

The Cloud and



Confidentiality

- These cases demonstrate how Value Mapping can be useful in a variety of applications
- They have been developed with publically available information, to illustrate particular features of Value Mapping
- Client information is always strictly confidential in our consulting practice
- Client consulting usually requires much more detail and quantitative analysis, often using Value Maps in a manner not shown in these cases

Background on AWS

- When Amazon first began to make available the use of its extensive computer capabilities to third parties, it started a new industry which became known as “The Cloud.”
- These servers and their software had been developed to service its then core business of selling books and many other products via the web.
- When the cloud business took off, other companies jumped in thereafter, but they were tardy.
- Today, the cloud industry is huge and still growing rapidly.

Construct a Value Map View of the Cloud

- It's a way to understand the strategies of AWS and its competitors and to highlight the many issues companies face in this industry
- We'll start by defining some of the most important values the industry can offer to its business customers

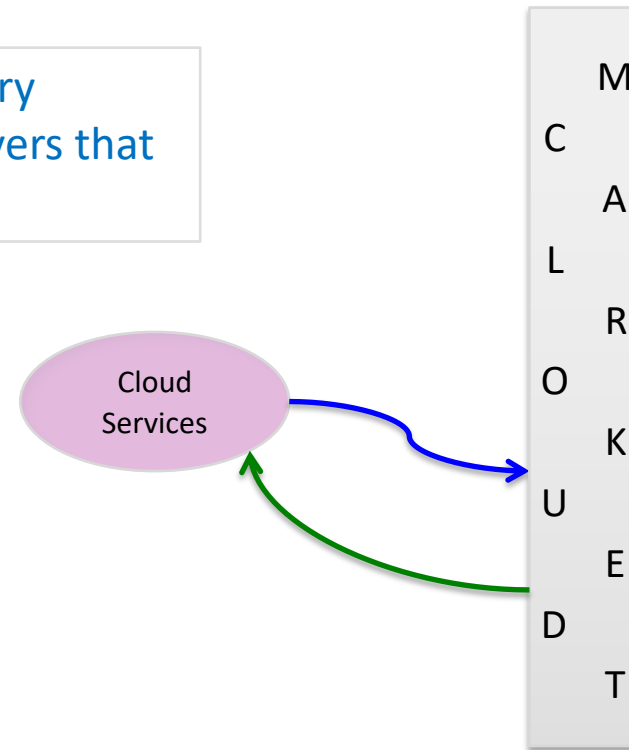
Key Cloud Values

M
C
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T

- Easy to use
- Agility; fail fast
- Support rapid growth
- Lower fixed costs—CAPEX to OPEX
- Lower total cost of operations—TCO
- Enable greater use of sophisticated analytics:
extract business value from BIG DATA
 - Faster time to market
 - Faster response to issues
 - Improved operating efficiencies
- Increase storage capacity, but only to the extent
needed
- Capture data capital

Cloud Services market

- Now let's build a value map for this industry
- The first stage where value is created delivers that value to the market and gets paid



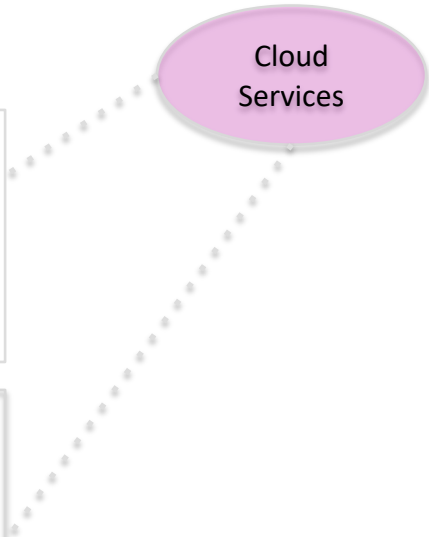
→ Value Flow

→ Funds Flow

Cloud services market

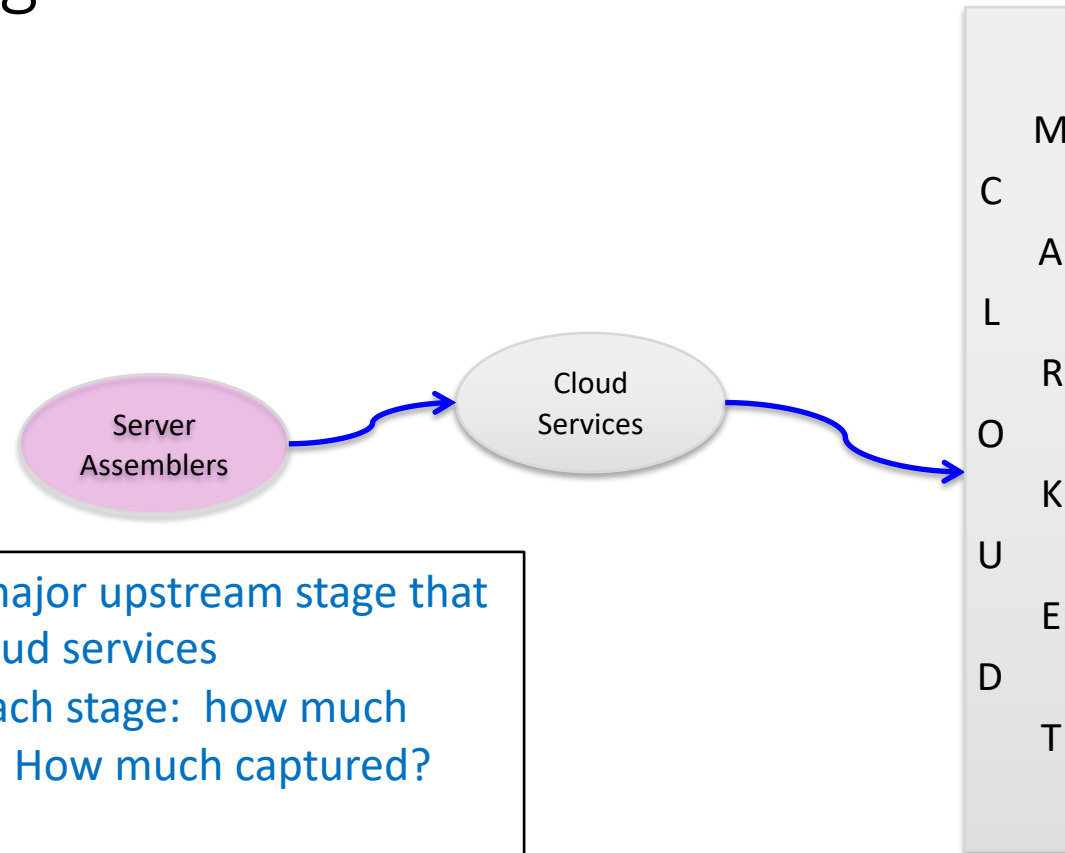
- We drill down to capture some key measures of the stage performance
- We do this for every stage when we judge it to be necessary. For example:

- Volume (\$)
- Growth rate % (recent and projected)
- Margin %
- Number of new customers acquired
- Business Unit Value (BUV)
- Key Issues
- Forecasts



Cloud Services

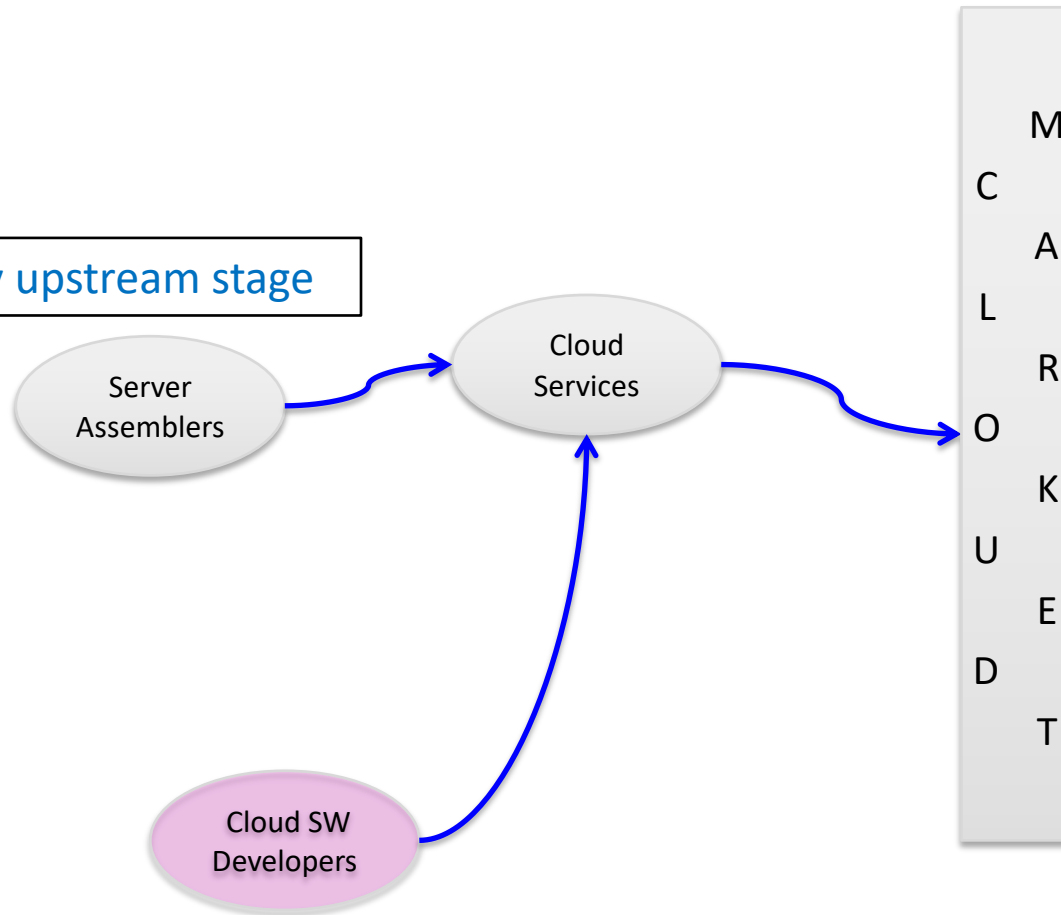
Upstream stage



- Next we go to the major upstream stage that delivers value to cloud services
- Key questions for each stage: how much value is generated? How much captured? Why?
- (Note: we don't show funds flows from here out to reduce clutter, unless needed. Fund flows are assumed to flow back to stages that deliver value)

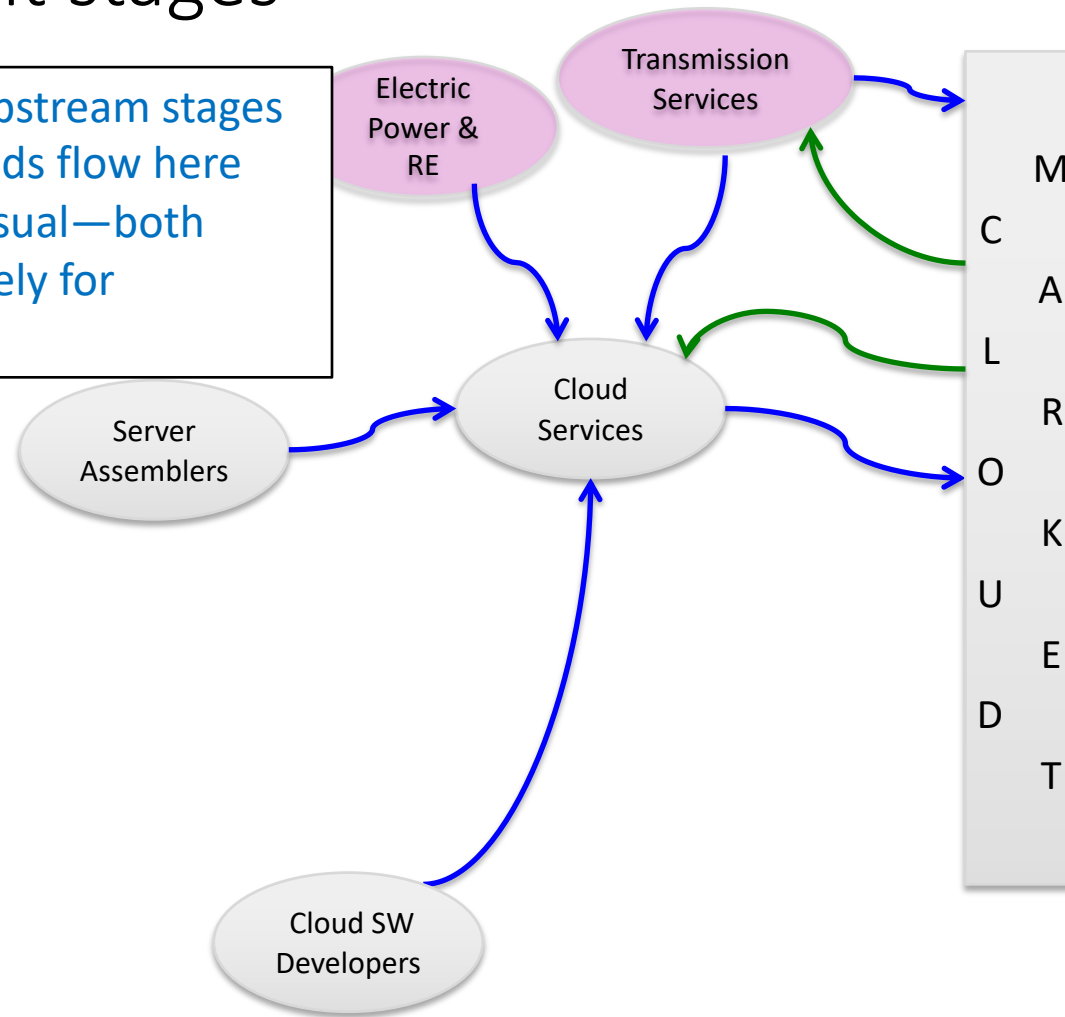
Cloud software upstream stage

- We add another key upstream stage

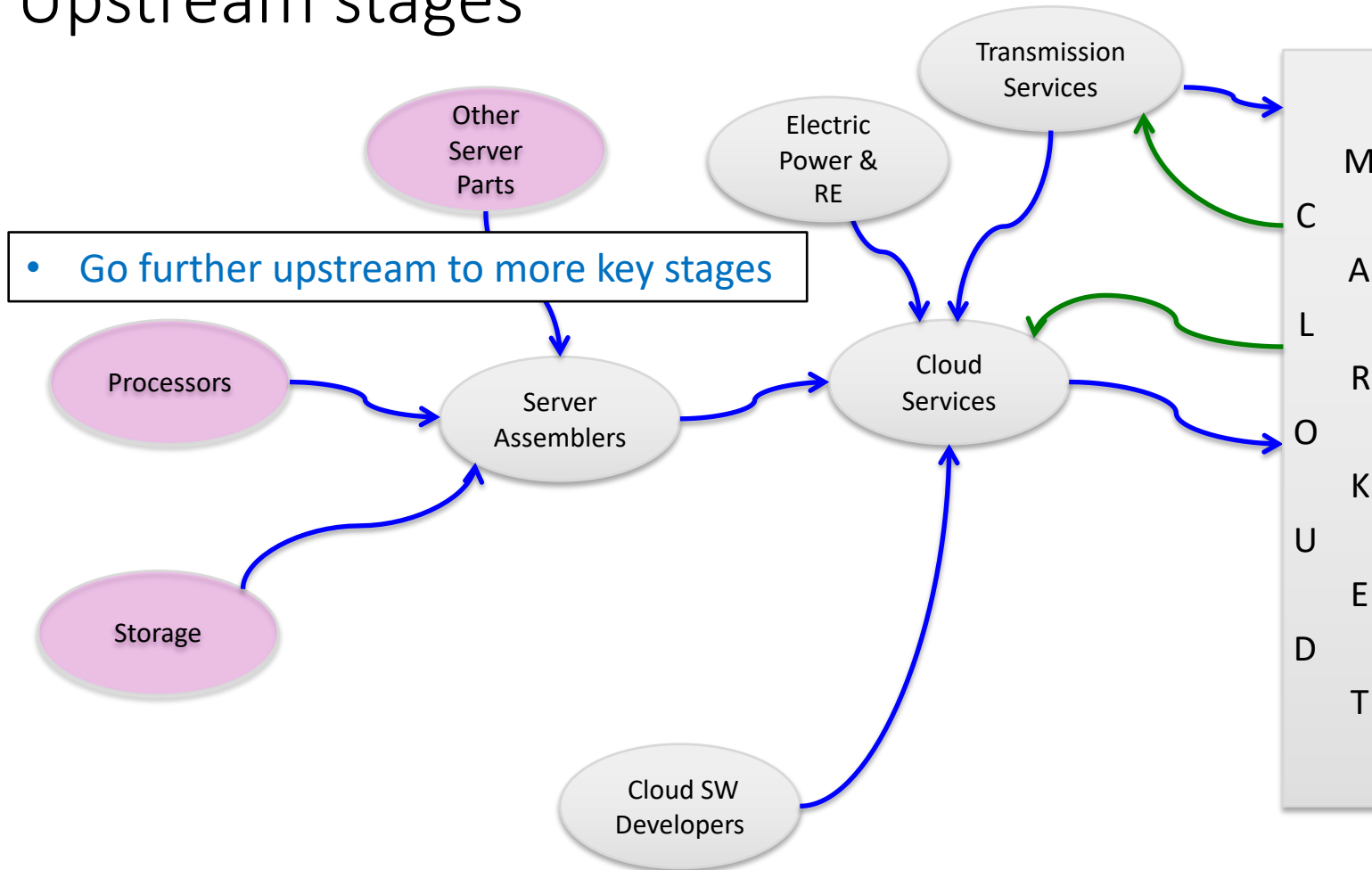


Two important stages

- Two other significant upstream stages
- Note: we show the funds flow here because they are not usual—both stages get paid separately for transmission services

