

# Impact of Cloud Computing Technology on E-Governance

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A Data Science Foundation White Paper

October 2019

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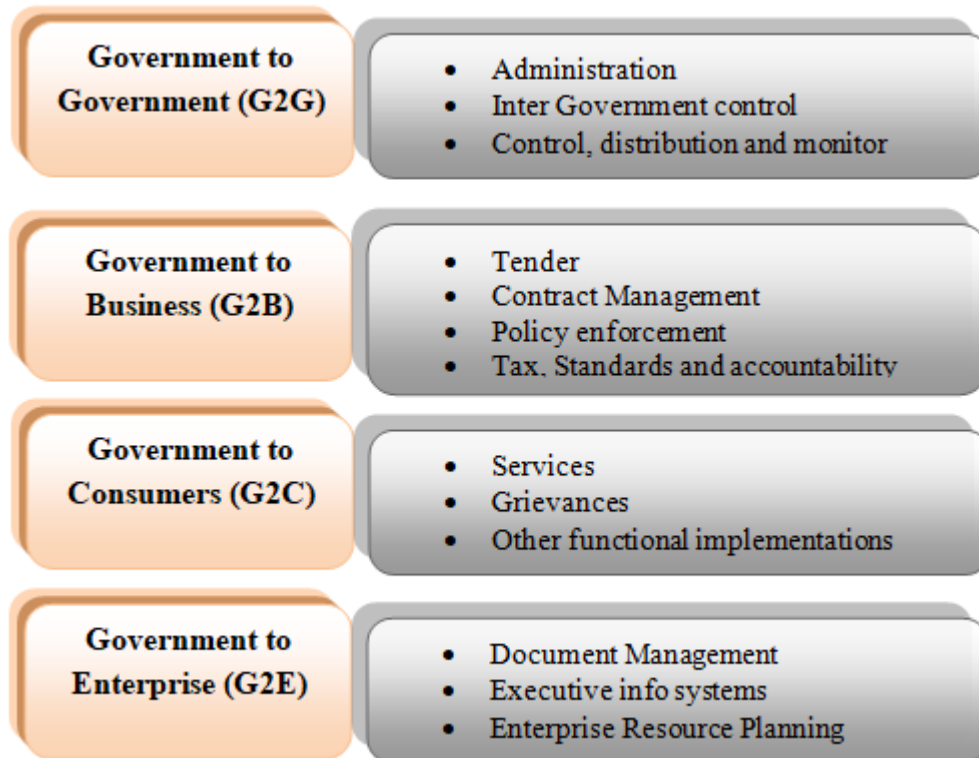
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## Overview

Information Technology plays an important part in the development of any state or country. India adopted e-governance many years ago and IT is playing an increasingly important role in the delivery of services. Today India, along with many countries is having to face the combined challenges of information overload as more and more systems come online, legacy systems using outdated software and hardware and of meeting the expectations of users as populations become increasingly sophisticated. The solution is to adopt cloud computing. Cloud computing can improve an administration's capacity to deliver secure always available services to its citizen's and government departments, while improving user experiences and reducing costs. This paper looks at the challenges and opportunities of adopting state-wide cloud computing systems.

