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University at Buffalo Information Technology 2019-2022 Strategic Report and Plan

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Today UB has an opportunity to build quality IT services that anticipate and withstand the frenetic path of technology in the coming years. As of 2018, UBIT is working with a platform on a pilot program exploring how AI can help us better support the campus community. By tapping into our extensive customer service knowledge base—both in the minds of our Help Center staff and the tens of thousands of requests they process each semester—we can train the AI platform to provide answers to customers' most common IT questions, like how to reset their UBITName password or find and download free software.

From finance to facilities to student success, Al could make UB more efficient by solving our most common problems, freeing up our staff to work on creative problem solving.

With our Al pilot, UBIT is laying the first bricks of our cognitive campus, and building the expertise needed to advise our partners on campus about how to best deploy these tools to get the greatest return. Al has the potential to be every bit as transformative as the Internet in how we work and learn.

UB shouldn't just be ready for the future—it should lead the charge.

J Pai Bill

J. Brice Bible
Vice President and Chief
Information Officer (VPCIO)

Building an Always-on Infrastructure

Availability, flexibility and security are the hallmarks of UB's always-on infrastructure. Critical systems have redundant links across multiple data centers, complete with 24x7 support and monitoring to keep institutional data safe and systems running.

Some steps UBIT follows to keep our systems secure include:

- Continuous scanning for security vulnerabilities and unauthorized configuration changes
- Whitelist security posture: Only enable access and services to authorized clients
- Three layers of firewalls: Perimeter, network and host
- Encryption in flight and at rest

- HIPAA certified systems available
- NIST 800-171 compliant research environment
- Restricted access to locked, alarmed data centers

The university's infrastructure is further supported through:

- Containers that deliver an efficient way to quickly deploy resources
- 2.5PB of redundant SAN storage

- A multi-platform environment that supports Linux, Unix and Windows
- Cloud-based services such as Google Mail, UBbox and Slate

VMWare

VMWare offers highly available virtual servers for central and distributed IT staff.

There are currently over **2K** virtual machines in use across UB.

The advantages of running VMWare include:

- Optimizing physical space
- Centralized management with simplified maintenance
- Ensuring full compatibility with enterprise applications
- Peace of mind from greater availability and easier recovery in case of disaster

Our network

UB distinguishes itself with three interconnected campuses, highly-trained network engineers and support staff and access to some of the fastest Internet infrastructure available.

High-capacity fiber optic networks

connect each campus. UB has constructed and owns an extensive regional fiber infrastructure that provides robust intercampus connectivity with ample capacity for growth. The available capacity on this strategic asset can be easily leveraged to support special purpose dedicated circuits for high-bandwidth connections.

UB maintains redundant connectivity to the Commodity Internet via dual redundant 10 Gbps links to separate providers. This connectivity is distributed to the campus via a highly redundant 10 Gbps backbone network with dual-building aggregation links, 10Gbps connectivity for servers and 1Gbps connections to the desktop as a standard. Wi-Fi connectivity is provided throughout the campus and supports eduroam federated access for visiting researchers.



eduroam hosted 867 devices from partner institutions and authenticated 3,853 devices for UB account holders traveling the US and abroad.

Eduroam is an encrypted Wi-Fi network used by UB and hundreds of participating universities. It allows students, faculty and staff to connect to encrypted Wi-Fi using their UB credentials at participating universities worldwide.

Wi-Fi Boost

Between 2015 and 2017, UBIT worked with the campus community to build a better Wi-Fi network across all three campuses as part of the Wi-Fi Boost project.

UB made a major investment in Wi-Fi infrastructure, allowing UBIT to double the campus' access points and upgrade UB's networks to the latest, fastest standard.

As a result, customer satisfaction with Wi-Fi has significantly increased according to the student IT survey and UBIT-led focus groups. Connectivity while roaming throughout the campus has improved, and outdoor Wi-Fi capacity is enhanced.

In the future, we look ahead to next generation Wi–Fi with expansion to outdoor spaces and exploring the impact of 5G cellular service.

Wired network upgrade

A full-scale upgrade to UB's wired network infrastructure is underway with an expected completion date of Spring 2019. The wired network upgrade will ensure

improved availability, performance, speed and reliability for years to come, while eliminating single points of failure.

