DC Modernization Puzzle & Cloud Operating Model

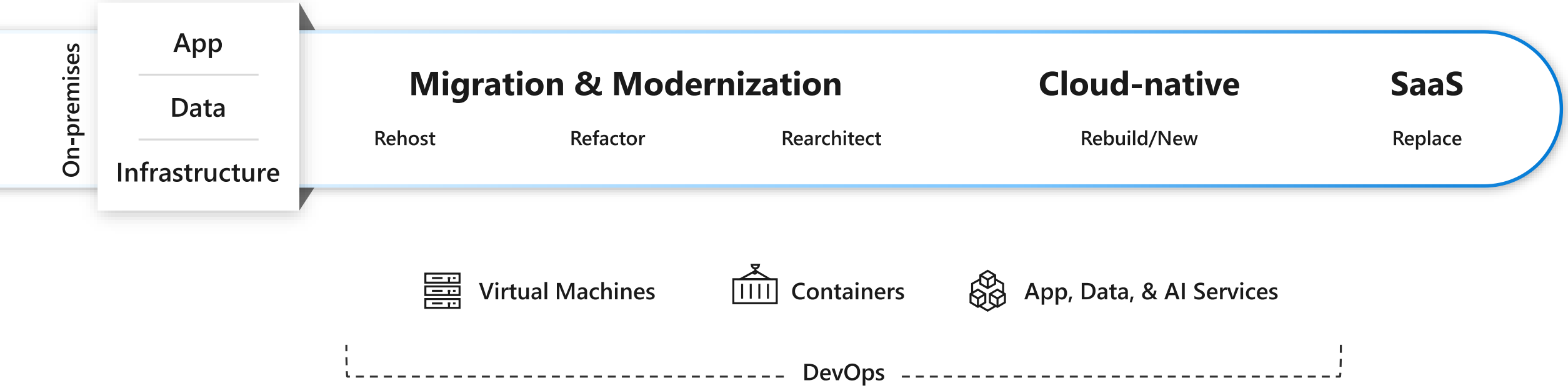
Why and How?

Umit Sunar EMEA Global Black Belt
DC Modernization Architect

18 Nov 2018

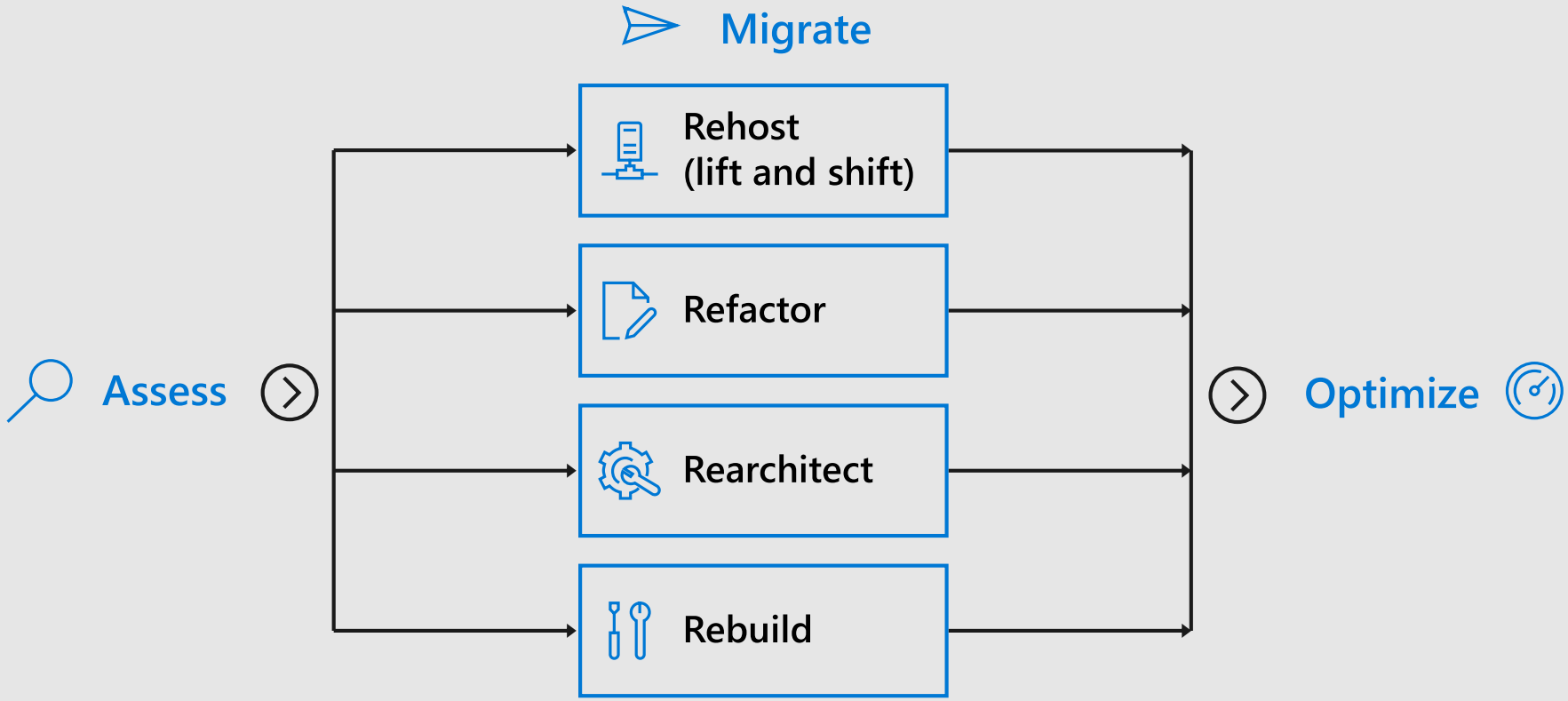
Microsoft

Customer Cloud Journey



Azure migration journey

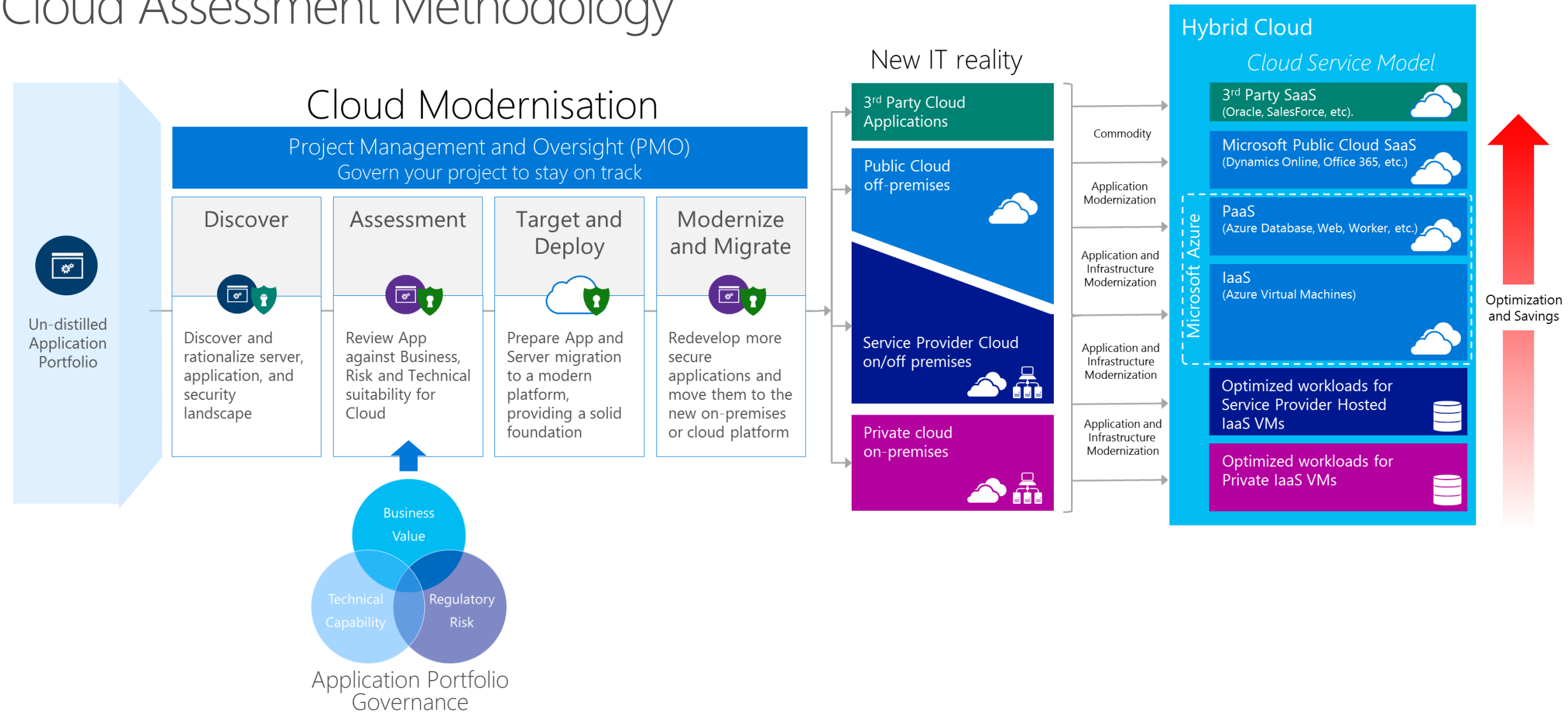
Top-down buy in: Business case | Executive sponsorship | Business and IT alignment



Foundational investments: Technical | Process | People

Desired Target End State

Cloud Assessment Methodology



Microsoft

Why organizations are looking to transform?

What's driving customers to migrate to Azure?

Triggers

Datacenter lease renewal, capacity crisis (!)

Hardware/ software refresh

Getting solutions to market faster, being competitive

Value

Innovation/Agility

Economics (e.g., CAPEX to OPEX)

Global scalability, reliability, security

Enablers

Workload and process guidance

Migration tools

Ecosystem, programs, and offers

Why Organizations Are Looking to Transform

Typically one of the three key scenarios

Burning House

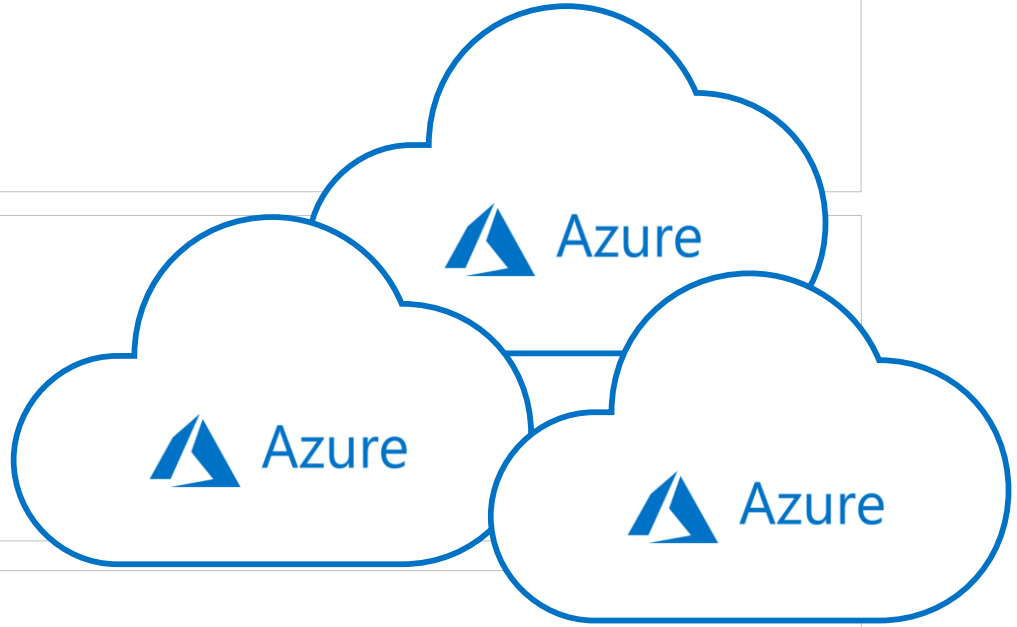
- Legacy Data Centre / Legacy assets
- Data Centre contract renewal
- Outsourcer stagnation
- Unmanaged security risks

Burning Time

- IT unable to respond to the business
- Operational immaturity
- Outsourcing risk to IT
- Chasing to control Shadow IT

Burning Cash

- High IT operations costs
- Outsourcers & multiple clouds
- Security mitigation costs
- Under utilized capacity



Microsoft

Datacenter Modernization Puzzle What is this?

