Transforming the Administration & Operations Enterprise

Final Report – August 16, 2019
Purpose & Objective

The purpose of this initiative is to help VT strengthen its capacity to deliver administrative and business services in the most cost efficient and effective manner possible to support mission-critical work.

Objectives:
- Assess current state operations: processes, transactions, structure, and policies
- Understand where work is done, how it is done, and who is doing which aspects
- Develop leading-practices future state opportunities to refine and streamline work flows and processes
- Eliminate barriers and unnecessary bureaucracy while embracing a continuous improvement mindset

Timeline and Approach

The assessment phase of this initiative began in April 2019 and continues through early August. The project approach focuses on the holistic four “levers” that VT can use to drive change: Business Practices, Technology, Data & Information, and People & Organization.

Business Operations
- Hokie Passport
- Mail Services
- Parking and Transportation
- Printing Services

Finance
- Budget
- Bursar
- Controller
- Procurement
- Risk Management

Human Resources
- Benefit Administration
- Employee Administration

Administrative & Operations Transformation Initiative

The assessment will cover VT’s current administrative services, including finance, business operations, human resources, and facilities management, focusing on the following in scope functions.

Business Operations
- Hokie Passport
- Mail Services
- Parking and Transportation
- Printing Services

Finance
- Budget
- Bursar
- Controller
- Procurement
- Risk Management

Facilities
- Capital Design
- Facilities Operations
- Real Estate
- Space Utilization & Management
- Utilities & Energy Management
- Sustainability

Engaging the Campus Community

This assessment works with the broader VT community to incorporate diverse inputs and gain deep understanding of current processes and future opportunities. Participants should actively participate and openly share individual perspectives.

✓ Survey  ✓ Interviews  ✓ Focus Groups

Contacts

Virginia Tech

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Engagement Context

Over the last four months, Deloitte has engaged a diverse set of stakeholders across campus and conducted detailed quantitative and qualitative analyses to understand VT’s current state and identify opportunities.

160+ Stakeholders through 23 End User and Employee Focus Groups

180 Customer Satisfaction Survey Responses

100+ Stakeholder Interviewees

350+ Documents and Data Sources

Virginia Tech stakeholders across key functional areas at all levels participated in this effort to provide the Deloitte team with a holistic understanding of the University’s current state. Representatives included:

- Deans / Vice Presidents
- T&R Faculty
- Frontline Employees
- Mid-level Managers
- Department Heads
- Admin Employees
- A/P Faculty
- Students
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Transforming the Administration & Operations Enterprise

Case for Change
What are Virginia Tech’s current challenges?
Virginia Tech is on a path of continued growth
The University is experiencing multi-dimensional growth with dramatic enrollment gains, an expanding geographic reach, and a growing research portfolio.

**Student Population**
Virginia Tech is so popular this year it’s offering financial incentives to delay enrolling
– Washington Post, June 2019

Virginia Tech officials say most diverse group ever applied to the school
– The Roanoke Times, March 2019

New Virginia Tech Campus to Boost CS Grads
– Campus Technology, May 2019

**Geography**
Virginia Tech Will Be Amazon’s Neighbor With Construction Of New $1B ‘Innovation Campus’
– WAMU, June 2019

$50 million gift bolsters health campus that was years in the making
– The Roanoke Times, December 2018

**Research Portfolio**
Virginia Tech Professor Receives Google Faculty Research Award
– Vision Spectra, July 2019

VA Tech’s SmartFarm Innovation Network will Build Farm of the Future
– Roanoke Star, June 2019

The new Virginia Tech Biomedical Research Addition will include research facilities in five thematic areas
– Building Design and Construction Network, January 2018

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To date, this growth has been sustained by VT’s lean administrative structure

Despite VT’s rapid growth and continued expansion plans, the University’s staffing levels are on par with or lag behind similar universities.

- VT is proud of its lean staffing, but this **contributes to gaps** in effectiveness and increases risk.
- Most of VT’s peers demonstrate **on par or higher employee to T&R faculty ratios**.*
- VT’s lean support model drives:
  - **Overly restrictive** and misaligned controls
  - **Under-resourcing** of strategic priorities
  - **Overburdened staff**
- Insufficient administrative support is further exasperated at VT due to **vacancies in key positions** driven by recruitment challenges.

*Note: Employee data includes both staff and A/P faculty workers and is consistent with IPEDS data definitions. Faculty data includes only T&R faculty data and is also consistent with IPEDS data definitions.

**Employees over T&R Faculty**

*Employees over T&R Faculty* is a **ratio** of total employees (**Staff & A/P Faculty**) divided by T&R faculty (**Teaching & Research**). This metric benchmarks the **level of administrative support** at the University.

Source: The Integrated Postsecondary Education Data System (IPEDS), 2018 Report
Yet, staffing challenges will be exacerbated by expected retirements

Retirement and turnover will grow in strategic academic and administrative areas. Coupled with recruiting challenges, this creates risk for the University in meeting its mission and growth goals.

**VT faces a looming retirement cliff...**

- **69%** The number of people that could retire by 2023 is 69% greater than the number of retirees in 2013
- **4,500+** Over 4,500 employees will either retire or separate from the University over the next 5 years
- **28%** ~28% of VT’s current workforce is expected to retire by 2030 (mostly Baby Boomers)

**...coupled with recruiting challenges...**

- VT faces challenges recruiting employees.
- Contributing factors may include inconsistent titles, compensation, and cumbersome hiring processes.
- Leading edge systems, streamlined roles and responsibilities, and improved processes are all needed to enable VT to be agile, responsive, and competitive in attracting and retaining talent.

**...and these workforce challenges put the University at risk.**

High-risk areas for potential workforce shortages jeopardize VT’s future ability to fully deliver its mission, including:

- **Core academics areas:** engineering, computer science, and basic science
- **Occupations such as finance, administration, trades, and lab support**
- **Ultimately, a lack of sustainable talent management will hinder VT’s ability to meet mission objectives and achieve strategic growth**

Source: Virginia Tech Workforce Analysis, 2018

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And, are compounded by current tools and processes

Employees spend time on redundant and highly manual work, limiting effective operations and reducing their capacity to contribute to the core mission of each department/unit.

| Shadow Systems | Employees develop and maintain shadow systems to compensate for process inefficiencies and/or limited technological capabilities. For example, employees frequently use spreadsheets to track progress of paper-based processes. |
| Manual Data Entry | Some employees are dedicated to entering data into one or more systems due to paper-based processes and lack of systems integration and automation. Some employees are fully dedicated to recording manual data entries, maintaining shadow systems, and reconciling data. |
| Transporting Paper | Pervasive paper-based processes require routing multiple physical documents to various stakeholders across campuses. Employees spend time walking forms around campus for approvals requiring wet signatures, faxing a high volume of materials to other departments, and mailing documents between departments, all of which delays overall processes. |
| Duplicative Processes | Employees frequently redo tasks in response to lost paperwork and errors in manual data entry. Due to lack of transparency and communication, units often also recreate processes that exist elsewhere on campus, such as maintaining paper copies of the same documents. |

The root causes of these challenges are deeply embedded in the culture of the institution, and “how work has always been done”
Where should Virginia Tech focus to create the services the University needs to succeed over the next five to ten years?
President Sand’s strategic priorities chart a path forward

“One of Virginia Tech’s greatest strengths is our ability to anticipate and adaptively respond to changing landscapes in education, industry, and outreach...

