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## *iCloud Technology*

**Prashant Verma<sup>1</sup>**  
MCA  
Mumbai University  
Mumbai, India

**Sudheer Singh<sup>2</sup>**  
MCA  
Mumbai University  
Mumbai, India

**Abstract:** *iCloud is a Cloud Storage and Cloud Computing Service from Apple Inc. Launched on October 12, 2011. As of July 2013, The Service had 320 Million Users.*

*The Service Provides its Users with Means to Store Data Such as Documents, Photos, and Music on Remote Servers for Download to iOS, Macintosh or Windows Devices, To Share And Send Data to Other Users, And to Manage Their Apple Devices if Lost or Stolen.*

**Keywords:** *iCloud; Cloud Technology; Apple Inc.; Data Backup; Data Sync.*

### I. INTRODUCTION

Cloud Storage is a Growing Tech Trend. Making Use of Cloud Computing Technology, Cloud Storage Services Give you Password-Protected Access to Online Storage Space. You Can Upload Files to This Storage Space as a Backup Copy of Content From Your Hard Drive, As Additional Space to Supplement Your Hard Drive, Or Just to Make Those Files Available Online from Other Computers or Mobile Devices.

Apple's Cloud Storage Product, iCloud, is Designed to Work Seamlessly with All Your Apple Devices Connected to the Internet. For Example, You Can Upload Photos from Your iPhone and Access Them from Your MacBook, Upload Music from Your MacBook to Listen to from your iPod Touch, Or Upload an Important Document from Your Mac Desktop to Access from Your iPad When You're On The Go.

But iCloud Isn't Apple's First Online Storage Service. MobileMe Was iCloud's Long-Standing Predecessor, Offering Synchronization Services for an Annual Subscription Fee. MobileMe's Primary Purpose Was To Keep Certain Files Synchronized Between Multiple Devices. This Included E-Mail, Contacts, Calendars, Browser Bookmarks, Photo Galleries and Apple iWeb and iDisk Services. Though MobileMe Was Tailor-Made For Apple Products, It Also Gave Users The Option To Synchronize Data From Non-Apple Computers.

Apple Revamped MobileMe and Merged Its Offerings into the new iCloud Service. iCloud not only Replaces MobileMe, It Also Adds Features, Flexibility and Free Service for up To 5 GB of Storage Space. In Addition, Digital Products You Purchase through Apple's iTunes Store Are Available from Your iCloud Account without Counting against That Free 5 GB. Later, we'll take a Closer Look At iCloud's Features and Pricing and How They Compare to Other Cloud Storage Products.



Steve Jobs Introduced The iCloud Service At The Apple WWDC In June 2011.

Like Its MobileMe Predecessor, iCloud's Biggest Advantage Is That It's Integrated into Apple Software. That Makes iCloud Your Most Convenient Cloud Storage Option, If All Your Computers And Mobile Devices Are Apple Products. Apps You Use In both Mac OS X and Apple iOS Can Connect to Your iCloud Space and Automatically Store Your Data There, Including Your Contacts List and Photo Gallery. Also Like MobileMe, This Can Expand To Include Apple Devices Used By Other Family Members, Too. With iCloud, You Can Ensure Your Data Is Continuously Synchronized Among Your Apple Devices while they're Connected to the Internet.

Now That You Know What iCloud Is, Let's Take A Closer Look At Its Features And Costs, And How It Keeps Your Data Both Safe And Readily Accessible.

## II. APPLE CLOUD SERVICE

iCloud's Features Give You Access to Your Data, From Important Contacts to Fun Photos, Anywhere You're Connected to the Internet. Here's How You Can Access iCloud From Different Types Of Devices:

- Apple Mobile Devices (iPad, iPhone And iPod Touch) Running IOS 5 Or Newer Will Connect To The iCloud Storage Associated With Your Apple Id. Then, IOS and Other Apps Capable of Saving Data to iCloud Will Automatically Synchronize That Data While You're Connected to the Internet.
- Apple Computers Running Mac OS X Lion (10.7) Or Newer Can Run Apps Programmed To Synchronize With iCloud Storage.
- All Apple Computers Can View, Upload And Download iCloud Storage Contents Using The Web App At [iCloud.com](http://iCloud.com). The Look And Feel Of The [iCloud.com](http://iCloud.com) Web Site Resembles The Default Apple IOS Interface.

