



CTO Perspective on Cloud – Transforming ICT Services Production to Drive Cloud Business Outcomes

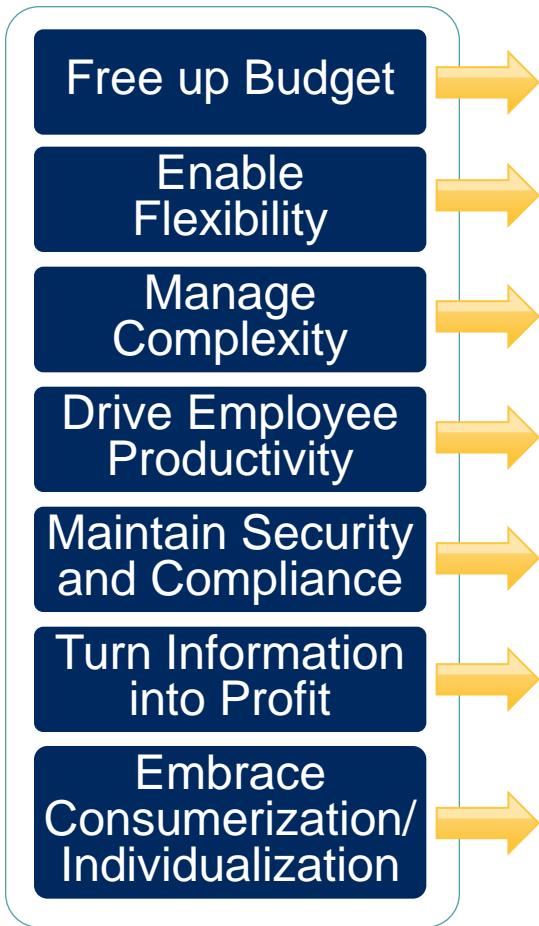
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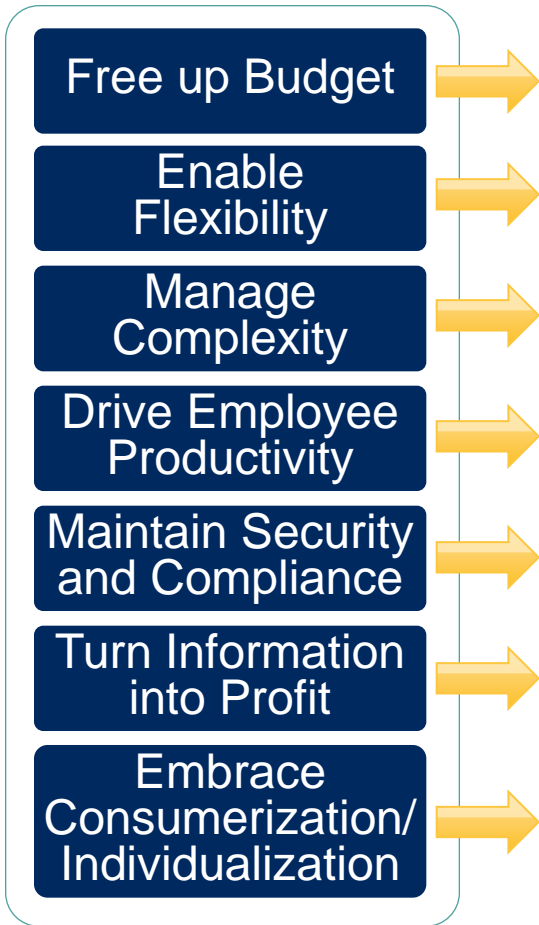
Supply-side needs to drive cloud transformation to meet demand-side requirements

