A YEAR IN REVIEW

MSU IT has taken on several initiatives in the past year to support the Spartan community and improve the Spartan experience. These initiatives align with our mission to implement and maintain practical information technology solutions that provide the platform for Michigan State University to excel in research, education, and outreach. We invite you to explore the endeavors presented in this report.

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Looking back on the progress we made this year, there are many people to thank who contributed to the MSU IT transformation. The efforts of our staff, administrators, and peers have helped us advance our mission to implement and maintain practical information technology solutions for our university.

Over the past year, we have built on a platform of progress started in 2014, including a new world-class data center, ubiquitous Wi-Fi in all residence halls, IT security modernization, and formal service and project management programs.

Our transformation leverages organizational structures and renewed capabilities to offer:

- Greater emphasis on innovation, enhancing academic and research-centric services and solutions to open new opportunities and digital channels for MSU
- An effective governance model to strengthen partnerships, accountability, and transparency into MSU’s technology decisions
- An increase in the quality of services offered to colleges and departments
- Development methodologies designed to better respond to changing demand and quickly move from ideas to actions
- A well-structured network and infrastructure portfolio ensuring efficient and reliable connectivity, collaboration, and data storage capabilities for MSU

MSU IT has made significant strides guiding our people, processes, and technology—the core of who we are, what we do, and how we do it. These advances are detailed in the following pages. We are proud of the MSU IT team and all that has been accomplished in this past year. As we look to 2019/2020, we advance with renewed strategy, expanded partnerships, and a great team to support our pioneer land-grant university.

Go Green!

MSU IT Senior Leadership Team
FOR A BETTER MSU

MSU IT has undertaken several projects in the past year to strengthen the MSU community. Read on to learn about initiatives taken on to improve the student, staff, and faculty experience.

Supporting Digital Accessibility

This year marks the creation of the Digital Content and Accessibility Team (DigitalX) to further support digital access and inclusion for all Spartans. At MSU, we are making it our goal to remove barriers for persons with disabilities by making websites and digital experiences accessible to everyone. Performance data gathered by the DigitalX team reveals an increasingly positive trend for MSU’s Digital Accessibility Services. Over the past year, Digital Accessibility Services has quadrupled the number of closed-captions and transcript minutes facilitated. They have also trained numerous faculty, staff, and students and continue to make courses more accessible through proactive DigitalX partnerships.

- 40,000 minutes of closed captions and transcripts generated last year
- nearly 150 faculty & staff attended DigitalX Accessibility training last year
- about 250 course materials created over the past year
- 563 courses were made more accessible through DigitalX partnerships
Empowering Diversity in IT

In May, MSU IT hosted EmpowerIT 2019 at the Kellogg Hotel and Conference Center. The Empower IT mission is to create a positive community of women, minorities, and allies in IT and adjacent professionals who engage in mentorship, fellowship, continued education, community outreach, and confidence-building initiatives. This year’s conference provided attendees with mentorship opportunities, professional networking, and skill development. It was held to inspire professionals working in the IT field and focused on topics such as morale, job performance, and employee retention.

42% registration increase

over 2018

400+ people attended

EmpowerIT and the Digital Access and Inclusion Conference
Investing in Our People

The ITnext series of employee development and engagement workshops helped onboard new team members, accelerate the understanding and delivery of critical projects, and manage change concerning critical processes. Events included the Security Summit and IT Welcome Sessions, Spartan 365 Mail Migrations, Effortless PC, Unit IT Discovery, and Digital Access & Inclusion conference. MSU IT also hosted Big Ten Academic Alliance conferences for IT Administrative Information Systems Directors and the IT Accessibility Group.

Culture Committee

The MSU IT Culture Committee organized several annual team building events, including a golf outing, football Saturday party, and student appreciation picnic. Following the 2019 Polar Vortex, we held a series of ice cream socials, featuring MSU Dairy Store ice cream, to celebrate the IT employees who supported critical operations during the subzero temperatures that forced the university to cancel classes—for only the seventh time in 164 years!
The new 25,191 square-foot MSU Data Center has become the new home to several faculty and student systems. Colleges and departments have migrated approximately 1,700 virtual machines, and major units like the Institute for Cyber-Enabled Research (iCER) host their high-performance workloads in the facility. MSU has also partnered with other educational institutions in the state to provide colocation space in the Data Center.

The new facility allows major academic units and departments to have their own dedicated rack space housed alongside other university and enterprise-wide systems with the benefits of a modern facility and automated monitoring. Colleges and departments can also explore virtual server management, or cloud-hosted services, which eliminate physical hardware maintenance.

