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What "Cloud Computing" Could Mean to Consumers

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"Cloud" is such a buzz phrase today that it's easy to be overwhelmed by what's really happening on the consumer side. Parks Associates specifies the following requirements for a product or solution to fit in the "personal cloud" category:

- For hardware, appliance, and online solutions, the ability to upload all desired content to remote storage, not just a single-purpose site
- The ability to "push" - or share - only specific folders or files with friends or family
- Remote and ubiquitous access to content from multiple IP-connected devices
- For premium content service cloud offerings, the ability to offer multiple formats or work with hardware with the necessary transcoding capabilities to play content on a wide number of devices

To further complicate this market, there are several different types of consumer cloud solutions:

Hardware, Software, and Appliances: Products in this category are network-attached storage appliances/media servers and applications that provide for remote access via smartphones and other IP-connected devices.

Attached Storage/NAS Clouds: The major consumer storage companies (Buffalo, Data Robotics, Iomega, Seagate, Western Digital, etc.) are implementing remote access and interaction with files, media, and content stored on attached drives and

network-attached storage devices. The interaction can be done with any IP-connected device, including smartphones. Iomega was heavily promoting its solution at CES 2011, which they call the Iomega Personal Cloud.

Appliance-based Clouds: If a consumer doesn't have attached storage or network-attached storage, there are appliances from companies such as Cloud Engines (Pogoplug™), CTERA, and iTwin that turn any device with local storage capabilities into a cloud server. Again, the key is the ability to interact with and access content from any IP-connected device.

Smartphone Clouds: Trend Micro has SafeSync, which is online backup and remote access to iPhone or Android smartphone content. Carbonite and SugarSync also offer this feature.

Online Storage and Backup: The first iteration of online backup was merely a way to automate backup of home computers (Carbonite, Mozy, etc.). Services such as SugarSync, SpiderOak, and ZumoDrive are taking online backup and making it a cloud service by making the content accessible (and sharable) from multiple types of IP-connected devices. Motorola just purchased Zecter, the company that developed ZumoDrive, which indicates that handset developers and wireless/mobile carriers are starting to look to online backup services for smartphones.

Service providers are also in the mix - Deutsche Telekom offers a service called Connected Life Experiences at Home. Companies such as NewBay Software and viacube are two to watch as white-label providers of syncing and backup services. Examples of e-mail/calendaring/family sync features include Apple's mobileme, Microsoft's Live Mesh, and Deutsche Telekom's Connected Live Experiences at Home, which enable calendaring, messaging, and media syncing across devices such as computers and smartphones.

Cloud Music Services: There are many streaming music services from which to choose, but proper cloud music services will store personally owned content and have it ubiquitously accessible. Speculation was that Apple would launch this service as a feature of iTunes following its purchase of Lala. Others in the mix are MOG All Access, Sony Qriocity, and Thumbplay.

Online Video Transitions to the Cloud: Sony's Qriocity is a good example of this kind of service. RoxioNow is a technology to watch in this space.

Video-on-Demand as a Cloud Service: Verizon FiOS Flex View is the first well-known initiative, but there will be other high-profile announcements soon. Whether or not they adhere to the UltraViolet brand from the Digital Entertainment Content Ecosystem (DECE) or Disney KeyChest is another matter.

There are multiple categories and players in the cloud media space mainly because there is strong consumer demand. Our *Digital Media Evolution II* survey found remote

and mobile access to photos and music are among the top cloud features desired. Furthermore, Microsoft's recent Windows 7 commercials have helped to bring broader market awareness about what practical end-user applications can come as a result of cloud-based services, thus helping build this market.

When it comes to digital media, the current iterations of "cloud media" services are what we would term "one-way solutions." The model today is to host and push content toward the consumer and not necessarily provide for the upload and storage of existing copies of all movies and music. Digital music services will probably be the first to move to true two-way clouds, likely starting with Apple, Amazon.com, and perhaps Google.

For video services, UltraViolet (DECE) and Disney's KeyChest get the major headlines in this space. They are proposing services where a consumer still buys the physical copy of a movie (Blu-ray), but with that will come a digital copy that is hosted and available on different types of consumer electronics devices. In the meantime, Verizon is already offering Flex View, which allows FiOS subscribers to order a movie (rental or purchase) from multiple types of devices and then access it from different platforms – smartphone, computer, television.

For gaming services, the prevalent cloud model today is one way, where companies such as OnLive have console-style games that can be played on multiple types of connected consumer electronics. At CES, OnLive announced a partnership with VIZIO, where OnLive gaming services will be available on VIZIO's connected TVs.

Parks Associates certainly sees an early market for cloud media wherein online backup services (Carbonite, Mozy, SugarSync, etc.) extend their functionality to include access to stored content and media on multiple types of IP-connected devices. We also anticipate that appliance-based consumer storage products (attached drives, network-attached storage, etc.) will take on "cloud" attributes, allowing consumers to access and update files and content from any connected device. The Digital Living Content Ecosystem (DECE) indicated at CES that we're a step closer to seeing a VoD-based cloud service become consumer-ready.

For the foreseeable future, online data/backup services will complement local storage such as computers and attached hard drives because they provide redundancy and the flexibility of multiplatform access. Online solutions will not reduce the need for robust storage in the home over the next five years, but it could eventually bring forth the long-anticipated arrival of "thin client" computing, where devices don't have to rely on large amounts of storage and processing. But it's a long-term evolution, and it will be awhile before consumers start to see their local storage and computing needs diminish.

About Parks Associates

Parks Associates is an internationally recognized market research and consulting company specializing in emerging consumer technology products and services. Founded in 1986, Parks Associates creates research capital for companies ranging from Fortune 500 to small start-ups through market reports, primary studies, consumer research, custom research, workshops, executive conferences, and annual service subscriptions.

The company's expertise includes new media, digital entertainment and gaming, home networks, Internet and television services, digital health, mobile applications and services, consumer electronics, energy management, and home control systems and security.

Each year, Parks Associates hosts executive thought leadership conferences CONNECTIONS™, with support from the Consumer Electronics Association (CEA)®, and CONNECTIONS™ Europe.

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About the Author

Kurt Scherf studies developments in home networks, residential gateways, digital entertainment services, consumer electronics, and digital home technical support services. Kurt is the sole author or contributing author/analyst to more than 80 research reports and studies produced by Parks Associates since 1998.

Kurt joined Parks Associates following a career in political research and multi-tenant dwelling management. He earned his BA from The University of Iowa.

INDUSTRY EXPERTISE: Home Networks & Residential Gateways, Home Networking Media (Wi-Fi, G.hn, HomePlug, MoCA, etc.), Set-top Boxes, Connected Consumer Electronics, Consumer Storage Products and Services, Media Server Hardware and Software, Value-added Services, Online Video, Consumers and Digital Entertainment, Digital Home Technical Support Services



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