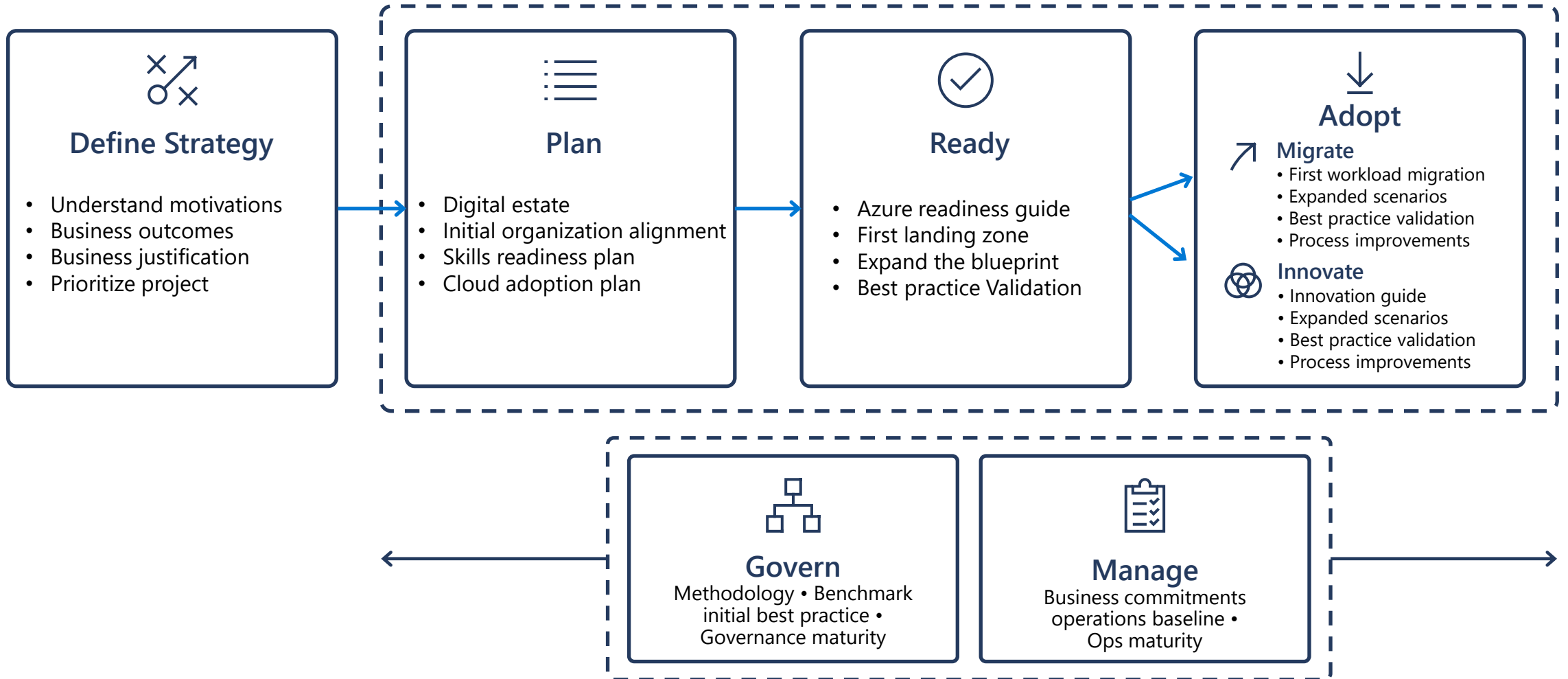
Enable/Support — Freedom & *delegated* responsibility

# Cloud Adoption Framework



- ⬆ **Governance**
- ⬆ **Architecture**
- ⬆ **Operations**
- ⬆ **Organization**

# Microsoft Cloud Adoption Framework for Azure

**Define Strategy**

- Understand motivations
- Business outcomes
- Business justification
- Prioritize project

**Plan**

- Digital estate
- Initial organization alignment
- Skills readiness plan
- Cloud adoption plan

**Ready**

- Azure readiness guide
- First landing zone
- Expand the blueprint
- Best practice Validation

**Adopt**

**Migrate**
- First workload migration
- Expanded scenarios
- Best practice validation
- Process improvements

**Innovate**
- Innovation guide
- Expanded scenarios
- Best practice validation
- Process improvements

**Govern**
Methodology • Benchmark initial best practice • Governance maturity

**Manage**
Business commitments operations baseline • Ops maturity

# Define strategy

Documenting the cloud strategy will help business stakeholders and technicians understand the benefits the organization is pursuing by adopting the cloud.