...the strategic plan reflects our commitment to a culture of continuous learning and improvement, with metrics to measure our progress and inform our decisions, and the flexibility to adapt as our internal and external environments change.”

- President Sands
The future of administrative services should support four priorities
Continued success in completing the University’s ambitious plan will require operations to mirror the nimble and innovative nature of the enterprise.

1. Advance Regional, National, and Global Impact
2. Elevate the Ut Prosim (That I May Serve) Difference
3. Be a Destination for Talent
4. Ensure Institutional Excellence
Virginia Tech’s vision for services should exemplify *Ut Prosim*

To thrive amid the current challenges of the higher education landscape and meet the ambitious institutional goals, Virginia Tech can develop administrative support functions based on these principles:

1. Eliminate barriers, unnecessary work flows, and duplicative and/or redundant efforts at all levels within the University

2. Use best practices in service delivery

3. Leverage technology to automate and simplify processes, reducing transaction times

4. Professionalize work environments

5. Develop and use cost effective and administrative efficient operating principles

6. Lead a culture of excellence and continuous improvement

7. Ensure the administrative and operations work is aligned with strategic priorities

8. Deploy leading change management principles to navigate new systems, processes, and structures
Virginia Tech should engage campus to fundamentally redesign how work is done

Broken, outdated, and inefficient processes can be streamlined with a focus on customer service and support of end user needs.

Benefits include:

- **Identifies Waste**
  - Pinpoints obsolete activities and process steps and identifies opportunities for electronic workflows, thereby reducing unnecessary organizational complexity and streamlining work.

- **Creates a Culture of Continuous Improvement**
  - Fosters a culture of improvement where employees at all levels are encouraged to provide input on an ongoing basis.

- **Increases Employee Engagement**
  - Process mapping requires increased employee engagement to capture feedback and put user needs at the center.

- **Improves End User Services**
  - Designs updated processes around the needs of the end-users, offering a more customer-service lens to process design.

- **Promotes Quality**
  - Creates a clearer picture of who does what and increases accountability among employees across the organization.

**Business Process Redesign (BPR)**

Examines the efficiency and effectiveness of an organization’s most critical processes.
Virginia Tech should focus the University’s talent on work that matters

Improved workforce alignment can empower employees to provide efficient and effective services. Investment in employee development will close competency gaps and enhance outcomes.

**GOALS & ACCOUNTABILITY**

Clear goals and accountability for progress measured by defined KPIs supports prioritization of work, aligns talent with VT goals, and facilitates results monitoring over time.

**ROLES & RESPONSIBILITIES**

Aligned individual and team-level roles mean employees have a clear vision of their work, priorities, and decisions. Ownership and authority is clearly defined and duplication of effort is minimized. Aligning roles within teams and among units creates shared aspiration and increases collaboration.

**TRAINING OPPORTUNITIES**

Increased training opportunities provide T&R faculty and employees with the tools needed to succeed in their positions. Training is a critical component of employee development and enables employees to advance their skills, competencies, and overall careers.

**DEFINED CAREER PATH**

Defined career paths are needed at VT for increased responsibility and compensation among staff. Career advancement (or lack thereof) is important to employees in their decisions to either join or leave an organization. Defined career advancement opportunities support VT’s hiring and retention efforts and reduces turnover in positions among departments.
Virginia Tech should leverage technology to make work easier

In response to current challenges, Virginia Tech can use technology to enable data-driven decision-making and increase workforce effectiveness and efficiency.

1. **Master Data Management**
   Using Master Data Management (MDM), VT can develop and leverage trusted and consistent data sources across campus. Coupled with increased use of Business Intelligence (BI), VT can analyze data and derive insights to drive improved outcomes in real time through the enablement of dashboards and other tools.

2. **Technology Roadmap**
   Creating a long-term plan for all software solutions will enable campus to make smart technology investments and work toward an integrated, holistic approach to systems.

3. **Process Automation**
   Thoughtful use of software can eliminate the most time-consuming and repetitive manual processes that make up staff’s day-to-day work, freeing up employees to drive strategic thinking and improve customer service.
Virginia Tech should empower employees with training and authority to make decisions

Leaders across all levels can build an environment that trusts and empowers their employees with autonomy, and the tools necessary to operate and complete tasks effectively and confidently.

**Priorities and Impact:**

- **Develop Leaders to Steward Talent**
  - Motivates and engages employees
  - Improves team productivity
  - Increases employee satisfaction and retention
  - Establishes consistency in employee experience across VT

- **Eliminate Silos**
  - Aligns inter-department goals and increases strategic thinking
  - Supports a culture of transparency
  - Increases collaboration and multi-disciplinary approaches among units

- **Reduce Single Points of Failure**
  - Enables employees to be cross-trained in multiple areas
  - Builds resilient and disaster-proof teams
  - Reduces burden on key employees through dispersed knowledge/skills
  - Promotes employee growth and development

- **Delegate Authority to Align with Accountability**
  - Reduces top-heavy decisions
  - Decisions are informed by those close to operations & eliminates intermediaries
  - Increases efficiency and reduces timeline to complete tasks
  - Promotes employee growth and development
What does the path forward look like?
Deliberate, disciplined focus on a new way of working can chart the course forward

A portfolio of “Transformational” opportunities can address critical current state challenges to improve how work is done at Virginia Tech.

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<th>Human Resources</th>
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<td>5. Conduct Comprehensive Review of Facilities Outsourcing</td>
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<tr>
<td>6. Develop Comprehensive Space Data Governance and Performance Management Program</td>
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<tr>
<td>7. Master Data Management &amp; Business Intelligence Strategy*</td>
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*Related to cross-cutting transformational opportunity.
Leadership should take time to assess what the institution has the capacity to do, when

Each of the Transformational Opportunities is an initiative that Virginia Tech will move forward to implement. The categories below describe how the University can approach next steps.

**Delegate to the Organization**
- Begin implementation of the opportunity in the near term
- Identify internal Virginia Tech stakeholders to design and implement the initiative

**Seek External or Additional Support**
- Begin implementation of the opportunity in the near term
- Identify supplemental help to support implementation efforts

**Evaluate Approach to Define Immediate Next Steps**
- Evaluate whether Virginia Tech can drive implementation or requires supplemental help
- Begin implementation of the opportunity in the near term
And, Virginia Tech will call on staff and faculty across VT to help
Each individual at Virginia Tech plays an important role in helping the University move forward.

- Read & Review the Report
- Attend SVPOA Town Halls. Ask Questions and Discuss with Your Departments
- Get Involved in Change Efforts
- Be a Change Agent
Transforming the Administration & Operations Enterprise

Current State Observations and Opportunities

*Cross-Cutting Transformational Opportunities*

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Cross-Cutting Transformation Enablers

The following success factors will be essential to implementation and enabling institution-wide transformation.

