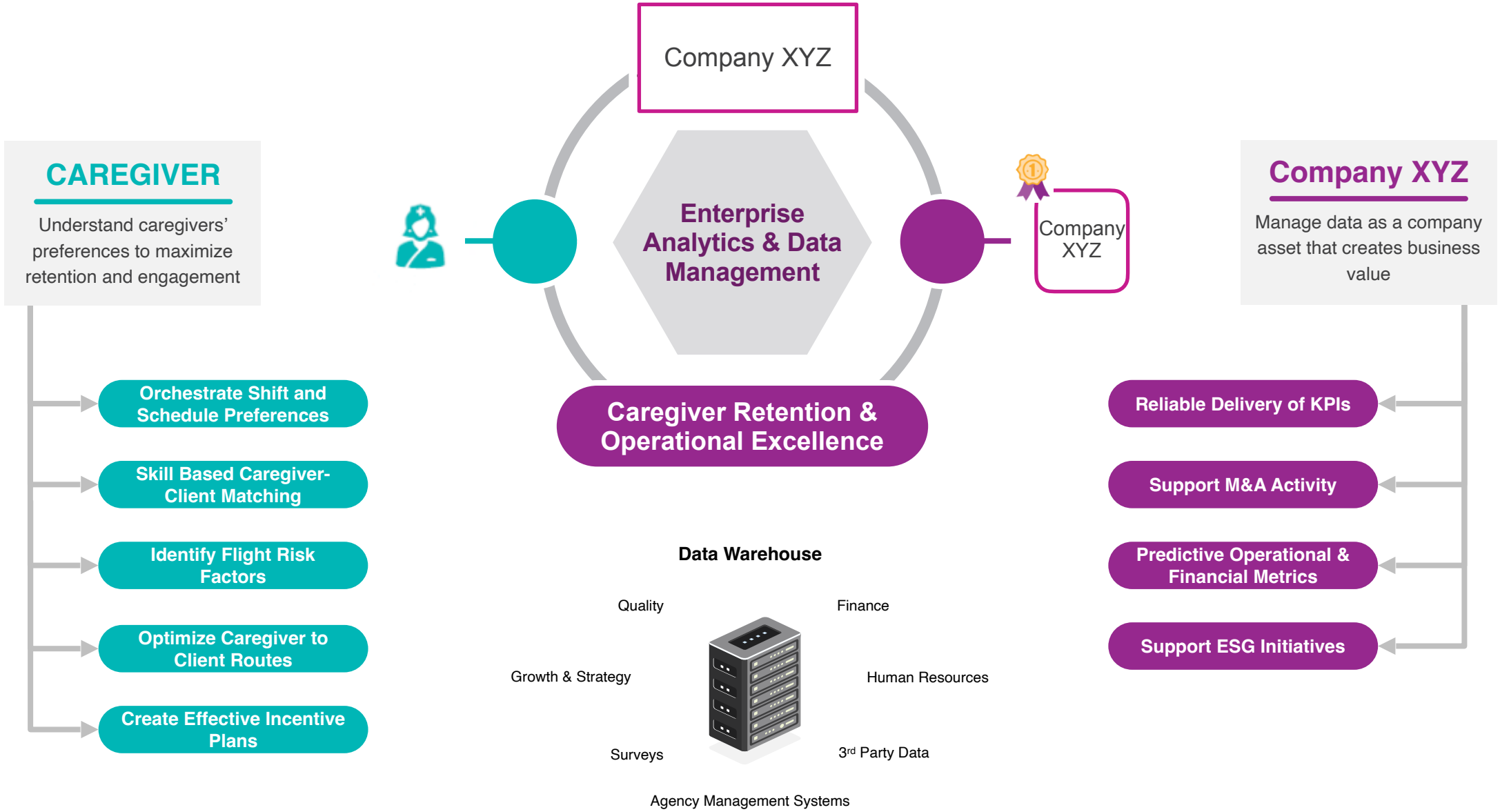
Cloud Strategy

Operational Analytics – Vision



A Cloud-First Mindset Helps

- Less stressed small IT department
  - Shortage of highly skilled, multi-faceted IT staff
  - Outsource as much as we can to focus the IT staff on key business needs
  - Bring focus to frameworks and common components
  - Focus on automation, CI/CD, SCM
  - More skilled over time
- Managed services reduce operational costs
- High availability, resilient storage, disaster recovery, business continuity
- Shared security model reduces stress on smaller teams
- Infrastructure management, maintenance, availability, resilience, reliability is outsourced
- Platform needs are outsourced (Intranet, web apps, APIs etc)
- Access to global infrastructure, expanded reach, edge capabilities, content distribution

