Athabasca University

Athabasca University's Digital Transformation
5 Year IT Strategy

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Our Strategy

As Canada's only digital learning university, created by Alberta innovators, Athabasca University's classrooms, collaboration spaces, and student hubs are not bricks and mortar, but **Cloud & Code**. Our 5-year strategy is to provide complete flexibility and accessibility to our online students in our province, across Canada and the world. We will create a cloud-based digital learning environment that encourages learning for a lifetime and provides a collaborative engagement space for students, professors and researchers to continuously innovate in digital pedagogy, applied augmented intelligence, and online learning experiences. Further, as we learn and improve on our digital transformation, we will invite universities and colleges across Alberta to be a welcome part of Canada's digital learning environment of the future.

Our Focus

Simply, our focus is to provide the highest quality Canadian digital learning experiences to learners of all ages, regardless of their location anywhere in the world. To provide this focus, we will ensure that all of our digital systems are stable, financially sustainable, highly flexible in upgrading and evolving, and provide innovation opportunities for our students, staff, faculty and researchers. In order to focus on our new strategy, we will stop previous habits that have prevented Athabasca University's digital environment from moving forward and keeping pace with the demands of our digital learners:

- We will encourage innovative code configuration ideas by focusing on system interoperability over custom coding.

- We will free up our talented team to work on modern university-wide systems and approaches by retiring obsolete systems.

- We will ensure security and stability of our global learning environment and its supportive administrative software solutions in a cloud-based approach across our digital ecosystem.

- We will expand and enrich lean governance and management practices in a commitment to openness, transparency and clarity.

Our People

Our 5-year IT Strategy rests wholly in the passion and dedication of our diverse technical talent. We reside across Alberta; working in Athabasca, north Edmonton on the St. Albert border, and in the downtown Edmonton core. Over the 5-year plan, we, as a semi-virtual IT organization, are committed to embody the movement of our Athabasca University Strategic Plan's Four Strategic Directions by our plan title, **RISE**: an acronym that defines how we will show up, support each other, and realize our university-wide *Imagine* plan.

We are Moving Beyond OPEN by being *Responsive* to the needs of our global community of learners and professors, ensuring they have the digital tools and platforms they need to collaborate, learn, and innovate.

We are Moving Beyond the NORM by being *Innovative* in our approach to using the best of open source and purchased solutions combined with an ecosystem of technology specialists in media-rich learning productions, virtual reality, augmented reality and artificial intelligence to build and continuously improve the digital learning environment of the future.

We are Moving Beyond PLACE by being *Sustainable* in ensuring our cloud-based architecture, supported by our trained cloud infrastructure management team, provides security, stability and growth opportunities for Athabasca University's digital innovations and those of our partner universities and colleges.

We are Moving Beyond NOW by *Engaging* in our workplaces, online, and in our communities, seeking opportunity to connect and support each other and encouraging a culture of lifelong learning and digital entrepreneurship.

Finally, we will **RISE** in awareness across Alberta and Canada by attracting and retaining diverse talent who share our passion for empowering learners everywhere by creatively integrating the best of mobile and accessible learning tools and platforms.

Strategy + Focus + People = Vision
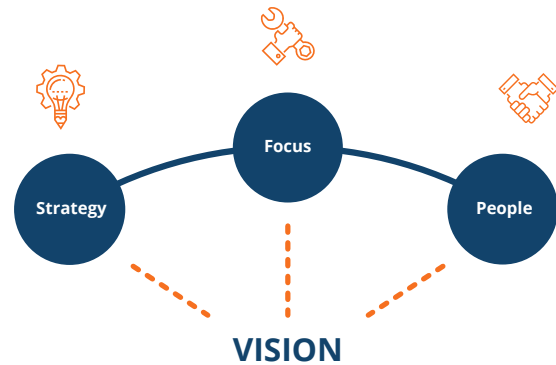
VISION

As Team **RISE**, our vision is a re-imagined Athabasca University digital learning environment where learners of all ages and stages can seamlessly interact with learning experiences asynchronously or synchronously, online or offline, mobile and in-place. Our vision is a **Cloud & Code** campus where the very best of open and proprietary tools ensure better learning outcomes for our students and better learning creation capabilities for our professors.

Our role as the facilities management of our **Cloud & Code** campus is to retire code when it is obsolete and no longer offering value to our students. In a continuous improvement mindset, we will research and suggest technical tool solutions to meet the desired learner experiences defined by the academy: best-of-breed learning management systems (LMS), massive open online courses (MOOC), blockchain identity management, ePortfolio, social engagement, gamification/badging, mobile, learning analytics, OER creation, virtual reality, augmented reality, artificial intelligence and others as they emerge over the next 5 years. We will professionally integrate all parts of the learning experience ecosystem of the future, ensuring learner data is secure, governed and follows best practices in data integrity. Finally, we will ensure a digital learning environment that allows students to learn about their personal education journey over their lifetime and allows our professors to understand and continuously improve digital learning at scale across all learning experiences in the environment.