**Employee and Financial Capacity**

Given that many Virginia Tech employees and budgets are already stretched thin, available financial and employee capacity will determine initiatives’ scopes and timelines. Capacity can be expanded through utilization of Central and/or unit-level strategic funds across the University.

**Transparency**

All initiatives would benefit from comprehensively informing Virginia Tech leaders and employees of rationale, timeline, and scope as early as possible. Institution-wide transformation project success requires transparency and buy-in from a diverse array of stakeholders.

**Governance Structure**

To achieve success, each initiative should have both executive sponsors and dedicated project managers. All initiatives should also have clear timelines and defined goals with regular progress meetings to ensure accountability.

**Change Management**

Changing systems, processes, and organizational structures can generate significant work disruption and stakeholder apprehension. Recommendations will require significant change management and communication activities to successfully mitigate T&R faculty, employee, and other stakeholder concerns and drive change.
Transformational vs Additional Opportunities Explanation

Opportunities were categorized as “Transformational” or “Additional” based on how many levers will be impacted, who will need to own the opportunity, and how large of an effort the next steps will be. The cross-cutting “Transformational” opportunities are included in this section as they are the “must-do” opportunities to complete across Virginia Tech.

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<td>What “levers” are used primarily to attain the impact?</td>
<td>Multiple levers are used, or multiple areas and operations are impacted.</td>
<td>Smaller more tactical opportunity may only affect smaller groups inside of departmental organizations.</td>
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<td>Who are the points of ownership for these transformation efforts?</td>
<td>Success will require leadership from more senior-level leaders and often cross-functional areas.</td>
<td>Can be managed by mid-level leaders and may not require support outside of function-specific group.</td>
</tr>
<tr>
<td>What do next steps look like for these opportunities?</td>
<td>Large implementation efforts with significant resource needs.</td>
<td>Supported through departmental/unit activities.</td>
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Transformational vs Additional Opportunities Explanation

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#1A: Master Data Management & Business Intelligence Strategy

Implement a comprehensive master data management (MDM) strategy to synchronize data across Virginia Tech software systems would improve decision-making by providing a single, accessible source of truth.

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<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
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<tbody>
<tr>
<td>• Establish comprehensive data governance and Master Data Management (MDM) program to promote &quot;one version of the truth&quot; for enterprise-wide data, analytics, and reporting.</td>
<td>• Increase efficiency by decreasing fragmented nature of current data cleansing, aggregation, validation, and reporting efforts.</td>
<td>• Inability to pinpoint the origin of specific data elements, resulting in continued detailed reconciliation among different data sources.</td>
<td>• Marathon—Developing an actionable and impactful data governance and MDM strategy requires leadership and resources, as well as ongoing governance support and oversight from across the University.</td>
</tr>
<tr>
<td>• Develop a data governance and MDM strategy to create a path forward for unifying and managing the University’s data and business intelligence.</td>
<td>• Develop &quot;one version of the truth&quot; for data across the University.</td>
<td>• Lack of early warnings of financial, HR, and other challenges.</td>
<td>• Additionally, this effort will require a high degree of engagement on aligning on common data definitions. To be successful, data definitions must be agreed to and commonly used across Virginia Tech.</td>
</tr>
<tr>
<td>• Collaborate across all functions to develop shared data definitions and agreed-upon data management policies and procedures.</td>
<td>• Accelerate the University’s ability to identify, respond to, and remediate data inconsistencies.</td>
<td>• Continued maintenance and offline management of different data sets, which costs additional time and money.</td>
<td></td>
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<tr>
<td>• Unite ongoing, separate data management efforts across all University functions (e.g., Finance, Operations, Provost, IT) to provide a truly enterprise-wide strategy.</td>
<td>• Build campus-wide trust in data and reduce units’ need to maintain shadow systems.</td>
<td>• Significant employee time spent on building reports through aggregating and cleaning disparate data sources.</td>
<td></td>
</tr>
<tr>
<td>• Marathon—Developing an actionable and impactful data governance and MDM strategy requires leadership and resources, as well as ongoing governance support and oversight from across the University.</td>
<td></td>
<td>• Continued disparate investment in unit-level data management initiatives and shadow systems.</td>
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</table>
#1A: Master Data Management Strategy Status Quo

Virginia Tech lacks an enterprise-wide master data management and governance strategy. The University will need to build an extensive governance structure and establish a clear plan to build on the very limited unit-level data cleanup and ownership status quo.

**Key Observations**

- **There is an established but limited understanding of how different Virginia Tech units are responsible for various types of data governance.** However, units report that there is no widespread, consolidated data governance around who can modify what data. For example, Procurement employees have historically been able to modify recent alumni student records to change their names to issue W-9s. However, this is not necessarily consistent with Student Affairs’ guidelines.

- **There is a significant lack of transparency around data** as different units restrict access to data in inconsistent ways. Unit-level financial employees report that it takes them significant time to obtain needed access (if they obtain it at all) from a wide range of different University systems.

- **There is a lack of data definitions.** Units report widespread confusion over what different data fields mean. Often, unit-level leaders (e.g., senior business officers) report that they don’t know what certain fields actually signify in Banner or other systems, and they don’t have a consolidated place to obtain this information. This leads to inconsistent reporting and decision-making.

- **Discrete units are trying to maintain data and clean data within their units.** For example, select Virginia Tech units conduct targeted database management (e.g., Procurement cleans up the Jaggaer/HokieMart vendor database).

**Key Insights**

- There is **no established enterprise-wide strategy** around master data management.

- Limited, disparate efforts will **take significant time to reconcile** and improve.
#1B: Master Data Management & Business Intelligence Strategy

Establish a university-wide business intelligence center of expertise would improve the quality and consistency of reporting and increase employee time spent on analysis and advising, rather than data aggregation and cleansing.

<table>
<thead>
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<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Establish a single point of reporting expertise, with appropriate university-wide governance.</td>
<td>• Improve management effectiveness by freeing up employee time that can be spent more strategically advising T&amp;R faculty, staff, and other leaders.</td>
<td>• Continued manual creation of reports requiring detailed reconciliation between different data sources.</td>
<td>• Marathon: Developing an actionable and impactful reporting center can build on existing BI resources. However, it still requires a university-wide commitment to enabling a comprehensive BI approach across the institution; as well as a commitment of leadership, resources, and ongoing oversight.</td>
</tr>
<tr>
<td></td>
<td>• Develop &quot;one version of the truth&quot; for reporting and analytics across the University.</td>
<td>• Lack of early warnings of strategic and operational challenges due to insufficient analytical capabilities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Accelerate the University’s ability to identify, respond to, and address strategic and operational challenges.</td>
<td>• Continued investment in maintaining shadow systems and spreadsheets perceived to have more readily accessible and accurate information.</td>
<td></td>
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</table>
#1B: Business Intelligence Strategy Status Quo

Virginia Tech’s emerging business intelligence (BI) efforts are siloed, uncoordinated, and lack a central governance structure to maximize long-term benefits.

**Key Observations**

- **BI efforts, while emerging, remain disparate.** Different SVPOA units are developing and beginning to implement unit-specific business intelligence plans. For instance, Operations is rolling out a new BI tool (Qlik). Across Virginia Tech, the Provost’s Office of Academic Resources is farthest along on the maturity curve to develop consolidated Business Intelligence resources.

