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*Zero infrastructure:  
Anything-as-a-service*



A technology operating  
model for the cloud-  
centric era

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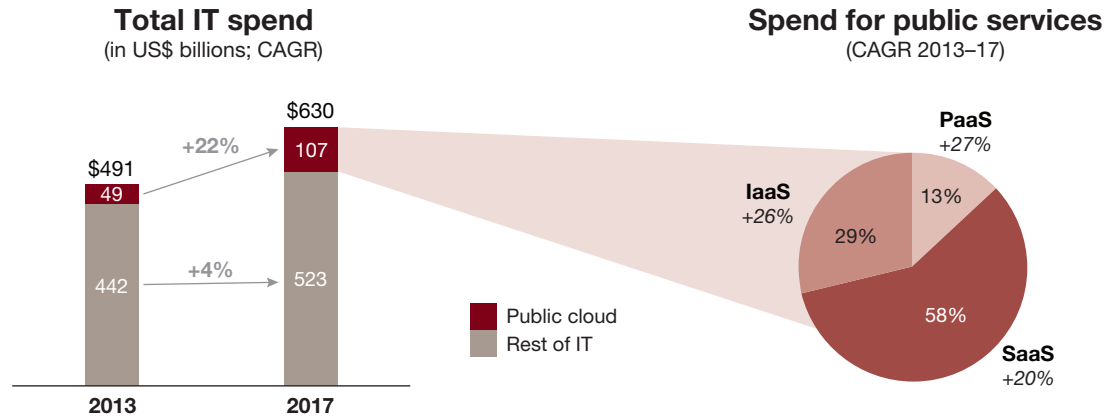
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# Executive summary

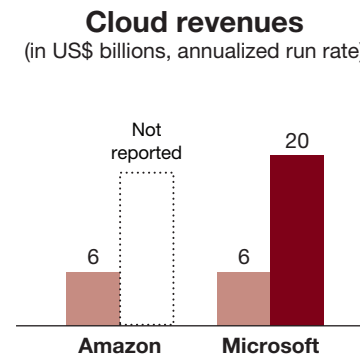
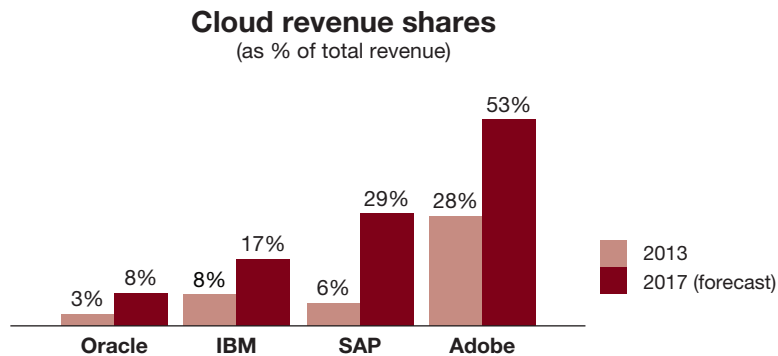
- **The cloud, especially the public cloud, is now officially beyond hype.** Supply options are real, as is enterprise buyer spend.
- Increasingly, chief experience officers (CXOs) are using the cloud to solve **the most important business and technology challenges** across all functions of the business, from speed and agility to innovation and cost advantage.
- The cloud is becoming the core paradigm for delivering business technology, with an **aspirational promise of “zero infrastructure — anything-as-a-service.”**
- To deliver on this promise, **tech operating models will need to evolve and grow a new set of cloud-centric capabilities** that are very different from the old ways of IT:
  - A new, consultative approach to cloud demand and business relationship management*
  - A retooled architecture, engineering, and operations capability, embracing such concepts as cloud orchestration tool sets, continuous integration and deployment, and development operations (DevOps)*
  - Strong controls for cloud consumption, performance, and vendor/partner management*
- **Where to start, and where to focus, will depend on your industry.** The journey will look different for players whose technology is the product vs. less tech-centered mid-cap and large enterprises.
- We offer a **blueprint for a cloud-centric operating model, and a road map for how to get there.**

# After years of hype, public cloud services are now reaching scale — with dramatic growth ahead



## Observations

- What we see today is only a **glimpse of what lies ahead**
- Public cloud services are **dramatically outpacing general IT spend** (22% vs. 4% CAGR)
- Companies adopt service models, going as far as striving for a **zero infrastructure footprint**
- **IT suppliers are rapidly adopting their business models** to compete with new players



Note: Numbers are analyst estimates and are not exactly comparable.

Source: IDC; Forrester; Gartner; Oracle; Strategy& analysis

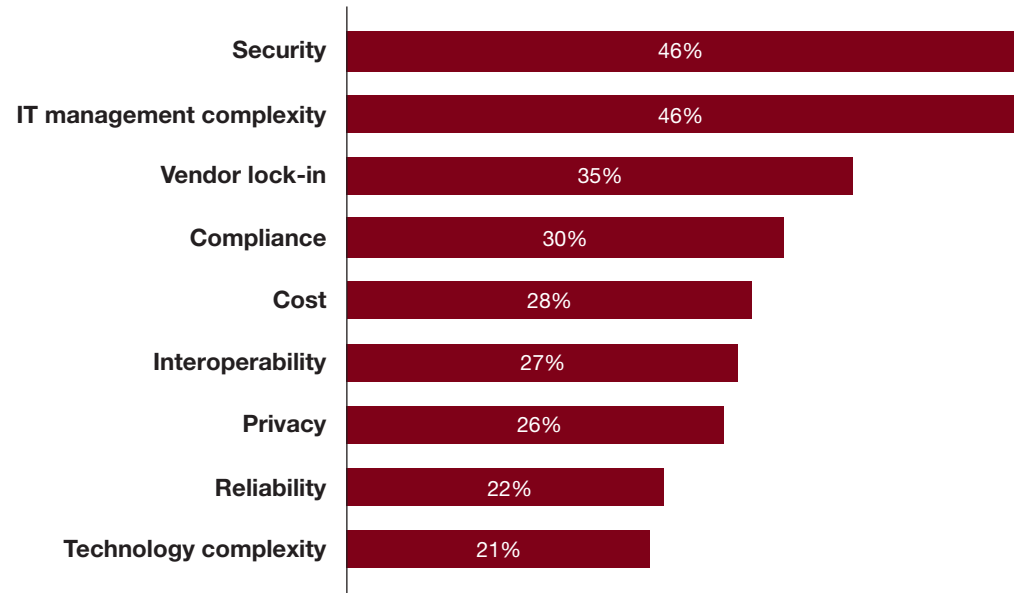
# Cloud models have benefits beyond costs, but a number of perceived and real inhibitors slow adoption