Datacenter Modernization Puzzle

Infrastructure

- Networking
- Hardware Inventory
- Decommissioning
- SAP, HPC, Mainframe
- PaaS-ification
- SaaS-ification

Applications

- Application Catalogue
- Dependencies
- Legacy Apps
- Mission-Critical Apps
- Line of Business Apps
- Containerization
- PaaS-ification
- SaaS-ification

Data

- Data Sources
- Mapping the data in cloud
- Managed Instances
- Data Lake
- Data Warehouse
- Big Data

Cloud Operating Model

- Governance
- Stakeholders
- Economics
- Cloud Benefits
- Risks
- Models
- Decision Matrix
- Responsibility Matrix
- Charge-backs
- Managed Service Provider
- Migration/Modernization
- Optimize

Microsoft

Automated Assessment

Technical Perspective: Assessment of Current Situation

Cloudamize
MOVERE POWERED BY UNIFIED LOGIC
intigua
ATTUNITY
CloudAtlas®
CloudEndure®
striim
morphis
CLOUDPHYSICS
DATOMETRY
turbonomic
Informatica
Corent
Ispirer
TSO Logic

https://azure.microsoft.com/en-us/migration/partners/

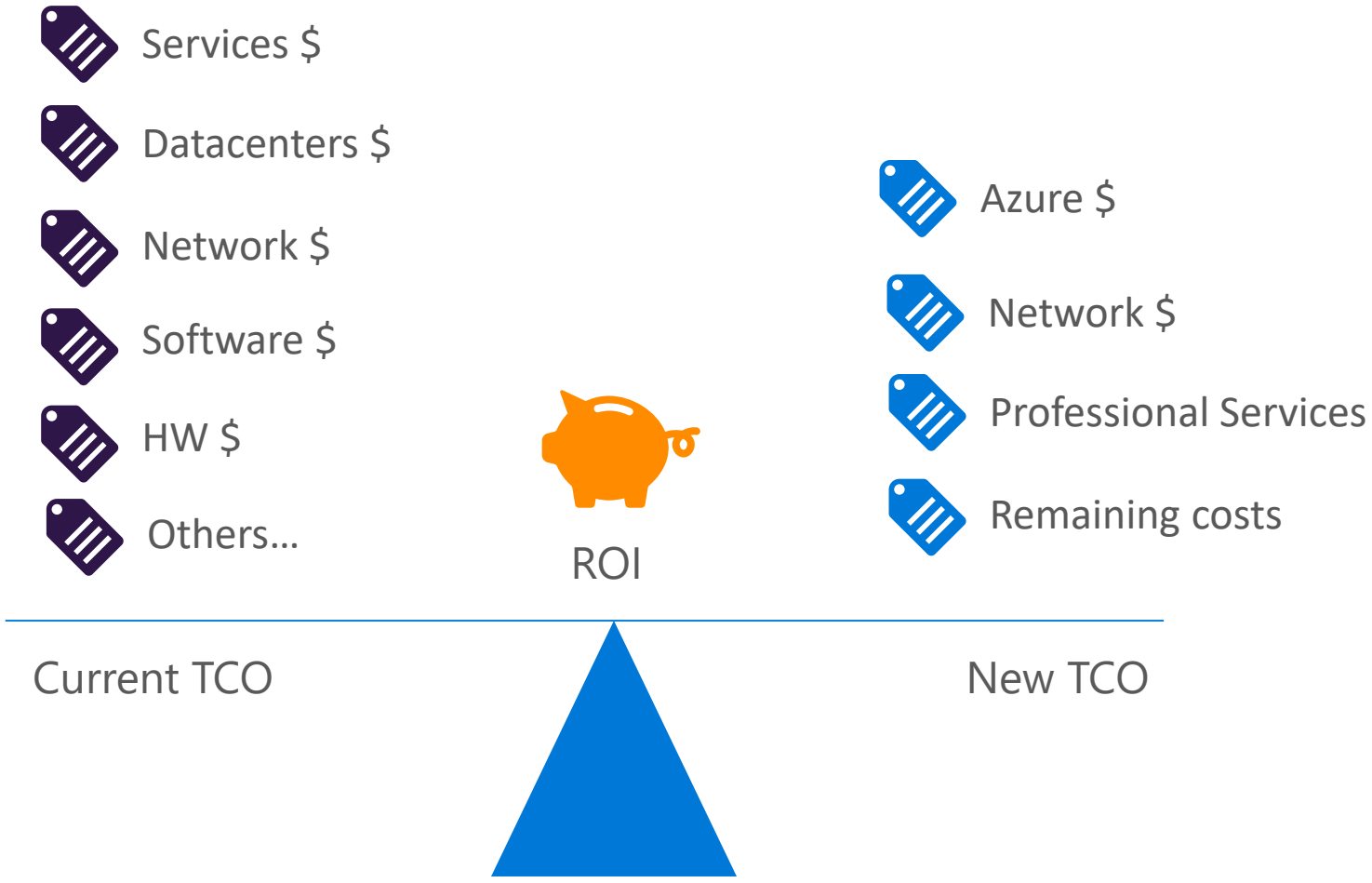
Tooling Landscape

	Discover	Migrate	Optimize
Microsoft	Azure Migrate Database Migration Assistant Microsoft Assessment & Planning Toolkit	Azure Site Recovery Database Migration Service	Operations Management Suite CLOUDYN
Partners	turbonomic, TSO Logic, Cloudamize, BitTitan, CLOUDPHYSICS, MOVERE, RISC Networks CloudScape	CloudEndure®, Zerto, VEEAM, VISION SOLUTIONS, 5NINE SOFTWARE	docker, CloudAtlas®

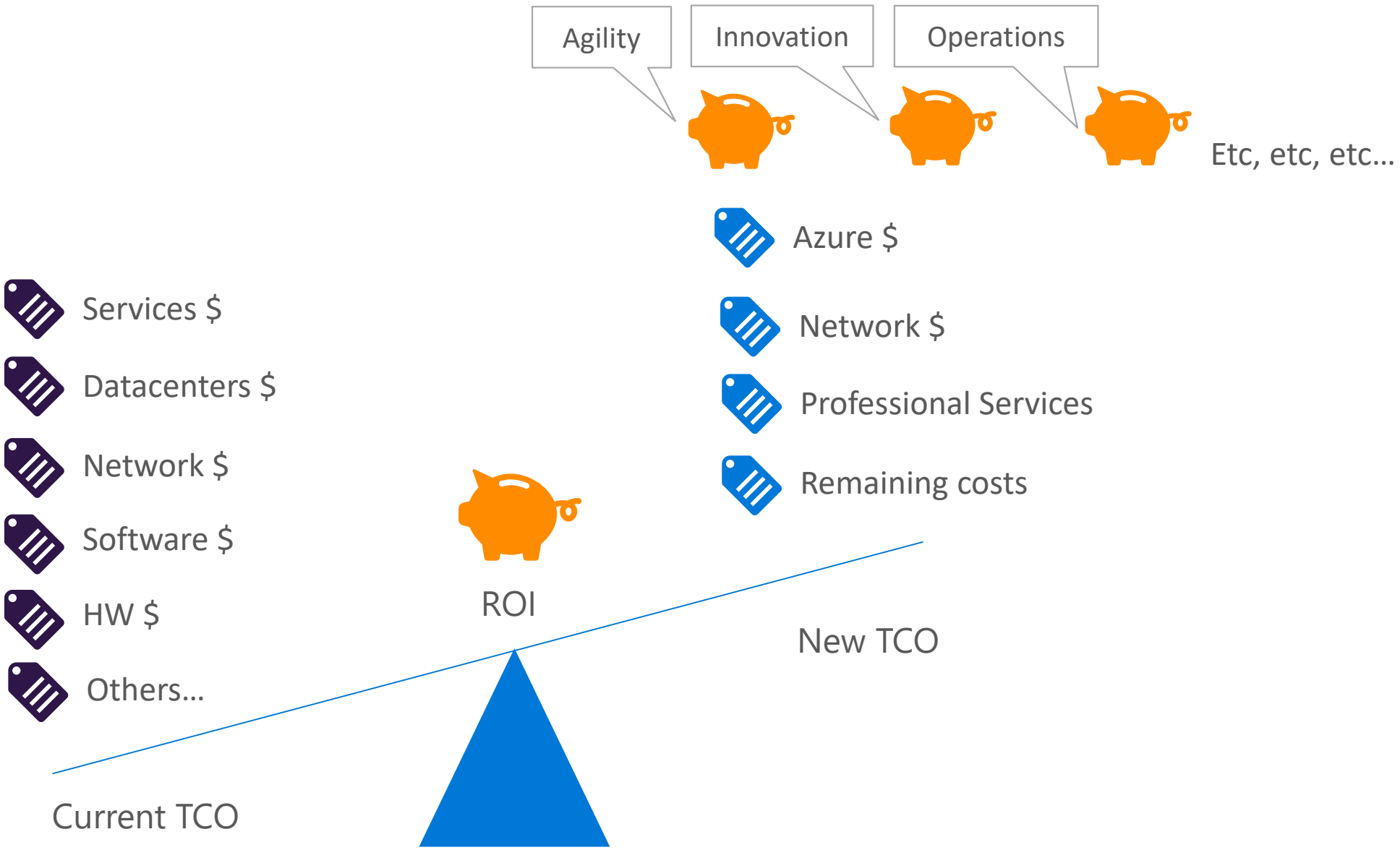
Microsoft

Business Case
TCO ROI Calculations

A view into a TCO analysis



Not everything is about tangible $



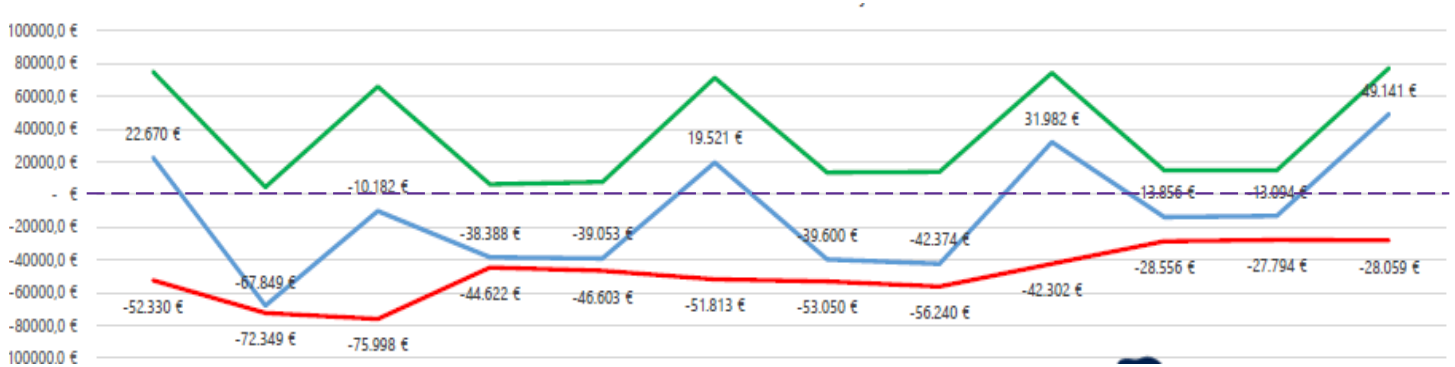
Selling though the TCO

In 3 years, Contoso will save 1.519.325€ (45% ROI) migrating to hybrid cloud with Microsoft.

Each 1€ invested in the migration project, will return 4€ of savings in 3 years.