- **Limited applicability of reporting tools.** MicroStrategy is reportedly not end user-friendly and does not have the right “canned reports” for administrative staff, College/Unit-level leaders, and other non-Central users. Therefore, some Central units (e.g., Controller’s office) do not frequently use tools and continue to rely on legacy SAS reporting. Other Central Finance units (e.g., Procurement) cannot use MicroStrategy since some essential data (e.g., HokieMart data) were not loaded into the data warehouse.

- **There is a lack of BI expertise.** Cross-campus units report limited to no MicroStrategy support or general analytics expertise from Central IT or other units. Select units report the need to either hire their own analytics staff and/or build relationships with limited analytics experts on campus to obtain necessary information on how to use MicroStrategy, where available reports are, and how to reconcile different data sets.

- **Ongoing initiatives are occurring in existing data silos without much coordination.** These initiatives are also generally being tailored to a small subset of central-level users, rather than cross-campus stakeholders. Additionally, any future master data management efforts will cause these separate initiatives to have to do redo their work after data definitions and governance are refined.

**Key Insights**

- **Virginia Tech needs to get ahead of these nascent BI efforts and create a consolidated business intelligence strategy** to coordinate different efforts. There is also a need for a consolidated BI governance structure to make sure future BI investments are complimentary and coordinated.
#2: Fundamentally Redesign Processes and Policies

Fundamentally redesign processes and policies to streamline how work is done. Launch a comprehensive process assessment leveraging front line workgroups to outline how to optimize core University technologies and practices.

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<tbody>
<tr>
<td>• Map common processes and conduct comprehensive assessment of technology system functionality to identify major limitations and solutions.</td>
<td>• Design effective, user-centric processes that significantly speed up common processes and transactions.</td>
<td>• Perpetuation of inefficient processes and systems.</td>
<td>• Marathon: This opportunity would require significant Central Finance, Central Human Resources, Central IT, and unit-level employees time and resources to identify and prioritize both process and technology challenges and opportunities.</td>
</tr>
<tr>
<td>• Begin process redesign efforts with a focus on Finance and Human Resources to achieve high impact cross-functional outcomes. A plan for improving processes should be developed, prioritizing the most important challenges.</td>
<td>• Drive culture change across the University focused on collaboration, continuous improvement, and user-centric systems.</td>
<td>• Continued employee time spent on low value work (e.g. obtaining wet signatures and manual data entry).</td>
<td></td>
</tr>
<tr>
<td>• Establish front line workgroups of Virginia Tech personnel working interdependently to involve multiple, on the ground perspectives, that can help determine user-centric solutions that directly solve process challenges.</td>
<td>• Reduce avoidable errors caused by paper-based transactions.</td>
<td>• Continued software system frustrations ranging from minor inconveniences (e.g., transaction delays, navigating through multiple screens) to major flaws (e.g., unsupported processes).</td>
<td></td>
</tr>
<tr>
<td>• Redesign processes in conjunction with a Central IT strategy, Banner improvements, and RPA initiatives to establish integrated user-centric processes enabled by technology.</td>
<td>• Reduce manual work to free up employee time for more strategic tasks.</td>
<td>• Tedious, delay-inducing and highly manual work to complete common transactions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reduce widespread use of departmental shadow systems.</td>
<td>• High number of required signatures diverting senior leadership time away from more strategic priorities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Enable employees to more effectively utilize technology system features.</td>
<td>• Continued high reliance on disparate and duplicative shadow systems for day-to-day VT administration work.</td>
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</tr>
</tbody>
</table>
#2: Fundamentally Redesign Processes and Policies Status Quo

Virginia Tech will need to consider how to best redesign processes for efficiency inside of individual departments, but also how those efforts will coalesce with Master Data Management and Business Intelligence.

**Finance** likely has the most developed technical abilities around Robotics Process Automation (RPA).
- Finance is redesigning processes and utilizing RPA to increase efficiencies.
- Procurement is strategizing about procurement process redesign in advance of potential Jaggaer reimplementations.

**Facilities** is currently addressing current state issues by better mapping processes. They are also attempting to better utilize HokieServ capabilities.
- While work is being done, the current state is nascent in terms of ability and development.
- There is still widespread confusion about policies and processes.

**Human Resources** has been considering business process redesign as part of the HR transformation and has made limited progress.
- For example, HR is currently looking at existing policies and procedures as part of a larger PageUp implementation.
- The ultimate goal will be to create new, more efficient processes and ensure that processes accurately reflect new policies.

**Key Insights**

- Virginia Tech currently has limited mapping and redesign capabilities spread across the University. However, these skills should ideally be established within one team to effectively implement systematic change.
- Another missing component is the lack of effective, enterprise-wide governance. Executive-level governance is essential so changes can be coordinated in a systematic manner to achieve buy-in and avoid effort duplication.
- Virginia Tech also needs to align all redesign activities with any selected Master Data Management and BI strategy.
#3: Prototype Service Model (Northern Virginia)

Virginia Tech has a unique opportunity to test and develop a new service model to support the broadening Northern Virginia campus.

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use the Northern Virginia campus as a model for the future service model. Design the optimal service model and test as a proof of concept. Design roles and responsibilities as a prototype for the future state of Virginia Tech broadly.</td>
<td>• Ability to test and perfect a service model that will work across VT’s campuses, both in Blacksburg and outside. • Optimized service delivery model increases efficiency and effectiveness as processes and the way work is done is tested and refined through piloting.</td>
<td>• Replication of broken and outdated roles throughout VT’s new campus. • Hampered innovation and strategic thinking. • Perpetuated processes without serious effort to overhaul. • Silos and replicated pockets of services on campuses. • Continued lack of customer service for departments, especially on campuses outside of Blacksburg.</td>
<td>Marathon: This opportunity requires a high level of effort to design roles and a service model that will work for the Northern Virginia campus. Alignment will require stakeholder buy-in and coordination. Piloting the new service model will require careful planning and implementation as well as flexibility to nimbly adjust aspects of the model based on lessons learned and need. As Virginia Tech refines the service model in the Northern Virginia campus, implementation plans and a cohesive strategy to expand to other campuses, including Blacksburg and Roanoke will take careful planning and broad stakeholder engagement.</td>
</tr>
<tr>
<td>Staff Northern Virginia campus strategically with clearly defined and thoughtful roles, rather than employees playing ‘generalist’ roles in their administrative functions.</td>
<td>Consolidate expertise within Centers of Expertise which operate as transactional hubs that have clear connections back to VT Central Administrative leadership.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consolidate expertise within Centers of Expertise which operate as transactional hubs that have clear connections back to VT Central Administrative leadership.</td>
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</tbody>
</table>
#3: Prototype Service Model Status Quo

Virginia Tech has begun initial efforts to develop and prototype a service model in Northern Virginia. The design and pilot of the service model requires cross-campus alignment and additional effort to continue to develop the concept.

- Key T&R faculty and employees are in the process of developing an innovative service model for the National Capital Region.

- This initiative appears to be in the early stages of cross-campus alignment and is in coordination with Innovation Campus launch and existing NCR service capabilities.