In addition, the wired network upgrade will elevate the university's information security profile by making it easier to deploy services and solutions designed to keep the university's data safe. Since the university depends on the network for virtually all educational, research, business and operational functions, this upgrade will enable support for future infrastructure needs and capacity. This is especially important as the number of wireless and Internet of Things (IOT) devices relying on the university's network continue to grow.

Finally, the wired network upgrade will distribute functionality to the university's IT staff. This will empower IT staff across decanal units to move wired devices independently of central IT support, resulting in faster turnaround for network changes. In the future, software controlled networking has the potential of meeting the continually diverse needs of faculty and students as well as offering granular optimization of different types of services.





Enabling Collaboration Anywhere

The University at Buffalo is building an entirely new technology ecosystem for collaboration, with transformative potential for teaching, working and learning. This is just the beginning.

Recording by Panopto

Introduced in 2017, Recording with Panopto enables asynchronous instructional recording in and out of the classroom. Enhanced with screen recording, editing tools and automatic captioning features, videos are available for students to stream online or download as podcasts.

Panopto is a cutting-edge service that leverages convenience features for learners, such as the ability to make notes that link to specific points in the video's timeline, to greatly improve the value and appeal of remote learning.



"I know **learning by doing** is the most effective way, and **Panopto** can help me with that."

David Murray, Clinical Associate Professor, Jacobs School of Management

Webex

Launched in July 2018, Webex provides a suite of online collaboration tools—with the ability to host meetings, training sessions or large events with up to 1,000

participants—to every faculty, student and staff member at UB.



"We're being encouraged to do more and more online teaching activities. Although I embrace this trend, I don't want to lose the connection to my students either. I value real-time interaction between people—I rely heavily on feedback from students, verbal and non-verbal, to show they're engaged and not getting bored—and Webex should be the solution for that."

James Lenker, Associate Professor, Rehabilitative Services

This service fills a substantial gap in demand, as many community members have reported finding their own technology solutions for online meeting and collaboration, often at an individual cost.

Webex is just one feature in UB's growing ecosystem of collaboration tools that work together and connect to the existing UB services our customers rely upon.

As both Panopto and Webex were rolling out, an early adopters program was established with a mix of central and distributed IT staff and faculty to troubleshoot challenges, identify questions and provide training and education and determine scalability and adoption. Early adoption also allowed distributed IT staff more hands-on support from VPCIO staff during service implementation and the opportunity to provide feedback and suggestions for improvement or different needs that will benefit academic units.

UBbox

Introduced in 2015, UBbox is an unlimited, secure cloud storage solution for UB students, faculty and staff. UBbox enables collaboration with anyone, even those without UB credentials. The service allows customers to set permission levels so that collaboration can range from viewing documents to full editing capabilities.

Over **42K** UB students, faculty and staff are currently using UBbox

UBbox has built-in features for realtime editing, such as integration with Microsoft Office Online and Google Docs, making content revisions and collaboration more seamless. Recent enhancements to UBbox include Box Drive, which functions as a cloud-based network drive right from a customer's desktop.



"My students create a professional portfolio...I showed them how to share their folders with other students and give each other feedback in UBbox. They really liked it!"

Mary Dedrick, Director of Clinical Education, Department of Exercise and Nutrition Science

Graduates are eligible to opt-in to Box for Life. Alumni can take potentially terabytes of files with them after graduation, but need to stick to 50 GB or less in order to add new files.

UBbox can be configured to securely store HIPAA and other restricted data. This environment also includes folder and account management and logging through Splunk to further protect restricted data.

Jabber: UB phone & IM functionality on any device

In Spring 2018, UBIT rolled out Cisco Jabber. Jabber turns Windows and Mac machines as well as mobile devices into a full-featured alternative to desktop phones. In addition to sending and receiving calls, getting voicemail, participating in conference calls and more, Jabber adds the ability to use instant messaging and set custom status updates.

Jabber enables customers to place, receive and manage voice and/or video calls using an Internet-connected computer and a headset, or to open a text window to chat with colleagues who are also using Jabber. Early adopters who helped test the service include the College of Arts and Sciences and School of Management.