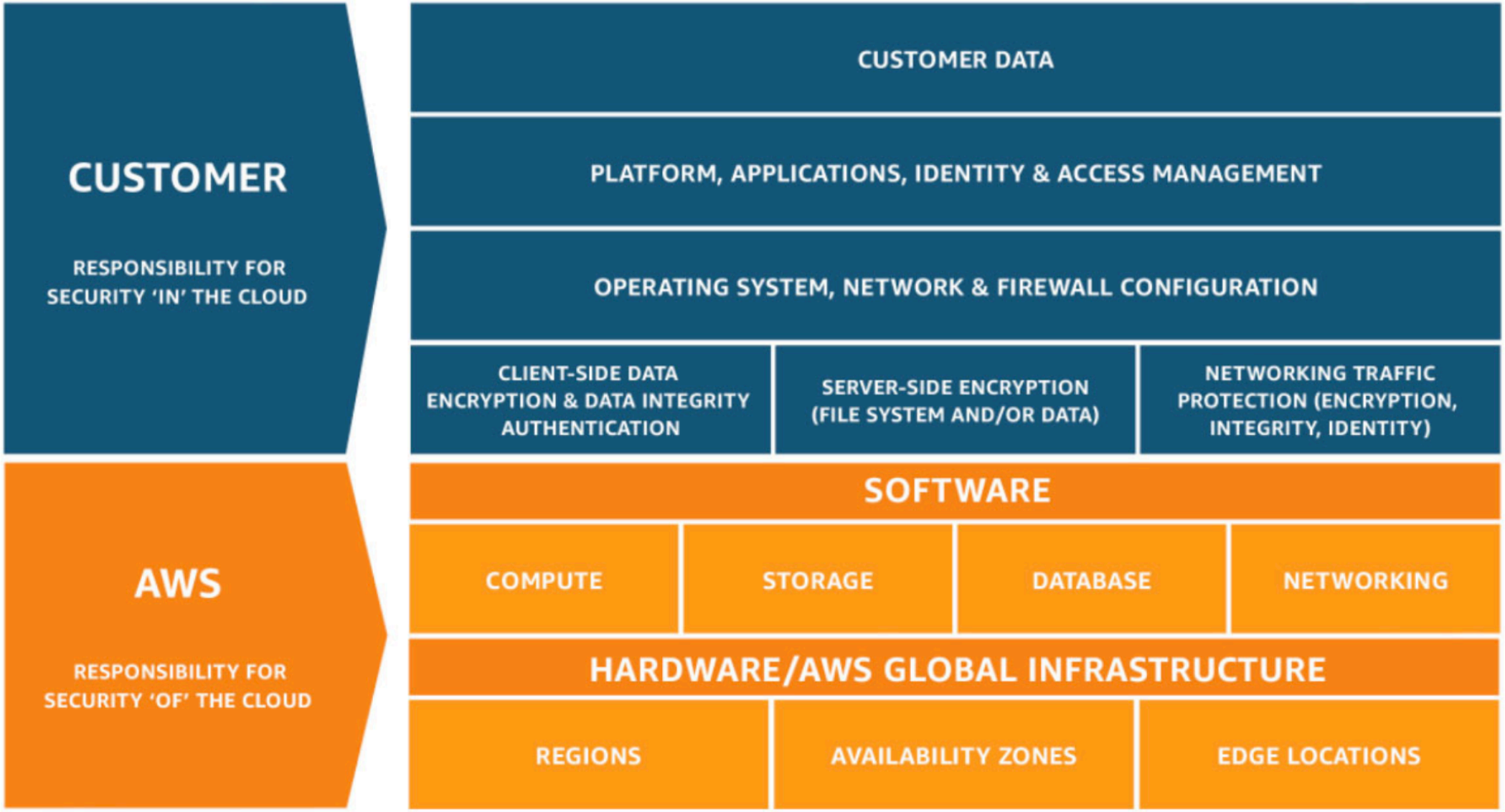
Benefits of Moving to the Cloud

- Cost – Operational - Economies of scale
  - Cloud elasticity – pay for what you use
  - Global network infrastructure
  - Security
  - Data-center facilities
- Outsourcing key aspects, share the responsibility
  - Global network Infrastructure
  - Security
  - Data-center facilities
  - Modern technologies (AI/ML)
- Time to market
  - Velocity
  - Fully managed build and automated deployment tools