## Motivations

- Executive mandate
- DC Exit
- Merger and acquisitions
- Cost savings
- Optimization
- Agility
- Tech capabilities
- Market demands
- Geo expansion
- Migration
- Innovation

## Business outcomes

- **Fiscal:** revenue, cost, profit
- **Agility:** timer to market, provisioning,
- **Reach:** global access, sovereignty
- **Customer engagement:** cycle time, from request to release
- **Performance:** SLAs, Downtime, operations, reliability

## Business justification

- **Business case:** the cloud is not always cheaper, mirroring is not cloud, servers drive cost analysis
- **Financial model:** Capex/ Opex, ROI, gain, cost avoidance/reduction
- **Cloud accounting:** cost center, procurement, profit center, revenue generating, chargeback

## First project

- **Business criteria:** workload supported by a BDM
- **Technical criteria:** minimum dependencies and test path, no governance
- **Qualitative analysis:** Current Team analysis
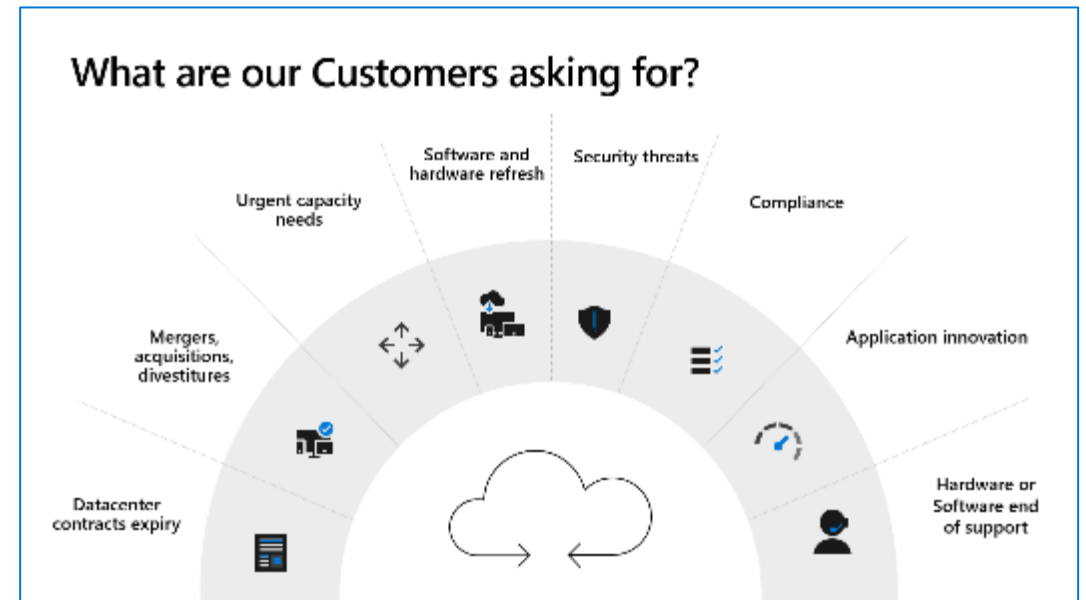
# Cloud strategy

**What are the motivators**
- Agility - Time to market/value
- Technical debt
- Reduce complexity

**Critical Business events**
- Datacenter exit
- End of support
- Regulatory compliance changes
- Response to of disruptions
- Improvement of IT stability

**Innovation**

- Scaling to meet business or geographic demands
- Transformation of products and services
- Market disruption



What are our Customers asking for?

Urgent capacity needs

Software and hardware refresh

Security threats

Compliance

Mergers, acquisitions, divestitures

Application innovation

Datacenter contracts expiry

Hardware or Software end of support

# Plan

Cloud adoption plans convert the aspirational goals of the cloud adoption strategy into actions. It will help guide technical efforts, in alignment with the business strategy.

## Digital estate

- **Rationalization:** inventory
- **Quantitative analysis:** asset optimized and sized properly
- **Qualitative analysis:** operational process

## Initial organization alignment

- **Cloud Strategy Team**
  - Business IT: requirements and needs
  - IT management operations: traditional IT
  - Governance: executive sponsor, finance, business leadership, legal, security, HR
  - Cloud platform vendor: account success team
- **Cost management**
- **IT-business alignment**
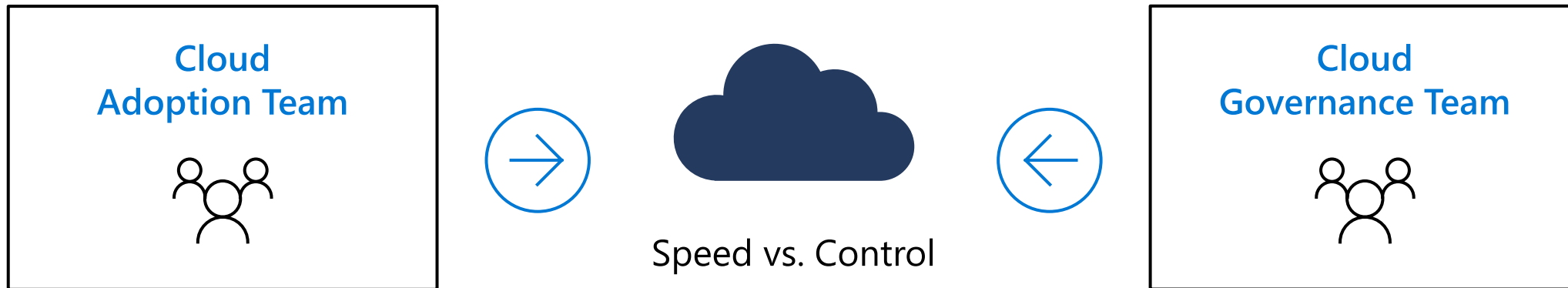- **Governance MVP**

