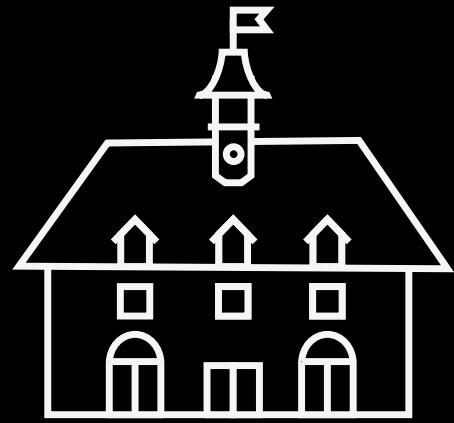




Case study

How the University of Illinois supports students during (and beyond) campus shutdowns

verizon✓



No one – not even large universities with storied legacies – could have prepared for how disruptive the COVID-19 pandemic would be.

The University of Illinois at Urbana-Champaign is a public university with more than 51,000 students from more than 100 countries. It's also an innovation powerhouse: the first graphical web browser was developed there, and it's home to a research park that's a technology hub for Fortune 500 companies and startups alike.

But like many universities, the University of Illinois Urbana-Champaign had to quickly pivot to virtual learning when college campuses shut down to stem the spread of the coronavirus, all while finding ways to creatively tap into technology to benefit its community.

The university leveraged its existing partnership with Verizon to implement flexible solutions, offering student technology programs that enabled virtual learning as well as rolling out a first-of-its-kind 5G Innovation Hub to drive research around emerging technologies. "The partnership with the university and Verizon is a unique experience that has allowed us to stay at the forefront of the evolution of technology and continue to meet our customers' needs and demands," said Uros Marjanovic, the lead network engineer in the university's IT department. "Additionally, the patience and empathy for our processes" benefited the partnership and contributed to the success of these initiatives, he said.

With the help of this partnership, the university was able to weather an unprecedented disruption to campus life and lay the foundation for innovation at the same time.

"The partnership with [Verizon] ... has allowed us to stay at the forefront of the evolution of technology"

Uros Marjanovic

Lead network engineer, Technology Services at University of Illinois Urbana-Champaign



47,000 students



Students from 100 countries



Developed first graphical web browser,



Technology hub for Fortune 500 companies and startups alike

Enabling virtual learning during the spring semester



When the spring semester began in January 2020, UIUC was prepared for a full slate of in-person instruction, research and cultural and athletic events. But by the time spring break arrived in late March, the World Health Organization had declared COVID-19 a pandemic, and it became clear that the rest of the semester would need to go virtual for the sake of public health and safety.

Students left campus, some without access to laptops or the internet while they were away. Faculty couldn't teach on-site, and many university employees faced challenges to perform their jobs without access to the technology they needed.

The university needed a solution that would let the campus community remotely conduct its learning, teaching and research – and it needed one fast.

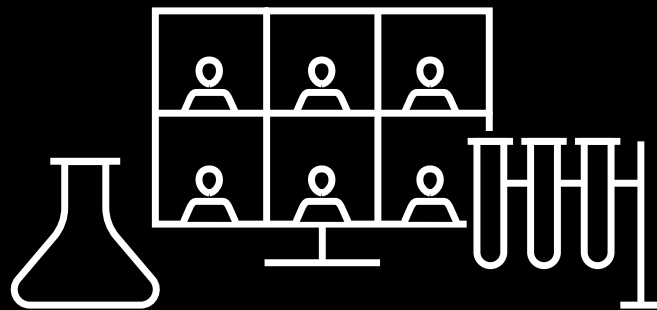
In 2020, the school launched two programs that would allow students continue their studies off campus. The first was a technology program designed specifically for students receiving financial aid, who could request laptops to stay connected while off-campus.