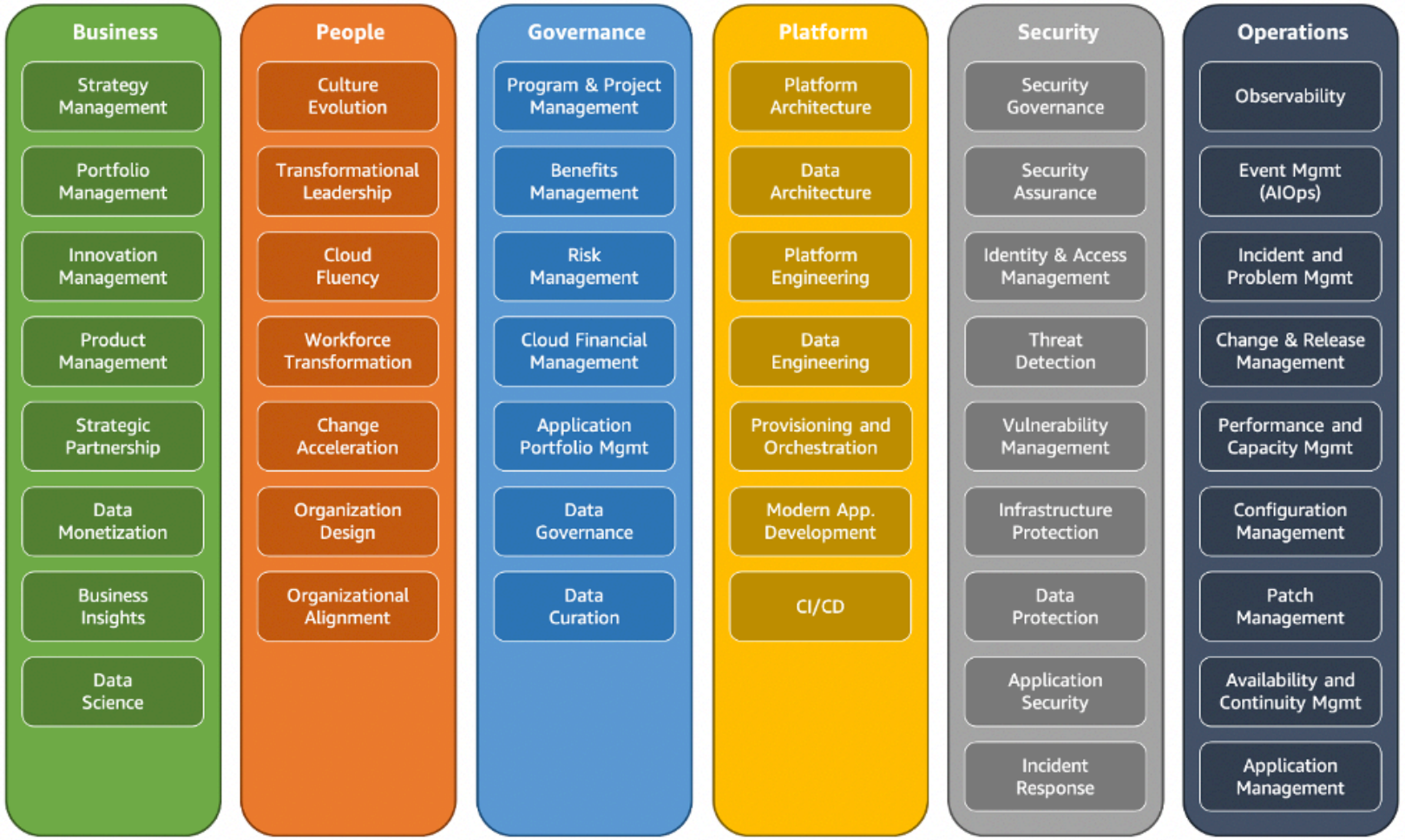
Benefits of Moving to the Cloud

- Insight – Advanced analytics capabilities
- Uptime
  - Fully managed solutions
  - 99.9% SLA
  - Resilience
  - 99.9% or higher availability
- Scalability
  - Reliability
  - Capacity management
  - Serverless Compute
- Performance – Internet/Intranet applications hosted in the cloud, low latency/highly scalable data stores, CDNs
