The Top Ten Reasons You Should Have Your Data Center and Core Information Technology Operations at NEOnet

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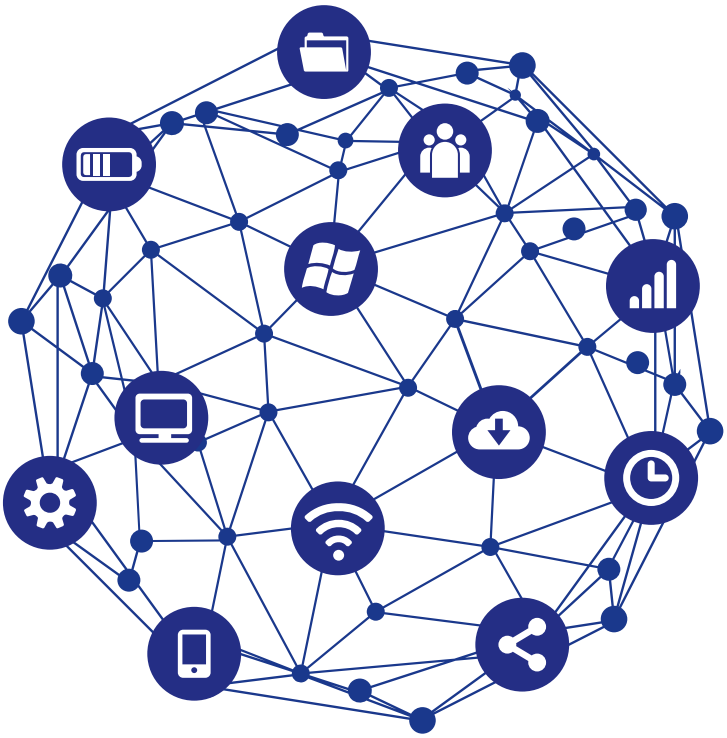

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The origins of a shared resource environment, such as cloud computing, date back to the 1960's. In a 1961 speech to MIT students, John McCarthy, a renowned computer scientist that won the Turing award for his work in Artificial Intelligence, famously said, "computation may someday be organized as a public utility."

https://www.softwareadvice.com/resources/saas-10-faqs-software-service/

Twenty years ago, when the State of Ohio deployed the SchoolNet Project, computer technology was much simpler. The project called for one computer for every four students in each classroom. This equated to small clusters of seven or eight stand-alone computers some of which were linked back to a main server in the building used for storage and, in some cases, broader network access. Most application and productivity software resided locally on each computer.

Management of, and expertise about, these systems was quite simple. Much of it was done by teachers with little prior computer training and experience who were early adopters of, and cheerleaders for, instructional technology. Because most software was local, backups were unimportant. Servers, where they existed, were used primarily for file storage and printing. Internet access and printing was managed by the remote "building" server. Since internet use was limited, the threat of viruses, spam, phishing, malware, rootkits and the like were of little concern.

Fast forward to today. Small stand-alone classroom computer clusters have been replaced by ubiquitous computing. Everyone in a school building has a device. Many have more than one. Most are attached to printers, servers and internet gateways. High-speed voice, video and data are transmitted wirelessly and simultaneously on the same network. Products and services are delivered from remote locations in the cloud.

District management, finance, academics and testing are done online. While hundreds of security attacks are repulsed each day, districts expect 24/7, uninterrupted service of the most complicated and mission-critical technologies. The level of technical complexity has grown exponentially. In many cases, district personnel have struggled to keep pace with these rapidly accelerating changes.

In order to keep up, successful districts now require specialists in operating systems, virtual servers, wireless transport, inter-networking, security, application suites and more. Yet few can afford all of the people with the skills needed to ensure that the technical systems function as the full-time utilities they have become.

The solution is to share critical technical resources among districts, thereby leveraging the cost of highly educated and trained technical specialists capable of supporting the complex infrastructures schools have adopted.

When the state of Ohio created the Ohio Education Computer Network (OECN), the intent was to deploy regional centers of expertise which could make highly trained and skilled technical personnel available to school districts as they navigated the demands and complexities of information technology.

The mission of the Information Technology Centers has not changed. In fact, their role in helping districts navigate the technology terrain has only grown over time. As evidence, we present: ***The Top Ten Reasons You Should Have Your Data Center and Core Information Technology Operations at NEOnet.***

1. System Backups and Restoration – Software and Process

Information Technology has become "mission-critical" to the successful operation of today's Ohio school districts. As a result, districts can ill-afford to lose data. Data must be backed-up daily and be available for retrieval and restoration when required and with minimal difficulty and loss of time. NEOnet backs up all data on a daily basis at the core data center and at their secondary Disaster Recovery Site. Lost data may be retrieved quickly and with a minimum disruption to district operations. NEOnet uses multiple back-up technologies, making the data loss window as little as 59 minutes.