Some highlights of Jabber include:

- Status availability of co-workers and colleagues
- Customized availability states, such as "in a customer meeting"
- Communicating by instant messaging
- Multi-party conferencing and collaboration

Jabber is a great example of how UBIT is modernizing the university to meet our customers' needs. It transforms phones from a simple utility to a rich application that integrates with other collaborative services, increasing mobility and flexibility for campus community members. In addition, it is

a more operationally efficient solution because it integrates with security controls and campus data systems, as well as supporting ADA compliance and accessibility requirements.

Learning environments

UBIT understands that learning is no longer confined to classrooms. Collaboration tools need to be accessible on a variety of personal devices. Likewise, classrooms need to be designed for the latest technology.

To that end, UBIT collaborates with the Provost's Office and decanal units on the needs of their instructors. Recent upgrades to classroom microphones and cameras allow faculty and students to get the most out of Webex and Panopto's collaborative functionality. Centrallyscheduled classrooms are also equipped with adapter rings that allow faculty to connect their personal devices to the teaching station.

UBIT sees the need for transformative and immersive teaching and research environments that incorporate augmented reality, mixed reality and virtual reality. Technologies such as 8K video walls, large rolling screens and flat wall LED systems are all on the horizon.

UBIT has contracted with Top Hat, a classroom response system which offers a suite of interactive, online teaching tools designed to engage students. Instructors use Top Hat in the classroom to take attendance, design interactive

polls and discussions—and students respond in real-time using their phone or laptop. Thanks to UBIT's partnership with Top Hat, UB students now receive a discount for their Top Hat membership.

180 instructors and 15K students in over 230 courses at UB are using Top Hat

Training

Providing faculty, staff and students with technology is only part of our story. UBIT offers in-person training and on-demand video tutorials to students, faculty and staff. Our current video library can be found on the UBIT website and UBIT's YouTube channel.

Technology and pedagogy

UBIT and the Center for Educational Innovation (CEI) partnered in the design of Norton 7 in order to more closely align teaching technology with pedagogy. Incorporating the latest technology solutions into instructional learning spaces enables faculty to experiment with new technologies before their adoption across campus.

Norton 7 encourages faculty to try out the latest classroom technology and offers interactivity to plug into multiple wireless projection and camera projection.

Capen Hall executive conference spaces

UBIT has started to modernize meeting spaces in order to support innovative conference and collaboration technology. The goal is to ensure that rooms are ready-to-go and optimized for Webex and other conferencing and presentation tools.

In 2018, the President's Conference Room and the VPCIO Conference Room were upgraded in order to test drive the next generation of conference technology.



Wireless presentation technology

Crestron's AirMedia technology is built into every classroom in UB's new Jacobs School of Medicine and Biomedical Sciences building in downtown Buffalo. AirMedia allows anyone to connect and present media in the classroom wirelessly from a laptop or mobile device, enhancing opportunities for increased student engagement.



Enhancing Customer Engagement

From informal discussions with students to leveraging the expertise of UB's Faculty Senate, UBIT partners with the campus community at every turn to inform short-term decision making and long-term strategy.

Student engagement

Each fall, UBIT staff directly engage with the student body. In 2017, UBIT conducted our 20th student IT experience survey, which an average of 3,000 students respond to every fall. Services and vendor partnerships like discounts on the Top Hat response system all started as a result of student IT survey responses. Student survey feedback sparked the three-year Wi-Fi Boost project, which doubled the amount of access points on campus, and also solidified the

need for UBIT to use email to better reach students. In addition, UBIT has increased our involvement in new student orientation to ensure that students are in the know about IT services from day one.

UBIT also reaches out to leadership through the Student Assembly, Student Association and Graduate Student Association to conduct informal focus groups throughout the fall and spring semesters. Student feedback is invaluable; they tell UBIT how they are using, or not using, our services, and how

they feel we could improve or where we've been successful.

Often, ideas for new services come out of these sessions, most recently the Tech Squad, which allows students to request tech help from their residence hall or other on-campus location.

