

## INDIVIDUALS PERCEPTIONS OF POTENTIAL OF CLOUD COMPUTING IN GOVERNMENT ORGANIZATION: A QUALITATIVE ANALYSIS

Preeti<sup>1</sup>, Dr. Kalpana Midha<sup>2</sup>  
Department of Computer Science  
<sup>1,2</sup>OPJS University, Churu (Rajasthan) – India  
Abstract

E-Governance process causes people in general to gain proficiency with the information and available of data's themselves instead of being reliant on a physical direction. They have been driven through e-govern understanding over the previous decade; henceforth there is a need to investigate new E-Governance ideas with cutting edge innovations. These frameworks are presently presented to wide quantities of danger while taking care of the information. The purpose of this study is to understand the perceptions and potential of cloud computing in Government organization. To discover the elements that influence the decision to receive cloud computing. For addressing the research questions and objectives of this study, the methodology used is exploratory methodology. An exploratory study is significant method for having the new knowledge of the problems and furthermore helps in clearing up the problems. Survey Method was adopted for collecting the essential data, information about population of interest utilizing a structured questionnaire.

### 1. INTRODUCTION

Cloud computing structure has various inclinations over standard client server building of the service data framework. Governments around the world have started using cloud computing models as opposed to customary client server building in light of focal points of cloud computing. A significant part of the time government is the pioneer in sending of cloud computing model over the wide economy. The associations can get advantage from cloud computing from various perspectives, by getting cloud computing model associations can build cloud arranged server ranches, associations can use resource as a service model and pay for the services they have used. By using resource as services, governments can concentrate on their inside services for open without obsessing about the help and up a level of the foundation. Governments can reduce the costs, increase gainfulness of their present data innovation benefits by using cloud computing model [1].

The legislature can similarly give progressively powerful services to their inhabitants by using cloud computing. Cloud computing supplier community offers four basic sending models; the client can pick any of these models as indicated by their essential. The four models include: (1) Private cloud: - for high security, in clients control and single association, (2) Community cloud: - used by various relative associations, (3) Public cloud: - control remains with the supplier; anyone can use it, for different associations (4) Hybrid Cloud: - mix of no less than two of above analyzed models, sharing of data and utility. Mutt cloud joins both open and private cloud models [2].

Government heads needs to discover their prerequisites, based on government's necessities the cloud supplier chooses which cloud computing model is best for the administration. A Cloud Computing Service Model: – Cloud computing offers three service models: Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a service (IaaS). Based on government's prerequisite, the cloud supplier chooses which service model is most appropriate for a particular government necessity [3].

## 2. REVIEW OF LITERATURE

**K. Govinda, Dr. E. Sathiyamoorthy (2012)[4]:** identity based secure data transfer in the cloud using GDS (Group Digital Signature) is introduced. In this scheme the group manager communicates with the cloud provider using the secret key generated using the Diffie-Hillman key exchange algorithms. Now the group manager receives the member (user in the group) public key. For a member who sends the data to the cloud server, it can sign the message with the assigned (d, n) private key. Now the message is received by the group manager authenticate the member and then collect the required detail and attach the secret group id and sign and send to the cloud provider. Cloud provider authenticates the message and allows the encrypted message to store in private cloud.

**Wadhe, Vaishali. (2016) [5] –** "Cloud computing is prepared to change the structure of organizations. There will be wealth of service providers, just as international players like Google, and Amazon who can reveal their Indian plans. With the idea of „Digital India“, it will give a significant push to endeavors to change to the cloud computing. For India, it is a quick accommodating effect for small to medium estimated organizations (SMBs) across the nation. This paper clarifies in regards to the chances and eventual fates of cloud computing in India and the manner in which organizations will get changed with created infrastructure and how get benefited from it.

