ALGONQUIN COLLEGE

Automation and Process Improvement President's Listening Tour Task Force Final Report

FINAL DRAFT
June 29, 2015

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"What I personally want from automation is to have less work so I can spend more time in the classroom. I want to see the College come out of this process with a real, workable plan for automation and process improvement."

~ Task Force participant

AUTOMATION AND PROCESS IMPROVEMENT EXECUTIVE SUMMARY

This report is the culmination of the work of the Task Force on automation and process improvement at Algonquin College. The Task Force, consisting of employees from all three employee groups, was chaired by Duane McNair, Vice President, Finance and Administration and Doug Wotherspoon, Vice President, International, Communications and Strategic Priorities.

The Task Force set about understanding how College automation and process improvement projects were identified and selected, reviewed the existing list of projects, identified internal strengths and weaknesses, discussed external opportunities and threats, and brought ourselves up-to-date on the status of the grade reporting automation project.

Three sub-committees were established to collect industry best practices, explore the potential for creating a framework for prioritizing automation and process improvement projects, and help facilitate our public meeting.

At the Task Force's May 7 public meeting, 37 participants divided into five groups to identify new automation and process improvement priorities. (See Appendix B for more.) The six top suggestions pertained to hiring and onboarding new employees; payroll automation; using technology to better track and communicate with students performing poorly in courses; enabling self-serve online course registration; automating graduation validation and academic upgrading; and ensuring faculty receive technology upgrades and repairs. After a good discussion, participants refined the list further, identifying its two top new projects for consideration when funding became available.

1. *Automated assignment of network access to new hires*, speeding up the onboarding of new employees
2. *Automated graduate validation*, allowing students and employees to check how many more courses were required for an individual to graduate and recommending a path to take to succeed.

After reviewing all the materials and discussions, the Task Force is has made 15 recommendations spread over five areas of leadership and governance, project prioritization, grade reporting, project management, and applications.

The results of this work would not be possible without the willingness of members of the Task Force to take on this work with open minds and a commitment to see change as a result of their deliberations. All of the information gathered from these deliberations is included in the appendices of the report.

PRESIDENT'S LISTENING TOUR BACKGROUND

Shortly after her arrival at Algonquin College, President Cheryl Jensen embarked on a four-month 'Listening Tour' to immerse herself in the College's culture, identify the opportunities and challenges facing the institution, and demonstrate her interest in seeking regular feedback from employees and students.

Over the course of 21 in-person and online sessions, 384 employees and students across all four Algonquin College campuses shared their thoughts on a broad range of issues. Two of the most frequently raised issues were those of automation and the related issue of process improvement.

Participants noted that automation and process improvement are about working more efficiently and streamlining routine tasks so staff and students can focus their time on higher-value activities — that is, less administration and more teaching and learning.

While automation is about using technology to simplify and integrate the College's processes, not all processes need to be preserved. Process improvement is about determining the ways existing processes can be made to work better — and identifying those that no longer bring value.

Throughout the President's Listening Tour, students and employees emphasized the need to replace the College's legacy systems with more modern, mobile-friendly platforms. Many said embracing automation would allow the College to improve program and service delivery, simplify workflows, thwart competitive threats, and enable sustainable growth.

From the Listening Tour, it was also clear that employees are looking for greater understanding of the College's direction with respect to automation and process improvement — and to have the chance to share their thoughts and ideas on which projects should be placed at the top of the priority list. They are also eager for the much talked-about automated grade reporting project to be completed and fully implemented.

TASK FORCE TERMS OF REFERENCE

Purpose

To address the service and workload concerns raised by employees and students during the President's Listening Tour, the Automation and Process Improvement Task Force is responsible for crafting a priority list of automation projects for 2015–16, and for ensuring the automated grade reporting pilot project is completed and fully implemented for the start of the Fall 2015 term.

Deliverables

- The Task Force will draft an interim report identifying the current state of automation and process improvement at Algonquin College. This report will include an explanation of how automation projects are identified, selected and tracked by the College; a list of all current automation and process improvement projects underway or planned through to March 2016; a list of all non-approved automation and process improvement projects; and an update on the status of the automated grade reporting pilot project.

- The Task Force will draft a final report outlining the actions to be taken to deliver on its objectives. This report will include a review of how other institutions identify, select and report on automation and process improvement projects; a prioritized list of automation projects for 2015–16; an update on the automated grade reporting pilot project; and recommendations on changes to be made to the College's automation and process improvement processes.

- The Task Force will host two public stakeholder meetings in 2015: one session to address the current state of automation and process improvement at Algonquin College, the other to inform the development of the final report.

- The Task Force will report its progress to the President's Council on a bi-weekly basis.

- The Task Force will post updates and support materials to myAC and the President's website.

Accountability
The co-chairs of the Task Force report and are held accountable to the President and the President's Council.

Authority
The Task Force has the authority to:

- Review all College data and documents related and relevant to its purpose;
- Draft a workplan for approval by the President's Council;
- Meet regularly to implement the workplan;
- Determine best practices relative to its work and report regularly;
- Make recommendations to the President's Council in relation to its purpose;
- Regularly assess its progress and adjust the workplan as necessary;
- Identify and call upon required resources from all areas of the College to complete its deliverables;
- Document its work and share its progress with members of the College community; and
- Regularly review its terms of reference and make recommendations for changes to the President's Council.

Duration
The Task Force will complete its work no later than June 30, 2015.

Members
The Automation and Process Improvement Task Force is co-chaired by Duane McNair, Vice President, Finance & Administration; and Doug Wotherspoon, Vice President, International, Communications & Strategic Priorities.

The Task Force was composed of three types of members:

- ***Technology leaders*** (i.e., those responsible for the College's technology leadership);
- ***Technology stakeholders*** (i.e., a representative group of the College's technology clients); and
- ***Resource members*** (i.e., technology and process subject-matter experts from the College community who support the Task Force in an *ex officio* capacity).