## Expected benefits of cloud operating models

- **Costs:** Declining infrastructure costs (Moore's law), competitive environment, pay-per-use model, opex for capex
- **Scalability/elasticity of supply:** Resources scale based on user demand, transparent resource utilization
- **Manageability:** Self-service and automation, SaaS/PaaS replace complex legacy solutions
- **Agility:** Faster time-to-market
- **Mobility:** Aligned with new customer behavior, supporting mobile workforces

## Key inhibitors of cloud adoption

(% of respondents who mentioned)



Source: North Bridge (2013); Strategy& analysis

# *The move to the cloud is creating a disruption comparable to the shift from mainframe to client/server architecture*

## Evolution of the digital technology agenda

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### Today

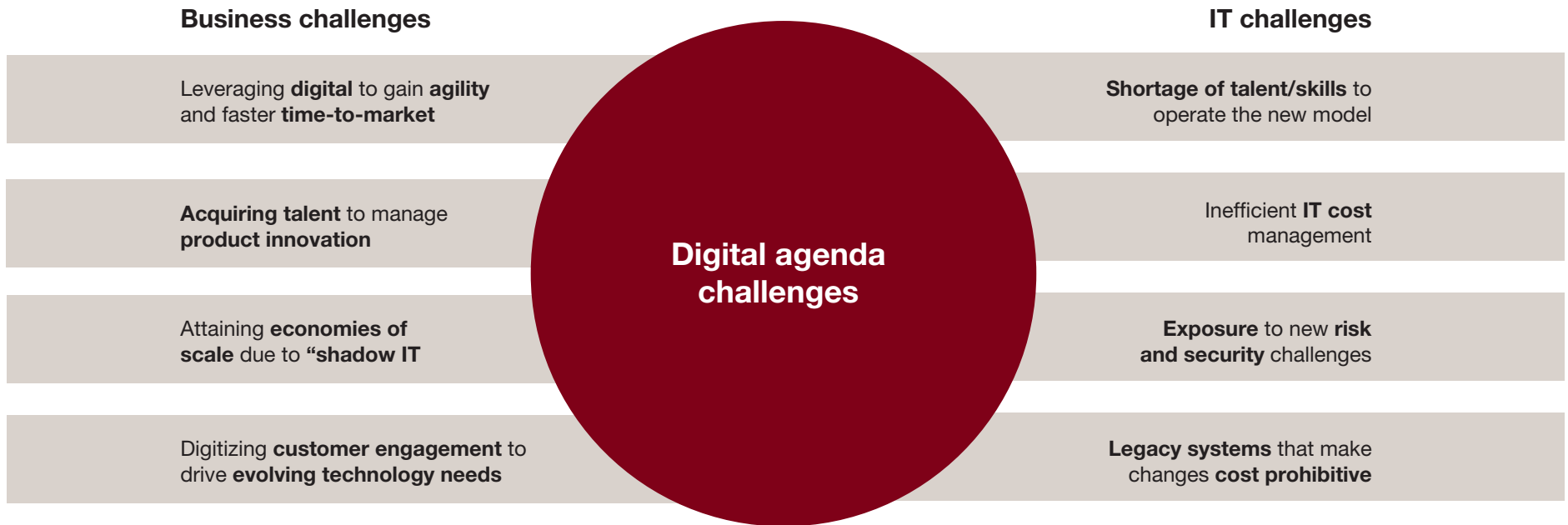
- **Custom-developed applications and stand-alone platforms** requiring onerous maintenance schedules
- **Siloed development and operations functions** managing lengthy release cycles
- **Long lead times to provision** IT components and code deployments
- **Dedicated, high-touch infrastructure** (data centers, server, storage, mainframe) estate
- Focus on development and supporting operations — **“IT for IT”**
- **Device-driven, static-capacity** end-user IT and supporting business services
- **Big IT/CIO controlling** the IT spend and resourcing

### Tomorrow

- **Standard, cloud-based, integrated SaaS/PaaS solutions** — focus on configuration vs. code
- **Continuous software delivery with accelerated time-to-market** enabled by collaborative DevOps
- **On-demand provisioning** of IT infrastructure services
- **Zero infrastructure:** low-touch, flexible, and scalable compute and store capacity
- Orchestrator of services, focused on business enablement — **“IT for business”**
- **Software-defined, auto-scalable** end-user IT and supporting business services
- **Shared funding and resourcing** among IT, business, and partners

Source: Strategy&

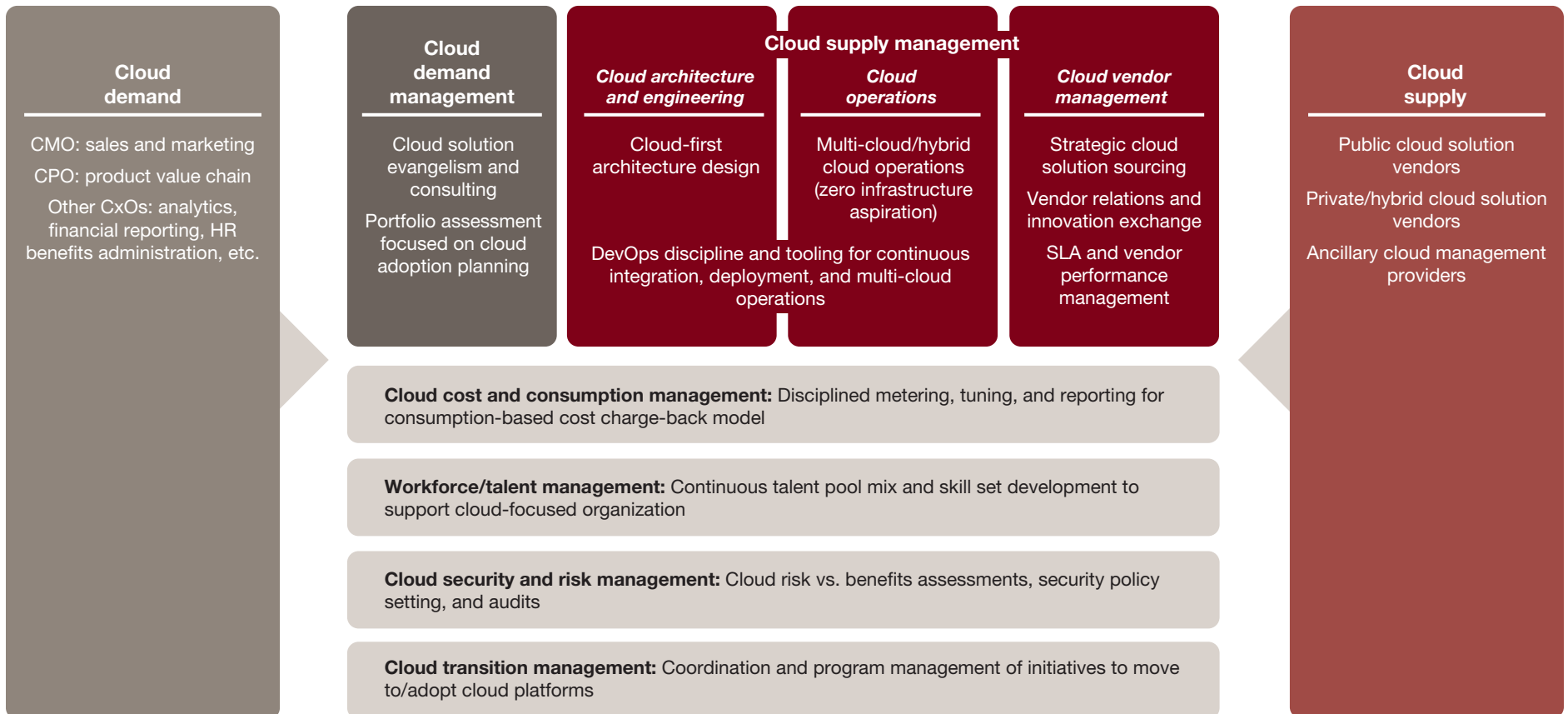
# Senior executives looking to adopt a cloud strategy face substantial business and IT challenges



