



Cloud Computing (CS60118)

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Introduction

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CLOUD COMPUTING

IN

Healthcare

Introduction

- In Today's real world technology has become a dominant crucial component in every industry including healthcare industry.
- The benefits of storing electronically the records of patients have increased the productivity of patient care and easy accessibility and usage.
- But many fears and security measures regarding patient records storing remotely is a concern for many in health care industry. .
- Despite of a common belief that certain boundaries and security issues of the cloud would hinder the shift, the healthcare industry is taking an initiative to move to these cloud based platforms. Today many doctors and hospitals are moving to-wards these clouds in order to provide better healthcare ser-vices to their patients.

Cloud Computing in Healthcare

- In recent years cloud computing technologies are on rise in the health care industries.
- The demand for cloud technologies in healthcare sector is increasing day by day. The environment in the healthcare sector is changing rapidly than ever before due to the increase in the demand for delivering the most effective medical services for a low cost of money which has increased the competition between the various healthcare providers.
- Cloud technologies provide opportunities to healthcare sectors in order to improve their services for the patients, to improve the operational facilities, to share information in an easy way, and to cut down the costs. Hence with the help of cloud computing in healthcare a doctor can access his patients records even if they are miles away.
- Thus the use of cloud technologies in healthcare can be proved as a boon for the patients all around the world.

Benefits of Cloud Computing in Healthcare

- **Mobility of records**: In some cases a person's health information can be required by two or more health institutions in that case by implementation of cloud technologies a person's health information can be easily synchronized and shared at the same time.
- **Speed**: Enables faster and accurate access to all the important information for the healthcare services providers and the history of their patients.
- **Security and Privacy**: By using cloud computing is mainly used for storage of medical records online. Use of encryption of data and protocols etc.
- Reduction of costs.
- Cost Savings
- Scalability/Flexibility
- Availability of data at all time.
- Easy updation of patient data.

Fears of Cloud Computing in Healthcare

- **Privacy and security challenges**: Always the data maintained in the cloud may contain either personal, private or confidential information regarding a person's health status and his health records which ought to be properly safe-guarded in order to prevent the misuse of this information and their disclosure.
- Disadvantage of using a public cloud is that it lacks the control and the security policies required for a health organization.
- Data Portability is another biggest challenge that some of the healthcare organizations face in adopting the' is the concern regarding the ability to transition to another cloud vendor or back to the healthcare cloud technologies organization without interrupting operations or introducing conflicting claims to the data.
- **Service Reliability**: Day to day growing reliance on distributed network based solutions are only increasing the difficulties and complexities of securing and maintaining the data in these dynamic environments. The dependence of this healthcare industry on availability and reliability of information can be a matter of life and death.

Fears of Cloud Computing in Healthcare

- Disaster recovery is a component of service reliability that focuses on processes and technology for resumption of applications, data, hardware, communications (such as networking), and other IT infrastructure in case of a disaster.
- Performance is another factor which is having a impact on slow adoption of cloud computing in healthcare industries.
- Dependency.
- Essentially need an Internet Connection which is not feasible in todays healthcare setups in all hospitals.
- Lack of Standards.
- Continuously Evolving.

Current state of Healthcare

- The healthcare industry has traditionally underutilized technology as a means of improving the delivery of patient care. Even today, organizations still rely on paper medical records and handwritten notes to inform and make decisions.
- This lack of access costs the healthcare industry millions of dollars each year in duplication and waste.
- Sharing of patient data among clinicians, departments and even patients is rare and complex.
- Patients today are better advocates for their own healthcare; they are more educated to their diseases and increasingly demand access to the latest technologies. As a result, demands for access to personal patient records are increasing and organizations need to keep up.
- When citizens can access bank accounts from anywhere in the world, withdraw money, get balances and make payments, it is hard for them to understand why they cannot have universal access to their secure health information.

Drivers for using cloud in Healthcare

- **Government Incentives.** Governments around the world are providing financial incentives for healthcare facilities to adopt new technologies such as electronic health records.
- Delivery of Cost-effective Healthcare
- **Clinical Innovation.** Healthcare is always striving to innovate to adopt new technologies that drive better patient care, born out of the cost and complexity of rolling out new technologies.
- **Big Data Growth.** Healthcare has become the best example of big data. As the amount of digital information increases, the ability to manage this data becomes a growing problem.
- Administrative Simplification.

Mobile Health

- Mobile health or mHealth usually uses mobile technologies as the basic elements for health research and delivering the healthcare services.
- It is like EHR(electronic health record (EHR) is a digital version of a patient's paper chart) with more advantages and functionality.
- In the future years to come these mobile systems will be able to retrieve and update the data that is stored in the electronic health records by the utilization of latest cloud technologies.
- The major advantage of using mobile technologies with cloud technologies is its mobility and easy sharing of the information.

Conclusion

- Cloud computing is changing our lives in many ways at a very quick pace.
- There are several reasons as discussed above for the utilization of cloud technologies in healthcare industry. The cloud computing solutions in healthcare can help the physicians to stay in touch with their patients and examine their health condition effectively at a low cost.
- There may be some concern regarding the security and other issues of data but still as every problem has a solution in the similar way these issues too will be overcome.
- It is always remembered that cloud computing is still a developing technology, which implies that in the future years the services it offers will be greater than our expectations or beyond our imagination.

References

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