For more information about system backups and restoration, please check out the following URLs:

TIA-942.org Datacenter Certifications
http://www.tia-942.org/content/162/289/About_Data_Centers

Achieving Backup and Restore Success in Five Easy Points
http://www.datacenterjournal.com/achieving-backup-and-restore-success-in-five-easy-points/

2. Budget Management/Fiscal Consistency – Capital Costs Versus On-going Budgetable Operating Expenses

Too often, as districts face budget difficulties, one of the places they look to make cuts is in information technology. However, the problem with this strategy is that it leads to shortcuts that impact the abilities of the district to function effectively in an information-rich and information-demanding society.

An analogy is a school district electrical grid. No one would argue that the district needs electricity to function, so too with information technology (IT). The solution is to treat IT the same as electricity. It should become a line item in a district budget. This allows districts to both plan and budget appropriately so that information technology services are not disrupted and continue to meet the demands of the district. Moving these costs to NEOnet makes them a budgetable purchased service, thereby lessening the likelihood of cuts to critical services.

For more information about data center budgeting, please check-out the following URLs:

Data Center Budget Tips for 2013
http://www.datacenterjournal.com/data-center-budget-tips-for-2013/

Data Center Budget Design Criteria
http://www.datacentertalk.com/2015/10/data-center-budget-design-criteria/

3. Hardware Expertise – Knowing What Technology to Adopt and How to Support It

Making effective strategic decisions regarding what hardware and technologies to adopt requires a deep understanding of how technology works, how it integrates with other technology components and whether or not that technology complies with industry standards.

Once that technology has been adopted and deployed, that same deep understanding is required to support it. Unlike most school districts, NEOnet personnel have computer science degrees and current industry certifications that enable them to make necessary strategic decisions and support what they purchase and deploy.

For more information about hardware expertise and certifications, please check-out the following URLs:

Best Data Center Certifications
https://www.businessnewsdaily.com/10777-data-center-certifications.html

What You Need to Know About Data Center Infrastructure Management (DCIM)
https://www.techrepublic.com/blog/data-center/what-you-need-to-know-about-data-center-infrastructure-management-dcim/

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4. Environmental Considerations – HVAC, Electrical (Including Generators) and Fire Suppression

Maintaining high-performance computing centers requires a thorough understanding of the needs of the equipment and the considerable budget resources to build and support them. Today's data centers are packed with technology that require significant power and cooling. They utilize instantaneous power cut-over circuits that trigger generators and fire suppression when needed. They follow industry standards for wire management and layout.

NEOnet maintains two state-of-the-art data centers, one on Graham Road and the other at a remote disaster recovery facility. Both sites follow current industry standards and protocols to ensure that client's systems are functioning as needed, when needed.

For more information about data centers environmental standards and management, please check-out the following URLs:

Best Practices in Commercial HVAC for Data Centers
https://www.donnellymech.com/blog/best-practices-commercial-hvac-data-centers/

HVAC Cooling Systems for Data Centers
https://www.cedengineering.com/userfiles/HVAC%20Cooling%20Systems%20for%20Data%20Centers.pdf

5. Virtualization Expertise – Deploying and Managing Advanced, High Availability and Fault-Tolerant Virtual Operating Environments

Server technology has changed dramatically over the last decade. In the past, it was common practice to have one computer function as one server. Today, one physical computer can operate as many servers in a virtual space. This uses sophisticated operating system technologies and is done because it allows for very quick server provisioning and high-availability fail-over.

With virtual servers, districts only pay for that portion of the machine's resource it uses. Those resources can be scaled up and down as needed. This technology provides a much more cost-effective and higher-functioning environment. The lack of virtualization expertise often leads to virtual systems being deployed without fault tolerance or upgrades for long periods of time, putting the district at risk of security breaches and performance issues. Fortunately, NEOnet has trained and skilled technical professionals well versed in running virtual systems.

For more information about data center virtualization, please check-out the following URLs:

10 Benefits of Virtualization in the Data Center
https://www.techrepublic.com/blog/10-things/10-benefits-of-virtualization-in-the-data-center/

VMWare Certification Tracks
https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/certification/vmware-certification-tracks-diagram.pdf

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6. Security – Physical Security, Server Patching, Firewalls, DMZ's, Port Management, NAT and Filtering

Every day it seems there is another story in the news about a security breach at some firm or another. Staying ahead of the security problems in today's information society can be a dizzying, full-time job. Fortunately, NEOnet has technical people skilled in the latest security technologies and protocols to ensure your systems and data are accessible and safe.