Source: Strategy& analysis

# Transitioning to the cloud requires a mix of new and enhanced traditional operating model capabilities

Holistic view: Components of an ideal cloud-centric operating model

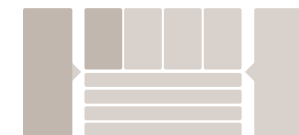


Source: Strategy& analysis



# Demand for cloud services is largely driven by needs of stakeholders outside the IT domain

	Key stakeholder strategic objectives	Digital agenda implications
<b>CMO</b>	<ul style="list-style-type: none"> <li>– Faster time-to-market and increased agility</li> <li>– Innovative sales and marketing powered by cloud solutions</li> <li>– Enhanced user and customer experience</li> </ul>	<ul style="list-style-type: none"> <li>– Enable advanced analytics through cloud-based solutions</li> <li>– Digitize customer engagement platforms</li> </ul>
<b>CPO</b>	<ul style="list-style-type: none"> <li>– Innovative service and/or product design – component customization based on rapidly evolving customer needs</li> <li>– Product value chain digitization and innovation</li> </ul>	<ul style="list-style-type: none"> <li>– Digitize technology service stack for product customization</li> <li>– Define architecture standards for product development</li> </ul>
<b>CIO</b>	<ul style="list-style-type: none"> <li>– Cloud-first target architecture blueprint</li> <li>– DevOps service management model supporting hybrid cloud platforms</li> <li>– Strict security and risk management</li> </ul>	<ul style="list-style-type: none"> <li>– Define architecture standards for corporate IT platforms</li> <li>– Digitize infrastructure to achieve a zero infrastructure footprint</li> <li>– Build cloud security capability</li> </ul>
<b>CxO</b>	<ul style="list-style-type: none"> <li>– Cost control and allocation</li> <li>– Capex to opex shift for increased operational agility and economies of scale</li> <li>– Back-office process automation</li> </ul>	<ul style="list-style-type: none"> <li>– Establish cloud consumption and cost control mechanism</li> <li>– Develop strong-form vendor management</li> <li>– Digitize back-end and support processes and functions</li> </ul>

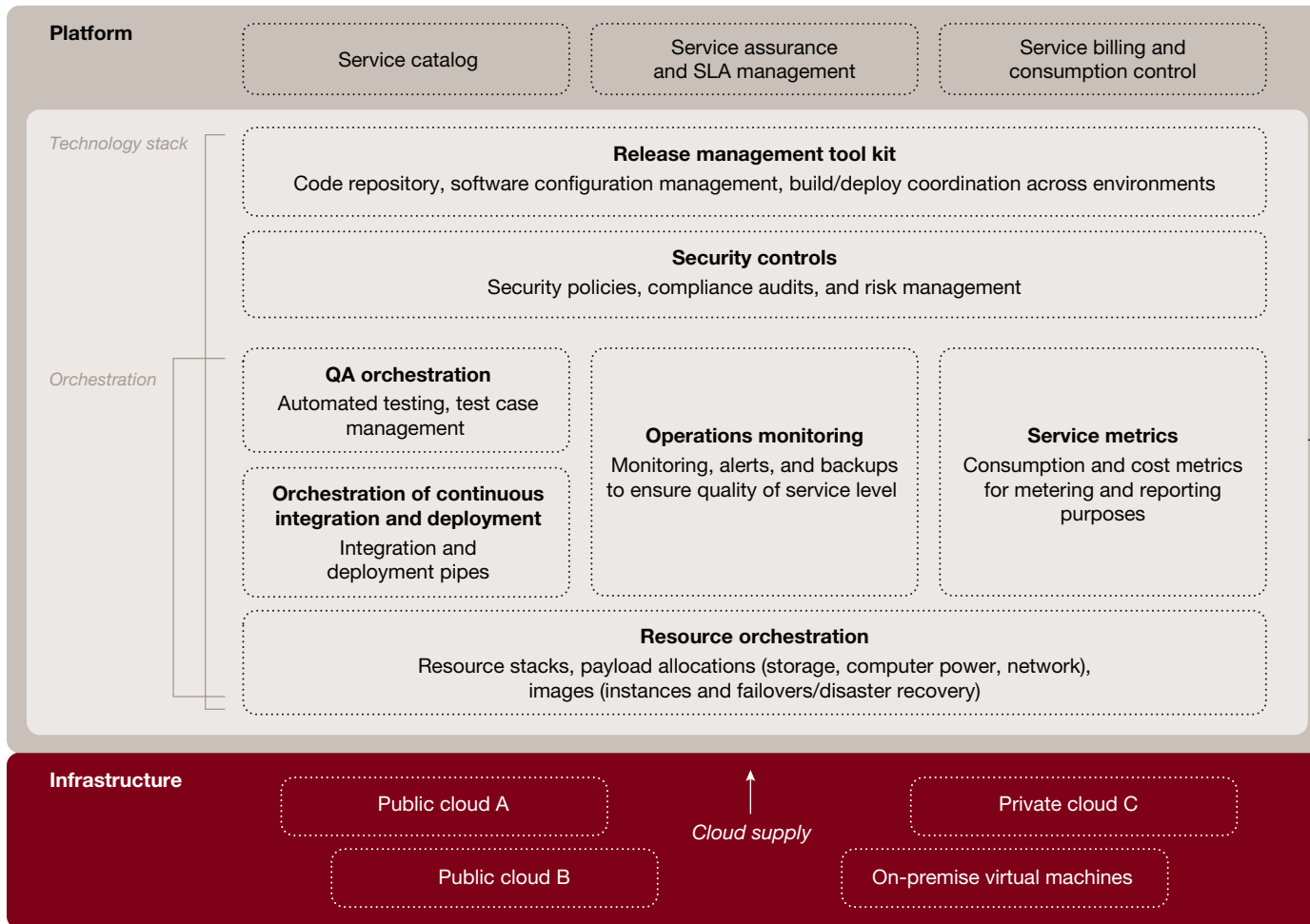


Cloud demand

Source: Strategy& analysis

# Cloud IT architecture is constantly evolving, standards are rare, and new technologies keep rolling out

Trends in cloud architecture stack technologies



Cloud architecture and engineering

● Growing list of commercial and open-source solutions provide a range of alternatives to manage the cloud technology stack.