A total of 38 people submitted their names for consideration in response to a call for volunteers. The following 19 individuals were selected to serve on the Task Force:

Task Force members	
Linda Crane Coordinator, Technology	Mary Ann Belanger Alumnus
Steve Griffith Professor, Media & Design	Graham Barber Manager, International
Eris Hollebone Director, Recruitment & Marketing	Allison Burnett Analyst, Human Resources
Glenn MacDougall Director, LTS	James Halls Professor, Business
Eric Marois Chair, Trades	Cristy Richards Manager, Academic
Janice Sargant Course Designer, CCOL	Krisha Stanton Project Manager, Student Services
Craig Delmage Senior Manager, IT	Marie Thériault Manager, Registrar's Office
Mario Ramsay Professor, Hospitality	Nancy Makila Executive Assistant, Academic
Karen Wood Part-time Instructor, Media &	Duane McNair Vice President, Finance and Administration
Doug Wotherspoon Vice President, International, Communications, & Strategic Priorities	

The following subject-matter experts were selected to serve as resource members:

Resource Members	
Laura Campbell CRM Manager, International	Sue Davidson CRM Administrator, Recruitment & Marketing
Chuck Doyle Manager, Finance & Administrator, ITS	Max Figueredo Senior BI Administrator
Mike Gawargy Director, ITS	Michel Langlais Education Application Support Specialist, ITS
David Loignon IT Infrastructure Services, ITS	Susan Preiss Senior Manager IT Applications,
Duncan Topp Manager, Corporate Systems & BI, ITS	Nash Zgonjanin Software Architect, International

"We have gathered a huge amount of data. If we could push it out to users, it would solve a lot of our problems. Our challenge today isn't a technical challenge; we don't need to buy more equipment. We need to define the information College users want to access so we can serve it up to them."

~ Task Force participant

TASK FORCE ACTIVITY

Between March and June 2015, the Automation and Process Improvement Task Force met eight times and held one public meeting. Task Force members reviewed the list of existing automation and process improvement projects spread across the college, shared best practices from Algonquin's own experience and that of other organizations, and considered an objective framework for prioritizing projects.

Date of Meeting	Purpose	Comments
March 12, 2015	Introduction, review of the terms of reference, and presentations on the A&PI current state (Application development, Automated grade reporting, Lean/Value stream, Customer relationship management (CRM), and Project Fusion).	• Many sources of A&PI beyond the obvious. • Different processes for launching an A&PI project depending on department.
March 24, 2015	Establishment of sub-committees and continued presentations on the A&PI current state (GeneSIS, LMSs, Registrar's Office, CCOL, Marketing and Recruitment, Applied Research, Ancillary Services).	• Two sub-committees established: Project Prioritization & Best Practices • College currently has 4 different LMS systems operating. • No clear process for A&PI pilot projects.
April 7, 2015	Interim report on the work of the sub-committees & Preparation for Town Hall meeting	• Third sub-committee established to prepare for the Town Hall.
April 23, 2015	Development of A&PI Prioritization Criteria Matrix	• BI portal holds significant amount of data. How to provide greater access to data discussed.
May 7, 2015	Town Hall meeting	• 37 attendees
May 25, 2015	Sub-committee presentations & discussion	• Automated grade reporting project on-target. • Best practices identified.
June 5, 2015	Draft v1 Final Report presented	• Task force broken into 3 groups to review different sections of the draft report.
June 11, 2015	Final recommendations presented, reviewed and approved in principle	• Prioritization sub-committee expanded to complete A&PI projects prioritization list.
June 24, 2015	Draft v2 Final Report presented & edits confirmed	

FINDINGS

Drawing on their distinct roles and expertise within the College — some technical, some administrative, some pedagogical — the members of the Task Force noted that:

Industry and Higher Education Trends

There were a series of industry and higher education trends that should be considered prior to making any recommendations.

- **Analytics** - By 2016, 70% of the most profitable and effective organizations will manage their business processes using real-time predictive analytics or extreme collaboration.

- **Speed** - By 2017, digital business transformation programs with demonstrated faster payback will compress the cycle time of insight to innovation from days to minutes.

- **Cloud computing** - Companies continue to move away from big infrastructure investments in favour of cloud-based systems. More than 40% of the respondents to the Computerworld Forecast survey said that their organizations will spend more on software as a service (SaaS) and a mix of public, private, hybrid and community clouds in 2015.

- **Security** - High-profile security breaches at Home Depot, Target, Michaels and myriad other companies — along with the explosion of mobile technologies — have propelled security spending to the top of the IT priority list for 2015.

- **Application development** - More than one-third (38%) of IT leaders said they will spend money on developing, upgrading or replacing applications, including mobile apps.

Algonquin College Current State

- The primary goal of automation and process improvement is to **make school life and work life easier**.

- Algonquin College today has **too many manual processes**, impeding efficiency and having a negative impact on the student experience. As an example, students cannot view their program plans in an interactive way to see which credits they have, which are in process, and which are required to complete their programs.

- Recognizing that budgets are limited and that different stakeholders will have their own visions for automation and process improvement, Task Force members agreed their work necessarily involves **prioritization** — distinguishing ‘wants’ from what the College truly ‘needs’, and using that information as the basis for a decision framework about automation and process improvement projects.

- The College’s systems are currently very ‘siloed’ — and the groups responsible for each silo are anxious about collaboration for fear of losing control of their own processes. Yet there is an opportunity for greater efficiency if **collaboration** between different technology environments can be enabled.

- It is essential to **engage the end user** in the development of new automated processes. The best way to do that is to ask them frequently, engaging the customer in the application development process.

- At the two-year mark, the College's **data warehouse is full of data** from disparate systems, including PeopleSoft, SharePoint and GeneSIS. But how exactly should that data be used? And what does the College community need from this repository?

- People don't always understand why their projects are approved or declined (or why, in some cases, they go on hold). The prioritization of automation and process improvement initiatives needs to be **transparent**.

- There seems to be significant **opportunity to better coordinate** IT and process improvement activities. For example, the lean/value stream office reviewed the process of grade reporting five years prior to the current work to automate that process.

- The College needs to take a **global view** of its systems. What it is doing well should not be overlooked. A global view will reveal the 'system landscape', offering perspective on what the different systems do best and suggesting ways in which they might be linked.

- We are not the only institution interested in automation. Perhaps there is an opportunity to **partner** with other colleges.