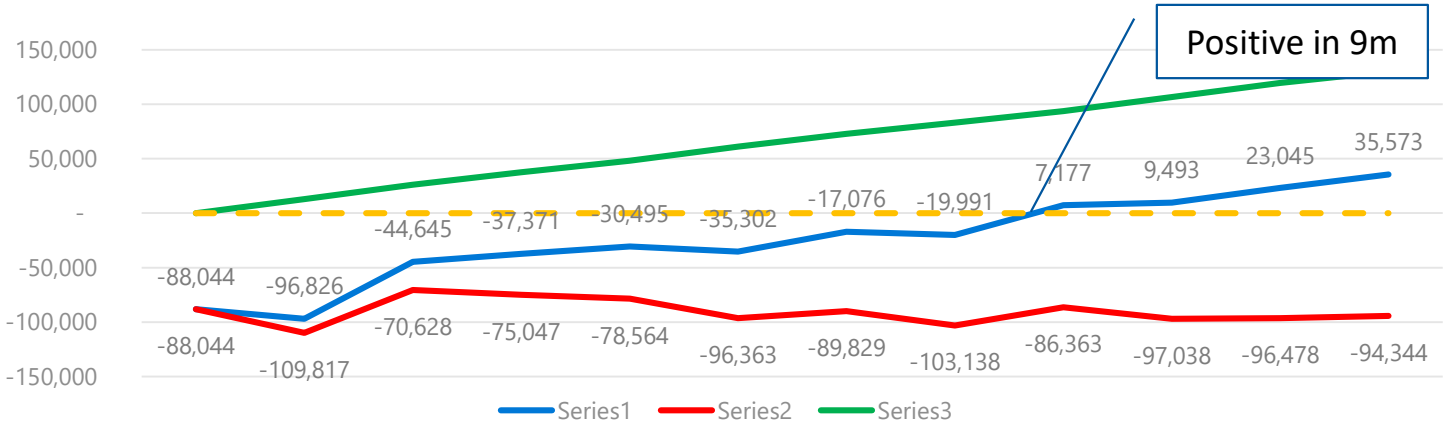
Cashflow example 1

DCM in an industry company, several service contracts

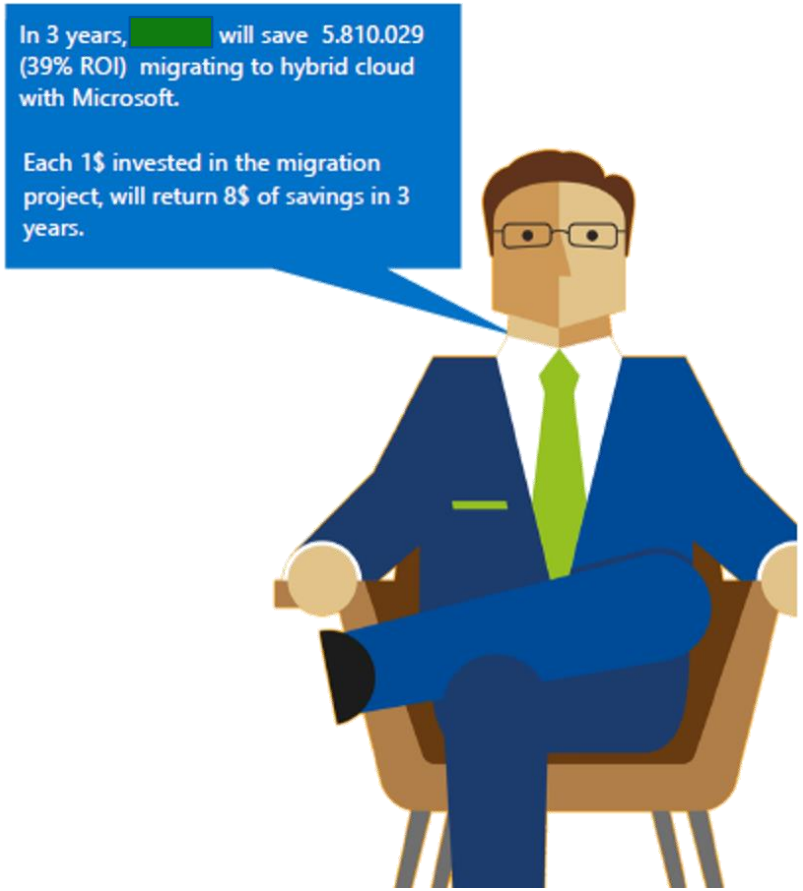


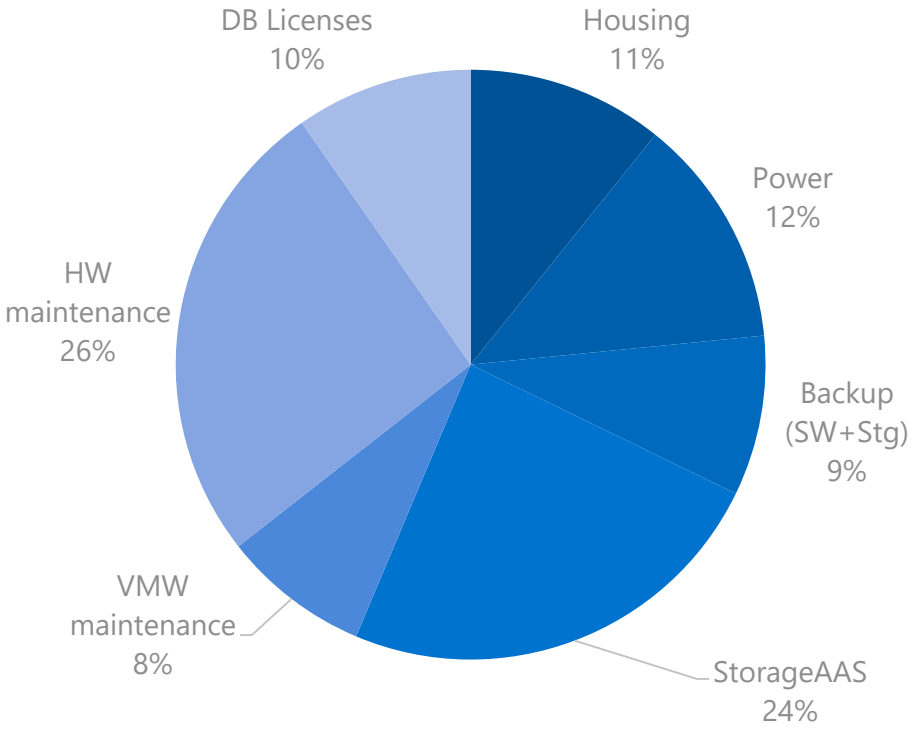
Cashflow example II

DCM in a Bank, Outsourcing, migrating everything beyond the baseline



ROI Samples





TCO Assessment demo

Transform the Datacenter

A Microsoft Business Case | Contoso | Hybrid cloud migration

Achieve global scale, in local regions

Rely on the most trusted cloud

Azure is not just about Microsoft software

Extend on-premises data and apps

Choose flexible pricing for your apps

Storage & Backup

Redundancy and recovery

Contoso will use managed disks

Backup Durability

SSD

Standard disk

Backup protected instances 257 | 32.540Tb

Savings in Azure Backup Service

Low latency and high throughput storage

Hybrid storage with Storsimple

Operations Management Suite (OMS)

Gain visibility and control across your hybrid cloud with simplified operations management and security

Gain immediate insights across workloads | Enable consistent control and compliance | Ensure availability of apps and data | Respond faster to security threats

Daily Security/Audit Gb Included 118

OMS featured solutions

Daily automation minutes included: 2.570 | Daily log analytics Gb included: 125 | Daily Security/Audit Gb included: 118

Cashflow

Contoso

First 12 months cashflow analysis

Year budget view (36 Months)

2017	489.478
2018	1.912.414
2019	1.771.717
2020	1.033.502

Migration overview

VMs Migrated 257

Backup protected instances 257

Tb Storage replicated with at least 3 copies 44.75

Total RAM (GB) 1.834

Total Cores (100% 576

41 Services Migrated

6% Dev VMs

0% Test VMs

94% Pro VMs

Non critical 30%

Critical 70%

Non Supported OS 42%

Supported OS 58%

73%

27%

Migration Project

Replicate your Virtual Machines to Azure using Azure Site Recovery

All VMs will be migrated in: 10 Month

Migration methodology

Savings overview

Where are these savings comming

3 Year TCO Overview

Savings: 1.843.104

Current (TCO): 3.447.000

Hybrid Cloud (TCO): 1.603.896

% Savings per Year

Daniel Matey

30/05/2017

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Microsoft

Microsoft Azure Infrastructure & Hybrid Cloud

VMs will be mainly located in North Europe

ExpressRoute Service with Telefonica

Datacenter Contoso

Top 10 Instance Types by cost

Make your connections fast, reliable, and private

IaaS SLA Overview

Special offers applied

Get more out of your existing Microsoft licenses

Azure Hybrid Use Benefit for Windows Server

Reserved instances (CPP)

Cost detail & ROI

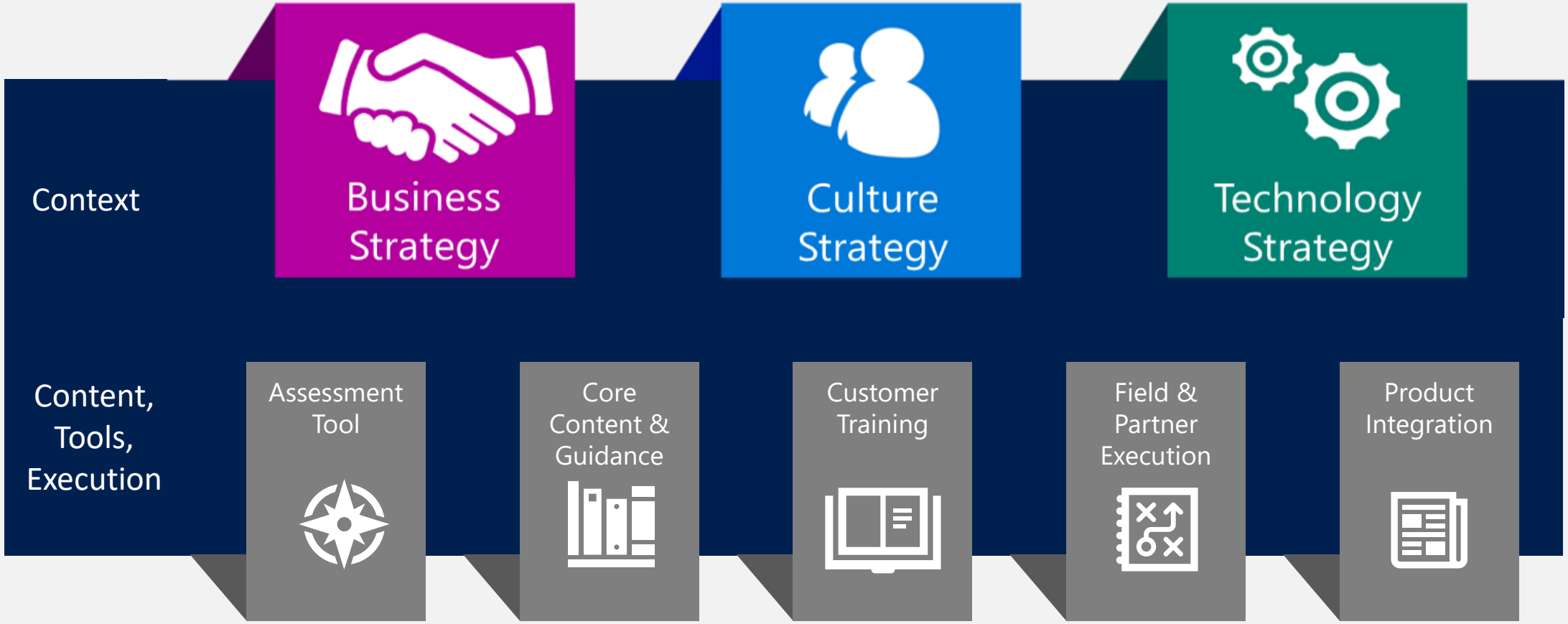
In 3 years, Contoso will save 1.843.104 (53% ROI) migrating to hybrid cloud with Microsoft.

Each 1€ inverted in the migration project, will return 10€ of savings in 3 years.

Microsoft

Enterprise Cloud Adoption Framework

Enterprise Cloud Adoption at Microsoft



Transformation Journeys

Operational Transformation

Efficiency focused Infra Strategy

Incremental Transformation

Enhancement focused App Strategy

Disruptive Transformation

Innovation focused Data Strategy

Maturity Transformation

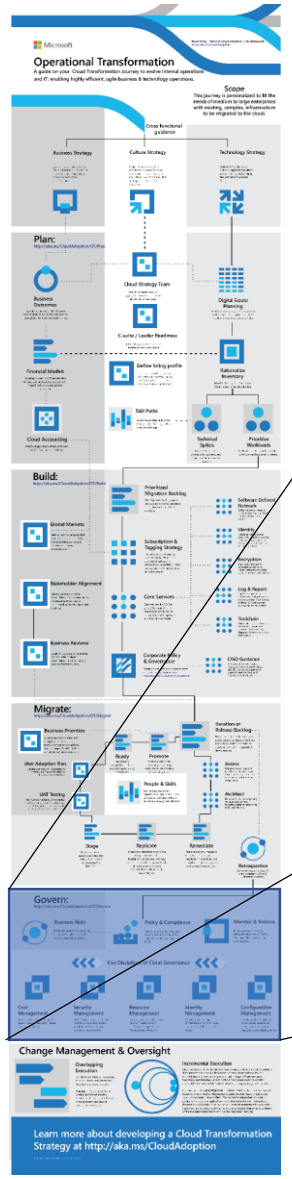
Evolve & grow focused Ops Strategy

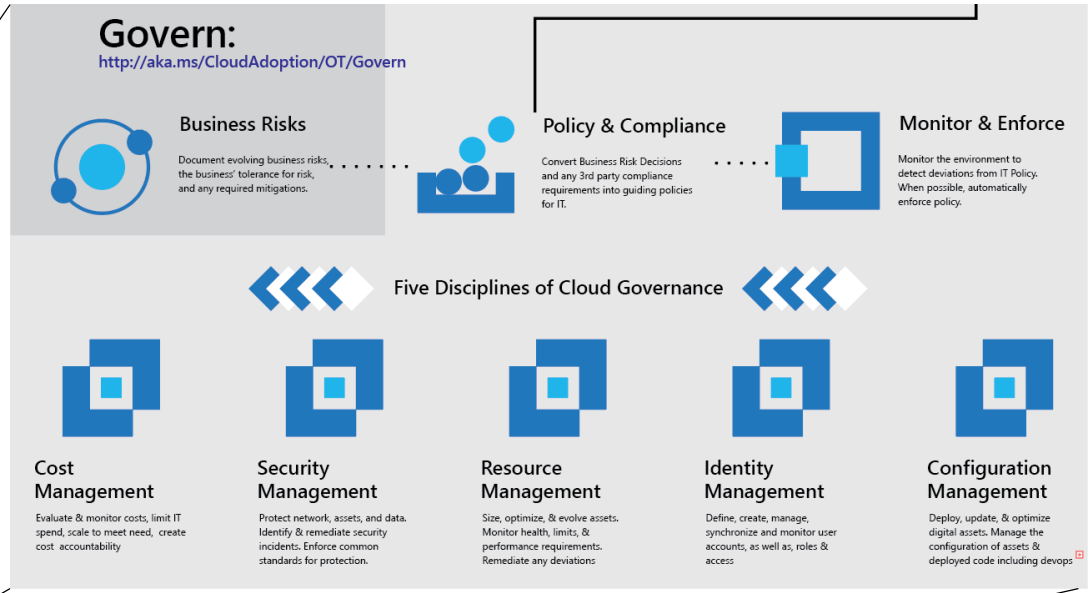
Persona Specific Transformations

Align each business transformation to the personas that drive change

Sample Journey: Operational Transformation

A visual guide to organize the complexity of Infrastructure migrations





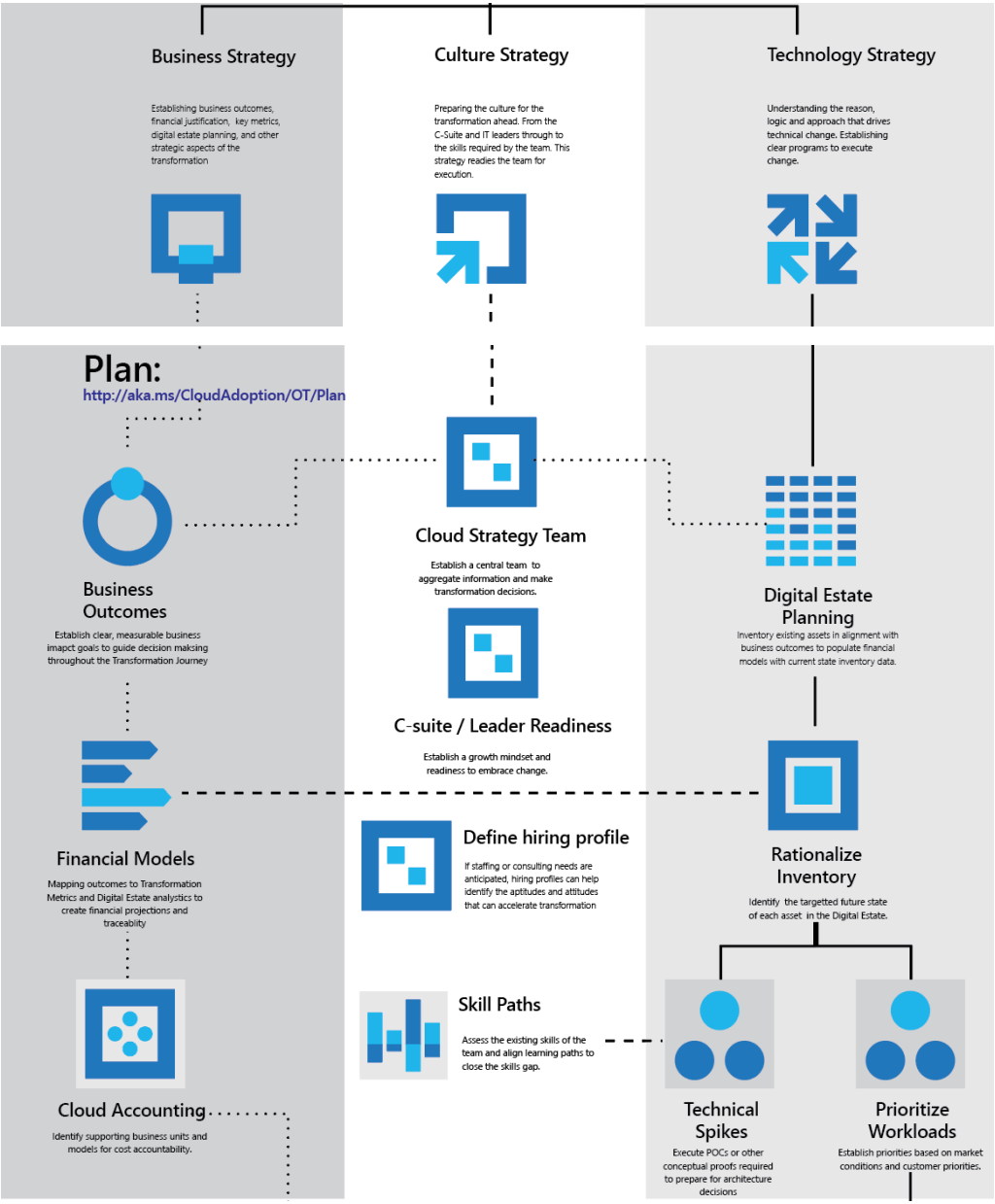
Scope: This Transformation Journey guides large customers during the Azure migrations of more than 500 VMs

Journey: Operational Transformation focuses on Business, Culture, & Tech strategies across Five processes vital to migration. In each process, it outlines functions and dependencies required to be successful. Mapping each process and function to supporting docs in ECA, AAC, or Docs.