Demand-side

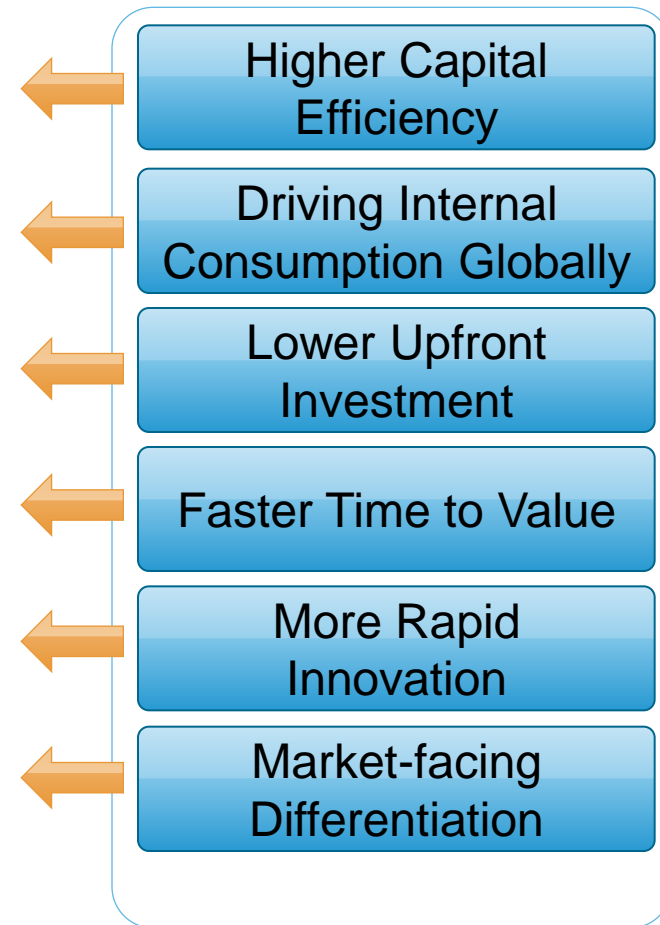


Supply-side needs to drive cloud transformation to meet demand-side requirements

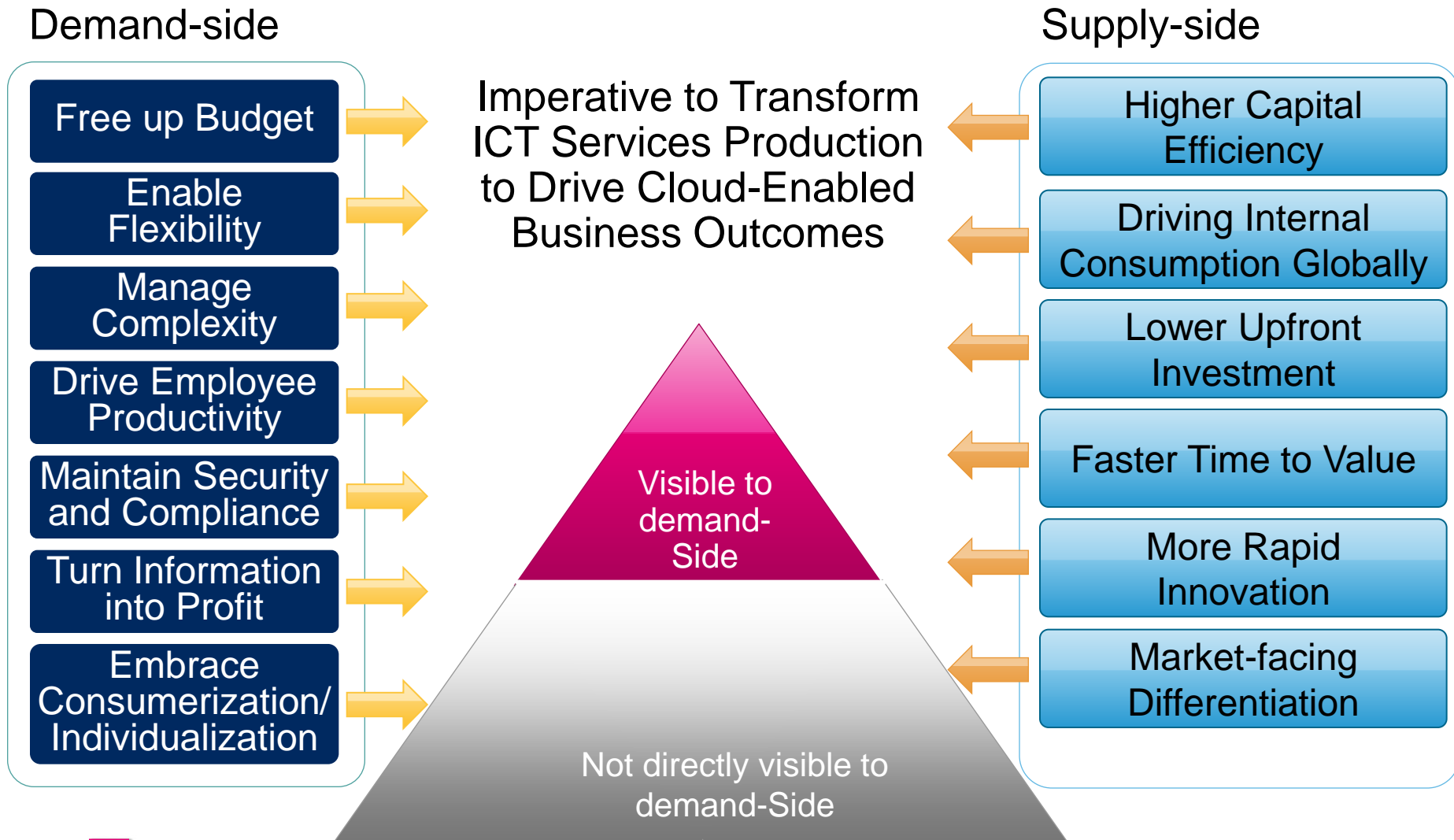
Demand-side



Supply-side



Supply-side needs to drive cloud transformation to meet demand-side requirements



Top levers that CTOs can pull to drive the transformation (1/2)

1. **Pooling cloud production assets** across customers, datacenters, countries and business units creates minimum efficient scale*
2. **End-to-end automation**, combining customer empowerment (e.g., app store) with application-to-infrastructure orchestration, reduces cost and complexity in service mgt and operations
3. **Highly modular production platforms** with high parts commonality are best suited to address spectrum of use cases
4. **Embracing open standards** and market-relevant API's as they become available
5. **Focus resources on areas of sustainable differentiation**, leveraging vendor-side innovation, e.g., unified computing / integrated stacks, pay-as-you-go

Cloud-Enabled Supply-Side Business Outcomes

Higher Capital Efficiency

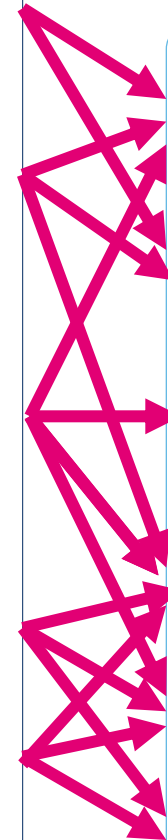
Driving Internal Consumption Globally

Lower Upfront Investment

Faster Time to Value

More Rapid Innovation

Market-facing Differentiation



Top levers that CTOs can pull to drive the transformation (2/2)

6. Security should be an advantage, not an inhibitor

- Security is an imperative, can be a differentiator, but also a major cost driver or obstacle to innovation
- Therefore, specific implementations need to consider economic requirements in different segments

7. Accelerated piloting of new services reduces burden on run-time operations

8. One organizational unit must be responsible for producing shared services in cloud mode. Only customer-specific requirements not supported in any platform may be implemented de-centrally

9. Strong governance. Any sizable changes to the production technology stack as well as to production assets across the enterprise will be evaluated for compliance with these design principles*