Algonquin College Strengths, Weaknesses, Threats & Opportunities

Overall, the discussions of the Task Force revealed some very clear strengths, weaknesses, opportunities and threats for Algonquin College today — and into the coming years:

	STRENGTHS	WEAKNESSES
INTERNAL FACTORS	• **Motivation:** There is a clear desire for automation and process improvement within the College • **Infrastructure:** The College has improved its technology infrastructure in recent years • **Innovation:** The College is home to pockets of often hidden innovation (e.g., agile CRM development, CCOL user experience enhancement, etc.) • **Openness:** There is a clear desire for process transparency within the College • **Strong executive support:** College leaders embrace the value of automation and process improvement, and the College has created a Vice President of Digital Technologies & Innovation role • **Project Fusion:** Algonquin College is already underway with an initiative to unify its major business systems • **Skills and willingness:** The College has the people, skills and "let's try it" attitude to drive technological and process change (e.g., eLearning, the eTextbook initiative) • **Vision:** The College recently updated its Digital Strategy, setting direction for its digital future	• **Scope:** Establishing a coherent, all-College approach to automation and prioritization is an enormous undertaking • **Complexity:** The College has more than 40 enterprise applications in multiple silos and multiple lists of existing and proposed projects • **Age:** A number of critical IT applications, such as GeneSIS, are based on older technologies and in need of significant enhancements, upgrades and/or replacement • **Methodology:** The College does not currently have an impartial, transparent methodology for choosing automation and process improvement projects • **Scattered communications:** Siloed applications mean communication about projects is fragmented • **Policy:** The College currently lacks the policy structures, processes and standards to support automation and process improvement in a centralized way • **Information management (IM):** The college does not have an clear data and information management framework • **Identity Access Management (IAM):** The College's approach to managing identities and information access lacks agility • **Scalability:** A number of key college systems are not built to grow ("scale") easily

	OPPORTUNITIES	THREATS
EXTERNAL FACTORS	• **Partnership:** By partnering with other organizations, like the College has with the sale of its Course Outline Mapping and Management System (COMMS) to other colleges, Algonquin has the opportunity to share or distribute the cost associated with automation and process improvement • **Savings:** The adoption of commercially off-the-shelf solutions may allow the College to cut or eliminate costs • **Timing:** Virtually all enterprises are looking for automation and optimization solutions, meaning there is an established market and solutions are available • **Technology:** The cloud, virtualization, software-defined networking, IP-based communications and other technologies exist to support the kinds of scalable applications the College needs today • **Best practices:** Because other organizations are looking for similar improvements/advantages, Algonquin College does not have to start from "square one" — existing best practices can be adopted	• **Financial capacity:** Provincial funding is declining, as are traditional enrolments due to demographic trends • **Pace of change:** It is costly and challenging to keep up with the rapid pace of technological change • **High expectations:** Clients and users are accustomed to high-end consumer devices and technology services, and may perceive College solutions to be cumbersome by comparison • **Security and privacy:** Flatter, more integrated and streamlined systems require greater attention to security and privacy to protect user data in transit and when stored

Industry Best Practices

"Best practices" encompass a broad set of considerations when it comes to automation and process improvement — everything from prototyping concepts to adopting a continuous improvement approach that will keep processes as lean and effective as possible. The Task Force reviewed best practices from a wide range of sources and institutions including Gartner, McKinsey, *EDUCAUSE*, Norex, the Education Advisory Board, Arizona State University, Western Governors University and Canada Post. Out of this review, the Task Force identified the following as key for the College to consider:

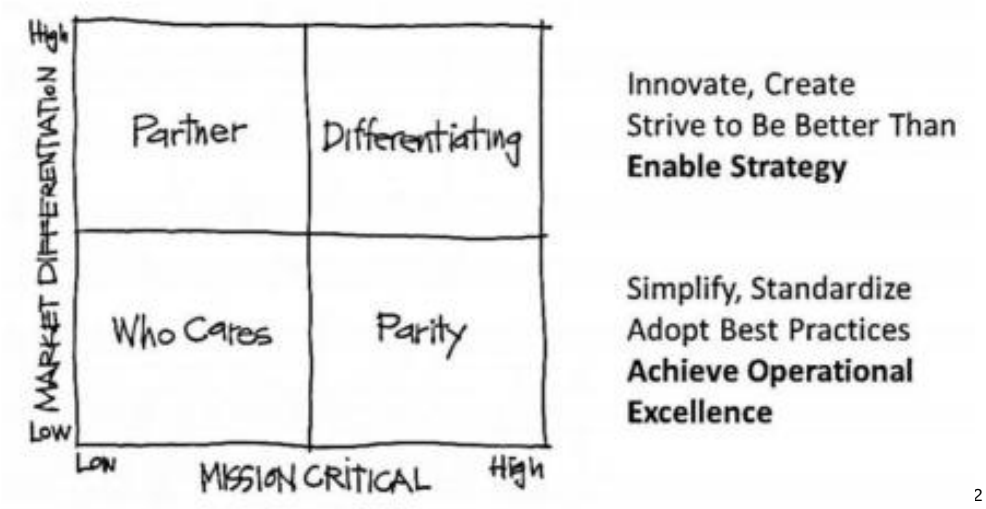
1. **Leadership on automation and process improvement must come from all corners.**
   It is no secret that the best source of continuous improvement ideas comes from customers and front line employees. Leading organizations have processes in place that foster client feedback and surface ideas. Additionally, given the pace and pressures of change, few organizations can get by on incremental improvements alone. Organizations must periodically undergo more significant transformations, which require an active and engaged leadership team. Specific to automation and process improvement, executives need to recognize IT investments as enablers of business transformation.[1]

2. **Build on a clear vision.**
   Norex and *EDUCAUSE* both note the need for organizations to clearly identify their mission, vision and leadership structure to succeed at innovation. Equally critical is having a technology roadmap that guides the way forward transparently and methodically.

