



# Data Analytics in Cloud Computing





### Executive Summary

Businesses have long used data analytics to help direct their strategy to maximize profits. Ideally data analytics helps eliminate much of the guesswork involved in trying to understand clients, instead systemically tracking data patterns to best construct business tactics and operations to minimize uncertainty. Not only does analytics determine what might attract new customers, often analytics recognizes existing patterns in data to help better serve existing customers, which is typically more cost effective than establishing new business. In an ever-changing business world subject to countless variants, analytics gives companies the edge in recognizing changing climates so they can take initiate appropriate action to stay competitive. Alongside analytics, cloud computing is also helping make business more effective and the consolidation of both clouds and analytics could help businesses store, interpret, and process their big data to better meet their clients' needs.



## What is Cloud Computing?

The cornerstone of data analytics in cloud computing is cloud computing itself. Cloud computing is built around a series of hardware and software that can be remotely accessed through any web browser. Usually files and software is shared and worked on by multiple users and all data is remotely centralized instead of being stored on users' hard drives. Analytics in cloud computing, such as tracking social media engagement and statistics, is simply applying the principles of analytics to information housed on cloud drives rather than on individual servers or drives.

## The Opportunities

Much of the benefit from data analysis comes from its ability to recognize patterns in a set and make predictions regarding past experiences. Usually the process is referred to as data mining, which simply means discovering patterns in data sets to better understand trends. With all the benefits data analysis and big data offer, much of their potential is missed because employees lack quick, reliable access to said information. Gartner estimates 85% of Fortune 500 companies do not reap the full benefit of their big data analytics because of lack of accessibility to data, causing them to miss potential opportunities to better connect with and meet clients' needs. As analysis moves towards cloud drives, data analysis gains accessibility as company employees can access company information remotely from any location, freeing them from being chained to local networks and thus making data more accessible. Recently, Time Warner unveiled its data analytics cloud system, which allows their 4,000 employees to better utilize sales data in hopes of equipping them to increase profit margins.



## The Reasons

Aside from its increased accessibility and utility, big data analysis on cloud drives also exports many IT demands, such as hosting and maintaining servers, to cloud service providers. Companies can spend less money on servers and instead focus on bolstering their staff and product. Thus, cloud drives help smaller companies get into the big data game, allowing start-ups to better compete with larger organizations in their industry.



### Quick Tip:

Determining the size of big data and the requirements of the data is essential in properly implementing large scale analytics.

## The Questions

When choosing which cloud storage device could best fit a business, the question becomes how much data storage is needed and what performance demands will be placed on the cloud. As the name implies, big data is a large collection of data often varying in scope that grows as additional data is recorded and processed. Given the inherent size of big data, companies must determine exactly how big is there big data, as not renting enough space from a cloud service provider could end up giving a company significant infrastructure issues and perhaps not allow them to use their big data analysis as intended or to its full capabilities.

Likewise, determining the computer power of a cloud drive is of importance, as underestimating the demands placed on it could slow service and make the cloud less effective. If data being processed and accessed on cloud drives seems random and from vastly different fields, it could strain the magnetic disks in the cloud servers and cause them to not operate at their full potential when working with large data sets. Diversifying data to multiple cloud servers as not to strain individual servers can help clouds operate more like tradition networks, keeping them competitive. Given the scope of big data, some clouds still cannot host or analyze certain sets of data regardless of their size or capability given the scope of some data sets. Thus, understanding the needs and size of big data and how it will be processed is essential in reaping the benefits of data analytics on cloud drives.



## SaaS

Software-as-a-Service, or SaaS, is another popular function for cloud data analysis. SaaS lets users access software housed on a clouds remotely from any web browser, diminishing the need to use specific machines to accomplish a task. Typical uses for SaaS included companies charging clients a membership or monthly fee to access software on their website so users only have access to the software as long as they pay their dues, never fully having the software on the hard drives of their own computers. While SaaS provides users flexibility concerning where they can access their applications, it also limiting if they do not have access to the internet or wish to work offline. Likely more software companies will adopt SaaS overtime as to further their profits and have complete control over their product. For users of the software this means they can either save money from having to buy a software if it is only needed for a short time or cost them more money in long run as costs of subscription to the software adds up. Salesforce CRM, Google Apps, and DeskAway are all examples of SaaS.



**SaaS sales reached \$14.5 billion in 2012 as software became more accessible to customers.**



# The Best Uses of Data Analytics



## Quick Tip:

Data analytics could become easier as SaaS becomes more popular, as customer information could become more centralized.

- 1. Social Media:** A popular use for cloud data analytics is compounding and interpreting social media activity. Before cloud drives became practical, it was difficult processing activity across various social media sites, especially if the data was stored on different servers. Cloud drives allow for the simultaneous examination of social media site data so results can be quickly quantified and time and attention allocated accordingly.
- 2. Tracking Products:** Long thought of as one of the kings of efficiency and forethought, it is no surprise Amazon.com uses data analytics on cloud drives to track products across their series warehouses and ship items anywhere as needed, regardless of items proximity to customers. Alongside Amazon's use of cloud drives and remote analysis, they are also a leader in big data analysis services thanks to their Redshift initiative. Redshift gives smaller organizations many of the same analysis tools and storage capabilities as Amazon and acts as an information warehouse, preventing smaller businesses from having to spend money on extensive hardware.
- 3. Tracking Preference:** Over the last decade or so, Netflix has received a lot of attention for its DVD deliver service and the collection of movies hosted on their website. One of the highlights of their website is its movie recommendations, which tracks the movies users watch and recommends others they might enjoy, providing a service to clients while supporting the use of their product. All user information is remotely stored on cloud drives so users' preferences do not change from computer to computer. Because Netflix retained all their users' preferences and tastes in movies and television, they were able to create a television show that statistically appealed to a large portion of their audience based on their demonstrated taste. Thus in 2013, Netflix's *House of Cards* became the most successful internet-television series ever, all thanks to their data analysis and information stored on clouds.



# The Best Uses of Data Analytics

**4. Keeping Records:** Cloud analytics allows for the simultaneous recording and processing of data regardless of proximity to local servers. Companies can track the sales of an item from all their branches or franchises across the United States and adjust their production and shipments as necessary. If a product does not sell well, they do not need to wait for inventory reports from area stores and can instead remotely manage inventories from data automatically uploaded to cloud drives. The data stored to clouds helps make business run more efficiently and gives companies a better understanding of their customers' behavior.

## The Future

As clouds become more secure, reliable, and affordable, the use of data analytics in cloud computing will also continue to grow. It would not be unthinkable that soon all of a company's data could be saved to clouds and accessed anywhere by those in need of the information. Local servers and personal computer hard drives could give rise to all data being stored remotely in data warehouses far from the physical location of a business. While some still shudder at the potential security risks of cloud devices, likely they will become as efficient and secure as any typical drive or server.

## Sources

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