

How leveraging corporate partnerships advanced the George Washington University's support of students, researchers, and future innovation



In December 2020, in Washington, D.C., alarms went off in the George Washington University’s data center. An air conditioning unit in the main data center failed, and university IT had to power down its core servers to keep the data center from overheating.

GW, similar to other institutions, had long struggled under the weight of fragile legacy infrastructure, but this near-crisis was too close for comfort. By this point, there were already numerous signs of strain.

Researchers, for example, were often stuck waiting for server resources, slowing down their work as IT went through the manual steps of setting up new servers. At the same time, the infrastructure costs only rose because the original architecture was designed for periods of peak server usage. For the majority of the year, the servers were underutilized.

[Many universities are facing these kinds of challenges](#), but many focus only on incremental improvements to their environment. GW took the opportunity to rethink and redesign, turning a problem with one data center into a full-scale infrastructure transformation.

To do so, the university embraced a two-pronged approach: upgrade its enterprise resource planning (ERP) by migrating it to an Ellucian SaaS environment and migrate the rest of the environment to the AWS cloud.



By identifying and partnering with two key vendors — Ellucian and Amazon Web Services (AWS) — the university moved from a fragile legacy infrastructure to a robust cloud infrastructure, complete with a data strategy that positions it for future innovation.

A CATALYST FOR CHANGE

GW was on a gradual journey to move to the cloud, but it wasn't easy to prioritize the investment the journey required until the data center outage pushed it to act.

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Geneva Henry, GW's Dean of Libraries and Academic Innovation and Vice Provost for Libraries and Information Technology, and Anna Vakulick, Deputy CIO, picked up the effort and, with the leaders throughout the organization, focused on rebuilding the university's infrastructure.

GW made two primary plans to ensure this would never happen again. In the short term, they built a better failover process between its data centers, which required some investment in new on-premises technologies to reduce

disruption as the university modernized its infrastructure. In the long term, they revived a then-dormant cloud-first strategy, now renamed “Accelerate to the Cloud,” that would further improve failover capabilities while positioning the university for the future.

GEORGE WASHINGTON WORKED BACKWARD FROM BUSINESS OUTCOMES

“The mission of the university is education and research,” Henry says. “It does not happen if you do not have functioning IT.”

By telling a story that involved not just IT but also students, researchers, faculty, and university leaders, Henry and Vakulick galvanized support and surfaced shared interests from across the university.

With this information, GW worked backward from the capabilities it wanted to support and the outcomes its students and staff would benefit from.

OUTCOME 1: FROM MAINTENANCE TO INNOVATION

On-premises servers and legacy software require frequent maintenance. This maintenance is tedious, manual, and costly, but the biggest price is opportunity cost. Instead of working on innovation projects or finding new ways to serve faculty, students, and researchers, IT is often consumed with fixing customized software, applying patches, and maintaining hardware.

“Vendors are finding it increasingly challenging to sustain support for software that is deployed locally by universities,” says Vakulick. As a result, she says, “The newest capabilities are built into the SaaS platforms first since they will be easier to maintain and upgrade.”

In Ellucian, George Washington found a partner who understood its dilemma: The longer it kept Banner, its ERP, on-premises, the steeper the costs would become and the harder it would be for GW to take advantage of the latest functionality. Over 25,000 students depended on this ERP, not to mention countless staff and faculty; however, the migration had to be smooth.

The university, working with Ellucian, is migrating Banner into a SaaS environment. Once implemented, GW will benefit from a modern solution that enhances the GW experience without spending nearly as much time on maintenance or relying so closely on its data centers.

Before this migration, the university struggled to keep up with current demands,

much less prepare for new, seismic changes [like artificial intelligence](#). By the end of this work, they will be even better positioned for the future — ready to experiment, innovate, and pursue new ideas as they emerge.

OUTCOME 2: RESILIENCE THROUGH PEAK PERIODS AND CRISES

The data center outage was the worst example of a long-standing issue: George Washington's on-premises infrastructure struggled to remain resilient through peak periods. The student experience was at risk every time demand peaked or the facilities failed.

The university worked with Ellucian to provide SaaS solutions for key applications, including its ERP, and worked with AWS to build a cloud infrastructure that would



improve its ability to support researchers and students.

With the cloud, peak periods aren't a threat. In the cloud, you can add servers when, for example, students are all registering for classes at once — ensuring there are no delays between seeing the perfect course and adding it to a course plan. Once registration is closed, the servers don't just lie in wait, consuming money and electricity. In the cloud, GW can automatically scale them back down, and the university doesn't have to pay for the resources it's no longer using.

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Anna Vakulick

*Deputy CIO,
The George Washington University*

This level of scalability has significant benefits outside of these peak periods. The data center outage that inspired this journey? Unlikely with the cloud. If any server were to fail at AWS, the university's resources would seamlessly failover to another server. Students, researchers, and faculty wouldn't even notice a difference.

