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Cloud Computing Business Models

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Positioning the Players

Cloud Technology Providers	Infrastructure as a Service	Platform as a Service	Software as a Service
	HP	Google App Engine	Cordys
	IBM	Facebook	Zynga
	RackSpace	Force.Com	SalesForce
	OpenStack	Microsoft Azure	
	Eucalyptus		Dropbox
	VMWare	Amazon Web Services	Animoto
	Oracle		Arch Red
	Techila		

Cloud Technology Providers

- Hardware, software and services for building private and public clouds
- Products based on the components needed for example for large-scale virtualisation, data storage, databases etc.
- Some of the products based on the in-house solutions for building clouds before the cloud was called cloud (Rackspace => OpenStack)
- Some deliberately designed for this purpose (Eucalyptus), business model open source with commercial support services, OEM branding (HP)
- Grid computing platform (Techila)
- Also complete (private) cloud implementations offered as a infrastructure service (HP, IBM, Rackspace)

Infrastructure as a Service (IaaS)

- At the simplest only data center or virtualisation services rebranded.
- Competitive advantage usually based on the more efficient utilisation of existing infrastructure and position (excess capacity, datacenters, economies of scale (software, hardware, Internet etc.))
- Products and services developed from the infrastructure building and management solutions (for example Amazon Web Services (IaaS provider) ⇔ Amazon.com (customer))
- Packaged to be easy to buy, utilise and deploy
- Charging based on the resources and services used (time, bandwidth, transactions, storage etc.) Custom units and different measure methods make the comparison of the provider prices harder.

Platform as a Service (PaaS)

- Adds a layer of abstraction over actual infrastructure (key asset of the PaaS provider)
- Sandboxed, more locked-in access to interfaces and resources – but also more tasks handled by provider (automation, load balancing, billing etc.)
- Services build on the platform promoted in the PaaS providers store (e.g. Google Apps Marketplace) => PaaS revenue from both providing resources and helping to bill/sell services
- More data to be analysed or mined (Facebook, Google, if not all)
- PaaS customers can be also sources of innovation and targets for acquirement => it is easy to integrate services, which already utilise the same platform
- Some PaaS (Force.com) developed also from the SaaS (SalesForce.com) using the already build datacenters and infrastructure.

Software as a Service (SaaS)

- The utilisers of IaaS and PaaS
- As many business models as there are companies
- Even more reasons to utilise: scaling, costs, robustness, reliability, latency, promotion, distribution, economies of scale, marketing, exit strategy etc.
- Pricing model depends on the service: subscriptions, pay-per-use, pay-per-seat, freemium model etc.
- Customer value (and charging) > Service production costs
- Customer charges must cover the risks of service disruption and possible service level agreement (SLA) compensations.

Additional Models

- Building management systems, for example Canonical Landscape, Ubuntu Enterprise Cloud
- Cloud Management Platform, for example Rightscale, scaling, deploying and connecting cloud services
- Integrating existing software to ready-to-use cloud images, charging for subscription or support
- Developing cloud services or migrating services to cloud: e.g. Codento, Vincit, Arch Red etc.

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Summary

Author's recommendation for market entry

Cl… Technology Providers	Infrastructure as a Service	Platform as a Service	Softwa… Service
	HP	Google App Engine	Rightscale
	IBM	Facebook	Cordys
	RackSpace	Force.Com	SalesForce
	OpenStack	Microsoft Azure	Canonical Landscape
	Eucalyptus	Amazon Web Services	Dropbox
	VMWare		Animoto
	Oracle		Arch Red
	Techila		

Vendor lock-in tightens, but opportunities for innovation, business models and market entry increase, need for venture capital decrease

Market entry costs and capital investment needs increase, need for venture capital increases