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Challenges in Adoption of Cloud Computing by Companies in 2019

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Abstract -This Article intends to bring forth the complexity faced by the companies since invention of cloud system, earlier companies used Public or Private cloud, later on migration to the hybrid cloud was seen. We tried comparing the proximity of all the type of cloud delivery models, how cost minimization techniques have been used by the company. We also tried looking into the new complexity faced by the companies in today's world and tried to answer the solution used around the world.
Keywords— Cloud complexity management, Cloud computing management, Cloud adoption Challenge, Complexity in determination of right cloud platform, Adoption challenges of cloud platforms

I. INTRODUCTION

Since the first Recognition and success of the cloud there was a hype that things are now going to be more simple, efficient, scalable, reliable so the business can do more better in Business operations. Firstly, there were traditional Cloud system than came the public where, there were no requirement of maintaining the infrastructure such as AWS. When in 1999 salesforce used the cloud services successfully and offered its first SAAS many companies/ businesses followed the example and tried to come up with their own version. As in 2002 when Amazon first jumped in Cloud based infrastructure for their web-based retail services which gave them capacity to use their computers much efficient and "boom" other organization started to follow, and sighting at the needs of cloud computing, soon in 2006 AWS was launched. Thus, that gave the businesses another breath of sigh as this was infrastructure-based service provider which could mean reduced cost of their maintenance, they could now focus more on their business development and operations. Following which as time passed new technologies replaced the older ones with advancements and integrations and today in 2019 there are a lot of companies providing different cloud Models and cloud services with a lot of choices to make such as vendors, API's, VPN services, Security etc. thus creating the great Cloud complexity.

II. LITERATURE REVIEW

The problem of cloud complexity management has not been known earlier rather this is the new rising problem. It recently came in light after an article that was published at "the wall street journal" where author tried to give facts by providing the surveys which we will discuss in brief later. However, while searching for the recent studies or research done by any author was hard to find. But few studies were done on the cloud adoption, challenges faced by companies were found.

"Industries inspired challenges such as 'security log protection' ,'Security control Mapping' where author tries to explain, how these security system mapping tools are providing loop holes for data breach, Author has also highlighted other field of challenges in general a cloud customer faces in different positions cloud computing deployment and showed the positive side of the gaps where if one wishes can research upon, the author has also tried giving the best solution available currently by their research [1]. "Complexity of cloud security issue in cloud model has increased, where new problems have arrived in its scope which is associated to the, user's privacy network security, platform and infrastructure issue and model data security" [2]. Of these all of the challenges and solution and yet many other challenges arising while solving problems is getting complex with many of the choices to make. These choices are killing companies in 2019 with their high costs. Another author in a research tried to cast some light upon the issues and challenges that is being suffered within Mobile cloud computing is as "partitioning and offloading Security challenge, virtualization security challenge, Privacy challenges, mobile security challenges" [3]. However, this is not all but author describes of another open challenges yet to be researched upon in papers. Always one or the other problem/loop hole is created with new technology, system, software's, or hardware advancement making it easier for the hackers to break in, which is why companies are more fearful of cloud platforms, they are somewhat puzzled with the choices thus, creating complexity and are spending more then they should.

With technology arriving, New innovations taking place, new problems researched every day companies are looking for the cost effective, high security, scalability, increased business operations when deploying cloud computing systems. Therefore, it is

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important that the cloud service providers may focus more upon the mitigation of the challenges and complexity so more and more no. of the companies can adopt the system easily.

