

Carleton's Technology Needs and ITS Strategic Priorities

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Technology is constantly in flux, and ironically that volatility makes the creation of strategic priorities even more important. The question for every institution is when to shift direction in response to emerging technologies, and the impact of doing so. Those pivotal moments are aided by having a clear understanding of current priorities.

Carleton has already committed to a number of technology initiatives that are going to require significant focus from ITS. In this document, we will describe those “[pillar projects](#)” (shown in blue) and other current priorities across 6 critical planks. These ITS priorities will be subject to annual reflection and potential re-prioritization to accommodate emerging needs.

#1 EXCELLENCE PERFORMING I.T. BASICS [not shown in attached “grid view”.]

The foundation of every Information Technology department is providing strong support for users within the existing environment. ITS has the following priorities in this aspect of our work:

1) provide a [more reliable classroom technology environment](#) with faster response time for faculty while they are teaching, 2) continue to improve our planning skills and ability to make good commitments and meet them, 3) provide more opportunities for ITS staff development and more redundancy in supporting critical services, 4) improve data security in a thoughtful and strategic way, and 5) maintain and advance all aspects of our technology services.

#2 CENTRAL and SELF SUPPORT

ITS is working to build a more robust “service buffet” for our clients to increase the number of ways our clients can find help, including more opportunities for them to reach out as part of a self-initiated search for answers. These efforts will be enabled by selecting and implementing a [new ITS ticketing software package](#). Another key piece is improving the quantity and quality of documents found in our Service Catalog. In order to provide multiple ways for faculty, staff, and students to get the help they need, an easy-to-navigate source for self-help documents that ties in to our ticketing system is vital. Finally, we intend to increase the number of ways we are asking our clients for feedback on the quality and types of support they are getting (and choosing to pursue), and to increase our training, particularly for new hires, on what services and support options are available.

#3 ENHANCE TEACHING, STUDENT LEARNING & COMPUTATIONAL RESEARCH

Recent new faculty have had a marked increase in their demand for [computational research](#) infrastructure, which is emblematic of how an increase in quantitative methods provides rich scholarship opportunities for Carleton faculty, staff, and students. These methods and outputs also create bridges between disciplines, encouraging --if not requiring-- broad collaboration. Building from these experiences, Augmented and Virtual Reality become more thinkable as teaching, learning, and research tools. Additionally, teaching online--whether via hybridization of Carleton face-to-face courses or via fully online courses shared across LACOL (Liberal Arts Consortium for Online Learning) --seems a real and useful possibility. Helping our students navigate these larger shifts with experiences designed to be critical, inclusive, and which employ salient digital tools in order to practice students in these areas *while at Carleton*, helps prepare them for life beyond.

#4 TRANSFORM DATA INTEGRATION & PROCESS EFFICIENCY:

Over the past five years, there has been a dramatic increase in the availability of tailored software solutions for functional areas across campus. This has raised the need for an [enterprise software review](#) to ensure that Carleton is best served and best positioned. The proliferation has generated a growth in the need for strong business analysis and awareness of the effort and complexity of the data connections. There are emerging tools to create an abstraction layer to better manage the timeliness and accuracy of the data being moved between these systems. In addition, the rise of CRM (Customer Relationship Manager) software like Salesforce has raised the possibility of enhancing our advising of the whole student by putting the right information at the fingertips of those who support our students. The projects in this category are designed to move Carleton forward in how we gather and make the best use of the information that we collect.

#5 MODERNIZE WEB & MOBILE PLATFORMS:

Web Services is in the early stages of [Web2020](#), a multi-year transition from Reason to WordPress. The newly designed Admissions site launched on the new platform on May 15, 2018, with the remaining 600+ sites to follow over the coming years. This transition provides Web Services the opportunity to benefit from the work of other schools and companies who build WordPress plug-ins, reduce the CMS (Content Management System) footprint by identifying the right tool for the job given the tools that are available today, and reduce the amount of custom code we put in place, which also reduces the maintenance burden. Although the staffing is currently unclear, we know there is strategic importance to clarifying Carleton's mobile strategies - in terms of what is offered to our students and other constituencies via apps and how best to support the emerging trend towards student-created apps. We believe that Web2020 will bring transformational change to Carleton in the area of web services.

#6 EMBRACE CLOUD & SHIFTING I.T. INFRASTRUCTURES:

ITS is working closely with all of Carleton's contractors on the [new science complex](#) and related construction projects. This is an opportunity to continue building a 21st-century IT infrastructure, with a special emphasis on the growing demand for wireless service and flexible networks to support new teaching spaces, labs, and study areas. We're also working hard to modernize our datacenter and server platforms. In particular, we're looking closely at GCP (Google Cloud Platform) as an opportunity to begin deploying production systems in the cloud for disaster recovery, redundancy, and flexibility. Over the next few years, we'll be evaluating the cost-effectiveness and value of this approach, through the hosting of WordPress and our authentication infrastructure. The latter will provide long-needed business continuity (for Gmail, Slate and other cloud-based services) in the event of an outage associated with our on-campus datacenter or Internet connections.