- Key University leaders are invested in design of an improved service model and have brought on external partners to support development.

The challenge: implementing redesigned roles on the distributed campus is not sufficient for success. The central offices these roles connect to must be well functioning to support the distributed efforts.
#4: Develop a Technology Roadmap

Develop an enterprise-wide Technology Roadmap that will define the University’s technology vision and outline planned investments over the next five years to support the University’s overall strategic priorities.

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Develop a Technology Roadmap that will define the University’s technology priorities and determine planned investments over the next five years.</td>
<td>• Engages leaders across the University to support a shared path forward for technology modernization.</td>
<td>• Missed opportunities to develop holistic technology solutions to meet cross-campus stakeholder needs.</td>
<td>• Heavy Lift: This opportunity would require broad, campus-wide alignment on University priorities and the technology investments to support them. In addition to leadership alignment, it would take significant employee time and resources to analyze the current technology landscape, identify capacity gaps, and develop a roadmap forward.</td>
</tr>
<tr>
<td>• Enable university-wide stakeholders to align on a shared technology vision that best supports institutional priorities.</td>
<td>• Establishes a vision for the future state that is focused on addressing the needs of all T&amp;R faculty and employees.</td>
<td>• Continued multitude of manual, paper-based processes.</td>
<td>• While it will take substantial resources, this initiative will lay the foundation for wholesale university-wide technology transformation that better serves T&amp;R faculty and staff.</td>
</tr>
<tr>
<td>• Identify/validate potential technology gaps compared to leading Higher Education practice.</td>
<td>• Identifies the level of transformation, and associated business impact, that Virginia Tech desires from investment in modern technology.</td>
<td>• Perpetuation of disconnected, inconsistent shadow systems across academic and administrative units.</td>
<td></td>
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<tr>
<td>• Estimate high-level investment requirements to bridge the gaps identified between current state and desired future state.</td>
<td>• Enables Virginia Tech to make more deliberate, transparent, and informed technology investments by working towards an integrated, customer-oriented, and holistic approach to software systems.</td>
<td>• Fragmented, disparate investments in unit-specific technology solutions disconnected from broader strategy.</td>
<td></td>
</tr>
<tr>
<td>• Develop roadmap based on University’s strategic priorities, inclusive of risks, dependencies, success factors, and decision points.</td>
<td>• Ultimately, provides a foundation for a Virginia Tech enterprise-wide technology operation that can provide more efficient and effective processes to serve T&amp;R faculty and staff.</td>
<td>• Lack of alignment and collaboration between IT and customers.</td>
<td></td>
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</table>

CROSS-CUTTING OPPORTUNITIES
#4: Develop a Technology Roadmap Status Quo

Virginia Tech will need to create an enterprise-wide Technology Roadmap to foster alignment between departmental IT investments and university-wide technology priorities.

<table>
<thead>
<tr>
<th>Discrete Roadmaps</th>
<th>Independent Investments</th>
<th>Distinct Data Owners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently different units have different, uncoordinated technology strategies.</td>
<td>Departments currently use different software depending on their individual needs.</td>
<td>Unit-level data owners are developing different software skill sets and creating custom reports inside these different solutions.</td>
</tr>
<tr>
<td>• These create differences in goals, processes, and ideal, end-state capabilities.</td>
<td>• Currently Facilities, HR and Finance all invest in different software (often through Central IT) to varying degrees depending on their needs.</td>
<td>• Units must conduct specific software training to smaller groups of people, leading to limited enterprise-wide knowledge.</td>
</tr>
<tr>
<td>• This also exacerbates the difficulty of creating a unified Master Data Management and BI strategy.</td>
<td>• For example, Facilities is investing in AiM/HokieServ enhancements, HR is implementing PageUp, and Finance is implementing Chrome River.</td>
<td>• Having distinct owners also leads to additional governance issues as multiple departments assign differing data stewards for similar data pools.</td>
</tr>
<tr>
<td></td>
<td>• However, there is limited conversations among units about how technology investments intersect with each other.</td>
<td></td>
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</tbody>
</table>

Key Insights

• Virginia Tech needs to develop a Technology Roadmap sooner rather than later. Currently, each department is moving in different, independent directions. The more developed and sophisticated these departments become in their IT capabilities, the harder it will be to integrate and scale them at a later date.

• Significant financial, training, and human capital risks exist as each department moves on its own technology path.

• Financially, the University loses the ability to strategically leverage its collective purchasing power to negotiate for more competitive contracts, potentially overpaying as smaller sets of licenses are purchased at the unit level. Additionally, training will have to be conducted on a smaller and more specific scale.

• From a human capital perspective, employees will become increasingly departmentally designated as they will develop department-specific software skills. This means employees could spend time and effort developing skills that are not required later, creating bottlenecks around data use and access.
Transforming the Administration & Operations Enterprise

Current State Observations and Opportunities

Finance

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<th>Page</th>
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<tr>
<td>Transformational Opportunities</td>
<td>56</td>
</tr>
</tbody>
</table>
Finance Current State Observations
What’s Working Well
The below observations summarize the key themes of what is working well in Finance.

Theme #1: Technology Initiatives
- Ongoing efforts to use technologies, particularly Robotic Process Automation (RPA), to streamline processes and improve financial management effectiveness in multiple areas.
- This may serve as an early test case for how Central-led technology modernization can improve operations and services provided to campus stakeholders.

Theme #2: Focused Support for Administrative Modernization
- Despite an overall traditional, control-focused environment, select Central Finance leaders (e.g., Payroll, Bursar, Procurement) are increasingly focused on modernizing their organizations to be more efficient and customer-centric.
- For example, Procurement has begun to redesign business practices, undertake targeted technology optimization, and redesign organizational structures to better serve Virginia Tech T&R faculty and staff.

Theme #3: Expanded Training of Unit-Level Employees
- Central Finance has launched an onboarding program to educate unit-level financial employees on Central Finance guidelines, best practices, and common financial tools. Early pilot cohort was oversubscribed due to high demand.
- Anecdotally, early participants report higher satisfaction, greater readiness to perform Virginia Tech financial management job responsibilities, and a stronger support network of Central and unit-level staff.
Virginia Tech’s Current State Finance Effectiveness

The Administrative and Operations assessment revealed stakeholder perspectives on Finance functions.

How would you rate your overall satisfaction with...

Purchasing Support
- Very Satisfied: 6%
- Satisfied: 15%
- Neutral: 31%
- Dissatisfied: 42%
- Very Dissatisfied: 17%

Contract Engagement & Approval Processes
- Very Satisfied: 5%
- Satisfied: 14%
- Neutral: 33%
- Dissatisfied: 42%
- Very Dissatisfied: 10%

Budget & Financial Planning
- Very Satisfied: 6%
- Satisfied: 2%
- Neutral: 33%
- Dissatisfied: 49%
- Very Dissatisfied: 10%

Key Insights

- Purchasing received the highest favorability among the Finance areas, with ~79% of people being either satisfied/very satisfied. However, Contracts only received a 50% favorability. 59% of respondents viewed Budget and Finance as favorably, however when asked specifically about timeliness, transparency, access to data and efficiency, favorability fell below 50%.