Function: Microsoft can have a consistent conversation, tailored to the customer's business objectives (Journey) and technical execution (Process). That conversation can evolve with the customer to drive consistent lifetime value

Operational Transformation – Plan Processes

Preparing for a large migration (Pre-sales to Architecture experiences)

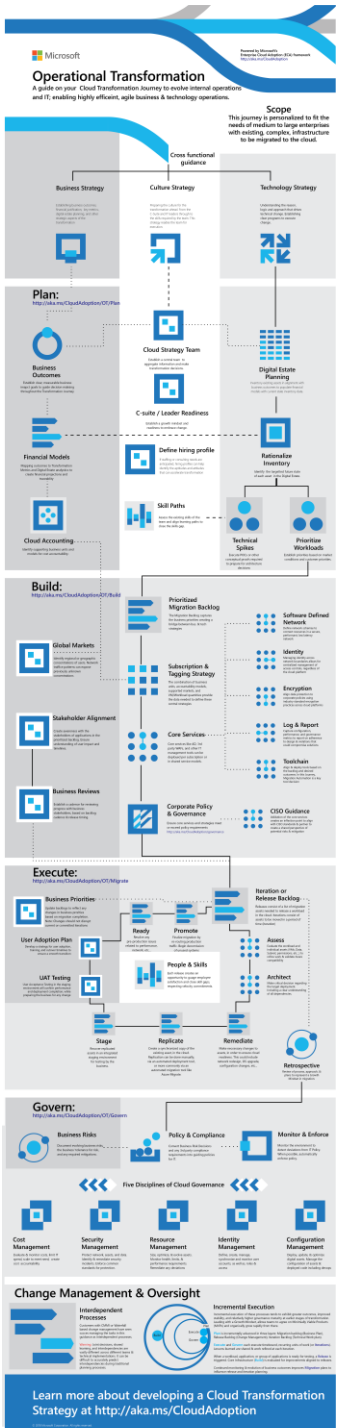


Plan

Build

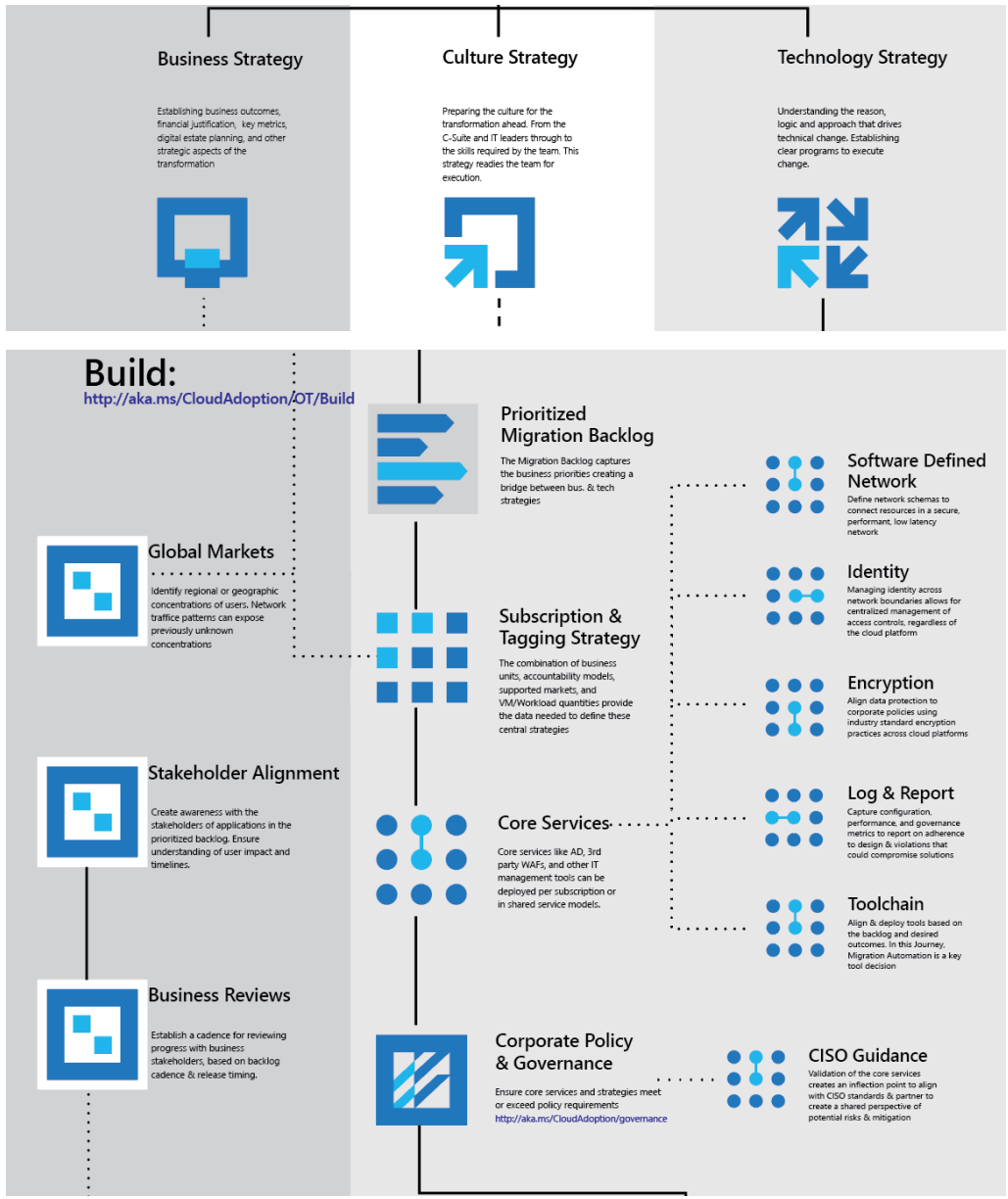
Execute

Govern



Operational Transformation – Build Processes

Build out of core infrastructure required to support a large migration (Solution Architecture to Workload Deployment)



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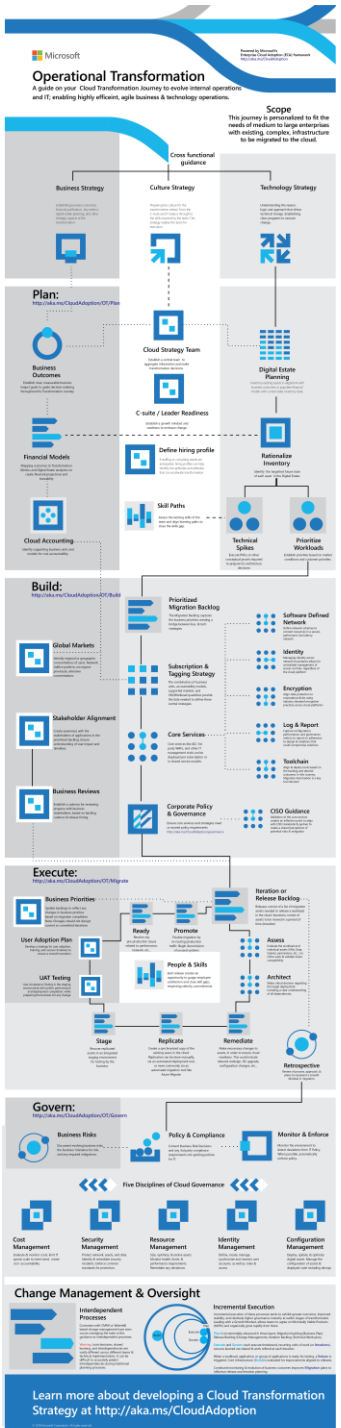
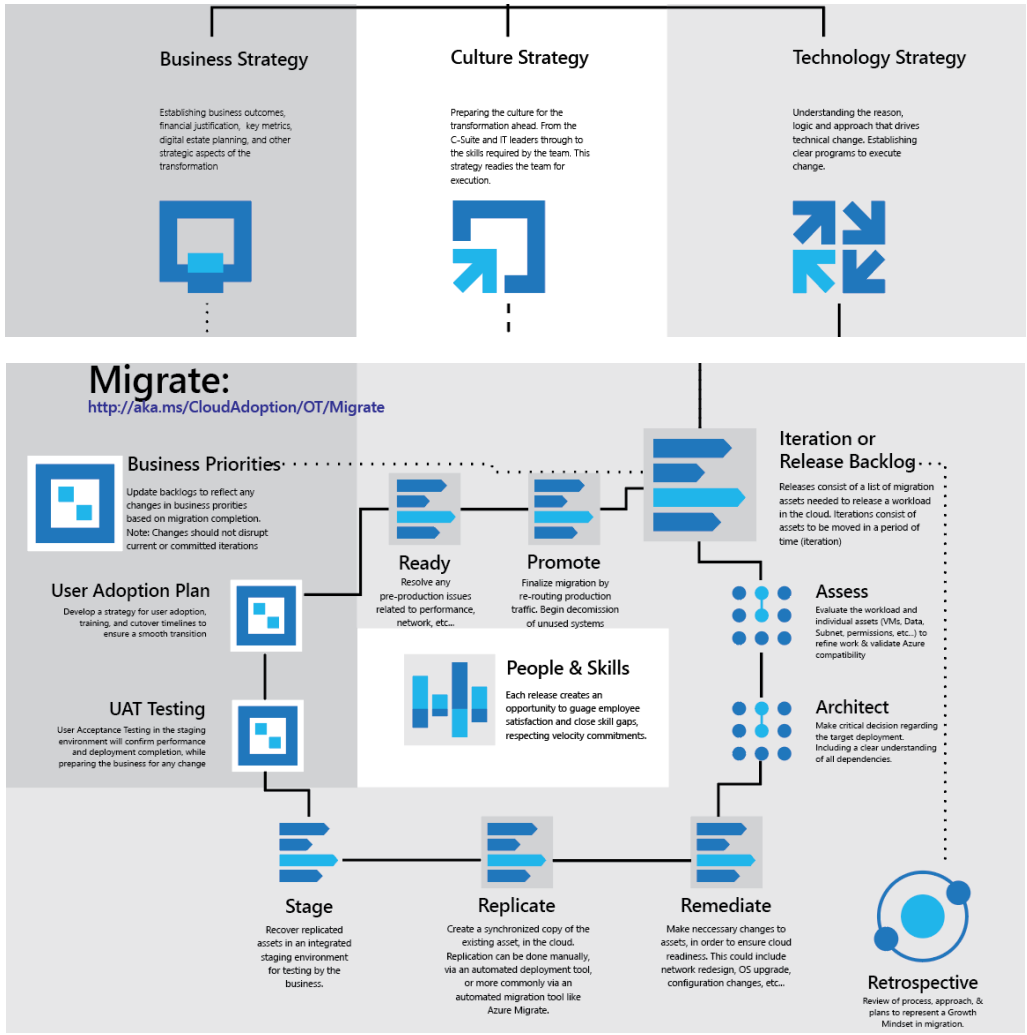


Operational Transformation – Execute Processes

Process of incrementally migrating workloads to the cloud & de-provisioning on-prem assets (Returns for the customer & Microsoft ha