App container and orchestration can be managed through a number of platforms.

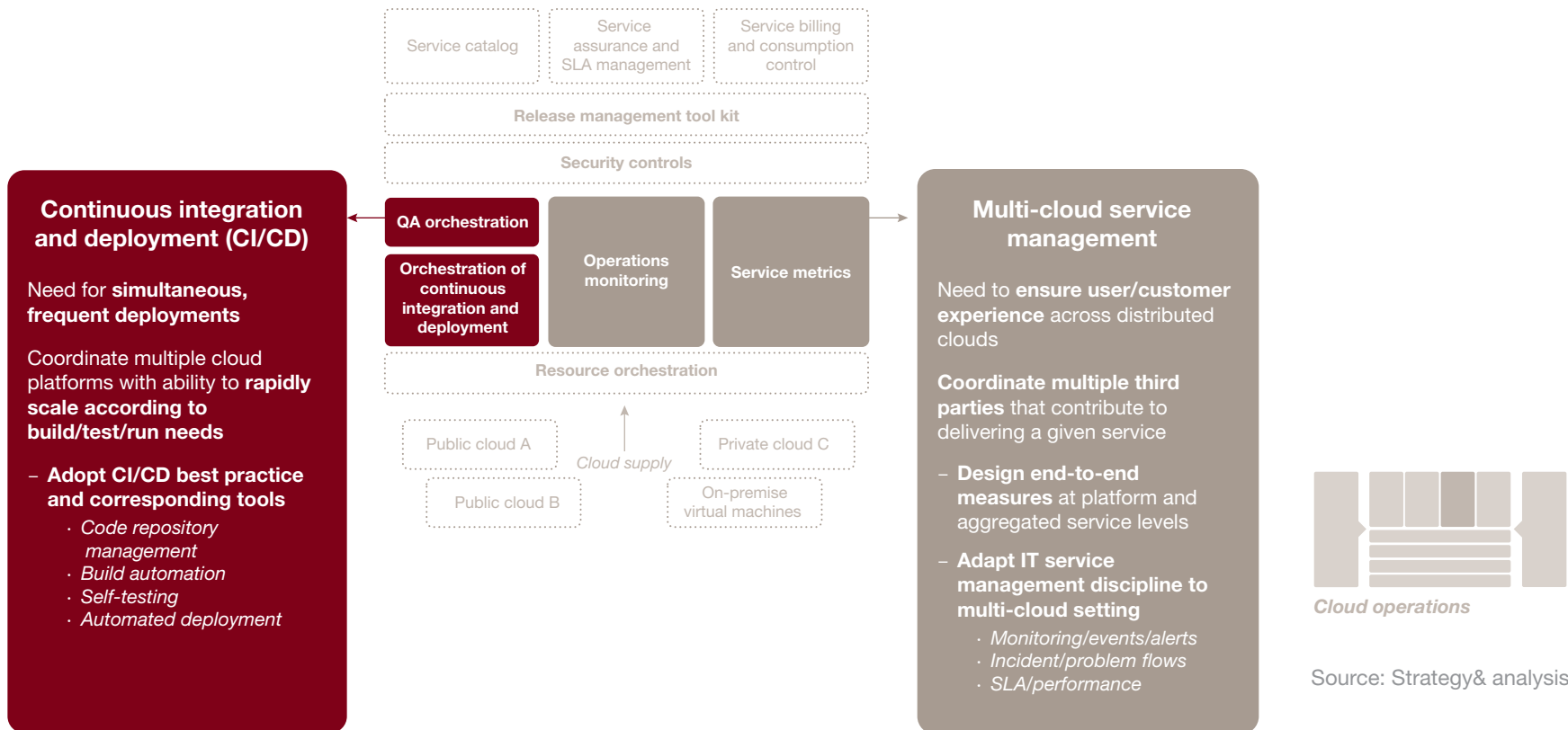
Fierce competition within public cloud space is driving prices down.

● Private cloud and on-premise VM providers are expanding into hybrid solutions.

Source: Strategy& analysis

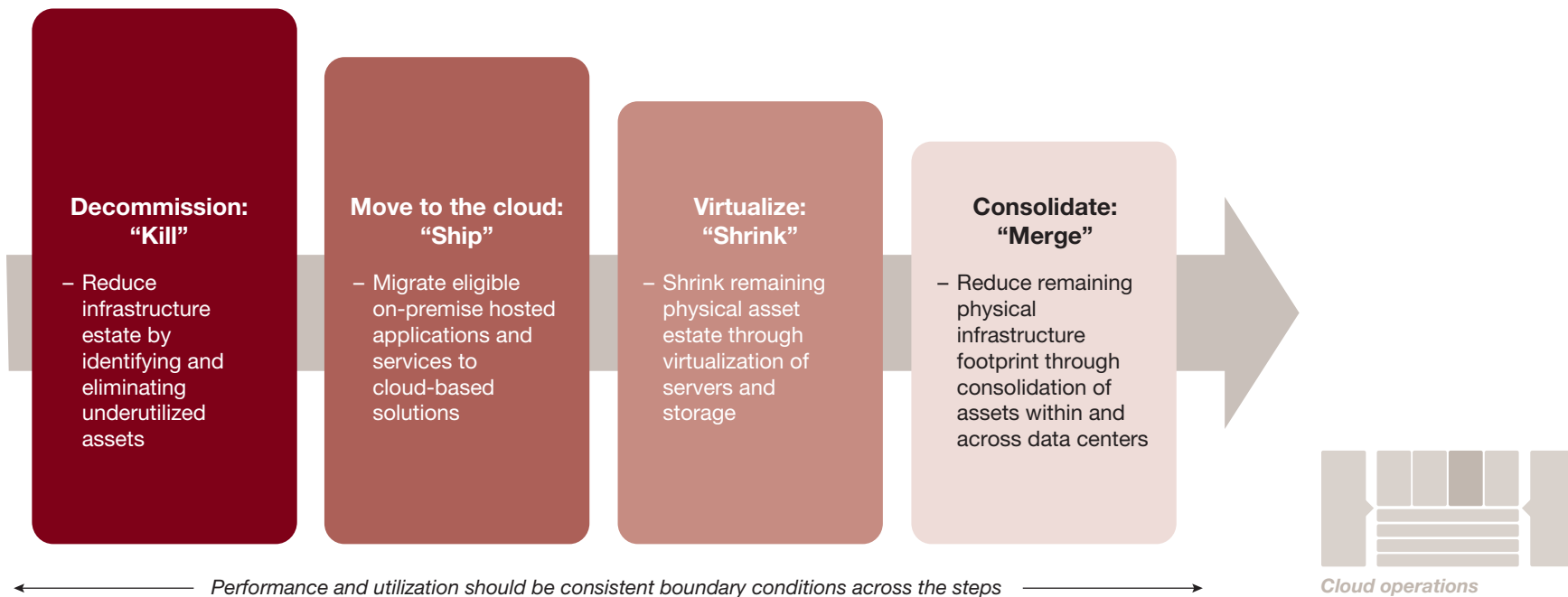
# A cloud-centric delivery model requires a new, more fluid, DevOps-style take on service deployment and operations