Some students who participated in the student technology program also did not have regular, reliable access to the internet while off campus, meaning they would only have half the technology resources they needed to learn in a virtual environment. To support these students, the university rolled out its second solution: a tech loan

Faced with an abrupt and nearly total shift to remote schooling for tens of thousands of students and faculty, the University needed agile, scalable solutions to ensure education continuity for a UI community spread across the country and globe.

program in partnership with Verizon. The initiative let students without internet access request smartphones and/or mobile hotspots to continue their studies during the campus shutdown.

A healthy, engaged community for the fall semester



As the fall semester came into view, the University of Illinois built on its spring successes, pursuing a flexible, blended approach that included online and in-person learning. Students and faculty members who felt safer meeting remotely could do so in virtual classrooms enabled in part by the Verizon-backed programs.

“Having that cellular connectivity has really allowed our faculty, our staff and our students to take advantage of those virtual offerings and to continue doing university business and research,” said Janet Jones, Associate Director of web and collaborative services at UIUC.

The university knew it would need to create a safe classroom environment to facilitate in-person instruction, and that meant finding a way to manage access to campus buildings. Built by the university and deployed in August 2020, the [Safer Illinois app](#) was that solution. The app served as a sort of digital boarding pass, ensuring that anyone seeking entrance into a campus building was cleared for entry. It also provided a broad range of resources supporting community health and safety, for example displaying information about on-campus COVID-19 testing for students, faculty and staff who thought they might have contracted the virus and notifying members of the community about possible COVID-19 exposure. Soon after releasing the app, the university rolled out the [Safer Illinois loan program](#) so that students without smartphones could receive one with the Safer Illinois app installed.

By quickly responding to the COVID-19 crisis with flexible programs that delivered timely access to student technology, the University of Illinois was able to scale existing capacity to support new students in the fall and lay a strong foundation for future educational enhancements.

“What we thought was going to be a short and sweet quick little project in March is actually still going on,” Jones said. “We still have the tech loan program, we still get requests

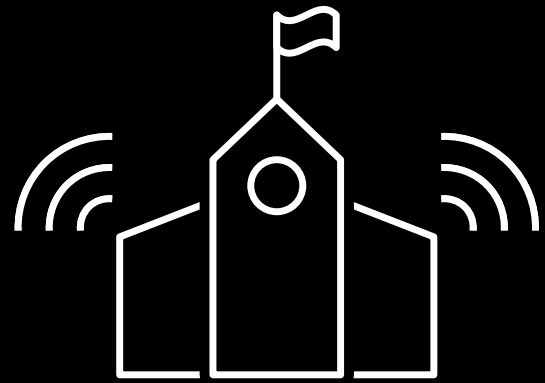
A multifaceted community required diverse solutions: a tech loan program, connected devices, on-campus mobile applications and widespread 5G infrastructure all worked together to support a successful remote and in-person environment.

for cellular internet connectivity and devices, and we’re still fulfilling those requests.”

The university was able to deploy the right technology at the right time thanks in part to its flexible contractual arrangement with Verizon, which let authorized faculty and staff members approve purchases within budget. University personnel could reach out to their Verizon representatives for assistance with their questions. The flexibility prevented bottlenecks in the provisioning process, letting the university quickly mobilize the technology it needed.

“Having the State of Illinois Central Management Services contract and being able to leverage that contract to ensure that all campus departments, colleges and groups are getting consistent pricing from a contract that’s already been vetted by the state and by the university has really allowed us to get the services very quickly,” Jones said.

Modernizing campus technology with 5G connectivity



Strong connections are the heart of the campus experience. This is as true for network connectivity as it is for the community bonds that enable learning and innovation. The university's close-knit IT team has steadily pursued 5G network projects that set the stage for a host of future improvements to support the evolving technology needs of students, faculty and staff. This customer-centric approach to IT service delivery begins with providing 5G network connectivity in the campus buildings.