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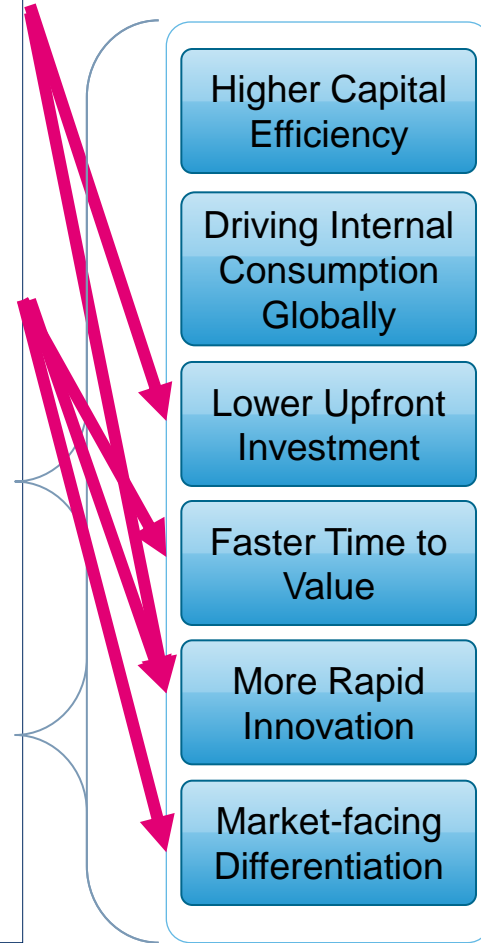
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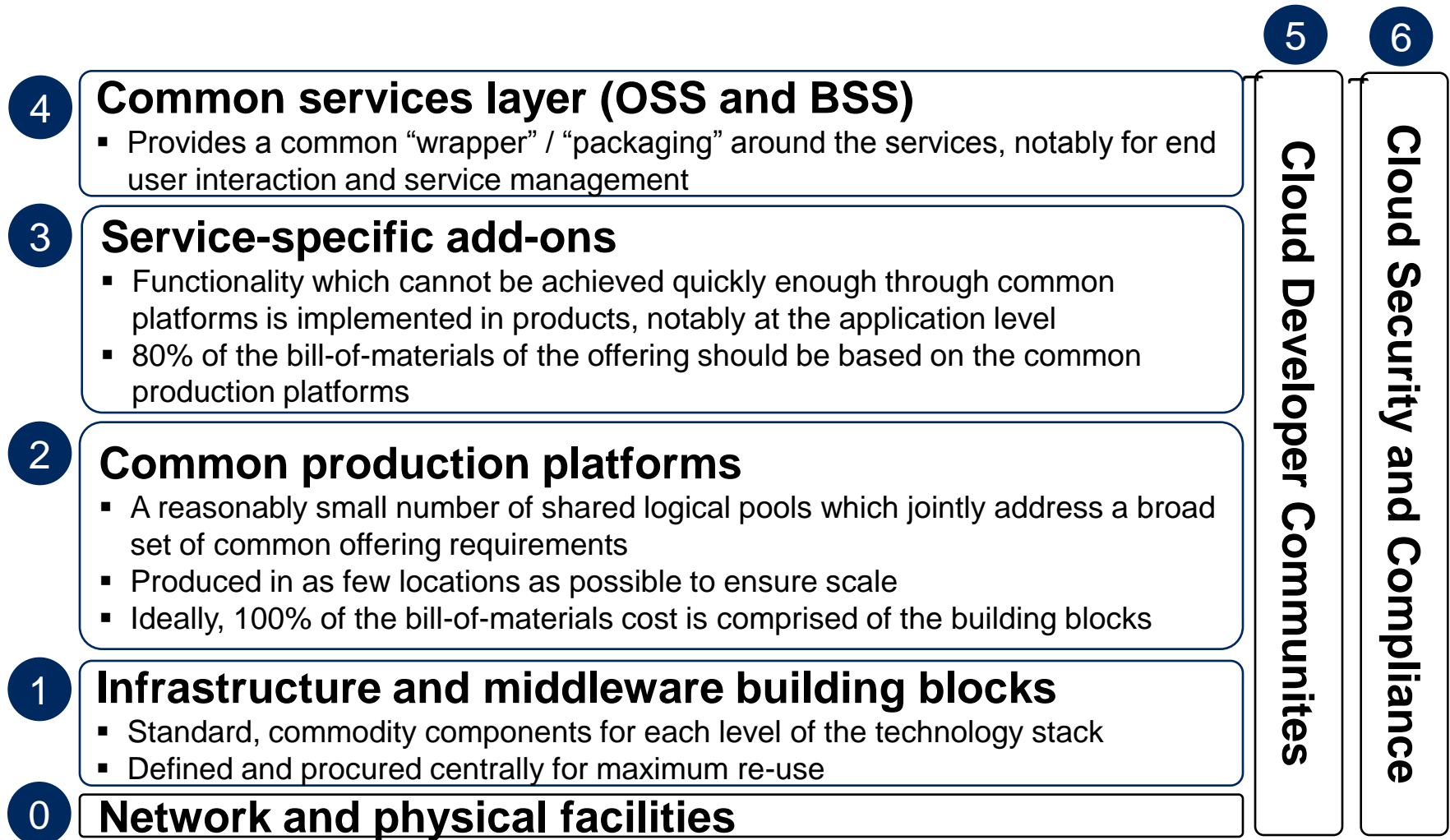
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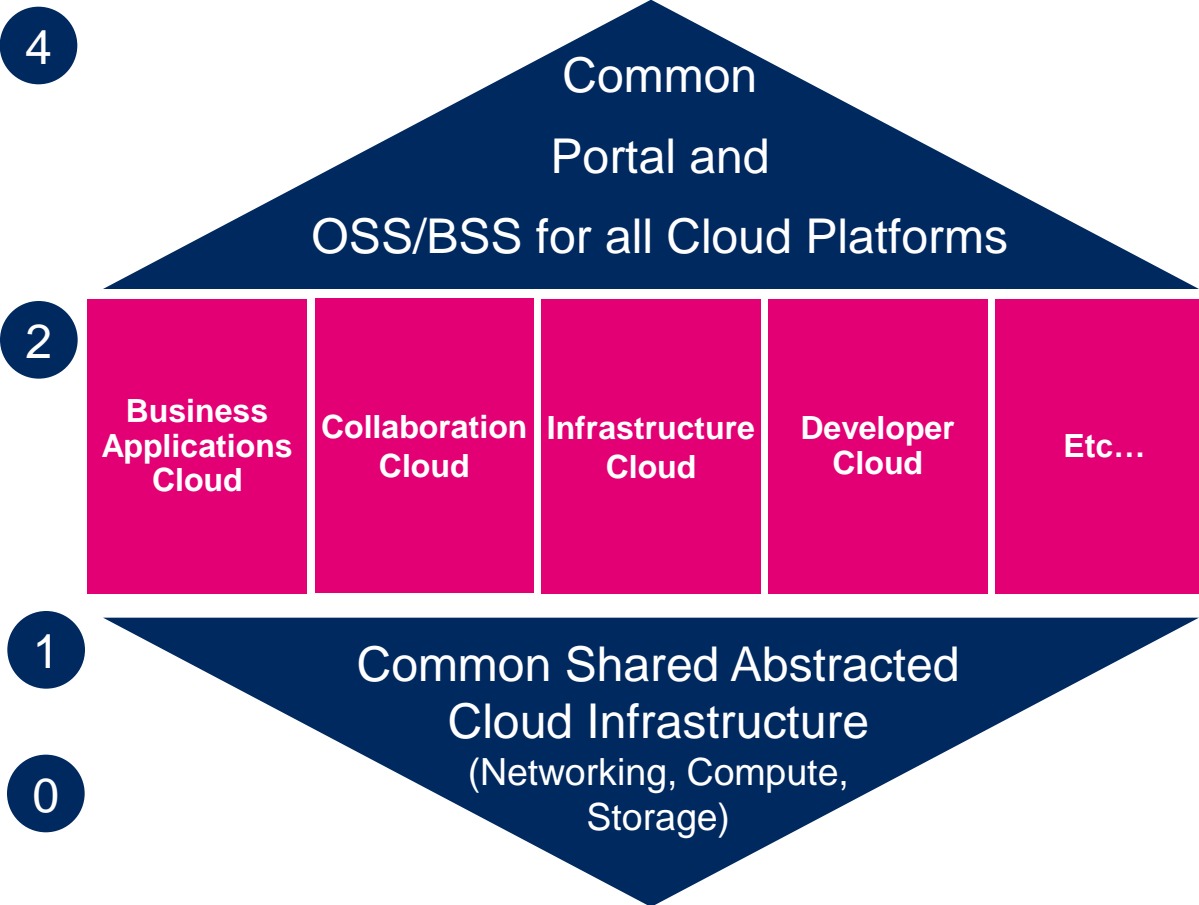


* In addition to usual considerations, e.g., business case

A target cloud production architecture delivers on modularity and parts commonality



Target is to efficiently support many different clouds with one converged Cloud Factory



- **Must support all Cloud Ecosystems in shared globally distributed environment**
- **Cloud Ecosystem Platforms addressing specific customer needs**
- **Functionally complete, modular middleware stack**
- **All physical DCs combined into one logical, virtual resource pool, with layer 2 networking spanning all sites**
 - **Easily re-allocable to serve different cloud platforms**
 - **No locked in Capex Pools**
- **Full automation, load sharing**
- **All Hardware is stateless**
 - **Rapid repurposing of assets via policy based orchestration**