- VT stakeholders value clearly-defined processes and transparency, especially in terms of purchasing and contracts, which are currently perceived to be lacking. T&R faculty and employees noted long procurement timelines and confusion around processes.

- Processes and data access are perceived to support Central administration goals, rather than the needs of T&R faculty, unit-level staff, and students.

- Stakeholders are interested in improving efficiency of Finance operations through automated processes and electronic signatures.

Procurement and Controller offices are not working with you. They are working against you.

My job is to make my own staff as efficient as possible. My job is not to change processes to reduce work for academic departments.

The procurement system is capable of much more than what we use it for.

Sometimes, [transactions] go through, sometimes they don’t. This is even when I submit [a form] that is exactly the same.

[Central offices] need to come into modern times and recognize electronic signatures.

I had four faculty wait for two months for their research project to advance because of procurement.
Initiatives In-Flight

Below summarizes the in-scope initiatives underway by Finance:

<table>
<thead>
<tr>
<th>Theme</th>
<th>Initiative</th>
</tr>
</thead>
</table>
| Robotic Process Automation (RPA)           | • Identifying processes where RPA can be best utilized to improve efficiency and accuracy.  
• Establishing work plans to implement RPA in those identified processes.  
• Expanding use of RPA tools beyond the Bursar/Controller’s office by identifying other Central Finance processes that could also be streamlined through robotic process automation. |
| Chrome River Implementation                | • Implementing Chrome River as a new travel system to streamline travel approval and reimbursement processes.                                                                                                     |
| HokieMart Optimization                      | • Developing plan to optimize HokieMart/JAGGAER to improve service to campus customers.                                                                                                                                 |
| I-9 Process Shift to HR                    | • Establishing and implementing a plan to move the I-9 process to Human Resources to align with best practices, and to maximize accuracy and efficiency.                                                                 |
| Payroll Modernization                       | • Expanding payroll tax withholding capabilities to additional states. Payroll expanded tax withholding to its first, non-VA state, in April 2019.  
• Communicating Payroll policies and procedures more effectively and frequently to employees.                                                                                                                                 |
## Current State Observations Overview

### Finance In-Scope Function(s)

- Cross-Functional
- Controller
- Procurement
- Budget
- Bursar
Current State Observation Template

The following format will be used to summarize current state observations:

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
<th>Identified Root Causes</th>
<th>Lever</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the observation?</td>
<td>What impact is this having on current state operations?</td>
<td>What is the underlying cause of this observation?</td>
<td>Business Practices</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>People &amp; Organization</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Data and Information</td>
</tr>
</tbody>
</table>

Indicates there is an In-Flight Initiative that impacts an observation(s) or implication(s)
Cross-Functional Current State Observations

Central Finance has a significant and growing number of FTEs reportedly devoted to data entry and other manual tasks. This contributes to unit-level financial employees not feeling supported by Central Finance, leading to avoidable errors and fewer opportunities for strategic financial advice to T&R faculty and staff.

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
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</thead>
<tbody>
<tr>
<td>Central Finance leaders report that there is a significant (and growing) number of FTEs</td>
<td>Central Finance leadership add/maintain FTEs to manage manual tasks, rather than invest in solving root business practice or technological challenges. Central Finance employees must spend time on transactional tasks, rather than more strategic priorities such as providing guidance and support for unit-level financial staff.</td>
<td>• Central-focused software configuration requires unit-level financial employees to send Central Finance many transaction types (e.g., most journal entry types) to be inputted.</td>
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<tr>
<td>devoted to manual data entry and reconciliation tasks. For example, a new FTE in the</td>
<td></td>
<td>• Outdated business practices requiring manual, paper-based financial transactions (e.g., ~30% of journal entries are manually keyed by Central and those transactions require paper forms with wet signatures).</td>
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<tr>
<td>Controller’s office has recently been hired primarily to correct fixed assets entries.</td>
<td></td>
<td>• Financial software configurations and integrations introduce recurring data errors (e.g., fixed assets errors are reportedly caused by self-service Jaggaer configuration) that subsequently require FTEs to correct.</td>
<td></td>
</tr>
<tr>
<td>Unit-level financial employees do not feel trained or otherwise supported by Central</td>
<td>Central and unit-level financial employees spend time correcting foreseeable financial errors, rather than strategically advising T&amp;R faculty and staff. University leaders may be missing out on opportunities to improve financial employee effectiveness to better serve T&amp;R faculty, staff, and students.</td>
<td>• Insufficient training on proper guidelines, procedures, and best practices provided to unit-level financial staff.</td>
<td></td>
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<tr>
<td>Finance and reportedly make frequent errors that Central Finance must subsequently</td>
<td></td>
<td>• Unit-level financial organizational structure creates silos and barriers for employees to share knowledge and improve effectiveness.</td>
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<tr>
<td>correct.</td>
<td></td>
<td>• Select Central Finance units instruct employees to deprioritize customer service (e.g., instructing employees to not answer email until the afternoon to facilitate faster transaction cycle times).</td>
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</table>
## Cross-Functional Current State Observations

Central Finance leaders design policies and procedures for their employees without holistically considering the needs of unit-level financial employees and academic/administrative stakeholders. This contributes to business practices that are not optimized for efficiently and effectively conducting work across the University.

<table>
<thead>
<tr>
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</thead>
</table>
| Central financial managers design processes to optimize Central financial employee workflows, rather than holistically considering how to improve the effectiveness and efficiency of distributed unit-level financial management. Additionally, unit-level financial employees broadly report that *Central Finance employees do not sufficiently and consistently communicate regarding policy changes.* | *Central finance employees* spend significant time designing processes without considering downstream time and energy costs to academic/administrative unit users. *Unit-level financial employees* must divert time to unnecessarily manual tasks (e.g., sending paper invoices), rather than more strategic financial tasks. *Deans and administrative leaders* have fewer opportunities for strategic financial support from Central or distributed financial staff due to these many manual tasks. | • Historic Central finance focus on maximizing internal efficiency, rather than university-wide financial management effectiveness and efficiency.  
• Insufficient Central finance understanding of common pain points and essential priorities of unit-level financial managers.  
• Siloed departmental financial organizational structure provides limited avenues for unit-level financial employees to elevate concerns and suggestions to Central Finance leadership.  
• Select Central Finance units explicitly order employees to deprioritize customer service (e.g., instructing employees to not answer email until the afternoon to facilitate faster transaction cycle times). |
Cross-Functional Current State Observations

Leaders, T&R faculty, and employees report significant difficulty in quickly obtaining accurate and consistent financial management data to make essential strategic and day-to-day decisions.