**Nanos, Ioannis&Misirlis, Nikolaos&Manthou, Vicky. (2017) [6] -** Cloud computing is one of the latest ICT developments, offering numerous favorable circumstances and prompting the advanced change of private and public organizations. In spite of the points of interest, activities for cloud computing adoption in public organization are in beginning time and generally slow, contrasting with activities for adoption in private organizations, because of different impacting factors. In the meantime, scholastics and professionals show that cloud computing not just can possibly offer significant points of interest in the public sector, yet is relied upon to be a central piece of e-government methodology in the up and coming years.

**Haider AI (2018) [7] -**The cloud computing in the realm of IT industry has a gigantic value. It made things dependable and agreeable. As the quantity of purchasers or clients is expanding on cloud computing they are dispatchers of their remaining task at hand on it. Some various characteristics make it extraordinary from others like giving high assets in execution, giving immense space to data storage, and so on. In this article, the writers quickly talk about protection and security in cloud computing, looking at changed techniques and strategies for verifying information and furthermore their downsides. The motivation behind this article is to comprehend the security issues and to overcome these occasions in parliamentary system to verify users' advantages. In the consequence of this examination, they had the capacity to comprehend the issues and give some new strategies or calculation to determine these issues.

**Blesson Varghese (2018) [8]** – The scene of cloud computing has significantly changed in the course of the most recent decade. Not just have more providers and service contributions swarmed the space, yet additionally cloud infrastructure that was customarily restricted to single provider data focuses is currently developing. In this paper, we right off the bat examine the changing cloud infrastructure and consider the utilization of infrastructure from numerous providers and the benefit of decentralizing computing far from data focuses. These patterns have brought about the requirement for an assortment of new computing models that will be offered by future cloud infrastructure. These designs are foreseen to affect territories, for example, associating individuals and devices, data-escalated computing, the service space and self-learning frameworks. At long last, we spread out a guide of difficulties that should be tended to for understanding the capability of cutting edge cloud frameworks.

### 3. METHODOLOGY

This research study will use a blend of quantitative and qualitative data from a survey of IT head/IT Manager/Network Administrators of Government engaged in auto component producing sectors in Pune region and data from interviews will conduct with Cloud computing venders or service providers. Through literature review some worldwide correlations of reception of Cloud computing in the assembling business will additionally looked at. The result will have been emphasize on the need around the reception of Cloud computing in the Government of auto component fabricating sectors so that to study the benefits of utilizing Cloud based services.

### 4. RESULTS & DISCUSSION

#### *Perception about Cloud computing in Government organizations*

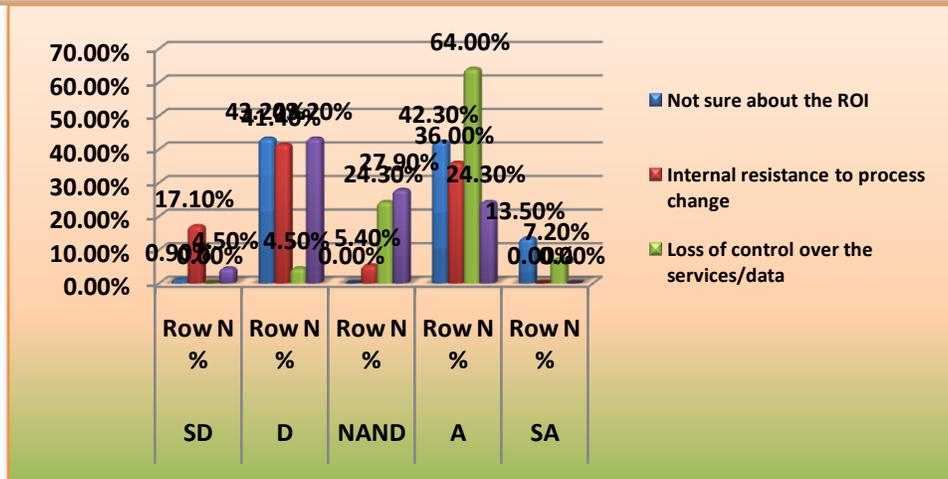
Aside from awareness researcher likewise attempted to discover about perception about Cloud computing among Government organizations dependent on different parameters every one of these discoveries are condensed in below table 1.