UB Tech Squad

UB Tech Squad was designed to deliver the same high-quality customer support to which UB students are accustomed, in an entirely new way: by empowering students to choose when and where they get help.



"My computer just shut off one night... it turns out there were over 500 viruses on it! [UB Tech Squad] deleted the viruses, installed antivirus software and then upgraded my operating system. It was free of charge, all within a day... I didn't have to buy a new computer!"

Allison Ariola, Transfer student, Political Science

Students use Tech Squad's online scheduler to pick a convenient time and place, and Tech Squad meets them anywhere on UB's campus. From the beginning (2016), Tech Squad was developed through student input, surveys and focus groups, to meet the need for flexible help with technology. The result is a customer-focused service platform standing by to help students from day one with their most common tech problems.



"When my laptop suddenly crashed, a friend of mine told me Tech Squad would be able to help. They took my laptop, asked me a few questions, then got back to me with a full report. They helped me back up my data and install the latest Windows OS. Don't hesitate to go to them if you have any issues with your computers."

Shamini Priya, Class of 2018, Communications

Faculty engagement

UBIT schedules focus groups with small groups of faculty at least once per academic year. In the sessions, faculty have a chance to provide valuable feedback on how to better get the word out about IT services to their peers, and share opinions on what tools they need to offer to gid their instruction.

In Fall 2017, UBIT launched a series of faculty town halls, which are repeated every semester. These forums give faculty the opportunity to engage in a two-way conversation with technical staff while participating in demonstrations of tools like UBbox cloud storage, Panopto course capture and Webex. Feedback from town halls allows us to better customize tools and tailor communications to address common faculty questions.

Faculty Senate IT Subcommittee

The Faculty Senate IT Subcommittee was formed during Fall 2016 at the request of the VPCIO and UBIT Faculty Fellow Valerie Nesset, Ph.D. This committee was tasked with addressing the rapidly advancing pace of technology and providing faculty guidance in steering the direction of UBIT services.

Their first priority was to develop a baseline for supporting further decision making. To that end, in 2017, the subcommittee worked with UBIT to develop the first-ever Faculty IT Survey. Data collected during that survey prompted several new initiatives, including the Faculty IT Liaison program and a series of ongoing Faculty Town Hall events that were designed to engage faculty and promote two-way communication between the faculty and IT staff. The subcommittee also helped to develop a policy for security standards on devices, written with faculty in mind.

Faculty IT Liaisons

The Faculty IT Liaison program is a collaborative team composed of faculty members and IT staff, meeting regularly to unpack and experiment with campus technology together in order to foster better communication, understanding and awareness.

Applications are solicited from faculty, with an emphasis on those who can best demonstrate how typical customers approach and use technology. These applicants also learn technology best practices from IT staff that they can take back to their unit.

The first liaison groups met during Spring 2018, and, through a series of collaborative design sessions, explored ways to improve UB's email (Exchange/Outlook), cloud storage (UBbox) and learning management system (UBlearns).

Usability studies: A deeper dive into how customers use technology

In addition to these conversations, UBIT conducts usability studies with students, faculty and staff at least twice each year. These studies often focus on new and upcoming services, but UBIT also regularly reviews existing services for opportunities to improve. By carefully watching how a student or faculty member interacts with technology, often in their own office or working environment, UBIT is able to address pain points that technical staff are simply unaware of.





Delivering Operational Excellence

UBIT works with colleagues all over campus to deliver desktop support, device management and creative solutions for contemporary work and research.

Collaborating with distributed IT community

VPCIO staff partner with distributed IT colleagues to ensure UBIT is providing efficient and effective solutions for business needs and customer profiles. Leadership from administrative and academic units meet at least monthly to discuss and prioritize projects and ensure consistent and compliant service delivery across the university.

IT working groups composed of central and distributed IT staff connect diverse perspectives, business functions and working environments. The collaboration helps identify challenges and opportunities existing within a highly complex IT environment. IT working groups help UBIT design and implement formalized technical training programs and to set operational and technical standards.

UBIT also hosts a series of "tech reviews," which are forums that allow all distributed and central IT staff to review the latest services or changes in more technical detail. These forums are a mix of brief town hall style talks that end in roundtable discussions.