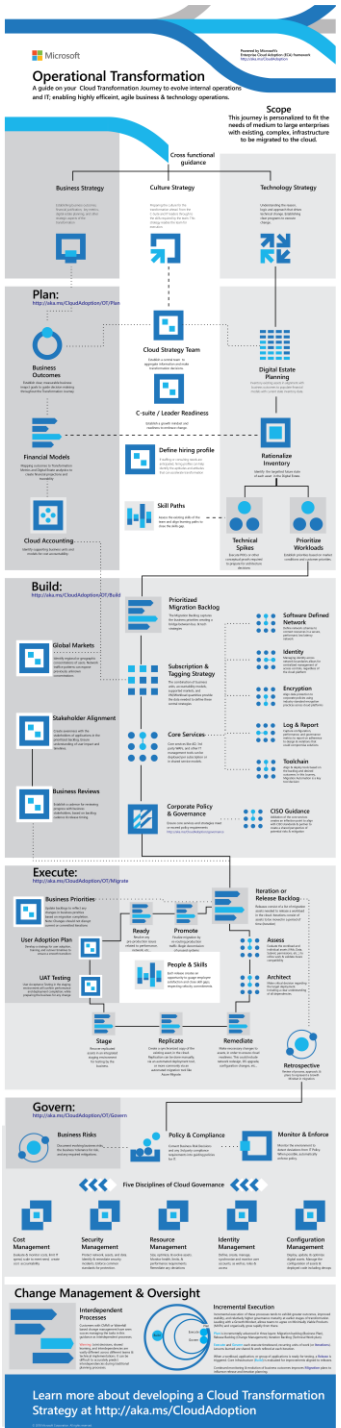


Plan

Build

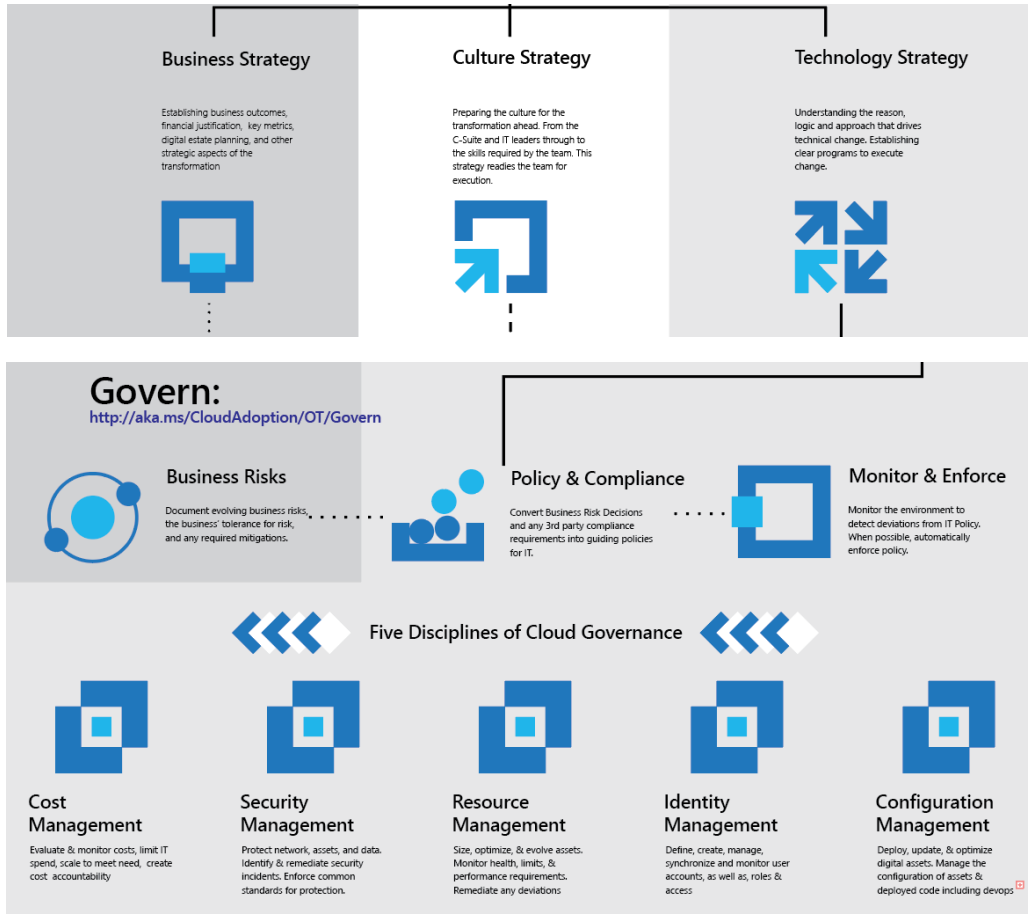
Execute

Govern



Operational Transformation – Govern Processes

Incremental improvement of the customer's ability to operate and govern cloud deployments

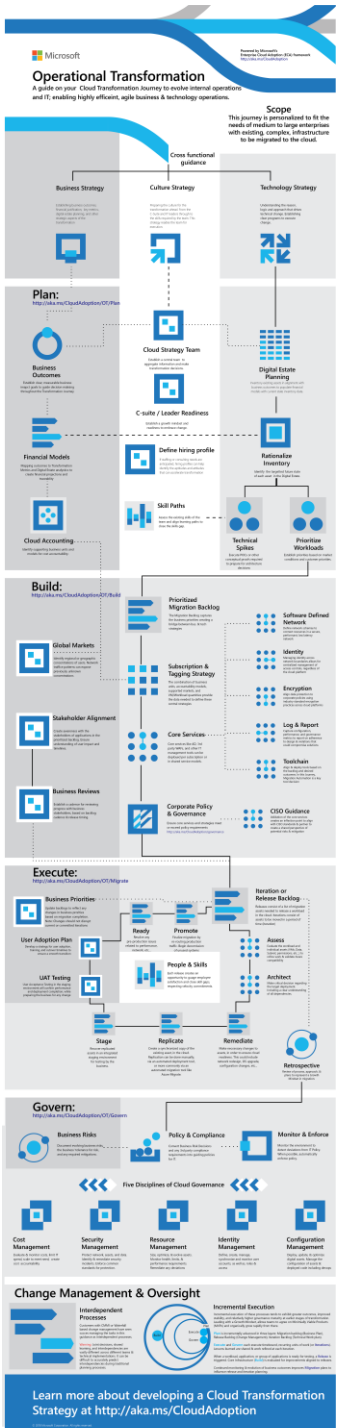


Plan

Build

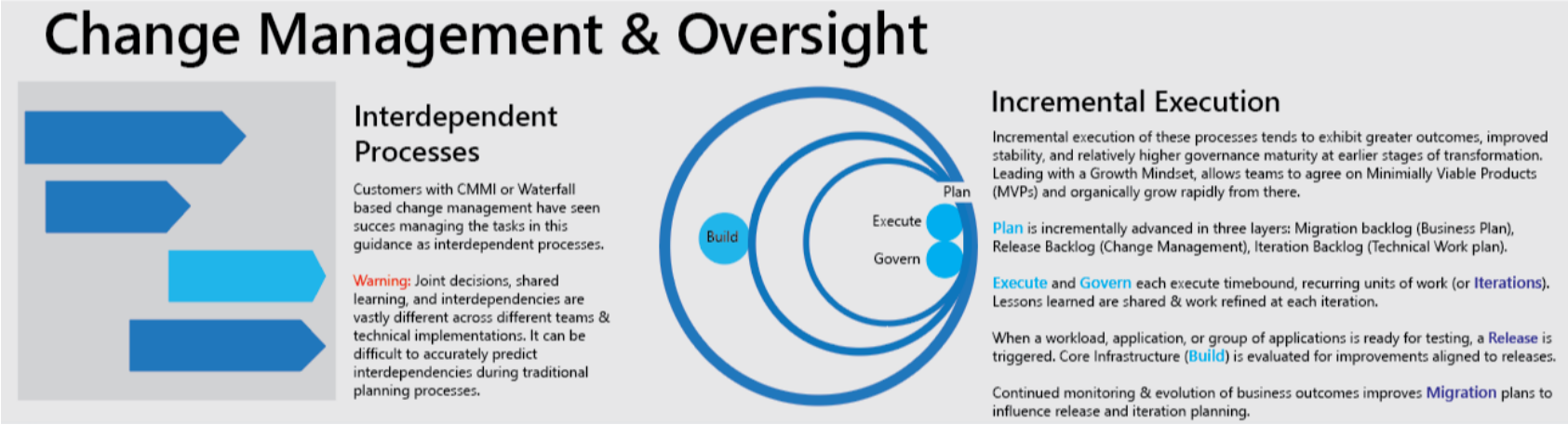
Execute

Govern



Operational Transformation – Change Management & Oversight

Aligning these processes with approved IT programs



Plan

Build

Execute

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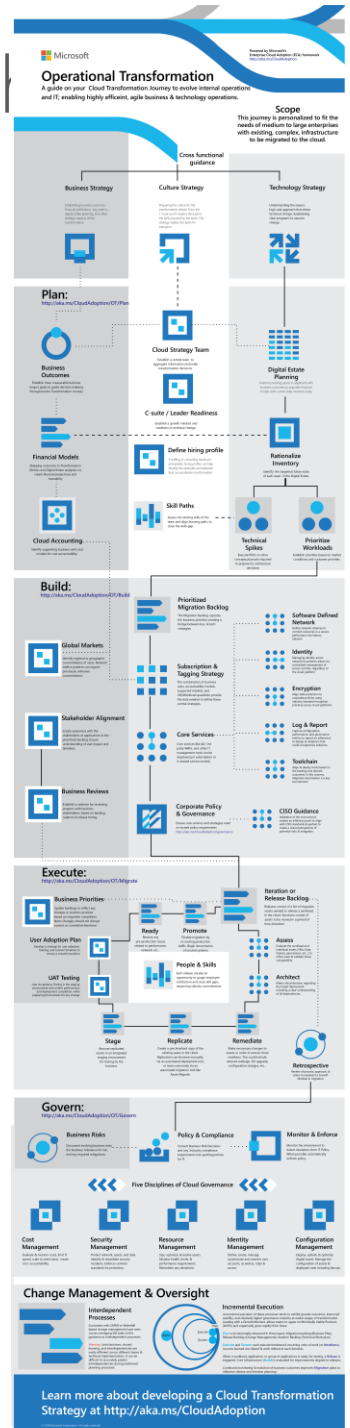
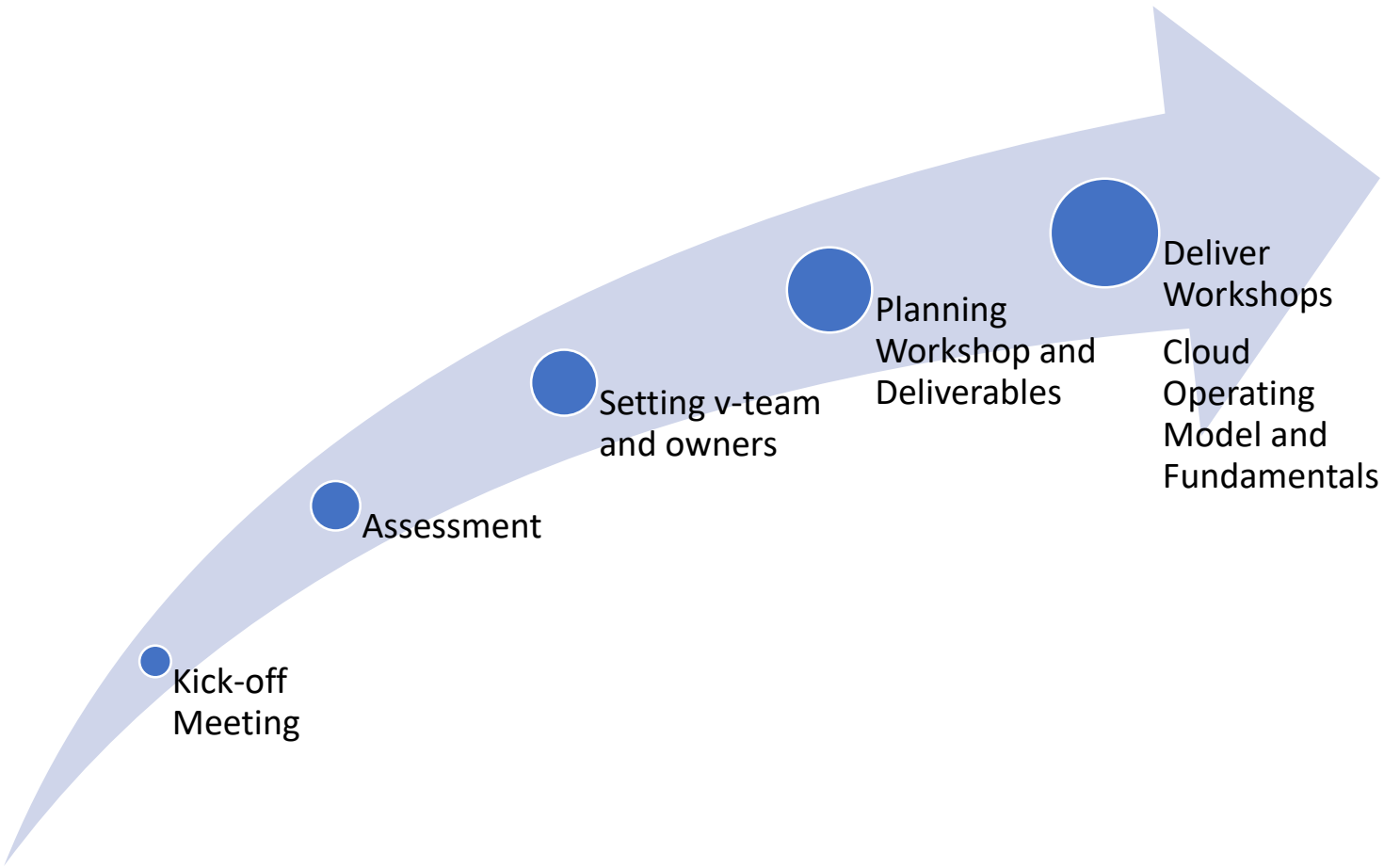


COM Landing Model Customer Engagement



Setting Maturity Transformation Objectives

Assessing the gaps on current situation vs desired situation

Cost Management

Evaluate & monitor costs. Limit cost, scale to meet need, create cost accountability

Resource Management

Select, monitor, & evolve resource health, limits, & performance

Identity Management

Define, create, manage, monitor roles and user access

Security Management

Protect network, assets, and data – Identify & remediate incidents

Configuration Management

Deploy, update, & optimize digital assets – including devops maturity

Policy & Compliance

Documentation, processes, and operational management meet or exceed the policies of corporate or 3rd party compliance

Monitoring & Enforcement

Logging, monitoring, notification, and automated enforcement of policy & compliance across operational management

Financial Planning

Cost management

An immediate CapEx and often OpEx reduction is realized by moving to the cloud. Building expensive data centers and managing them soley with your own IT is no longer necessary.