## 1. INTRODUCTION

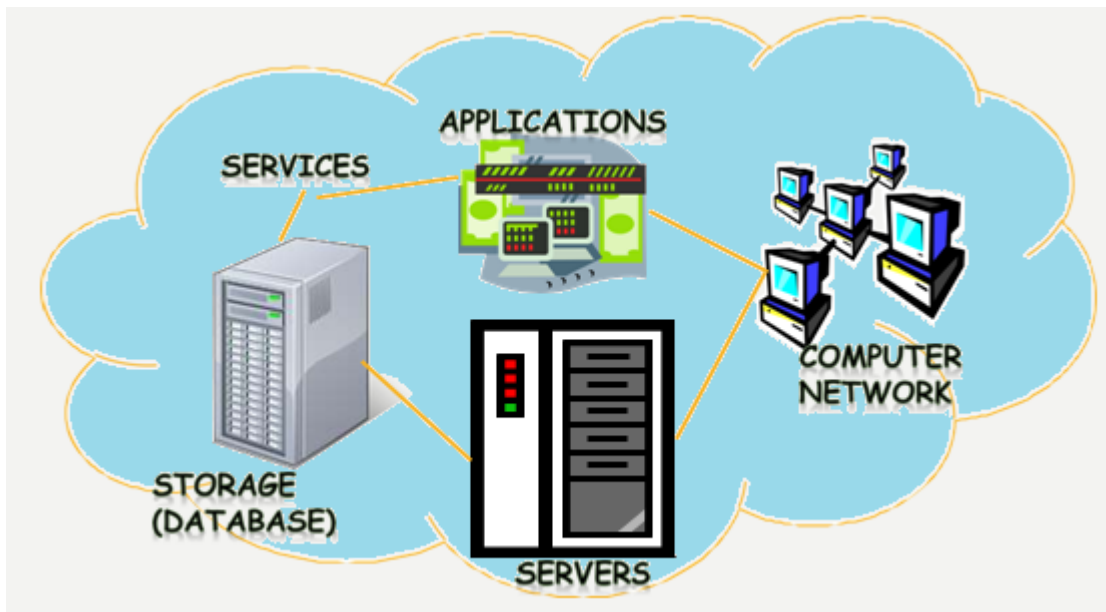
The powerful utilization of ICT (i.e. Information and Communication Technology) is the E-Governance to advance the arrangement of administration that set up and along these lines give better administrations to the natives. E-Governance drives on benefits of data and correspondence advances identical to the web, local area network and cellular phones to upgrade viability, productivity and administration conveyance along these lines promising quick data scattering, higher regulatory effectiveness and improved open administrations. As the period of advanced economy advances, the requirement for good administration accepts a more prominent noteworthiness. E-Governance has been around for over 10 years now. E-Governance is worried about changing administration from "System and Power Centered" to "Resident and Service Centered" utilizing innovation as a device. E-Governance is a "procedure of change in the manner and conveys administrations to outer and interior customers to assist both government and the customers that they serve". Administrations have incalculable implementations that can be electronic. The administration expend on Information Technology would fabricate the proficiency of the organization and would assist in essential administration and approach approval, etc. Implementations in the administration drops into the general classes identical to "Government to Government (G2G), Government to Enterprise (G2E), Government to Business (G2B), and Government to Consumers (G2C)". An innovation that can possibly offer answers for E-Governance is distributed evaluation. Distributed calculation gives administration arranged entry to clients in need of settling on reliability. This process assembles the cloud a magnificent stage to have E-Governance administrations.



**Figure 1: Typical requirements of e-governance**

## **2. CLOUD COMPUTING - BACKGROUD**

Configurable shared pool of computing measures (Internet infrastructure called a platform). On-demand network access (“Using the Internet for communication and transport provides hardware”), software and network resources provided to Clients. It is provisioned by the Service Provider.



**Figure 2: Cloud Computing**

On account of carrying innovative implementations, a trusted, versatile and penetrating domain is vital. One such platform is Cloud Computing, it is a design that oversees several transformation potentials, for instance,

- Multi-tenancy
- Automated provisioning and
- Usage accounting while relying on the Internet and
- Other connectivity technologies like
- Richer Web browsers to realize the vision of computing delivered as a utility”.