The VPCIO's area often serves as consultants to the distributed IT community. The consulting role is mutually beneficial as it promotes shared learning experiences and fosters more efficient business practices.

VPCIO staff also assist with classroom and laboratory computer imaging, virtual desktop and traditional computer lab management for School of Management, University Libraries and the Law School.

Student Life VPIT transition

During Summer 2017, Student Life IT Services were incorporated into the VPCIO's area. UBIT now supports IT services for Student Life, the VP for Finance & Administration, University Communications and the Office of the President. The support model includes desktop support, application support, technical project support and IT procurement consultation.

UBIT has made great strides to support a seamless and effective service transition. Service support initiatives include:

- Consolidating Executive Support for 4th-5th Floor and 1Capen
- Refreshing Capen Hall Executive Conference Spaces

- Applying new security standards
- Introducing Box and Box Drive for file storage
- Upgrades to Windows 10 and Office 2016
- Standardizing departmental software and configuration
- Implementing SCCM System to aid in software deployment and management
- Establishing consulting services
- Consolidating requests into the UBIT Help Center Online
- Providing event support and equipment loan

Partnership for transition of Research Institute of Addictions

UBIT has worked with the Research Institute of Additions to transition to enterprise IT services, such as UBmail powered by Exchange, UBIT firewall, VPN and VLAN services, virtual machine hosting and database hosting as department IT support services, including workstation support. The goal is to create economies of scale for all parties and provide for future IT infrastructure and support needs.

Managing devices across the university

Device management offers faculty and staff a more efficient support environment and also allows for more robust device security.

To manage Windows devices across decanal units, UBIT has deployed SCCM. This service runs on Microsoft's System Center Configuration Manager and has managed computers in UB's public computing sites for over 10 years.

SCCM offers UB the ability to:

- Deploy operating system images to new hardware, or reimage existing machines
- Create and deploy your own applications, or choose from a library of common software
- Gather managed machines into collections based on name or login
- Take inventory of hardware and software, and generate reports
- Collaborate with other departments securely

UBIT will also offer advanced privilege software such as Make Me Admin to allow faculty and staff members with legitimate requirements to update academic or research-required software on university-owned computers, without the risk of running an administrative account at all times.

Customer discounts through vendor relations

The Device Standards Group, chaired by Martin Camacho, Assistant Dean for Technology with the College of Arts and Sciences, has successfully negotiated with Dell to offer the same systems available to the institution to students, faculty and staff for personal use.

The pricing model is the same, but they are required to pay sales tax. The Device Standards Group is currently working with other vendors to try to offer the same discount to campus constituents.

Modernizing IT services

Over the last few years, UBIT has focused on modernizing our infrastructure. All mainframe applications have since been retired.

In January 2018, the Wings web hosting service was retired after over 20 years. As a result of combined efforts with University Communications and administrative and academic units across campus, a total of 480 sites were reviewed, 300 of which were decommissioned. The remaining 180 sites were migrated into the UBCMS or WebApps.

WebApps is a container solution that uses RedHat Openshift. It uses a software code repository (UBVCS) for managing scripts and provides each organizational or developer unit autonomy. Unlike Wings, WebApps offers the ability to routinely upgrade the software and operating system. It is a flexible, scalable solution that can grow with university demands. WebApps allows developers to select from a variety of tools including PHP, Perl, Node. js, .NET, Java, Ruby, Python and MySQL.

In 2016, UBIT deployed a line of adapter rings to each centrally-scheduled classroom. These allow faculty members to connect nearly any device directly to the teaching station for instruction purposes. The teaching station is equipped with a VGA. HDMI and 1/8 inch audio cable.

Strategic staffing and procurement

Thanks to increased automation and strategic relocation of some services to the cloud, UBIT continues to strategically align staff to top priorities.

Central and distributed UBIT staff are evaluating the feasibility of implementing Low-Code development platforms. These platforms enable application software creation through graphical customer interfaces and configurations rather than through traditional computer programing.

