Information Technology Futures Report

The Office of Information Technology
Portland State University

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Portland State
Office of Information Technology

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Preface: Why an IT Futures Report?

As an industry, information technology (IT) has continued on an aggressive path of growth since the advent of modern computing in the mid-1960s. In less than 60 years, technology has permeated almost all aspects of society and today, eight of the top ten largest organizations in the world are technology companies that didn't exist before 1980. It is now so ubiquitous, we often fail to see how it has changed the ways we live and work. One example of this growth and our dependence on technology is the recent computer chip shortage that has almost halted automobile manufacturing. Modern cars can't be built without 100 or more microprocessors each, some use over 1,000 per car. This growth of high-tech electronics in autos is only projected to increase as we move into the age of autonomous self-driving.

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Technology hasn't left Higher Education untouched and there has been a similar 60-year steady growth of computing, from the systems that operate campuses to the ways instruction is delivered. In addition, the technology our students use to learn, communicate, and interact is evolving quickly. By almost all available measures, the rate of technology growth is accelerating and many colleges and universities across the country are struggling to keep up with the needs and expectations expressed by students, faculty, and staff.

While technology continues to grow and consume more time and resources, many higher education institutions are struggling with stagnant or declining student numbers. This puts increasing pressure on university budgets and challenges IT departments to meet growing demands while reducing resources. Most recently, the pandemic has sped up the rate of technology growth and placed technology at the forefront of university responses in instruction and employee support.

Portland State University finds itself in this exact situation: growth of IT across campus, coupled with associated pressures for IT to support and integrate systems, are at odds with a steady reduction in available resources due to budget cuts. While this is not new, and OIT has successfully managed a reduction in resources while meeting growing demands for many years, an inflection point has been reached where core IT is now increasingly forced to say "no" to new requests or delay responding to requests for six to twelve months or even more.

It is in this dynamic environment that President Percy commissioned the OIT Futures work to help define what IT services will be needed to be successful in the near and long term. The genesis of this report came out of the PSU Futures work spearheaded by Dr. Laura Nissen. She engaged with OIT to lead an IT futures exercise with a broad campus group of student, faculty, and staff constituents. A similar exercise was held with all OIT staff, and finally,a campus committee worked on the report over three months. The results are summarized in this document.

Kirk Kelly
VP and CIO, IT
Portland State University

The Process

Planning for the Future Exercise:

In November, 2021, Laura Nissen led the IT Futures Planning Group and the PSU Futures Collaboratory through a Futures Exercise to imagine the future of technology at PSU. During this session a wide array of campus partners discussed technology trends on the upswing, downswing and what's around the corner, as it relates to national signals and PSU. These discussions encompassed six key subjects:

1. Technology and Equity
2. Technology and the Future of Instruction
3. Technology and the Future of Instructional Spaces (in person vs. online)
4. Technology and the Future of Work
5. Technology Expectations Ahead (from students perspective)
6. Technology Expectations Ahead (from PSU workforce perspective)

Resources collected from the IT Futures Session:

- Breakout group worksheets, with ideas and input in each subject
- A campus wide exercise in imagining OIT's future: Pre-reading Reflection Notes
- Pre-reading Signals: Future of Technology in Higher Ed

OIT Fall 2021 All Staff Meeting:

Following the Futures Exercise, OIT replicated this same activity with OIT employees in an all-staff meeting. You can view more from those discussions and brainstorming sessions in the OIT Futures Worksheets.

Huron Consulting Support Services Findings

Concurrently with the IT Futures Report, Huron Consulting was engaged in a campus-wide Support Services Review initiative, which included participation from OIT. The findings from Huron were not available at the time of publishing this report.

The Future

The future promises even more rapid change and at times, chaos:

- OIT will be expected to perform with extreme agility, similar to the COVID-19 pandemic response
- There will be a continuing need for integration of technology within most aspects of our organization; using technology for connecting and communicating will continue to grow
- Crises' will continue to evolve, such as continuation of pandemic response, climate change, fires, and civil unrest
- The landscape for higher education will become more competitive, such as the enrollment crisis and eroding public perception of the value of higher education
- The "great resignation" phenomenon will continue to make hiring and retaining employees challenging

The university's approach to this rapid change and chaos will define the student and employee experience. IT will play a key role in successfully navigating the future changes and challenges, but can play a more innovative role by implementing targeted, strategically selected approaches.

Approaches to the rapidly changing technology needs in higher education

PSU uses technology to disrupt, not reinforce privilege

We are an access institution, and we are proud of this. We believe in diversity, equity and inclusion: we have the most racially diverse campus in Oregon. If we fail to provide our students with a modern and efficient digital experience, privileged students will out-pace those with fewer resources. Also important, is PSU's commitment to serving students locally: we are striving to serve more Oregonians and other students in close proximity to PSU. This approach is supported by both PSU's Mission and the growing diversity of PSU students and staff.