**Table 1: Organizational Perceptions about Cloud Computing**

[SD: Strongly Disagree, D: Disagree, SD: Strongly Agree NAND: Neither Agree nor Disagree Agree]

	SD		D		NAND		A		SA	
	Count	Row N %								
Not sure about the ROI	1	.9%	48	43.2%	0	.0%	47	42.3%	15	13.5%
Internal resistance to process change	19	17.1%	46	41.4%	6	5.4%	40	36.0%	0	.0%
Loss of control over the services/data	0	.0%	5	4.5%	27	24.3%	71	64.0%	8	7.2%
Cloud computing is NOT compatible with present systems in use.	5	4.5%	48	43.2%	31	27.9%	27	24.3%	0	.0%

**Source:** Primary data survey of the Government organization. Data in table shown



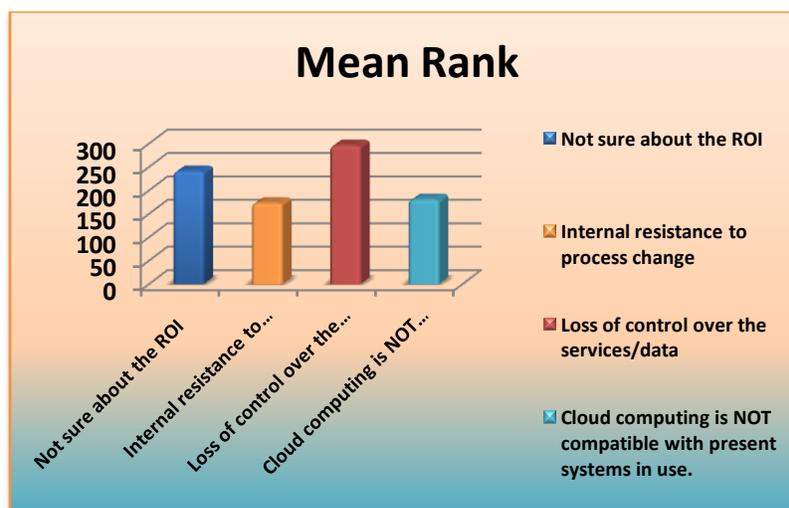
**Figure 1: Organizational Perceptions about Cloud Computing**

Kruskal-wallis test applied and mean rank score generated for perception about Cloud Computing in Government organization dependent on different parameters, and same is plotted in below table 2.

**Table 2: Mean rank table of Organizational Perceptions**

Organizational Perceptions	N	Mean Rank
Not sure about the ROI	111	240.75
Internal resistance to process change	111	172.86
Loss of control over the services/data	111	295.85
Cloud computing is NOT compatible with present systems in use.	111	180.54
Total	444	

**Source:** Primary data survey of the Government organization. Data in table shown



**Figure 2: Mean rank distribution of Organizational Perceptions**

**Table 3: Kruskal-Wallis test for Organizational Perceptions**

	Value
Chi-Square	75.443
P-value.	.000

Since p-value for the Kruskal Wallis test is not as much as that of 0.05 demonstrates significance of contrast between the average scores of perception agreement. The higher the score more the agreement, along these lines the highest agreement is watched for Loss of command over the services/data as the mean rank score in the Kruskal-Wallis test is highest for it. The ensuing agreement is resolved in based on consequent scores. Is seen that Industry is more worry on loss of authority over services/data followed by no lucidity of ROI different parameters like internal resistance from process change and Compatibility has lower ranking.

***Potential for Cloud Computing in Government organizations***

In the wake of breaking down different angles in embracing cloud computing, researcher additionally examined potential for Cloud computing in Government organizations w.r.t. different Applications as referenced in below table 4.