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<tbody>
<tr>
<td>Campus stakeholders at all levels (leaders, T&amp;R faculty, and staff) report significant difficulty in obtaining financial information efficiently and effectively to make informed, data-driven decisions.</td>
<td>Financial employees spend significant time reconciling disparate data (up to 15 different queries for one common report), rather than analyzing results and advising academic/administrative leaders. Academic and administrative leaders employ FTEs primarily-or solely-focused on reporting and reconciliation due to the significant labor and time it takes to consolidate information. Unit-level financial employees sometimes rely on disparate shadow systems (e.g., QuickBooks) and different data fields, generating inter-unit inconsistencies in financial reporting.</td>
<td>• MicroStrategy implementation did not incorporate essential financial data (e.g., procurement data) in data warehouse. • Canned MicroStrategy report database lacks essential reports heavily used by unit-level financial managers. • Incomplete data dictionaries for current reports cause confusion for financial staff. • Limited to no Central IT customer support or training on business intelligence tools and practices. • Strict access restrictions on financial data reduce ability for T&amp;R faculty and employees to obtain necessary information.</td>
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</tbody>
</table>
Controller Current State Observations

Controller-related financial management business practices are highly manual and paper-based. This contributes to Central and unit-level financial employees diverting time, energy, and FTEs to manual tasks, rather than strategic financial management.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Highly manual and centralized paper-based processes generate significant delays, slow down processing speeds, and decrease accuracy of mission-critical financial processes.</td>
<td>Unit-level financial employees spend significant time and energy completing, tracking, and correcting error-prone paper-based processes (e.g., journal entries). Unit-level financial employees devote time to building, maintaining, and entering transactions into shadow systems to manage paper and keep track of financial transactions. Central Finance employees reportedly lose personally identifiable information (PII) due to the many paper forms mailed across campus. Slow, highly manual processes lead research administrators to report significant difficulties in informing PI decisions through presenting accurate and up-to-date account balances. University leaders must hire and retain employees for data entry and manual reconciliation tasks (e.g., ~15 Central Finance FTEs devoted to rekeying 156k annual invoices). T&amp;R Faculty, staff, students, and vendors receive slower and less accurate financial management service levels.</td>
<td>• University’s Banner configuration does not allow non-Central employees to electronically initiate general ledger transactions (with the exception of intra-organizational budget transfers), forcing employees to send most journal entry types to Controller’s office to be centrally and manually entered.</td>
<td>• Select paper-based transactions are perceived to save time for Central Finance employees, even when they generate extra work for distributed units. • Insufficient electronic workflow systems that could allow Personally Identifiable Information (PII)-related transactions to be securely transmitted through electronic means. • Slow pace of limited efforts to migrate processes to electronic workflows.</td>
</tr>
</tbody>
</table>
Controller Current State Observations

Stakeholders report Controller employees inconsistently reject transactions and provide confusing advice. This reduces unit-level financial employees’ capacity to complete their tasks effectively, efficiently, and accurately.

<table>
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</thead>
<tbody>
<tr>
<td>Campus stakeholders report significant inconsistency in Controller office interpretation of financial guidelines. This has led to confusion over unwritten rules and frustration over unexpected rejections.</td>
<td>Unit-level financial employees feel unsupported and confused by common financial transactions. T&amp;R Faculty and employees experience unexpected delays and frustrations due to unexplained rejections. Central and unit-level financial employees divert time and energy to correcting transactions, rather than more strategic financial tasks.</td>
<td>- Reportedly significant Controller office employees and leadership turnover leading to changes in unwritten rules and guidelines about core functions (e.g., A/P, Travel). - Insufficient training of unit-level financial employees on central Finance policies and procedures.</td>
<td></td>
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</tbody>
</table>
Controller Current State Observations

Internal billing practices are perceived to be opaque and error-prone, frustrating and generating additional work for unit-level customers. Purchase card (Pcard) and travel expense processes are slow and manual, but will be soon revamped through a Chrome River implementation.

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Internal billing processes (e.g., print services, facilities) are perceived to be both opaque and error-prone with many reports of general ledger charges significantly exceeding initial estimates. When discrepancies occur, campus customers do not feel they have avenues to contest charges with internal campus vendors.</td>
<td>Unit-level financial employees divert time from core job responsibilities to manually review internal billings to discover and dispute discrepancies. <strong>Academic/ Administrative leaders</strong> reallocate budgets away from core programmatic tasks to cover higher than expected internal billing charges (e.g., unexplained $78K print services charge rather than $70K estimate). <strong>Internal campus vendor employees</strong> do not provide sufficient customer service to campus customers in explaining actual cost of services. <strong>Employees</strong> try to avoid internal campus vendors partially due to frustrations over opaque and seemingly arbitrary pricing.</td>
<td>• Internal campus vendors (e.g., print services, facilities) are not required to provide itemized invoices or other final cost documentation. Campus customers often only discover charges when final charges hit general ledger. • <strong>Virginia Tech financial guidelines do not provide sufficient support</strong> to aid departments in contesting charges.</td>
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<tr>
<td>Pcard and travel expenses often experience processing delays, (e.g., up to 2 months for some reimbursements) and require many manual paper-based forms and wet signatures.</td>
<td><strong>T&amp;R Faculty, staff, and students</strong> report waiting for up to 2 months for reimbursements after trips, a particular challenge for <strong>cash-strapped</strong> graduate students. <strong>T&amp;R Faculty and employees</strong> spend significant time filling out confusing forms and following-up on reimbursements. <strong>Financial employees</strong> build and maintain shadow systems partially to keep track of ongoing and expected travel expenses. <strong>Research administrators and PIs</strong> find it challenging to reconcile Pcard expenses in time for award closeouts.</td>
<td>• <strong>Outdated travel system (Banner TEM) requires many manual processes and paper-based forms</strong> (Note: Chrome River implementation is expected to address this challenge). • <strong>Historic guidelines requiring wet signatures</strong> for many common tasks and processes.</td>
<td></td>
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</table>
# Procurement Current State Observations

Central Procurement is primarily focused on tactical, rather than strategic activities. The University is missing out on opportunities to reduce spend, improve service to campus customers, and enhance vendor relationships.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Virginia Tech’s primary focus is on tactical procurement activities as the vast majority (~90%) of Central Procurement activities are transactional (e.g., PO Processing). This is significantly below institutional benchmarks (~50%). Even buyers and senior procurement managers spend significant amount of time on manual tasks (e.g., filling out paper requisitions), rather than more strategic procurement tasks (e.g., contract and vendor management).</td>
<td>Procurement employees have limited capacity for more strategic procurement activities (e.g., contract management, vendor relations, and customer engagement). <strong>Procurement leaders</strong> have limited capacity for strategic planning to envision new ways to save money and improve service.</td>
<td>• Historic role of Procurement as tactical, data entry-focused organization, rather than strategic partner to campus customers. • HokieMart/Jaggaer system configuration generates significant amount of avoidable, paper-based work and duplicate reentry.</td>
<td>• Significant amount of transactional work crowding out buyer capacity for more strategic tasks. • Historic lack of training and empowerment of buyers to serve as strategic partners with campus stakeholders. • Potential resistance from campus to channel spend into established contracts. • Procurement employees manually distribute requisitions to generalized buyers, rather than establish specialized expertise. • University does not have an established, category-based spend taxonomy or KPIs for organizing existing procurement.</td>
</tr>
<tr>
<td>Significant focus on transactional activity contributes to fewer opportunities for Central Procurement to conduct more strategic procurement tasks (e.g., negotiate cost savings, improve vendor quality). As a result, the University falls below institutional benchmarks for cost savings and cost avoidance.</td>
<td><strong>Procurement buyers</strong> have additional opportunities to more strategically manage existing contracts to reduce spend and improve performance to T&amp;R Faculty and staff. <strong>Academic and administrative leaders</strong> spend unnecessarily for goods/services not under contract or under insufficiently managed contracts. <strong>PIs</strong> divert limited research funds to overly expensive goods/services. <strong>T&amp;R Faculty and employees</strong> receive limited, reactive, strategic buying support from procurement staff.</td>
<td></td>
<td></td>
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</tbody>
</table>