The security issue

BRIEF PROBLEM ARTICULATION

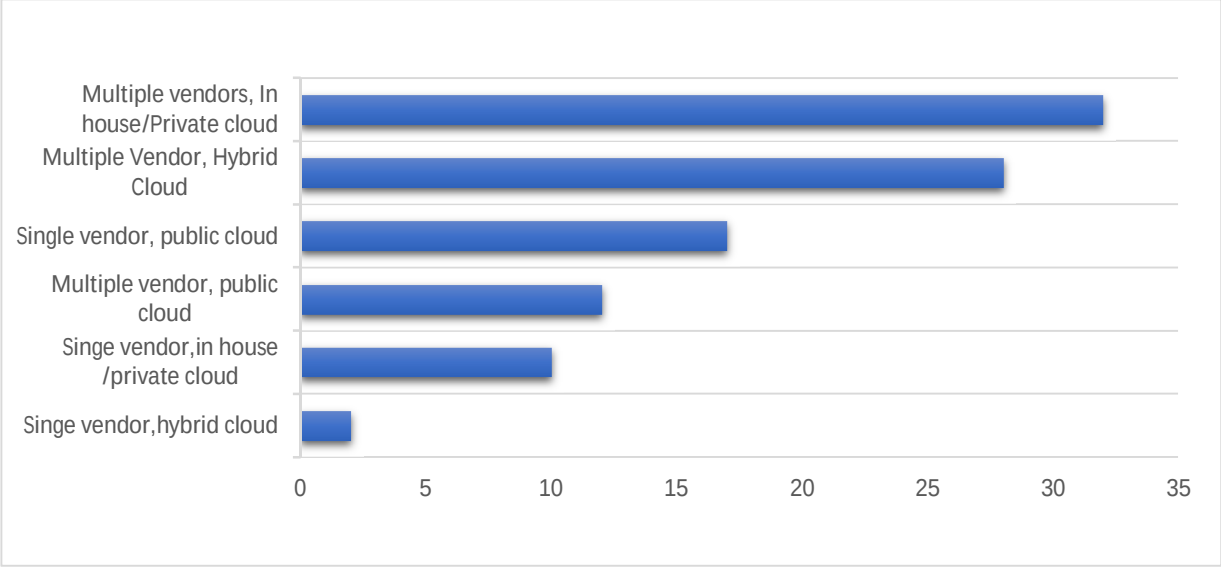
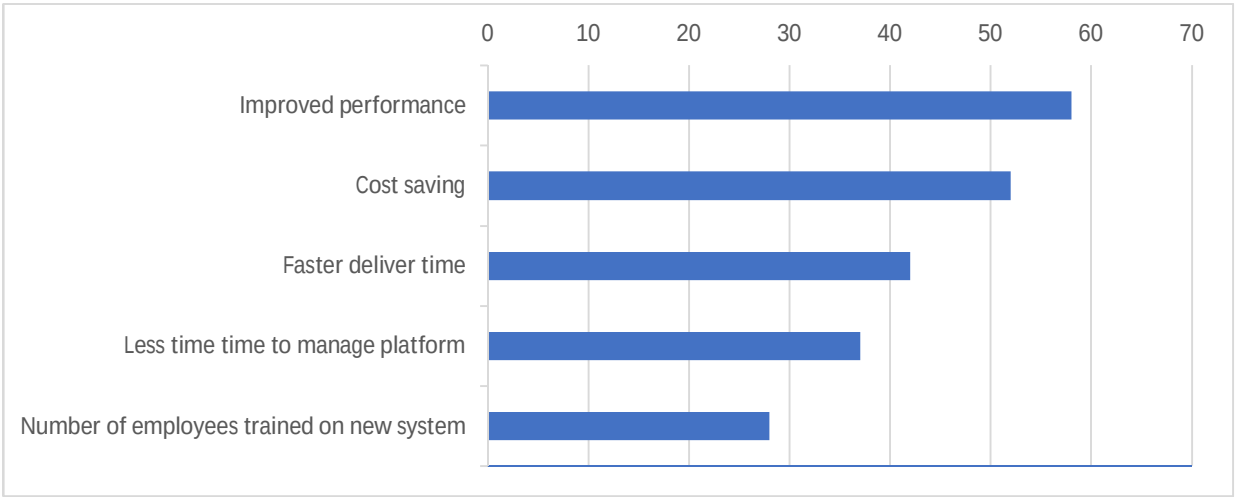


Fig. 1 CIO's in a recent KeyBanc survey were asked to describe their strategy for cloud computing [4]

The Data Above represents the preferences of the companies out of all cloud models and services that are being used today. Where 32% of them prefer Private cloud and multiple vendors, 28% of them go with Hybrid and multiple vendors, To the companies what is the most Problematic of all the system is, As cited by the "freeform Dynamics Research organization" that "executives find difficult Integrating internal system and vendors offered services, their also might be an issue of Duplication or fragmentation of their Data over internet, while few argued that there is no consistency in the models offered, few of them also Complained of the vendors side issues". [5]

However, Consistent Shifting of the companies who are more towards on-premises cloud computing model or prefer to use the multi-cloud system is on the rise where as hybrid model is the second most used, Looking at the facts cited by the "Forrester survey" in the below graph where Most of the people said multi-cloud system Increased their Performance, While Second Group said their focused cost reduced, Followed by other answers as well.



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Fig. 2 Over 700 IT executives were asked to Identify the matrix they use for determining success in a multi-cloud platform [6]

Hence, the fact is that no one vendor can be good at providing everything and that is letting IT professionals at the firm choose multiple vendors to perform their different tasks. Today Cloud computing has taken over the world there are uncountable organization from around the world who offer different models/services to choose from. Moreover, having such vast industry with different cloud providers has different infrastructure establishments with different capabilities of machines, having different Database systems, API's, Security systems, and of course "Prices" which again companies have to spend time in the management of these systems. Integration, data movement, proper function time, outage problem and proper management is the success key for any Multi-cloud users. However, the advancement is going to take place, there might be Technology advancement which might mitigate the problem of complexity or may elevate it more, as Migration will again "cost".