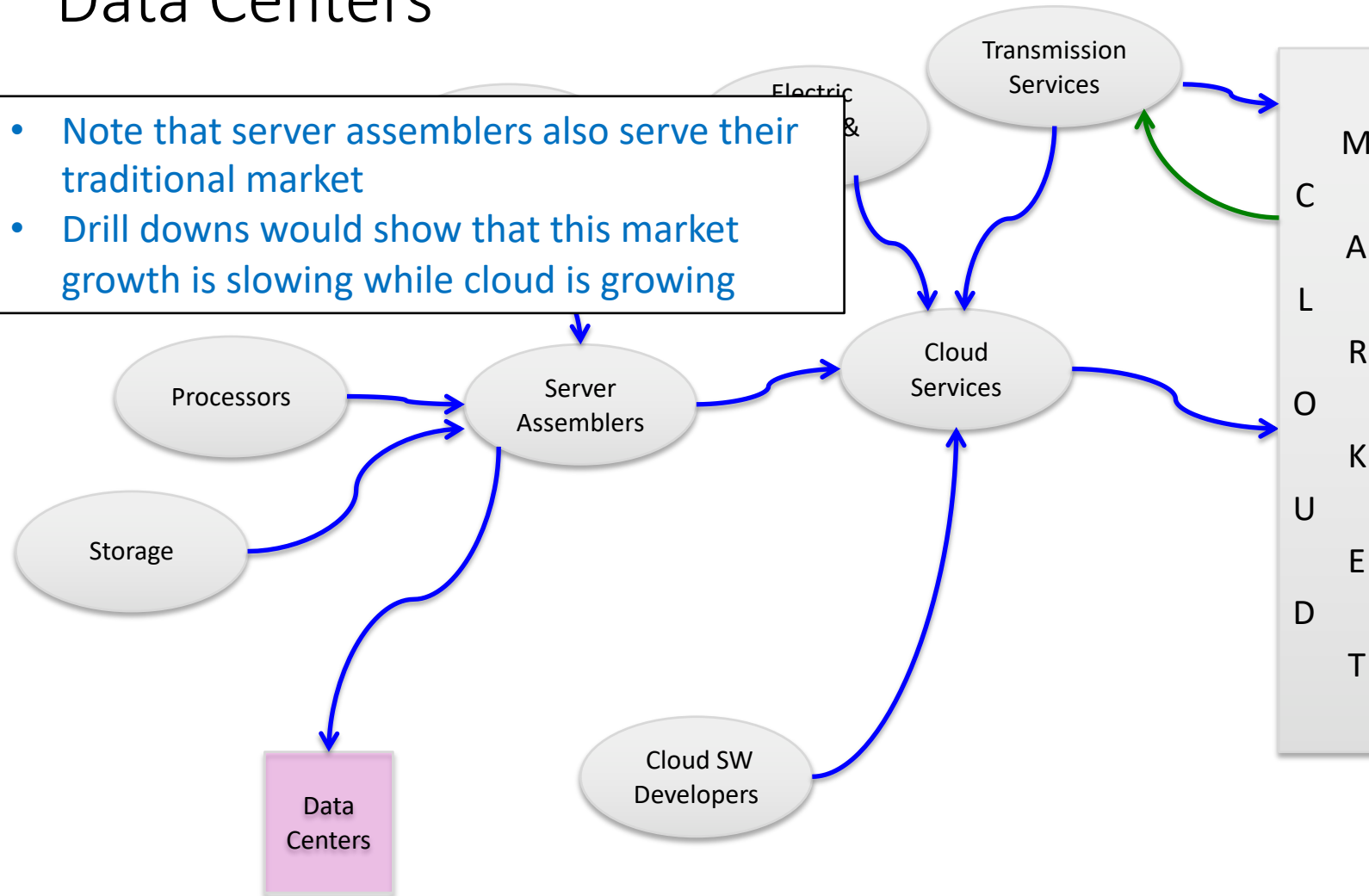


Upstream stages

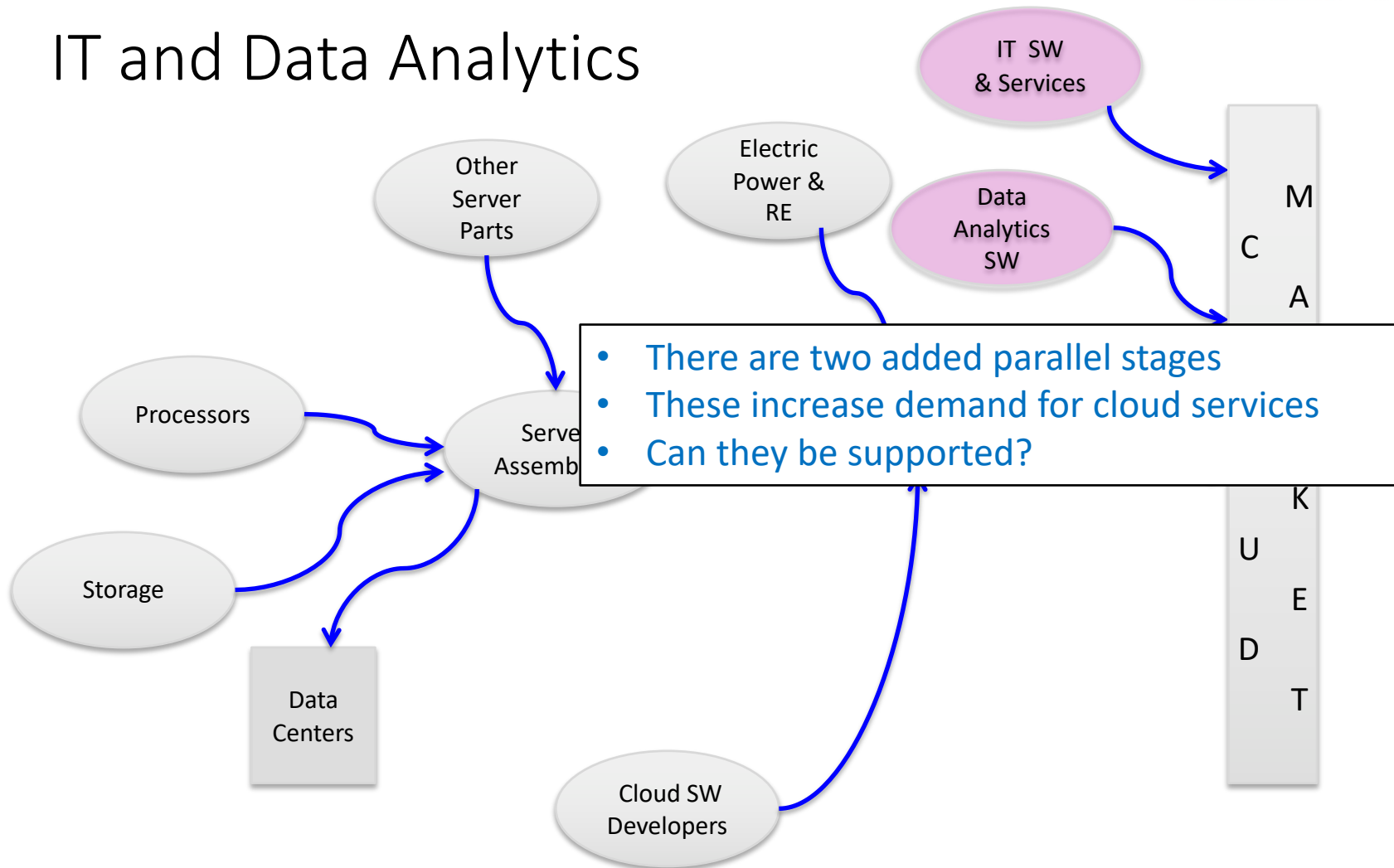


Data Centers

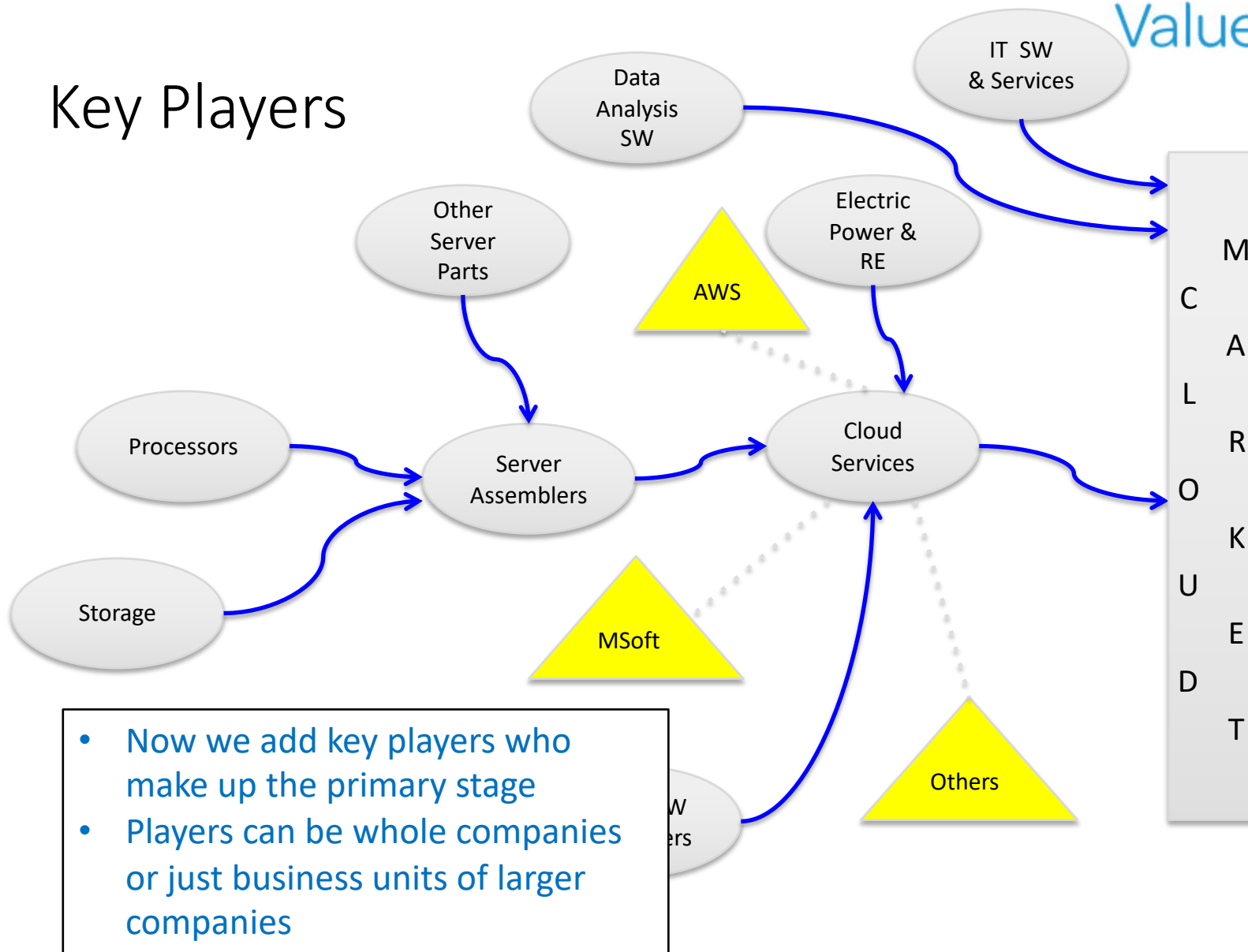
- Note that server assemblers also serve their traditional market
- Drill downs would show that this market growth is slowing while cloud is growing



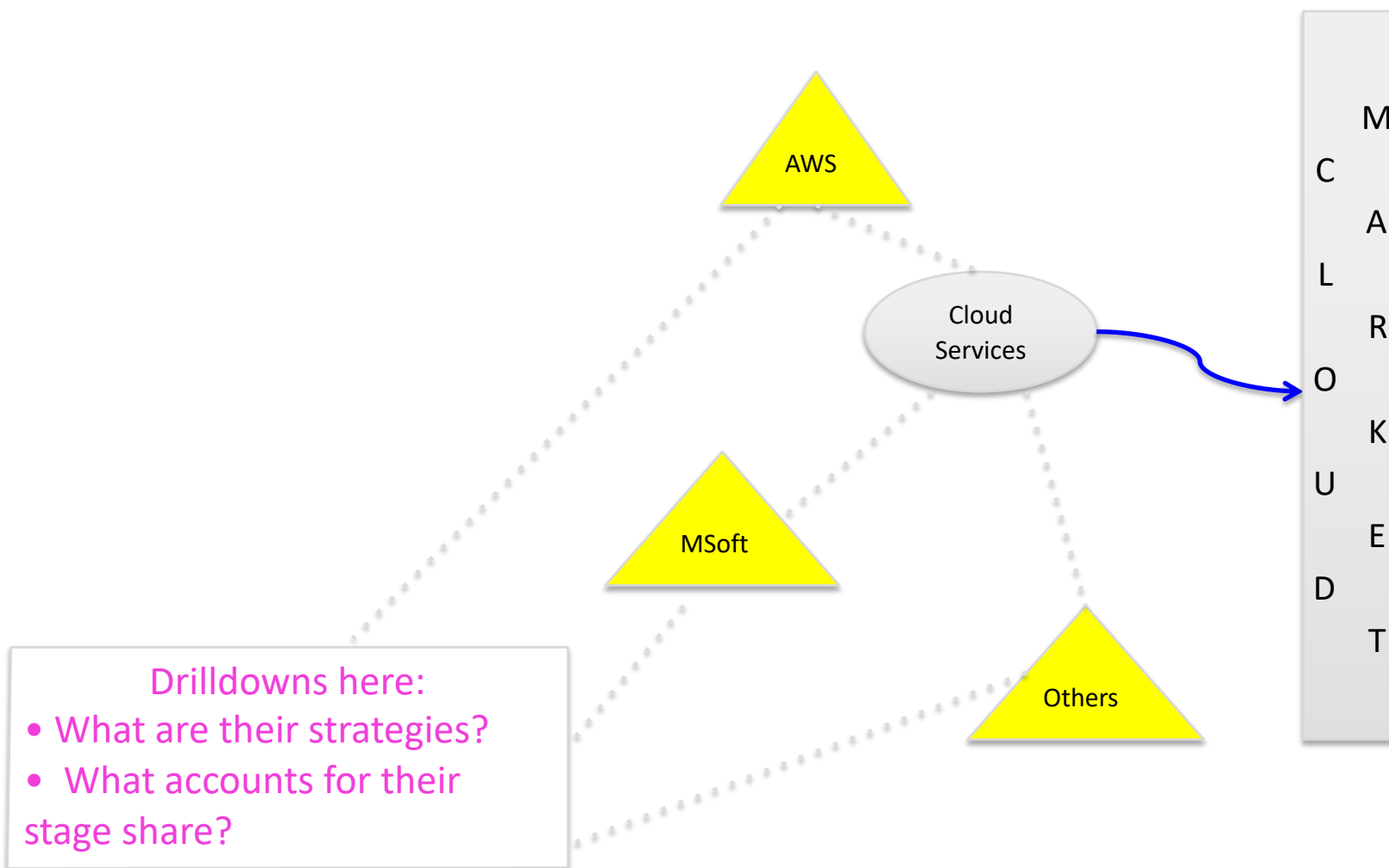
IT and Data Analytics



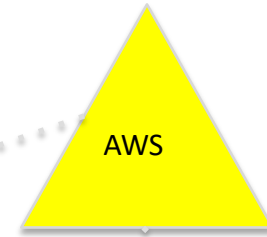
Key Players



Competition

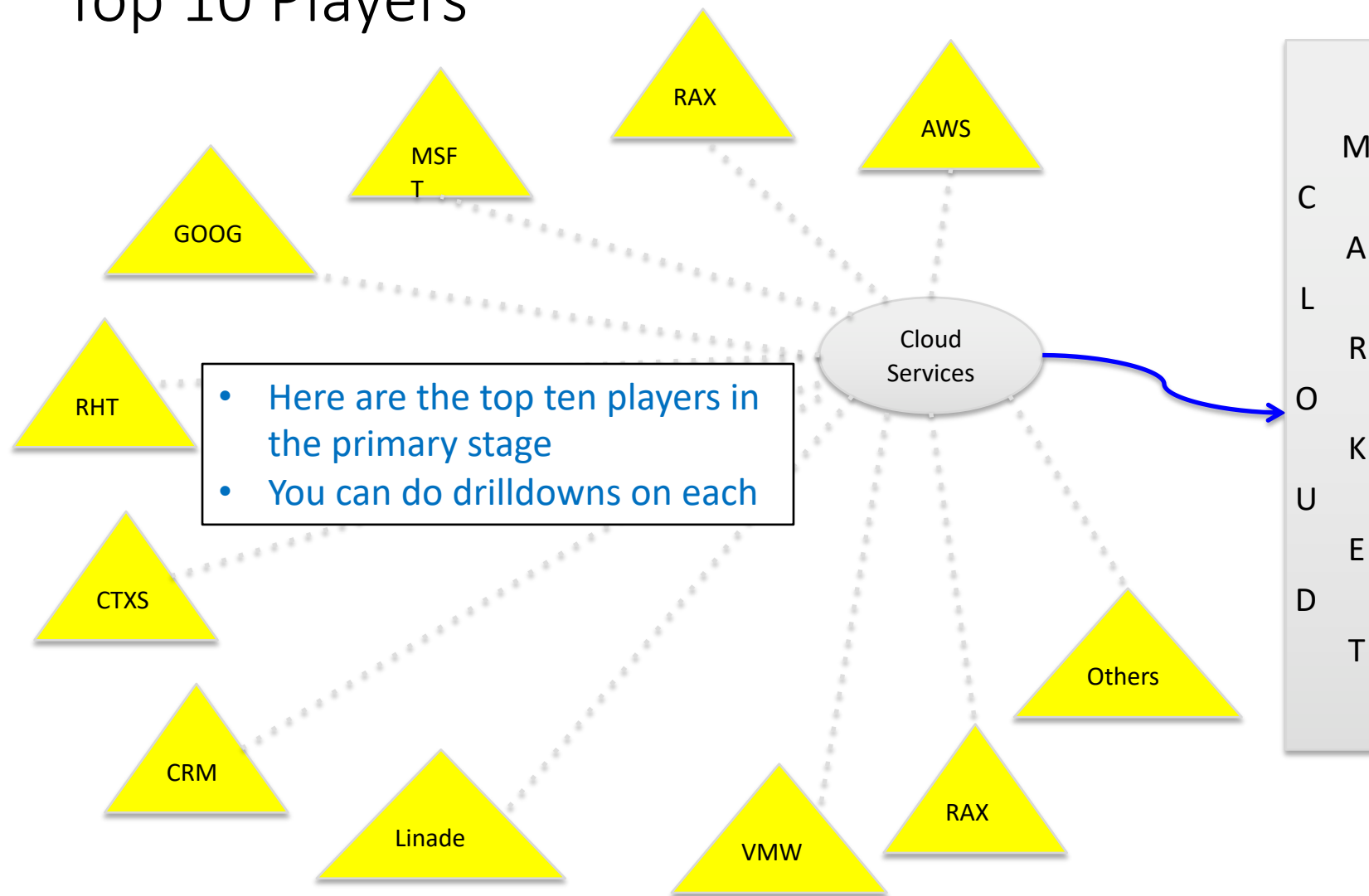


Example: AWS



- Volume: \$16b by 2017 (source: Deutsche Bank)
- Margin 20.6% TTM; projected ?
- Stage share 29%
- Growth rate %, past and expected
- Assets
- ROA
- Market focus and strategy
- Business Unit Value (BUV) \$