You Can Authorize Up To 10 Devices To Access And Use iCloud With Your Apple Id. This Is A Leap Beyond The iTunes Store Authorization, Which Is Limited To Five Devices. Plus, iCloud Authorization Extends Beyond iTunes To Touch All Apps Capable Of Connecting And Use iCloud From That Device. Developers Program Each App To Connect To And Use iCloud Content In Its Own Way, So Check An App's Help Pages To Find Out Whether And How It Can Use iCloud. If you're One of Those Developers, Check Out How Your App Creations Can Use the iCloud Application Programming Interfaces (APIs) As Described at the Apple Developer Site.

Besides Its Options For Apps To Connect To And Use The Service, iCloud Features Unlimited Free Storage For Anything You Purchase Through The iTunes Store. This Means That Any Music, Movies, TV Shows, Books Or Apps You Purchase From iTunes Don't Count Against Your Free 5 GB Of iCloud Storage Space. In Addition, Each iTunes Purchase Is Instantly Available For Download To Any Of Your iCloud -Authorized Devices, As Long As The Songs Are Available From The iTunes Store. In Short, Buy It Once, Access It Everywhere. This Even Applies to Purchases You Made under the Same Apple Id Long before iCloud Existed, Provided They're Still Available in the iTunes Store.



If You Upload A Photo To Your iCloud Online Storage, You'll Be Able to Access the File from Any of Your Internet-Connected Apple Devices.

It's Possible That 5 GB Is Plenty For Your Storing Your Non-iTunes Files In iCloud, Such As Documents And Photos. However, Apple Also Realizes That You Might Want More Space, And You Can Purchase Subscription-Based Upgrades To Fill That Need. As Of This Writing, Apple Is Offering The Following Subscription Options For Increasing Your iCloud Storage Space:

- 10 GB More (15 GB Total) For \$20 Per Year
- 20 GB More (25 GB Total) For \$40 Per Year
- 50 GB More (55 GB Total) For \$100 Per Year

Let's Continue Exploring iCloud's Features on the Next Page with a Look at Your Streaming Media and Device Backup Options.

### III. APPLE CLOUD ADVANTAGE

So Far, We've concentrated On iCloud's Storage Features. Another Important Feature, Though, Is The Option To Stream Music And Videos From The Cloud. As Of This Writing, Streaming Is Not a Part of iCloud's Basic Services. If It Were, You Could Play Media Content Directly From iCloud Rather Than Having To Download It First. This Could Be Particularly Useful If You Have A Large Music Or Video Collection And Don't Want To Use Up All The Available Space On Your iPhone, iPad Or iPod Touch. Apple Piqued the Curiosity of Those Anticipating a Streaming Option, Though, When It Offered Free Streaming Of a New Red Hot Chili Peppers Album for iTunes Desktop Users in Late August 2011.



Accessing iCloud Data through a Web Browser

Perhaps The Biggest Advantage Of The iCloud Service Is How You Can Use It To Back Up And Restore Data On Your Apple IOS Devices. iCloud Is Capable Of Taking Daily Backups Of Your iPhone, iPad Or iPod Touch When It's Connected To The Internet Using Wifi. These Aren't Full Backups, Which Would Include All The Data Stored On Each Device. Instead, These Are Partial Backups That Store Only the Data you've Changed on the Device. The Following Are The Types Of Data That iCloud Can Back Up From Your IOS Device:

- Your Personal Device Settings, Like The Screen Brightness Or Call Volume
- Your App Arrangement On The Screen
- Ringtones And Text Messages
- Apps, Music And Books You've Purchased From iTunes
- App Data, Like An Account Setup Or Game Scoreboard
- Photos And Video Associated With The Camera Roll Feature In IOS

In Addition To Simplifying The Backup Process, The iCloud Service Makes Quick Work Out Of Restoring An Apple IOS Device From Backup. You'll Probably Want to Restore Your Device Any Time You Lose Important Data, Reset or Replace the Device, Or Upgrade to New Hardware. Apple IOS 5 Will Automatically Restore From Your iCloud Backups As Soon As You Sign In With Your Apple Id Over A Wifi Connection.

We've Looked at the Features Apple iCloud Has to Offer. Next, Let's See What Challenges iCloud Faces And How It Stacks Up To Its Competition In The Cloud Storage Market.