**Table 4: Potential for Cloud Computing**

Willingness to adopt Cloud computing	No of respondents	%
Not Adopting	0	0%
Don't Know	47	42.3%
Willing to adopt	42	37.8%
Already Done	22	19.8%

**Source:** Primary data survey of the Government organization. Data in table shown

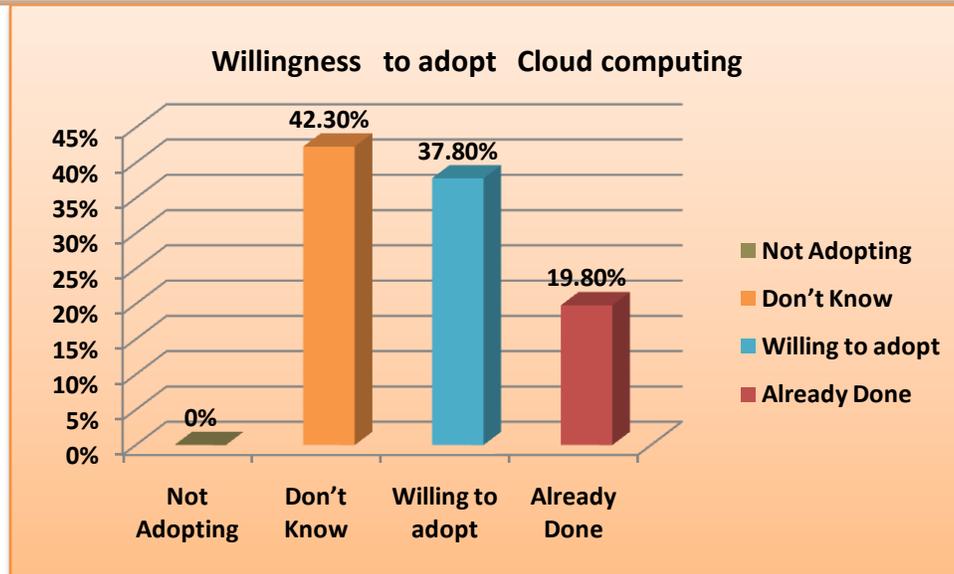
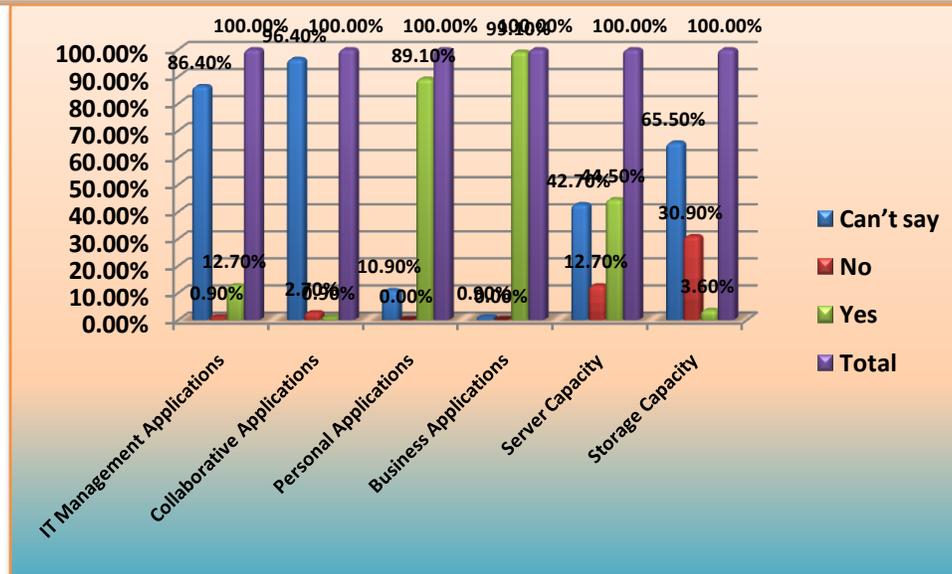


Figure 3: Potential for Cloud Computing (Adoption Plan)