Low-Code platforms will enhance the productivity of application developers and the speed by which new innovative applications can be deployed. These platforms support enterprise and distributed application development and utilize both cloud and on-premise virtual deployment platforms. These tools will be utilized by UBIT's application services team in order to:

- Remediate at-risk applications
- Facilitate integration between onpremise and cloud applications
- Facilitate agile development for new applications

From the procurement side, UBIT has worked to consolidate similar contracts and conduct competitive awards. Whenever possible, similar products are consolidated to avoid duplication. A comprehensive trade-off analysis for cloud vs. on-premise is conducted.

Data governance and project prioritization

The University Data Governance and Project Prioritization and Reporting Initiative is a collaborative effort that brings together the VPCIO area and university partners. Its purpose is to align IT priorities with university objectives, promote project awareness and foster engagement and input on university data and project priorities.

The Data Governance & Prioritization Council was commissioned by the Provost in 2016 and an IT Portfolio Advisory Committee supports the counsel's initiative review.

The Data Governance Council includes university leadership and provides strategic data and systems oversight. The council:

- Provides executive guidance on data definitions and processes
- Reviews university IT projects for status and alignment to university priorities
- Sets priority order for top IT system projects
- Resolves policy, resource, and alignment conflicts
- Reviews and provides guidance to the Provost with respect to initiatives or programs that require university investment

UBIT by the Numbers



31K Simultaneous devices (As of October 23, 2018)

13GB
Normalized peak

4K

UB devices

authenticated worldwide on eduroam (9/18)

701

Guest devices

authenticated on eduroam (9/18)

99.999% Network uptime

6.25GB

Normalized average

over 24 hours

UB's network is comprised of a diverse range of devices, and the number of devices continues to grow.

Within just a few years, we expect UB's network to peak at over 500,000 devices.

148K

Unique devices

(October 2018)

30K

Windows

17K

1.5K

Linux

35K

Gaming and media devices

47K

iPhone, iPad, iPod

18K

Android devices

114

Windows phones

23 Blackberry

University at Buffalo Information Technology

Applications



UB/earns
90K Customers
8.2K Courses (AY2018)

As of 10/30/18

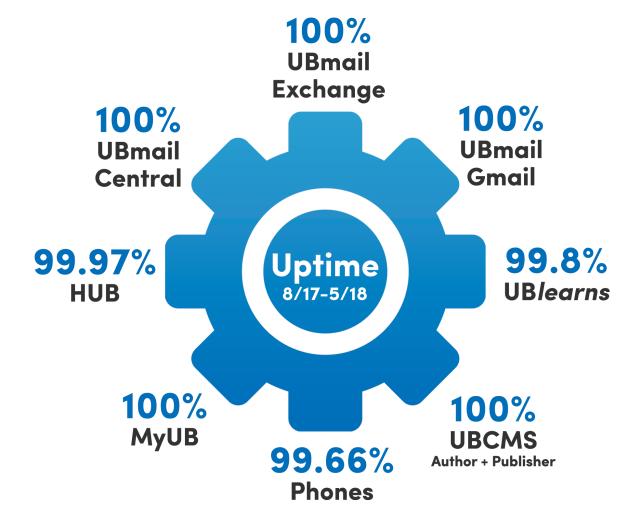
Panopto[™]
14.3K Customers
334K Hours watched
As of 10/30/18

Cisco
WCC

1.3K Customers*

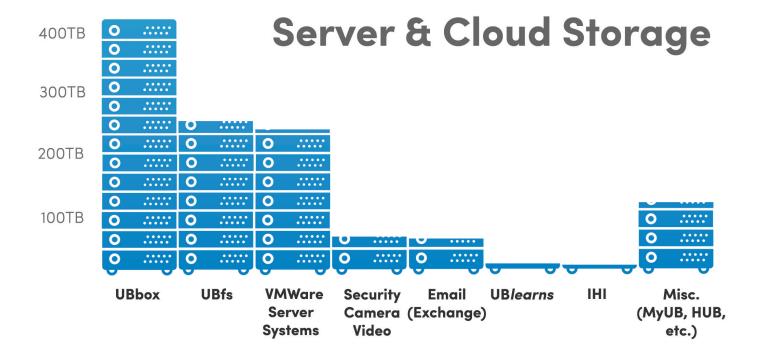
3K Meetings**

* Since 7/24/18 ** 8/18 - 10/18



UBIT by the Numbers





Backup Storage



University at Buffalo Information Technology

Customer Service 8/1/17 - 5/19/18



- 5 Accounts
- 182 **Applications & Software**
 - 1 Classroom Technology
 - 2 **Departmental IT Support** Email & Calendaring
- 17 File Management
- 88 **IT Security**
- 177 **Network Connectivity**
- 59 Other
 - **Phones & Conferencing**
- 3 **Public Computing & Printing** Web, Database & Server Hosting