1,700 virtual machines migrated to the new MSU Data Center

21 academic units moved data to the new MSU Data Center

Data Center project was completed 4 months ahead of schedule

$5.3 million under budget
Security

MSU Information Security leverages a “defense-in-depth” approach to securing MSU assets. Understanding that all technology has flaws and weaknesses, MSU’s Information Security team takes a multilayered approach to its security practice. While many of those layers concentrate on securing as many systems as possible, assets that carry the highest risk receive additional protections to ensure they are safeguarded appropriately.

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vulnerabilities remediated</td>
<td>57,749</td>
<td>156,309</td>
<td>66,584</td>
</tr>
<tr>
<td>Security incidents</td>
<td>876</td>
<td>1,157</td>
<td>2,828</td>
</tr>
<tr>
<td>Systems enrolled in endpoint protection</td>
<td>15,957</td>
<td>21,012</td>
<td>26,478</td>
</tr>
<tr>
<td>Systems enrolled in patch management</td>
<td>6,921</td>
<td>8,145</td>
<td>18,195</td>
</tr>
<tr>
<td>Attacks caught by secondary protections</td>
<td>3.3M</td>
<td>19.7M</td>
<td>68M</td>
</tr>
<tr>
<td>Viruses stopped by endpoint protection</td>
<td>43,730</td>
<td>101,158</td>
<td>68,278</td>
</tr>
</tbody>
</table>

More is Not Worse

Figures, like the ones listed above, that indicate multiple negative security events (such as viruses detected on systems) are not necessarily a bad thing. While it’s never desirable to have a malware infection—or to find vulnerabilities on systems—data points such as these are signs that attackers were caught before they could cause damage. This multilayered approach is intended for one layer to catch what another misses. While each system has inherent limitations, the purpose of a full suite of safeguards is the best way to form an effective security solution.
Spartan 365

As part of our effort to integrate all Spartans onto the same campus-wide system, Spartan 365 is offered to most campus users. Spartan 365 is a suite of Microsoft Office software customized and configured for MSU’s unique environment. It provides users with Microsoft OneDrive, Word, Excel, PowerPoint, SharePoint, Teams, and more for campus-wide messaging and collaboration.

Identity and Access Management

MSU IT persistently works to keep user information safe. The core of this security is provided by the Identity and Access Management team. The primary tenet of information security is that the appropriate people have the correct level of access to the information necessary to perform their work. By making access and logins uniform and simple, the Spartan community can quickly access what they need when they need it without jumping through unnecessary hoops.

As the next year begins, improving how Spartans get access to information critical for their role at MSU will continue to be our primary focus. We look forward to simpler two-factor authentication, fewer logins, and more things “working” when you need them to.

Improving Campus Collaboration

The university is improving security and collaboration by connecting Spartans to the same campus-wide systems. MSU is unifying campus in three areas: email, workstations, and servers. Presently, MSU IT is working to consolidate local unit technology by combining the multitude of different email servers on campus into Spartan Mail. Unifying Spartans on the same system allows for seamless collaboration and improved security.
MSU App: By Students, For Students

The MSU App is the embodiment of the power of student contribution at MSU. It was originally created as a capstone project by students and developed in partnership with RHS, ASMSU, and University Communications. The app is continuously growing in popularity and has over 20,000 downloads and served approximately 4,000 new users at this year’s New Student Orientation (NSO). It allows users to read the latest MSU news, see a listing of upcoming events, view dining hall menus, explore the campus map, and submit user feedback. The feedback is sent to the development team who review it and incorporate changes each month. Students can also personalize their schedule for NSO, view their class schedule and grades, and see CATA bus routes. The Analytics and Data Solutions team at MSU IT has also enhanced the campus map and wayfinding interfaces.
Microsoft Teams for Students

In early 2019, Teams became available for all students. Teams is a chat-based workspace tool provided at no cost for students, faculty, researchers, and staff. This collaboration application can be used across multiple devices and stores conversations, files, and tools in one team workspace. With Teams, students can chat privately or with a group, share and edit files, co-author documents, track changes, assign tasks for projects, and make audio or video calls—making projects easier to manage. Teams also integrates with the Spartan 365 suite, like Microsoft SharePoint and OneDrive. Recently, MSU IT partnered with Student Affairs and Services to improve communication and collaboration among registered student organizations through Teams. As we enter the new academic year, more than 900 MSU registered student organizations will have a dedicated Team to use among their members.