## Skill readiness plan

- **Organizational readiness**
- **Governance and security alignment**
- **Initial organization alignment**
- **Building technical skills:** business/technical, and certifications
- **Change management guidance**

## Cloud adoption plan

- **5R strategy:** rehost, refactor, rearchitect, rebuild, replace
- **Infrastructure migration:** VM, server, database focus
- **Application innovation:** born in the cloud applications, APIs
- **Data-driven innovation:** Focus on data consolidation and analysis

# Defining your Cloud Adoption Team

Implementing Cloud Adoption Plan requires some initial alignment of different stakeholders who will make the plan a reality

**Cloud Adoption Team** → Speed vs. Control ← **Cloud Governance Team**

Create a balance between speed or *moving quickly* and control or *reducing risks* by have teams accountable for adoption and governance

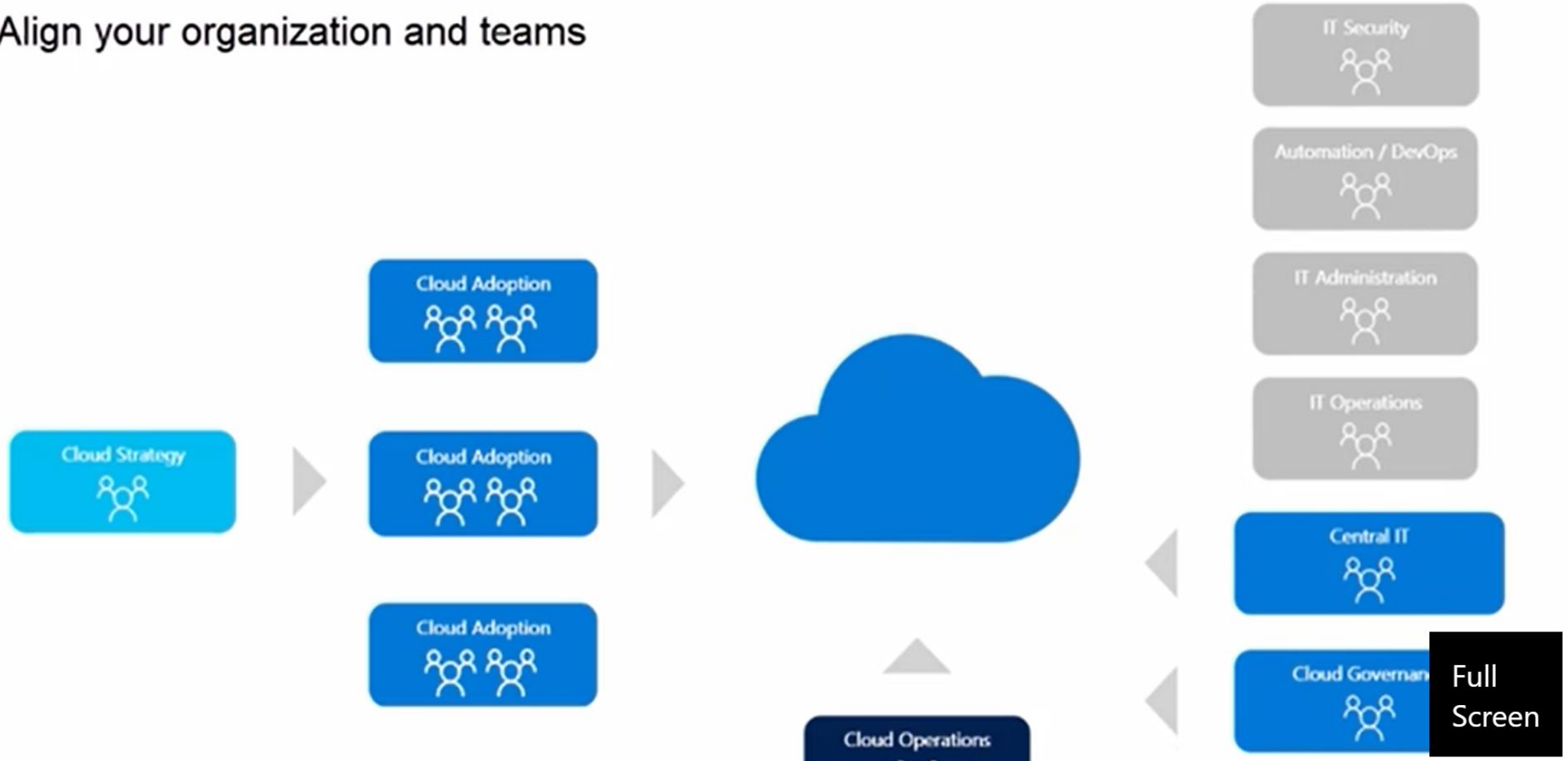While Cloud Adoption Team is required to execute cloud adoption tasks, governance team ensures processes and controls are implemented
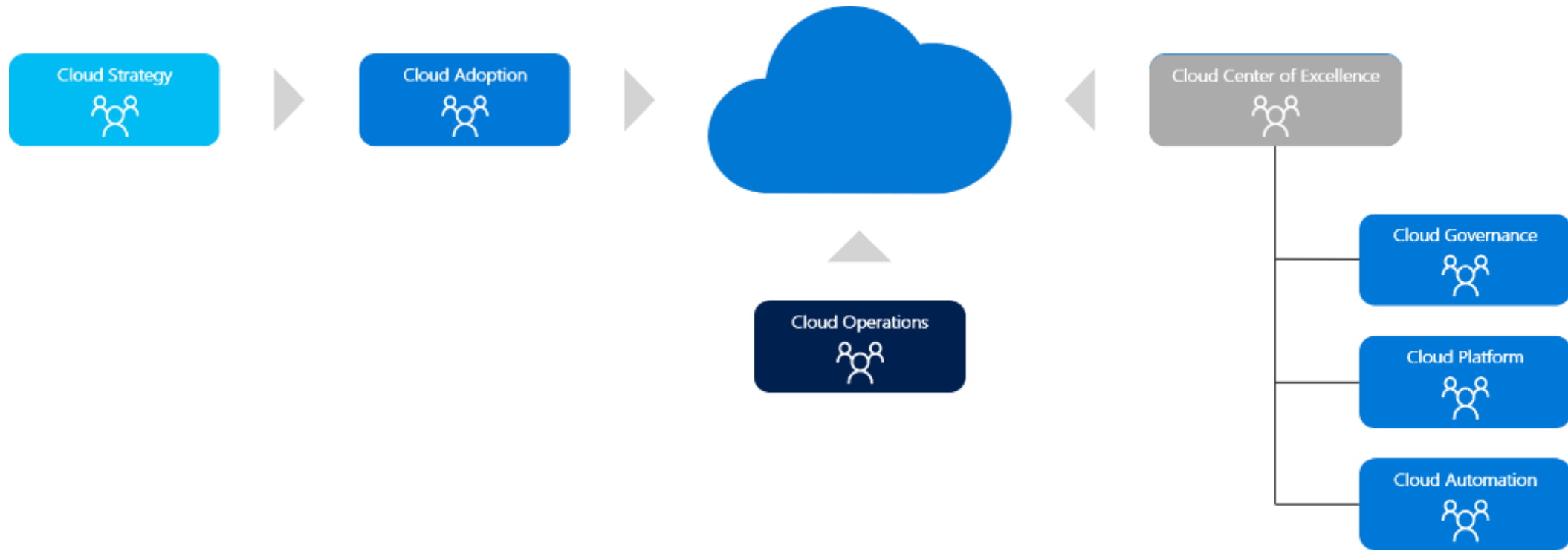
# Evolvement of organization
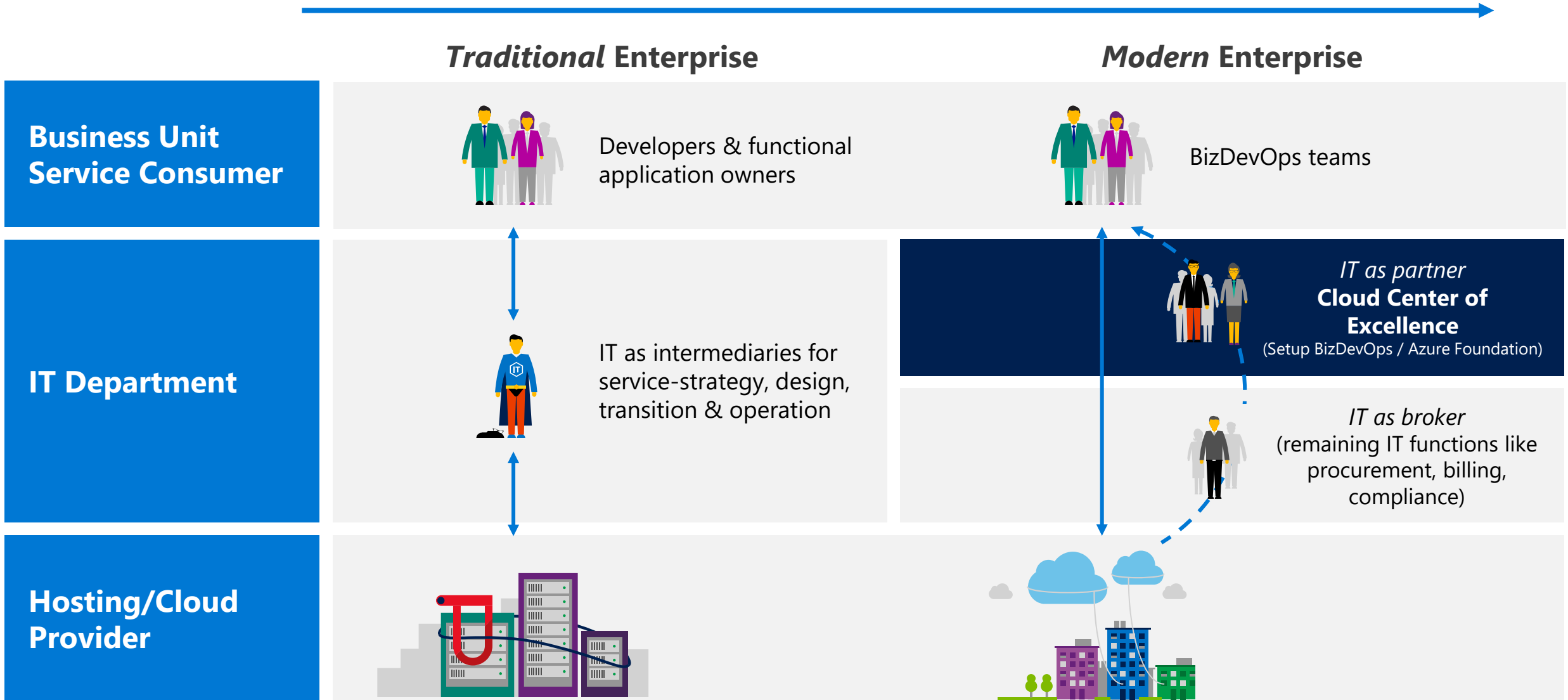
# Evolvement of Organization

