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EXPERIENCE TEAM

OPERATIONAL ROLES & TASKS FOR AZURE

CLOSE-OUT

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CSA-E
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Agenda

- Recap Engagement Goals
- Engagement Deliverables
- Service Map
- Cloud Roles
- Assigned Tasks
- Recommendations

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Engagement Details

Scope: knowledge transfer and information gathering for the following topics

- Explore current Azure Operational Framework
- Discover and document roles and responsibilities
- Map roles to Operational Tasks and estimate durations
- Develop Service Dependency Map

Deliverable:

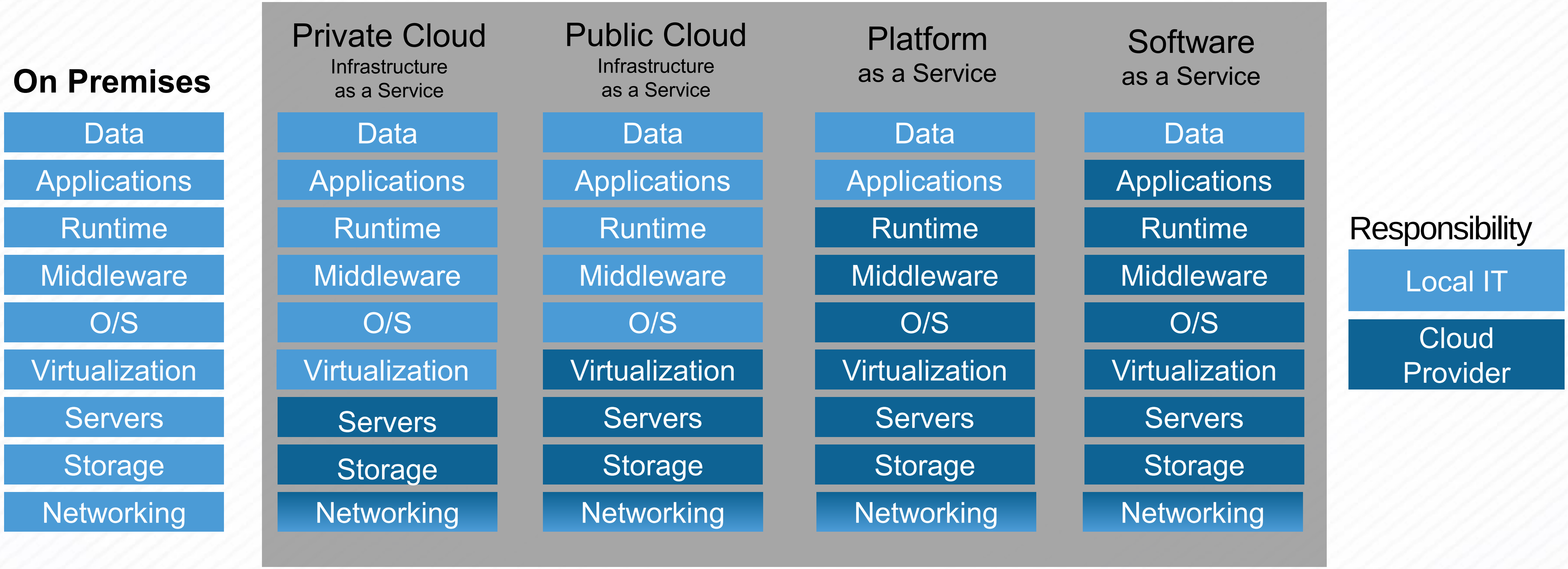
- Service Map (Excel workbook & Visio diagram)
- Assigned Roles & Tasks Matrix (Excel workbook)
- ORT Tracking Dashboard (Power BI Desktop)
- Closeout (PowerPoint presentation)

Out of Scope:

- Formal skills assessment
- Formal classroom training
- Third-party tools evaluation and integration
- Implementation of non-process improvement recommendations
- Technical or architectural design review or remediation
- Best practices for non-service management processes

Cloud Operational Service is a Paradigm Shift for IT

Shared Responsibility Model



On Premises	Private Cloud Infrastructure as a Service	Public Cloud Infrastructure as a Service	Platform as a Service	Software as a Service
Data	Data	Data	Data	Data
Applications	Applications	Applications	Applications	Applications
Runtime	Runtime	Runtime	Runtime	Runtime
Middleware	Middleware	Middleware	Middleware	Middleware
O/S	O/S	O/S	O/S	O/S
Virtualization	Virtualization	Virtualization	Virtualization	Virtualization
Servers	Servers	Servers	Servers	Servers
Storage	Storage	Storage	Storage	Storage
Networking	Networking	Networking	Networking	Networking

Responsibility

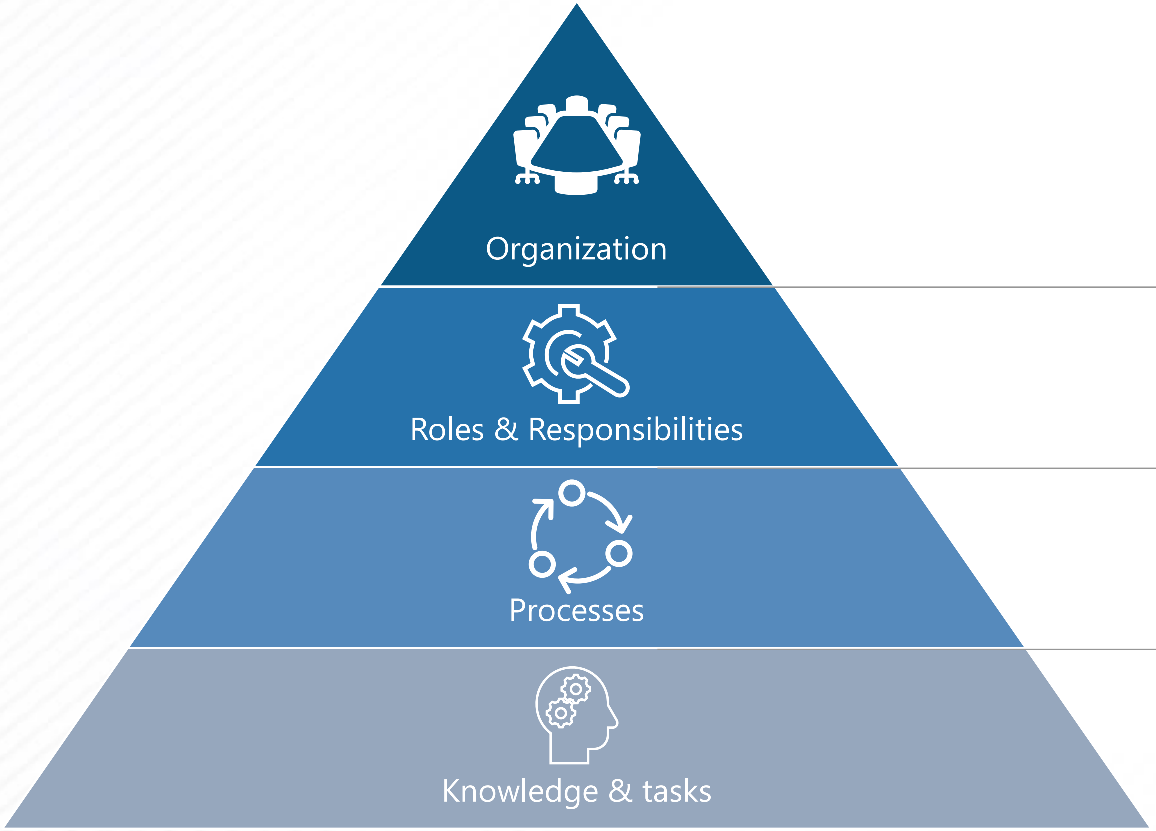
Local IT

Cloud Provider

Existing staffing, structure &
Operational processes

New roles and Cloud
ready processes

Focus Areas for Operations Improvement



Organization

- Clear goals
- Management system aligned with goals (governance)
- Roles organized for efficient execution

Roles & Responsibilities

- Service Map
- Roles Assessment

Processes

- ITIL processes implemented
- Processes facilitate efficient execution of tasks by roles
- Performance measured through KPIs

Knowledge & tasks

- Tasks Definitions
- Tasks Assignment

Cloud Service Operational Governance

- Individuals and teams across the IT service lifecycle **must achieve** a few **key quality goals** to **be successful**.
- The IT service lifecycle describes the life of an IT service:
  - **from planning** and **optimizing** the IT service
  - **to align** with the **business strategy**,
  - **through** the **design** and **delivery** of the IT service, to its ongoing operation and support.
- IT must organize itself to **ensure** that the **right accountabilities** are addressed moving teams from a reactive to proactive approach expanding **new attitudes** introduced by cloud services.