Top 10 Players



Recent Cloud Market Shares

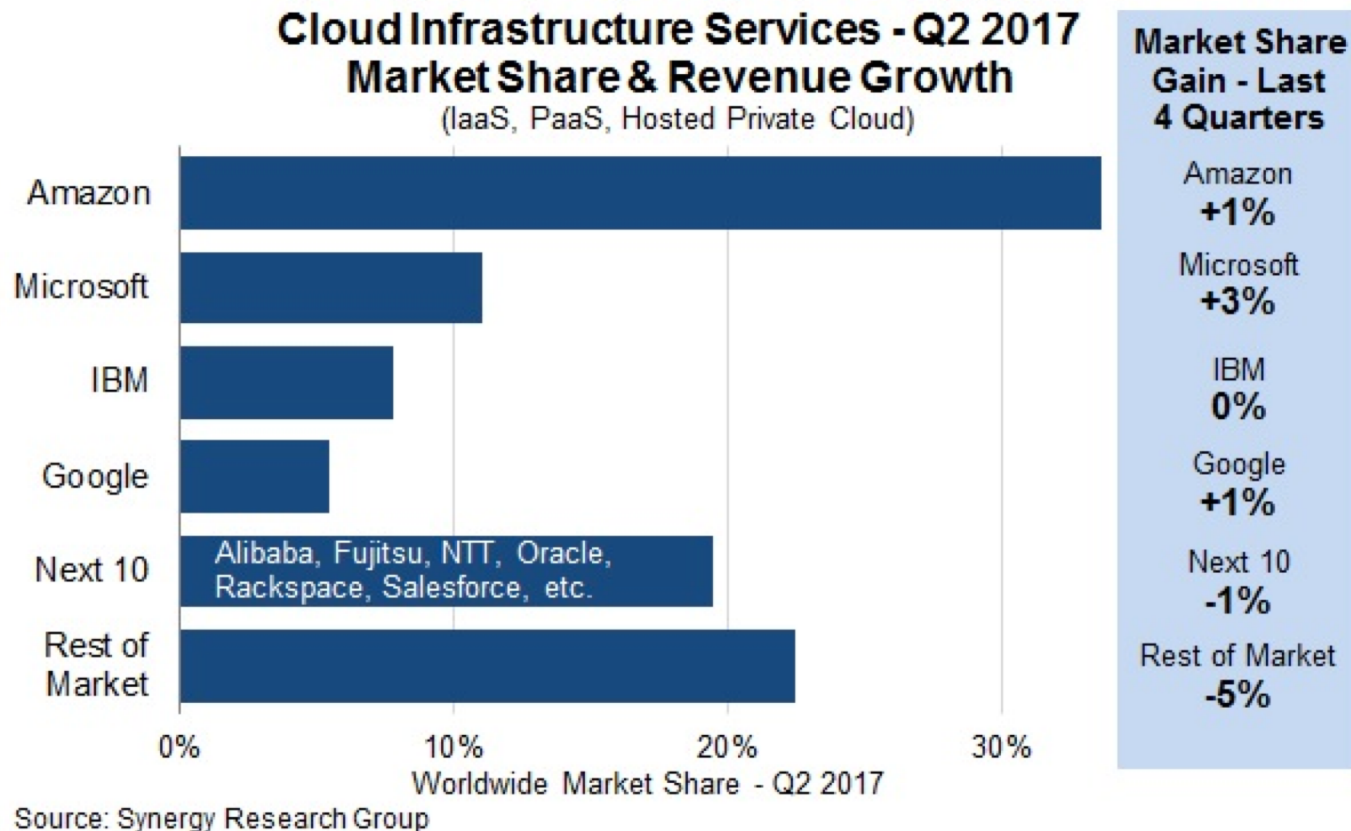
- You can see how AWS became and has stayed the leader in this industry
- Such data would be part of the drilldown of the market

	Q1-2016*	2015	2014
AWS	32%	29%	25%
Next 3 (uS, Goog, IBM)	23%	26%	21%
Others	45%	45%	54%