- Security – Infrastructure, shared responsibility
- Transparency – Billing, operational and infrastructure insights

Shared Responsibility model - AWS



Cloud Capabilities and Perspectives

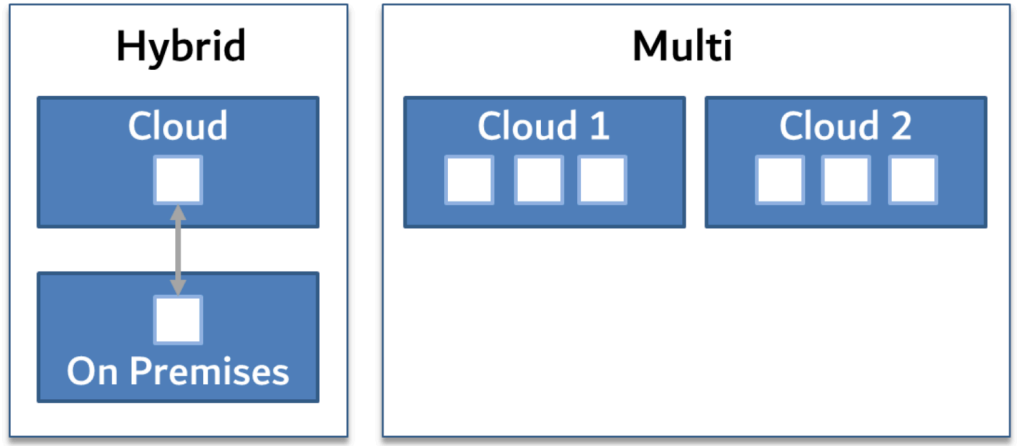


ELT/SLT Support

- Executive Sponsor (Priorities and Resources)
- Chief Architect (Tech Goals and Direction)
  - The Architect Elevator
- Program Manager
  - Runs teams