Cloud Operations Task Areas

Inventory & Visibility

- 🟦 Monitoring/Log Centralization
- 🟩 Service Change Tracking
- 🟦 Resource Inventory/ Change Tracking
- 🟦 Monitoring:
  - Azure Service/ Subscription/ Resource Health
  - Cybersecurity
  - Network (Peering/DNS)
  - Cost

Operational Compliance

- 🟦 Patch Management
- 🟦 Policy Enforcement
- 🟦 Environment/ Resource Configuration
- 🟦 Operations/ Performance Automation

Protect & Recover

- 🟦 Data Protection
- 🟦 Environment Protection
- 🟦 Breach Notification
- 🟦 Service Recovery Automation
- 🟦 Safe Deployment Practices

Platform Operations

- 🟩 System Design (CAF)
- 🟩 Service Catalog
- 🟦 Automate Remediation
- 🟦 Resource Performance
- 🟦 Shift-Right Testing

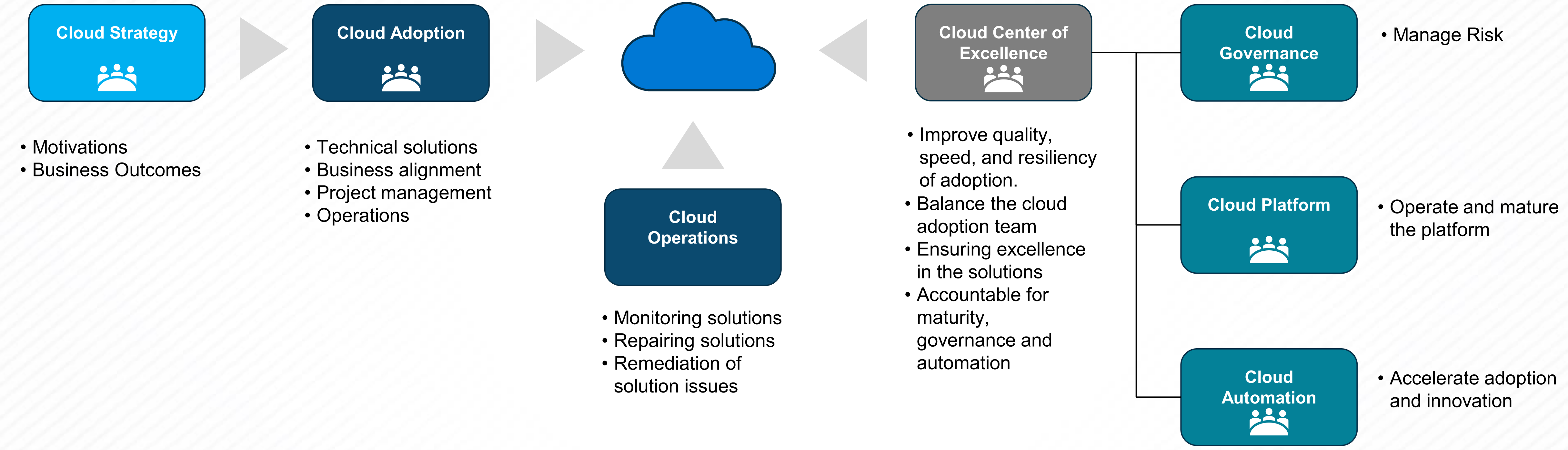
Mission Operations

- 🟦 Follows a similar set of operational tasks listed on the left under mission landing zone ownership bound by landing zone requirements

🟦 Technical/ Operational activity

🟩 Service Management/ Governance activity

Culture and Organization – Example Maturity Journey



Cloud Strategy

- Motivations
- Business Outcomes

Cloud Adoption

- Technical solutions
- Business alignment
- Project management
- Operations

Cloud Operations

- Monitoring solutions
- Repairing solutions
- Remediation of solution issues

Cloud Center of Excellence

- Improve quality, speed, and resiliency of adoption.
- Balance the cloud adoption team
- Ensuring excellence in the solutions
- Accountable for maturity, governance and automation

Cloud Governance

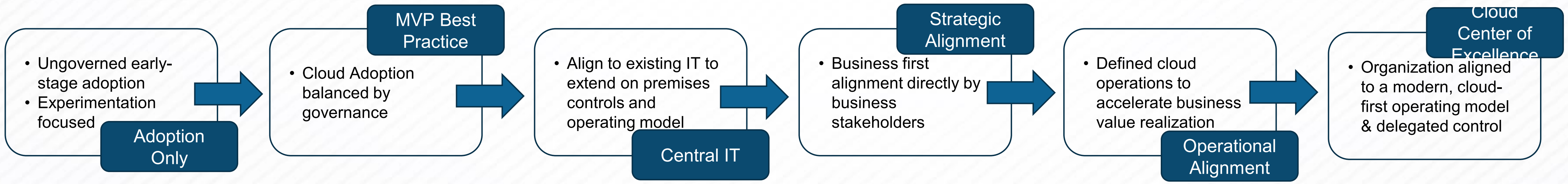
- Manage Risk

Cloud Platform

- Operate and mature the platform

Cloud Automation

- Accelerate adoption and innovation



Adoption Only

- Ungoverned early-stage adoption
- Experimentation focused

MVP Best Practice

- Cloud Adoption balanced by governance

Central IT

- Align to existing IT to extend on premises controls and operating model

Strategic Alignment

- Business first alignment directly by business stakeholders

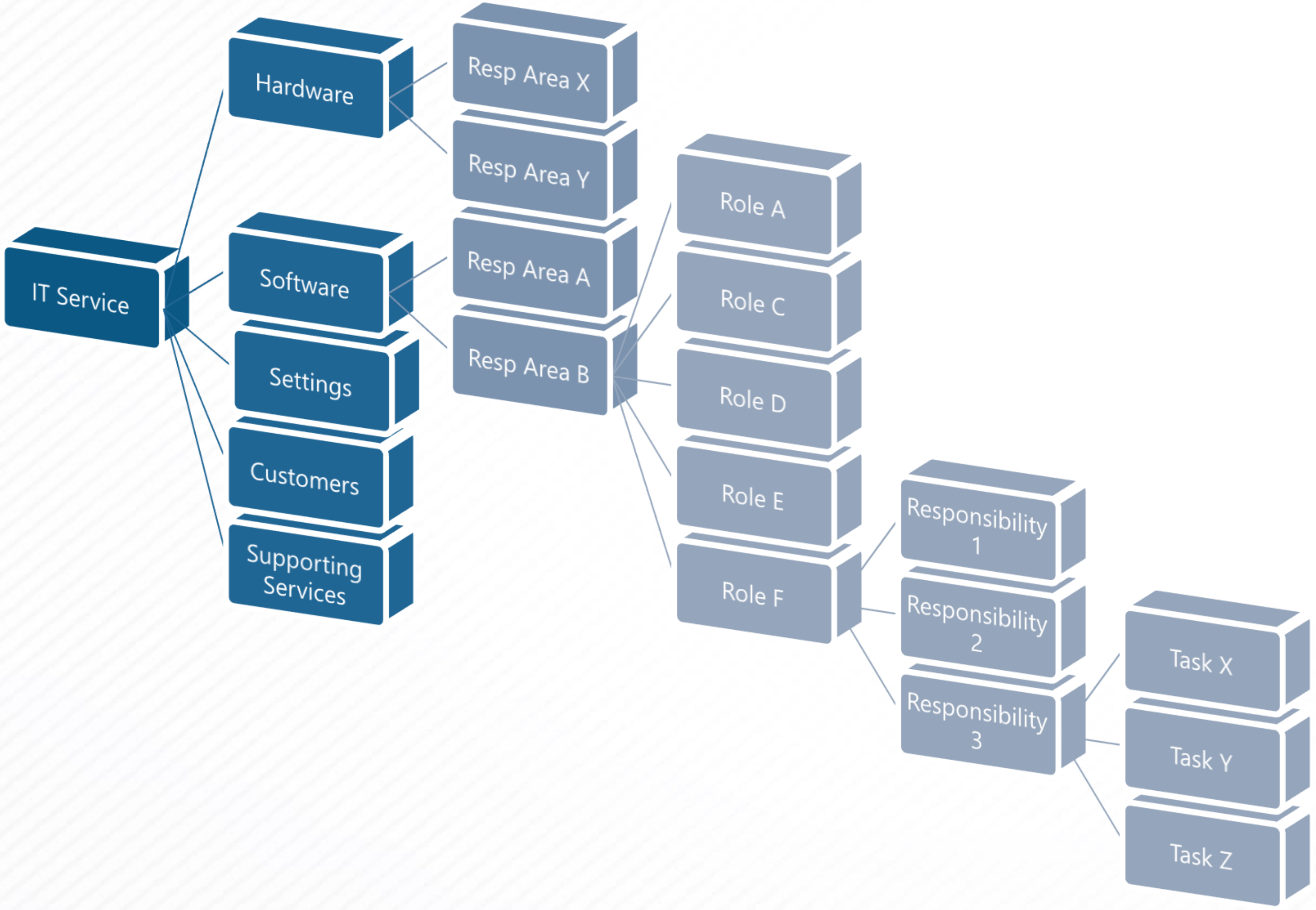
Operational Alignment

- Defined cloud operations to accelerate business value realization

Cloud Center of Excellence

- Organization aligned to a modern, cloud-first operating model & delegated control