Strategic ITS Initiatives for the next 3 years (FY19-21)

YEAR 1
(FY19)YEAR 2
(FY20)YEAR 3
(FY21)

- **Pillar Project: a new ticketing system**
- Implement a new ticketing system

BLEND CENTRAL & SELF-DIRECTED SUPPORT:

- Improve the ITS Service catalog, focusing on client usability, and assign an ITS owner/shepherd of the catalog
- Develop methods for continuous feedback from clients on quality of support
- Develop on-boarding training for new Carleton faculty and staff. Work with HR in supporting tech professional development
- Use client feedback to iterate on client-facing aspects of ticketing system, including self-directed support resources.
- Use client feedback to iterate on Service Catalog, emphasizing seamless flow between self-directed and central support.
- Use client feedback to iterate on methods of providing support, adjusting structure and processes of Helpdesk as needed.
- Conduct bi-annual MISO satisfaction survey. Explore options to evaluate effectiveness of Lynda pathways and other training
- On-going gathering of client and technician feedback
- Complete creation of a publicly shareable set of support metrics and regular reporting
- Consider need for 24x7 support, and different methodologies for achieving this.
- Share results of MISO survey. Implement joint assessment program with HR regarding campus-wide tech training

Pillar Project: computational research

- Establish research computing coordinating group and support roll-out of NSF cluster
- Work with various campus partners to pilot e-portfolios and explore approaches to student digital literacy
- Work with Carleton faculty to continue CUBE courses and create courses to be shared with LACOL schools
- Develop framework for the ways that design principles and visual thinking positively impact the teaching and learning experience

ENHANCE TEACHING, STUDENT LEARNING & COMPUTATIONAL RESEARCH:

- Explore cloud options for research (AWS Educate, Google Cloud for Educators)
- Evaluate e-portfolios and work with CELT and LTC to develop workshops on student digital literacy
- Collaborate across LACOL to reflect on shared courses and appropriate next steps
- Make app store available for comps students. Explore adoption of Universal Design/Accessibility
- Further research computing in new science complex and evaluate projections of storage demand
- Report out on e-portfolio work to the campus community and discuss if a "Carleton e-portfolio" is of interest
- Test and scale up AR Hololens classroom system and rollout AR framework
- Evaluate Carleton's current digital learning environment, including LMS (Moodle), WP, bepress, etc.

TRANSFORM DATA INTEGRATION & PROCESS EFFICIENCY:

- **Pillar Project: enterprise systems review**
- Modernize the Hub - develop timeline. Begin implementing modules delivered by Ellucian (incl. Student Financials and Financial Aid)
- Student 360 - pilot (in Salesforce) the tracking of student interactions with selected offices
- Identify opportunities for process reviews in Colleague (e.g. HR) and process automation in OnBase (e.g. digital signatures)
- Deepen understanding of Ellucian Ethos and other options for more effective data integration
- Modernize the Hub - implement delivered Self-Service, including Student Planning. Redevelop custom Hub functionality
- Student 360 - potentially implement campus project
- Process Automation - analyze Reason workflows and develop plans for new solutions to those needs
- Modernize Integrations - select integration tool(s) and create a pilot
- Prepare for review of alternate enterprise systems
- Complete Student 360 and provide training and assessment
- Review (Saas) software selection process for departments
- Modernize Integrations - begin campus-wide implementation

Pillar Project: Web2020

- Translate the Reason design (standard theme) to WordPress
- Develop custom applications (events, etc) built on data abstraction layer, when possible
- Migrate 2-3 pilot sites and a collection of academic sites to WordPress; conduct training
- Evaluate and select 3rd party tool for new Athletics site
- Develop and communicate mobile app strategy, including support levels and procedures for student-created apps
- Custom application work related to migrating sites. Develop additional data integrations
- Migrate admin sites to WordPress; conduct training
- Launch new Athletics site
- Custom application work related to migrating sites
- Complete WordPress migration (with minimal stragglers into FY22)

MODERNIZE WEB & MOBILE PLATFORMS:

- **Pillar Project: New/Renovated Science Complex**
- Install network, classrooms and labs in Science Addition and support associated office/lab moves
- Deploy authentication infrastructure to GCP for disaster recovery
- Plan for network core replacement
- Reflect on network design, including role of firewall and desired isolation of risk and desired commonality with St. Olaf
- Renovate network, classroom and lab spaces in Hulings/Olin
- Explore Google Cloud Platform (GCP). Define costs of local infrastructure on per-service basis
- Deploy new network core and associated infrastructure
- Plan network-level DR for essential campus buildings
- Iterate on and refine networking, wireless, cellular amplification and classroom and lab spaces throughout complex
- Begin moving production workloads to GCP as appropriate and cost-effective
- Continue buildout of redundant physical network

EMBRACE CLOUD & SHIFTING IT INFRASTRUCTURES:

May 24, 2018