# What will the future IT Department look like?

## Cloud Center of Excellence:

# What is Cloud Center of Excellence about?

*"shift the value of the IT department from build, own and run, to enable others to do autonomously"*

**Traditional Enterprise**     **Modern Enterprise**

**Business Unit Service Consumer**

Developers & functional application owners

BizDevOps teams

**IT Department**

IT as intermediaries for service-strategy, design, transition & operation

*IT as partner*
**Cloud Center of Excellence**
(Setup BizDevOps / Azure Foundation)

*IT as broker*
(remaining IT functions like procurement, billing, compliance)

**Hosting/Cloud Provider**

# Cloud Center of Excellence uses the following

Born in Cloud
Organizational Structure

Born in
Cloud Architecture

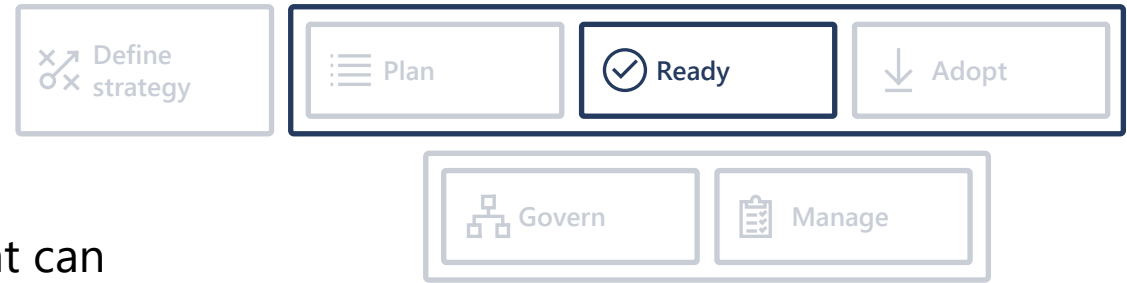Born in Cloud Tooling

Born in
Cloud Controls

Born in Cloud
Deployment Mechanism

Born in Cloud
Processes Implementation

# Ready

Ready establishes a cloud foundation or Adoption Target that can provide hosting for any adoption efforts. This should consist of common denominators across 80–90% of cloud adoption.

## Azure readiness guide

- **Resource management:** management groups, subscriptions, resource groups, resources tree hierarchy
- **Naming Standards**
- **Resource tags**

## Landing zone infrastructure

- **Network design:** Vnet, hybrid, firewall, hub, front door, endpoints
- **Storage design:** disk, file, blobs, CDN
- **Compute design:** VMs, containers, apps, serverless
- **Data design:** Structured/ unstructured

## Landing zone ID

- **Identity and access**
- Role-based access control **RBAC**
- Manage to **least privilege**

## Landing zone cost

- **Costs and billing**
- Analyze **Cloud Costs**
- Monitor with **budgets**
- **Optimize** with recommendations
- **Manage** invoices and payments

## Blueprints

- **AI**
- BigData
- Hybrid networks
- **Identity management**
- **Serverless**
- **SAP**
- VMs
- WebApps
- DevOps