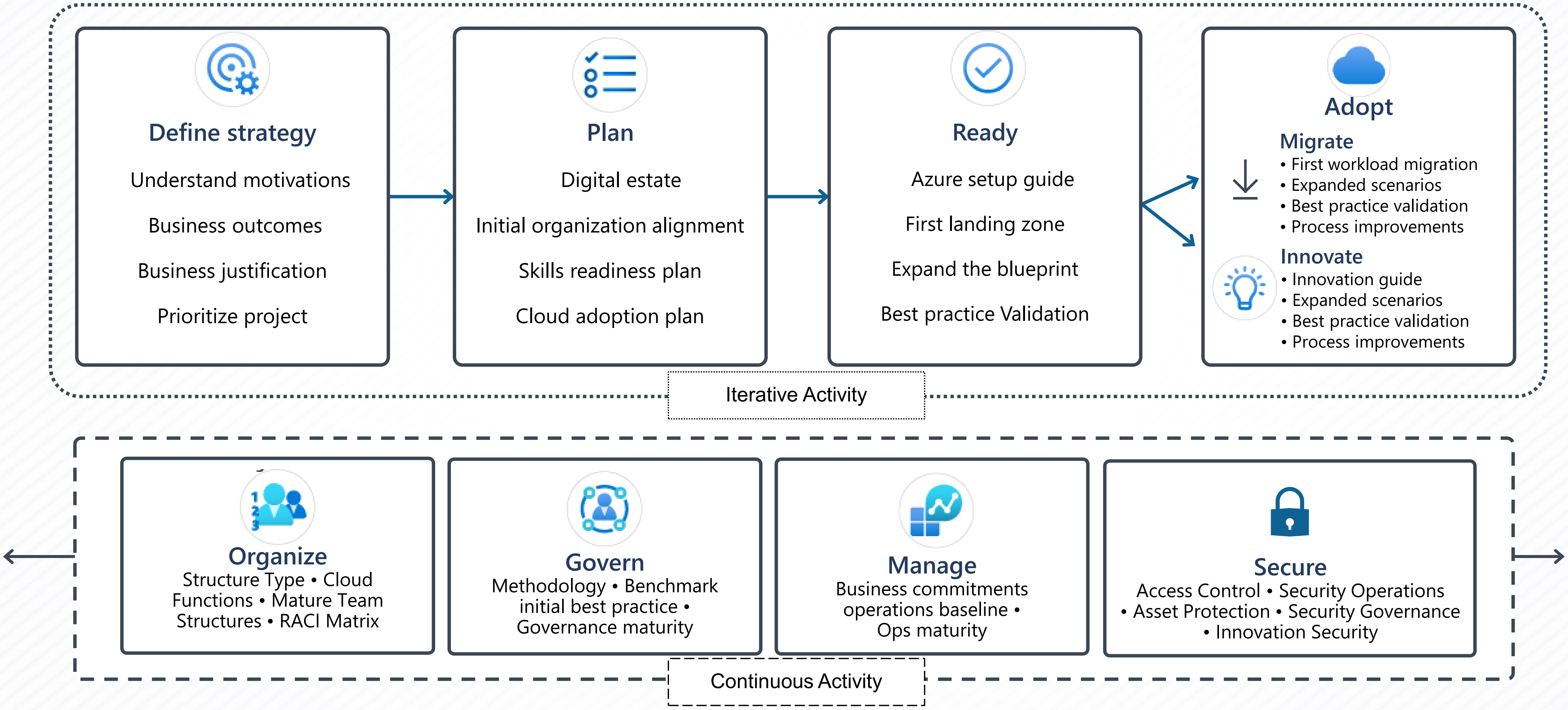
From Service Map to Operational Knowledge



Cloud tasks can be categorized as:

- Strategic
  - Vision
  - Plan
- Tactical
  - Design
- Deployment
  - Migrate/Innovate
  - Configure
  - Validate
- Operation
  - Monitor
  - Maintain & Update
  - Respond (Incidents/Problems)

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 setup 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

Iterative Activity

Organize
Structure Type • Cloud Functions • Mature Team Structures • RACI Matrix

Govern
Methodology • Benchmark initial best practice • Governance maturity

Manage
Business commitments operations baseline • Ops maturity

Secure
Access Control • Security Operations • Asset Protection • Security Governance • Innovation Security

Continuous Activity

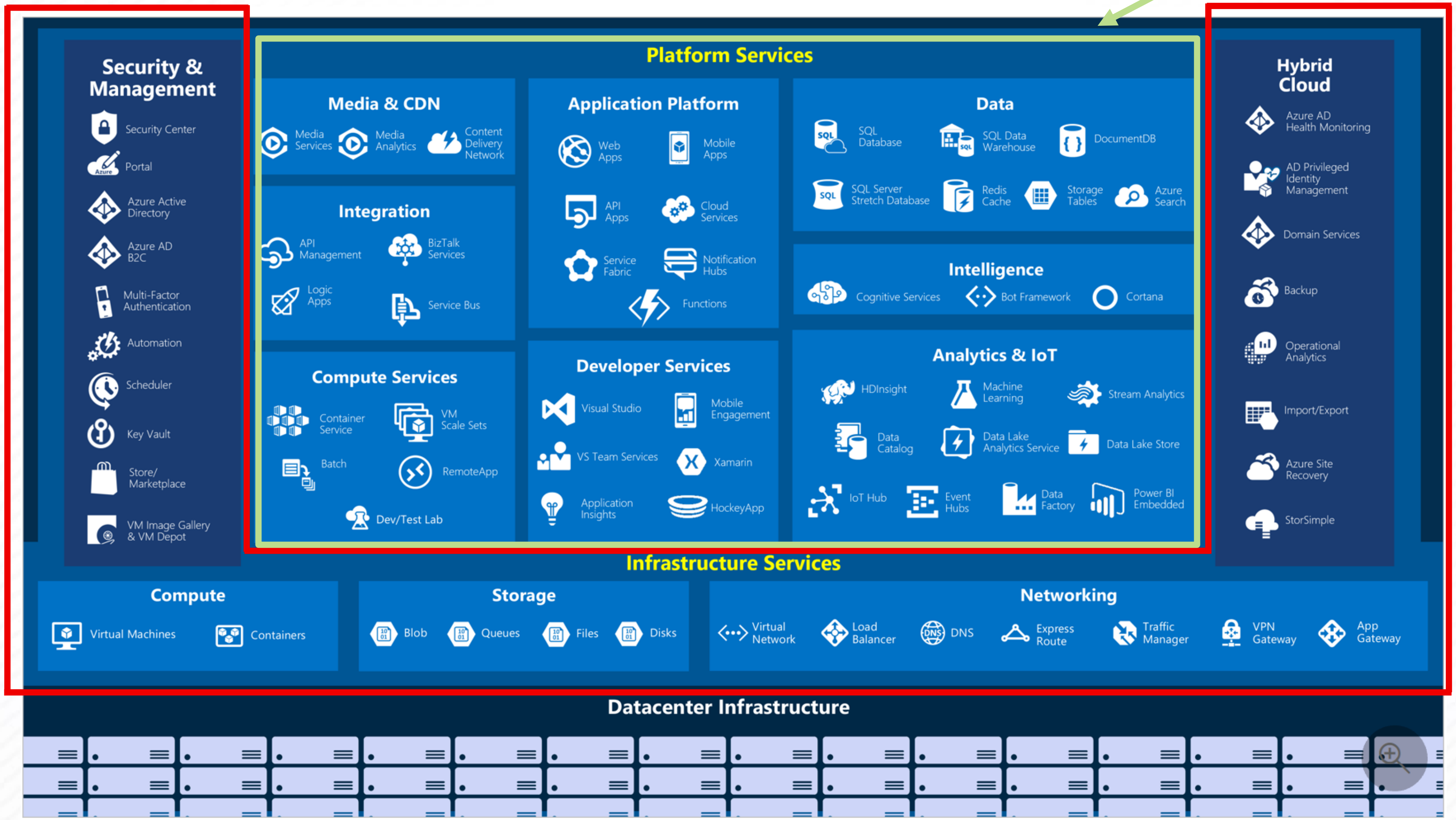
https://docs.microsoft.com/en-us/azure/cloud-adoption-framework/

Know Where You Operate in the Cloud

Most infrastructure/ managed service groups will operate in these Azure Services.

Know your services need and where your group operates in the infrastructure/platform.
[Tour of Azure services - Learn | Microsoft Docs]

While your customers/ application owners will operate in these Services.



