Introduction to PaaS/SaaS

Cloud Computing-What is it?

- moving services, computation and to an internal or external, centralized facility or contractor.
- Reason
  - easy and ubiquitous accessibility
  - cost
  - collaboration, integration, and analysis on a shared common platform.

What is it?

- SaaS (software-as-a-service). WAN-enabled application services (e.g., Google Apps, Salesforce.com, WebEx)
- PaaS (platform-as-a-service). Foundational elements to develop new applications (e.g., Coghead, Google Application Engine)
- IaaS (infrastructure-as-a-service). Providing computational and storage infrastructure in a centralized, location-transparent service (e.g., Amazon)

What is it?


Management and Administration
Software as a Service
Platform as a Service
Infrastructure as a Service

Software as a Service

- First implementations of cloud services was **Software as a Service(SaaS)** — *business applications that are hosted by the provider and delivered as a service*.
- ***Application Service Providers (ASPs). -*** The ASP business grew up soon after the Internet began to mushroom, with some companies offering to securely, privately host applications.
- Hosting of supply chain applications and customer relationship management (CRM) applications was particularly prominent,
- Although some ASPs simply specialized in running email.
- However, the most successful vendors were those who recognized that an application delivered as a service with a monthly fee based on the number of users had to be easy to use and easy to stay with.