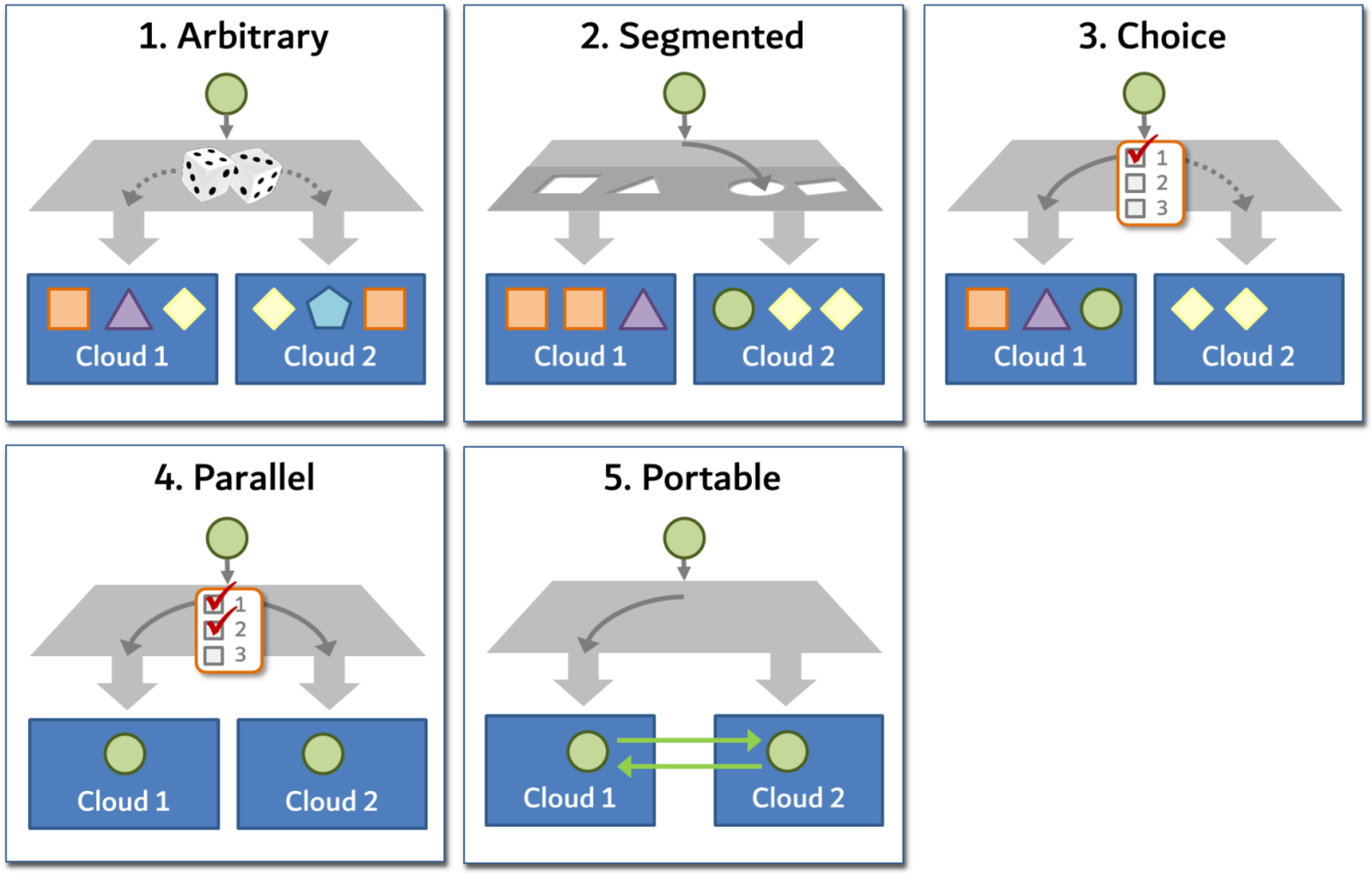
Hybrid or Multi?

- Hybrid (on-prem and cloud)
  - Cost to maintain on-prem infrastructure
  - Disparate security models
  - Deployment costs
  - Movement of data between the two
  - Complex architectures
  - May be a reality for some companies but a transition plan to cloud should be considered
- Multicloud or one cloud? (AWS or Azure or both or more?)
  - This is an explicit choice we can make
  - One cloud is optimal but may not be realistic
  - Cost optimization
  - Minimize skillsets needed
  - Harvest volume discounts