Supporting Students Worldwide: Sunapsis App Implementation

This year, the Analytics and Data Solutions (ADS) team took steps to benefit our international students by providing support for Sunapsis. Sunapsis is an international case management software that supports the Student and Exchange Visitor Information System (SEVIS). It uses data to manage information on prospective international students and ensure they continue their experience at MSU without interruption. The ADS team contributed to the project by gathering the data feeds required for its implementation. This project was sponsored by the Office for International Students and Scholars (OISS).
Hub for Innovation in Teaching and Learning Partnership

In partnership with the Hub, the academic technology consultants of MSU IT launched two new courses on Coursera, an online learning platform. MSU IT also offered video production services to the Hub.

**Additional Classroom Support**

<table>
<thead>
<tr>
<th>Count</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,285</td>
<td>MSU Coursera courses completed</td>
</tr>
<tr>
<td>2 new</td>
<td>MSU courses launched on Coursera co-developed by our team</td>
</tr>
<tr>
<td>150,000</td>
<td>active learners participated in MSU Coursera courses</td>
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<tr>
<td>635,754</td>
<td>forms scanned at the Scoring Office</td>
</tr>
<tr>
<td>19,136</td>
<td>Qualtrics surveys created since June 2018</td>
</tr>
<tr>
<td>15,000</td>
<td>real training workshops provided to faculty</td>
</tr>
</tbody>
</table>
Progress for Student Financial Aid

MSU awards financial aid to tens of thousands of students each semester. This year, the Office of Financial Aid and MSU IT collaborated to improve this process by introducing a new financial aid system. This system manages award acceptance, notifications, and disbursements, including scholarships, grants, federal aid, and Parent PLUS loans.

The MSU IT Analytics and Data Solutions team also created two new reporting views related to the newly implemented ProSAM applications: Pell Grant eligibility and student award details. Collectively, these enhancements serve to assist financial aid staff and to improve the student experience through better navigation and real-time data integration.

D2L Accessibility Services

MSU IT is improving course accessibility with the D2L course inventory tool—a free service for faculty and instructors teaching credit courses in D2L. This tool allows MSU IT to prioritize what course content should be evaluated and updated for accessibility and usability. The tool also provides a course accessibility report to assist with simple changes and identifies items that could be barriers to learning. MSU IT further supports accessibility through providing captioning support, faculty accessibility training, and universal design for learning best practices.
Our success relies on continuous investment in our people, process, and technology. Our strategy is guided by the MSU IT vision and directs us each year when developing our annual goals. Last year was unprecedented as we integrated technology and multiple IT teams from across the university into one unified team. Our Big Six transformation deliverables helped us focus on the people, processes, and technologies that positively impact our MSU partners the most.

**IT Transformation**

Serving the university puts our mission statement into practice. We aim to provide top-notch service in every aspect of IT—from calls to our service desk to providing high-end data solutions.

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1. **Common Core Workstations**
2. **Single Sign-on Capability**
3. **Spartan 365 Migration**
4. **Talent Management**
5. **Governance**
6. **Contracts and Licensing**

We invest in our people to foster personal and professional growth.

With an effective process, we establish effective governance and increase efficiency.

Our innovative technology solutions enable the university’s research, education, and outreach.
Access Management

MSU IT is increasing business efficiency with Forms Tracking Utility (FTU). This system enables paperless business transactions through electronically routed, multi-signature web forms. FTU supports automated form routing and approval tracking, single sign-on capabilities, route customization, and a common record of approvals.

Simplifying Connectivity: Eduroam

MSU IT provides global Wi-Fi compatibility between academic institutions and organizations with Eduroam. With this international roaming service, users can access the wireless networks of any other participating institutions by using their home institution credentials. Visitors to MSU with Eduroam are supplied with easy access to Wi-Fi on campus and the MSU community is given access to the networks of other institutions.

Solutions for Health Care

The MSU IT Analytics and Data Solutions team continues to support health care at MSU. This year, ADS completed development of the financial reports and dashboards for the MSU HealthTeam. In addition, the support model has been incorporated into MSU IT by transferring the infrastructure into the MSU Data Center, providing desktop support, and stabilizing the IQ SharePoint environment.

Zoom is a cloud-based solution for high-quality video and audio conferencing that is available for free to MSU faculty, staff, and students.

Did you know?
Zoom webinars can host video calls with 500 participants.
**Effortless PC**
As a part of the ongoing effort to provide a consistent Spartan experience, MSU IT introduced the Effortless PC workstation menu. The MSU IT team carefully weighed and evaluated workstation use across the university and selected computer options that meet or exceed the needs of 90 percent of faculty and staff members. Effortless PC is designed to decrease unit cost by approximately 10.5 percent, shorten deployment time, and increase security.