[1] Business Transformation and the Role of Strategic CIO Leadership By Dean Samuels, Chief Information Officer, Genesys http://www3.alcatel-lucent.com/enrich/v3i12009/article_c2a5.html?l=en

3. **Change culture to change behaviour.**
Leading technology research organization Gartner has identified eight building blocks critical to digital success, related to the fact that the digital workplace — and in this case specifically, automation — requires changes to internal processes, departmental structures, incentives, skills, culture and behaviours.

4. **Focus innovation where it delivers the strongest return.**
The educational thought leadership publication, *EDUCAUSE*, recommends that business process re-engineering efforts be prioritized in favour of supporting mission-critical systems or differentiating the institution. Where differentiation is possible but systems are not mission-critical, partnership is the recommended path. Where systems are mission-critical but not differentiating, the goal should be parity, not exceptionalism. The purest innovation efforts should concentrate on mission-critical systems that do differentiate. That's where the College can stand out.



[2]

Figure 1. Prioritizing innovation efforts

5. **Process improvement first, automation second (if necessary)**
Improvements in process do not necessarily require automation. Leading organizations do not rush to automate. They first consider whether the process requires elimination or re-design.

6. **User-centered design**
According to the University of Toronto's Information Technology Services Department, user-centered design is about more than just thinking of the user when building an application. It's about involving the user in the development process from the ground up — to define requirements and test assumptions and functionality.

7. **Resource appropriately.**
Successful innovation of any kind, including automation and process improvement, requires the commitment of sufficient, adequate resources, both financial and human. While economies and efficiencies should always be sought, institutions risk substandard outcomes if they under-invest in automation and process improvement.

8. **Communicate clearly and often.**
Communication has always been a cornerstone of change management and it is equally so when it comes to optimization. Change demands buy-in, and buy-in only comes when people feel secure and confident that they know what is happening — and why.

[2] EDUCAUSE/NACUBO 2014 Administrative IT Summit Report https://net.educause.edu/ir/library/pdf/PUB9017.pdf

9. **Make it straight forward for people to propose both IDEAS and PROJECTS.**
The University of California at Berkeley has two clear and distinct processes one that encourages the raising of business improvement ideas and projects. Both are online and promote transparency. Both sites provides step-by-step instructions on how to submit projects and explains the criteria by which projects are selected. Initial ideas and fuller project proposals are both submitted using a simple form.

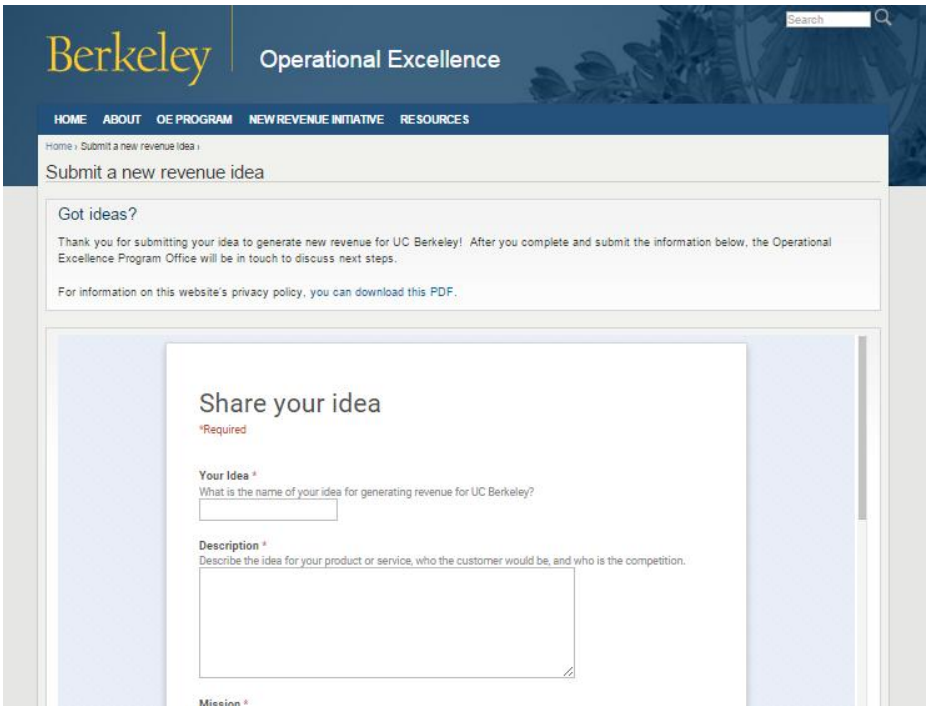


Figure 2 & 3. The University of California, Berkeley, project portal

[3] University of California at Berkeley Operational Excellence Office -http://oe.berkeley.edu/programs/operational-excellence/projects

10. **Dedicate a team to automation and process improvement.**
    At the University of California, Davis, critical projects are supported by a specialized automation and process improvement team skilled in process re-engineering, change management, project management, communications and automation. This allows projects to advance while business units continue to focus on what they do best — serving clients.[4]

11. **Iterate, iterate, iterate.**
    Rather than pursue a massive project, conduct a small-scale prototypes and pilots and then when the bugs are workied out roll out a "finished product" across the entire College. Today's innovation wisdom suggests an iterative approach yields superior results and puts less strain on the organization. Successive piloting and "learning by doing" ultimately allow for important projects to advance incrementally and facilitate continuous improvement over time.

12. **Be empirical.**
    All projects should have measurable outcomes, and measurement should be part of the project plan so that effectiveness can be tracked, lessons learned and approaches optimized.

Developing a Criteria for Prioritizing Projects

Early in its discussions, the Task Force acknowledged that people within the College do not always understand why certain automation or process improvement projects are approved, declined, or postponed. The Task Force believes the prioritization process needs to be more transparent.

To see if it could help come up with a model for prioritization, The Task Force established a prioritization sub-committee who set about reviewing prioritization best practices and testing various approaches. After careful review, the sub-committee identified a set of six criteria it believes could help standardize project selection. The criteria include;

1. Alignment with College strategies and/or externally mandated (e.g., Ministry of Training, Colleges and Universities or Students' Association)
2. Impact
3. Return on investment
4. Degree of risk (both of undertaking and *not* undertaking a given project)
5. Complexity
6. Sustainability (environmental and related to total cost of ownership)

Fuller definitions of these criteria are provided in Appendix E.