# Design Principles

Subscription Democratisation

Policy Driven Governance

Azure Resource Manager; Single Control and Management Plane

Application Centric and Archetype-Neutral

Azure Native Design and Roadmap Aligned

# 8 x Critical Design Areas

👥 Enterprise Enrolment and Azure AD Tenants

🪪 Identity and Access Management

👥 Management Group and Subscription Organisation
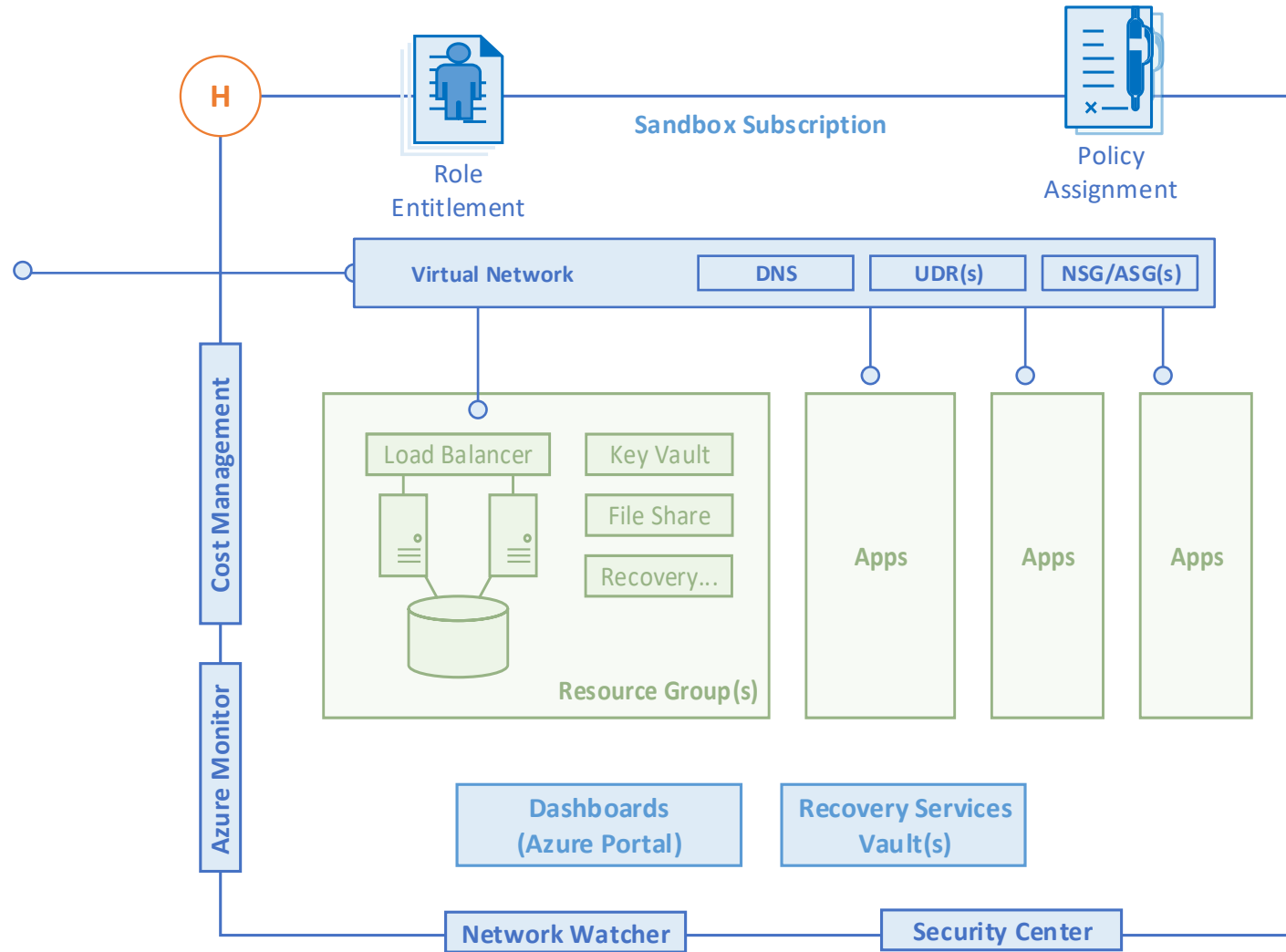
⚛ Network Topology and Connectivity