**Video Production Services**
MSU IT video production services have livestreamed 14 events for a total of 22 hours of live captions. In addition, they have developed new video production workshops for the campus community. These workshop sessions offer 27 total hours of instruction and have been taught 10 times throughout the year.

**MATLAB**
Michigan State University and MathWorks, in coordination with the MSU Tech Store, announced a new and more effective way for Spartans to access MATLAB toolboxes at MSU. MATLAB is a software platform that enhances teaching and research for MSU staff, faculty, and students. It combines a desktop environment optimized for analysis with a programming language that expresses matrix and array mathematics directly.

**Client Services**
IT Client Services provides the highest quality technical support services to deliver an outstanding Spartan experience and drive value through the support of practical information technologies for research, education, and outreach. The MSU IT Service Desk is the single point of contact to the user community for communication, coordination, and support of technology at MSU. Over the past year, the average wait time for help dropped from over three minutes to only 47 seconds.
Supporting Course Development

MSU IT is improving course development and accessibility for effective student learning by funding online and blended learning support. By working with various instructors and courses, departments can suggest improvements. Additionally, MSU IT provides review and consultation on the development of five-year accessibility plans and annual self-reviews.

New Digital Signage

MSU IT is working to provide campus with new digital signage. In the upcoming academic year, we will provide a central solution that will allow units to customize their own content. Located throughout campus, these signs will display maps, directions, and timely messages throughout the day.

Supporting College of Veterinary Medicine

Unifying systems and getting help from IT means a lot more than a tech upgrade. In places like Veterinary Medicine, it can mean real-world experience for students. MSU IT is supporting CVM by implementing a new electronic medical records system, Instinct. Instinct introduces students to a modern records system similar to what they may use when they go into practice upon graduation.
Inspiring Innovation: Spartahack V

In January, Michigan State University hosted its fifth-annual student-led hackathon with over 500 participants. This weekend-long event encouraged student developers from all backgrounds, skill levels, and fields of study to get creative, network with peers and industry members, and forget how to say “I can’t.” Many individuals and group teams competed in challenges to win prizes and awards.

Science Gallery

MSU IT partnered with the Hub and academic units on campus to support an initiative of the Global Science Gallery Network (GSGN) art installation. MSU IT contributed to the endeavor through its instructional designers who developed programs, supported technologies, and planned educational events, including The STEAM Engine. They also assisted with communications, experience design, and training and curriculum for Science Gallery’s mediators.

Finding Our Voice Exhibition

MSU IT supported the MSU Museum with the Finding Our Voice: Sister Survivors Speak exhibition. The Analytics and Data Solutions team contributed by developing a web mapping and mobile application for the event which was inspired by hundreds of teal ribbons tied around campus trees in 2018 as a tribute to survivors of assault. The visual art, poetry, text, and audio encourages interactive dialogue with all visitors, instills a charge to build a better world, and serves as a reminder to other survivors that they are not alone.

As an educational institution, it is our responsibility to provide opportunities for growth, learning, and development throughout the university. MSU IT positively contributed to this mission by partnering with our community.

OUR PARTNERSHIPS
SIS Modernization Project

In December 2018, Michigan State University’s Board of Trustees approved the Student Information System (SIS) Modernization Project to implement a new SIS. MSU’s SIS serves the entire academic community and supports students throughout their academic journey. This includes admissions applications and financial aid offers, accessing MSU’s schedule of courses and managing enrollment, as well as grade submission and degree conferment. Modernizing SIS is a major investment in undergraduate and graduate student success at MSU and will offer a more personalized student experience and provide robust analytics and metrics. SIS is administered by four lead units with support from MSU IT. MSU Chief Information Officer Rob McCurdy served as a member of the Executive Committee for the project. He provided strategic direction and support while working with the committee which offered oversight, guidance, and approval for major parts of the project. After implementation completes in spring 2021, MSU IT will become instrumental in supporting and maintaining the new SIS.

Facilities Connect

MSU IT is supporting an IPF-led initiative to implement a new facilities tool, Planon. This tool will replace the 20-year-old FAMIS System. It will collect asset information and maintenance data and place it in one tool which is intended to ease the planning and execution of maintenance work. The project is currently in phase one, with implementation expected to begin in 2020.
MISSION

Implement and maintain practical information technology solutions that provide the platform for Michigan State University to excel in research, education, and outreach.

VISION

Exemplify visionary leadership and deliver effective technology solutions to enable Michigan State University students, faculty, and staff to positively impact vital global issues.