The Task Force put 51 existing automation and process improvement project proposals through the two-stage process. First, the full set of projects was evaluated using criteria 1, 2 and 3. The top 23 projects were then tested against criteria 4, 5 and 6. While the effort yielded a prioritized list that at first blush seemed relatively in line with college priorities the Task Force did not believe it had have enough documentation and expertise to make a final recommendation. The prioritization review completed by the Task Force sub-committee is presented for information purposes only.

To ensure fairness, the Task Force concluded that a standardized application process was required in order to allow all projects to be compared against each other fairly and that the final prioritization should be completed by an expert evaluation panel. The Task Force did though conclude that a slightly modified version could help the College Technology Committee and the President's Council bring clarity and transparency to the prioritization process. (See Recommendations #5)

[4] University of California at Davis, http://oe.ucdavis.edu/process-analysis-and-design/index.html

In addition, members agreed that not all criteria needed to be weighted equally, and that this prioritization framework best applies to projects with an estimated cost of between $25,000 and $1 million. The Task Force felt larger projects should continue to be overseen by President's Council.

For transparency, the Task Force also agreed that all applicants should receive feedback on their project submissions, regardless of the prioritization outcome.

Automated Grade Reporting Update

The Automated Grade Reporting Project continues to remain on schedule. Two successful pilots were completed by May 2015, the first involving 12 course sections and the second involving more than 459 course sections. A third iteration is planned for release in August 2015 in support of the launch of Grade Entry and Review for all full-time day programs. This third version will include the ability to upload files with grades directly into the system as well automated letter/numeric grade conversion. Additional enhancements, including user interface changes are planned for delivery prior to Fall Grades due date.

The project has reinforced the importance of continuous software development process, one in which early stakeholder feedback and an iterative software development approach leads to faster and better outcomes.

> *"We have gathered a huge amount of data. If we could push it out to users, it would solve a lot of our problems. Our challenge today isn't a technical challenge; we don't need to buy more equipment. We need to define the information College users want to access so we can serve it up to them."*
>
> — Task Force member

RECOMMENDATIONS

Based on its research, the Task Force has identified fifteen recommendations within five key areas to be addressed by the College in advancing automation and process improvement.

Leadership and Governance

1. **That President's Council, under authority of the new VP Digital Technology and Innovation, confirms the College Technology Committee (CTC) as the initial decision making body for automation and process improvement projects.**

2. **That President's Council renews the CTC governance mandate to ensure CTC sees its role as the champion of the student and employee users, above their role as champions of technology.**

3. **That College Technology Committee establishes a survey mechanism and feedback process for determining use and user satisfaction of key college student and employee technologies and processes.**

4. **That President's Council task the new Vice President, Digital Technology and Innovation with responsibility for renewing College IT policies and procedures, starting with a formal process for the submission of automation and process improvement ideas and projects**

Project Prioritization

5. **That the College Technology Committee continues to pilot the use of the 6-criteria prioritization matrix developed by the Task Force for the selection of 2016-17 projects.**

6. **That the College Technology Committee considers the addition of two new priority projects, when funding became available;**
    - ***Automated assignment of network access to new hires; and***
    - ***Automated graduate validation*.**

Automated Grade Reporting

7. **That the College Technology Committee considers continuing the Grade Reporting Automation Project through 2016–2017, to ensure successful implementation and continuous improvement.**

Project Management

8. **That the College Technology Committee oversee the development of an online environment within myAC, similar to the University of California at Berkeley, to serve as the central repository for the submission of automation and process improvement ideas, projects and updates by employees and students.**

9. **That the Vice President, Digital Technology and Innovation oversee the drafting and implementation of a formal project management framework to be used for all automation and process improvement projects.**

10. **That the Vice President, Digital Technology and Innovation consider creating a cross-functional team charged with spearheading automation and process improvement projects, guided in their work by the principles of lean, user-centered design.**

11. **That the Vice President, Digital Technology and Innovation uses Project Fusion as a test model for large-scale IT renewal, developing processes, communication plans, and training programs that will be able lessons learned to be scaled for use on other large automation and process improvement projects**.

Applications

12. **That Vice President, Digital Technology and Innovation establishes a master list of College applications, identify a champion for each, and draft an automation roadmap, that empowers the business and leverages the principle of "configure" versus "code" to advance innovations in an efficient way.**

13. **That the College commits to the use of an open data model, one in which internal users are able to gain access to data in a safe and secure manner in order to enable innovation, integration and analytics.**

14. **That President's Council accelerates the replacement of Algonquin College's student information system.**

15. **That the Vice President, Digital Technology and Innovation strike a committee to review the College's use of four different learning management systems (LMS) and explore options for improvement.**

NEXT STEPS

This report will be available to all employees no later than June 30, 2015. The duties of the current task force will be considered complete as of the date of the issuing of the final report.

All results will be shared with the incoming Vice President, Digital Technology and Innovation as the ongoing Executive Sponsor. Reports will come to the President's Council on a monthly basis.

Progress on the recommendations will be communicated to the college community through the President's newsletter as well as in a town hall, in the Fall term.

APPENDIX B: NEW AUTOMATION AND PROCESS IMPROVEMENT PROJECTS – AS IDENTIFIED AT THE MAY 7 PUBLIC MEETING

Below is a capture of the raw feedback provided by the five breakout groups of participants in the May 7 public meeting.