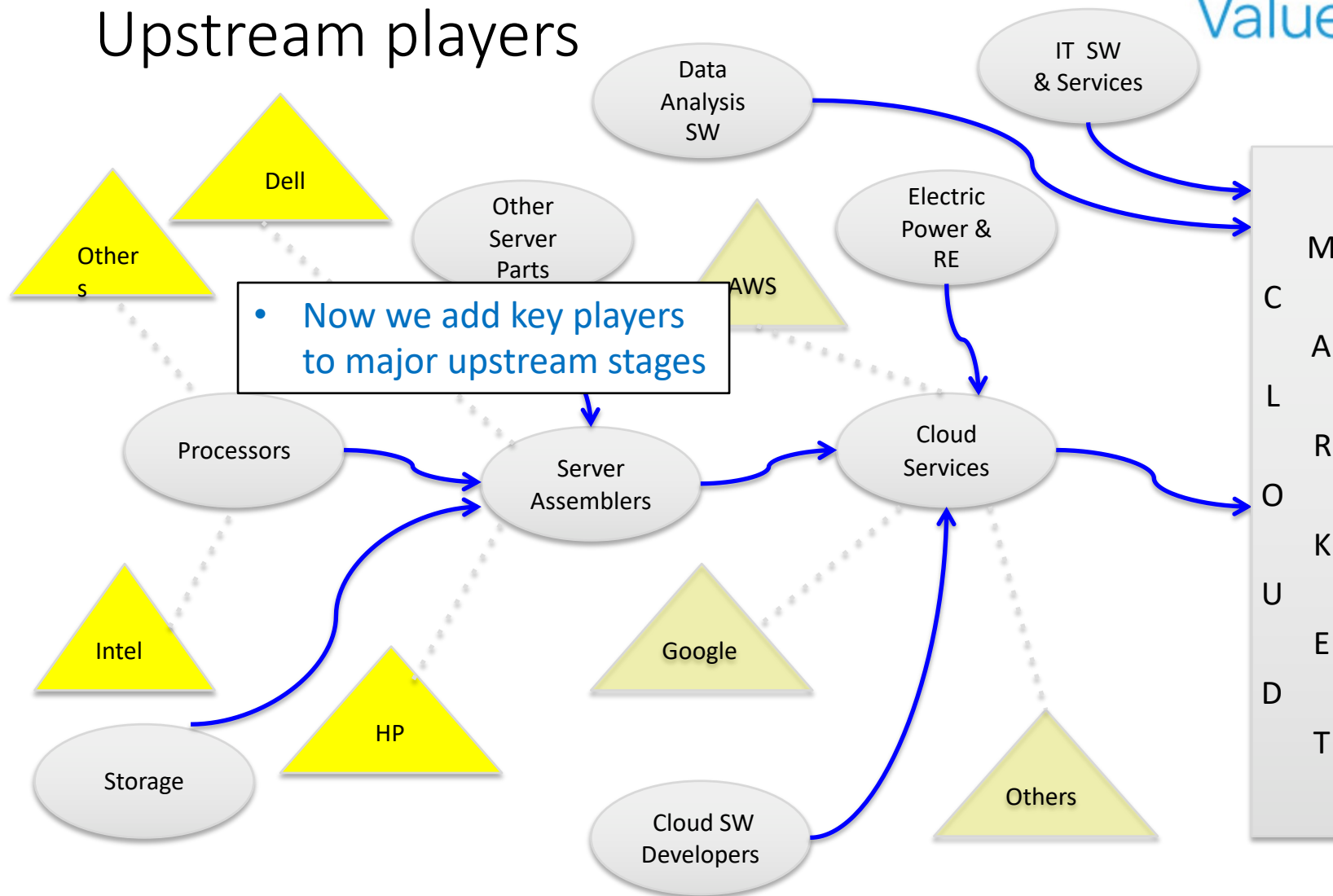
Source: Synergy Research Group

*IaaS, PaaS, Private & Hybrid Combined

Cloud Market Shares through H1 2017

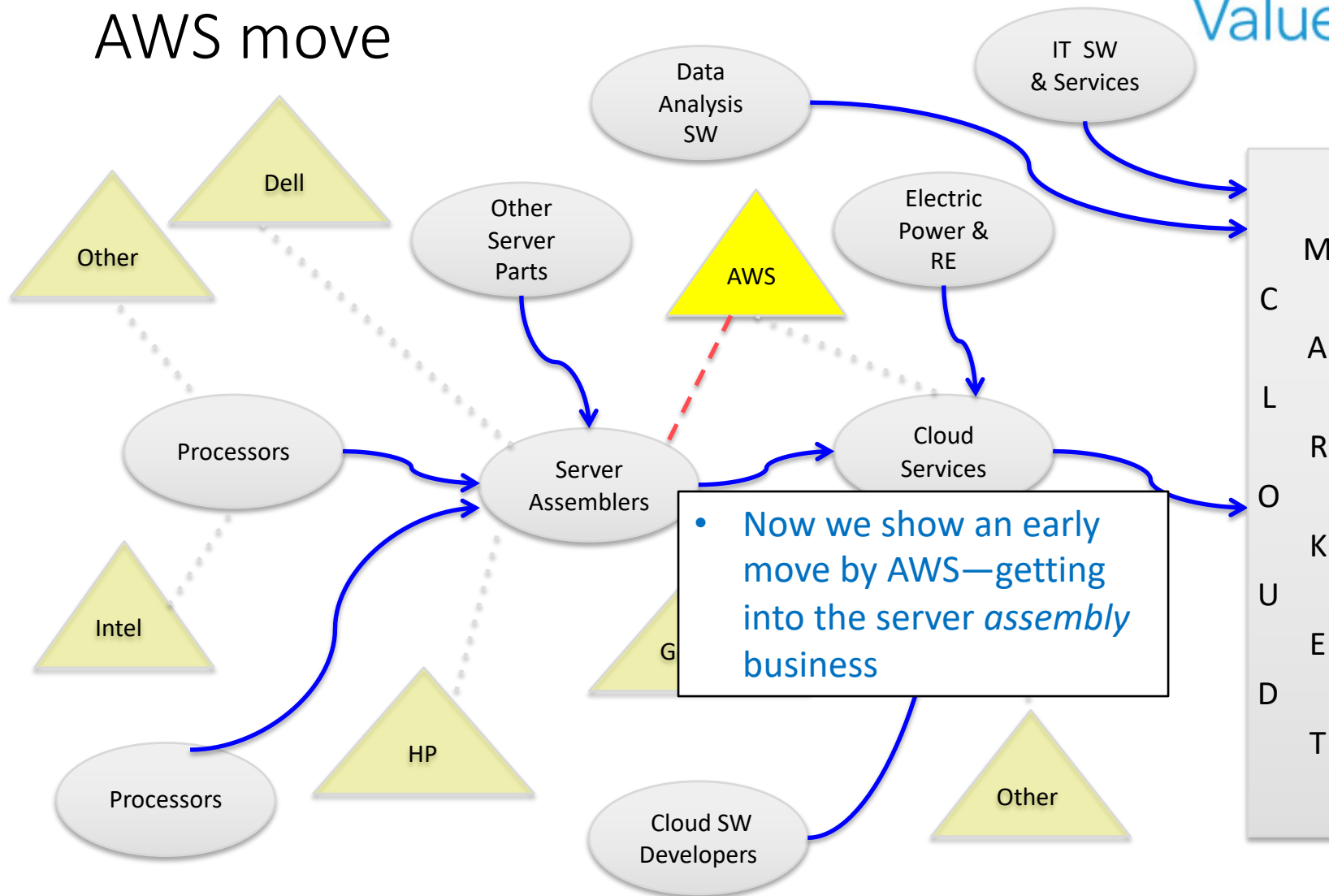


Upstream players



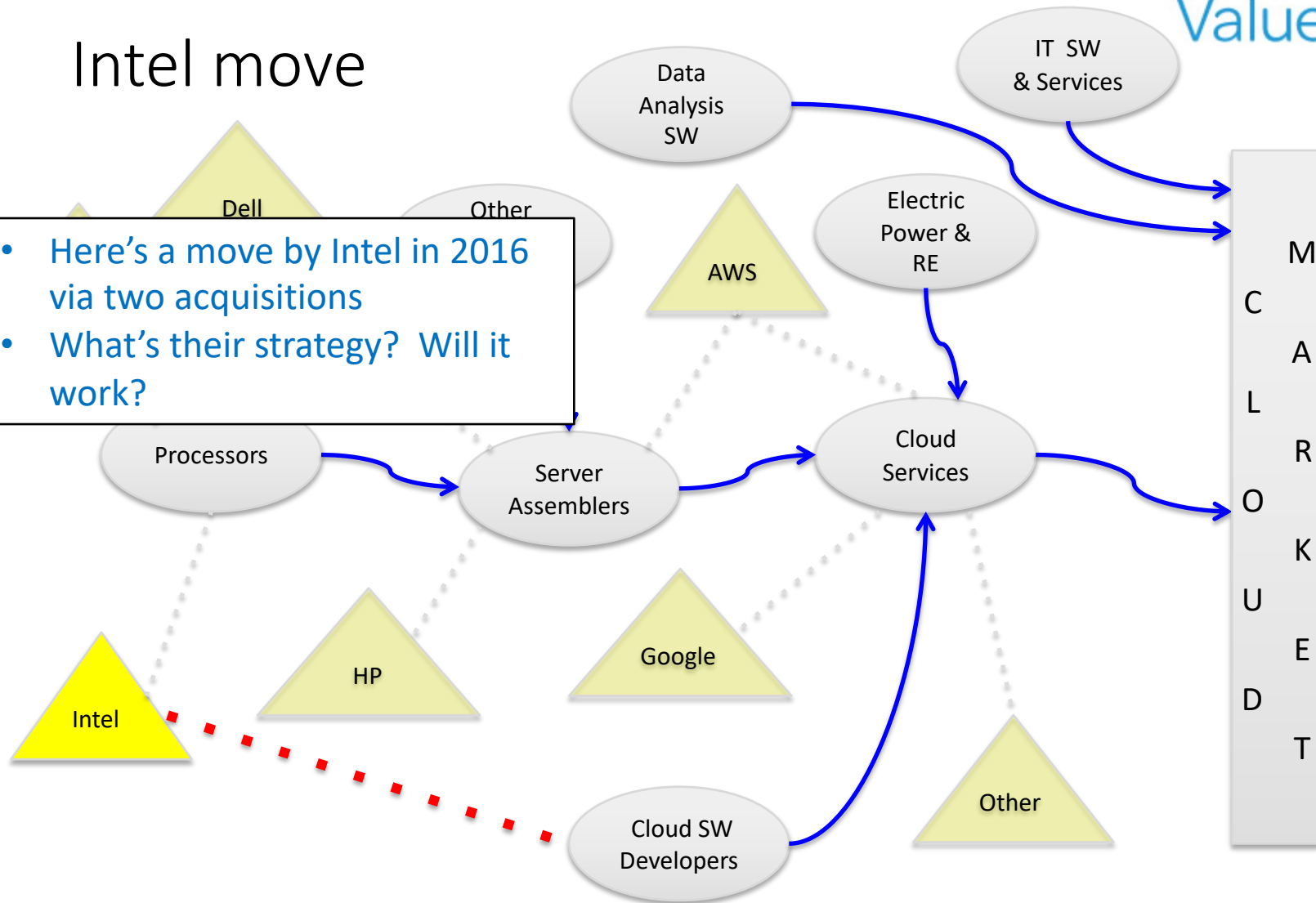
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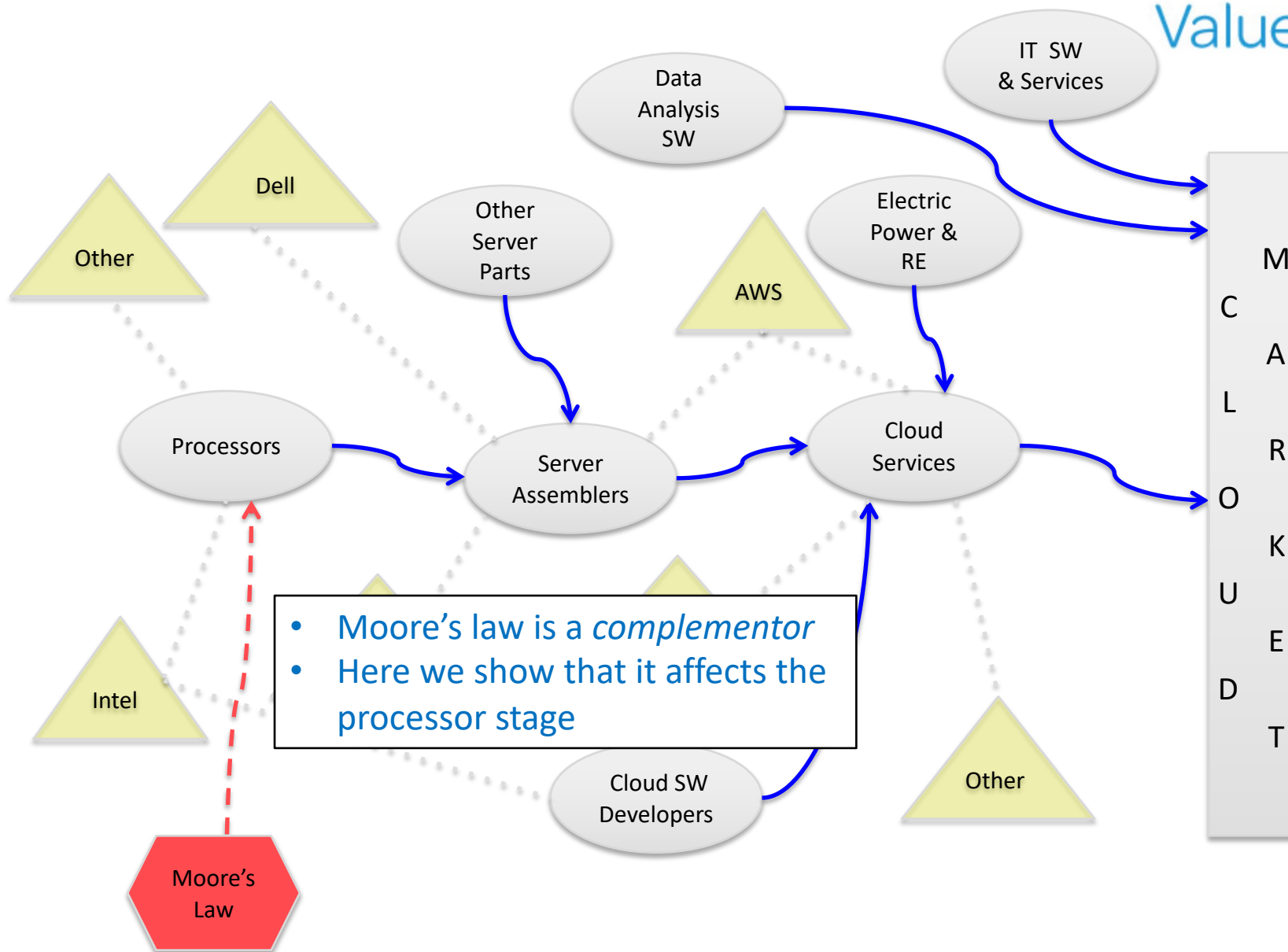
AWS move



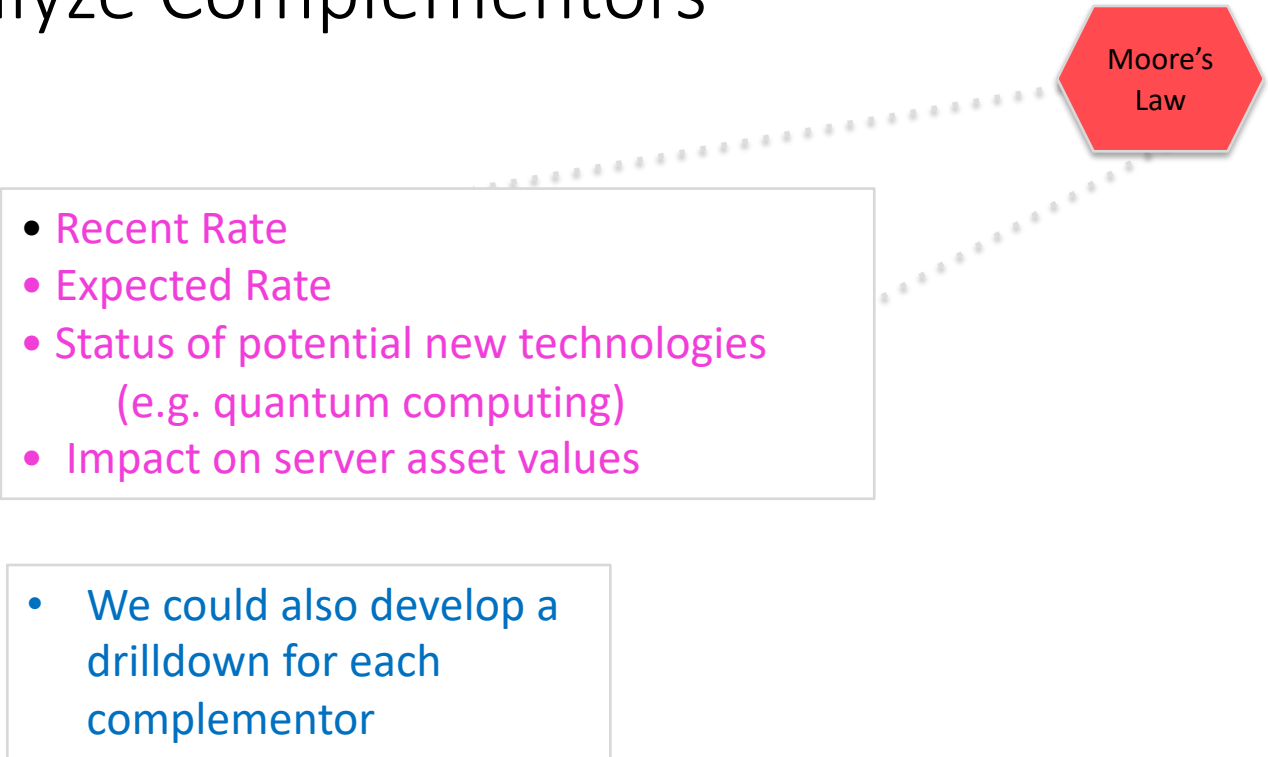
Intel move

- Here's a move by Intel in 2016 via two acquisitions
- What's their strategy? Will it work?





Analyze Complementors

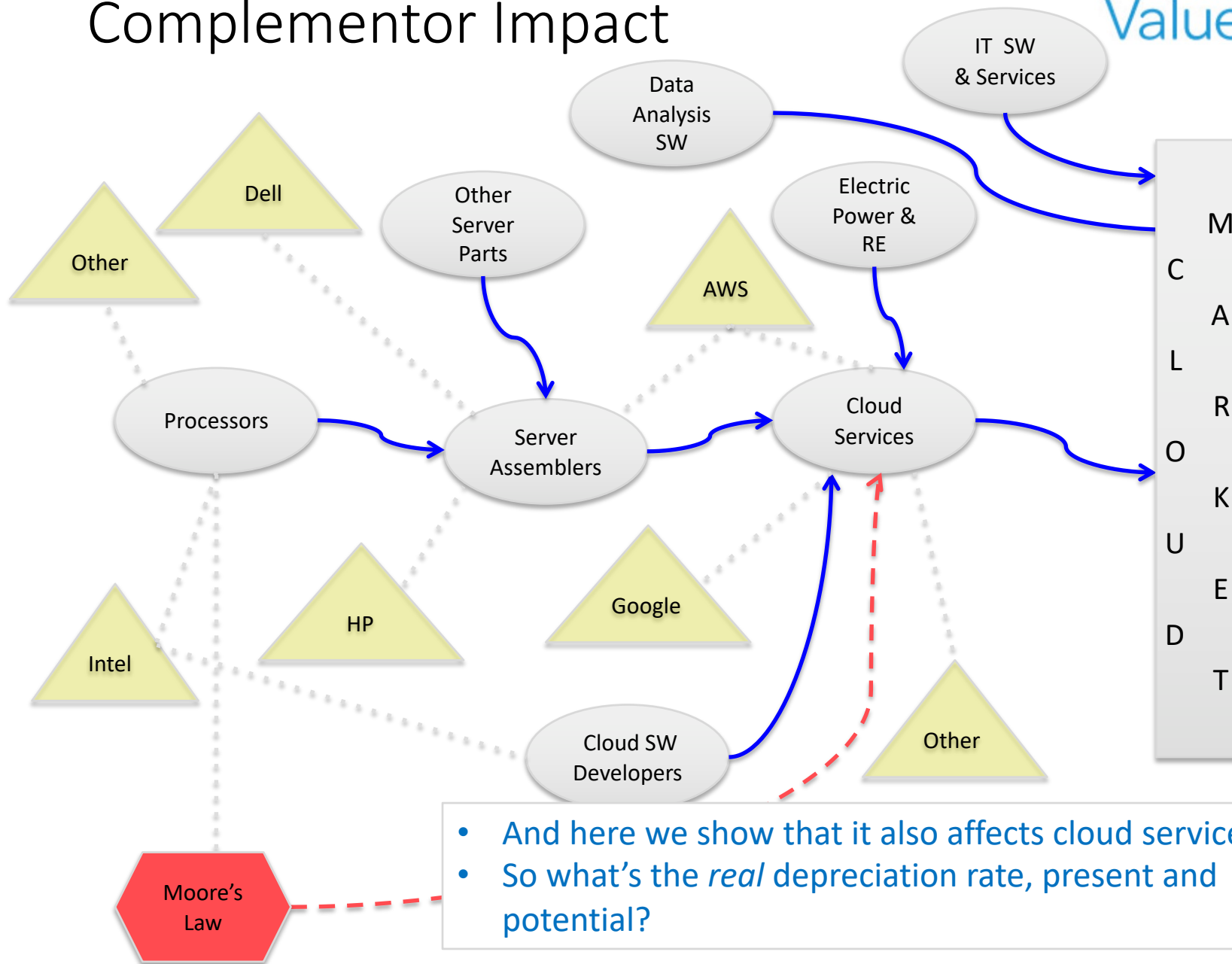


Moore's
Law

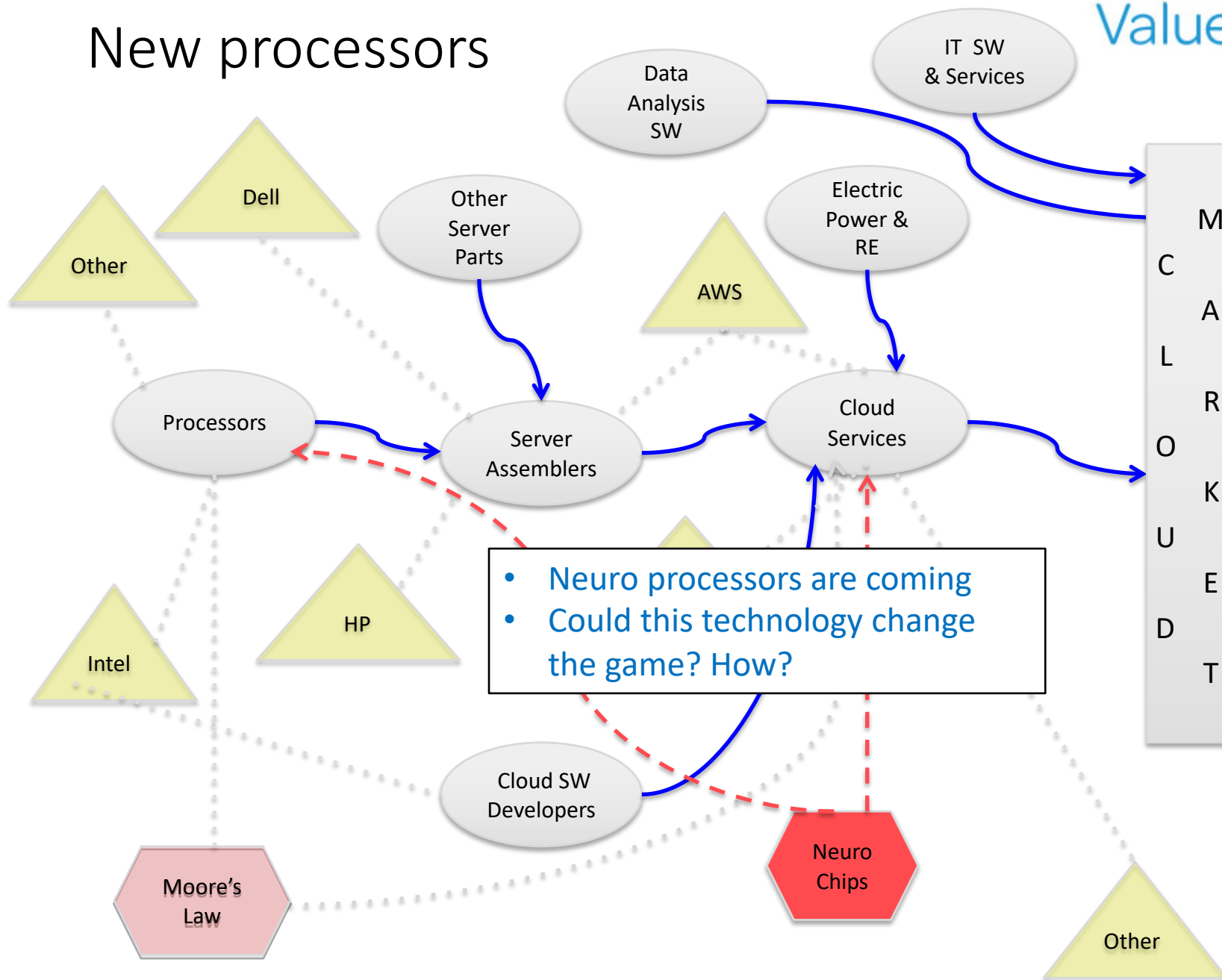
- Recent Rate
- Expected Rate
- Status of potential new technologies
(e.g. quantum computing)
- Impact on server asset values