Portland State University is leading the way to an equitable and sustainable future through academic excellence, urban engagement and ***expanding opportunity for all****.*

Growing diversity

Portland State University (PSU) is leading the way in diversity among public universities in the state, as well as social mobility nationwide. As PSU doubles down on efforts to expand diversity among administrators, faculty, staff, and students, concurrently PSU ranks No. 1 in the state and top 10% nationwide for Social Mobility[1] - enrolling students with low-income backgrounds and graduating them into jobs.

> *"We will double down on our efforts to expand diversity-among our administrators, faculty, staff, and students-and ensure success for all"[2].*
>
> Strategic Priorities, President Percy

Facts By the Numbers - PSU Students (2021)[3]

48% Identify as non-white

46% Receive Pell Grant

80% Oregon Students

46.2% First Generation

65% Receive Financial Aid

[1] Ranking by CollegeNet, Inc. places PSU in top 10% nationwide and No. 1 in Oregon for Social Mobility
[2] Strategic Priorities to Strengthen PSU
[3] Source: Facts: PSU By the Numbers

PSU embraces a ***Digital Transformation*** approach to technology innovation and change

Digital Transformation (Dx) is an approach that involves deep thinking about the core of what we do, and using technology to enable new educational and operating models, transforming the way PSU delivers on its mission. Some examples of what might be included in a Digital Transformation project naturally emerged from the futures exercises:

1. Transform the ***student*** experience to provide the highest level of technical infrastructure and support so technology enhances student success

Our commitment to students: We will not leave you behind due to lack of technical resources or poorly designed technology. This is backed by our mission statement: *Leading the way to an equitable and sustainable future*. Aim for a return on investment: students select PSU because of our commitment to a superior digital experience. There are many possibilities in this category, including:

- Transform how we support our transfer students, who make up over 69% of our graduates. For example, design solutions to provide a simplified and transparent process for future transfer students who have declared PSU to be their graduating institution, as soon as we are aware of their intentions.
- Provide rapid delivery of technical equipment and support for classrooms and meeting rooms as the requirements evolve based on faculty and staff design and innovation.

"Students select PSU because of our commitment to a superior digital experience."

- Become a service-first organization for all points of student interaction, including students with future plans to transfer to PSU. Fast, accurate, supportive, inclusive service delivery anywhere and any time a student asks for help. For example, use chatbots, text-support, virtual appointments, artificial intelligence (AI) service guides, just-in-time service replaces waiting in line or on hold.

- Simplify Processes with Technology. With scarce resources, reducing the amount of human touch involved in standard processes will be invaluable to the university; for example, moving to a 100% paperless organization.
- Modernize, consolidate, and properly resource identity and access management, including both digital identity and modern access control such as using a smartphone instead of a traditional ID card.

2. Transform the ***employee*** experience to provide the highest level of technical infrastructure and support so technology enhances employee retention, satisfaction and success

- Employee satisfaction and success often translates into student success.
- Move all employee onboarding, offboarding and other administrative processes online, fully supporting employees virtually.
- Streamlined approvals for routine job-related activities, particularly things that can be done via multiple devices.
- Provide fast, accurate, supportive, and inclusive service delivery anywhere and any time an employee asks for help.

3. Transform our approach from reacting to anticipating

- Watch trends, and provide timely solutions to support university innovations, such as transitory and flexible use of space, highest quality of remote technology for instruction, collaboration, and community presence regardless of physical location.
- University commitment and focus on agreed upon future IT solutions is paramount to success. PSU cannot do it all–we need to get better at deciding what *not* to do, and stay focused on what we have agreed to do.
- Provide technology to support a flexible workforce, such as needed support for remote work, meetings, hoteling, shared workspaces, virtual collaboration, etc.
- OIT is sufficiently resourced to collaborate and provide support for current university priorities, such as the President's Strategic Priorities.

- Some longer-term examples might include:
    - Provide virtual reality (VR) simulation labs
    - Use AI to improve our processes and services, such as a virtual classroom assistant or a student communications assistant
    - Implement a modern, agile HR, finance, and student information solution (e.g. replacing or augmenting Banner)
    - Create an identity around PSU's focus on *slowing and reversing Climate Change*, using technology

4. Provide seamless access to information, that is easy to find and use for all

- Partner with the campus to create a new online space dedicated to internally facing content (i.e. an intranet).
- PDX.edu becomes a more nimble, external-facing website to support recruitment of new and transfer students, and promote our stories and successes.
- Connect the diverse array of campus services by creating one place for answers to common questions, online request tracking, unified chat, etc.
- Invest in data analytics and reporting to provide decision makers with the information they need to drive success.