Hybrid and multicloud *1

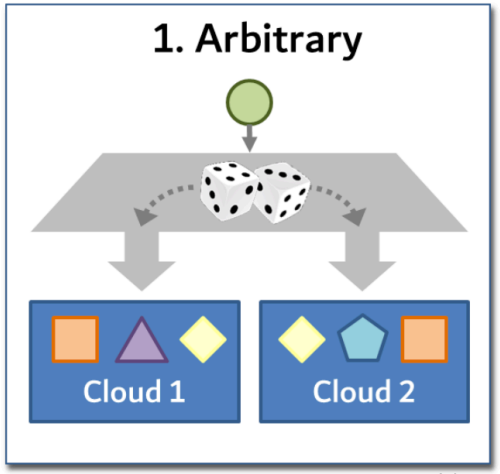
Multicloud Options



Multicloud architecture styles *1

Multicloud Options - Arbitrary

- Some stuff in any cloud
- Result of poor governance and vendor influence
- Based on a company's evolution and lack of standards
- Not a good option to stay with long term
- Must be avoided



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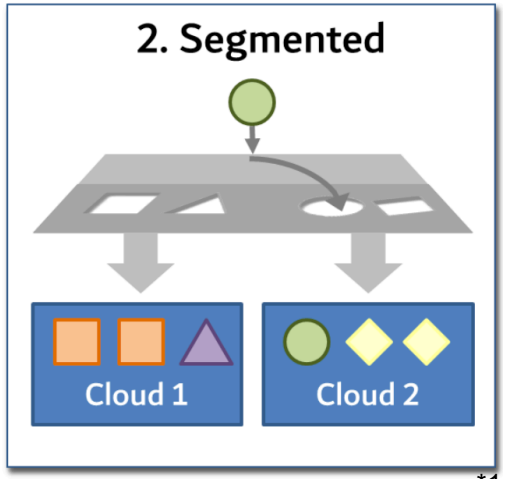
Multicloud Options - Segmented

- Different clouds for different needs
- Choose different clouds for specific types of workloads or services
- Choosing the cloud service provider based on strengths
- Choosing based on different factors:
  - Type of workload (integration vs. data processing)
  - Type of data (public vs. confidential)
  - Type of service (compute vs. analytics vs. infrastructure services)



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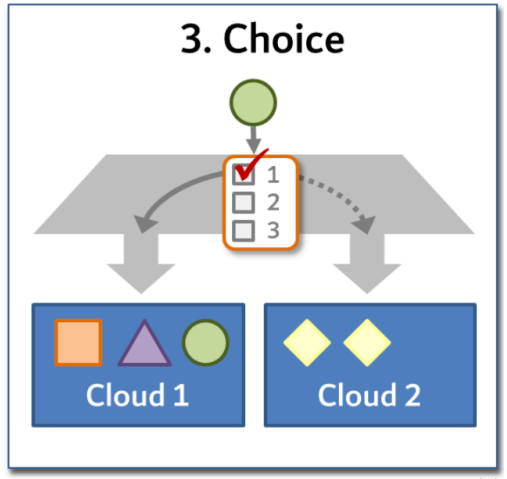
Multicloud Options - Choice

- Most attractive of the choices - Freedom of choice
- Very hard to enforce any standards
- Will need abstraction layers, devops consistency and more oversight
- Developer's choice
- The advantage of this setup is that projects are free to use proprietary cloud services
- Makes for a good initial step for multicloud.



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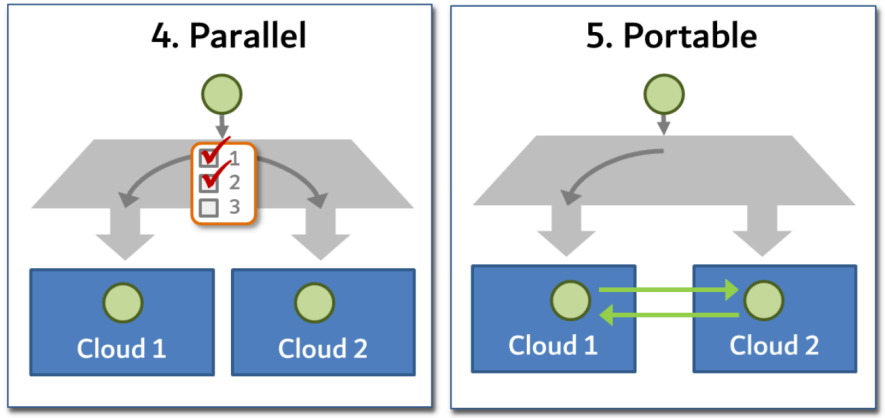
Multicloud Options – Parallel & Portable