- We could also develop a
drilldown for each
complementor

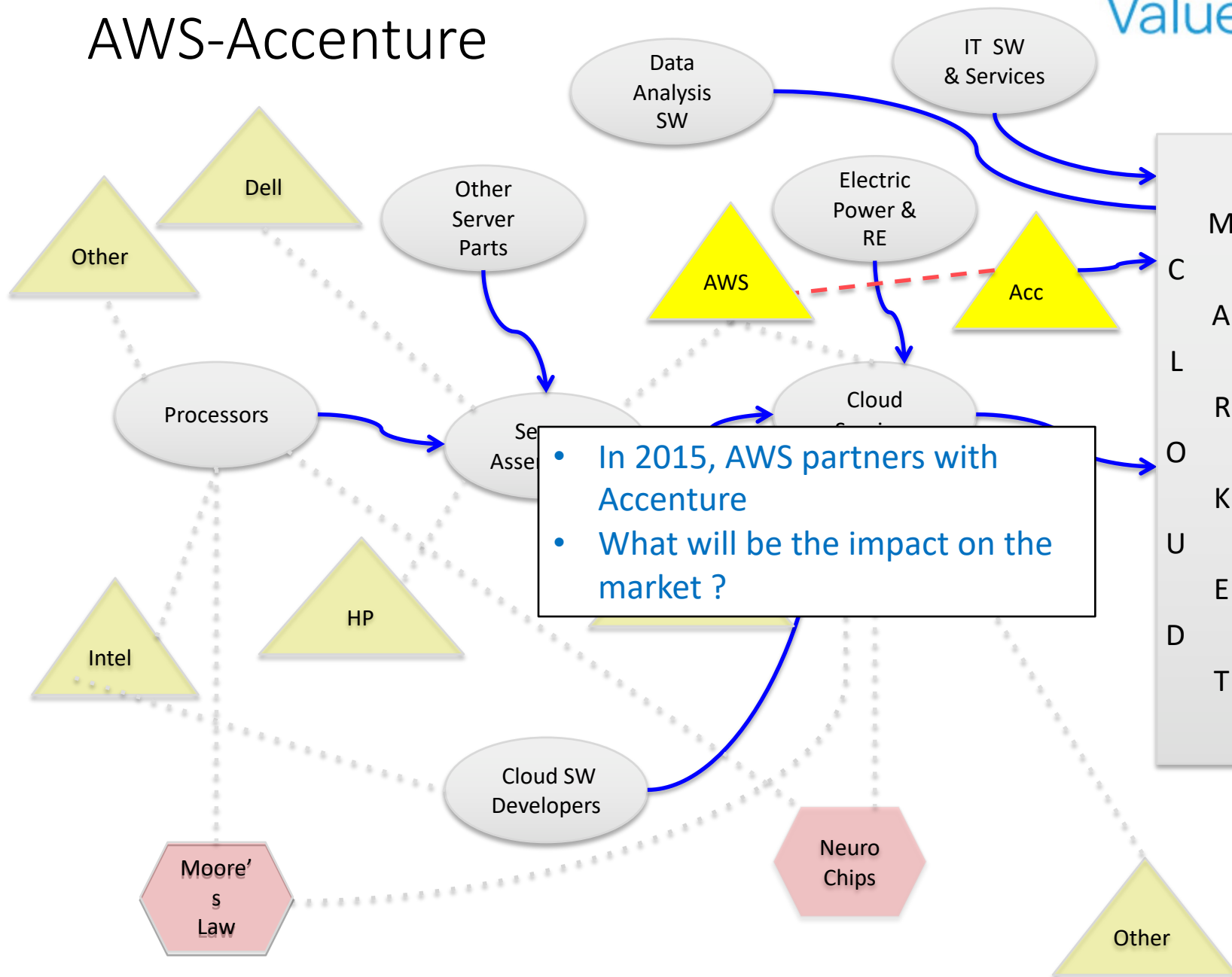
Complementor Impact



New processors



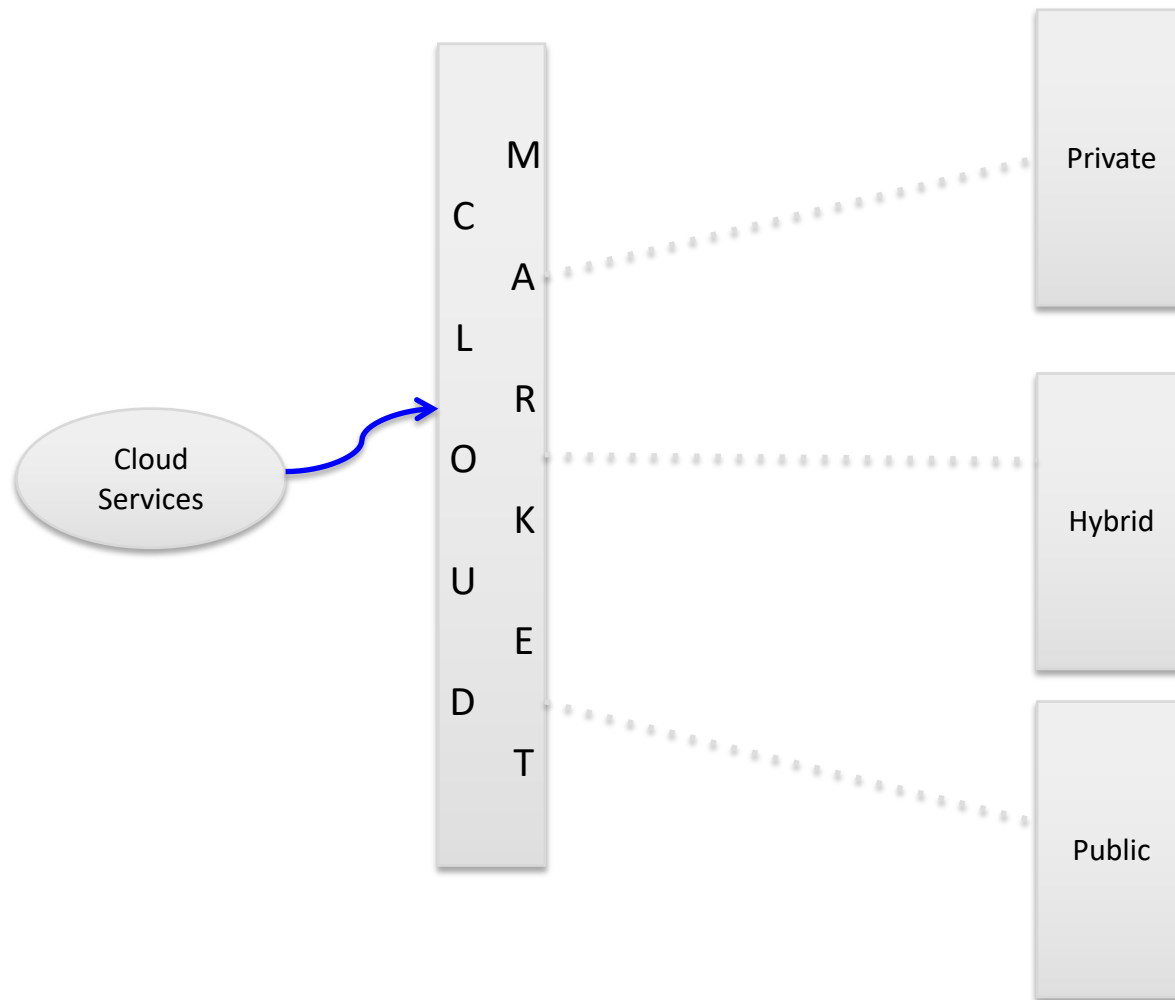
AWS-Accenture



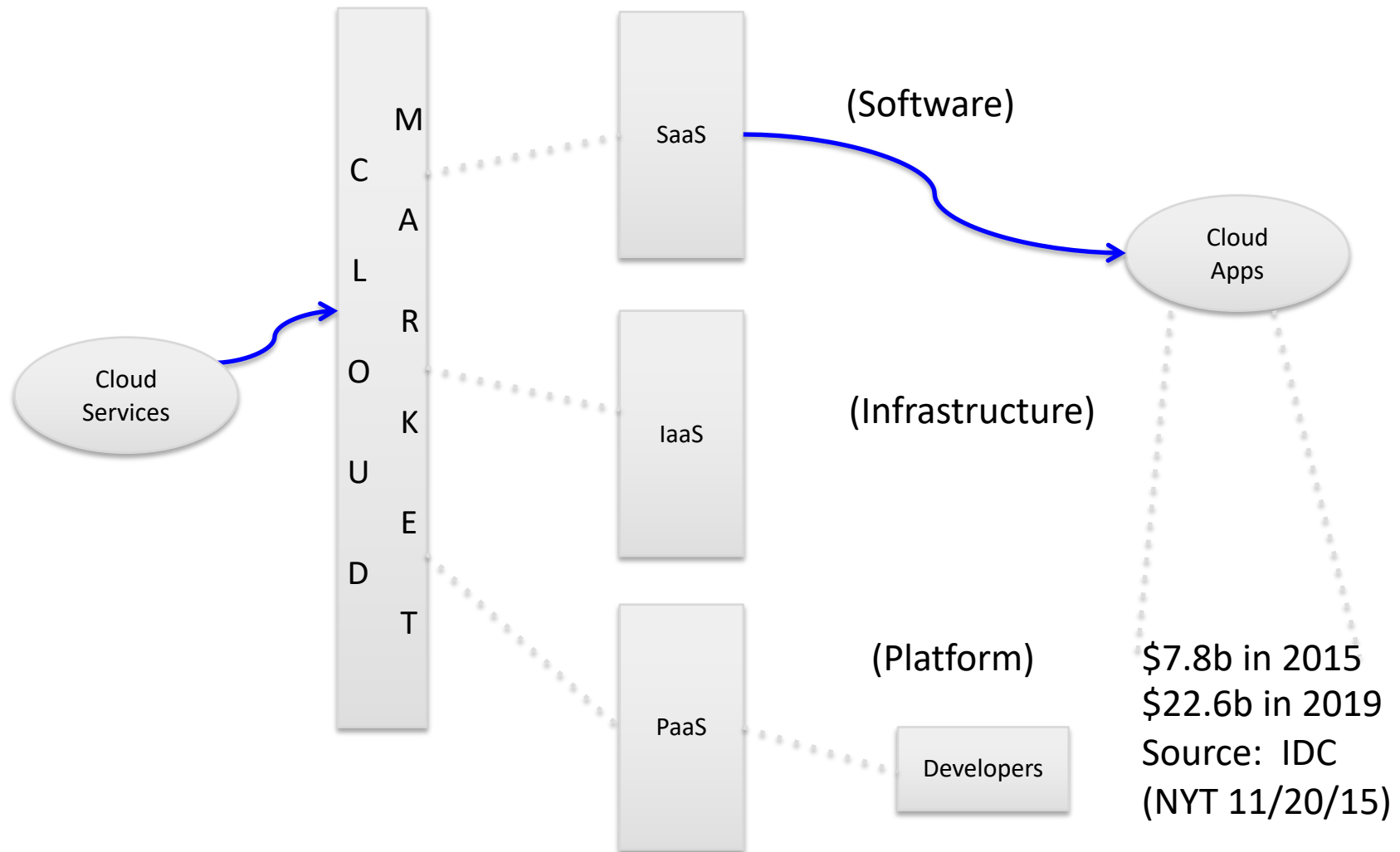
End users

- Most Cloud services do not serve end users
- Expand the Value Map *downstream*
- Find clusters of customers and end users
 - Many ways to do this
 - Each cluster will have its own set of values
 - Each will need drilldown data
- Capture data on clusters of interest
 - Those that may suggest successful strategies
 - Those focused on by competitors