Integration with IT Operational Plan & University *Imagine* Plan

RISE: Athabasca University's Digital Transformation has nine core goals with objectives under each that will allow us to realize those goals. Separately to this document, we have also created a supporting 5-Year IT Operational Plan that starts at the objectives level and drills down to the tactics, effort analyses and measurements.

Each of our nine 5-year goals on the following pages underpin our cultural commitment of Team **RISE** to embody the movement of our Athabasca University Strategic Plan's Four Strategic Directions. Following our nine goals and supporting objectives is an alignment map that visualizes how each of our Team RISE IT strategic goals supports the university-wide goals in the overall Athabasca University Strategic Plan, Imagine: Transforming lives, Transforming communities.

5-Year Goals

1.

Architect Athabasca University's digital strategy that will enable a re-imagined semi-virtual AU organization and its innovative learning environment for our learners.

1.1 Define with the Provost office, the digital learning environment of the future to serve students across their lifetime of learning and identify existing products and emerging technologies that meet that criteria.

1.2 Ensure the functional academic, research, and administrative capabilities in the current environment are roadmapped to the desired future environment to determine decommissioning, modernization and prioritization.

1.3 Build a flexible and adaptable Canadian-region cloud strategy that allows for media-rich courses easily accessible by all learners, even if in rural, remote, or international locations.

1.4 Identify and prioritize the IT investments necessary to modernize existing services deemed core, to acquire new core services with the required capabilities to achieve the desired future environment, or to decommission service and migrate required data.

1.5 Create and maintain a conceptual architectural reference model of identified existing core services, proposed future services, and their inter-dependencies.

1.6 Establish an enterprise-level service for course and program evaluation.

1.7 Establish an enterprise-level social networking service for current students and staff.

1.8 Work with stakeholders to establish a standard exam management system across the organization.

1.9 Work with stakeholders to develop a document management framework for all types of learning content, including media-rich content, currently on a multitude of platforms.

2.

Map the AU student body's digital experience across current IT products and services to create a data-informed, responsive and adaptable student services framework that is mobile and engaging.

2.1 Build a modern user experience (UX) practice to inform choices in best design and accessibility practices.

2.2 Create and maintain a conceptual map of all existing and proposed online student services and touchpoints (e.g., service interfaces) and identify IT product owners for the tools and digital experiences that provide student services.

2.3 Prioritize identified student services and touchpoints, define service level requirements, and formulate service level agreements.

2.4 Work with stakeholders to identify the data elements required to inform student improvements, systems of truth for required data and current reporting capabilities, and build a data management framework that ensures data integrity and leverages cloud-based data warehouse capability.

Moving Beyond **OPEN** by being *Responsive*

5-Year Goals (continued)

2.5 Create a joint IT-University Relations Digital Strategy working group to:
- improve understanding of the navigational behaviour of current students in our IT-managed online systems, in coordination with University Relations' analyses of navigational behavior of prospective students
- to inform the implementation of site search technologies to ensure key information can be found quickly,
- to raise awareness of available student services to support success, and
- to promote new learning opportunities to encourage registration.

2.6 Establish an enterprise-level book store service that enables students to choose where and how they want to obtain the required learning resources for the courses they are registered in.

2.7 Establish an enterprise-level service that on-boards and orients all students to the resources available to them to support their success.

2.8 Establish an enterprise-level service that on-boards and orients staff (e.g., tutors, academic and support staff, faculty) to the resources available to them to support their work and the students they serve.

2.9 Strategize to establish an enterprise-service for prospective and current Canadian and US Middle States Association of Colleges and Schools students to utilize Athabasca University's transfer credit system.

2.10 Modernize systems to accept gender identification outside the binary and to support preferred names and titles while insuring the accuracy of data in the records.

2.11 Expand implementation of the student document digitization platform so it can be adopted on an enterprise-wide level in keeping with the document management and retention standards.

2.12 Improve student service by establishing enterprise-level web chat capabilities between students and frontline staff.

3.

Develop accessible, user-friendly data collection and reporting capabilities to ensure faculty, staff and students have timely access to business intelligence required to support their objectives.

3.1 Define the required data, definitions, taxonomy, data sources (source of truth), data owners and stewards, and collecting and reporting requirements as a precursor to establishing capabilities to support data analytics and to improve data quality.

3.2 Standardize by establishing and implementing an organization-wide Data Governance Framework to improve data ownership, accountability, quality, integrity, and to mitigate data-related risks.

3.3 Evaluate and create data privacy and data masking standards for all development, testing and production environments following best practices in data management and in compliance with Alberta's Freedom of Information and Protection of Privacy Act (FOIP Act).

