How **Cloud Computing** Accelerates **Big Data** Implementation

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With the disruptive innovation, monetization and the competitive advantage data and analytics have brought to businesses in the last couple of years; there has been a significant increase in adoption of Big Data technologies in the Enterprise IT Landscape.

More & more enterprises are considering one or all of the following for building the new age data architecture: analyzing new data streams (social media, sensors, streams, etc.) for business benefits & advantage; moving from a pilot to production stage or initiating serious big data proof of concepts with tangible ROI (return on investment); augmenting their existing data architecture with big data technologies for scalability, flexibility & agility in

data processing; leveraging Big Data technologies as the foundation of emerging use cases; planning to handle varied workloads elastically without linearly increasing costs; move away from the traditional software licensing & maintenance models; focus more on the core business use case at hand & off load aspects such as hardware/software procurement & maintenance; shorten the TTM(Time to Market) cycle to achieve early mover advantages.

Cloud Computing accelerates the above in one or more ways. Cloud Computing platforms such as Amazon Web Services(AWS), Microsoft Azure and Google have taken significant strides in evolving from just being providers of Infrastructure as a Service(IaaS) to maturing into solution providers of Platform as a Service(PaaS) & Software as a Service(SaaS).

Initially, enterprises considered Cloud Computing platforms to avail compute, storage & network services so that they can offload the hardware provisioning & maintenance and achieve elasticity to scale up and down to process spikes and lows in data volumes. For example, AWS EC2 cloud compute can be leveraged to provision multiple on-demand data processing servers to cater to increased data volumes and shut them down once the processing is complete. This flexibility would NOT have been possible without the Cloud. In addition to this, the ability to provision the entire infrastructure on demand would mean drastically reduced turnaround time to do the task at hand.

With continuous innovation, Cloud providers have leaped forward providing more value added offerings such as Platform as a Service where they provide a development environment which consists of operating system, programming language execution environment, database & web server as a fully managed service. The highest evolution of Cloud providers has been their ability to provide Software as a Service(SaaS) where users gain access to "on-demand" software for a subscription fee. The user does not have to manage the cloud infrastructure & the platform where the application runs.

Now, mapping the above developments for Big Data Analytics, all leading Cloud providers offer end to end services to acquire, ingest, store, process, mine, visualize and deliver data to the end users. For example, Amazon Web Services(EC2) provide an end to end stack of services such as distributed computing, storage & databases, data warehousing, business intelligence,

machine learning, server less compute frameworks. This could be a huge leap for an enterprise (either a mature Big Data Analytics consumer or a startup) to focus on the core business objective at hand and leverage cloud services for the entire data management lifecycle. This would not have been possible without the advent of cloud computing and would have severely constrained an organizational ability to derive timely value out of the data they need to analyze. Also the flexibility available in pricing models ensures that you pay only for what you use and also do NOT get locked into cycles of software and hardware maintenance. This model also gives ability to keep the technology architecture agile to provide room for changes as the use case evolves. It also drastically reduces the overhead of software & hardware maintenance.

Some critics of cloud would argue that the cloud based models would also have a vendor lock in, however in my opinion and looking at market trends and the exponential growth of these platforms, the benefits clearly outweigh these concerns.

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The future belongs to harnessing data as an asset and using it for competitive advantage. The success of businesses will be directly dependent on their ability to mine their data assets to improve their business processes, knowing their customers, planning for the future and being able to constantly innovate. Considering that the sources of data are only going to increase and so the need to process this data. As a result, it is only imperative to say that cloud computing will increasingly play a huge role in expediting & easing the data acquisition to data delivery life cycle and its adoption is bound to grow by leaps and bounds in the next few years. CR