Group 1:

- We had process for onboarding new groups. Process for maintaining and documenting processes – something standard for all departments so it's consistent and the same.
- We'd like to have a manual form that's automated.
- The support staff appraisal process – right now it's a manual form.
- Process for any IT requests. If we had one system that would amalgamate it all, we could prioritize, and if you could see what the status was
- Resource management
- Process prioritization – maintenance, security, etc.
- Getting a contractor on the network
- A way to have everyone aware of what the process is
- Having an IT person embedded in the units themselves, a single POC for IT requests, though not necessarily IT pro
- Way to buy things via budget code
- Leave form. We could automate it, I'm sure.
- Access to business intelligence. It's a relatively clunky process right now.
- **But our two top ones are the onboarding process, and easier way to hire people.**

Group 2:

- Common refrain – communication. We want to synthesize information about finance and the various units.
- 555 – sales force, you get a notification that your ticket is open, but then no info on the process until it's complete. Would like some feedback.
- Project experts in particular areas, people be able to amalgamate information
- **Number one big point: Getting processes clearly defined, a knowledge base, a one-stop shop for new employee onboarding. Getting a phone, a garbage can, etc. instead of stealing it. Having one place for help, one point of entry within specific groups for payroll, finance, etc. Someone able to fan information out to whoever needs it. A particular person in HR to talk to.**
- **Number two big point: Finance payroll process automated. A lot of it is handled through emails right now, getting it signed. It would be better to have it be as paperless as possible.**

Group 3:

- **Priority 1: Payroll -> more automated for part-time staff input**
- Issue refunds from departments (not through finance). Departments have own budget officers. Getting reimbursed for parking takes a few weeks.
- Scheduling system – College-wide system for client-facing groups (*Privacy issues?)
- Access to student photo ID
- Online timetables on Access
- **Priority 2: Tracking students who are off-cycle, generating reports for students, automatic messages to students about to fail courses**
- Online grade entry, grade change forms – easier, not paper
- Grade verification process – is paper driven: create a system that will do this. Currently done by a person looking at academic printout. Like this with student off-cycle tracking.
- Further automation of academic transfer. Ex: exemptions go through RO -> department ->co-ord ->faculty -> chair -> unit. It's electronic, not automated.
- More face-to-face – less email when automating

Group 4:

- Scheduling process automation
- **Priority 1: Automate forms in the RO and make self-service online registration for students. Everyone else has it.**
- Leverage what other colleges are doing – look at their processes
- Think of user experience. We have to test with at least six people.

- **Priority 2: Graduation automation process – would reduce paperwork by 60%.**
- Cal 99 is another pain.
- Student data access.
- Students don't always check emails – what can we do better?
- Better reporting for student data
- We're not using Blackboard to the best of its ability, and again students might not be checking Blackboard email. What about push notification?
- Automating RO reports
- Invoicing
- No uniformity – what about Canvas instead of Blackboard? It might just be a matter of training on how we can best use Blackboard.
- We don't use taps for purchases anywhere. It would save time in a long lineup for coffee in the morning.

Group 5:

- Apparently there's difficulty accessing alumni resources online
- Offboarding and onboarding, leaving employees and also leaving students
- Grade reporting systems, should have grade change
- Start including plagiarism, and al those other directive that the faculty has to fill in
- Improving exception process for the chairs
- The 'PLAR' process, and the push on the college to do more, it needs to be looked at
- The drop process for students after the courses start, cannot be done online now
- A number of coordinated process, like annual intervention for failed courses, grade validation. Giving access to us and to students about what they have left. They get confused about where they are.
- We have a lot of problems about late-paying students – sometimes they come and pay and we don't know it's happened, and the registrar's office needs to change timetables, so we have to manually check the status.
- We're lumping coordinative processes in general together.
- For the faculty, there's no easy way to share information between departments.
- Trying to reduce email. A lot of people are being consumed by email. Perhaps some education on etiquette, and reply all.
- **Priority 1: Getting faculty on the list for upgrades**
- **Priority 2: Academic upgrading**
- **Clear winners of priority vote: Process network access for new people, and grade verification**

APPENDIX C: DETAILED DESCRIPTIONS OF PRIORITIZATION CRITERIA

CRITERION 1. ALIGNMENT WITH COLLEGE STRATEGY AND/OR EXTERNALLY MANDATED

DEFINITION
This criterion requires proposed automation projects and their outcomes to demonstrably align with:

College or departmental strategies, or enable the College to respond to external motivators for automation (e.g., competition, legislation)

AND

Align with a supporting performance measure or goal

Projects that provide supporting evidence of, or justification for, their alignment with supporting performance measures or goals receive higher ranking.

All SIP project requests must align with the College's Strategic Plan. All operational technology or automation project requests must align with the College's Business Plan or Departmental Business/Operational Plans.

HOW TO USE THIS CRITERION
The more closely proposed projects align with specific, measurable metrics, the more strongly this criterion should weigh in the overall assessment of their priority. Each subcomponent of the criterion is to be scored on an ascending scale of 1 to 5. Below is an example to illustrate this:

PROJECT REQUEST: Funding for development and piloting of automated early warning and intervention system

SUBCOMPONENT	SCORE
Alignment with Strategic Plan *Goal 1: Deliver an exemplary applied education and training experience*	5
Alignment with a supporting performance measure or goal *Initiative: Implement cross-College intervention initiatives in first-term classes to assist students experiencing academic challenges, increasing first-term retention by 1.5%*	5
Supporting evidence of/justification for performance measure alignment *Average first-term retention in programs X, Y, and Z is 72%. Internal research indicates students who miss assignments in weeks 2 and 3 are 20 times likelier to not persist. Automated early warning and intervention systems focused on "first 30 days" attendance and assignment completion show average improvement of 3-7% in first-term retention.*	5
TOTAL	15

CRITERION 2. IMPACT

DEFINITION
"Impact" refers to the effects (both positive and negative) expected from a project, whether at the departmental level or throughout the College community.

Measuring impact is important in order to understand the extent and intensity of potential change; to enable project evaluation and benchmarking; and to test assumptions and engage in continuous improvement. A standardized assessment of impact is needed so projects can be compared to one another.

Proposed projects should:

1. Clearly define their intended impact
2. Indicate their expected "level of influence" (i.e., how many people will be affected, and to what extent)
3. Indicate what will be measured to verify impact, noting any alignment business and strategic plans
4. Explain how measurement information will be collected and evaluated

HOW TO USE THIS CRITERION
For simplicity's sake, impact is to be projected as follows, with each subcomponent scored on an ascending scale of 1 to 5.