Moving Beyond **Now** by being *Engaging*

5-Year Goals (continued)

4.

Create an Innovation Design, Engineering and Architecture (IDEA) model to support professors and students in providing cloud-based infrastructure and tools as well as a team of creative programmers, product designers and product developers to support R&D work in digital learning.

4.1 Work with stakeholders to define requirements necessary to establish an Innovation Design, Engineering and Architecture (IDEA) model where professor and student innovators can access infrastructure and technical talent to create in a R&D maker-space.

4.2 Invest in resources and capabilities to enable faculty, staff, and students engaged in digital learning research and innovation to:
- communicate and collaborate with each other,
- experiment with emergent technologies and experimental approaches to learning,
- disseminate and share research, and
- attain technical support to facilitate their research and innovation initiatives.

4.3 Create a public-facing instance of the Innovation Design, Engineering and Architecture (IDEA) model in Athabasca, AB to be northern Alberta's rural entrepreneurship maker-space where northern Alberta entrepreneurs can access infrastructure and technical talent to work, collaborate, connect and contribute to economic diversification of northern Alberta.

4.4 Contribute to economic diversification in northern Alberta by establishing a competitive Summer Internship program for northern Alberta high-school age and recent high-school graduates to learn modern IT skills and approaches.

5.

Remove artificial distinction between enterprise and divisional systems and evolve IT governance to university-wide Digital Governance, creating collaboration, fiscal accountability, transparency and flexibility to innovate for all university digital needs.

5.1 Develop and maintain roadmaps for all university digital services, including current shadow IT systems or processes, to inform investment planning with the aim of keeping each service up-to-date with the current stable version.

5.2 Develop evidence-based business cases to assess the viability of modernizing identified existing digital services to the current stable version (n-1), or acquiring new digital services, to fully understand potential impacts and risks.

5.3 Engage owners of current divisional systems not historically supported by IT to identify go-forward plans for system integration, retirement or replacement.

5.4 Implement an Embedded Resources Model so that technical talent can remain in their specific academic and administrative units while benefiting from functional expertise management of experienced IT leaders, shared technical processes and operations, being part of a larger team working together to implement Athabasca University's Digital Transformation.

5.5 Embed prioritization across digital systems implementations, enhancements and upgrades for regular review and voting within the expanded digital governance model.

Moving Beyond **NORM** by being *Innovative*

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5-Year Goals (continued)

6.

Strengthen or develop partnerships with industry, government and other post-secondary and K-12 institutions to explore the viability of technology related partnerships that can leverage AU's technological assets, and provide co-developed, shared services, or resource attainment opportunities.

6.1 Create a Cloud Infrastructure Partnerships strategy for northern Canada to leverage AU's technological assets, or co-develop or share services with postsecondary, local governments, indigenous communities, and industry.

6.2 Establish partnerships with select industry partners to co-develop services or attain resources and create internships to facilitate the development of employment opportunities in northern Alberta.

6.3 Leverage and augment existing Athabasca University virtualized infrastructure to create cloud hybrid solutions for best practices in disaster recovery and business continuity for partnering post-secondary institutions in Alberta.

6.4 Partner and participate in the creation of digital solutions that answer the needs of northern and rural Alberta.

7.

Improve sustainability and the interoperability, scalability, security, and usability of digital learning products and services relied upon by our students, staff and faculty.

7.1 Based on industry best practices establish and implement an organization-wide standard software development methodology of:
- modern development,
- continuous delivery and integration
- automated deployment strategies
- automated end-to-end application testing, and
- tools to ensure security and the consistency and quality of coding.

7.2 Establish and implement an organization-wide design standard and resources to automate the creation and submission of online forms.

7.3 Establish and implement an organization-wide interface design standard (e.g., navigation, visual design, terminology, accessibility) in keeping with the AU brand.

7.4 Establish and implement an organization-wide standard for identity management (e.g., directory services).

7.5 Create a data management strategy that defines key data web services for core data and aligns to the cloud-based architecture strategy.

Moving Beyond **PLACE** by being *Sustainable*

5-Year Goals (continued)

7.6 Standardize by establishing an enterprise-level architecture program and expertise to: define technology-related design standards, assign ownership and accountability of architectural components across the organization, and to raise awareness of how proposed changes to the environment will impact business and technical services.

7.7 In consultation with the Provost, faculties, and stakeholders establish a flexible, mobile-friendly, and adaptive learning environment across the organization, including the integration of LMS or MOOC platforms, learning analytics, machine learning-based agents and other emerging technologies.

7.8 Standardize service design packages to streamline the deployment and transitioning of new services into production.

7.9 Establish and implement a cloud-based, organization-wide athabascau.ca web publishing platform and UX navigational standards in responsive design compliant with the AU brand strategy and the W3C recommended Content Security Policy[1].