5. Security, Privacy and Accessibility transforms into a differentiating feature of the PSU experience

- In the future, PSU is differentiated by our commitment to Security, Privacy and Accessibility: we protect your identity, we respect your privacy, and we are an intentionally inclusive institution.

6. Stop supporting outdated, duplicated or inefficient technology

In order to be ready and available to respond to new things, and adapt to what this report identifies as future changes, it's incumbent upon the organization to eliminate the old, creating capacity for the future.

- Evaluate existing enterprise solutions before implementing additional solutions. Consolidate whenever possible.
- Examine computer lab traffic and convert underutilized computer labs into student collaboration spaces.
- Facilitate a paper-free educational experience by reducing demand for printing.
- Eliminate all paper forms, across all departments.
- Continue our “cloud smart” strategy, reducing unnecessary locally hosted systems.
- Replace traditional phone lines with modern modalities such as cloud voice, video, text, or chat.
- Eliminate outdated systems by implementing lifecycle management of all services, technologies, and tools. Prepare and implement service retirement plans.
- Stop expecting employees to work with outdated technology. For example, provide and implement a plan to refresh desktop and laptop systems on a regular basis. Up until 2010, the University used Certificate of Participation Bonds (COPS) to fund campus-wide replacement of computers and technology. A replacement program should be reinstated and properly staffed.

Conclusion

How to successfully meet our future

OIT has engaged with a wide array of stakeholders from across campus to talk about the future of technology at Portland State. We want our institution to disrupt, not reinforce privilege, and provide opportunities for all. We want to embrace a Digital Transformation approach, reshaping how PSU delivers on its mission, through a deep examination of how we operate, and connecting that thinking to ways that technology can make significant and coordinated improvements. A first phase of a Digital Transformation program at PSU might focus on the following areas:

1. Transform the student experience to provide the highest level of technical infrastructure and support so technology enhances student success.

2. Transform the employee experience to provide the highest level of technical infrastructure and support so technology enhances employee retention, satisfaction and success.
3. Transform our approach from reacting to anticipating.
4. Provide seamless access to information that is easy to find and use.
5. Security, Privacy and Accessibility transforms into a differentiating feature of the PSU experience.
6. Stop supporting outdated, duplicated or inefficient technology.

Challenges

In September of 2021, OIT leadership compiled a list of strategically important project requests that are on hold due to limited resources. This "no" list is broad and unfocused: many PSU departments are in acute need of additional IT solutions, but a cohesive order or strategy to these requests is lacking. As we consider the future of IT for PSU, it is important to frame it from within our current situation. OIT has learned to do more with less over years of budget cuts and staff reductions, but as the compiled list of rejected projects shows, the department is sorely in need of additional resources–just to meet current demand, let alone keep pace with PSU's technology needs of the future. PSU prides itself on innovation, and there is great passion across campus for using IT to be more innovative and efficient, yet a larger picture of wholeness is missing from the institution-wide approach to IT. A new approach is needed for managing budget crises: OIT cannot continue to reduce and reorganize to meet campus goals and stay abreast of future technology changes and innovation.

What's next?

The scope of this report organized and evaluated the ***why*** and the ***what*** *that* needs to be considered for the future of IT at PSU, in particular for students and staff. ***How*** we proceed is beyond the scope of this report, and will require a solid partnership between OIT and its campus partners to be successful. Also, beyond the scope of this report is the evaluation of the future of IT for research, scholarship and knowledge creation activities. Additional planning should be completed to provide focus on these areas.

Each moment in time offers an organization an opportunity to look ahead and greet the future with resource planning backed by forethought and visioning. Those that seize this opportunity will be rewarded with a more stable, reliable organization that is viewed as innovative and a desirable place to be by students, faculty and staff. Given the rapidly expanding use of IT across all industries, investing in technology for higher education not only makes sense, it is imperative for survival.

Appendix

Resources

1. Exercise to Imagine the Future of Technology at PSU:
    a. Breakout Group Worksheets (p.5)
    b. Pre-Reading Reflection Notes (p.5)
    c. Pre-Reading Signals (p.5)
2. OIT Fall 2021 All-Staff Meeting - Imagining the future of technology at PSU:
    a. IT Futures Input Worksheets (p.5)
3. Huron Consulting Report Services Findings (will be attached, once available)
4. PSU's Mission Website: Our Mission, Our Values, Our Position (p.6)
5. Ranking by CollegeNet, Inc: PSU Ranked in Top 10% Nationwide for Social Mobility (p.7)
6. Facts: PSU By the Numbers (p.7)
7. Strategic Priorities to Strengthen PSU (p.7 & 10)
8. Impacted Services in OIT: a living document maintained by OIT Senior Leadership to document services we are not able to continue providing or may stop providing, due to resource constraints. (p.11)