Like many research universities, George Washington hosts researchers who have massive data and high-performance computing needs. With cloud resources on tap, the university can offer researchers environments much faster than they used to. And in the process, researchers don't have to endure a burdensome procurement and implementation process that consumes their time and slows down their progress.

OUTCOME 3: BUDGET PREDICTABILITY

Before the cloud, George Washington struggled to predict the budget it would need for on-premises infrastructure.

The university used to approach its IT budget from a CapEx perspective, requiring up-front capital expenditures. Now, the university's infrastructure is primarily an OpEx cost — seeing it as an ongoing operating expenditure — meaning GW can build a budget that remains predictable across time, even with the occasional burst in server resources.

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George Washington further secured the success of this initiative by building a Cloud Center of Excellence (CCoE). The CCoE ensures that everyone inside and outside the IT team is aware of the guidelines and best practices when requesting and using cloud resources.

The cloud offers near-infinite access to resources, but the CCoE applies processes that make usage trackable and predictable, which makes ongoing costs trackable and predictable.

That level of operational predictability builds trust with the finance team, who can now easily stay abreast of average costs.

With the CCoE, GW can extend the ability to requisition and provision resources without worrying about the risk of runaway costs.

OUTCOME 4: POSITIONING DATA FOR THE FUTURE

The George Washington University identified AWS and Ellucian not only as partners who would work with the university but also as partners who would work with each other to help position the institution for the future.

AWS, for example, is working with the university to architect its data strategy and provide the technology and resources necessary

to support it. This strategy ties directly into the data architecture of the SaaS environment Ellucian provides for Banner through AWS. The foundation of GW's data strategy isn't any one technology but the seamless flow of data between environments.

With this foundation built, the university is ready for the future, and the future is AI. AI has the potential to dramatically improve the educational experience while providing a whole host of new operational efficiencies — as long as the sanctity of the data supporting these projects is preserved.

By partnering with AWS, the university can put guardrails in place to ensure effective data management, safeguard privacy and security, and support new innovation projects.



By partnering with Ellucian, they can use Ellucian Journey, an AI-enabled lifelong learning platform that gives students visibility into how their educational courses relate to their career goals. Journey uses large language models (LLMs) to capture each learner's skill progressions so its recommendation engines can suggest courses that map those skills to workforce data.

With the new data architecture, supported by AWS, the university will be able to load student and course data into Journey so that students receive recommendations specific to GW's academic offerings.

"If you think about advising students on their career path — today, that's a very one-to-one type of conversation dependent on the expertise of one person and one knowledge set," Vakulick explains. "Journey unlocks that. The quality and pace at which we can guide 25,000 students is going to increase, and that's exciting."

With Ellucian Journey, the university can ensure that the courses it's offering support the development of skills that graduates need to succeed in the job market. At the same time, every student can take advantage of a customizable skill map that will allow them to identify the skills they want to take from the university to the workforce.

FROM FRAGILE TO FUTURE-PROOF

In its plan to build a future-proof environment, George Washington developed a wave-based strategy for migrating to the cloud. The university has over 200 applications, over 800 servers, and over 1,200 databases on track for migration to the cloud within the next two years.

By the end of this leg of the journey, the university will reduce its on-premise data center footprint by 50 percent, positioning it for greater resilience and reduced maintenance and utility costs.

"We're able to adapt to the changes more quickly simply because we eliminated the slow and tedious process that comes with running your own equipment, doing regular refreshes, and hoping you get the money in your capital budget," Henry explains.

The move to the cloud is also expected to reduce the university's carbon footprint by up to 96 percent for every workload migrated. Over time, the cloud will enable even more sustainable operations.

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Now, George Washington is ready to support its faculty, students, and staff in a much more efficient and effective way, whether they have timely research needs or delivering services during periods of peak resource demand.

ACCELERATING THE CLOUD-FIRST TIMELINE

“Institutions are not going to be able to keep things running on-premises for much longer,” Vakulick says. “The writing’s on the wall and the benefits of moving to the cloud are real.”

With Ellucian and AWS, George Washington accelerated its timeline and migrated to the cloud much faster than it had initially planned. The “Accelerate to the Cloud” strategy worked both due to Vakulick and Henry’s leadership, the leadership

throughout the organization, and their choice of partners.

“For us, Ellucian and AWS are more than vendors; they are genuine partners who are committed to our success,” says Vakulick.

Now, the university is freed from maintaining the past and is ready to build the future for its students, staff, faculty, and researchers. Migration to the cloud will continue at a steady pace, and with the support of AWS and Ellucian, GW will always have the opportunity to innovate.

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