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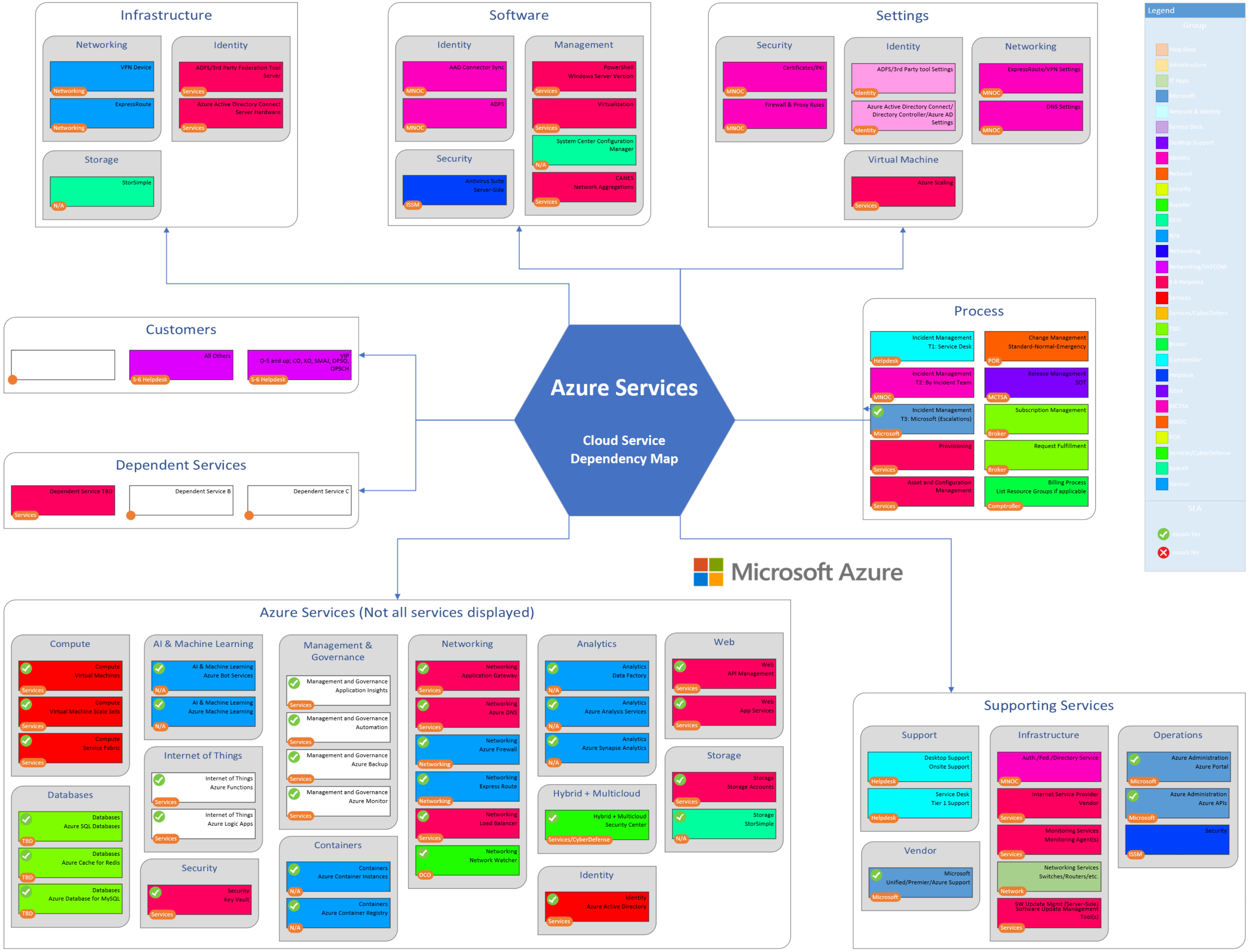
Findings & Recommendations – Main Points SAMPLE

- Continue discussions with appropriate DoN/USMC groups to determine if Cloud Broker or fully managed Azure environment will be utilized.
- Follow Microsoft CAF Organize Cloud Functions recommendations:
- Establish Cloud Governance Body and follow CAF Govern recommendations to establish foundational risks/cloud policies.
- Review, update, formalize Service Map and Roles & Tasks Matrix (or PowerBI Dashboard) as part of a cloud governance baseline.
- Work with the organization to achieve shared understanding of roles, responsibilities, & tasks as demonstrated during the engagement:
    - Utilize task analysis sheet for Role Assignment, Comms, Automation, Process, Skills Gap
    - Review and update applicable processes
    - Review task and activities with operational groups [conduct workshops]
    - Ensure managed providers have a clear view of their responsibilities – establish/update SLAs
    - Continue work on RBAC planning as p/o Governance
    - Update all access policies related to Cloud – post in user-accessible areas
    - Communicate all user-impacted policies/changes/updates

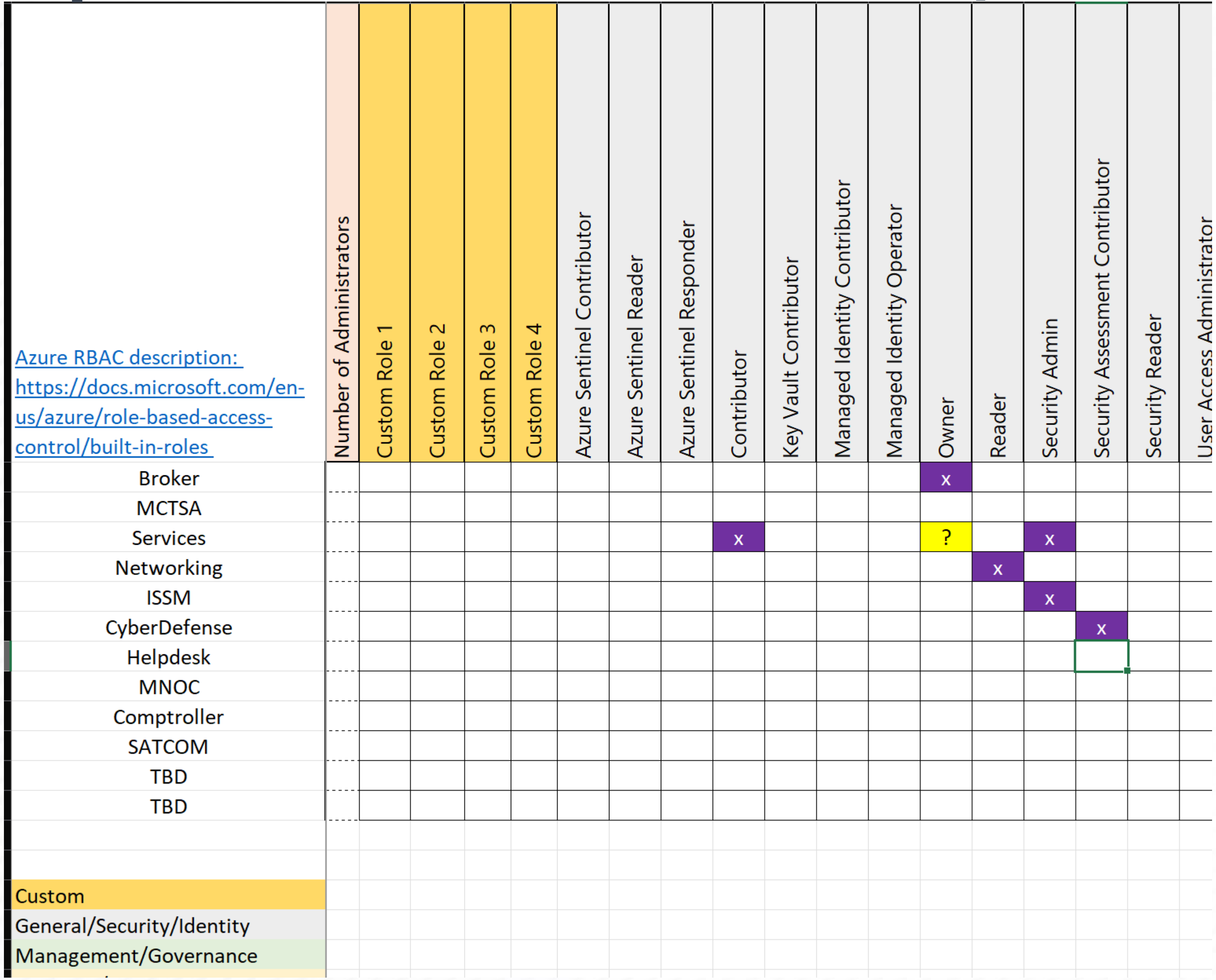
Azure IaaS Service Map


Infrastructure
Networking
VPN Device
Networking
ExpressRoute
Networking
Identity
ADFS/3rd Party Federation Tool Server
Services
Azure Active Directory Connect Server Hardware
Services
Storage
StorSimple
N/A
Software
Identity
AAD Connector Sync
MNOC
ADFS
MNOC
Security
Antivirus Suite Server-Side
ISSM
Management
PowerShell Windows Server Version
Services
Virtualization
Services
System Center Configuration Manager
N/A
CANES Network Aggregations
Services
Settings
Security
Certificates/PKI
MNOC
Firewall & Proxy Rules
MNOC
Identity
ADFS/3rd Party tool Settings
Identity
Azure Active Directory Connect/ Directory Controller/Azure AD Settings
Identity
Networking
ExpressRoute/VPN Settings
MNOC
DNS Settings
MNOC
Virtual Machine
Azure Scaling
Services
Legend
Group
Help Desk
Infrastructure
IT Apps
Microsoft
Network & Identity
Service Desk
Desktop Support
Identity
Network
Security
Supplier
DCO
N/A
Networking
Networking/SATCOM
S-6 Helpdesk
Services
Services/CyberDefens
TBD
Broker
Comptroller
Helpdesk
ISSM
MCTSA
MNOC
POR
Services/CyberDefense
SpaceX
Various
SLA
✓ equals Yes
☒ equals No
Customers
All Others
S-6 Helpdesk
VIP O-5 and up; CO, XO, SMAJ, OPSO, OPSCH
S-6 Helpdesk
Dependent Services
Dependent Service TBD
Services
Dependent Service B
Dependent Service C
Azure Services
Cloud Service Dependency Map
Process
Incident Management T1: Service Desk
Helpdesk
Incident Management T2: By Incident Team
MNOC
Incident Management T3: Microsoft (Escalations)
Microsoft
Provisioning
Services
Asset and Configuration Management
Services
Change Management Standard-Normal-Emergency
POR
Release Management SOT
MCTSA
Subscription Management
Broker
Request Fulfillment
Broker
Billing Process List Resource Groups if applicable
Comptroller
Microsoft Azure
Azure Services (Not all services displayed)
Compute
Compute Virtual Machines
Services
Compute Virtual Machine Scale Sets
Services
Compute Service Fabric
Services
Databases
Databases Azure SQL Databases
TBD
Databases Azure Cache for Redis
TBD
Databases Azure Database for MySQL
TBD
AI & Machine Learning
AI & Machine Learning Azure Bot Services
N/A
AI & Machine Learning Azure Machine Learning
N/A
Internet of Things
Internet of Things Azure Functions
Services
Internet of Things Azure Logic Apps
Services
Security
Security Key Vault
Services
Management & Governance
Management and Governance Application Insights
Services
Management and Governance Automation
Services
Management and Governance Azure Backup
Services
Management and Governance Azure Monitor
Services
Containers
Containers Azure Container Instances
N/A
Containers Azure Container Registry
N/A
Networking
Networking Application Gateway
Services
Networking Azure DNS
Services
Networking Azure Firewall
Networking
Networking Express Route
Networking
Networking Load Balancer
Services
Networking Network Watcher
DCO
Analytics
Analytics Data Factory
N/A
Analytics Azure Analysis Services
N/A
Analytics Azure Synapse Analytics
N/A
Hybrid + Multicloud
Hybrid + Multicloud Security Center
Services/CyberDefense
Identity
Identity Azure Active Directory
Services
Web
Web API Management
Services
Web App Services
Services
Storage
Storage Storage Accounts
Services
Storage StorSimple
N/A
Supporting Services
Support
Desktop Support Onsite Support
Helpdesk
Service Desk Tier 1 Support
Helpdesk
Vendor
Microsoft Unified/Premier/Azure Support
Microsoft
Infrastructure
Auth./Fed./Directory Service
MNOC
Internet Service Provider Vendor
Services
Monitoring Services Monitoring Agent(s)
Services
Networking Services Switches/Routers/etc.
Network
SW Update Mgmt (Server-Side) Software Update Management Tool(s)
Services
Operations
Azure Administration Azure Portal
Microsoft
Azure Administration Azure APIs
Microsoft
Security
ISSM