The university's IT department had conducted regular surveys over the past several years to understand how well the existing technology in buildings at the Urbana-Champaign campus supported the people who use it. It learned that maintenance inspectors often could not get cellular network coverage while servicing basements and out-of-the-way areas in buildings. If an inspector was on-site dealing with a water leak, for example, there was a good chance they would not be able to receive phone calls or messages during that time, preventing them from coordinating their work or responding to other maintenance issues.

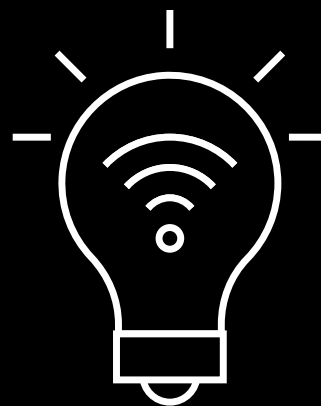
The university IT team shared this feedback with Verizon's regional office in Schaumburg, Illinois, to address the problem. Verizon examined the campuses' existing 3G infrastructure, evaluated the feedback and the network analytics it had on hand, and decided that the existing network was due for an upgrade.

In close coordination with the university's IT team, Verizon gradually implemented a holistic upgrade of the existing cellular network infrastructure, using network extenders and other devices not available when the original 3G network was erected. These enhancements laid the groundwork for future 5G connectivity, which will benefit the campus and its surrounding community.

The university also noted that over time, students weren't using the landline phones in the residence halls, preferring to use their cellphones instead. The university maximized its technology investments based on student needs and continued enhancements to cellular and Wi-Fi coverage.



5G network innovation



The University of Illinois Urbana-Champaign isn't simply a world-class name in research, teaching and public engagement – it also aims to be a leading public research university. The university's [Research Park](#) is an innovation hub for startups, corporate research and development operations. It's home to more than 120 companies across a range of industries including digital agriculture, financial technology, data science and digital transformation. It also hosts university startups that engage the ingenuity of both students and full-time tech professionals.

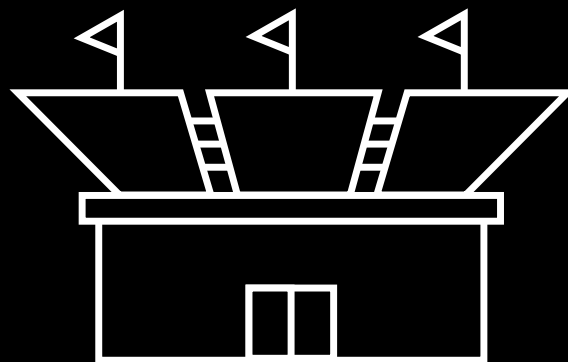
Thirty global corporations, including many Fortune 500 companies, have dedicated innovation centers at the Research Park. Meanwhile, the EnterpriseWorks incubator provides 43,000 square feet of space for laboratories, offices and collaboration areas for startups, which have received over \$1.1 billion in venture capital funding to date.

The university's innovation hub taps the student body in pursuing cutting-edge research. In October 2020, it became the first [Verizon 5G Innovation Hub](#) at a university research park or incubator.

The 5G Innovation Hub, located in the EnterpriseWorks incubator, will help students, corporations and industry partners develop, test and demonstrate 5G-enabled solutions. Verizon [5G Ultra Wideband](#) will drive research and development in machine learning, the Internet of Things, robotics, artificial intelligence, guided vehicles, drones, manufacturing automation, virtual reality, data analytics and more.

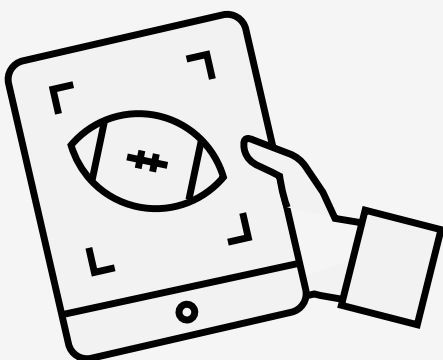


Delighting fans with 5G network enhancements for the stadium



As part of the initiative to make the campus 5G-ready, Verizon and the university wired up Memorial Stadium with full 5G connectivity. The stadium, one of the centers of campus life, now boasts double the network capacity it offered in 2019. Anyone who's attended a major sporting event knows that it can be challenging to feel plugged into the broader fan community when network service is spotty during big games. With Memorial Stadium's new 5G capability, Fighting Illini fans can now freely stream and post their experiences in real time.

