Why Cloud?

Many leading districts are shifting to the cloud. Why? The reasons vary from district to district and the benefits of cloud do as well. Some districts may only be solving a specific problem such as disaster recovery while others are going all-in cloud. For some districts migrating to cloud may not realize the benefits - for example, a district that has recently upgraded and virtualized their data center may not realize cost savings from moving to the cloud. Below are some of the reasons districts might choose to make the switch and considerations for districts to think about as they contemplate this shift.

1. Security

- **District ownership and control of data**: Cloud providers give education institution full ownership and control of their data when purchasing Infrastructure as a Service. Agencies have control of where data is stored and how it is securely accessed or deleted.

- Compliance to Security Standards and Audits: Cloud providers meet a broad spectrum of compliance certification and accreditation standards such as: HIPAA, NIST, ISO and FedRamp. Rigorous third-party audits verify adherence to the strict security controls these standards mandate.

- Leverage: The highest levels of security developed for Fortune 100 companies and the government are automatically made available to all accounts.

- Proprietary platforms: Many cloud providers run their services on proprietary hardware and software which is harder to hack than standardized platforms.

- Business Continuity and Disaster Recovery: It is easy to make a plan for continuity in the foundational architecture, with many features built in to help with durability and redundancy.

- Elasticity: Cloud architectures are flexible enough to absorb unwanted traffic such as Distributed Denial of Service (DDOS) attacks.

- Monitoring: Cloud service providers monitor for potential security issues

Access: Cloud providers will ensure that there is a separation of physical and logical access to data. Those who have access to the physical servers have no access to accounts, and vice versa.

2. Simplification

- Management: Cloud allows districts to simplify management across servers to a single console accessible from any location. Cloud also offers managed services for software patching and management.

- Governance: Cloud has provisions to set up governance rules to manage access across organizations.

- Procurement: Cloud has simpler procurement processes than purchasing and installing hardware.

- Planning: Cloud platforms that allow you to spin up and down a server readily simplifies the planning process.

- Business Continuity and Disaster Recovery: Both are easy to implement in the cloud whereas they are highly complex and expensive otherwise. Cloud has numerous fail-safes and failovers that make continuity essentially built in.

- Accessibility: The provisioning of cloud resources also implies the accessing of those resources via web-based technologies; as opposed to thick or programmed clients; the primary benefit of moving towards a 100% web based client is the ability of cloud systems to be more client agnostic.

- Serverless Database Architecture: Cloud supports the development of serverless database architecture.

Future-Proofed: Districts will always have their systems running on the latest and greatest equipment, security, and software.

3. Analytics & Insights

- Personalization: Districts can better serve students with personalization due to the power of analytics across disparate data sets in the cloud.

- Storage: Cloud offers the ability to store large unrelated data sets from multiple sources and gain real-time insights.

- Analytics Services: Analytics are built into many cloud services by default and provide access to the same analytics tools as the top fortune 50 companies and top research institutions.

Data Democratization: Cloud allows districts to democratize data so that people in the organization have access to the data they need to make better informed decisions faster.

4. Agility and Experimentation

Rapid Development: Cloud affords the ability to focus on app development itself rather than worrying about whether the district has the infrastructure to support it.

- Research: Cloud can support data intensive short-term research projects.

- Leading Edge: Many cloud providers offer access to experimental platforms.

5. Efficiency

- Resources: Districts can minimize capital outlay by operationalizing large architecture assets and procuring them as needed on a monthly, annual or as load dictates basis.

- License usage: Districts can use licenses and pay for only the time they are used.

- Shared resources: Districts have access to low-cost surplus resource usage for non-time sensitive workloads.

- Free tiers: Many cloud providers offer free service tiers that enable districts to quickly try something without a cost commitment.

- Labor: Workload shifts to higher value work.

Utility: Districts only pay for what they use, allows districts to move from capital expenditures to predictable operational expenditures.

6. Equity

Desktop as a Service (DaaS): DaaS platforms provide a more uniform digital playing field for students, helping ensure every student has a chance to experience the same learning environments.

- Access: Agnostic (web-based) access to resources opens the door to universal access as long as broadband Internet access is pervasive and widely available to all.

Considerations

- Although the cloud is much more secure, the likelihood of a data attack is higher for national/international providers than on specific school districts. Districts should carefully review data breach protocols and assure contract with cloud providers clearly protect the district's interests.
- There is a learning curve to switching to cloud that may take time for staff to climb - it involves more than transferring files to cloud servers. As with any new initiative thoughtful strategic planning and risk mitigation will lead to better implementations.
- It takes expertise to analyze and make sense of analytics and to dive into the information behind them. A strong data governance process will assist districts using the cloud. Assure that providers have access only to the data they need and there is a process to delete data that is no longer necessary.
- It takes special training and experience to be able to take advantage of leading edge platforms.
- Cloud pricing is complex and can be difficult to predict. To shift the work to higher value tasks may require retraining or new skills.
- Not all students will have equal access to the Internet outside of school to access cloud-based services.

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