



Cloud Computing Opportunity for Service Providers



Hosting Controller Whitepaper

www.hostingcontroller.com

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<http://hostingcontroller.com/Resources/Whitepapers/Cloud-Computing-Opportunity-for-Service-Providers.pdf>

Table of Contents

Agenda	4
1. The Business Case	4
Market Size	4
Extra Source of Revenue	4
Increasing Loyalty and Reducing Churn	5
Differentiation of Services	5
Peer Pressure	5
Market Leadership	5
Monetization of Access Network	5
Deregulation of Markets	5
Low CAPEX	5
Extension of Technology	6
Higher Margins	6
2. The Opportunity	6
Infrastructure and Virtualization	6
Enterprise Applications	6
Software as a Service	7
3. Business Challenges	7
4. Technical Challenges in offering Cloud Computing	8
5. The Hosting Controller Solution	9
Hosting Controller Virtualization Module	9
Hosting Controller Enterprise Applications Module	10
Hosting Controller SaaS Module	10
6. The Hosting Controller Solution	10
Master Console	10



APIs for integration 10

Automatic Provisioning on Windows and Linux 10

Multi-Tenancy 10

Flexible Service Plan Manager 11

Quota Enforcement 11

Service Metering 11

Operations & Maintenance support using Administrator GUIs –..... 11

Flexible Report generation..... 11

Transactional APIs..... 11

Granular Monetization..... 11

Service Management 11

Multi-Tenancy Aware Self-care portals..... 11

Topology Hiding of Infrastructure..... 11

License Reporting..... 11

Resource Visibility 11

Load Distribution..... 12

Validated by Microsoft..... 12

Conclusion 12

About us..... 12

INVESTOR RELATIONS CONTACT 13



Agenda

1. The Business Case
2. The Opportunity
3. Technical Challenges in offering Cloud Computing
4. The Hosting Controller Solution
5. The Hosting Controller Advantage

1. The Business Case

Cloud Computing has recently developed into new avenue of revenue for service providers of all types. The hosting service providers have taken it as a natural extension of their business but cloud computing offers lucrative opportunities for other service providers as well that offer traditional services of fixed or mobile telephony, Internet Access, Cable TV or others.

Recent years have already seen a lot of convergence in the Service Provider market. Mobile operators are now offering ubiquitous data access. ISPs are offering residential phones over VoIP, Cable TV operators are offering Internet access and so on. With Cloud Computing making computing into more of a utility function; it is just natural for the service providers of modern day to embrace it in their portfolio of services as well.

Market Size

Global Cloud Computing Services Market to Reach US\$336 Billion by 2020, According to New Report by Global Industry Analysts, Inc. The major players are Akamai Technologies Inc, Amazon Web Services, CA Technologies Inc, Caspio Inc, Dell Inc, ENKI LLC, Flexiant Limited and Google Inc.

Morgan Stanley predicts Microsoft cloud products will be 30% of revenue by 2018. In 2015, Amazon Web Services (AWS) generated \$7.88B in revenue with Q4 2015, up 69% over last year

According to Gartner, Inc. the worldwide public cloud services market is projected to grow 18 percent in 2017 to total \$246.8 billion, up from \$209.2 billion in 2016. The highest growth will come from cloud system infrastructure services (infrastructure as a service [IaaS]), which is projected to grow 36.8 percent in 2017 to reach \$34.6 billion. Cloud application services (software as a service [SaaS]) is expected to grow 20.1 percent to reach \$46.3 billion.

- Global spending on public cloud services will reach \$195 billion by 2020, according to the latest forecast from International Data Corporation (IDC)
- Independent studies suggest it could hit \$240B by 2020

While some service providers started it as a source of extra revenue, it is now becoming imperative to keep a cloud computing portfolio in the service offerings. Some of the reasons are mentioned below:

Extra Source of Revenue

Service Providers are finding revenues from their traditional services shrinking due to excessive competition. Value Added Services on top of their core services have provided them with the



required extra revenue for many years but that is also leveling off. Cloud Computing offers itself as the candidate for the next wave of value added services providing support to their revenue and the bottom line through cross-sell and up-sell opportunities.

Increasing Loyalty and Reducing Churn

Cloud Computing offers multiple reasons for the existing customers to stay longer because once they start using some cloud based services from one service provider, their stickiness and barrier to move away both increase significantly. When previously it was just a matter of signing up with the new service provider, with cloud computing in the portfolio, they have an added 'migration cost' of their data involved in order to move away and a potential downtime of critical services during switchover.

Differentiation of Services

With many providers in the same market segment, cloud computing provides a way for service providers to differentiate their services from the competition.

Peer Pressure

With more and more service providers offering some type of cloud computing service, the peer pressure is increasing on the rest of the service providers to also offer the same services or risk losing their customer base to competition.