## Cloud deployment and operations considerations



# Organizations can set the path toward a zero infrastructure footprint by employing a four-step asset reduction process

## Four steps toward a zero infrastructure footprint



Source: Strategy& analysis

# The cloud service supplier landscape is diverse, and maturity varies across technology and domains

## Cloud supplier landscape and maturity

### SaaS

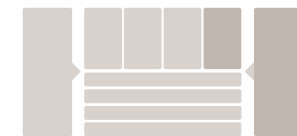
<b>Enterprise software</b> <ul style="list-style-type: none"> <li>- IBM</li> <li>- Oracle</li> <li>- SuccessFactors</li> <li>- Workday</li> </ul>	<b>Collaboration and productivity</b> <ul style="list-style-type: none"> <li>- Atlassian</li> <li>- Google for Work</li> <li>- Jive</li> <li>- Kaltura</li> <li>- Office 365</li> <li>- ON24</li> <li>- Yammer</li> </ul>	<b>Content management</b> <ul style="list-style-type: none"> <li>- Adobe CQ5</li> <li>- HP Autonomy</li> <li>- OpenText</li> <li>- SDL</li> </ul>	<b>CRM</b> <ul style="list-style-type: none"> <li>- Oracle Service Cloud</li> <li>- Salesforce</li> <li>- SugarCRM</li> </ul>	<b>E-commerce/ payments</b> <ul style="list-style-type: none"> <li>- Demandware</li> <li>- Hybris Software</li> <li>- IBM Sterling Commerce</li> <li>- Intershop</li> <li>- Oracle Commerce</li> </ul>	<i>Examples:</i> High supplier diversity Will continue to grow as more applications move to the cloud Interoperability is a challenge
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### PaaS

<b>Security</b> <ul style="list-style-type: none"> <li>- Alert Logic</li> <li>- Integralis</li> <li>- SAVVIS</li> <li>- Silver Sky</li> </ul>	<b>Private cloud stacks/solutions</b> <ul style="list-style-type: none"> <li>- Cisco</li> <li>- IBM</li> <li>- Microsoft Azure</li> <li>- OpenStack</li> <li>- VMware</li> </ul>	<b>App containers and middleware</b> <ul style="list-style-type: none"> <li>- Docker</li> <li>- Force.com</li> <li>- Google App Engine</li> <li>- IBM Bluemix</li> <li>- Microsoft Azure</li> <li>- TIBCO</li> </ul>	<b>Big data and analytics</b> <ul style="list-style-type: none"> <li>- Adobe Analytics</li> <li>- Amazon Web Services</li> <li>- Cloudera</li> <li>- Hortonworks</li> <li>- MapR</li> <li>- SAP HANA</li> <li>- SAS Analytics</li> <li>- Webtrends</li> </ul>	<i>Examples:</i> Emerging standards (e.g., Docker, OpenStack) Need to integrate and bridge private and public offerings
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### IaaS

<b>Network</b> <ul style="list-style-type: none"> <li>- Brocade</li> <li>- Cisco</li> <li>- HP</li> <li>- Juniper</li> <li>- OpenFlow</li> <li>- VMware</li> </ul>	<b>(Enterprise) storage</b> <ul style="list-style-type: none"> <li>- Amazon Web Services S3</li> <li>- Box</li> <li>- Dropbox</li> <li>- Egnyte</li> <li>- Google Cloud</li> <li>- Microsoft Azure</li> </ul>	<b>Computing</b> <ul style="list-style-type: none"> <li>- Amazon Web Services EC2</li> <li>- Google App Engine</li> <li>- Microsoft Azure</li> <li>- SoftLayer</li> </ul>	<i>Examples:</i> Growth will be driven by volume/unit cost advantages Growing maturity of offerings Diminishing relevance of risk/security concerns
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Cloud supply

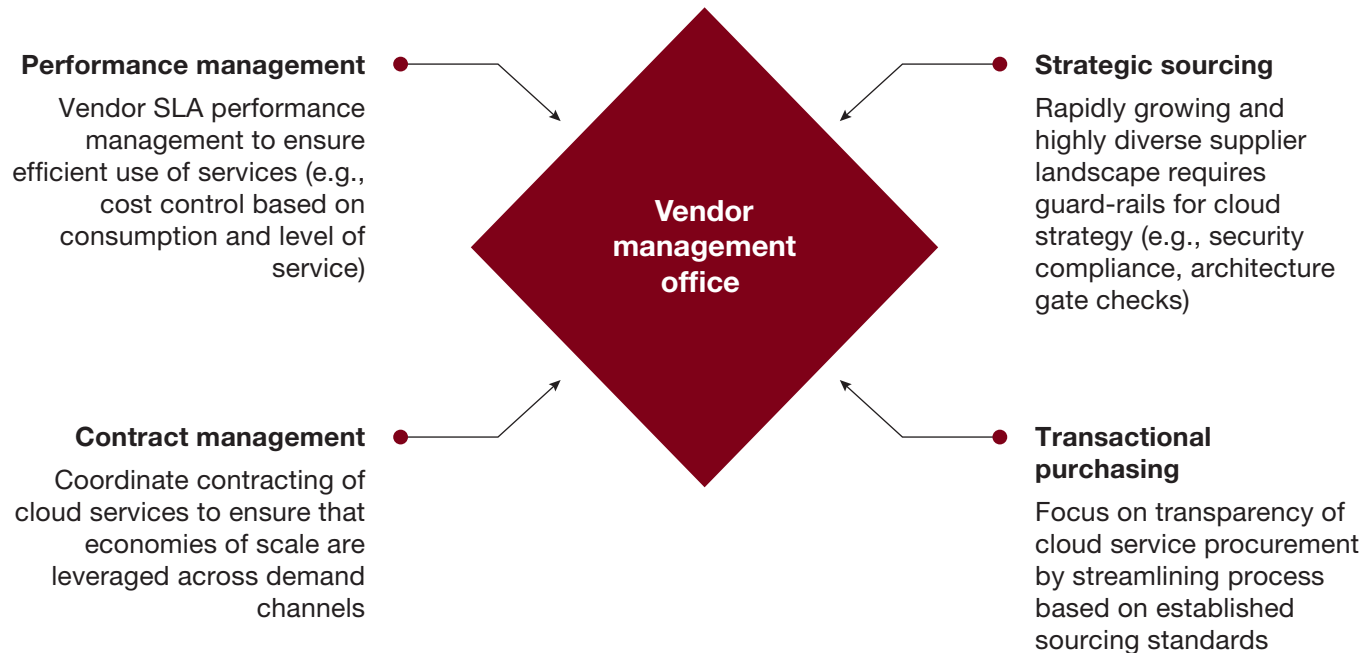
#### Maturity of product offering:

- High
- Medium
- Low

Source: Strategy& analysis

# *Sourcing cloud services through a central VMO function allows organizations to leverage scale and expertise*

## Cloud-centric vendor management

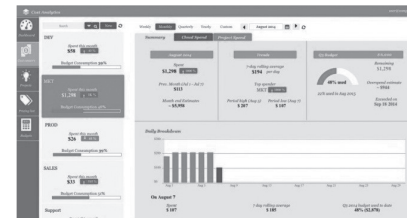


Source: Strategy& analysis

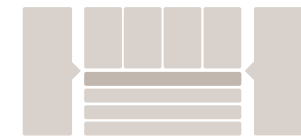
# A number of cost models providing varying levels of cost transparency are available to organizations

Cost transparency model options	Benefits	What's required to get there?
<b>1. Consumption-based cost allocation</b>	<ul style="list-style-type: none"> <li>– Accurate level of cost allocation based on per-unit metric consumption</li> </ul>	<ul style="list-style-type: none"> <li>– A <b>defined services catalog</b> with associated <b>cost drivers</b> to allocate IT costs <b>in business-relevant terms</b> that reflect the services provided</li> <li>– “<b>Good, granular data</b>” and <b>supporting systems</b> to track and manage cost allocations</li> </ul>
<b>2. Product-level cost transparency</b>	<ul style="list-style-type: none"> <li>– More granular level of cost transparency to inform business group product strategy</li> <li>– Ability to conduct product support cost-benefit analysis to identify ways to positively impact P/L</li> </ul>	<ul style="list-style-type: none"> <li>– A <b>change in organizational behavior</b> to adopt consumption-based billing and charge-back model</li> <li>– <b>Embedded financial acumen</b> across roles within the organization (i.e., service managers) to <b>actively manage and fine-tune</b> consumption-based costs</li> <li>– <b>Active communication of the allocation process</b> by IT, business units, and finance to the organization to ensure alignment with existing planning and budgeting processes</li> </ul>
<b>3. Service portfolio menu card</b>	<ul style="list-style-type: none"> <li>– Provides service offering cost transparency to better inform sales process</li> </ul>	
<b>4. Cost charge-back mechanism</b>	<ul style="list-style-type: none"> <li>– Instills accountability for support costs within business groups by product</li> </ul>	

Increasing level of transparency



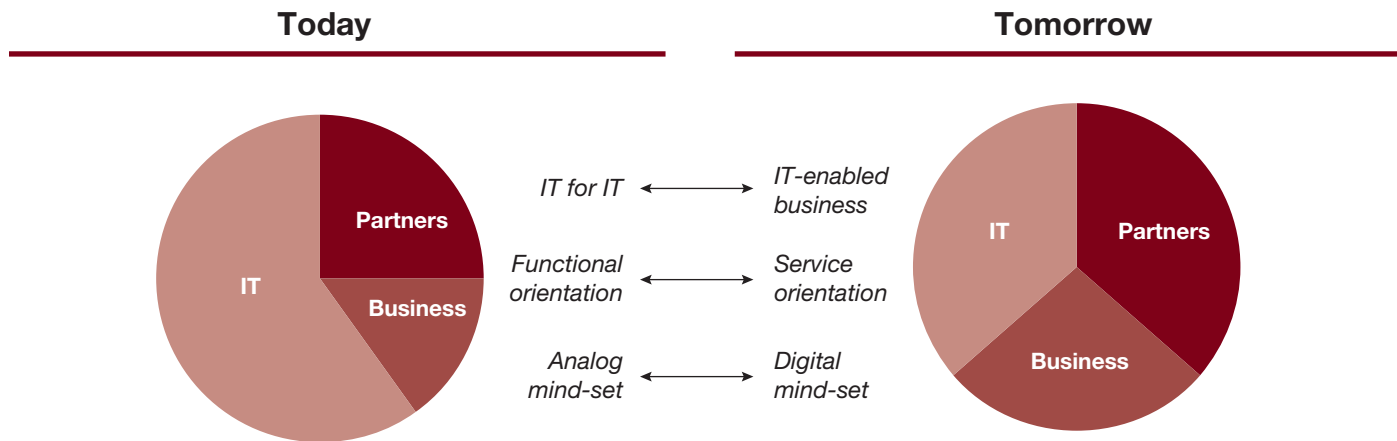
Example



Cloud cost and consumption management

Source: Strategy& analysis

# Implementing a cloud-first organization requires a service-oriented transformation in the talent and delivery model...



## Knowledge and skills in today's workforce

- Traditional development methodologies
- Custom-developed applications
- Heavy engineering and technical focus
- Infrastructure and application management skills
- Managing resources and staff augmentation

## Knowledge and skills in tomorrow's workforce

- Fit-for-purpose development methodology – agile, DevOps
- Configuration and integration of SaaS apps/platforms
- Finance and business acumen/business consultation
- Information and service management skills
- Strong-form vendor management tracking outcomes

