

OPENSTACK VS. CLOSED CLOUDS – THE AOL FACTOR

A White Paper by Sean Patterson

OpenStack vs. Closed Clouds – the AOL Factor

Cloud computing is here, and it's real. It is, as we hear more often these days, The Future of Computing. If you're not yet leveraging cloud computing to streamline IT operations, you soon will be, or you'll be left behind by your competition.

All of this, in the dizzyingly accelerated pace of IT evolution, is old news. The question facing most CIOs today is not "should I start using cloud computing?" but rather "which cloud provider should I choose?" There are now a number of public cloud providers to choose from, and the list is growing quickly. There are various criteria that one might consider. I urge you to consider two new criteria: history and the future.

I. History

First, history. Let's go back to the early 1990s and consider the early days of the internet service provider, (ISP), industry. There were three notable players in the consumer mass-market: CompuServe, Prodigy, and America Online (AOL). All three began with similar dial-up services, including email, games, forums, and proprietary "web-like" pages. By the mid-90s, due to superior innovation in development, and focus on ease of use for non-geeks, AOL had handily surpassed its competitors. At the time, their myriad of refined features, consistent and integrated interface, and tight integration of applications combined to create, quite simply, the best and easiest online portal in the world. Even our parents could use AOL, and use it well! AOL appeared unstoppable, the clear and dominant market leader, with unparalleled brand recognition. Among consumers, the right choice among online portals looked like a no-brainer: AOL.

However, AOL was utterly defenseless against the greatest threat to its near-monopoly. The enemy wasn't another proprietary player like CompuServe or Prodigy. The many-headed monster that relegated AOL to obscurity was the "open Internet", initially accessed by tech-savvy consumers via independent internet service providers (ISPs). The first sign that AOL recognized its precarious position came in 1993, before most non-IT consumers even knew the word "Internet". AOL, however, knew all about the Internet. Although as the market leader they would not deign to publically acknowledge their real competition, behind closed doors they fully recognized that the open standards that drove so many consumers to ISPs were a force to reckon with. AOL's first defensive tactic was to add a USENET feature to their portfolio, allowing AOL users to mingle with the open Internet and (hopefully) maintain vendor lock-in, at least among less technical customers. There soon followed a parade of incremental incentives and "enhancements", each one a desperate attempt to prevent AOL's inevitable decline at the hands of open standards:

- A change in pricing, ending the hourly rate in favor of a monthly flat rate of \$19.95, a trend that culminated in the offer of \$9.95 per month for unlimited access
- A massive direct-marketing campaign consisting of millions of CDs mailed to consumers' homes
- Ever-increasing amounts of free online hours offered in the first subscription month
- Free email accounts given to non-AOL users
- The purchase of NetScape and deployment of an integrated, semi-standard, small browser within the AOL thick client
- The purchase of media behemoth Time Warner, which allowed AOL's remaining customer base to access the portal's services via broadband

None of these tactics worked for long. Consumers weren't impressed with the price concessions, and instead found greater value in the open Internet as it evolved. The incremental technical improvements were equally unconvincing. For example, the integrated web browser was hated by users and developers alike. AOL email didn't play nice with other email systems (remember the multiple levels of nested attachments for each step in a long email thread?). Ultimately, only a sense of vendor lock-in kept many of their remaining users on-board and the revenue flowing. The vast majority of AOL users, however, left AOL in favor of a standards-based ISP and the open Internet.

II. Future

Now, what about the future? What does AOL's history in the consumer market have to do with cloud computing decisions today? A lot. In fact, the parallels between the online portal/ISP market in the 1990s and the cloud computing market today are unmistakable once one looks past the hype and grasps the underlying realities.

As of early 2010, the cloud computing market was comprised of a number of companies running proprietary, closed systems. The value proposition of each cloud provider varied widely, but there were a handful of dominant players with varying levels of brand recognition who got the bulk of the business, including: Amazon®, Rackspace®, Microsoft®, Google®, and a few others. Among these, Amazon's AWS product was the market leader with a significant head start, with Rackspace next in line, and the other major cloud providers trying to carve out as much market share as they could get. Driving its market lead, Amazon had a myriad of refined, nicely-integrated cloud products, driven by an innovative development machine and unparalleled brand recognition.

Does this sound familiar? The similarities to the online portal/ISP market of the 90s don't stop there. Enter Amazon's real competition: OpenStack. OpenStack is an open-source cloud platform co-founded in 2010 by Rackspace Hosting and NASA. The goal is simple: to level the playing field by providing an open standard for cloud computing systems to be built on. Just like earlier standards such as TCP/IP, HTTP, HTML, and many others, OpenStack is freely available for anyone to deploy open clouds on. Any organization, including Rackspace's competitors, can build a massively-scalable cloud on the same technology used by Rackspace and NASA. OpenStack can be deployed by any company on-premise, or in a collocation or managed hosting facility, and workloads can easily be moved from one OpenStack platform to another.

Unsurprisingly, OpenStack is gaining support in a way eerily reminiscent of the ascension of the open Internet of the 1990s. As of early 2011, the list of OpenStack community partners has grown to be quite impressive, including such industry giants as Citrix, Intel, AMD, and Dell. On January 19, 2011, Internap became the first of Rackspace's competitors to announce that it will launch a cloud service on OpenStack. Even Microsoft is joining in, contributing code to enable its Hyper-V virtualization platform to run in OpenStack clouds.

OpenStack will drive rapid development of standards-based cloud technologies. It will do this by enabling any software developer(s) in the world to submit innovative new technologies to the project, just as open standards of the past enabled developers to make the open Internet what it is today. The IT industry is beginning to recognize that open standards will drive innovation and freedom in the cloud much more effectively than closed, proprietary cloud platforms, and they're putting their money on OpenStack to be that standard.

Back to Amazon. As the proprietary market leader, Amazon has had very little to say in the public arena about OpenStack. But make no mistake about it: they know their dominant position is tenuous. Since Rackspace and NASA announced the OpenStack initiative, Amazon has lowered its prices for AWS cloud services, even going so far as to announce a Free Tier on June 30, 2010. Again, one is reminded of AOL's attempts to lock in market share in their competition against open standards. Over time you can also expect Amazon and other proprietary cloud providers to integrate limited OpenStack functionality into their platforms. The likely first concession will be the adoption of OpenStack application programming interfaces, or APIs, which will attempt to allow their customers to "play nice" with standards-based cloud systems. The real goal, of course, will be to cling to customers. When the proprietary cloud providers begin adopting select OpenStack technologies, you can be sure that their end has begun, and more of AOL's tactics are probably soon to follow.

So what does all this mean to a CIO faced with the decision of which cloud provider to use today? Simply put, it means that investing time and resources in a closed, proprietary platform is a losing strategy. In order for a company to deploy IT services into a particular cloud, they have to conform to that cloud's standards and technologies. Time and money must be spent, and the result will be a relationship with a single provider they can't easily leave. However, a decision to deploy in an OpenStack cloud will result in freedom, mobility, and ultimately in superior technology. IT history is repeating itself before our eyes, and once again, open standards will prevail.

Rackspace is the world's leader in hosting and cloud computing, and co-founder of OpenStack. We offer a comprehensive portfolio of standards-based cloud and dedicated solutions, including Cloud Files and Cloud Servers. For a complete view of the entire Rackspace portfolio of services, go to http://www.rackspace.com/hosting_solutions.php.