[1] W3C Content Security Policy Level 3 Editor's Draft, 16 February 2018
https://w3c.github.io/webappsec-csp/

8.

Focus our IT talent and processes to continually identify and implement emergent solutions with a continuous improvement mindset based on Lean best practices for higher education in product development and ownership.

8.1 Place student experience needs first, engaging them as end-users in the design and testing of all new services prior to their implementation.

8.2 Improve IT service management capabilities by training staff in industry best practices in service management (ITIL) to achieve Level 3 on the ITIL capability maturity model and train existing infrastructure staff to become a high-performing cloud infrastructure management team.

8.3 Implement best practices in proactive training and technology communications to drive increased utilization of the university's existing technology stack and adoption of new, enterprise-wide technologies.

8.4 Implement university-wide digital learning on cyber-security threats and mitigation tactics to alleviate risks.

8.5 Optimize the inclusiveness and communication of IT product development and enhancement plans and priorities through the governance process to ensure IT plans are understood by the university community as a key member of integrated planning and continuous improvement.

8.6 Improve project planning and delivery by establishing and maintaining an Integrated Delivery Plan that aggregates the priorities, risks, dependencies, and resource requirements of: all approved IT capital projects, priority business initiatives identified as part of integrated organizational planning that require IT resources, ongoing operational requirements, and the new IT Strategic Plan 2018-22.

8.7 Conduct annual reviews of AU's adopted IT Lean portfolio strategy and governance frameworks to ensure their effectiveness.

8.8 Develop staff knowledge and skills to ensure effective management of currently implemented technologies, and align training and learning plans to facilitate the development of new skills and knowledge required to address emergent needs.

8.9 Establish and maintain a Continuous Service Improvement Register to capture service improvement opportunities identified from customer feedback, student satisfaction with IT, project lessons learned, service incident root cause analyses, audits, and other feedback sources to inform continuous improvement planning.

8.10 Improve the performance of core services by monitoring services against service level agreements and pro-actively intervening as required to mitigate service disruptions.

8.11 Once new strategies and processes are well-established via the governance process, implement semi-annual internal IT audit cycles to ensure quality of software design, code, and supporting cloud infrastructure are consistent in product areas such as:
- cloud infrastructure management;
- learning management system and supporting digital learning technologies;
- online forms;
- interface design;
- identity management;
- data governance;
- IT communications via email, blog, newsletter, social media and website;
- agile portfolio management;
- software development; and
- software security

8.12 Determine a DevOps philosophy and framework utilizing configuration as code, containerized deployment, continuous integration, and other operational tools that are needed in order to make development sustainable and flexible.

9.

Expand access to high-quality Canadian digital learning to rural and remote learners in Alberta, Canada and the world by becoming Canada's leading technical team in cloud infrastructure management for online universities.

9.1 Improve the utilization of remote communication and collaboration technologies at organizational events to facilitate community engagement and develop institutional culture.

9.2 Optimize remote communication and collaboration technologies and training to enable staff, students, and partners to communicate, collaborate, and work effectively from a distance.

9.3 Transition the provisioning of core services, and the underlying services on which they are reliant, as software as a service (SaaS) or cloud-based services.

9.4 Modernize the IT infrastructure to ensure seamless failover and disaster recovery using best cloud practices.

9.5 Strengthen AU's security posture by engaging external expertise in the design, management and continuous improvement of IT security architecture and implementation.

9.6 Implement a fully redundant and secure network topology.

Moving Beyond **PLACE** by being *Sustainable*

Moving Beyond **PLACE** by being *Sustainable*

In 5 Years...
Some final thoughts

Imagine a recently retired Albertan sitting on the patio of his Arizona vacation home writing video annotations on his iPad for his Athabasca University program's learning cohort to read...

Imagine a family in Fort McMurray coming together after dinner to participate in interactive learning experiences with their grandparents who live in another province in Athabasca University's virtual reality learning environment...

Imagine a young world traveler who checks her mobile device to see how many of her Athabasca University International Relations degree cohort happen to be in Paris that week so they can meet up to work on their project...

Imagine an Athabasca University augmented intelligent learning partner who suggests additional interactive problem sets for you to tackle and coaches you through them...

We recognize our 5-Year IT Strategic plan is ambitious and there are many aspects of our existing legacy systems and technologies that need to be retired, rethought, and reinvented. Yet with supportive collaboration across the university community and with the encouragement of our government and industry partners, we will **RISE** to lead Athabasca University's Digital Transformation.

Respectfully submitted,

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Athabasca University

athabascau.ca

OUR VISION
Transforming Lives,
Transforming Communities

OUR MISSION
Athabasca University is dedicated to the removal
of barriers that restrict access to and success
in university-level study and to increasing
equality of educational opportunity for
adult learners worldwide. We are
committed to excellence in teaching,
research and scholarship and to being
of service to the general public.