SUBCOMPONENT	ACTUAL	SCORE
Number of people affected	10,000	4
User benefit	Time saving of 5 minutes per transaction	2
TOTAL		6

In the example above, the number of people affected is relatively high, while the benefit — time saved — is relatively small. In the next example, fewer people are affected but the gains are greater:

SUBCOMPONENT	ACTUAL	SCORE
Number of people affected	100	2
User benefit	Time saving of 2 hours per transaction Cost saving of $8,000 per year Higher student/client satisfaction	5
TOTAL		7

Importantly, this model does not distinguish between staff-focused projects and student-focused projects.

CRITERION 3. RETURN ON INVESTMENT

DEFINITION
Return on investment (ROI) is a percentage of financial benefits of a project compared to its cost:

$$\text{ROI} = \frac{\text{Total financial equivalent benefit expected}}{\text{Total financial cost expected to implement and maintain the project}} \times 100\%$$

HOW TO USE THIS CRITERION
Standardizing the assessment of ROI can be challenging given the extreme variations in costs and benefits of projects from one to the next. That said, applying the following guidelines will help bring consistency:

- Evaluate ROI for the short, medium and long terms (1 year, 3 years, 5 years)
- Account for every factor that contributes to the **benefit** of the project
- Convert every benefit into a financial equivalent (supported by documentation)
- Account for every factor that contributes to the **cost** of the project
- Convert every cost (financial, time or otherwise) into a financial equivalent (supported by documentation)
- Ensure the assumptions are defensible

For example:

PROJECT REQUEST: Simplified grade entry system

BENEFITS	
Time saved at end of single term (in dollars)	Registrar: $5,000 Academic: $12,000
Error reductions at end of single term (in dollars)	Registrar: $500 Academic: $500
TOTAL (PER TERM)	$18,000
COSTS	
Design consultation	ITS: $5,000 Academic: $5,000
Programming	ITS: $25,000
Testing	ITS: $5,000 Academic: $5,000
TOTAL (PER TERM)	$45,000

To be multiplied by two terms per year.

	1 Year	**3 Years**	**5 Years**
Benefit	$36,000	$108,000	$180,000
Cost	$49,500	$58,500	$67,500
ROI	**72.7%**	**185%**	**267%**

Break-even point (where a = number of years to break even):
$36,000 X a = $45000 + $4,500 X (a-1) => a = 40.5 / 31.5 => a = 1.3 year
After the third term, the College would get its money back

CRITERION 4. ASSESSING RISK

DEFINITION

The Project Management Body of Knowledge defines risk as “an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives such as scope, schedule, cost, or quality.” The Project Management Office at Algonquin College has built a Risk Rating Matrix that calculates risk in terms of impact and probability. This matrix is applicable to automation and process improvement projects.

HOW TO USE THIS CRITERION

The first step is to calculate the impact of risk, then probability, then combine the two.

CALCULATING THE IMPACT OF RISK

IMPACT	COST	TIME	SCOPE	QUALITY
1 - Insignificant	Insignificant increase	Insignificant increase	Decrease barely noticeable	Degradation barely noticeable
2 - Minor	< 10% increase	< 5% increase	Minor areas of scope affected	Only very demanding modules affected
3 - Moderate	10–20% increase	5–10% increase	Major areas of scope affected	Reduction requires sponsor approval
4 - Major	20–40% increase	10–20% increase	Scope reduction unacceptable to sponsor	Reduction unacceptable to sponsor
5 - Catastrophic	> 40% increase	< 20% increase	Project end item is effectively useless	Project end item is effectively useless

CALCULATING THE PROBABILITY OF RISK

PROBABILITY	PROBABILITY RANGE
1 - Rare	1%–20%
2 - Unlikely	21%–40%
3 - Possible	41%–60%
4 - Likely	61%–80%
5 - Almost certain	81%–99%

COMBINING IMPACT AND PROBABILITY

RISK LEVEL	COMBINED RISK SCORE	SIGNIFICANCE
Low	(1–4)	Manage with routine procedures and operations; should not require much attention but should be reviewed at least every 18 months.
Moderate	(5–10)	Manage with specific monitoring or response procedures; should be monitored and reviewed every 12 months.
High	(11–18)	Requires escalation to VP and (Audie and Risk Management) ARM committee; should be constantly monitored and reviewed every six months (May and November).
Critical Risk	(19–25)	Requires escalation to VP, ARM and Board of Governors responsible for risk management oversight; should be constantly monitored and reviewed monthly.

CRITERION 5. COMPLEXITY

DEFINITION
The complexity of a project is determined by multiple factors including the number of interrelated parts, processes, organizations and technology. The following framework for evaluating complexity is based on a pmtips.net model that could be adapted easily to College requirements.

FACTOR	PROJECT PROFILE		
	Low complexity	**Moderate complexity**	**High complexity**
Time and cost	< 3 months < $25K	3 – 6 months $25K – $100K	> 6 months > $100K
Team size	3 – 4 team members	5 – 10 team members	> 10 team members
Team composition and performance	• Strong project leadership • Team staffed internally, has worked together in the past, and has a track record of reliable estimates • Formal, proven PM, BA, SE methodology with QA and QC processes defined and operational	• Competent project leadership • Team staffed with internal and external resources; internal staff has worked together in the past, has a track record of reliable estimates • Contract for external resources is straightforward; contractor performance known • Semi-formal methodology with QA/QC processes defined	• Project manager inexperienced in leading complex projects • Complex team structure of varying competencies, (e.g., contractor teams, virtual teams, culturally diverse teams, outsourced teams) • Complex contracts; contractor performance unknown • Diverse methodologies
Urgency and flexibility of cost, time, and scope	• Minimized scope • Small milestones • Schedule, budget and scope are flexible.	• Schedule, budget, scope can undergo minor variations, but deadlines are firm • Achievable scope and milestones	• Over-ambitious schedule and scope • Deadline is aggressive, fixed and cannot be changed • Budget, scope and quality have no room for flexibility
Problem and opportunity clarity	• Clear business objectives • Easily understood problem or opportunity	• Defined business objectives • Problem or opportunity is undefined	• Unclear business objectives • Problem or opportunity is ambiguous and undefined