DC expansion to Cloud First Mentality

- Eliminating Capital Expenses
- On demand resources
- Capacity Planning
- Scale up and down
- Moving out of the DC business
- Reliability

Total cost of ownership (TCO) calculator

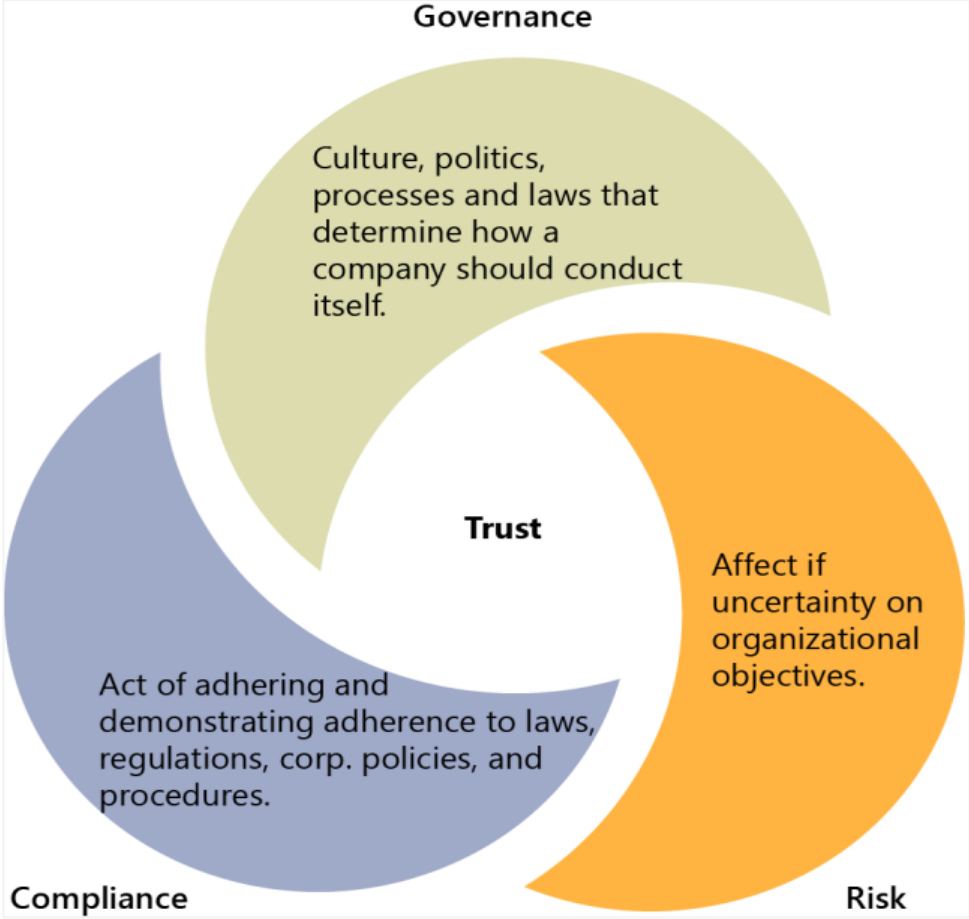
Pricing calculator
Cost management

Azure Hybrid Benefit
Reserved Instances

Governance, Compliance and Risk

Governance, Compliance and Risk

Governance, risk management, and compliance (GRC) are three facets that help to ensure that your organization meets its objectives and Microsoft provides you with tools to accomplish this.



Keep risk at acceptable levels

Maintain availability

Comply with laws and regulations

Protect Customer Data

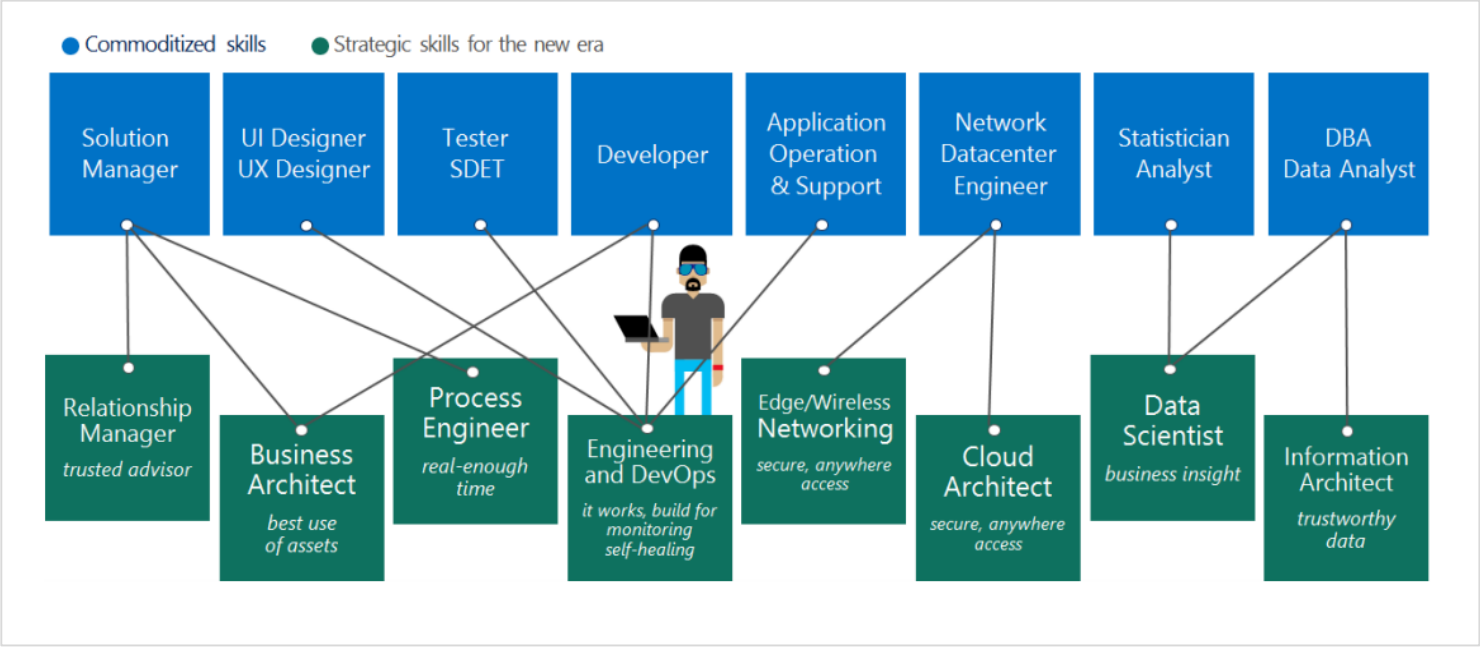
Microsoft

Transforming Culture

IT Evolution

Translation of roles, guidance, and training

IT staff supporting current and emerging cloud technologies will need guidance and training to evolve their IT roles to cloud technologies.



Mapping to cloud capabilities

Performance Metrics

Training and Readiness plans

Skills and readiness path

Skill readiness paths

IT staff members may feel anxious about their roles and positions as they realize that a different set of skills is needed. Enlisting the help of Microsoft Partners can help embrace changes and update necessary skill-sets.

Azure Solution Architect

Learn the fundamentals of Microsoft Azure solution design and architecture and how to select the best services and features.

Learn more >

Node.js Developer on Azure

Learn everything you need to develop and deploy Node.js web applications and services in Azure.

Learn more >

.NET Developer on Azure

Learn everything you need to develop and deploy .NET web applications and services in Azure.

Learn more >

AI Developer on Azure

Learn the fundamentals of Microsoft's Machine Learning and Artificial Intelligence services and how to build applications using them.

Learn more >

Azure for AWS Professionals

Courses for Amazon Web Services (AWS) professionals who wish to add Azure to their skill set. Learn the most common Azure architectural, development, and operational tasks much easier by leveraging your current AWS Knowledge.

Learn more >

[Microsoft Azure certification]

Azure training packages by level

Internal and partner delivered training enabled for all HiPo accounts. Training selection is based on Learning Plan developed by CSA.

T1 Foundational Role-based

Introductory to start learning Azure

Microlearning

Microlearning

- Microsoft Learn

Instructor Lead

- Azure Fundamentals (coming soon)

T2 Advanced Role-based

Master Azure skills with in-depth training

Online Courses / Instructor-led Training

Available through Microsoft Learning Partners

- Online Courses
- Instructor-led Training (in-person and virtual)

Pluralsight

- Online Courses (available for free)

T3 Advanced Workload-based

Dive deep into Azure workloads with topic based workshops & Hackfest

Facilitated Workshops

Workload Based

- Advanced Cloud Workshops
- Code With Hackfest (CSE)

Optional Role-Based Certification: Exam Prep, Practice Tests, Exam Vouchers

Azure Administrator – Training Menu

Description

- manage cloud services that span storage, security, networking, and compute cloud capabilities
- deep understanding of each service across the full IT lifecycle
- take requests for infrastructure services, applications, and environments
- make recommendations on services to use for optimal performance and scale, as well as provision, size, monitor, and adjust resources as appropriate
- have proficiency in using PowerShell and the Command Line Interface
- basic familiarity or knowledge of Azure Portal, ARM templates, operating systems, virtualization, cloud infrastructure, storage structures, and networking

T1 Foundational

Cost	Targeted Roles	Title / Description	Delivery	Delivered By	Duration	Start Date	End Date
Free	Administrator	Azure Essentials – Micro Learning	Self-Service	Microsoft / Self-Service	Varies	tbd	tbd
Free	Administrator	Learning Path - Azure Administrator	Self-Service	Pluralsight / Self-Service	Varies	tbd	tbd
Fee	Administrator	MOC Course 10979: Microsoft Azure Fundamentals	Instructor Led (Online or In person)	Learning Partner*	2 Days	tbd	tbd

T2 Role-Based

Cost	Targeted Roles	Title / Description	Delivery	Delivered By	Duration	Start Date	End Date
Fee	Administrator	MOC Course 20533: Implementing Microsoft Azure Infrastructure Solutions	Instructor Led (Online or In person)	Learning Partner*	5 days	tbd	tbd
Fee	Administrator	Certification Exam AZ-100: Microsoft Azure Infrastructure and Deployment (beta)	Self-Service	Learning Partner*	Varies	tbd	tbd
Fee	Administrator	Certification Exam AZ-101: Microsoft Azure Integration and Security (beta)	Self-Service	Learning Partner*	Varies	tbd	tbd

T3 Workload-Based

Cost	Targeted Roles	Title / Description	Delivery	Delivered By	Duration	Start Date	End Date
Free	Administrator	Cloud Workshop - Azure security and management – (https://github.com/Microsoft/MCW)	Facilitated Workshop	Microsoft (CSA, GBB)	1 -2 Day	Ongoing	Ongoing
Free	Administrator	Cloud Workshop - Enterprise-class networking in Azure – (https://github.com/Microsoft/MCW)	Facilitated Workshop	Microsoft (CSA, GBB)	1 -2 Day	Ongoing	Ongoing
Free	Administrator	Cloud Workshop - Lift and Shift with Azure Resource Manager – (https://github.com/Microsoft/MCW)	Facilitated Workshop	Microsoft (CSA, GBB)	1 -2 Day	Ongoing	Ongoing

Azure Developer – Training Menu

Description

- design and build cloud solutions such as applications and services
- participate in all phases of development, from solution design, to development and deployment, to testing and maintenance
- partner with cloud solution architects, cloud DBAs, cloud administrators, and clients to implement the solution
- proficient in developing apps and services by using Azure tools and technologies, including storage, security, compute, and communications
- have at least one year of experience developing scalable solutions through all phases of software development and be skilled in at least one cloud-supported programming language

T1 Foundational

Cost	Targeted Roles	Title / Description	Delivery	Delivered By	Duration	Start Date	End Date
Free	Developer	Azure Essentials – Micro Learning	Self-Service	Microsoft / Self-Service	Varies	tbd	tbd
Free	Developer	Learning Path - Azure Developer	Self-Service	Pluralsight / Self-Service	Varies	tbd	tbd
Fee	Developer	MOC Course 10979: Microsoft Azure Fundamentals	Instructor Led (Online or In person)	Learning Partner*	2 Days	tbd	tbd

T2 Role-Based

Cost	Targeted Roles	Title / Description	Delivery	Delivered By	Duration	Start Date	End Date
Fee	Developer	MOC Course 20532: Developing Microsoft Azure Solutions	Instructor Led (Online or In person)	Learning Partner*	5 days	tbd	tbd
Fee	Developer	Certification Exam 70-532: Developing Microsoft Azure Solutions	Self-Service	Learning Partner*	Varies	tbd	tbd

T3 Workload-Based

Cost	Targeted Roles	Title / Description	Delivery	Delivered By	Duration	Start Date	End Date
Free	Developer	Cloud Workshop – Containers and DevOps – (https://github.com/Microsoft/MCW)	Facilitated Workshop	Microsoft (CSA, GBB)	1 -2 Day	tbd	tbd
Free	Developer	Cloud Workshop – Securing PaaS – (https://github.com/Microsoft/MCW)	Facilitated Workshop	Microsoft (CSA, GBB)	1 -2 Day	tbd	tbd
Free	Developer	OpenHack (aka.ms/CSEOpenHackRegister)	OpenHack	Microsoft (CSE)	3 Days	tbd	tbd

Azure Solutions Architect – Training Menu

Description

- advises stakeholders and translates business requirements into secure, scalable, and reliable solutions
- have advanced experience and knowledge across various aspects of IT operations, including networking, virtualization, identity, security, business continuity, disaster recovery, data management, budgeting, and governance
- manages how decisions in each area affects an overall solution
- proficient in Azure administration, Azure development, and DevOps, and have expert-level skills in at least one of those domains

Foundational

Cost	Targeted Roles	Title / Description	Delivery	Delivered By	Duration	Start Date	End Date
Free	Architect	Azure Essentials – Micro Learning	Self-Service	Microsoft / Self-Service	Varies	tbd	tbd
Free	Architect	Learning Path - Azure Solutions Architect	Self-Service	Pluralsight / Self-Service	Varies	tbd	tbd
Fee	Architect	MOC Course 10979: Microsoft Azure Fundamentals	Instructor Led	Learning Partner*	2 Days	tbd	tbd

T2 Role-Based

Cost	Targeted Roles	Title / Description	Delivery	Delivered By	Duration	Start Date	End Date
Fee	Architect	MOC Course 20535: Architecting Microsoft Azure Solutions	Instructor Led (Online or In person)	Learning Partner*	5 days	tbd	tbd
Fee	Architect	Certification Exam 70-535: Architecting Microsoft Azure Solutions	Self-Service	Learning Partner*	Varies	tbd	tbd

T3 Workload-Based

Cost	Targeted Roles	Title / Description	Delivery	Delivered By	Duration	Start Date	End Date
Free	Architect	Cloud Workshops - Optimized architecture – (https://github.com/Microsoft/MCW)	Facilitated Workshop	Microsoft (CSA, GBB)	1 -2 Day	tbd	tbd
Free	Architect	Cloud Workshop – Azure Stack – (https://github.com/Microsoft/MCW)	Facilitated Workshop	Microsoft (CSA, GBB)	1 -2 Day	tbd	tbd
Free	Architect	OpenHack DevOps (aka.ms/CSEOpenHackRegister)	OpenHack	Microsoft (CSE)	3 Days	tbd	Tbd
Free	Architect	Cloud Workshop – Building a Resilient IaaS Architecture – (https://github.com/Microsoft/MCW)	Facilitated Workshop	Microsoft (CSA, GBB)	1 -2 Day	tbd	tbd

