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Internet Weather Report:

– Increasing Cloudiness, Chance of Storms

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Everyone to The Cloud! Now! Hurry!



To the cloud! Wait, the what?



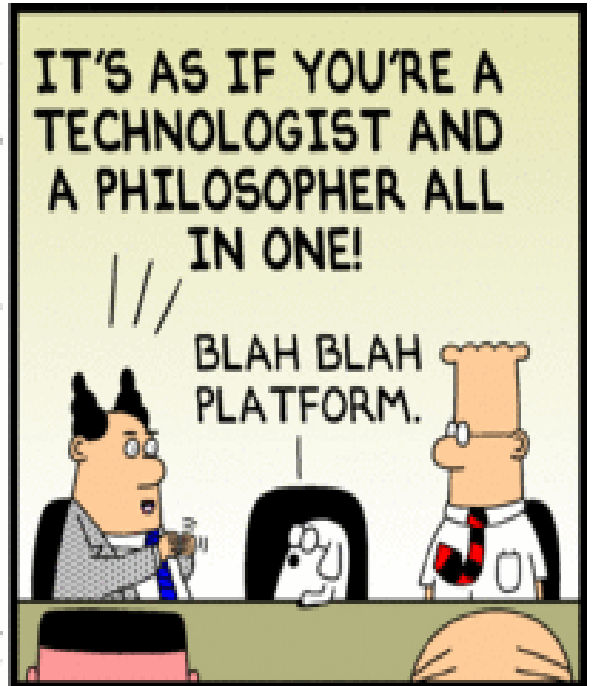
COURTESY: MICROSOFT



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Cloud Computing is:

Working from home on a rainy day?

Accessing your email in-flight?

A meaningless marketing buzzword?

The rediscovery of distributed computing?

“**Cloud computing** is a [business AND technical] model for enabling convenient, **on-demand network access** [from ANY device...PC, Laptop/Pad, SmartPhone] to a **shared pool of configurable computing resources** (e.g., networks, servers, storage, applications, and services) that can be **rapidly provisioned and released** with minimal management effort or service provider interaction.” -- **NIST**

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NIST Cloud Definition & Characteristics

<http://csrc.nist.gov/groups/SNS/cloud-computing/index.html>

On-Demand Self-Service

Broad Network Access

Resource Pooling

Rapid Elasticity

Measured Service

Delivered as:

SaaS (Software as a Service)

PaaS (Platform as a Service)

IaaS (Infrastructure as a Service)