Market Leadership

Service Providers offering cloud computing are seen as driving the market and providing leadership. With hundreds of services coming in the cloud computing space, the trend is going to continue for many years to come. It also provides opportunities for companies to take leadership roles now in the early stages and that will make it easier for them to maintain the lead.

Monetization of Access Network

Access Network is very expensive and more so for wireless service providers because of increasing spectrum license costs among others. Cloud Computing offers an added range of high value services to be offered over the same access infrastructure, offering better avenues of monetization of the same network.

Deregulation of Markets

Telecom markets and other service provider markets are deregulating worldwide from the hold of incumbent state owned service providers to open them up for other competing players. This has resulted in a large number of Tier-2 providers who do not have the economy of scale of the incumbents and therefore need higher value offerings to stay competitive. Cloud Computing offers an easy path for them to differentiate.

Low CAPEX

Offering Cloud Computing services is a low capex venture. With all larger software vendors offering service provider license agreements, the nature of business is basically pay as you grow with little CAPEX and OPEX directly related to revenue.



Extension of Technology

All Service Providers are technology driven industries and already have expertise in managing their core networks and running their operations uninterrupted and also have monitoring systems in place for their core services. Adding cloud computing to their offerings does not add any significant requirements for them in terms of expertise or equipment.

Higher Margins

Cloud Computing comes with multiple avenues in adding value. They could be in providing managed services, monitoring of services, maintenance and upgrades of services, different levels of support and so on. Such personalized services allow higher margins than base services which are now increasingly commoditized.

2. The Opportunity

Cloud Computing Services can be broadly categorized into the following market segments:

1. Infrastructure and Virtualization
2. Enterprise Application Platforms
 - a. Unified Messaging
 - b. Unified Collaboration
 - c. Unified Communication
 - d. CRM and Others
3. Software as a Service



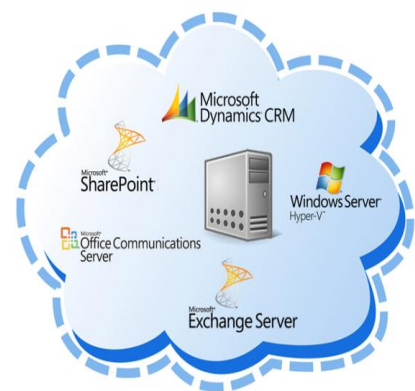
Infrastructure and Virtualization

Cloud Computing revolution was originally made possible and is being driven by advancements in virtualization technologies.

Offering computing Infrastructure as a Service has become a big industry of its own and offers a lucrative addition to any Service Providers' existing portfolio of services.

Gartner estimates that the IaaS market will continue to grow. According to Gartner's latest forecast, Global spending on IaaS is expected to reach almost US\$16.5 billion in 2015, an increase of 32.8 percent from 2014, with a compound annual growth rate (CAGR) from 2014 to 2019 forecast at 29.1 percent.

It involves providing dedicated servers or virtualized partitions on those servers. Deployment models could be a private cloud, public cloud or a hybrid cloud.



Enterprise Applications

Enterprises are moving away from on-premises in-house managed services to hosted applications. The major chunk of this business resides in the basic enterprise applications of Unified Messaging,

Unified Collaboration and Unified Communications, CRM and others. Microsoft with its Exchange suite of applications in addition to its Dynamics CRM and other related products is leading the market.

Software as a Service

In addition to large enterprise applications, there is a huge market for offering other server software as a service. According to the International Data Corporation (IDC) Worldwide Quarterly Cloud IT Infrastructure Tracker, total cloud IT infrastructure spending will grow by 26.4% in 2015 and will reach \$33.4 billion.



These include:

- Web Servers
- Email Servers
- Database Servers
- FTP and File Storage Servers
- DNS Server
- Analytics Servers
- Web Applications
 - Content Management Servers
 - Content Delivery Networks
 - E-Commerce and Support Solutions
 - Forums / Blogs and other such products
 - Hundreds of other services
- Mobile App servers

Such Services offer an opportunity to the Service Provider to add in its service portfolio as hosted services.

3. Business Challenges

Traditional Service Providers have their strengths in their data centers, their ability to deliver telecom, Internet Access, TV and other services 24 x 7 and a large existing customers' base. Cloud based hosted services are a new avenue for them that offers new opportunity as well as challenges.

Biggest challenge comes with competition from the giants like Amazon for Infrastructure and Microsoft and Google for Enterprise applications like Office365 and Google Apps.

Many Service Providers have chosen to be reduced to reselling hosted services from these giants. In this way, they manage to use their customer base to some extent but give up their core competence in being a Service Provider. They also lose their value proposition to their existing reseller network. In the end, these third party hosted services are becoming a commodity and offer little to no avenues for Service Providers to add value that they've traditionally been adding.