Cloud Fundamentals Workshop: Accelerate Cloud Adoption

Most Common Cloud Adoption Blockers

1 Security Fundamentals

Trust & Control
- Compliance
- Dimensions
- Cyber Threat Intelligence
- Online Services Terms

2 Enterprise Class Networking

- Cross-Premises Connection
- ExpressRoute, IPSec VPNs, Peering
- Load Balancing and Routing
- Virtual Network Appliances
- High-Availabity Network Design

3 Accelerate Deployments

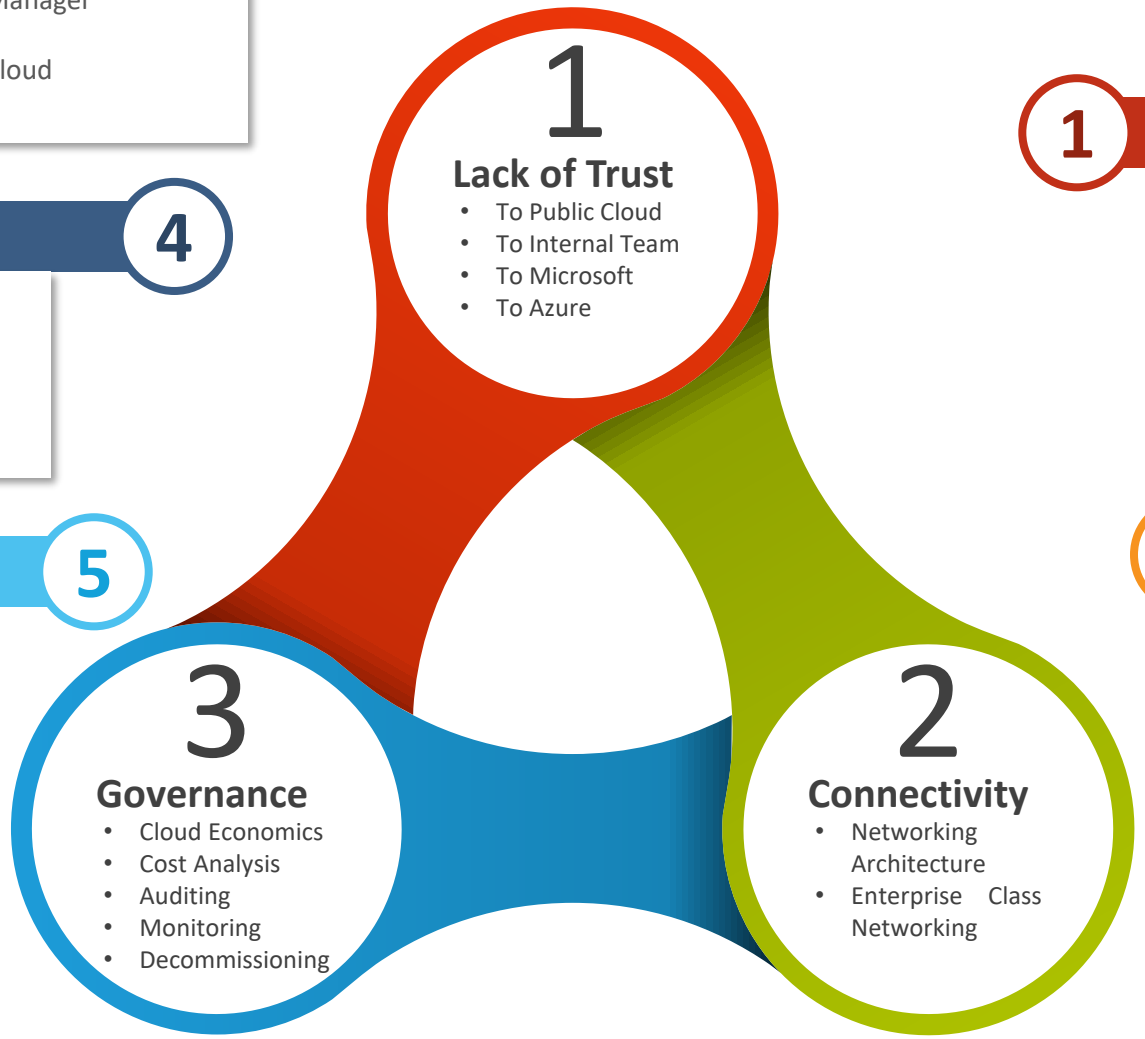
- Automation
- Azure Resource Manager
- DevOps
- Architecting for Cloud

4 Monitoring

- Auditing
- Monitoring
- Log Analytics
- Azure Security Center
- Azure Advisor

5 Governance

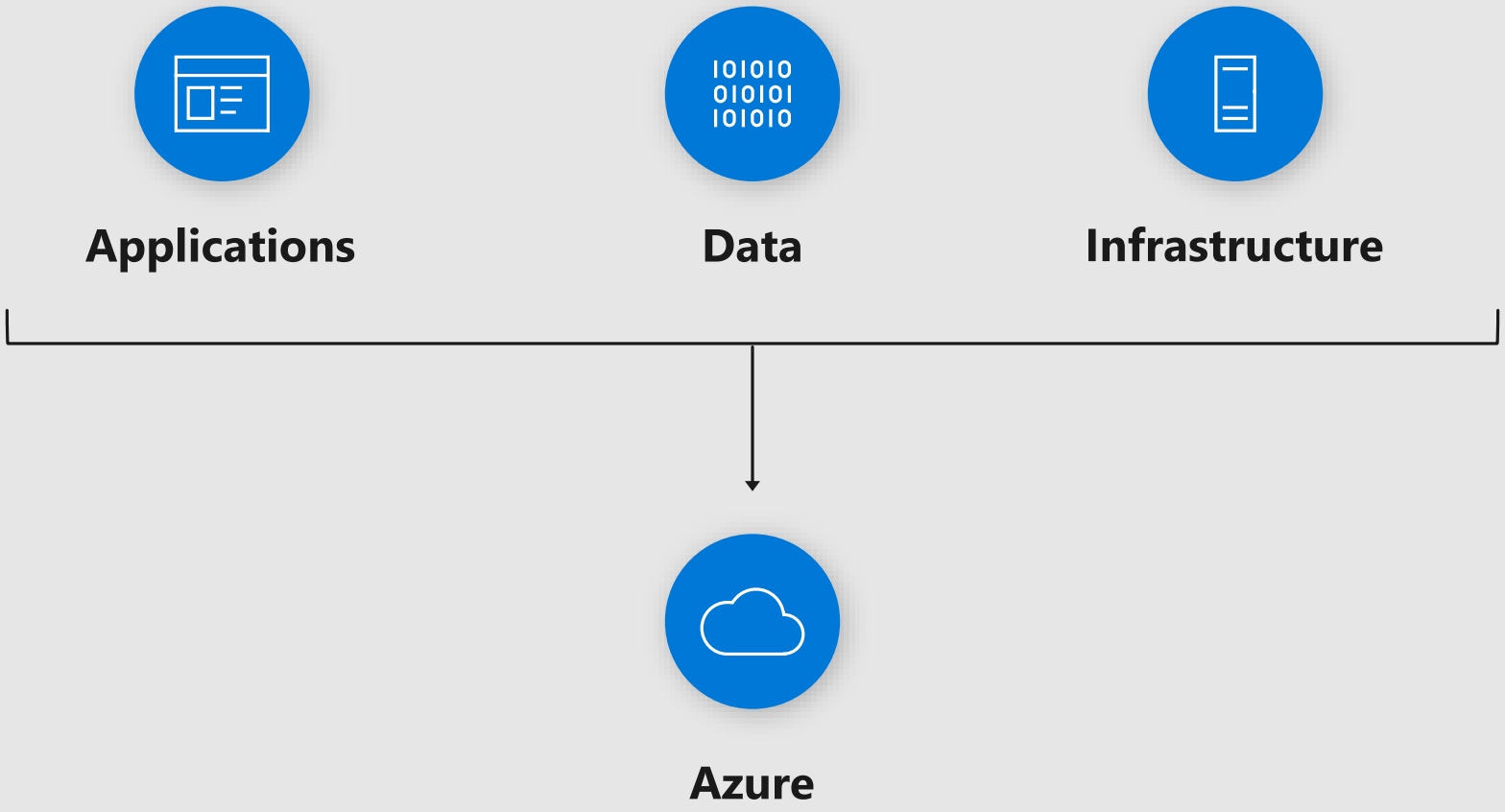
- Cloud Economics & Billing Models
- Azure Reserved Instance
- Azure Hybrid Usage Benefits
- Scalable Design
- On & Off Cloud Design
- Right-Sizing and Capacity Planning
- Reporting and Dashboards
- Cloudyn



Microsoft

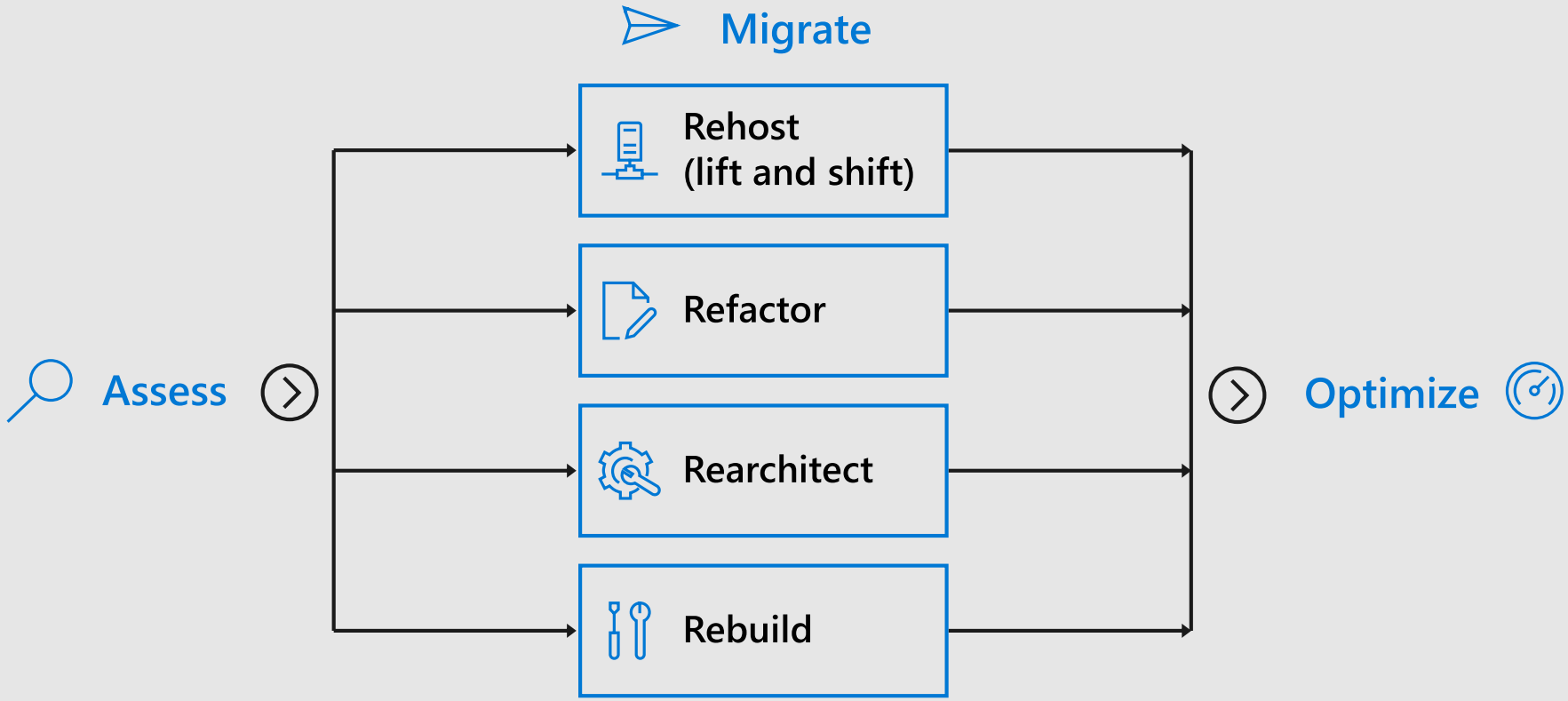
Planning DC Modernization

What are customers looking to migrate?



Azure migration journey

Top-down buy in: Business case | Executive sponsorship | Business and IT alignment



Foundational investments: Technical | Process | People

Each Workload needs to be Transformed

Transformation goes beyond technology. It is a <u>strategic business decision</u>

1. Discovery

Catalog your application & workloads

2. Assessment

Categorize applications & workloads

3. Target End State

Identify your destination(s)

4. Plan

Detailed project planning per app & server

5. Migrate

Make the move & modernise or modernise then migrate

6. Operational Support

Support app transition to managed Ops

Agile Sprint Based Approach

Discovery

Evaluating the Portfolio

Top Down

Emphasis on modernizing applications

- Take a Business Viewpoint
- Where should the application live?
  Paas? SaaS?
- Are there network or workload dependencies?