Recommendations

- Know services ownership and all stream interconnections
- Maintain and update as scheduled or as required
- Keep source copy, but share visual output with all stakeholders

Operational Roles – RBACs (Role Based Access Controls)



Azure RBAC description: https://docs.microsoft.com/en-us/azure/role-based-access-control/built-in-roles	Number of Administrators	Custom Role 1	Custom Role 2	Custom Role 3	Custom Role 4	Azure Sentinel Contributor	Azure Sentinel Reader	Azure Sentinel Responder	Contributor	Key Vault Contributor	Managed Identity Contributor	Managed Identity Operator	Owner	Reader	Security Admin	Security Assessment Contributor	Security Reader	User Access Administrator
Broker													x					
MCTSA																		
Services									x				?		x			
Networking														x				
ISSM															x			
CyberDefense																x		
Helpdesk																		
MNOC																		
Comptroller																		
SATCOM																		
TBD																		
TBD																		

Custom

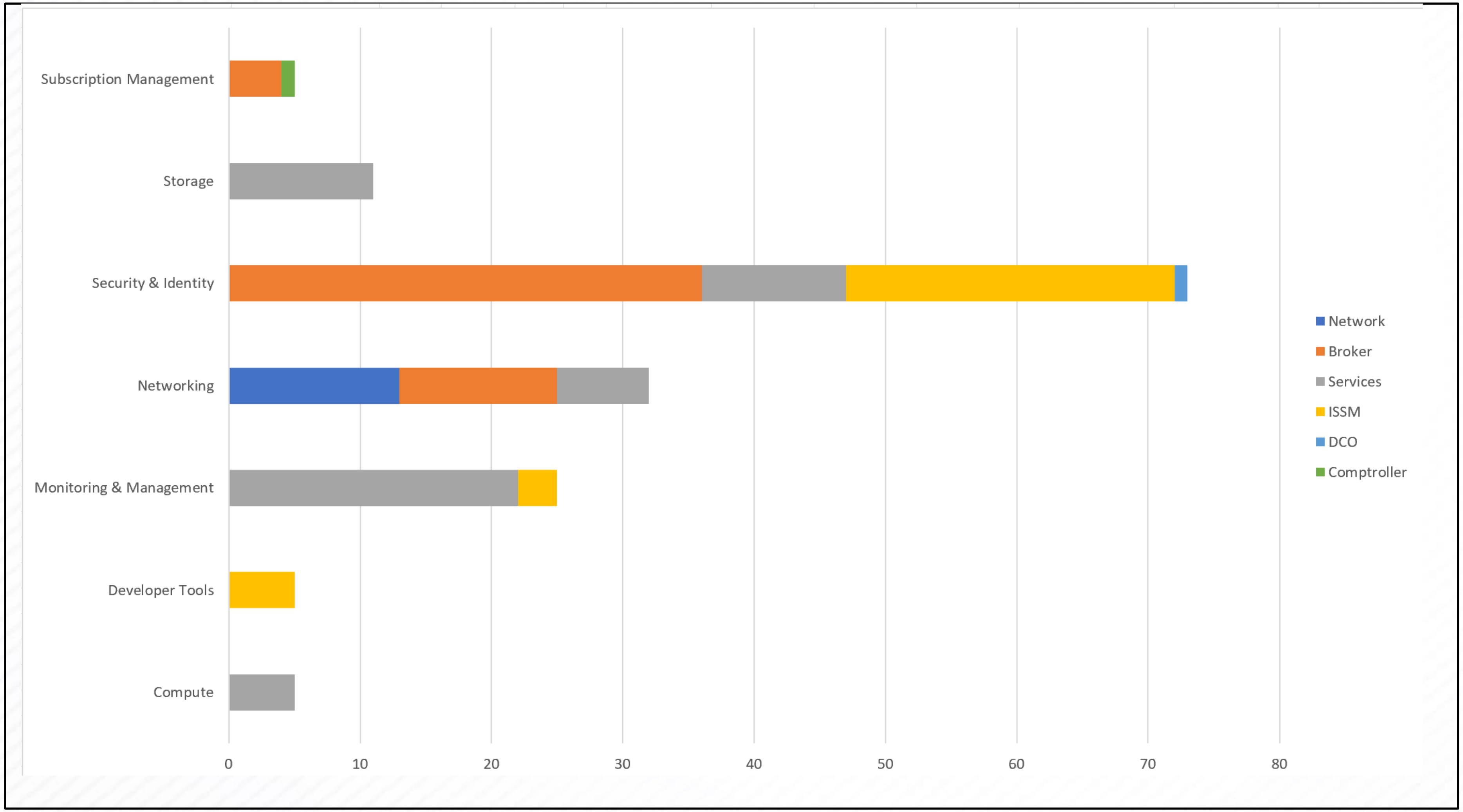
General/Security/Identity

Management/Governance

Recommendations:

- Define access policy and audit policy for admins/portal users
- Routine reviews of role assignments
- Discuss with all groups/users accessing portals to ensure awareness/ understanding of role/duties

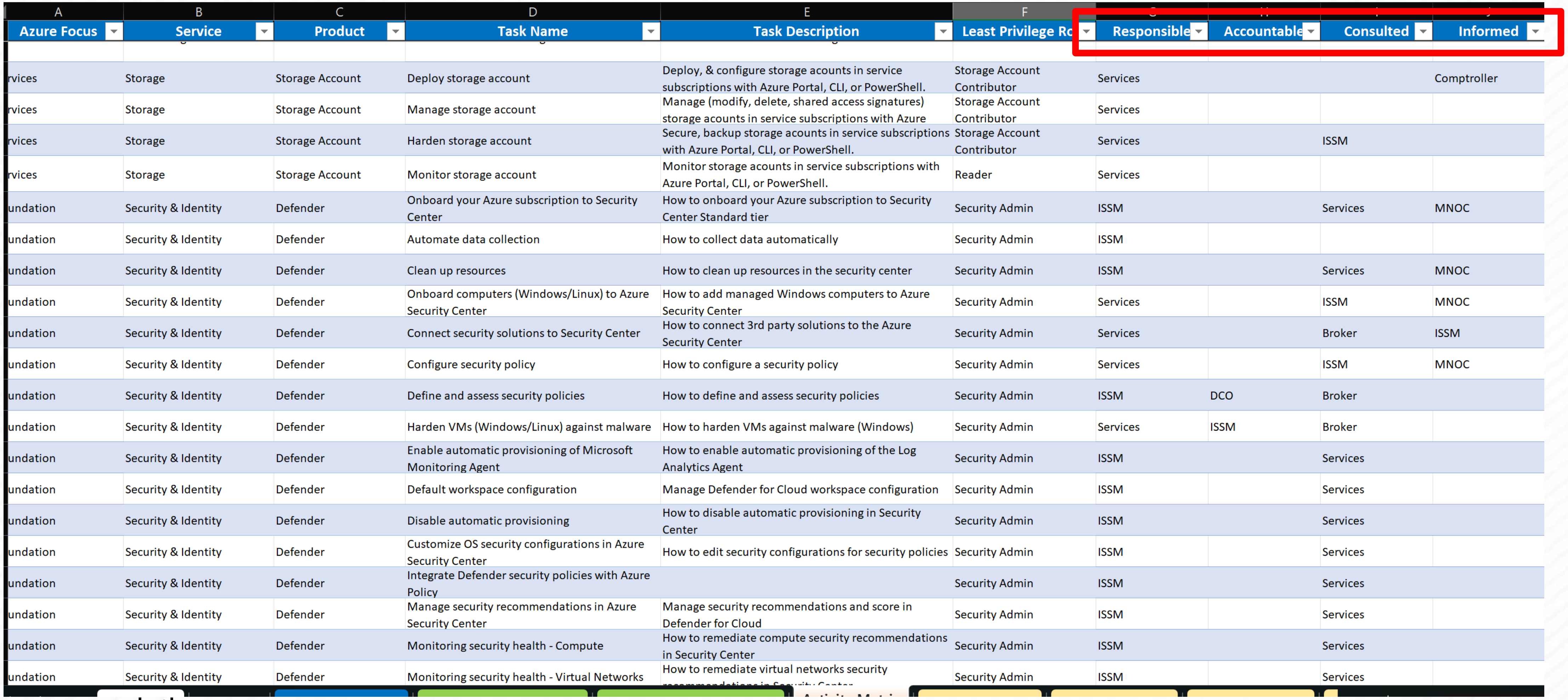
Azure Role Assignment



Recommendations:

- Routinely verify the tasks/roles required/groups assigned.
- Use charts for discussion with leadership/displayi ng in policy/process documents

Roles and Responsibilities Workshop & Data



Azure Focus	Service	Product	Task Name	Task Description	Least Privilege Rc	Responsible	Accountable	Consulted	Informed
rvices	Storage	Storage Account	Deploy storage account	Deploy, & configure storage acounts in service subscriptions with Azure Portal, CLI, or PowerShell.	Storage Account Contributor	Services			Comptroller
rvices	Storage	Storage Account	Manage storage account	Manage (modify, delete, shared access signatures) storage acounts in service subscriptions with Azure	Storage Account Contributor	Services			
rvices	Storage	Storage Account	Harden storage account	Secure, backup storage acounts in service subscriptions with Azure Portal, CLI, or PowerShell.	Storage Account Contributor	Services		ISSM	
rvices	Storage	Storage Account	Monitor storage account	Monitor storage acounts in service subscriptions with Azure Portal, CLI, or PowerShell.	Reader	Services			
undation	Security & Identity	Defender	Onboard your Azure subscription to Security Center	How to onboard your Azure subscription to Security Center Standard tier	Security Admin	ISSM		Services	MNOC
undation	Security & Identity	Defender	Automate data collection	How to collect data automatically	Security Admin	ISSM			
undation	Security & Identity	Defender	Clean up resources	How to clean up resources in the security center	Security Admin	ISSM		Services	MNOC
undation	Security & Identity	Defender	Onboard computers (Windows/Linux) to Azure Security Center	How to add managed Windows computers to Azure Security Center	Security Admin	Services		ISSM	MNOC
undation	Security & Identity	Defender	Connect security solutions to Security Center	How to connect 3rd party solutions to the Azure Security Center	Security Admin	Services		Broker	ISSM
undation	Security & Identity	Defender	Configure security policy	How to configure a security policy	Security Admin	Services		ISSM	MNOC
undation	Security & Identity	Defender	Define and assess security policies	How to define and assess security policies	Security Admin	ISSM	DCO	Broker	
undation	Security & Identity	Defender	Harden VMs (Windows/Linux) against malware	How to harden VMs against malware (Windows)	Security Admin	Services	ISSM	Broker	
undation	Security & Identity	Defender	Enable automatic provisioning of Microsoft Monitoring Agent	How to enable automatic provisioning of the Log Analytics Agent	Security Admin	ISSM		Services	
undation	Security & Identity	Defender	Default workspace configuration	Manage Defender for Cloud workspace configuration	Security Admin	ISSM		Services	
undation	Security & Identity	Defender	Disable automatic provisioning	How to disable automatic provisioning in Security Center	Security Admin	ISSM		Services	
undation	Security & Identity	Defender	Customize OS security configurations in Azure Security Center	How to edit security configurations for security policies	Security Admin	ISSM		Services	
undation	Security & Identity	Defender	Integrate Defender security policies with Azure Policy		Security Admin	ISSM		Services	
undation	Security & Identity	Defender	Manage security recommendations in Azure Security Center	Manage security recommendations and score in Defender for Cloud	Security Admin	ISSM		Services	
undation	Security & Identity	Defender	Monitoring security health - Compute	How to remediate compute security recommendations in Security Center	Security Admin	ISSM		Services	
undation	Security & Identity	Defender	Monitoring security health - Virtual Networks	How to remediate virtual networks security recommendations in Security Center	Security Admin	ISSM		Services	

Recommendations:

- Routinely verify the tasks/roles required/groups assigned
- Update for relevance (validate TBD and/or Unnecessary items)
- Update duration/recurrence (columns hidden)
- Verify Automation capabilities/needs

Additional Azure Engagement Opportunities

Discuss these other CCx engagement options with your CSAM, other cloud areas include: M365, Power Platform, & D365.

Cost Management

- Microsoft Federal CCx Cost Management Planning for Azure

Govern

- Microsoft Federal CCx Governance for Azure

Foundations

- Microsoft Federal CCx Cloud Success Plan (CSP for Azure

People

Process

Technology

Designated Service Engagements (DSE) are specific engagements with an agreed scope, schedule, and outcome.

A Customer Engineer (CE) for the specific area will work with the customer teams as a guide to identify solutions for the present challenges – the CE can aid in defining processes, technical solutions and present informational engagements.

Building a Cloud Program

Foundational components and activities.

The cloud is like any other large, organizational initiative requiring detailed management/oversight. A program is defined as “related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually.” The Standard for Program Management 4th Ed. PMI.

