

Cloud Technology on the Healthcare System

By: Daniel Hwang

About Me

- Rising 10th Grader
- Attend Wootton High School
- Hobbies: Violin, Frisbee, Football
- Interest:
 - Healthcare



Agenda

1. Overview of Cloud Technology: Development and Current Usage
2. Possible Future Applications
3. Conclusion

1.

Development and Use: Cloud Technology

How does cloud technology work and how is it being used today?

What is Cloud Technology?

- The delivery of computing services such as servers, storage, databases, networking, software, analytics, and more over the Internet, or “the Cloud” (1)
- If you send emails, edit documents, play games, cloud technology is making this all possible
- Can also create new apps and services, backup data, host websites, stream audio, and more (2)



Benefits of Cloud Technology

- **Cost Efficient**
 - Eliminates the capital expense of buying hardware and software and setting up and running on-site data centers
- **Speed**
 - Most cloud computing services are provided self service and on demand, so even vast amounts of computing resources can be provisioned in minutes
- **Global Scale**
 - The benefits of cloud computing services include the ability to scale elastically.
- **Reliability**
 - Makes data backup, disaster recovery, and business continuity easier and less expensive

Trip to RagingWire Data Centers

- Centralizes an organization's IT operations and equipment, as well as where it stores, manages, and disseminates its data
- Provide important services such as data storage, backup and recovery, data management and networking
- Utilizes a large amount of electricity and air conditioning
- Integration of Cloud technology and data centers into Ashburn VA
 - 70 percent of Global Internet Traffic goes through Ashburn VA (3)



Cloud Technology Today

Enterprise:

- Provides a range of cloud services, including those for compute, analytics, storage and networking (5)
 - Amazon Web Services (AWS)
 - Microsoft Azure



Individual:

- Google Drive - Cloud Storage Service
 - Expand your ability to store files beyond the limits of your hard drive (6)
- iCloud - Cloud service specifically used for Apple Devices
 - Securely stores your information and data and keeps it updated across all Apple Devices (7)



Cloud Technology Today: Netflix

- Streaming Company, one of the biggest users of Amazon Web Service Public Cloud (8)
- Computing and Storage needs - All users, Preferences, Organization of the Company's content, etc
- Uses data centers for its content delivery network called Open Connect (9)
 - Network of data centers which distributes all video traffic



2.

Possible Future Applications

How can cloud technology be used in the healthcare system?

Application: Emergency Transport

- The time period when the patient is transported on an ambulance to the hospital
- Emergency Medical Technicians (EMT) provide basic medical care for the patients to stabilize them
- EMTs could input patient information on a device that sends that information to the cloud
 - This information could be taken in at the hospital so that when the patient arrives, doctors and nurses will already be prepared
- Internet of Things (IoT) + Cloud



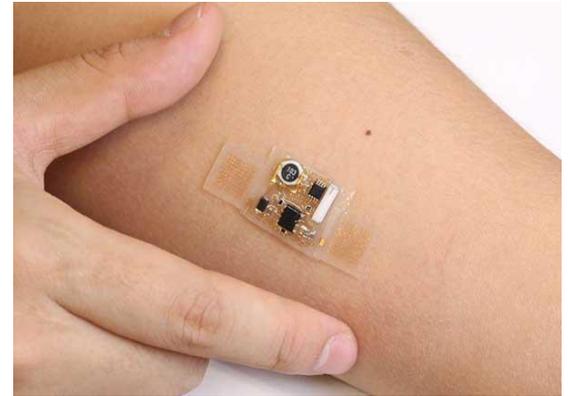
Application: Patient Information

- Most hospital records are written on paper and filed
 - Very difficult to find individual files quickly and efficiently
- Cloud technology makes storing and backing up data quicker and more efficient
- Less costly than having multiple computers in various medical rooms — each needing proper hardware, updated software, and network accessibility to upload, store, and retrieve patient or other medical data.
- Digitalization + Cloud



Application: Patient Care

- After treatment, it is crucial for patients to be taking care of their bodies and taking the appropriate medication
- Patients can put on electric tags or patches that will send patient health information such as pulse, weight, and other dietary information to their doctor
 - Eliminates the need for patients to constantly check in on the doctor
- Emerging Technology + Cloud



3.

Conclusion

Conclusion

- Cloud Technology can be used to positively impact the healthcare system
- These benefits should not be limited to just healthcare, but in other parts of society as well
- Offers an effective solution in the healthcare system

Citations

1. Bohrer, Eva. "What Is Cloud Computing and How Does It Work? - Definition & Overview." Money Crashers, www.moneycrashers.com/cloud-computing-basics/.
2. Strickland, Jonathan. "How Cloud Computing Works." HowStuffWorks, HowStuffWorks, 8 Apr. 2008, computer.howstuffworks.com/cloud-computing/cloud-computing.htm.
3. Benjamin. "70 Percent of the World's Web Traffic Flows Through Loudoun County." Washingtonian, 20 Sept. 2016, www.washingtonian.com/2016/09/14/70-percent-worlds-web-traffic-flows-loudoun-county/.
4. Koellmer, Drew. "8 Reasons Why Small Businesses Should Be Using Amazon Web Services." 5 Types of IT Security Threats Facing Businesses, www.rutter-net.com/blog/8-reasons-why-small-businesses-should-be-using-amazon-web-services.
5. "What Is Microsoft Azure (Windows Azure)? - Definition from WhatIs.com." SearchCloudComputing, searchcloudcomputing.techtarget.com/definition/Windows-Azure.
6. "What Is Google Drive and How Does It Work? A 2018 Step-by-Step Guide." Cloudwards, 11 July 2018, www.cloudwards.net/how-does-google-drive-work/.
7. "Apple." Apple Support, support.apple.com/kb/ph2608?locale=en_US.
8. Brodtkin, Jon, and UTC. "Netflix Finishes Its Massive Migration to the Amazon Cloud." Ars Technica, Ars Technica, 11 Feb. 2016, arstechnica.com/information-technology/2016/02/netflix-finishes-its-massive-migration-to-the-amazon-cloud/.
9. "Netflix's Functioning: Its Migration on the Cloud and Its Content Delivery Network | MS&E 238 Blog." MSE 238 Blog Cyber Security Challenges in Developing Countries Comments, mse238blog.stanford.edu/2017/07/nwahl/netflixs-functioning-its-migration-on-the-cloud-and-its-content-delivery-network/.