Hosting Controller is one product that offers the missing link for such Service Providers to jump onto the opportunity provided by the cloud.

4. Technical Challenges in offering Cloud Computing

With the opportunity, comes its own set of challenges. Following are some of the core challenges faced by service providers:

More Complex Products – Customer facing products get more complex with more services included and that makes the order complexity increase as well. Service Providers need an extra layer between their order management systems and provisioning layers to fulfill the orders.

Unified Provisioning – More services need to be provisioned and automated provisioning of infrastructure, servers and resources is an important extra process required.

Unified Billing and Payments – All Subscriptions on the Cloud Computing side need to be integrated with existing or other back end billing systems and charged to customer's unified billing accounts.

Integration of operational requirements in CSR portals – Existing Customer Service Representative Portals need to be enhanced with all the new requirements of cloud computing services.

Unified Self-Care portals – Existing customer self-care portals need to be enhanced to allow further self-serve of all cloud computing services. With the very nature of cloud computing and the flexibility that it offers, such requirements can be quite substantial.

Monetization options – Different cloud computing applications and servers offer multiple features and the service provider would like to offer plans and packages allowing monetization of such services down to a single feature available.

Automatic Service Management – Service Management is mainly about suspending and resuming services based on available credit and other billing cues. A Service Provider needs to have automatic interfaces and provisioning APIs to be able to easily integrate them into their existing billing systems.

Multi-Tenancy layers and self-service portal – Many applications offered in cloud computing specially the Enterprise Applications were not designed to run as Multi-Tenant applications. This converts the process of simple provisioning to “multi-tenancy enforced provisioning”. This is very domain specific and is achieved differently on different applications.

Operational Reporting – Lots of operational reporting is required for monitoring, resource availability, resource utilization and others. Tools are required that can provide such operational requirements for the cloud computing services.



Plan Management – A Plan Manager is needed that can easily integrate with front end products and services offered to customers. This will allow the provisioning layer to allow the customers to self-serve themselves for the resources that they have purchased

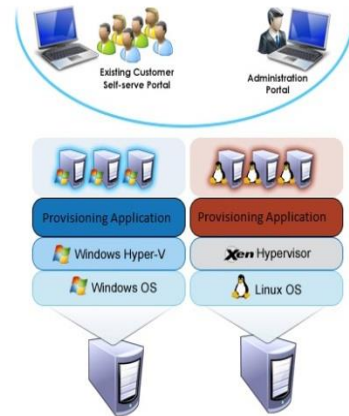
Quota Enforcement - An enforcement point is needed in all services to enforce policy restrictions. Quota Manager integrates with self-serve portals to restrict customer’s provisioning requests within their allotted quotas.

Service Metering – Many services need to be metered for their actual usage done by Customers and metering agents are needed to monitor and report that usage to allow charging and rating engines to charge for the usage.

Version Upgrades – The applications in the cloud are mostly provided by third parties and are undergoing continuous version upgrades. Customers expect a newest version that is a continuous integration and provisioning pain for the Service Provider to keep up to date with newest versions of all software offered in the cloud.

Support for Value Added Resellers – Cloud Computing Services at times requires further services of customization, migration, monitoring, configuration, physical installation, support, repair etc. best done by SMBs acting as resellers for Service Providers. Their relation with the Service Provider is mainly B2B and they offer B2C services to their customers and add value in the process. Service Provider needs to have the required tools for them to be able to self-serve themselves and their customers to provision resources within their quotas.

Abstracted Out Provisioning Layer – Service Providers need a layer of provisioning that abstracts out the underlying infrastructure and applications and offer a unified provisioning interface for all applications on all operating systems whether Windows or Linux.



5. The Hosting Controller Solution

Hosting Controller is a one stop solution for Service Providers that intend to offer cloud computing services.

It offers three broad solutions catering for each of the three above mentioned market segments.

Hosting Controller Virtualization Module

Offers automation of all infrastructure and virtualization services for both Windows and Linux platform. The module supports automatic provisioning of virtual machines on vmware, Citrix Xen and Microsoft Hyper-V. Virtualization Module is a complete package offering all required use cases for any Service Provider to provide IaaS (Infrastructure as a Service).

<http://x.co/hcvir>



Hosting Controller Enterprise Applications Module

Provide provisioning for:

- Microsoft Exchange
- Microsoft SharePoint
- Microsoft Skype for Business (Lync)
- Microsoft Dynamics CRM
- Microsoft Active Sync
- Blackberry Server
- Others

<http://x.co/hcent>

Hosting Controller SaaS Module

Provides automated hosting of a large number of common SaaS applications including web servers, FTP Server, Email Server, DNS Server and web applications like Mambo, Joomla, osCommerce, zenCart, WordPress, OpenX, Comensus Cart, DotNetNuke, PHPNuke, myLittleAdmin etc.