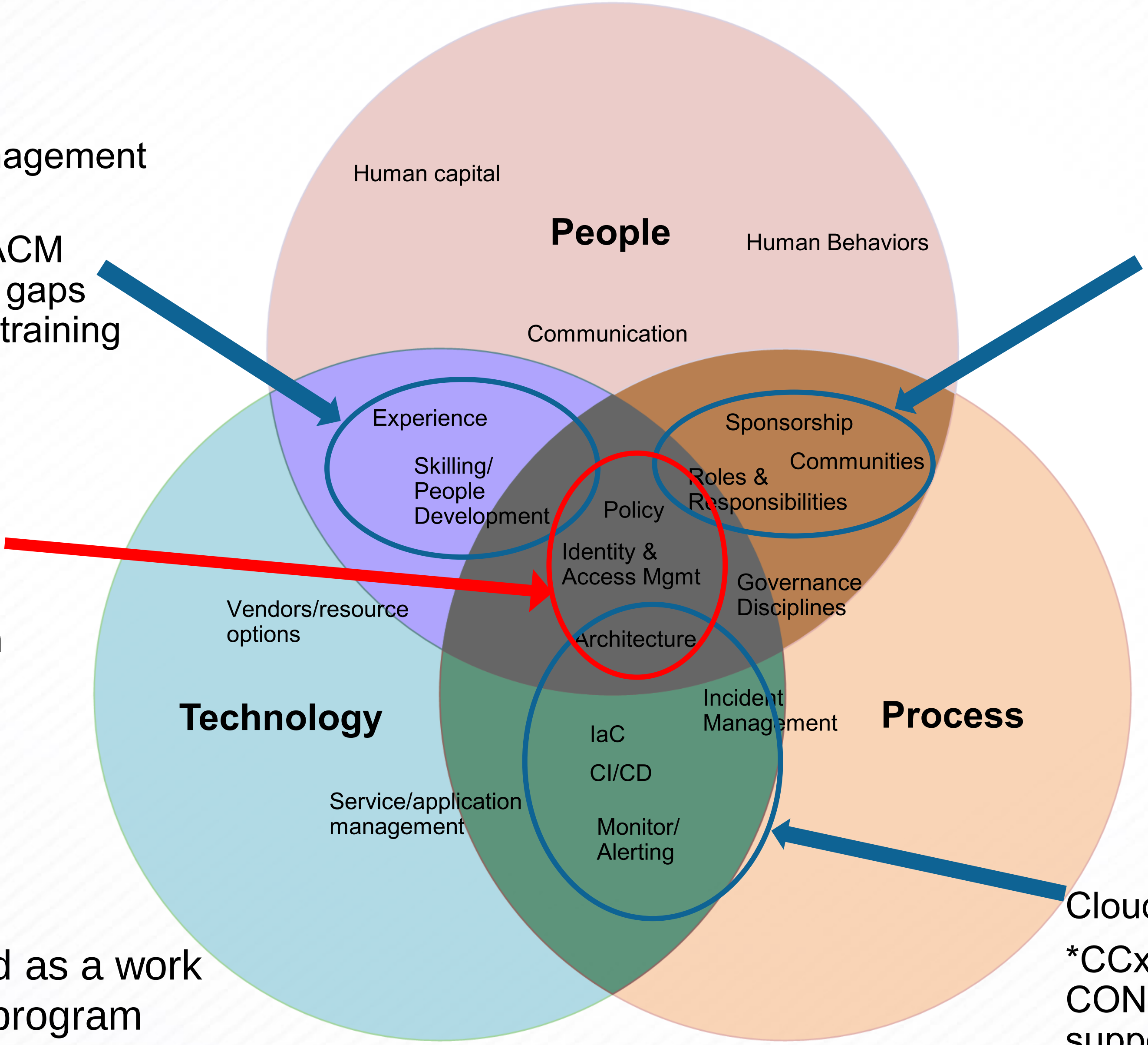
CCx (MSM/ACM) Approach to Cloud

Training Management Focus

*CCx MSM/ACM identify skills gaps and develop training plan

Security Focus

*Cloud governance responsibility, with dedicated Cybersecurity team support



Adoption Change Management (ACM) Focus

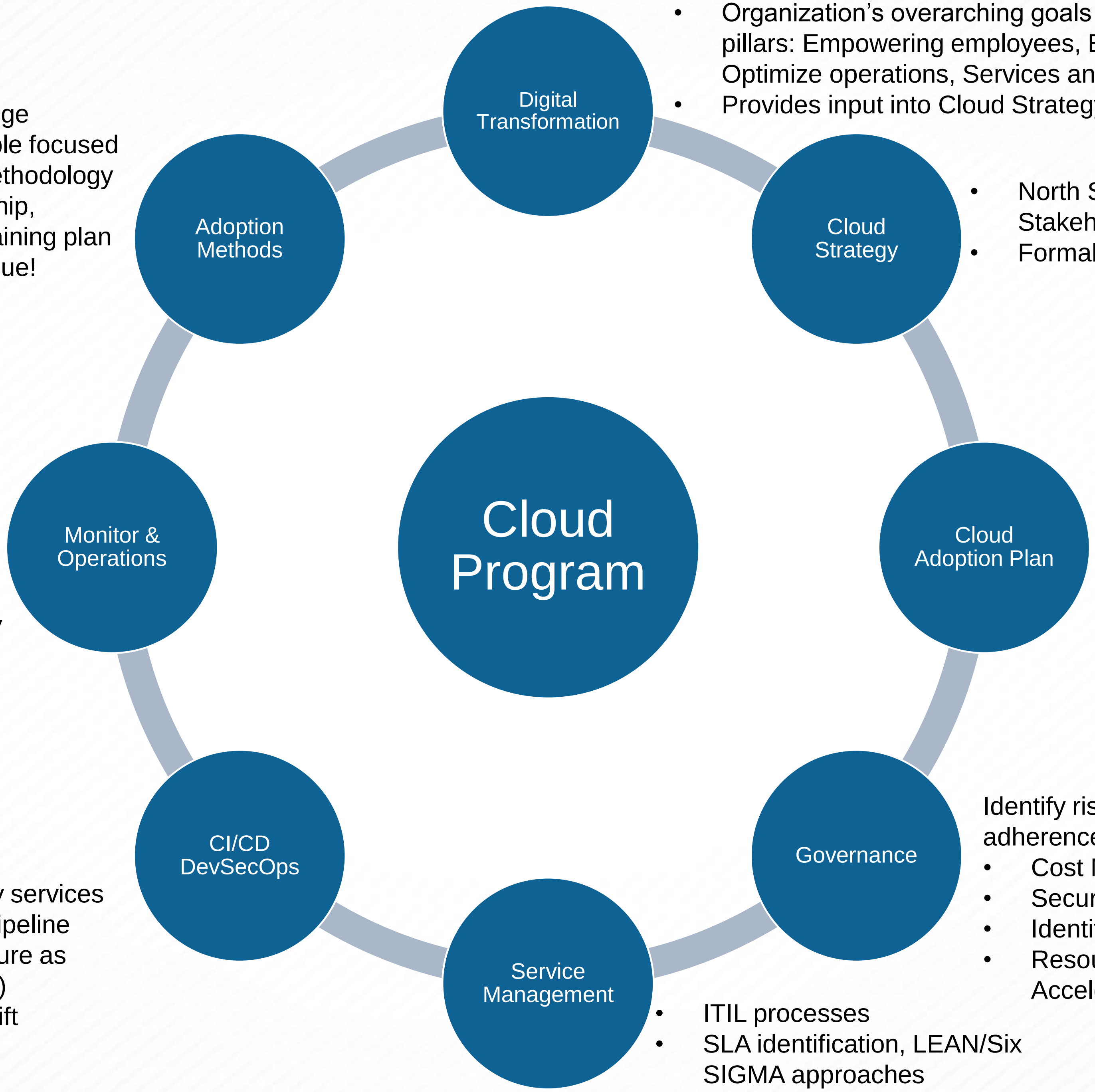
*Requires dedicated personnel to deliver

Cloud Operating Model Focus

*CCx MSM Team develops CONOPS with DevOps team support

Each item can be viewed as a work stream within the cloud program

Cloud Program Outcomes



- Organization’s overarching goals for DT success based on the pillars: Empowering employees, Engaging customers, Optimize operations, Services and products.
- Provides input into Cloud Strategy

- North Star/Vision for Cloud Stakeholders
- Formalized & shared

Lists/includes:

- Key stakeholders
- Prioritized workloads for migration/development
- Milestones
- Skills gaps

Identify risks, define policies, & develop adherence processes for each discipline:

- Cost Management
- Security Baseline
- Identity Baseline
- Resource Consistency & Deployment Acceleration

- ITIL processes
- SLA identification, LEAN/Six SIGMA approaches
- Focus on delivering value

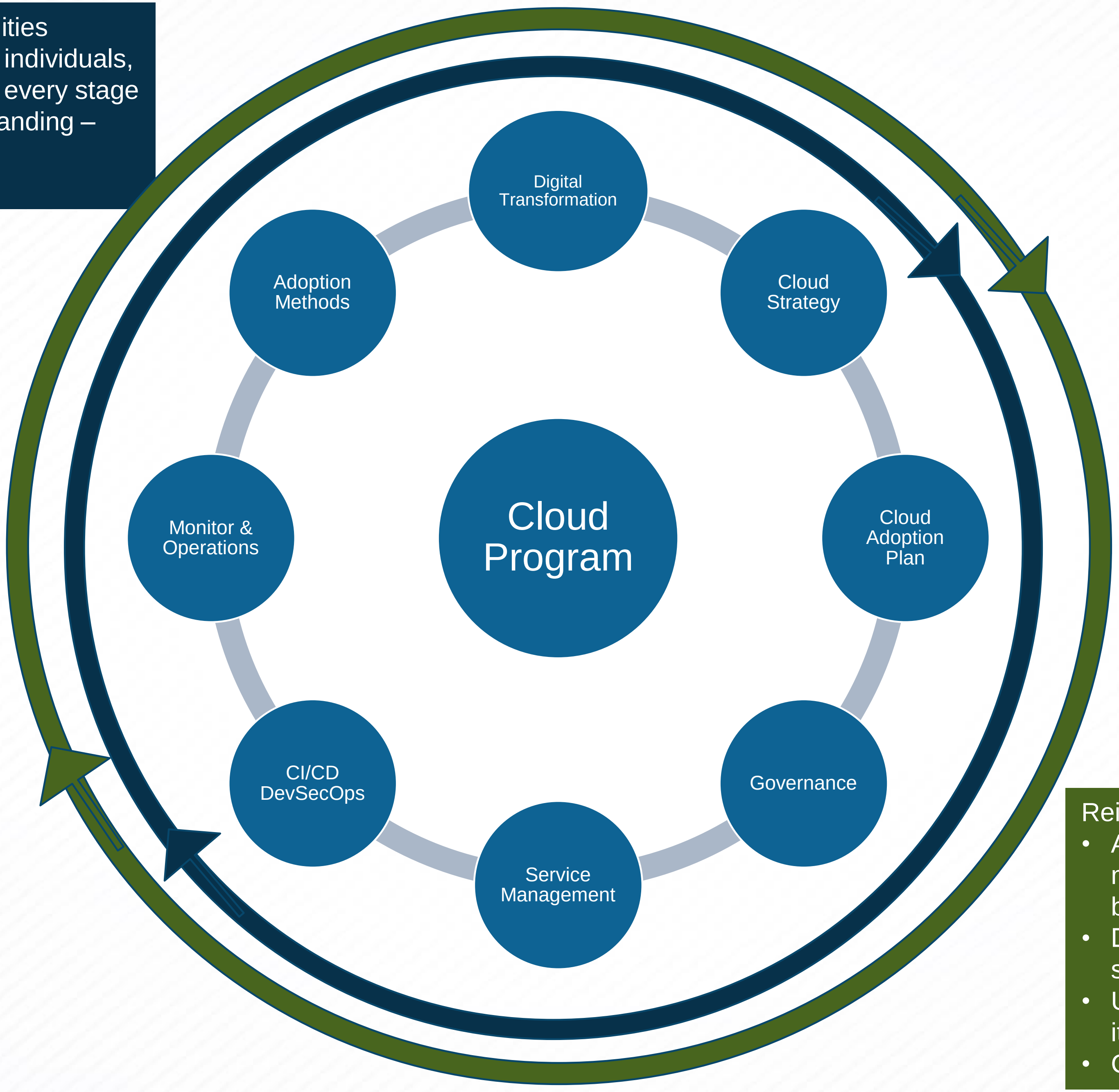
- Repository services
- Release pipeline
- Infrastructure as Code (IaC)
- Culture shift

- Defined monitor & alert strategy
- Operations team & tools
- Incident management response (Routine/Critical/Major/Cyber)

- Organizational Change Management – people focused
- PROSCI ADKAR methodology
- Executive Sponsorship, Communications/Training plan
- Beware change fatigue!