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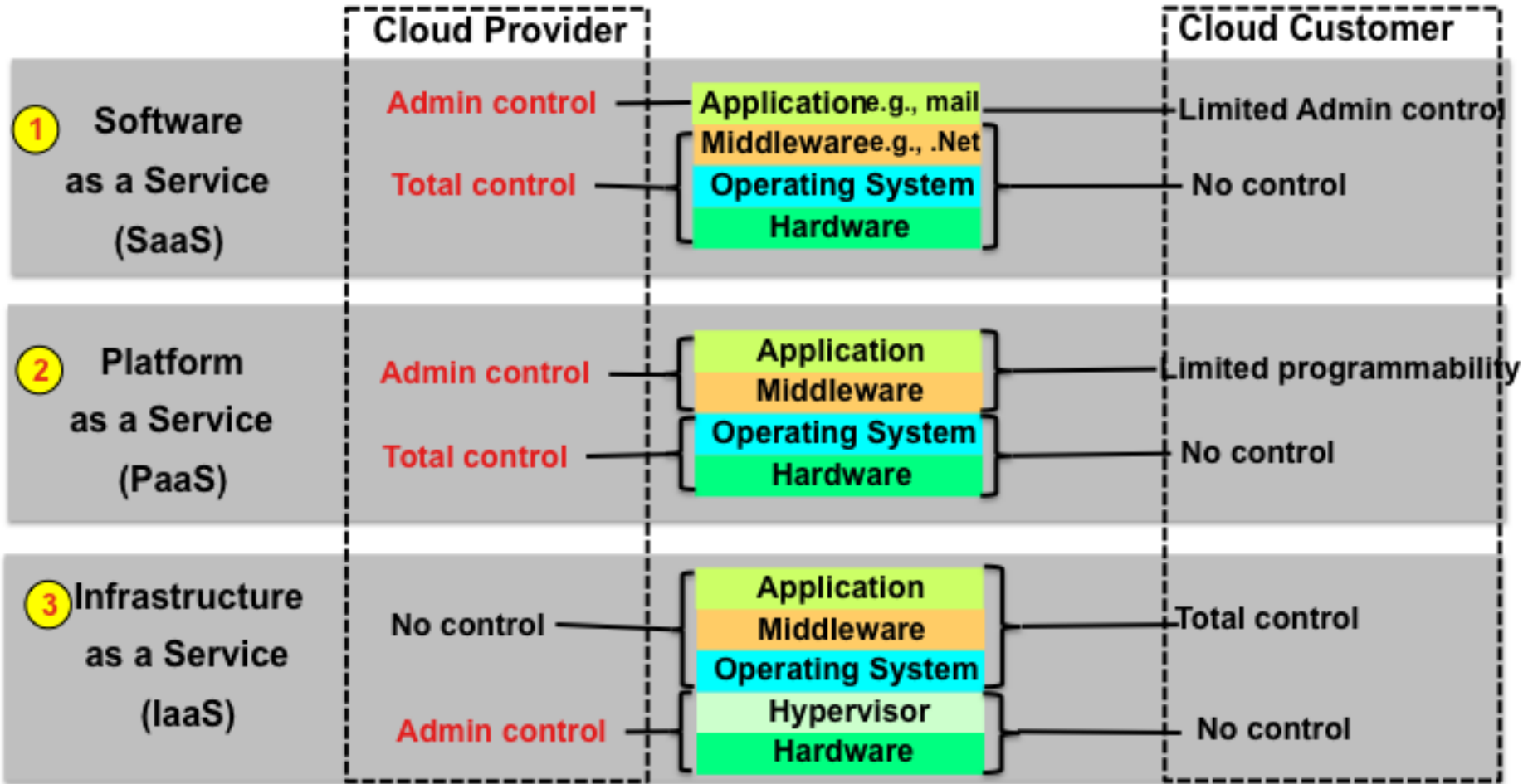
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Who has Control & Who can See What



“Cloud will solve ALL your IT problems!”

- ✓ **Centralized management**
- ✓ **Enhanced & standardized security**
- ✓ **Reduced costs:**
 - ✓ **Energy**
 - ✓ **No more over-provisioning**
 - ✓ **Pay-by-the-drink**
- ✓ **Scalability when you need it**

However...

(...yes, there's always a 'however', someone's always raining on your parade)

- ✓ **Business model change**
 - ✓ own-to-rent, loss of territory
- ✓ **Bigger target for bad guys**
 - ✓ still in early stages of understanding risks
- ✓ **Bigger failure modes**
 - ✓ Remember Amazon?
- ✓ **Harder to do troubleshooting & forensics**
- ✓ **Legal issues**
 - ✓ who owns & has jurisdiction over your actions and your data?
 - ✓ **LOCATION is relevant!**

Nevertheless...

- ✓ **Cloud Computing is NOT going away**
 - ✓ in fact, US Gov't is **REQUIRING** “cloud first” solutions
- ✓ **Big IT vendors are targeting cloud solutions**
 - ✓ significant industry consolidation underway
- ✓ **Cloud services are becoming consumerized**
 - ✓ data services & apps (MS, Google, Apple, ...)
 - ✓ digital cameras with 3G/WiFi & auto-save-to-cloud
 - ✓ Google ChromeBook (ALL cloud, NO local apps)
- ✓ **Cloud will drive development of faster Internet**
 - ✓ demand for faster CPUs, I/O, networks
 - ✓ need better understanding of caching and parallelism
 - ✓ increasing Web consumer expectations for speed and responsiveness (was “8 sec rule” ...now 3 sec)

Your homework:

(...sorry...I AM also a professor)

✓ Learn the *new language* of cloud computing

✓ Some neologisms:

- ✓ cloudology
- ✓ encloud/discloud
- ✓ cloudification
- ✓ cloudwashing
- ✓ cloudonomics
- ✓ cloudsourcing
- ✓ cloudage, cloudful
- ✓ cloudlet, cloudling
- ✓ and...

...Cloudward!





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THANK YOU!

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