2.4K

Applications & Software

1.1K 2.8K Other

Email & Calendaring

965

Management

10.3K

Accounts

264 **Departmental IT Support**

Tickets opened

215 Classroom **Technology**

Phones & Conferencing **Public Computing** & Printing

3.7K **IT Security**

> Web, Database & **Server Hosting**



Growing Research and the Cognitive Campus

From creative problem solving to cutting-edge research, innovation thrives at UB. Our campus community inspires us to continue evolving toward safer stewardship of data, and more responsive support for our customers.

Artificial intelligence (AI)/Chatbot

Leveraging AI technology, UBIT is developing a virtual customer assistant that uses AI to provide convenient and on-demand answers to customers' most common technology problems.

By analyzing thousands of customer service records, a prototype of the chatbot can already link a customer to free software downloads on the UBIT website based on their campus affiliation, simply from knowing their UBITName.

In the future, the assistant will also be trained to assist in UBITName password resets and other "first level" tasks, all in a matter of seconds and at any time of the day or night.

Not only will this project allow us to meet or exceed the level of service provided by institutions like ours, but by leading the charge in implementing "smart" technology today, we can demonstrate its value to others on campus and provide insight and assistance in how it might help them streamline instruction, services and support.

Partnership with Institute for Healthcare Informatics

The Institute for Healthcare Informatics (IHI) has joined the UBIT virtual machine infrastructure using UBIT firewall, VPN and VLAN services. This leverages UB enterprise services, creates economies of scale for both UBIT and IHI, and provides IHI with the ability to scale their infrastructure as the need arises.

Expansion of this service will include adding "HIPAA" class data from other affiliates, which will enhance UB research activities.

NIST research environment

In recognition of the growing research community at UB, the Information Security Office created the Information Security Compliance Analyst role in December 2017. This position collaborates with faculty and distributed IT professionals in order to ensure that research environments comply with NIST standards for information security and privacy. This includes collaborating with Enterprise Infrastructure Services on the development, building and implementation of the central NIST 800-171 compliant virtual desktop environment.

The NIST 800-171 compliant environment:

- Supports the increased awareness of security standards and guidelines
- Supports the development of security expertise in the IT disciplines (i.e. network, etc.)
- Supports the IT security needs for sponsored and funded research

UB's School of Pharmacy is the first partner to utilize the environment.

Awareness

Awareness, communication and collaboration are key to supporting faculty research. To that end, the Compliance Analyst fosters working relationships with Sponsored Projects and the research community.

Adaptable and nimble

The Compliance Analyst is responsible for collaborating with distributed IT professionals and faculty in order to identify and evaluate when a specialized research environment is more appropriate than the standard NIST 800-171 compliant environment. The project team adapts the security controls accordingly. For example, specialized equipment may not be able to function in a standard environment. Therefore, compensating controls or other features will be implemented in order to ensure appropriate security compliance.

Looking ahead

Deploying the NIST 800–171 compliant environment is the first step of an ongoing initiative. Once the environment is in place, demonstrating information security compliance and executing data use agreements or contracts will require minimal effort from the faculty or distributed IT professionals.

Because the landscape of information security is ever-evolving, the Compliance Analyst will conduct cyclical auditing and update the environment accordingly. The audit also provides VPCIO leadership with valuable data points for information security compliance.



University at Buffalo Information Technology

Setting Standards for Security

Securing the availability, confidentiality and integrity of institutional data is critical to UB's vision. That's why the university's standards for, and approach to, information security are evolving.