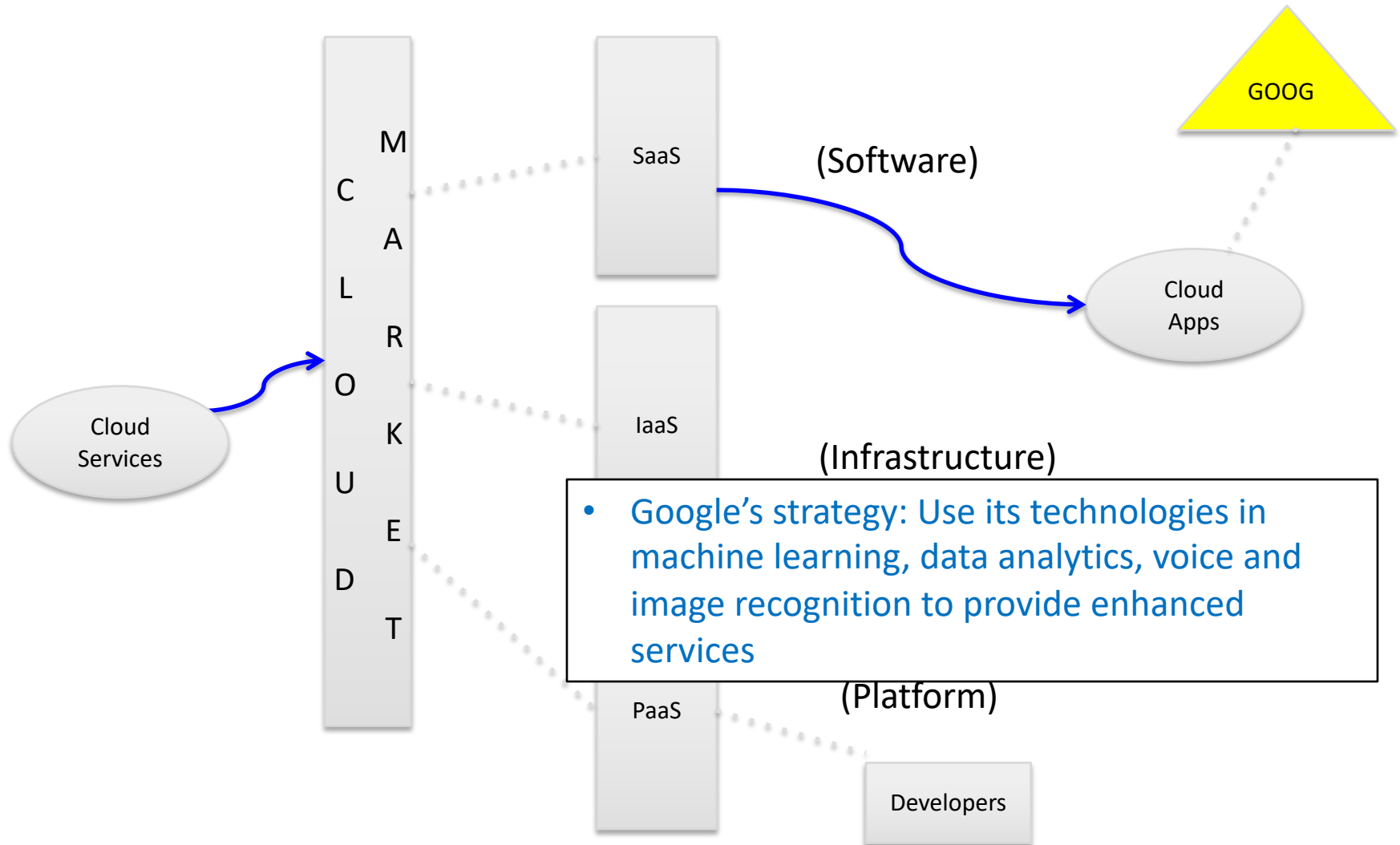
Cluster #1 – By Use of Cloud



Cluster #2 – By Nature of Cloud Services

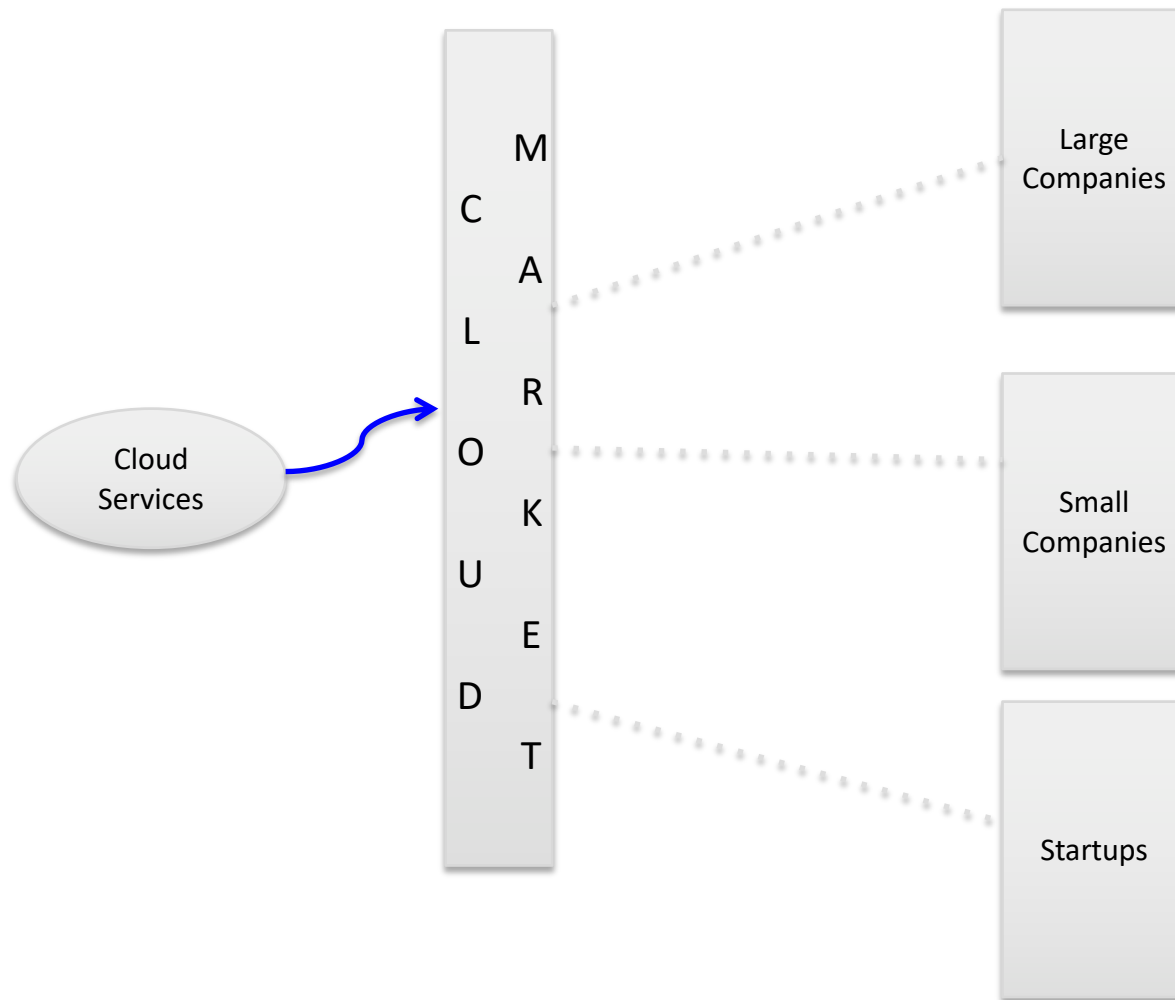


Cluster #2 – Google's move in 2015

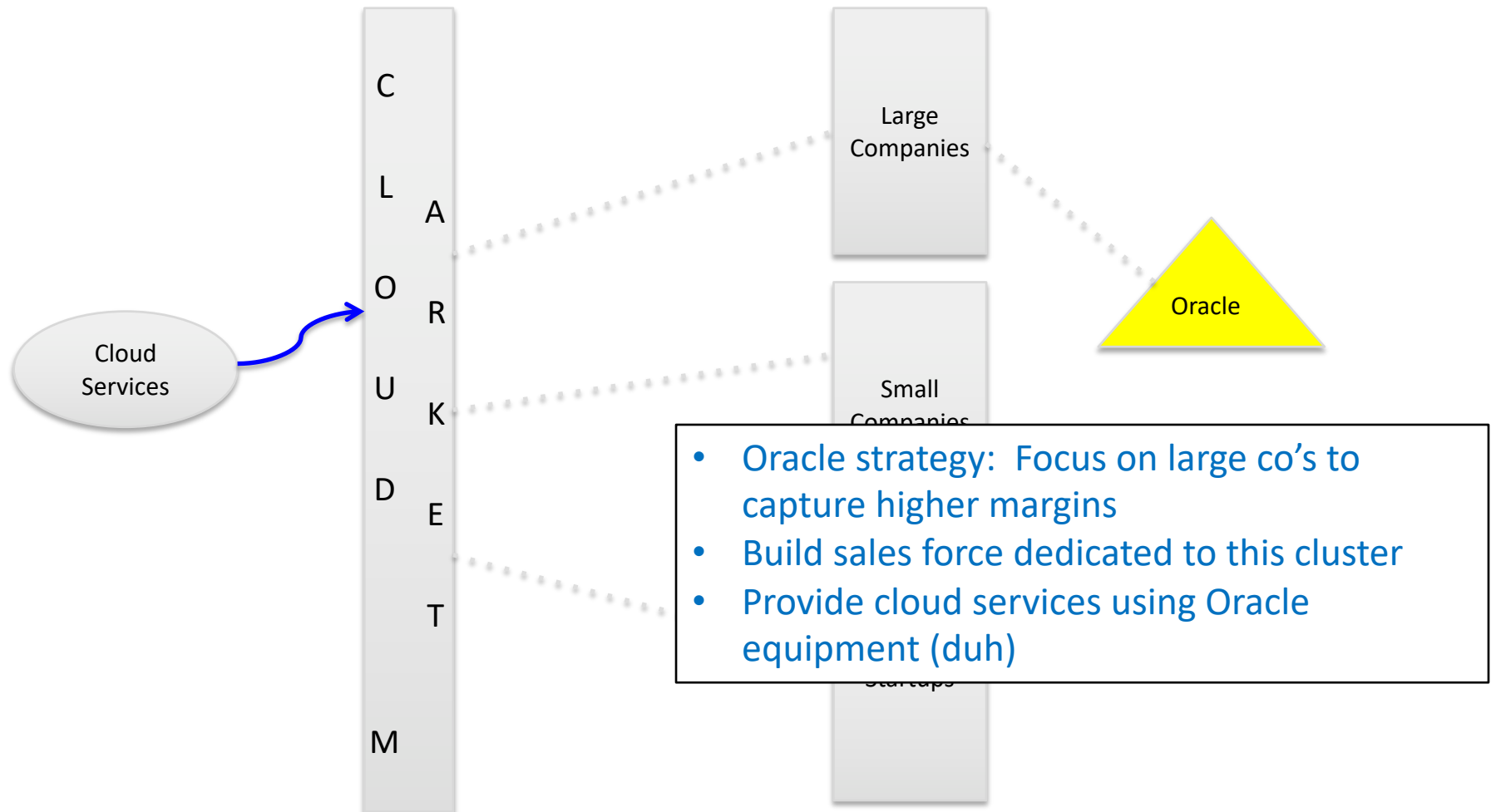


- Also, hire a new CEO to run the business—Diane Greene

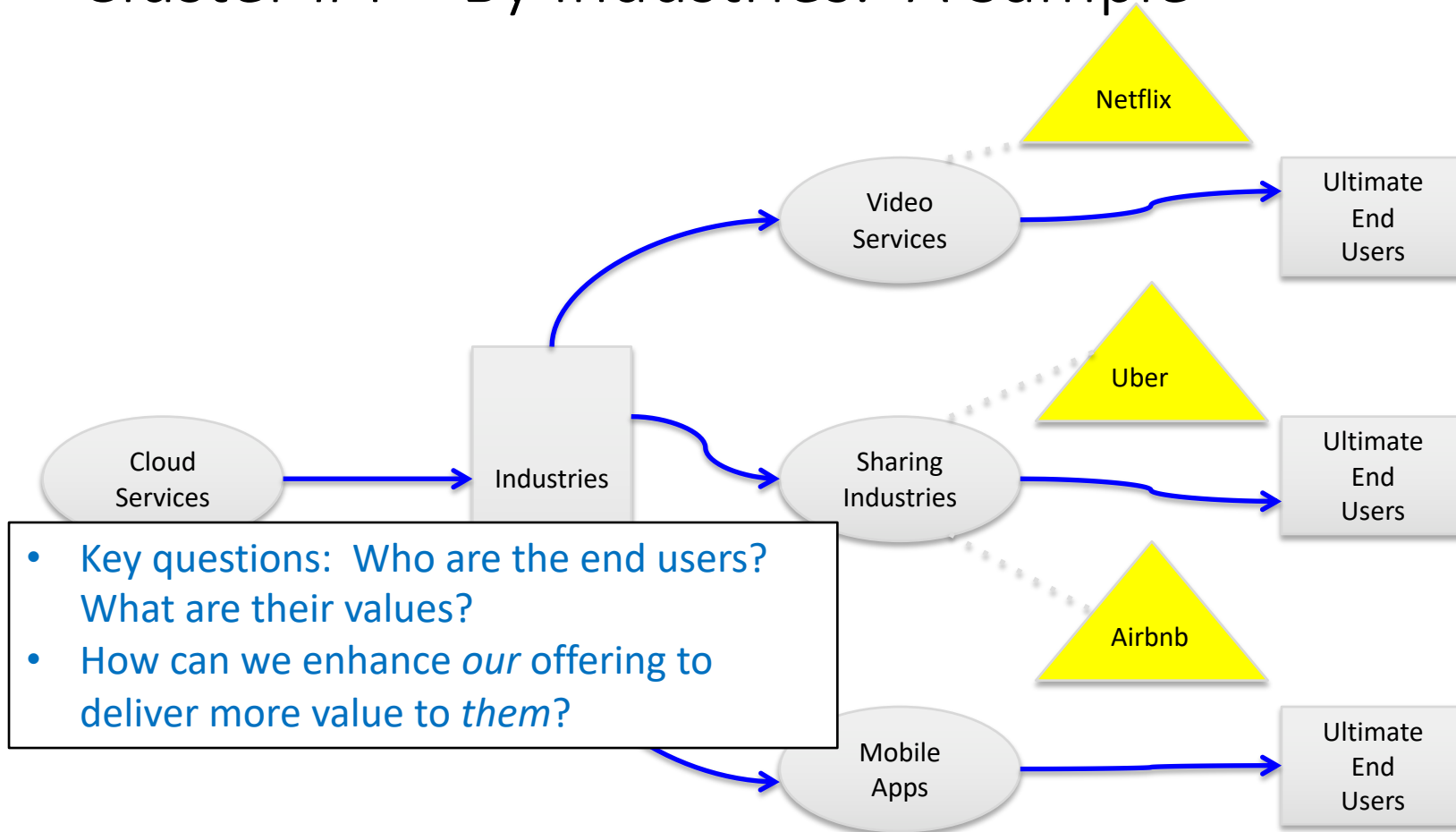
Cluster #3 – By Size & Character of Client