#### IV. ICLOUD'S CHALLENGES AND COMPETITION

Many of iCloud's Challenges Are the Same as Those Faced by Other Cloud Service Providers. Users Are Limited To Using Software Specially Designed To Access That Particular Cloud. Though iCloud Is Available Anywhere You Can Access the Internet, It Still Requires Some Sort Of Front End Application to Manage the Connection between You and your Data. This Is Either Built into the App You're Using, Or Is Available by Browsing to iCloud .Com.

iCloud Also Faces The Same Internet Access Challenges As Other Cloud Player Products. One Way Apple Has Addressed This Is By Limiting The iCloud Software So That Certain Interactions Can Only Occur When Using A Wide Internet Connection. This Means Your Device Won't Eat Up A Limited 3g Wireless Data Plan Just For Regularly Scheduled Synchronization Tasks.

One Unique Challenge For iCloud Started In A Courtroom Rather Than A Computer. Within Days Of Apple's June 2011 Announcement Naming The iCloud Product, An Arizona Voice-Over-IP (VoIP) Provider Filed A Lawsuit. The Firm, iCloud Communications, Had Owned The Right To Its Company Name Since 2005. Apple Had Filed Eleven Trademark Applications For The iCloud Name And Brand and Purchased the iCloud .Com Domain from Swedish Company Carrion. According To The Use Patent And Trademark Office, iCloud Communications Didn't Register The iCloud Brand Itself, Leaving It Up For Grabs. One Legal Expert Predicted That Apple Would Settle The Lawsuit Out Of Court, But The Case Was Not Yet Resolved As Of This Writing.

Since iCloud Isn't The Only Cloud Storage Service Out There, How Does It Stack Up To Its Competition? In Terms Of Legally Providing Music With Cloud Service, A Court Ruling In August 2011 seems To Have Cleared The Air For These New Type Of Music Services By Ruling That They Could Offer Scan-And-Match Services Without The Consent Of Record Labels. With That Issue Out Of The Way, It's All Down To Which Service Provides The Features And Quality You Want At The Right Price.



Available Major Competitor For iCloud .

Here's A Quick Look At Some Other Cloud Storage Services And How They Compare To iCloud:

- Amazon Cloud Drive And Cloud Player Are Probably The Closest To iCloud In Terms Of How Buying And Using Content Are Tied Together. Both Services Let You Upload Or Purchase Content And Access It From Any Device. However, Because Amazon Is Not Attached To A Suite Of Operating System Software, It Doesn't Have The Deep So Integration That iCloud Has On Mac And IOS Systems. Amazon Also Limits Your Free Storage Space To 2 Gab, Though Your Amazon Digital Purchases Don't Go Against That Total. Amazon's Biggest Advantage Over iCloud Is That It Provides A Music Streaming Option For Mobile Devices Running Amazon Mp3 Player Software.

- Dropbox, Like Amazon Cloud Services, Offers Only the First 2 GB Free and Lacks iCloud's Deep So Integration. However, It Has Been Around A While, And Enterprising Developers Have Used Its Application Programming Interface (Ape) To Produce Well-Designed Drop Box-Connected Apps For Every Major Desktop And Mobile Operating System. Dropbox's Biggest Disadvantage Compared To Both iCloud And Amazon Is That All Your Stored Files, No Matter What Type They Are, Count Against Your Total Storage Limit.
- Google Music Is Designed Specifically For Storing And Streaming Music. Google Music Offers Features Comparable To Amazon Cloud When It Comes To Audio Tracks, But It Doesn't Have The Flexibility Of iCloud Or Cloud Drive To Store And Synchronize All Types Of Data.
- Microsoft Windows Live SkyDrive Is Designed For Sharing Documents, Videos and Photos between Multiple Users. In Contrast, Your iCloud Content Is Limited To Use By Your Apple Id Only. SkyDrive Also Offers A Whopping 25 GB Of Storage Space For Free. SkyDrive Is Nearly As Integrated With Microsoft Products As iCloud Is With Apple Products, So Choosing Between Them May Be A Matter Of Why Types Of Computers And Mobile Devices You Plan To Use.

Now You Know Some Basics About How iCloud Works And The Features That Make It A True Competitor Among End-User Cloud Storage Services. If Your Head's Already In The iCloud And Eager For More, Check Out Additional Information On The Next Page.

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### AUTHOR(S) PROFILE



**Prashant Verma**, Studying Master in Computer Application from Institute of Management and Computer Studies (IMCOST) Affiliated to Mumbai University in the period year 2012-15.



**Sudheer Singh**, Studying Master in Computer Application from Institute of Management and Computer Studies (IMCOST) Affiliated to Mumbai University in the period year 2012-15.