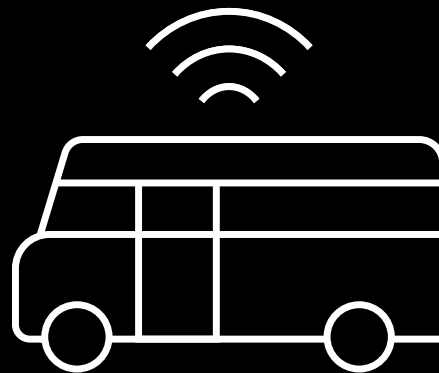
"It's a big achievement," said Marjanovic. "The athletics department has been a great partner with us, and they have been wanting to do something like this for a very long time. We've been able to work with them on improving the fan-base experience. This is just helping them enhance that level of customer experience and providing things to the venue that they normally couldn't provide."



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University's IT department

Creative transportation solutions for the community



About five months before the campus was shut down to prevent the spread of COVID-19, the University of Illinois launched [UI Ride](#), a shuttle service that operates between the University of Illinois's Urbana-Champaign and Chicago campuses and the Discovery Partners Institute in Chicago. The shuttles offer Wi-Fi access and convenient workstations to help students make efficient use of their commutes between the campuses and minimize travel fatigue.

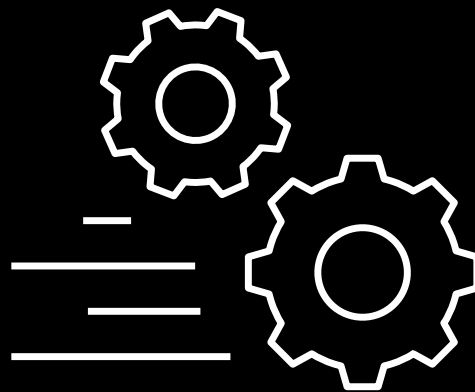
Although shuttle service was temporarily halted when in-person schooling was suspended, it is expected to resume once the pandemic abates. In April and May of 2020, working with public school teachers, the university sent [UI Ride shuttle buses](#) to neighborhoods without reliable internet access so that families with school-age children have the resources they need to engage in

remote learning. The UI Ride buses, which offer Wi-Fi within 60 feet of the vehicles, park in highly visible spots, and families can park their cars nearby or walk up and access the internet for free.

One other University-funded bus also helped support local communities. In addition to serving as a Wi-Fi hotspot wherever it goes, the [Hip Hop Xpress Double Dutch](#) bus, founded and directed by Dr. Will Patterson, is a mobile innovation lab. The Hip Hop Xpress team not only records local musicians and hosts presentations by local activists, but also works to address social inequities. Among other visits, the Hip Hop Xpress was at the Canopy Club in Urbana for the What's Goin' On? celebration in July 2020. It also rolled into Springfield, East St. Louis' the House of Miles and to Chicago's Musical Arts institute in October 2020.



Cutting red tape to open the door to innovation



UIUC's pandemic response was efficient and effective, in part due to its partnership with Verizon. The university team was able to hit the ground running and launch innovative initiatives quickly and efficiently.

"It was really awesome, and that's going to hold true as Verizon continues to expand the technology to include 5G in some of their sites, which we think is the hope," Marjanovic said. "We're excited about some of the

ideas that the Innovation Hub can bring – for example, some of the ties with [Amazon Web Services] and edge computing and connectivity for researchers. A lot of those conversations are still really in the early stages, but it's really exciting."

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