Three usually conveyed cloud service models to be specific:

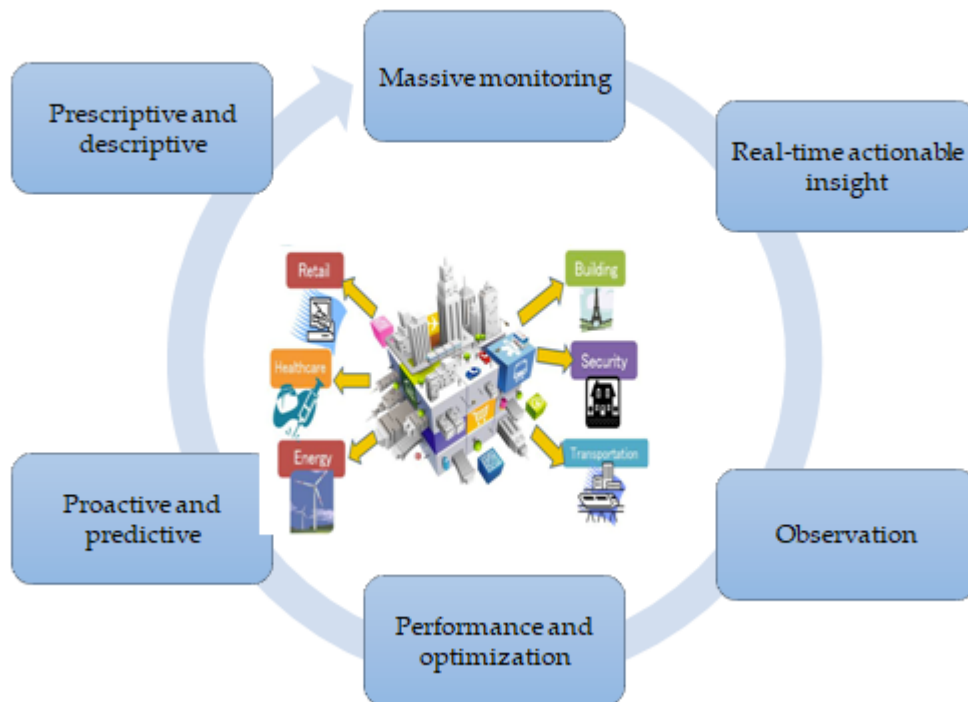
- Infrastructure as a Service (IaaS)
- Platform as a Service (PaaS) and
- Software as a Service” (SaaS)

In IaaS, the hardware access such as actuators and sensors are given to the users. User could fix up “discretionary administrations and deal with the equipment by means of cloud asset access control”.

PaaS provides a platform from the client can obtain to the IoT database and modify it as per the IoT applications being created by the purchaser.

SaaS can be provided with PaaS as the base to “offer the provider’s own SaaS platform for characteristic IoT domains”.