- Parallel
  - Looking for more availability, less reliance on one CSP
  - Requires more decoupling, abstraction and generic frameworks
  - Raises cost of maintaining and managing apps
  - Increases complexity

- Portable
  - Free portability across clouds
  - No vendor lock-in
  - Full automation and abstraction is required
  - Highest complexity



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Multicloud Options

Style	Key Capability	Key Mechanism	Consideration
Arbitrary	Deploying to the cloud	Cloud skill	Lack of governance; traffic cost
Segmented	Clear guidance on cloud usage	Governance	Drifting back to "Arbitrary"
Choice	Support project needs/preferences	Common framework for provisioning, billing, governance	Additional layer; lack of guidance; traffic cost
Parallel	Higher availability (potentially)	Automation, abstraction, load balancing/failover	Complexity; underutilization
Portable	Shift workloads at will	Full automation, abstraction. Data portability	Complexity; framework lock-in; underutilization

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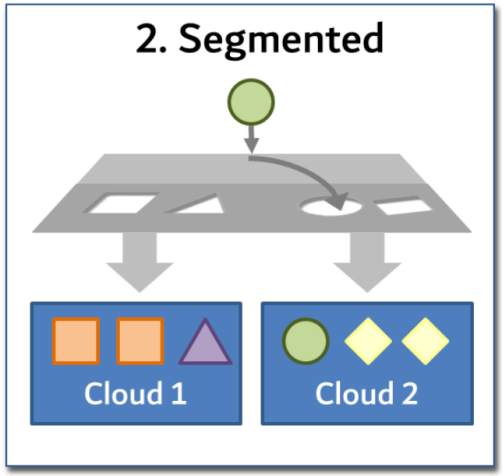
Multicloud for Company XYZ - Segmented

- Analyze our needs
  - Business requirements and processes
  - M&A activities
  - Infrastructure
  - Security
  - App
  - Data
  - Common usage scenarios
- Multicloud makes the most sense
- AWS and Azure
  - Azure for infrastructure (Security (AD), VDI)
  - AWS for Apps, Integration & Data



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Decision Rubric

- Create a core competency for applications, data and integration services in AWS
- Create a core competency for infrastructure related services in Azure
- Establish common patterns for interactions between AWS and Azure

Requirement/Usage Scenario	Decision
FedRAMP High Compliance (App, Data)	AWS GovCloud
FedRAMP Moderate Compliance (App, Data)	AWS Commercial
HIPAA (App, Data)	AWS Commercial
Data	AWS Commercial
Applications	AWS Commercial
Integration Services	AWS Commercial
M&A	M&A chosen cloud provider
Infrastructure (AD, VDI)	Azure

https://aws.amazon.com/compliance/services-in-scope/

Considerations

- Cloud-first mindset
  - Define and agree on enterprise cloud strategy
    - Multi-cloud
    - Strategic partnerships with AWS and Azure
    - Overall security posture
    - Infrastructure architecture
    - Apps, data and analytics
    - Deployment and M&A decision process
- Improved SDLC and Devops strategy to support sustained business growth
  - Change management
  - Audit
  - Automation
  - Quality releases
  - Continuous integration and deployments to improve reliability and availability

Appendix

Citing the Sources

1) Gregor Hohpe (Author), Michele Danieli (Contributor), Jean-Francois Landreau (Contributor), Tahir Hashmi (Contributor) (2020). Cloud Strategy – A Decision-based Approach to Successful Cloud Migration