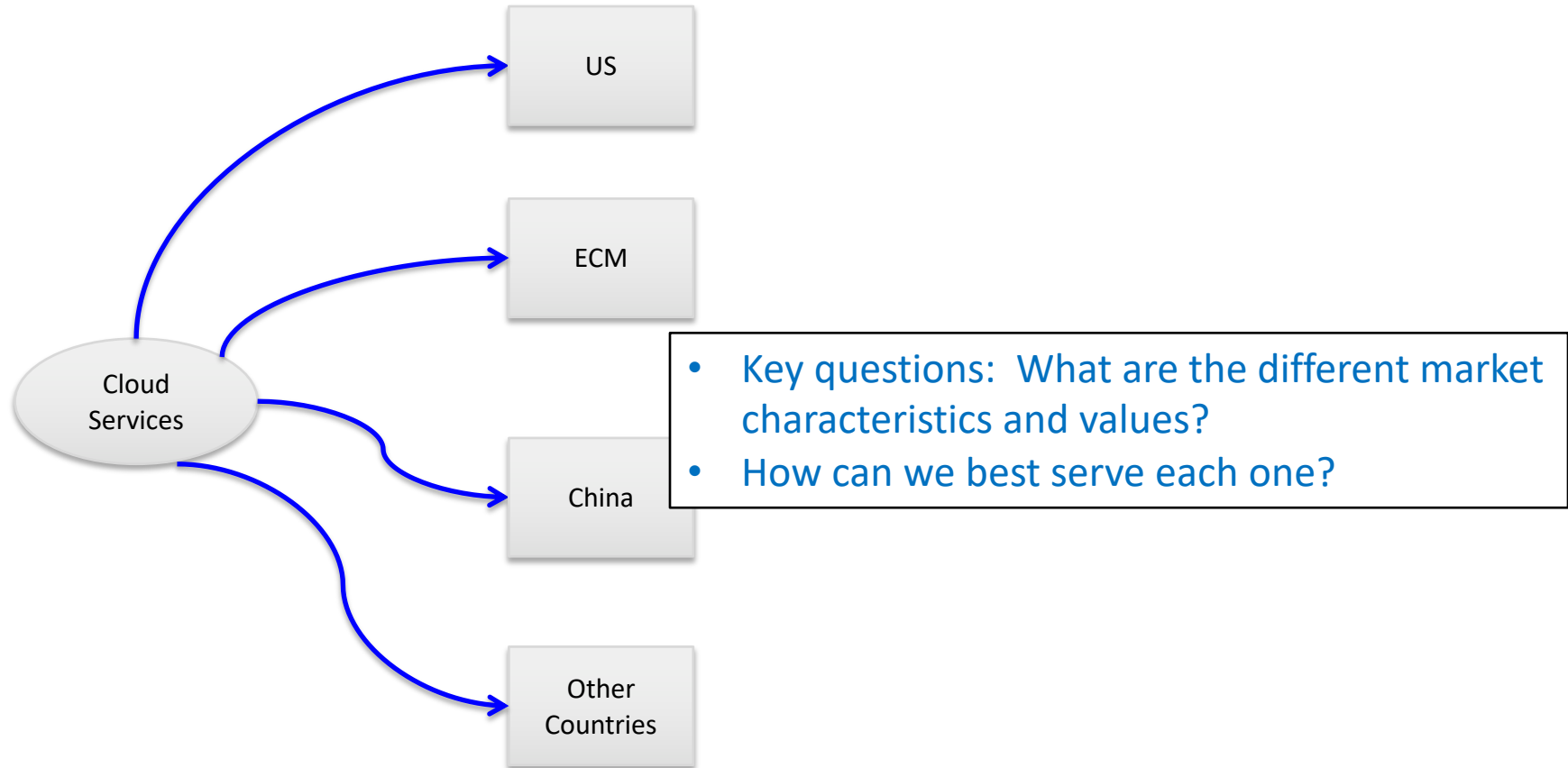
Cluster #3 – Oracle



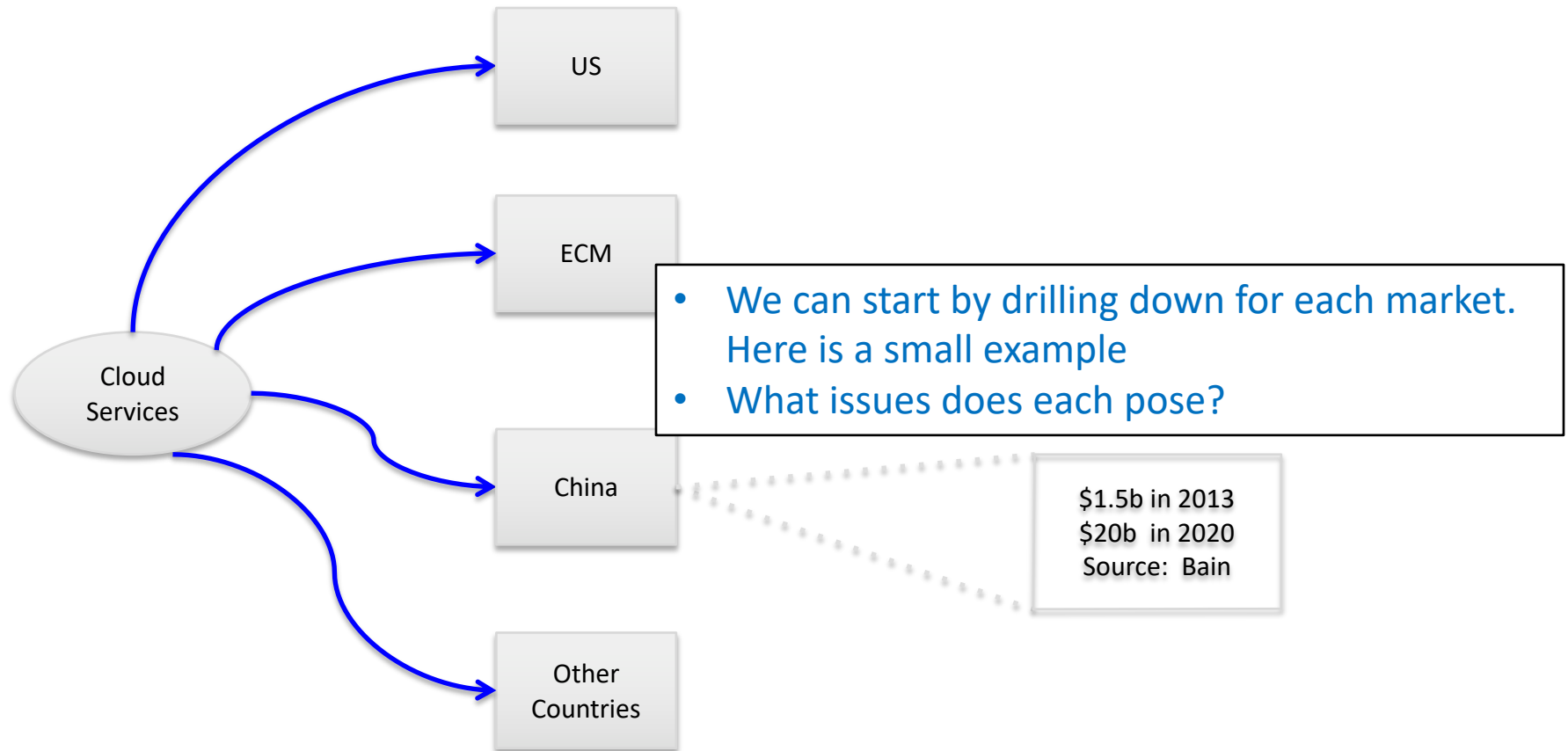
Cluster #4 – By Industries. A Sample



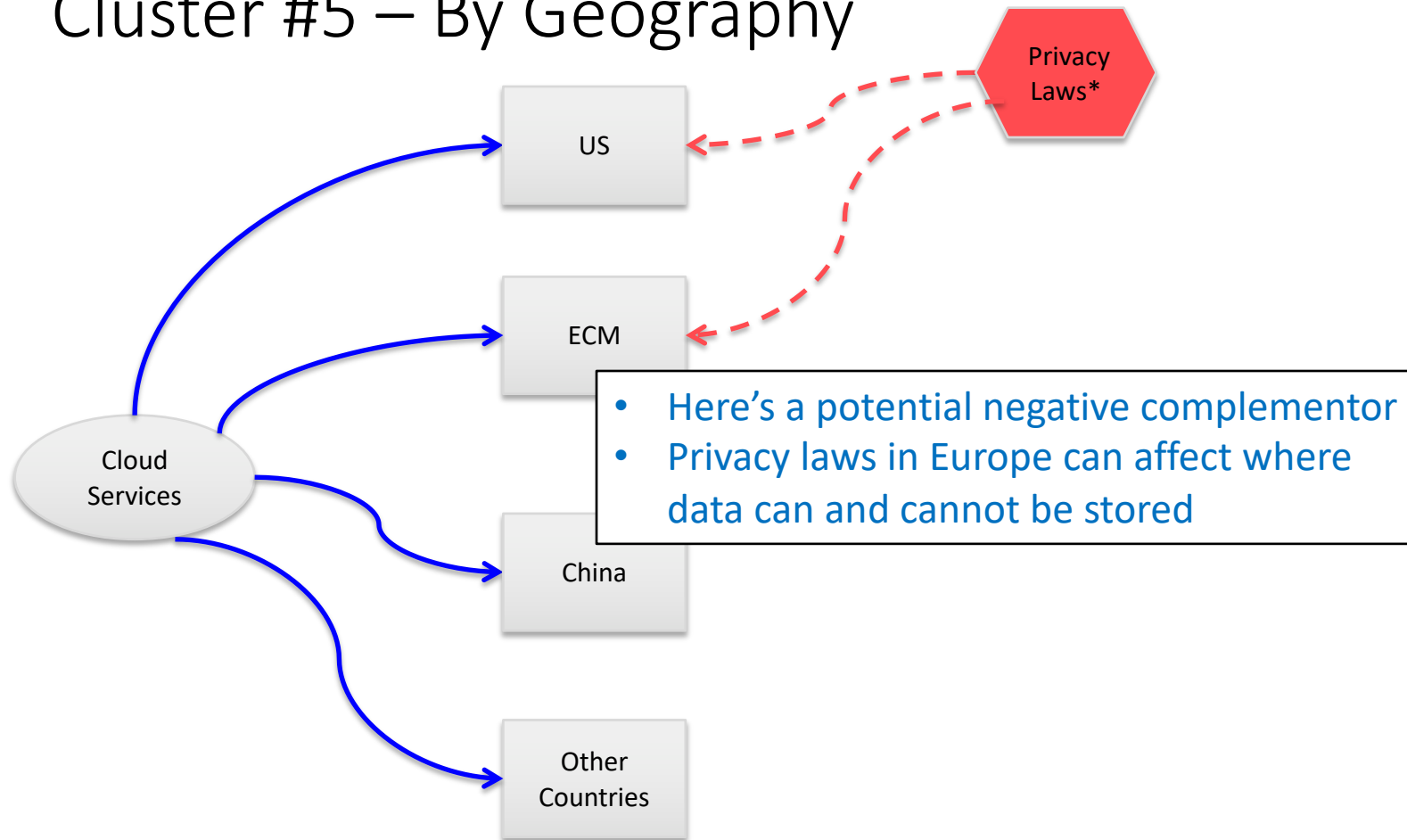
Cluster #5 – By Geography



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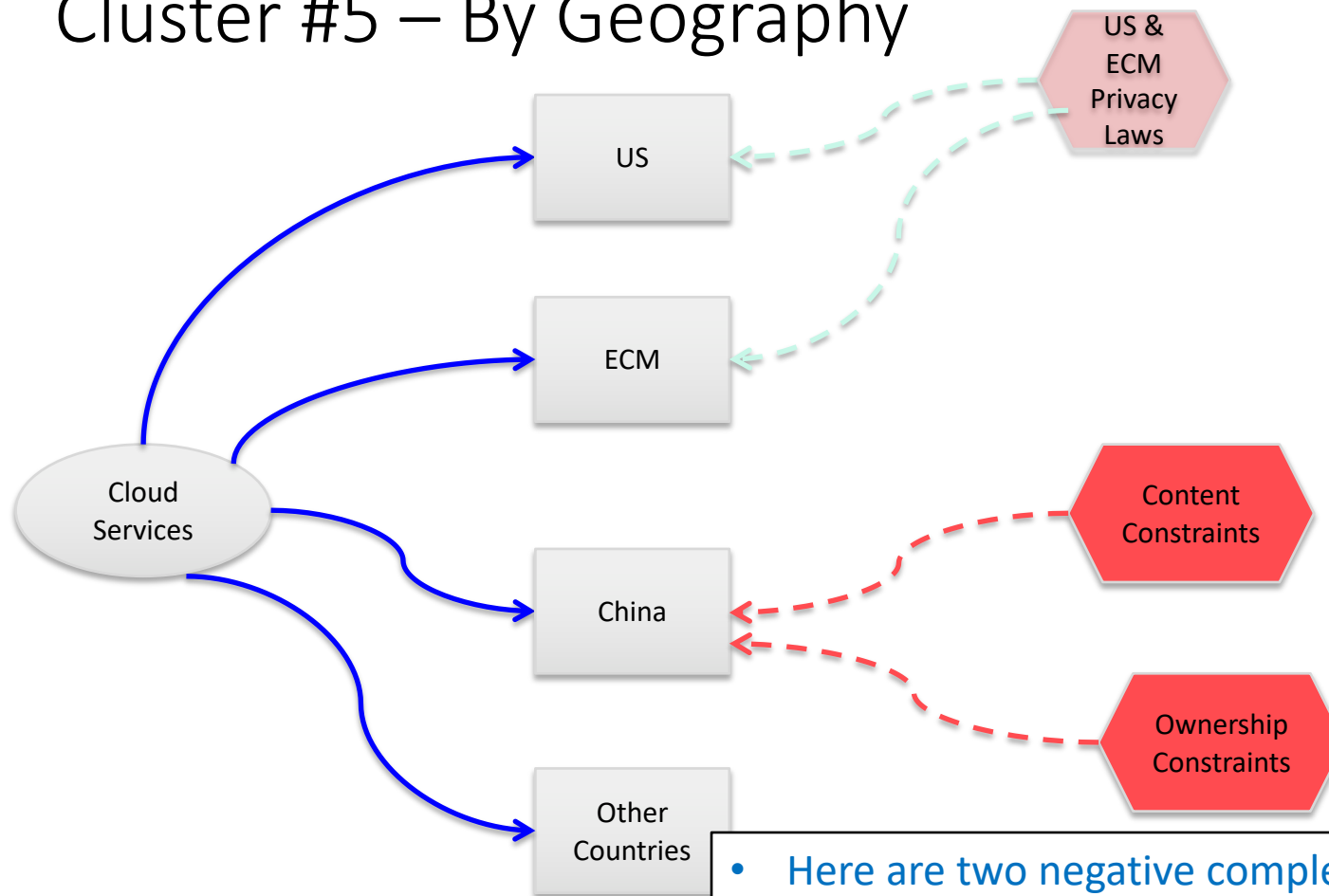


Cluster #5 – By Geography



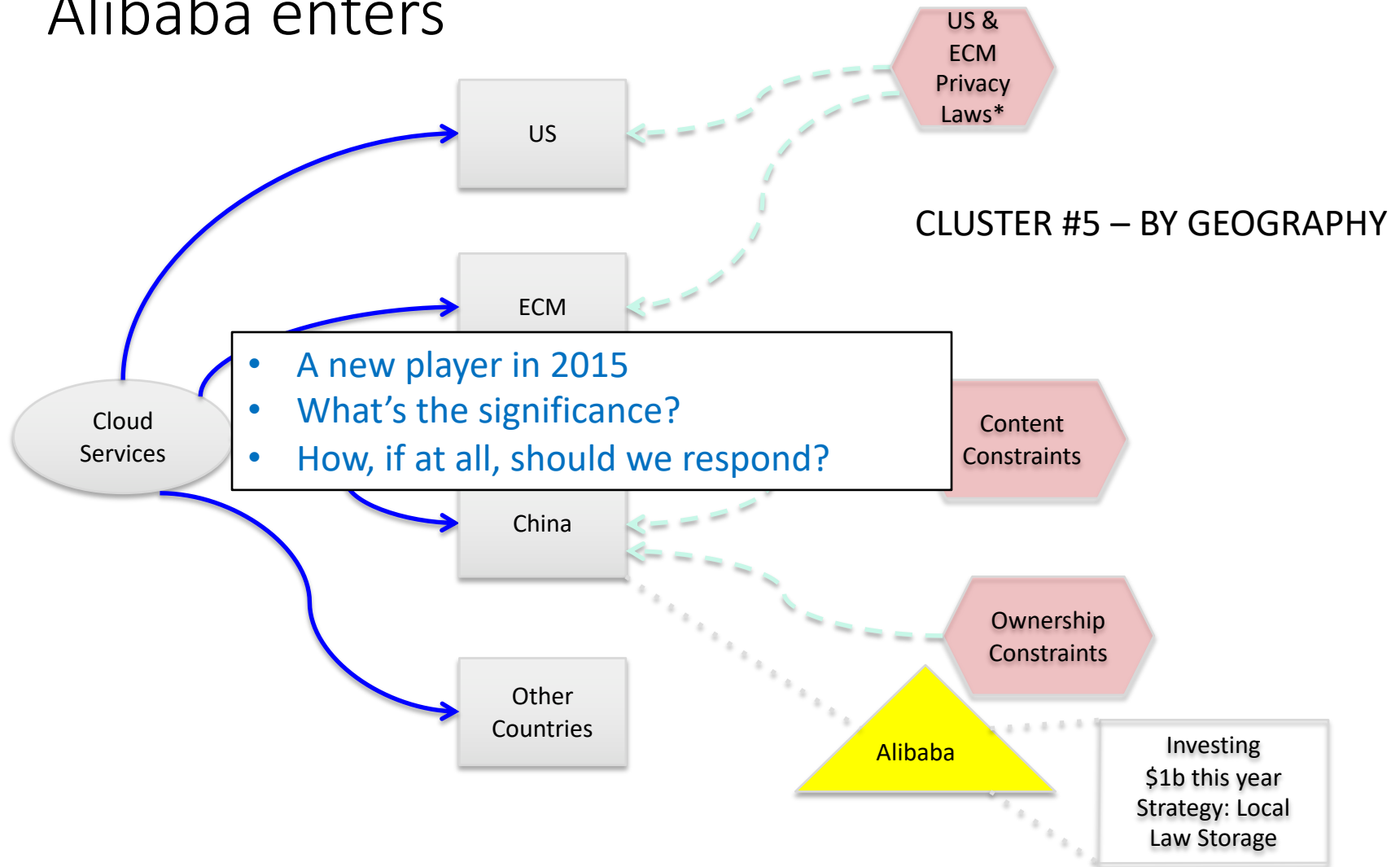
*Microsoft case pending; adverse decision could require compliance with local country laws

Cluster #5 – By Geography

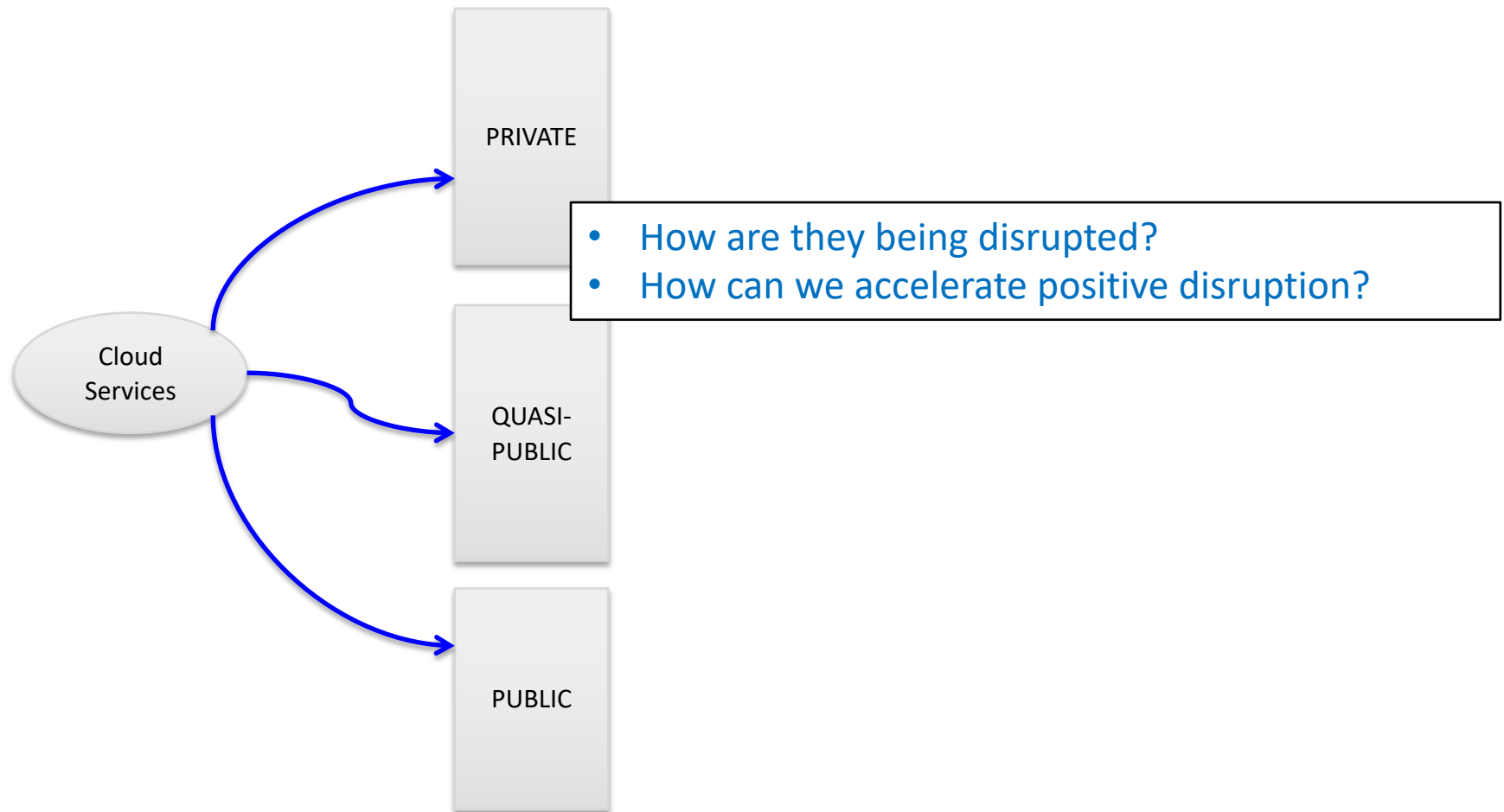


- Here are two negative complementors for China
- Key questions: How significant are the constraints? How do we deal with them?

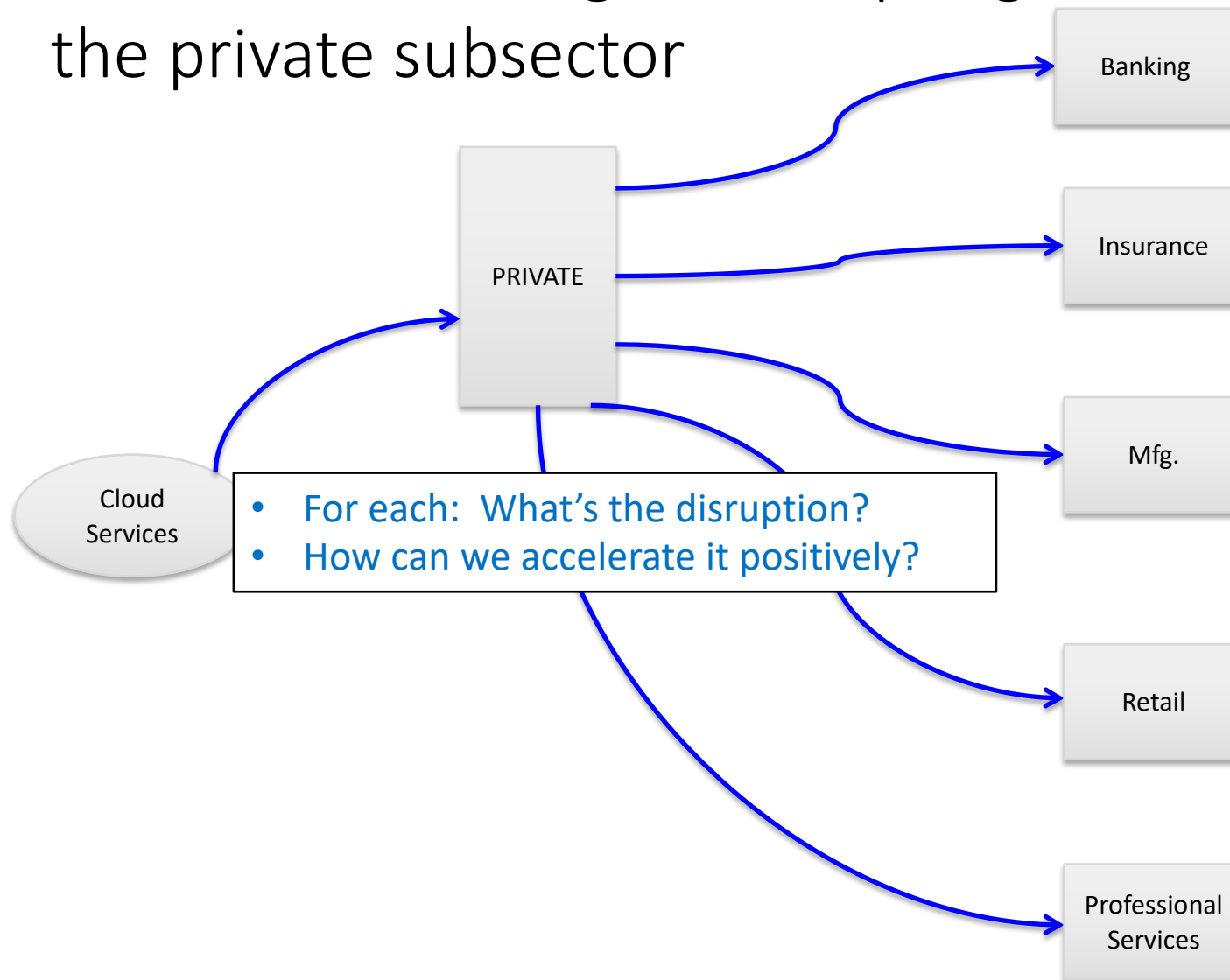
Alibaba enters



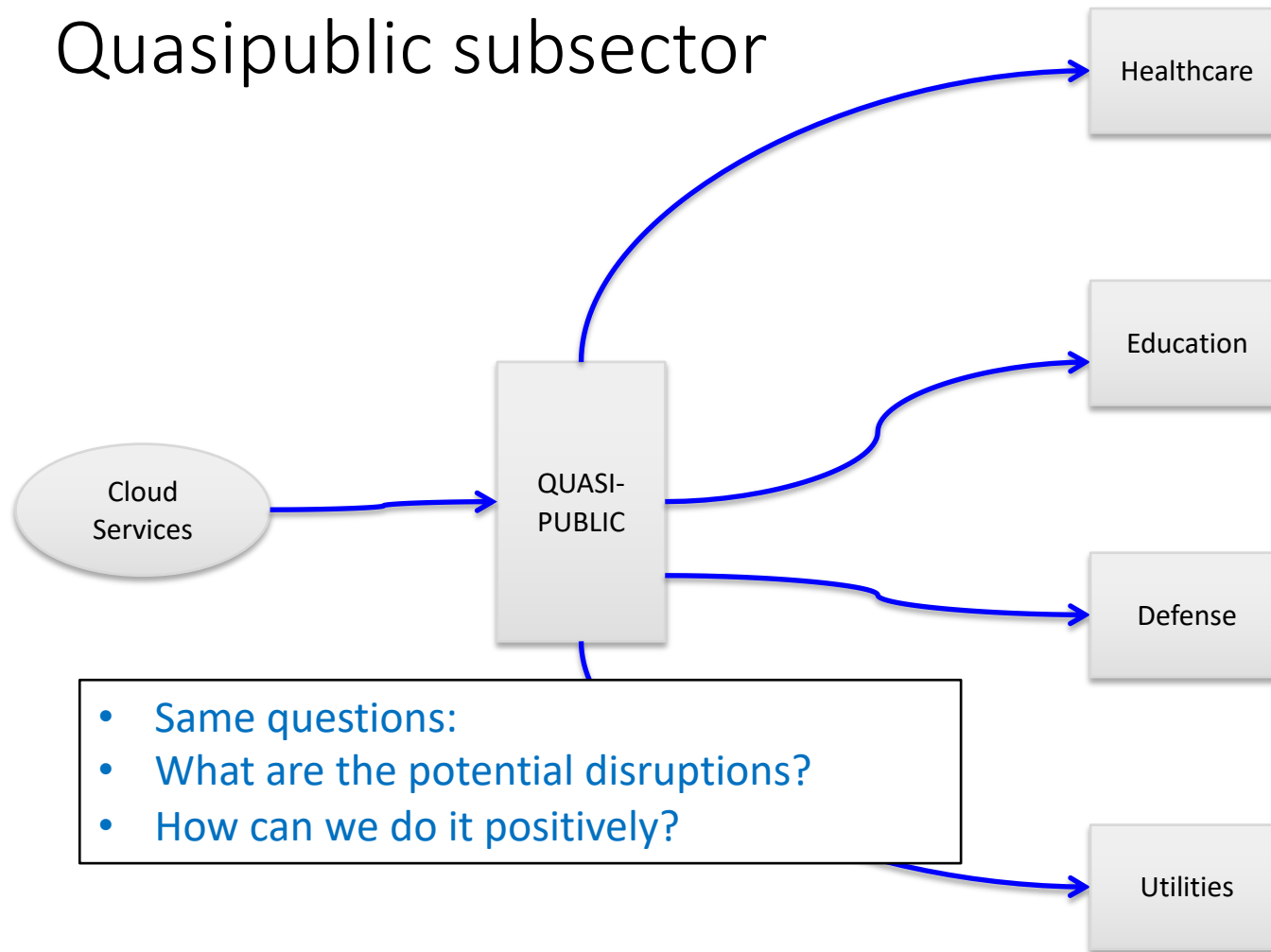
CLUSTER #6 – Digital disruption by sector