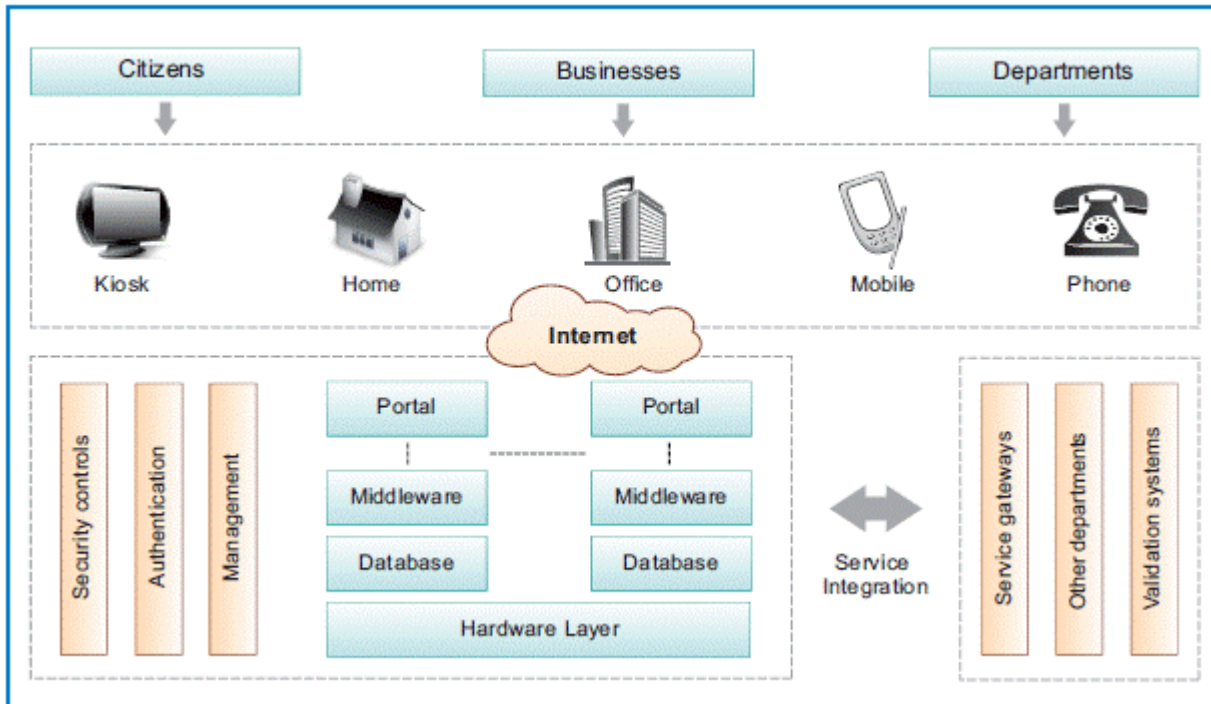
Organizations such as: “Axeda<sup>18</sup>, ThingWorx<sup>19</sup>, DeviceWise<sup>20</sup> - are already providing software development platform to build innovative M2M and IOT applications”.



**Figure 3: Cloud-based IoT Big Data applications**

### 3. E-GOVERNANCE - OVERVIEW

E-governance was introduced for making the lives of the general citizens easy and comfortable. With the use of ICT the Government could deliver the services to the citizens easily, quickly and effectively. E-governance means SMART government. By SMART we mean simple, moral, accountable, responsive and transparent government. The government provides services to different stakeholders involved in e-governance.



**Figure 4: E-Governance architecture key elements**

### 3.1 Impact on e-Governance

#### Benefits of Cloud

*Reduce Total Cost of Ownership:* Deploying application on a cloud platform and especially in public cloud reduces capital outlays

*Minimize Labor Cost:* Government does not have to spend on management cost and overhead

*High availability:* Cloud guarantees uptimes in the range of 99%

*Interoperability:* Between multiple agencies and departments.

*Scalability:* Handles the uncertainty in demand and load in e-Governance

### 3.2 Cloud Computing on E-Governance - Benefits

The space where the E-Administration and distributed evaluation would be helpful in:

- Agriculture

- Deployment of Citizen Services
- Unique Identification Authority of India (UIDAI)
- Centralized Auditing
- Management Information System (MIS)
- Education
- Health and Land Records
- Case Management and Legal Records
- Food and Drug Administration
- Postal Services
- Centralized Monitoring and Evaluation”

#### **4. CONCLUSION**

Cloud computing offers many advantages at government level where administration systems are under pressure to deliver always available services to high numbers of simultaneous users. They have the added benefit of not requiring massive capital investment and allow management teams to change course as projects develop. In this age of exponential technical growth and the speed with which users demands are changing, only cloud-based systems have the flexibility keep one step ahead of redundancy. What many considered to be the risky option just ten years ago is now becoming an industry standard. In short “Cloud computing is the future of education, healthcare and e-governance”.

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## About the Data Science Foundation

The Data Science Foundation is a professional body representing the interests of the Data Science Industry. Its membership consists of suppliers who offer a range of big data analytical and technical services and companies and individuals with an interest in the commercial advantages that can be gained from big data. The organisation aims to raise the profile of this developing industry, to educate people about the benefits of knowledge based decision making and to encourage firms to start using big data techniques.

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