📋 Management and Monitoring

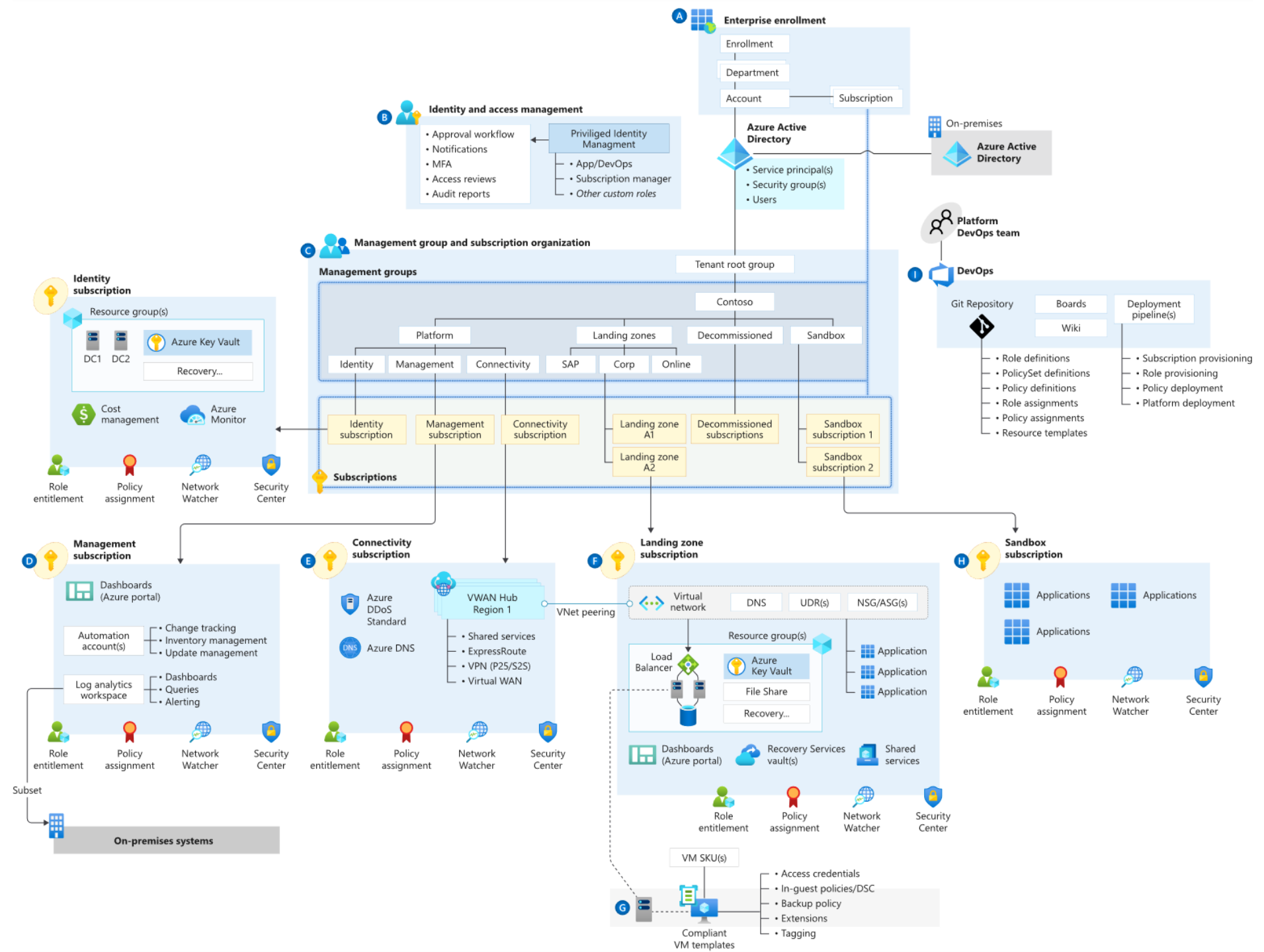⛈ Business Continuity and Disaster Recovery

🔒 Security, Governance and Compliance

⚙ Platform Automation and DevOps

# Landing Zone Definition

Enterprise-scale

# Adopt: Migrate

Cloud adoption will include workloads which do not warrant significant investments in the creation of new business logic.
Those workloads could be moved to the migrated to the cloud.

## Assess

- **Evaluate** assets and establish a plan
- **Validate pre-requisites:** landing zone, skilling
- **Drivers:** reducing capex, freeing up DC
- **Quantitative factors:** VMs, networking, compatibility
- **Qualitative factors:** process dependencies, critical business events

## Migrate: rehost

- **Replicate** (lift and shift) on-prem functionality using cloud native technology
- Leverage **Azure Migration Guide**