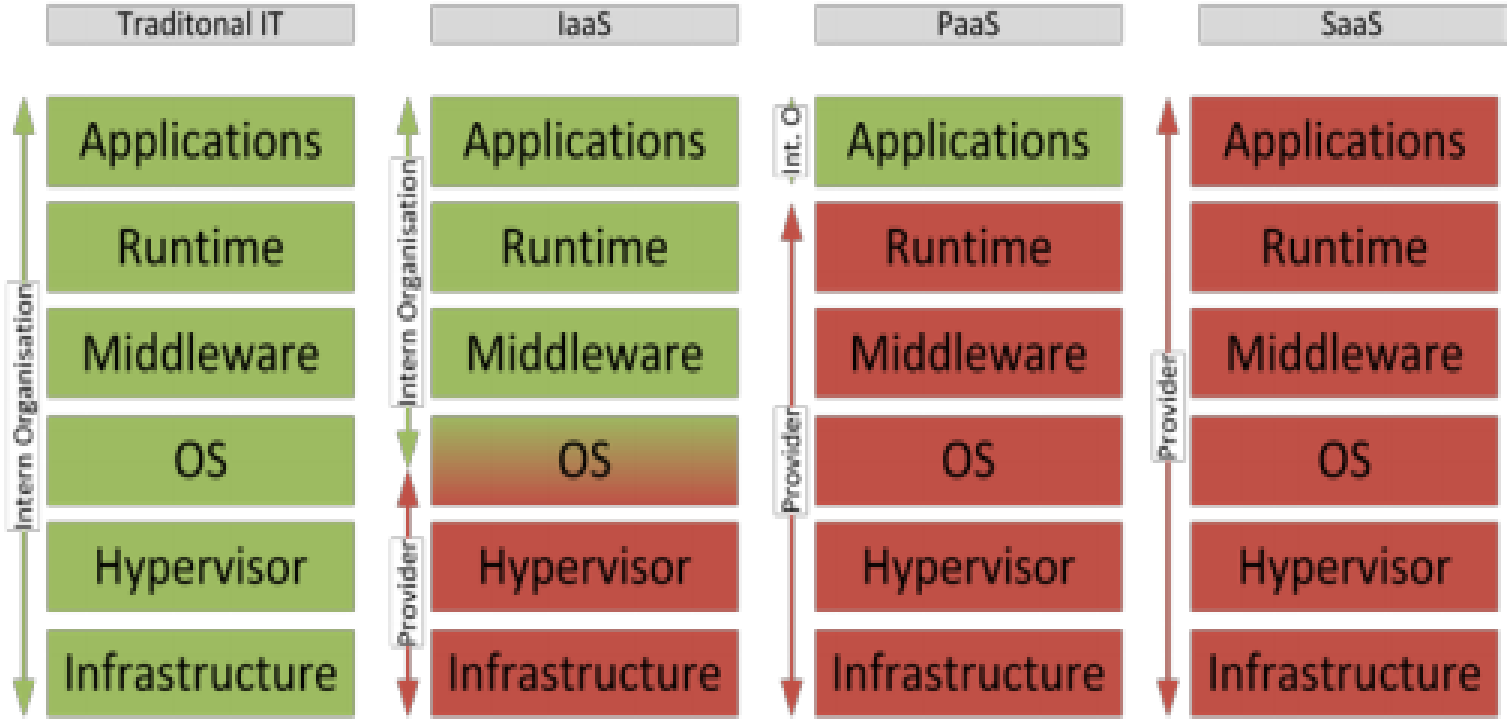
Platform as a Service

- It delivers what you might call a solution stack — an integrated set of software that provides everything a developer needs to build an application — for both software development and runtime.
- The primary benefit of PaaS is having software development and deployment capability based entirely in the cloud — hence, no management or maintenance efforts are required for the infrastructure.
- Every aspect of software development, from the design stage onward (including source-code management, testing, and deployment) lives in the cloud.

Infrastructure as a Service (IaaS)

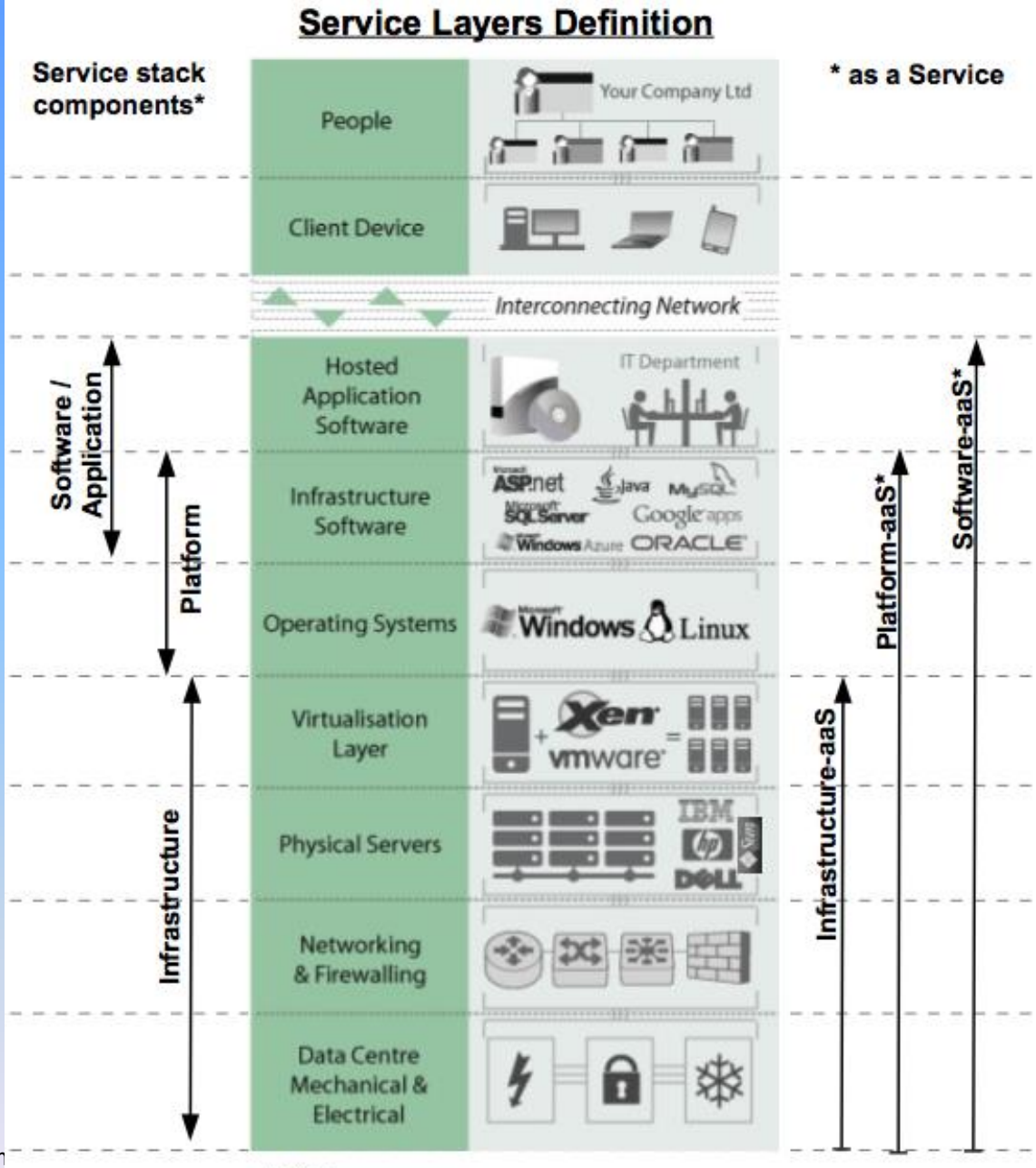
- Infrastructure as a Service (IaaS) is the delivery of computer hardware (servers, networking technology, storage, and data center space) as a service.
- It may also include the delivery of operating systems and virtualization technology to manage the resources.
- The IaaS customer rents computing resources instead of buying and installing them in their own data center.
- The service is typically paid for on a usage basis.
- The service may include dynamic scaling so that if the customer needing more resources than expected, he can get them immediately (probably up to a given limit)