III. CONCLUSION

Since, we saw on the top charts that Shows increasing demand of the hybrid and multi-cloud system is obvious to have increased complexity as we are going to choose the different Database, API, security system, Resulting complexity. Mr. David Linthicum who works as "chief cloud strategy officer" for 25 years at American based organization "Deloitte Consulting" states in his presentation on cloud complexity management that "Monitoring and management of Business value's, Risk of missing value, Risk of cost overrun, Risk of missing agility, monitoring of service providers, compliance and data integration should be properly done [6]" [7]. The main Issue begins at the beginning when the companies do not evaluate there needs, and get in a conflict of choosing the right services, later on if they somehow figure out their need Organization end up confused upon the proper service providers based on their needs, which eventually leads them into paying more than their budget. However, proper managing and deep understanding of every step-in deployment may help organization in mitigating the complexity. Every day we are going to see the advancement, developments, new software operation tools, new security systems, API's, Database systems, Etc. which will lead in more complexity. However, looking at the Advancement of AI there could be possibility that we could easily solve the problem of complexity faced by companies while migration as this can quickly detect and rectify the cloud managing software problems, which will turn out to be more positive user experience for cloud computing customers.

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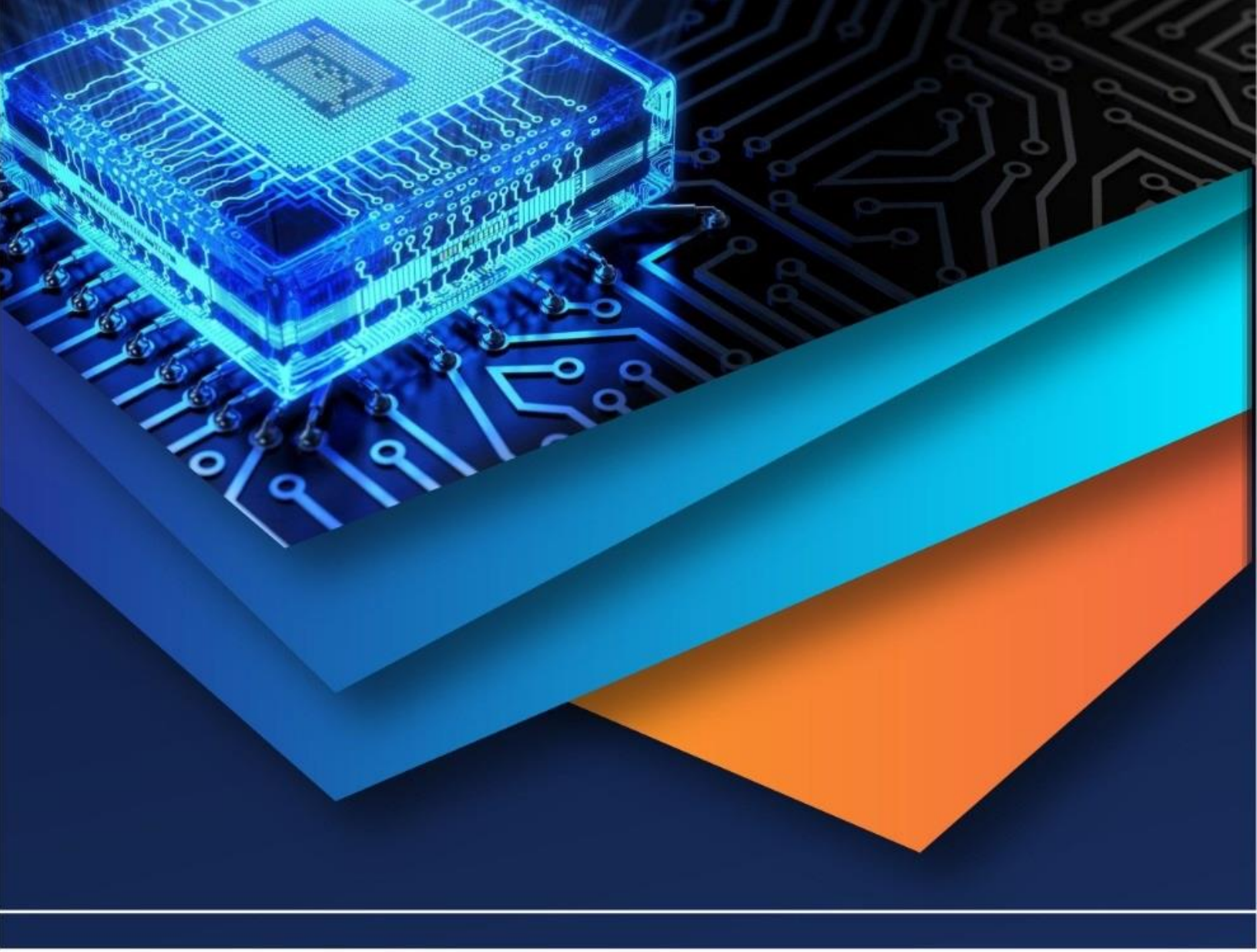
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