Strategic / Evaluative

Tactical / Cost-effective

Bottom Up

Emphasis on environment rationalization

- Take a Technical Viewpoint
- Understand hardware inventory & network topology
- Are there network or workload dependencies?
- Adhere to business compliance requirements

Opportunistic

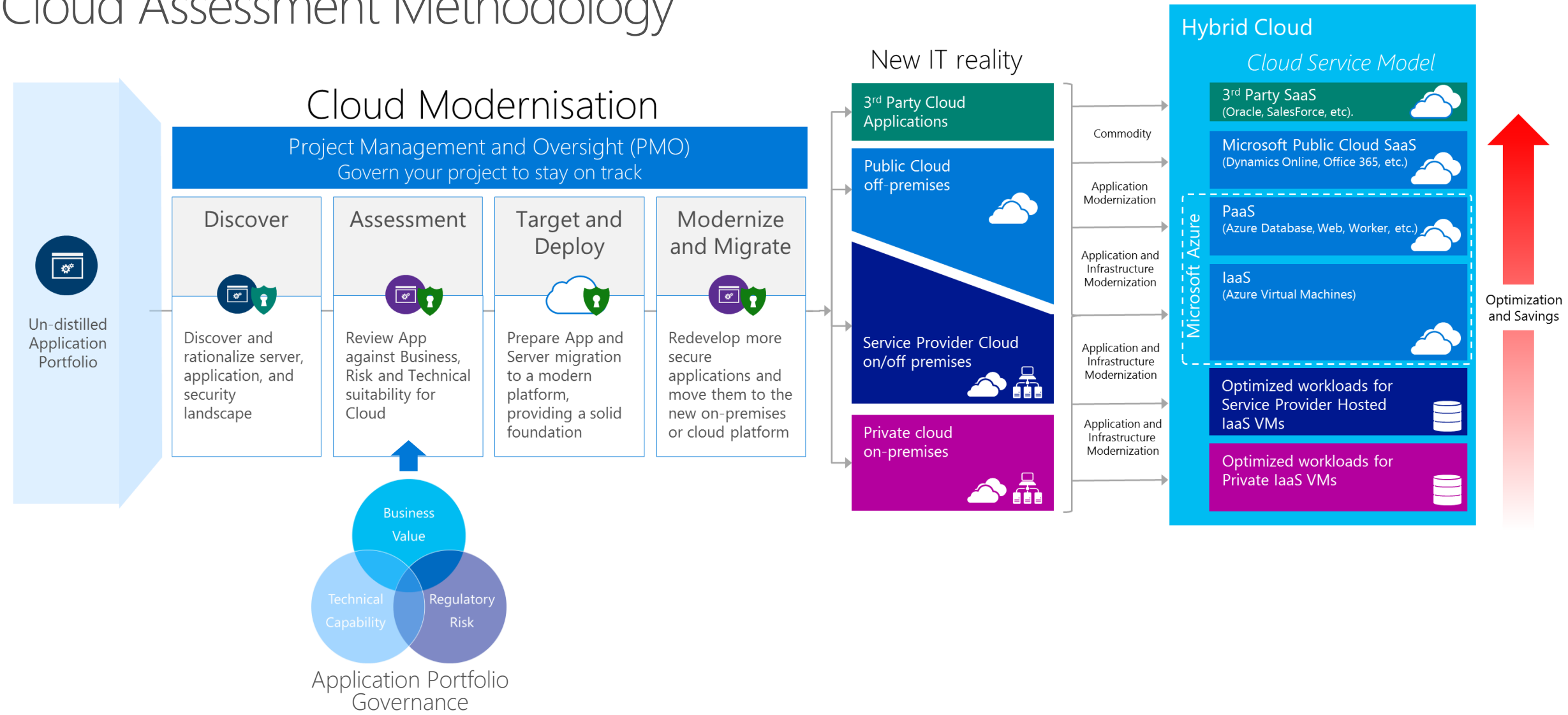
Evolve applications to Azure

- Migrate applications in the course of other projects
- Build new functionality or components in Azure
- Convenience and efficiency

On-the-fly / Flexible

Target End State

Cloud Assessment Methodology



Optimization - Typical savings

Run 24/7	Run As Necessary	Azure Hybrid Use Benefits	Right Size	Reserved Instance
33-66% savings	75% Saving	<40% Saving	Typically 25% Saving	<72% Saving
Dependent on Energy efficiency of source DC	176 Hours	Based on Standard Edition Windows Server licenses	Using latest Generation hardware typically can reduce as is CPU requirements	Dependent on VM type
	8 Hour week day			

Assessment

Categorize your Application Workloads

Gartner Published Whitepaper on Migrating Applications to the Cloud (2010)

Evaluation Criteria – Customers' Requirements & Constraints

- Migration Goals & Priorities
- Legacy Application Characteristics
- Modernization Requirements
- Application Platform & Architecture Principles
- Development & Operations Skills Constraints
- Migration Cost Considerations

Rehost,
Refactor,
Revise,
Rebuild, or
Replace

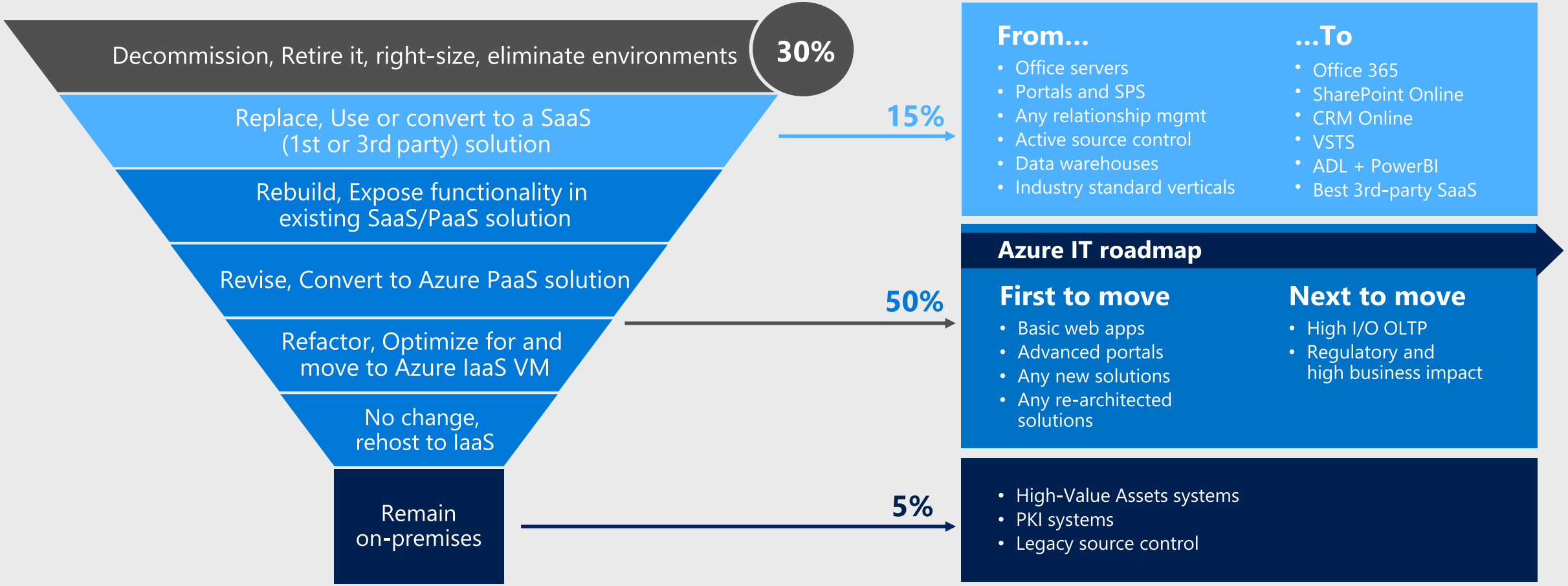
Migrating Applications to the Cloud: https://www.gartner.com/doc/1485116/migrating-applications-cloud-rehost-refactor

A different view of our Tactical approach

Target
90% in the cloud by end of FY17

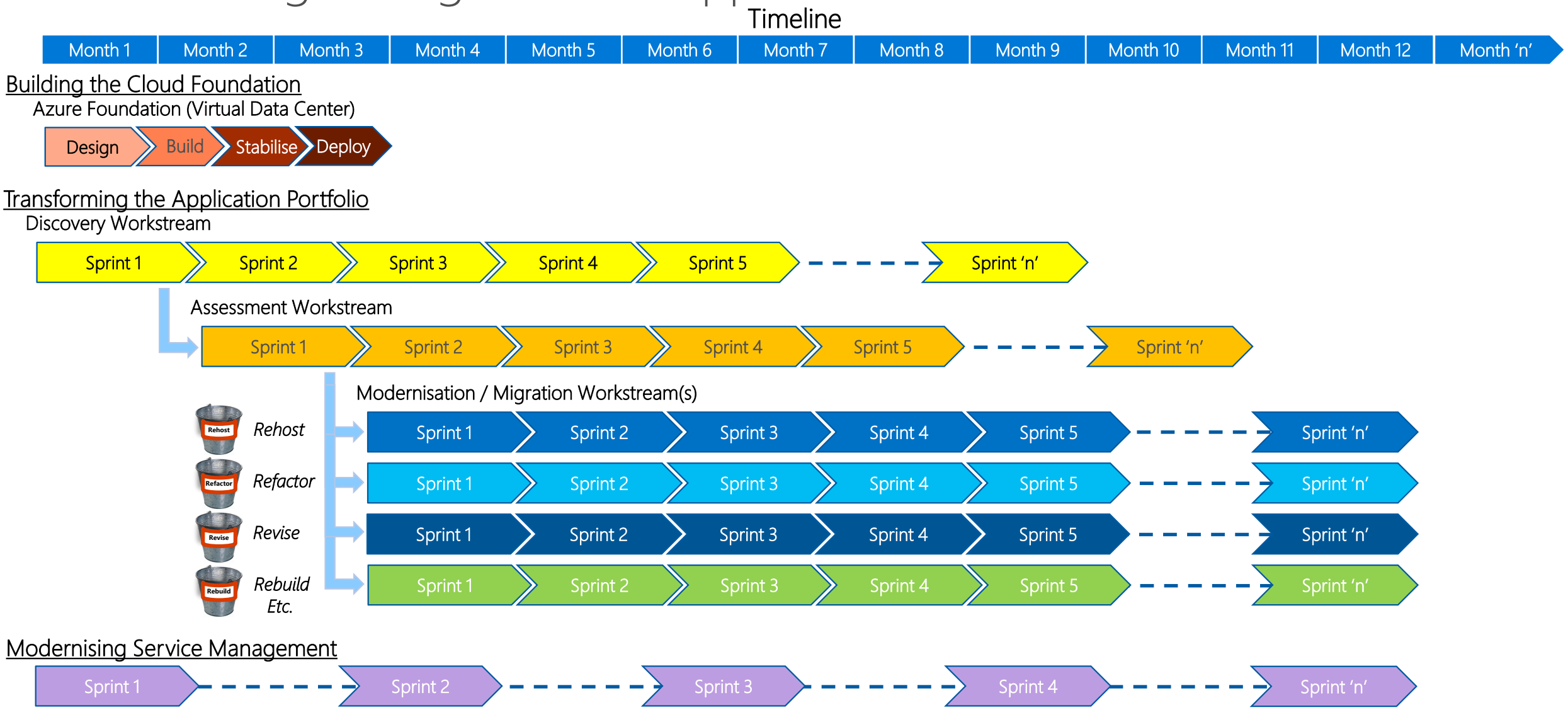
Principles:
Proxy for Enterprise customers to improve our products (Azure and SaaS)
Lead the industry in leveraging the cloud to transform our complex IT environment

Approach:



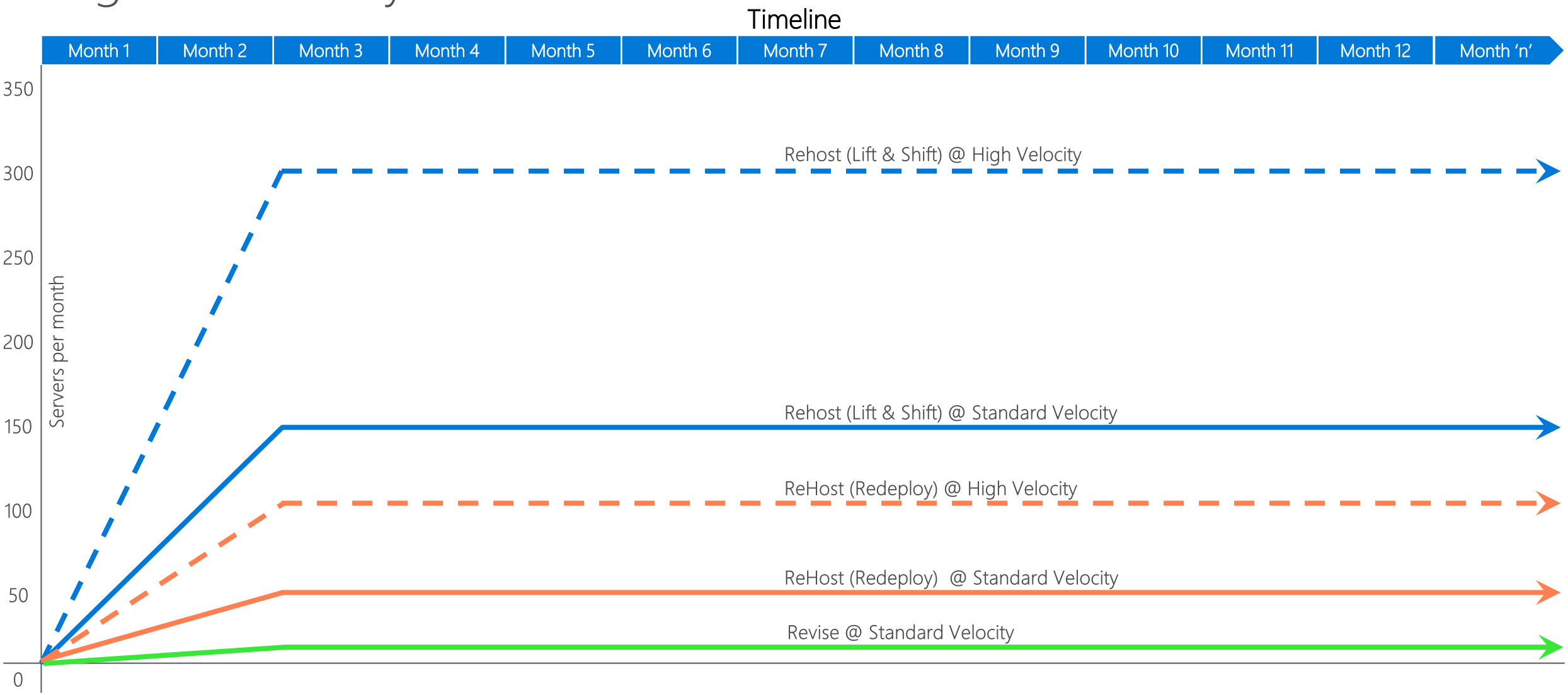
Plan

Needs an Agile Programmatic Approach



Plan

Migration Velocity



Microsoft

Q&A

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