UB's security standards for endpoint devices and servers

Information security risks are complex and ever evolving. UBIT tackles these risks through educational outreach, technical safeguards and policy implementation. In order to align business functions with best practices for information security, the Provost directed the VPCIO to oversee a coordinated, institution—wide effort.

As a result, the Minimum Security Standards for Desktops, Laptops, Mobile and Other Endpoint Devices and the Minimum Server Security and Hardening Standards were developed and implemented in Fall 2017.

David Costello, Assistant Dean with UB's School of Management heads up the Endpoint Security Committee (subcommittee of the Device Standards Group), which serves as a resource for the distributed IT community. With central

investment and resources from the VPCIO area, the Endpoint Security Committee's goal is to educate the distributed IT staff on certain tools, share knowledge between departments and bring forward new ideas for consideration.

The School of Management beta tested storing Category 1 Restricted Data in the UBbox environment. This project included the creation of the administrative account, assigning appropriate permissions, using Splunk for monitoring file changes, folder management and changing the workflow of business office customers to ensure appropriate controls and handling of information.

Why security matters

UB's security standards help ensure the availability, confidentiality and integrity of university data and the network infrastructure. The university's shared commitment to information security also provides faculty with a competitive advantage when seeking research funding. Many organizations expect federally-compliant information security measures, such as NIST, to be demonstrable at the point of contract funding. Therefore, adopting these standards proactively supports the university's vision for impactful research.

What's next?

UBIT continues its outreach with schools and administrative units to inventory equipment, understand needs and impact and develop a plan for compliance. This process aims to balance appropriate security practices with customers' needs. UB schools and administrative units are given the authority to develop and manage security standards compliance exceptions to suit their unique needs and environments. In addition, UBIT is working with the distributed IT leadership to pre-approve software in order to allow updates to run without administrative rights. Doing so will reduce the need for customers to request software updates and experience downtime. We also expect that automatic software updates should help reduce the Help Center requests fielded by both UBIT and the distributed IT community.

HIPAA compliance

With the continued growth of the research and medical environments at the university, UBIT recognized the need to provide centrally-supported, HIPAA-compliant services for our customers. UBIT has worked to meet technical and procedural requirements needed to become HIPAA compliant, with a focus on adequately safeguarding electronic protected health information (ePHI).

Effective December 2017, the VPCIO area is designated as a HIPAA covered function operating under SUNY's HIPAA covered entity. As a covered function, UBIT supports the School of Dental Medicine's EHR system and UBbox environment. Additionally, UBIT supports the College of Arts and Sciences' Speech-Language and Hearing Clinic's effort

to be designated as a HIPAA covered function.

UBIT staff who work with the systems that store, process or otherwise manage ePHI are trained in order to ensure that proper protocols and regulations are followed. This training is offered using the UB EDGE online training class.

UBIT Security Awareness Program

IT Staff Training

The Information Security Office provides required training to all new UBIT staff and student assistants. The training is also available by request to other administrative and academic units. As of Fall 2018, training is offered through Inspired eLearning's security awareness product hosted on UB EDGE as a selfpaced, fully interactive online module. This training is customized for UB and includes our policies, terminology, data access roles and campus-specific information. The training is very adaptable, allowing a learner to begin at a level that suits their current skills and knowledge.

Campus Outreach

The Information Security Office engages with the campus in order to promote the importance of keeping the university's information and systems safe and secure. The ISO offers information security and security awareness presentations to any unit upon request. The ISO frequently participates in outreach at events such as Orientation for New Hires, WellFest, and UB Business Days for faculty and

staff. The ISO also provides awareness materials during annual new student orientations and move-in. Posters, bus headliners and information cards are posted and distributed throughout the campus to build greater awareness of phishing and how to avoid having personal information stolen.



ISPAC

In April 2017, at the request of the Provost, VPCIO Brice Bible established the Information Security and Privacy Advisory Committee (ISPAC). ISPAC's goal is to address information security and data privacy concerns in order to manage sensitive data areas throughout the university.

ISPAC evaluates, develops and recommends information security and privacy policies, procedures, and operations vital to protecting and sustaining UB's mission. ISPAC's members represent a majority of the functional units throughout the university.