- Windows Applications: <http://x.co/hcwin>
- Linux Applications: <http://x.co/hclnx>

6. The Hosting Controller Solution

Hosting Controller Supports both Linux and Windows based applications and servers as mentioned above. Hosting Controller specifically provides:

Master Console – a Set of three web based portals for self-serve for:

- Customers
- Value Added Resellers
- Administrators

APIs for integration – a large list of web service based APIs to allow integration of all the supported use cases with front end and back end services and orchestration engines. The API also comes with an annual update subscription that allows Service Providers to offer newer versions without changing their integration.

Automatic Provisioning on Windows and Linux – complete provisioning of resources and supported applications on Windows and Linux servers behind the same master console GUI.

Multi-Tenancy – enforces multi-tenancy layer on top of all Enterprise Applications and SaaS applications that it supports. It is one of the few validated solutions by Microsoft for offering multi-tenancy for Exchange and all related applications.



Flexible Service Plan Manager – allows creative productization and monetization of newer services which can be easily integrated and billed to customer based on consumed resources.

Quota Enforcement - is done by the plan manager that restricts all customers to only provision resources through self-serve within the purchased quotas.

Service Metering – provides metering for most services and the usage of customers for individual services and resources.

Operations & Maintenance support using Administrator GUIs – Master Console offers multiple use cases for Administrators to manage their infrastructure and resources.

Flexible Report generation – Hosting Controller keeps the most current position of all available and consumed resources in its database. The database allows easy querying by operations team to gain insight into the state of their infrastructure.

Transactional APIs – Hosting Controller APIs are fully transactional which means that when the provision resources they also do other stuff as part of single transaction. That includes:

- Quota Enforcement
- Updating Database

Granular Monetization – Hosting Controller allows a Service Provider to define each and every single feature available in the underlying service as a chargeable entity and offers great flexibility to enable Service Providers to monetize on different features of the cloud based services.

Service Management – Hosting Controller provides full support for Service Management through APIs. This includes basic use cases of Suspend Service and Resume Service that can be integrated behind any billing system for automatic suspension and resumption of services.

Multi-Tenancy Aware Self-care portals – Hosting Controller provides self-care portals for all supported applications that are fully multi-tenancy aware which is imposed by Hosting Controller.

Topology Hiding of Infrastructure – Hosting Controller APIs completely hide the underlying infrastructure from the front end Order Management layer and provision resources on multiple distributed hardware infrastructure as per defined policies.

License Reporting – In a Service Provider environment where users are doing self-serve for many resources, keeping track of licensing requirements is a daunting task where license price is dependent on the number of resources actually provisioned. Hosting Controller provides interfaces to report current license requirements and generates easier reports for the same that can be used to ensure compliance and help in audits.

Resource Visibility - Hosting Controller database reflects the latest up to the second position of all the resources in the complete infrastructure and network. Reporting is available down to a single



instance of a resource and its mapping to different user accounts.

Load Distribution – Hosting Controller automatically distributes provisioning load as per policies mentioning by the host. Different flexible schemes are supported for the purpose.

Validated by Microsoft – Microsoft Exchange and its related suite of applications are not designed to run in a multi-tenant environment typical of any cloud hosting offering. Microsoft requires any company offering hosted exchange to use a third party control panel to provision the extra multi-tenancy layer on top of Exchange. Microsoft has validated some such applications and official support from Microsoft is only provided if the Service Provider is using a validated solution. <http://x.co/exchg>

Conclusion

Cloud Computing is a big opportunity for Service Providers but comes with its own challenges. Some of them are technological, others are operational, still others are about integration into existing system, some are about service assurance, others are about billing and revenue assurance and yet there are others which are about reporting, audit and compliance.

The range of cloud computing applications is large and keeping their provisioning and integration up to date with all these applications is beyond the scope of a Service Provider even for the largest of them. Link for recent webinars is at <http://x.co/hcwbr>

Hosting Controller is one such product that offers support in all the above domains. It started as a SaaS application for web hosts and over 10 years is being used by thousands of hosts and hundreds of Service Providers. It offers a flexible API that Service Providers can use to easily integrate with their existing OSS / BSS systems and the API subscription service enables them to continue to offer latest versions of applications without changing their integration efforts.

About us

Hosting Controller Inc is a Canadian company with office in Toronto, Ontario, Canada. With over 15 years in business, Hosting Controller is trusted by thousands of hosts and hundreds of service providers for the mission critical applications for their business.

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