Further, through the Ohio Educational Computer Network, NEOnet utilizes a Certified Information Systems Security Professional (CISSP) to assist in planning and maintaining its security environment.

For more information about information technology security, please check-out the following URLs:

Data Center Security
https://en.wikipedia.org/wiki/Data_center_security

5 Steps to Secure Your Data Center
https://gcn.com/Articles/2009/11/30/5-steps-to-a-secure-data-center.aspx?Page=3

7. Cost Control – The Flexibility to Pay Only for the Resources You Use and Need.

Building static data centers in schools requires a combination of capital funding and monies from the district general fund. Once built, these facilities incur ongoing costs directly related to their environment. This constitutes environmental, security, licensure and other costs that are frequently locked into long-term funding commitments.

By moving your operations to NEOnet, cost control becomes a budgetable purchased service that can be adjusted on a yearly basis. This model provides the ability for districts to pay for exactly what they are using – and recoup those operating costs if they no longer need the resources.

For more information about information cost control, please check-out the following URLs:

Software as a Service
https://en.wikipedia.org/wiki/Software_as_a_service

What is SaaS? 10 FAQs About Software as a Service
https://www.softwareadvice.com/resources/saas-10-faqs-software-service/

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8. Disaster Recovery – Complete System Redundancy From a "Hot Site"

In the event of a disaster, school districts should be able to switch from one technology site to another instantly and seamlessly. Unfortunately, very few districts have the financial resources or technical know-how to build and maintain Disaster Recovery Centers that are "hot sites". Hot sites enable districts to switch seamlessly from one data center to another without any disruption of service.

NEOnet maintains a "hot-site" Disaster Recovery Center that is a direct clone of the facility at Graham Road. For many services, NEOnet can switch users from one facility to another without any disruption.

For more information about disaster recovery and "hot-sites," please check-out the following URLs:

Data Center 101: Data Center Disaster Recovery
https://datacenterfrontier.com/white-paper/data-center-101-data-center-disaster-recovery/

Data Center Disaster Recovery
https://www.cisco.com/c/dam/global/en_my/training-events/cnsf/files/T2-S2_KwaiSeng-DRv2.pdf

9. Complete, Thorough and Regular System Updates and Replacements

A recurring problem in many school districts is the failure to maintain necessary system updates and replacements of critical information technology systems. This often leads to new applications and/or services not working properly, or at all. When this is discovered, the cost to upgrade to the necessary, latest version, (often many versions away from the one which the district is running), can be significant. Version control is a central component of the professional information technologist's toolkit. At NEOnet, system updates and replacements are budgeted for and performed regularly.

For more information about system updates and replacements, please check-out the following URLs:

Data Center Best Practices for Upgrading and Optimization
https://www.intel.com/content/www/us/en/data-center/data-center-optimization-planning-guide.html

Data Center Management: Trends and Challenges
https://www.seagate.com/tech-insights/data-center-management-master-ti/

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10. And the Intangibles - UPS Replacement and Maintenance, Space, Maintenance Costs on Hardware and Software, Staffing, Etc.

People who do IT for a living are aware of all the intangibles that go along with building and running professional data centers and providing IT services. This includes expenses often overlooked by districts when looking at total cost of ownership. For instance, electric to power equipment, annual maintenance contracts for HVAC and physical equipment, personnel time to install and upgrade equipment, purchased services to help support the equipment, lost time due to outages, etc.

Because building and deploying high-end technology is what they do, the IT professionals at NEOnet are well prepared to deal with intangibles. When NEOnet proposes a purchased service budget number to a district, it comes from the knowledge and expertise gleaned from years of education, training and experience. Because there are no surprises for them, there are no surprises for you, the customer.

For more information about IT intangibles, please check-out the following URLs:

Using a Total Cost of Ownership (TCO) Model for Your Data Center
https://www.datacenterknowledge.com/archives/2013/10/01/using-a-total-cost-of-ownership-tco-model-for-your-data-center

Determining Total Cost of Ownership for Data Center and Network Room Infrastructure
http://www.linuxlabs.com/PDF/Data%20Center%20Cost%20of%20Ownership.pdf

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It seems clear that in today's highly technical, highly demanding information society, leveraging complex, high-cost resources with other school districts makes sense. The ITCs were created to provide just this type of service. At NEOnet, highly trained computer science professionals provide in-depth, comprehensive services at a cost much lower than districts could provide for themselves.

If you haven't moved your data and district technology operations to NEOnet, give them a call today and find out for yourself how you can receive better technical care at a much lower cost.