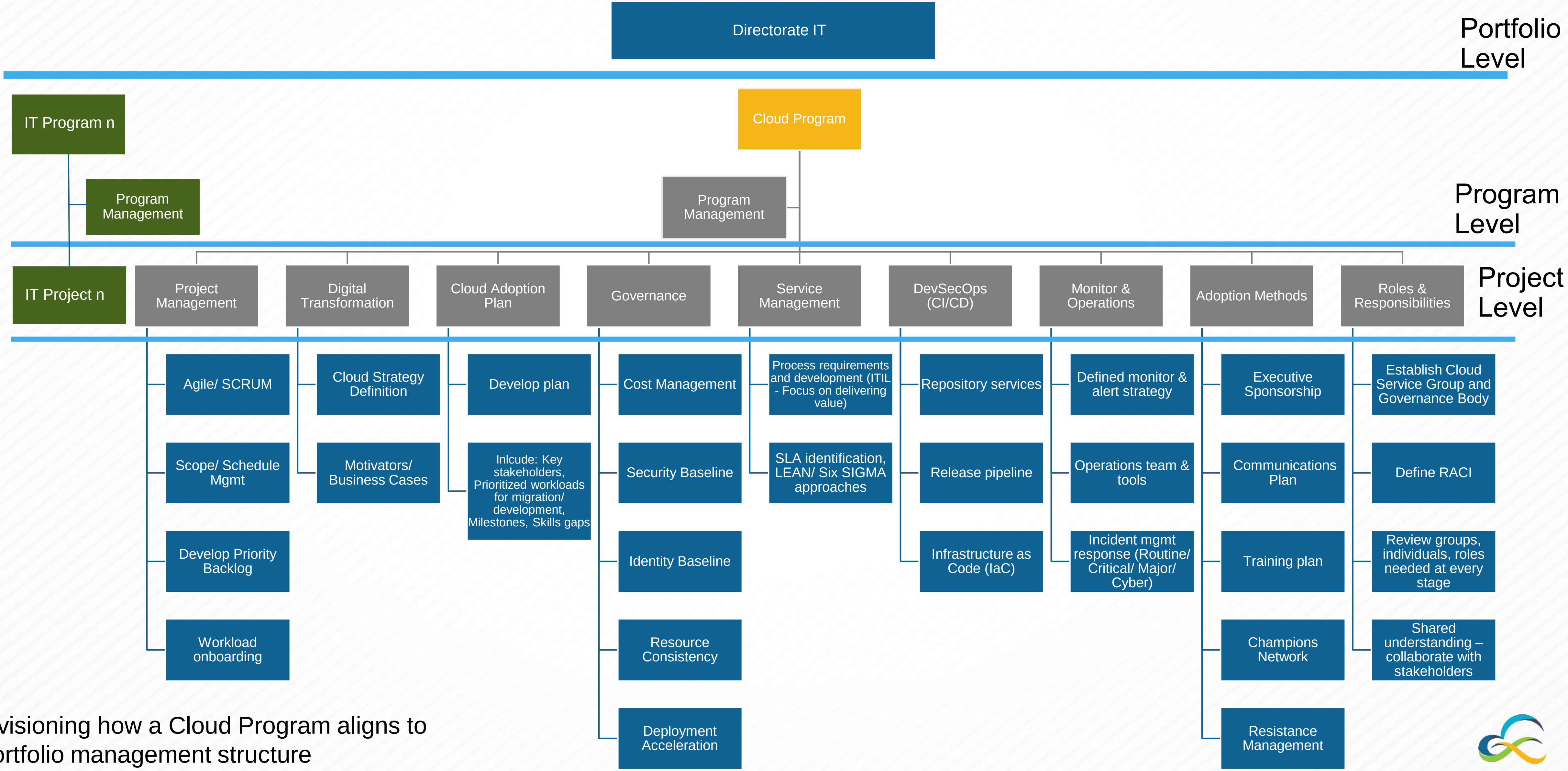
Cloud Program Maintenance

Roles & Responsibilities
- Review groups, individuals, roles needed at every stage
- Shared understanding – collaborate with stakeholders



Reiterate:
- Agile Project Management methodology – start small & build big
- Don’t be afraid of deferred success (failure)
- Use backlogs for time-based iterations (SPRINT)
- Culture shift

IT Portfolio View Example*



Portfolio Level

- Directorate IT

Program Level

- IT Program n
  - Program Management
- Cloud Program
  - Program Management

Project Level

- IT Project n
- Project Management
  - Agile/ SCRUM
  - Scope/ Schedule Mgmt
  - Develop Priority Backlog
  - Workload onboarding
- Digital Transformation
  - Cloud Strategy Definition
  - Motivators/ Business Cases
- Cloud Adoption Plan
  - Develop plan
  - Inlcude: Key stakeholders, Prioritized workloads for migration/ development, Milestones, Skills gaps
- Governance
  - Cost Management
  - Security Baseline
  - Identity Baseline
  - Resource Consistency
  - Deployment Acceleration
- Service Management
  - Process requirements and development (ITIL - Focus on delivering value)
  - SLA identification, LEAN/ Six SIGMA approaches
- DevSecOps (CI/CD)
  - Repository services
  - Release pipeline
  - Infrastructure as Code (IaC)
- Monitor & Operations
  - Defined monitor & alert strategy
  - Operations team & tools
  - Incident mgmt response (Routine/ Critical/ Major/ Cyber)
- Adoption Methods
  - Executive Sponsorship
  - Communications Plan
  - Training plan
  - Champions Network
  - Resistance Management
- Roles & Responsibilities
  - Establish Cloud Service Group and Governance Body
  - Define RACI
  - Review groups, individuals, roles needed at every stage
  - Shared understanding – collaborate with stakeholders

*Envisioning how a Cloud Program aligns to a portfolio management structure

CAF MLZ Technical Roadmap Example

License Procurement, Tenant Creation, and Enrollment

- The customer is fully informed of all licensing requirements prior to moving forward with Tenant Creation and Enrollment
- The Enterprise Enrollment defines the shape and use of Azure services within the organization from a contractual point of view
- Chargeback model and Billing enablement

Identity and Access Management

- This is the primary security boundary in the cloud. It’s the foundation for any secure and fully compliant architecture
- Determine how the cloud-based identity solution will coexist or integrate with on-prem identity providers

Network Topology and Connectivity

- Identify networking and connectivity requirements
- Establish network connectivity and monitoring

Management Group and Subscription Organization

- Scaling considerations for subscription design and management group hierarchy have an impact on governance, operations management, and adoption patterns

Security

- Determine controls and processes to protect cloud environments
- Ensure compliance with Enterprise IT security requirements
- Design baseline security model for Enterprises using Blueprints (automation)

Monitoring Solution

- Establish the logging, monitoring and alerting solution for workloads in Azure and on-premises environments

Governance and Compliance

- Engage with the Enterprise IT security and compliance teams
- Implement automated auditing and enforcement of governance policies
- Implement Cost Management controls

Business Continuity and Disaster Recovery

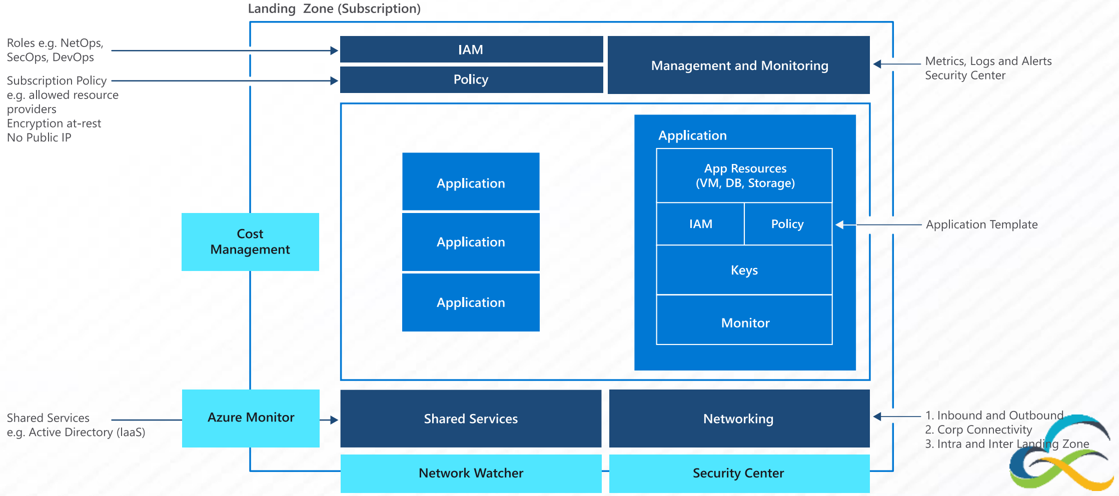
- Management baseline is required to provide visibility, operations compliance, and protect and recover capabilities

Platform Automation and DevOps

- Aligned change and continuation of onboarding capabilities
- Services roadmap of upcoming changes are clearly communicated to the customer
- Create build automation, continuous integration, automation testing, validation, and continuous deployment

Cloud Center of Excellence (CCoE)

- Build CCoE focused on continuous cycle of improvements for modern cloud operating model
- Partner with the customer to establish the CCoE
- This model provides a structure for customers to develop, manage, and operate their Azure platform and internal applications


Landing Zone (Subscription)
Roles e.g. NetOps, SecOps, DevOps
Subscription Policy e.g. allowed resource providers Encryption at-rest No Public IP
IAM
Policy
Management and Monitoring
Metrics, Logs and Alerts Security Center
Application
Application
Application
Application
App Resources (VM, DB, Storage)
IAM
Policy
Keys
Monitor
Application Template
Cost Management
Shared Services e.g. Active Directory (IaaS)
Azure Monitor
Shared Services
Networking
1. Inbound and Outbound
2. Corp Connectivity
3. Intra and Inter Landing Zone
Network Watcher
Security Center

- Recap Engagement Goals
- Engagement Deliverables
- Service Map
- Cloud Roles
- Assigned Tasks
- Recommendations

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THANK YOU!