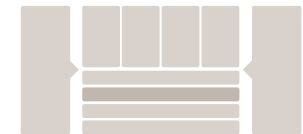


Source: Strategy& analysis



# *...to identify and retain the right skills for tomorrow's workforce*

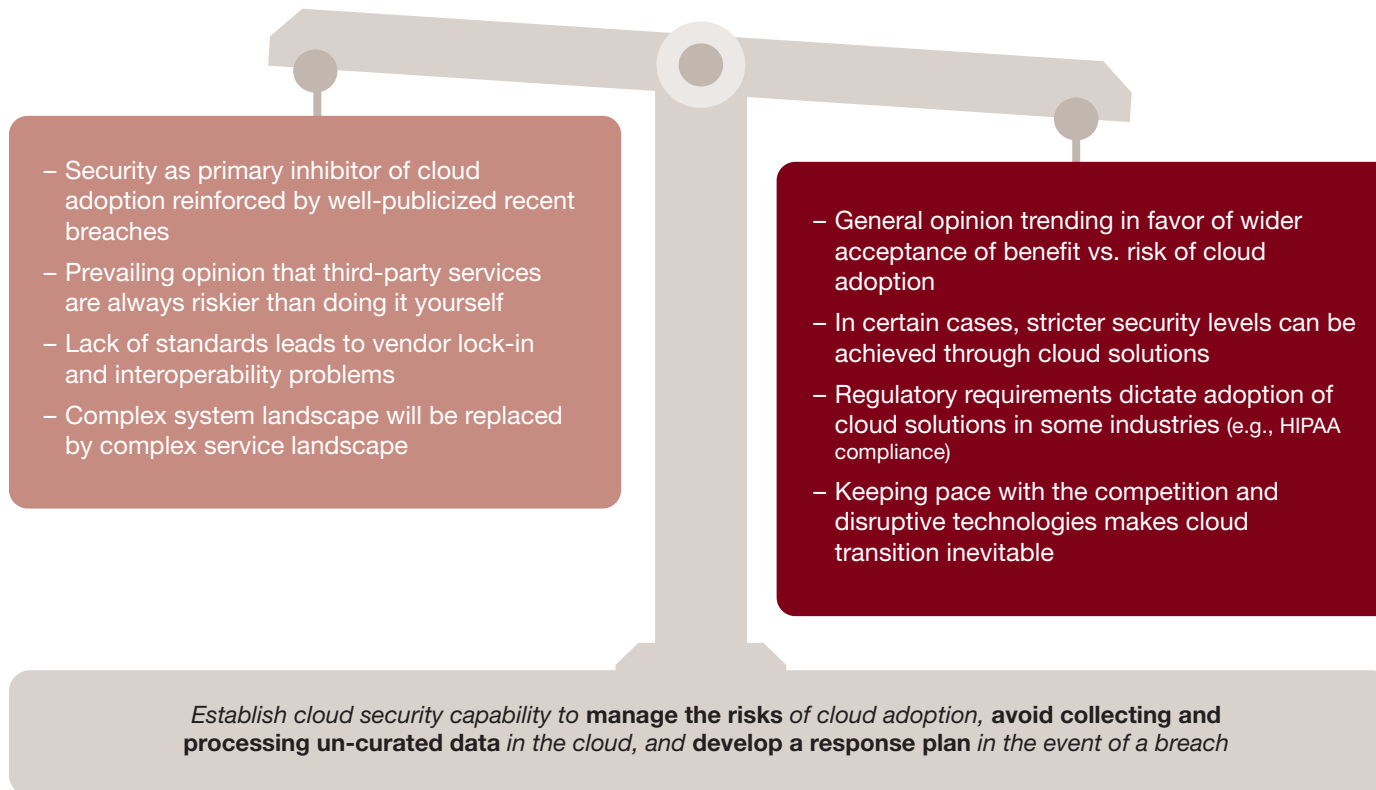
## Digital keystone skills



*Workforce/talent management*

Source: Strategy& analysis

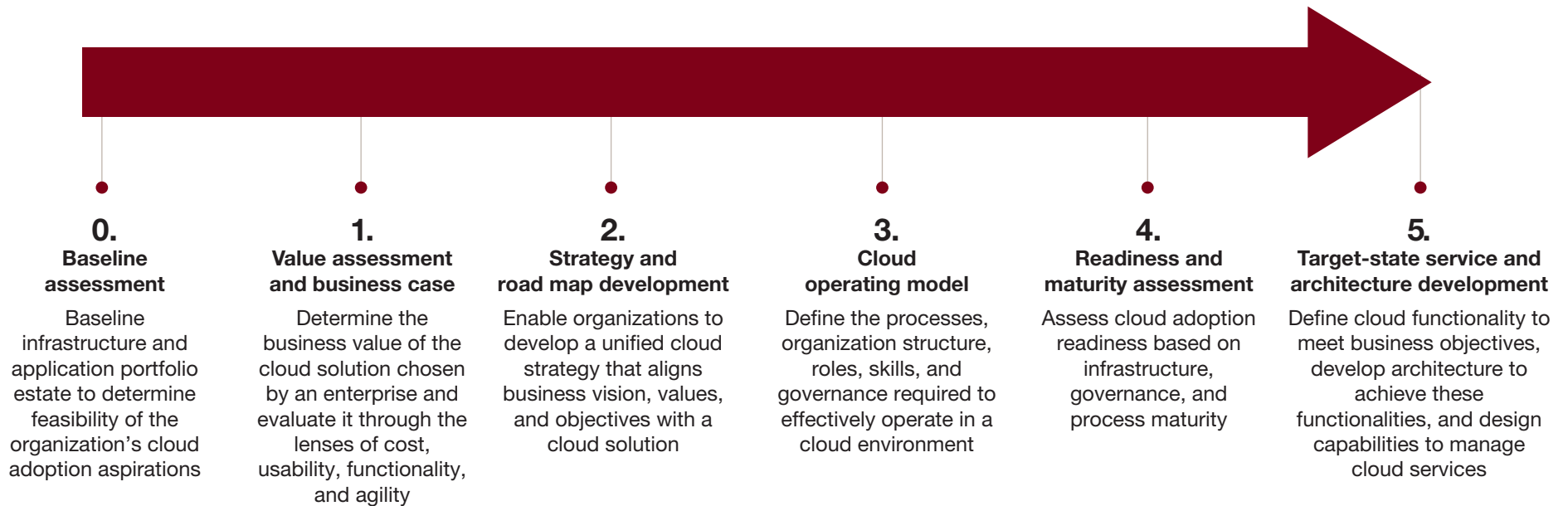
# ***Organizations must adapt to stay competitive as the benefits of cloud adoption continue to outweigh security risks***



Cloud security and risk management

Source: Strategy& analysis

# *A cloud transformation entails establishing a business case, strategy, operating model, and target-state architecture*



Cloud transition management

Source: Strategy& analysis

# ***An organization's cloud transition play depends on its tech affinity and size***

## **Three archetypes of cloud plays**

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### **Basic: Lower-tech mid-caps**

- Lack of capability to create solutions matching capabilities of cloud offerings
- Difficult to recruit experts to implement cloud services
- IT not seen as a key business enabler

*Midsized non-tech companies should selectively adopt cloud to improve cost profile and innovate*

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### **Expert: Tech vanguards**

- Aggressively adopting cloud models
- Modern, virtualized application portfolio
- Young, highly skilled IT personnel

*Cloud adoption is mandatory for tech-affiliated companies in order to stay agile and competitive from an innovation and cost profile perspective*