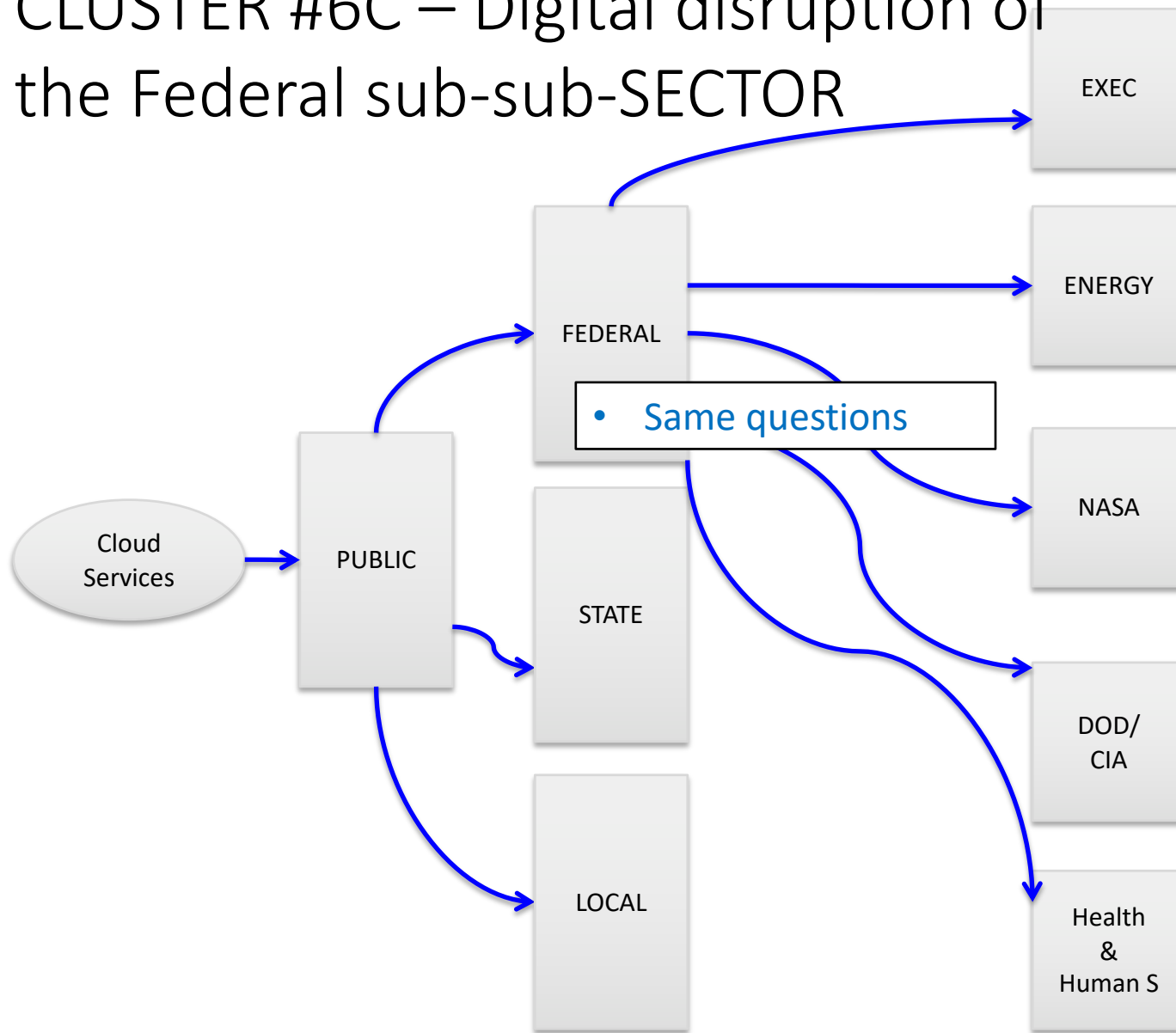
CLUSTER #6A – Digital disrupting the private subsector



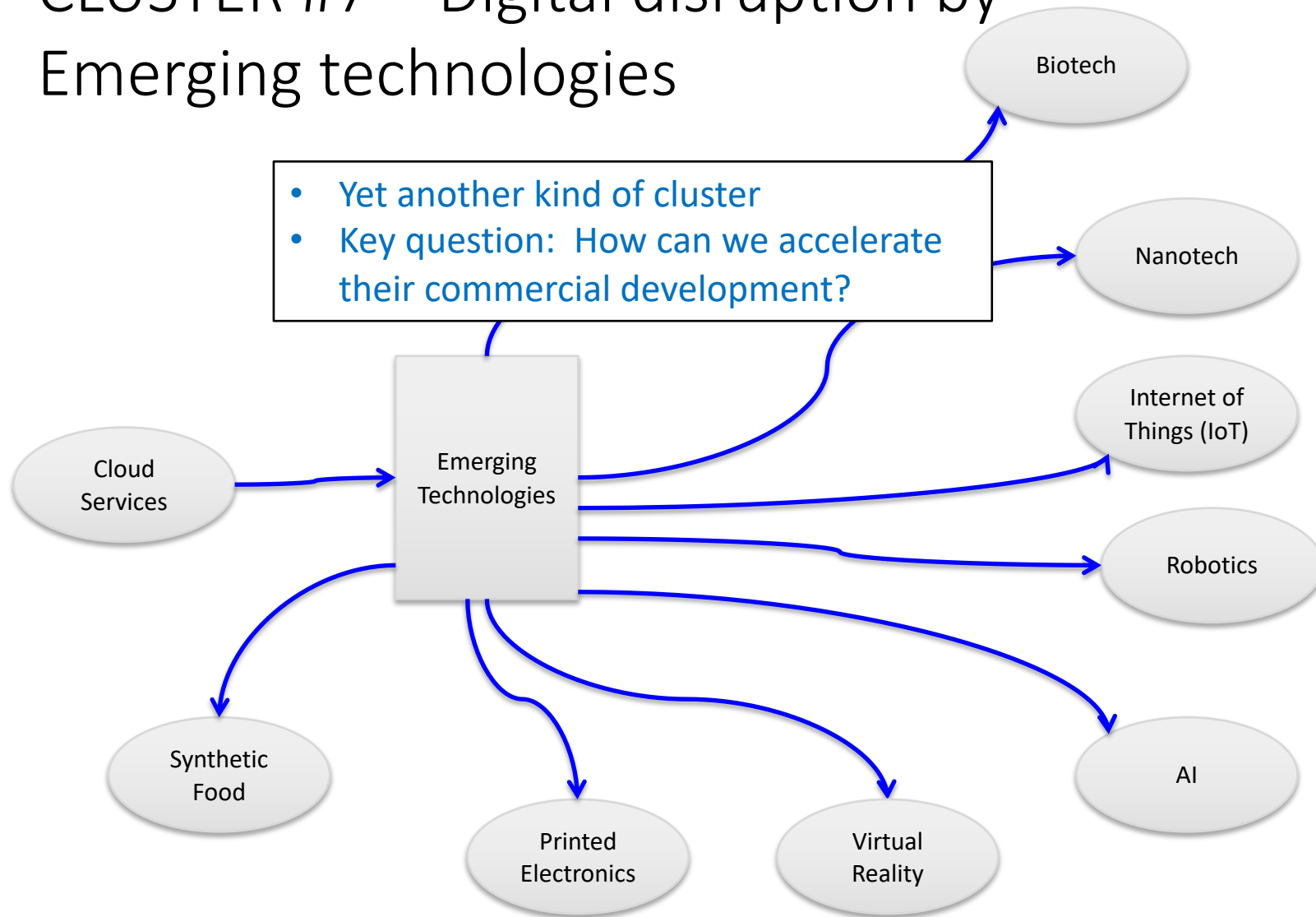
CLUSTER #6B – Digital disruption of Quasipublic subsector



CLUSTER #6C – Digital disruption of the Federal sub-sub-SECTOR



CLUSTER #7 – Digital disruption by Emerging technologies



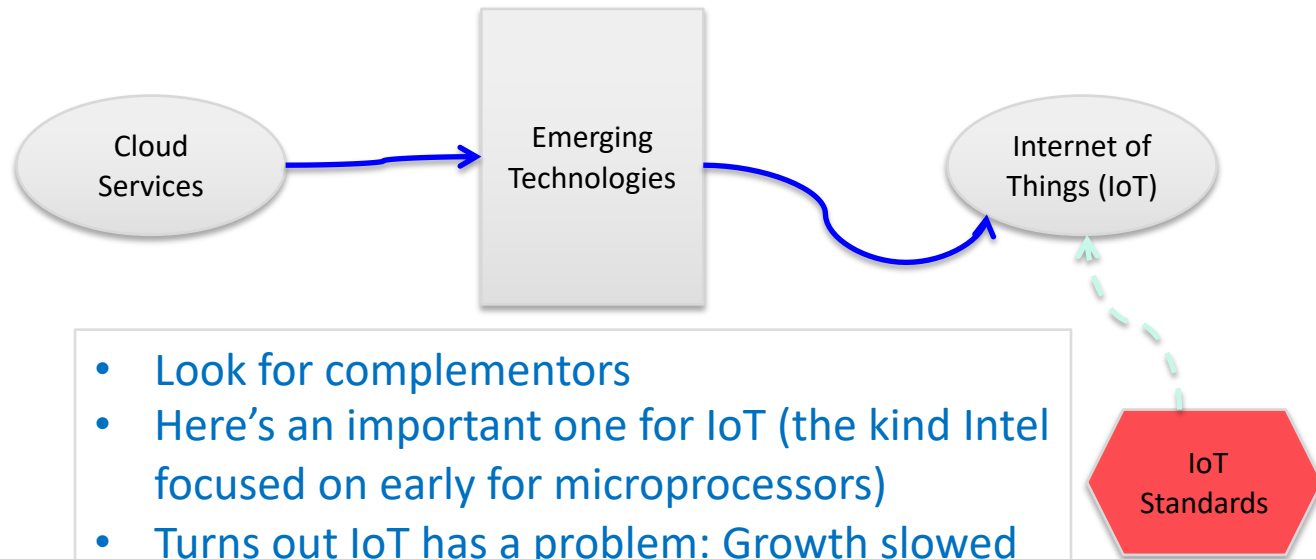
CLUSTER #7 – Digital disruption by Emerging technologies

- As an example, here's a partial drilldown for IoT

Internet of Things (IoT)

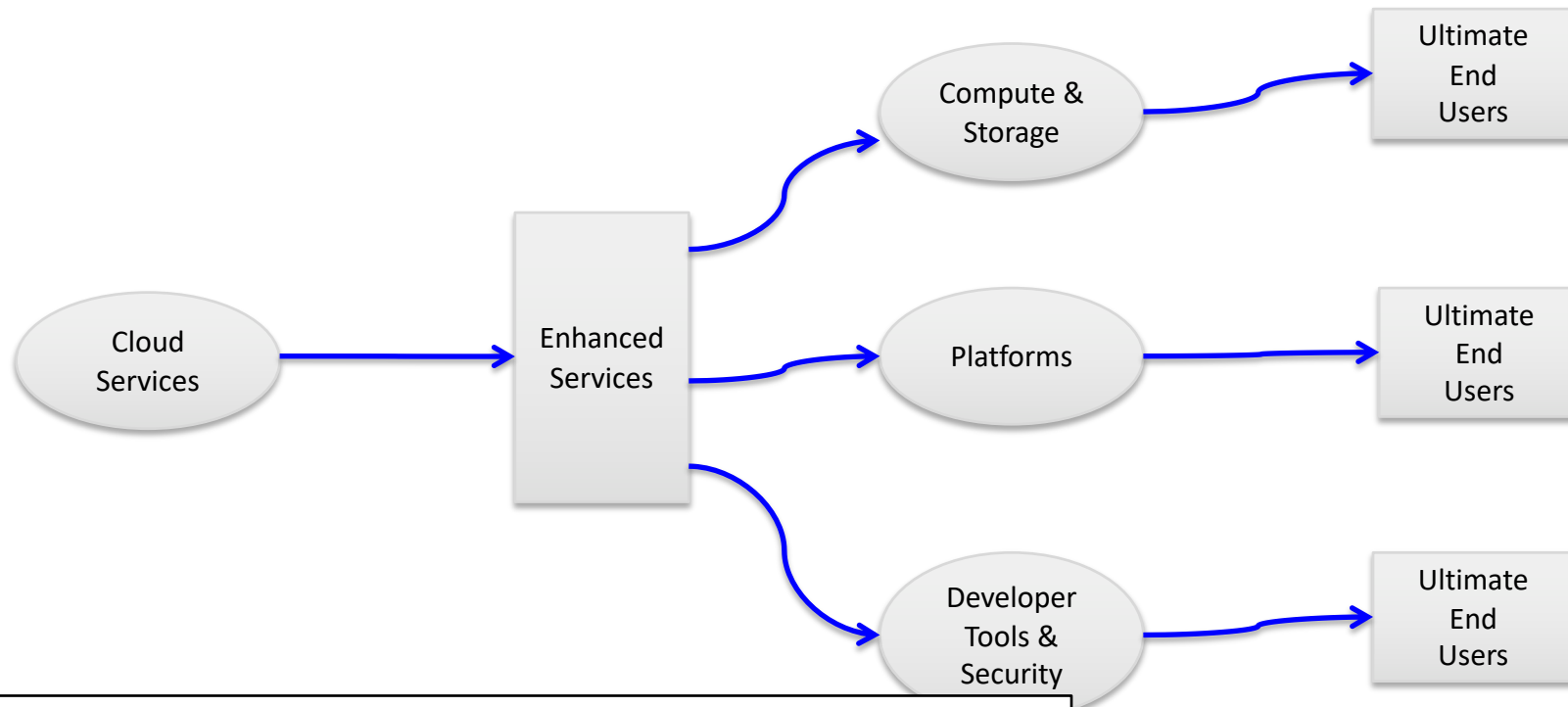
- Volume 2015: \$32b
- Growth rate 5 yrs: 38%/yr: Source Weiss
- Global \$21T (trillion) by 2020; Source Cisco
- “Our central finding is that the hype may actually understate the full potential”
--McKinsey

CLUSTER #7 – Digital disruption by Emerging technologies



- Look for complementors
- Here's an important one for IoT (the kind Intel focused on early for microprocessors)
- Turns out IoT has a problem: Growth slowed by difficult system integrations—it's a pain in the butt to get lots of apps going; very negative
- Common standards would help
- How can we promote them?

CLUSTER #8 – Focus on Enhanced Service



- Here's another cluster (where AWS has a great lead in the industry)
- How can we enhance our clients' offerings so they deliver more value to *their* customers using *our* cloud?

Value Mapping the Computer Cloud Industry has Surfaced Key Issues

- Upstream
 - The impact of new chip technologies
 - The pro's/con's of further upstream integration
 - More potential alliances
- Downstream – 8 Clusters
 - Which ones provide best growth/profit opp'ies?
 - How deal with legal constraints?
 - How accelerate positive digital disruption?
 - How best exploit IoT?

In Value terms, why has AWS been successful?

- Created a new value space
 - The Cloud
 - Got first mover advantages
- Provided many added values to customers (see values)
- Provided many added values to end-users
- Integrated upstream to achieve faster, less costly development
 - Servers
 - Software
- Pursued selected clusters downstream, e.g.
 - Global coverage
 - Leveraging new technologies (e.g. IoT)
- Traded present value captured for future ones
 - Low pricing
 - Large share
- Payoffs
 - High market share
 - High Business Unit Value--stock price (vs. “standard” measures)