What is it?



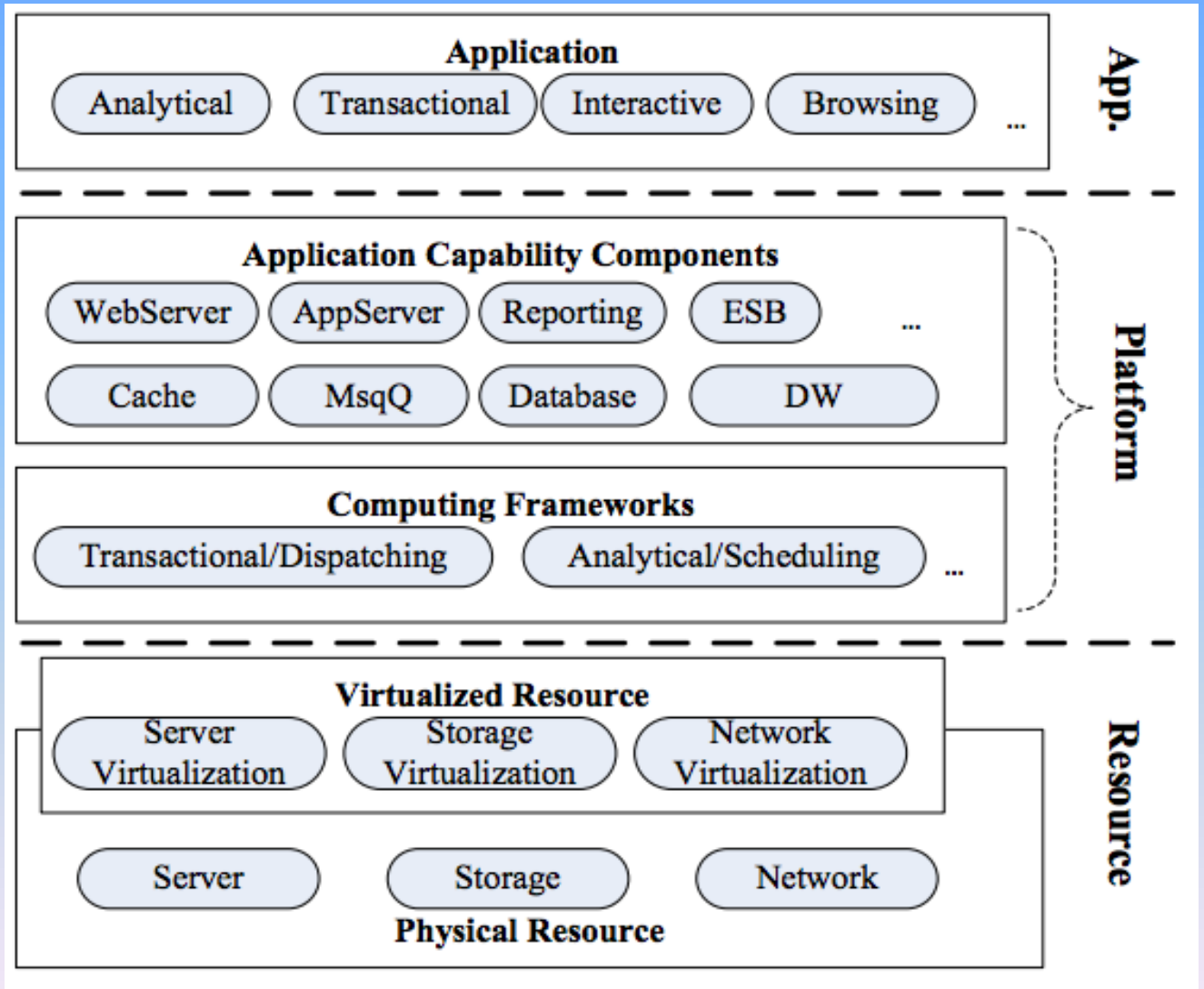
Source: Based on the model developed by NIST (2011)