Table 5: Potential for Cloud Computing Applications

Potential for Cloud Computing Application		Can't say	No	Yes	Total
IT Management Applications	Count	95	1	14	110
	% within Index 1	86.4%	.9%	12.7%	100.0%
Collaborative Applications	Count	106	3	1	110
	% within Index 1	96.4%	2.7%	.9%	100.0%
Personal Applications	Count	12	0	98	110
	% within Index 1	10.9%	.0%	89.1%	100.0%
Business Applications	Count	1	0	109	110
	% within Index 1	.9%	.0%	99.1%	100.0%
Server Capacity	Count	47	14	49	110
	% within Index 1	42.7%	12.7%	44.5%	100.0%
Storage Capacity	Count	72	34	4	110
	% within Index 1	65.5%	30.9%	3.6%	100.0%

Source: Primary data survey of the Government organization. Data in table shown



**Figure 4: Potential for Cloud Computing (Migrating Business Application on Cloud)**

**Table 6: Chi-square test for Potential for Cloud Computing**

	Value	df	P-value. (2-sided)
Pearson Chi-Square	523.833a	10	.000
Likelihood Ratio	596.051	10	.000
Linear-by-Linear Association	23.630	1	.000
N of Valid Cases	660		

**Source:** Primary data survey of the Government organization

Practically 20% of respondents are as of now shifted to Cloud 38.7% are eager to shift to Cloud in not so distant future. 42% respondent does not know directly the choice, which is potential to shift Cloud in not so distant future. Subsequently great potential for Cloud in not so distant future in Automobile Government In that primary application will be Personal Application and Business application followed by storage capacity. After Data Analysis next Part is Hypothesis Testing.

## 5. CONCLUSION

The expansion in cloud computing reception by the Governance in created nations has in any event uncovered what the legislatures comprehend about cloud computing – they know about the operational and key parts and the effect of the cloud computing scene in today's business. Regardless of this seeing, a few governments are as yet holding up, and some have scanned for additionally persuading proof that cloud computing osmosis will make value before settling on a noteworthy cloud computing speculation and reception. Cloud computing has come to remain. It is as of now at work today lessening working expenses, sometimes significantly. They are empowering advancement of benefits use and adaptability in both the scale and extent of IT Governance and hardware. Numerous administration offices are

investigating a large group of new Governance and are communications with different gatherings inside government and in addition citizens. Cloud computing is set to change (in the event that it has not done that as of now) how IT infrastructures are sent both in business and in government in light of its obviously shoddy, basic and adaptable nature.

## 6. REFERENCES

- [1]. Barros, A. P. and M. Dumas (2006). The Rise of Web Service Ecosystems. IT Professional, 8 (5), 31- 37.
- [2]. Saeed, I, Juell-Skielse, G &Uppström, E 2011, 'Cloud Enterprise Resource Planning Adoption: Motives & Barriers ', paper presented to confenis 2011.
- [3]. Theresa Durrant ,2012 ,A complete history of Cloud Computing – Infographic – 1961 – 2010 Posted on 9th March 2012 ,available at <http://resourceondemand.com/a-complete-history-of-cloud-computing-infographic-1961-2010/> accessed on Dec. 2013)
- [4]. K. Govinda, Dr. E. Sathiyamoorthy “Identity Anonymization and Secure Data Storage using Group Signature in Private Cloud” Science Direct 2012.
- [5]. Wadhe, Vaishali. (2016). Future and Scope of Cloud Computing in India. Elixir. 93 (2016) 39561-39563. 39561-39563.
- [6]. Nanos, Ioannis&Misirlis, Nikolaos&Manthou, Vicky. (2017). Cloud Computing Adoption and E-government.Conference Paper **(PDF Available)** · June 2017
- [7]. Haider Al (2018) – “A Comprehensive Review of Security Issues in Cloud Computing”, Periodicity:January - June'2018, DOI : <https://doi.org/10.26634/jcc.5.1.15448>
- [8]. Blesson Varghese (2018) – “Next generation cloud computing: New trends and research directions”, Future Generation Computer Systems 79 (2018) 849–861.