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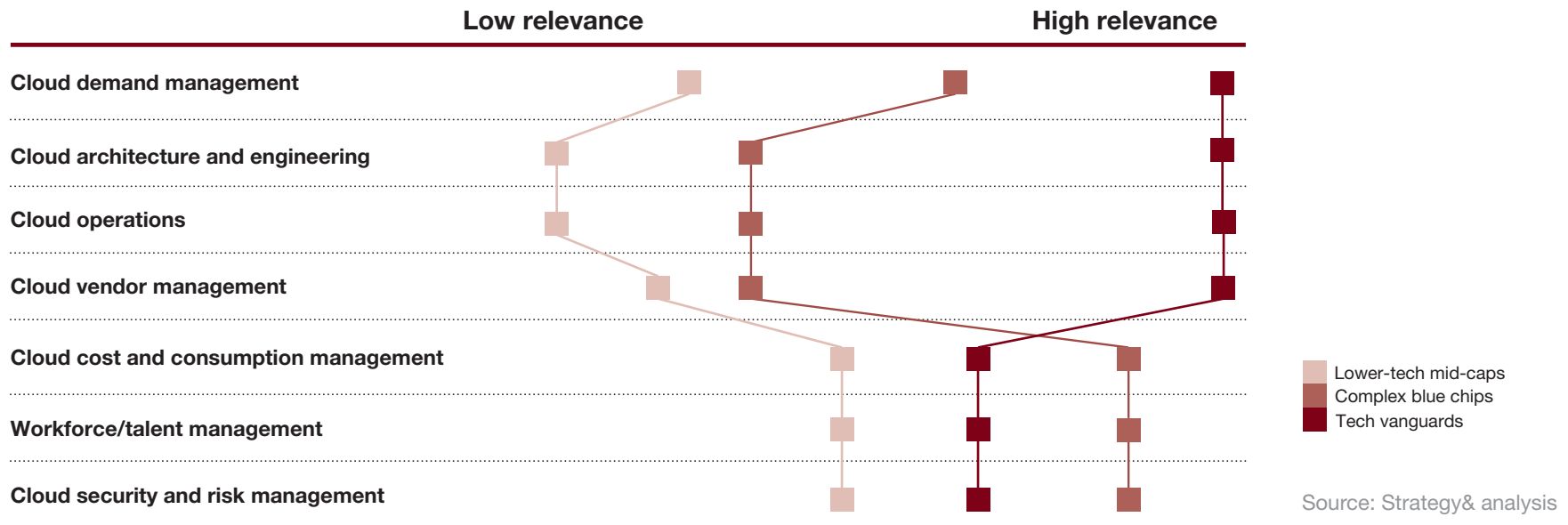
### **Expert: Complex blue chips**

- Cloud required for reducing complexity, improving agility and innovation
- Large legacy portfolio, heterogeneous and highly specific application portfolio

*Large corporations should at the minimum adopt cloud to reduce complexity of their business support functions*

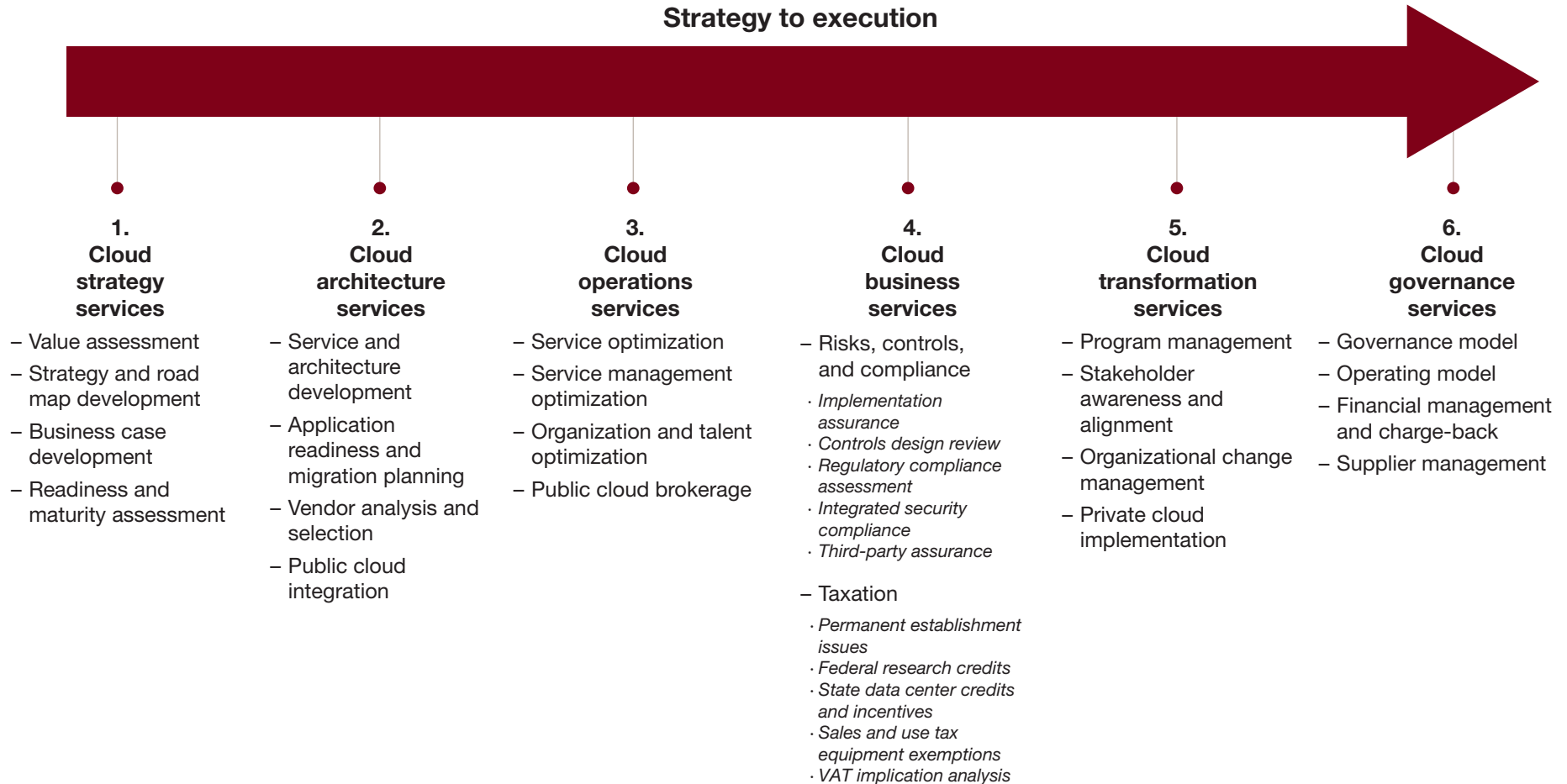
Source: Strategy& analysis

# *Each organization should decide how far it needs to push the operating model choices*



# We offer a full range of cloud-centric services to help clients move to an IT platform of the future

## Strategy to execution



Source: Strategy& analysis

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