- Green indicates the levels owned and operated by the organization
- Red levels are run and operated by the service provider



Source:
http://www.katescomment.com
paas-saas-definition/

Core Stacks



Source: Goel, Pragati, and Mayank Kumar. "An overview of Cloud Computing."

- **Resource Layer**
  - infrastructure layer which is composed of physical and virtualized computing, storage and networking resources.
- **Platform Layer**
  - computing framework manages the transaction dispatching and task scheduling.
  - storage sub-layer provides storage and caching capability
- **Application Layer**
  - general application logic
  - either on-demand capability or flexible management.
  - no components will be the bottle neck of the whole system.
  - large and distributed transactions and management of huge volume of data.
  - All the layers provide external service through web service or other open interfaces.

Basis Of	IAAS	PAAS	SAAS
Stands for	Infrastructure as a service.	Platform as a service.	Software as a service.
Uses	IAAS is used by network architects.	PAAS is used by developers.	SAAS is used by the end user.
Access	IAAS gives access to the resources like virtual machines and virtual storage.	PAAS gives access to run time environment to deployment and development tools for application.	SAAS gives access to the end user.
Model	It is a service model that provides virtualized computing resources over the internet.	It is a cloud computing model that delivers tools that are used for the development of applications.	It is a service model in cloud computing that hosts software to make it available to clients.

Technical understanding.	It requires technical knowledge.	Some knowledge is required for the basic setup.	There is no requirement about technicalities company handles everything.
Popularity	It is popular among developers and researchers.	It is popular among developers who focus on the development of apps and scripts.	It is popular among consumers and companies, such as file sharing, email, and networking.
Percentage rise	It has around a 12% increment.	It has around 32% increment.	It has about a 27 % rise in the cloud computing model.
Usage	Used by the skilled developer to develop unique applications.	Used by mid-level developers to build applications.	Used among the users of entertainment.

Cloud services.	Amazon Web Services, sun, vCloud Express.	Facebook, and Google search engine.	MS Office web, Facebook and Google Apps.
Enterprise services.	AWS virtual private cloud.	Microsoft Azure.	IBM cloud analysis.
Outsourced cloud services.	Salesforce	Force.com, Gigaspaces.	AWS, Terremark
User Controls	Operating System, Runtime, Middleware, and Application data	Data of the application	Nothing
Others	It is highly scalable and flexible.	It is highly scalable to suit the different businesses according to resources.	It is highly scalable to suit the small, mid and enterprise level business