## Optimize

- **Balance performance and price**
- Deliver the right experience **within budget**
- **Resize VM size, resize storage, resize database**
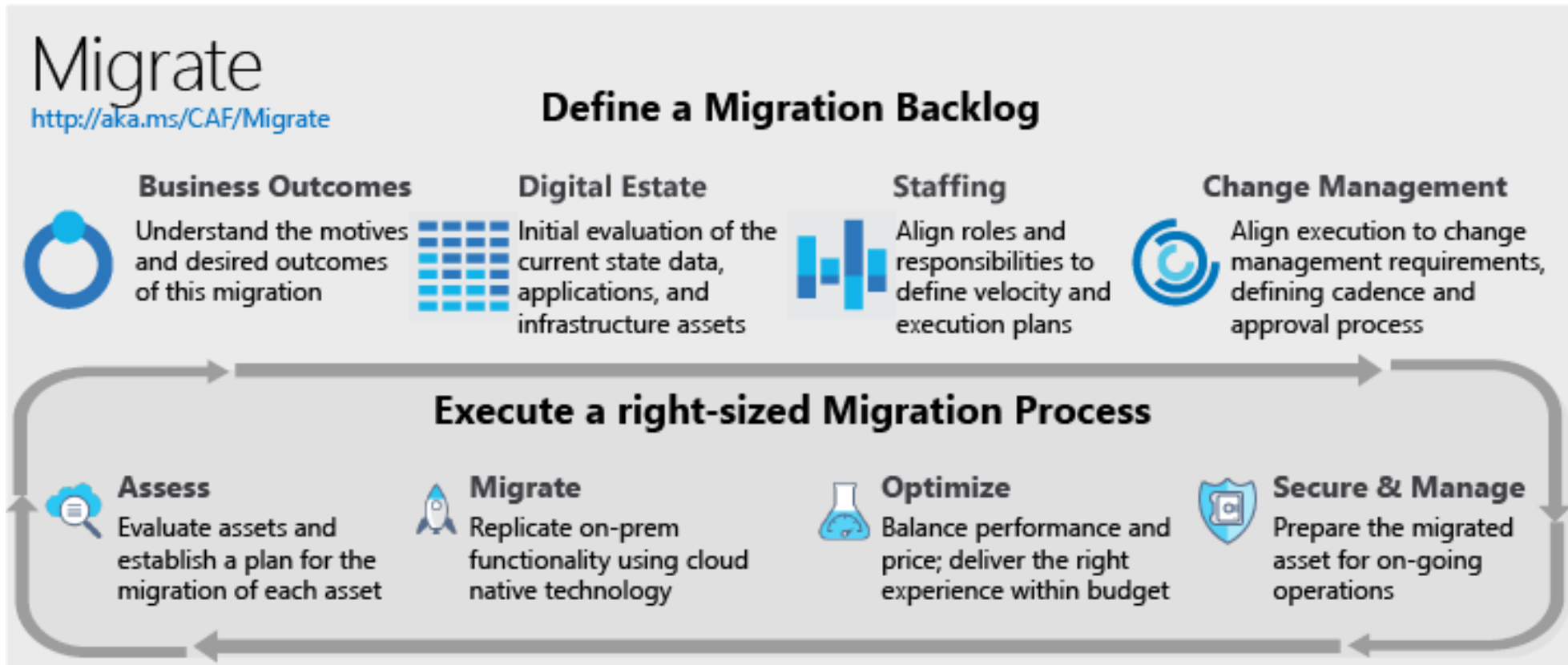
## Secure and manage

- Prepare the migrated asset for ongoing operations: **security, monitoring, configuration**

# Migration Methodology
## Prioritize investments of time and energy based on migration objectives

Migration Implementation

# Adopt: Innovate

Older apps can take advantage of many of the same cloud-native benefits by modernizing the solution or components of the solution. Modern DevOps invites into the process to create shorter feedback loops and better customer experiences.

## Infrastructure abstraction
- Cloud native applications built from the ground up **optimized for cloud:** resiliency,
- Global scale
- Agility
- Security
- Autoscaling

## Innovate: refactor
- Refactoring an application to fit a **PaaS/Serverless-based model** or refactoring code to deliver on new business opportunities.
- **Drivers:** faster and shorter updates, code portability, greater cloud efficiency (resources, speed, cost)

## Innovate: rearchitect
- Modify existing applications into managed **containers** to take advantage of cloud native benefits
- **Drivers:** application scale and agility, easier adoption of new cloud capabilities, mix of technology stacks

## Innovate: rebuild
- A new code base is created to align with a **cloud-native** approach. **App Data and AI Services**
- **Drivers:** accelerate innovation, build apps faster, reduce operational cost

## DevOps
- Culture
- Development
- Testing
- Release
- Monitoring
- Management

# Govern

Define strategy

Plan

Ready

Adopt

Govern

Manage

Policy definition ensures consistency across adoption efforts. Alignment to governance/compliance requirements is key to maintain a well-managed cross-cloud environment.

## Business risk
- **Document** evolving business risk
- Document risk tolerance based on **data classification**, and **application criticality**

## Policy & compliance
- Convert risk decisions into **policy statements**
- Establish cloud adoption boundaries

## Processes
- Establish processes to **monitor violations**
- Adhere to corporate policies
- **Cloud Center of Excellence**

## Cost management
- Evaluate and monitor cost
- Limit IT spend
- Scale based on business demand
- Create cost accountability

## Security baseline
- Compliance with IT Security requirements
- Apply security baseline to all adoption efforts

## Resource consistency
- Consistency in resource configuration
- Enforce on boarding, recovery and discoverability practices

## Identity baseline
- Enforce identity and access baseline
- Apply role definitions and assignments

## Deployment acceleration
- Centralize templates
- Drive consistency and standardization

# Manage and operations

Manage and operations enumerates, implements, and iteratively reviews related to the expected operational behavior of the service.

## Management

- Identify critical operations for business operations
- Map operations to services
- Analyze services dependencies
- Create high level view service dashboards

## Monitoring

- Enable data collection
- Identify operations baseline
- Generate alerts
- Measure Service Metrics and generate SLAs

## Resiliency

- **Enable a resilient** platform
- Recover from failures with minimal downtime and minimum data loss before
- **Evolve to a highly available platform**

Accelerate:  Solution Assessments

**Microsoft**

# Thank you