FACTOR	PROJECT PROFILE		
	Low complexity	**Moderate complexity**	**High complexity**
Solution clarity and level of IT complexity	• Solution is readily achievable using existing, well-understood technologies • IT complexity low	• Solution is difficult to achieve or the technology is proven but new to the organization • Moderate IT complexity and legacy integration	• Solution requires groundbreaking innovation • Solution is likely to be using immature, unproven or complex technologies provided by outside vendors • High IT complexity and legacy integration
Requirements, volatility and risk	• Strong customer/user support • Basic requirements understood, straightforward, stable	• Adequate customer/user support • Basic requirements understood, but are expected to change • Moderately complex functionality	• Inadequate customer/user support • Requirements are poorly understood, volatile, and largely undefined • Highly complex functionality
Strategic importance, political implications and number of stakeholders	• Strong executive support • No political implications • Straightforward communications	• Adequate executive support • Some direct mission impact • Minor political implications • 2–3 stakeholder groups • Challenging communication and coordination effort	• Mixed/inadequate executive support • Affects core mission • Major political implications • Visible at highest levels of the organization • Multiple stakeholder groups with conflicting expectations
Level of organizational change	• Impacts a single business unit, one familiar business process and one IT system	• Impacts 2–3 somewhat similar business units, processes and IT systems	• Large-scale organizational change that impacts the enterprise • Spans functional groups or agencies • Shifts or transforms the organization • Impacts many business processes and IT systems
Level of commercial change	• Minor changes to existing commercial approach	• Enhancements to existing commercial practices	• Groundbreaking commercial practices

HOW TO USE THIS CRITERION

To keep the scoring as simple as possible, each dimension applicable to College projects is scored on a scale of Low, Moderate or High.

FACTOR	PROJECT PROFILE		
	Low complexity	**Moderate complexity**	**High complexity**
Time and cost			
Team size			
Team composition and performance			
Urgency and flexibility of cost, time, and scope			
Problem and opportunity clarity			
Solution clarity, level of IT complexity			
Requirements, volatility and risk			
Strategic importance, political implications and number of stakeholders			
Level of organizational change			
Level of commercial change			
Risk, external constraints and dependencies			
OVERALL RANKING (Low, Low/Moderate, Moderate, Moderate/High, or High)			

CRITERION 6. SUSTAINABILITY

DEFINITION
The simplest and most fundamental definition of sustainability is "the ability to sustain" or "the capacity to endure". Measuring sustainability reveals:

- The full life cycle costs of a project; the human resources required to implement and maintain the project; training, support, repair costs; physical infrastructure costs; etc.
- Comparative strengths and weaknesses relative to competing projects
- Short-, medium- and long-term environmental, social and technological impacts

HOW TO USE THIS CRITERION
For proposed projects, each of the following considerations should be scored on a scale of 1 to 5 (from lowest to highest). The total score, out of a potential total of 35 points, indicates the relative sustainability of the project.

CONSIDERATION	SCORE
How will this project affect future decisions; are we compromising future options and possibilities?	1 to 5
Is the project scalable?	1 to 5
Do we know the full cost of developing, implementing and maintaining the project over time?	1 to 5
Can the project be sustained over time?	1 to 5
Does it align with the College's sustainability framework?	1 to 5
Does it align with the College's Business Plan?	1 to 5
Do we have the resources (financial, human) to execute the project?	1 to 5
TOTAL SCORE	xx/35

APPENDIX D: PROJECT PRIOTIZATION BASED ON CRITERIA

The Task Force applied the criteria in Appendix E to the College's 51 existing project proposals. Based on their ranking according to the first three criteria, the following 23 projects were shortlisted as potential priorities; the top 11 emerged for recommendation to President's Council:

REQUEST	ROI	ALIGN W/ BUS. PLAN	IMPACT	PHASE I EVAL. TOTAL	RISK	SUSTAI N-ABILITY	COMPLE XITY[5]	PHASE II EVALUA TION TOTAL	FINAL SCORE
Develop a Salesforce Community similar to myAC (Prospect admission portal)	3	3	3	9	2	2	2	15	13
Review the second offer for students that don't get into their program of choice.	3	3	3	9	2	2	2	15	13
Automate the annual curriculum review (CAL999)	3	3	2	8	2	2	1	13	11.5
Secure email, data loss prevention and anti-phishing	1	2	3	6	3	1	3	13	11
Grade entry and review	2	3	3	8	1	2	1	12	10.5
Bursary automation	3	3	2	8	1	2	1	12	10.5
Upgrade email and move to a hosted solution	1	2	3	6	3	2	1	12	10.5
Graduate validation	1	3	3	7	1	2	1	11	9.5
Active directory password authentication	1	1	3	5	2	1	2	10	8.5
Automate advanced standing course exemption process & course exemption for Perth and Pembroke	1	2	2	5	2	1	2	10	8.5
Monographs	2	1	2	5	2	1	2	10	8.5

[5] Following this exercise, it was decided to modify the complexity ranking from numerical to simply Low, Medium or High, so that each assessed project would have a numerical score *plus* a Low, Medium or High complexity level.

REQUEST	ROI	ALIGN W/ BUS. PLAN	IMPACT	PHASE I EVAL. TOTAL	RISK	SUSTAIN-ABILITY	COMPLEXITY[5]	PHASE II EVALUATION TOTAL	FINAL SCORE
Leverage existing client management solution & create knowledge base to publish on ITS Help Centre.	2	1	2	5	1	1	3	10	8
Create a case management or client management solution in Salesforce to track and report on support activities	2	3	3	8				8	8
Academic upgrading - automate fee notices and timetables	2	2	1	5	1	1	2	9	7.5
Create a solution in Salesforce that tracks new program information and status changes	1	3	1	5	1	1	2	9	7.5
Review the process for legal services	2	1	1	4	1	1	3	9	7
Develop a registration process with triggered communication	2	1	1	4	1	1	2	8	6.5
Leverage existing client management solution & develop a registration process with triggered communication	2	1	1	4	1	1	2	8	6.5
Leverage existing client management solution	2	1	1	4	1	1	2	8	6.5
GTC/onCourse Catalog	1	1	2	4	1	2	1	8	6.5
Locker rental system changes	1	1	1	3	1	1	2	7	5.5
Improve Blackboard and GeneSIS integration in support of Jazan	1	1	1	3	1	1	2	7	5.5