Sources: Virginia Tech Procurement data. Center for Advanced Procurement Studies (CAPS) Industry benchmarks (Government); Center for Advanced Procurement Studies (CAPS) Industry benchmarks (Cross Industry); APQC Key Procurement Benchmarks at a Glance (Government/Military Industry); APQC Key Procurement Benchmarks at a Glance (Cross Industry).
## Procurement Current State Observations

Despite a focus on transactional tasks, Central Procurement has relatively slow cycle times for common processes. This is partially driven by paper-based procurement workflows perpetuated by the flawed, original Jaggaer implementation. Jaggaer’s configuration has also led to reduced reporting capabilities.

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
<th>Identified Root Causes</th>
<th>Lever</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current procurement process times still lag industry benchmarks. For example, current PO processing cycle times average 13.9 days compared to benchmarks of 0.5 – 7.2 days.</strong></td>
<td><strong>Procurement leaders allocate FTEs to printing, organizing, and manually rekeying documents. Procurement employees spend time and energy on manual data entry and switching among systems, rather than more strategic sourcing tasks. T&amp;R Faculty and employees may experience slower procurement processing times and lower opinions of Central Procurement as an organization.</strong></td>
<td><strong>• HokieMart/Jaggaer implementation decision to replicate legacy processes, rather than reengineer processes to reduce work through utilizing Jaggaer electronic workflow functionality.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Current Banner/Jaggaer integration’s reportedly inefficient configuration has perpetuated paper-based processes, duplicate reentries, and other manual tasks.</strong></td>
<td><strong>Procurement employees do not have sufficient data readily available to make data-driven procurement decisions. Procurement leaders and employees spend time and energy requesting ad-hoc reports from other, specialized IT/analytics employees outside unit. Procurement and Finance leaders do not have ready access to procurement data to make essential strategic decisions. Finance leadership does not have information for assessing whether future Procurement initiatives are effective.</strong></td>
<td><strong>• MicroStrategy implementation did not include procurement data in data warehouse, preventing utilization of university-wide BI tool capabilities.</strong></td>
<td></td>
</tr>
</tbody>
</table>

Even though the tactical activity is supported by e-procurement technology, **reporting from the system is slow and often requires consultants or other individuals with unique programming skills** from the Finance Department.

**Sources:** Virginia Tech Procurement data. Center for Advanced Procurement Studies (CAPS) Industry benchmarks (Government); Center for Advanced Procurement Studies (CAPS) Industry benchmarks (Cross Industry); APQC Key Procurement Benchmarks at a Glance (Government/Military Industry); APQC Key Procurement Benchmarks at a Glance (Cross Industry).
Procurement Current State Observations

Across Virginia Tech procurement organizations, the IT procurement organization (ITPALS) is especially perceived to be slow and overly restrictive on approving software licenses essential for academic and administrative goals.

<table>
<thead>
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<th>Current State Observation</th>
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</tr>
</thead>
<tbody>
<tr>
<td>IT software procurement is perceived to be overly slow and restrictive (reportedly 12-18 month cycle times) and has intensive new review processes (e.g., a new 365 cybersecurity questionnaire for all bidders) that may delay procurements even further.</td>
<td>T&amp;R faculty experience significant barriers in obtaining necessary software for teaching and research goals due to vendors refusing to work with university due to onerous bid requirements and/or slow cycle times. Even when approved, T&amp;R faculty, employees and students do not receive sufficient communication from IT procurement and are not able to obtain necessary software in a timely fashion. Frustrated T&amp;R faculty and employees increasingly avoid required IT review procedures through “loophole” purchases outside of formal procurement system. Unit-level financial employees divert time to trying to expedite software procurement reviews, rather than complete core job responsibilities.</td>
<td>• IT cybersecurity team focused on preventing, rather than managing, risk, which conflicts with other procurement goals (e.g., speed, customer service). • Requirement that all proposed software licenses must be reviewed by one paralegal in General Counsel’s office. • Significant increase in campus customer requests for software license review from 151 (FY17) TO 469 (FY18).</td>
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</tr>
</tbody>
</table>
Budget Current State Observations

The Budgeting process at VT is perceived as opaque by those who manage and are responsible for department-or college-level budgets.

<table>
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</thead>
<tbody>
<tr>
<td>Annual budget requests for administrative functions (budgets not utilizing the PIBB model) are made via Excel spreadsheets, which can include 30 or more tabs. Maintenance of the spreadsheets is done manually at the department or college level using multiple sources of financial data. Stakeholders report it takes unnecessarily significant time and energy to build and maintain these spreadsheets.</td>
<td>Inconsistent data and untimely use of estimates drive budget requests, and therefore approved budgets are sometimes reportedly based on old and inaccurate data. Multiple manual entries increase the risk of inaccuracies, especially with multiple sources of data across multiple systems and spreadsheets. The process consumes significant unit-level financial staff time that could be reallocated to other tasks.</td>
<td>• Technologies are not maximized; because there are disparate systems and multiple iterations of manual entry of financial transactions and information occur, since the University overly relies on Excel spreadsheets and other manual budgeting tools. • Historical processes have not been revised to meet the needs of the changing and growing demands of the University. • Maintaining financial control at the central level has not fostered transparency across the process</td>
<td></td>
</tr>
<tr>
<td>Leaders with responsibility over their own departmental (non-PIBB) budgets do not have clear insight into the process, but are held accountable. There is push-back when leadership asks for clarification to gain a better understanding of the process.</td>
<td>Leaders in administrative departments are not able to make fully informed or data-driven decisions around the budgets because of the opaque process. These leaders are less informed in making strategic, future-looking financial decisions about resource allocation.</td>
<td>• Historical processes have not been revised to meet the needs of the changing and growing demands of the university. • Maintaining financial control at the central level has not fostered transparency across the process.</td>
<td></td>
</tr>
</tbody>
</table>
Higher Education Budgetary Authority Leading Practice

Higher education institutions take a range of approaches in setting and maintaining budgetary authority, and leading practice can provide context for Virginia Tech in charting a course through its current budget model transition.

**Provost Budget Office**
- Develop and create budget process and plans across all academic units in alignment with the overall strategic plan of the University.
- Integrate academic and fiscal planning in development and expansion of new and existing academic service programs.
- Establish individual unit budget allocations across all funding sources.
- Ensure regulatory and administrative compliance of budgeted resources by academic units.

**Finance Budget Office**
- Develop and maintain the operating budget of the University.
- Plan and forecast budgets, factoring in enrollment growth/decline, state appropriations, capital infrastructure, and technology needs consistent with University’s strategic plan.
- Determine availability of all funds and communicate to the Provost.
- Support individual budget units embedded within a University’s academic, administrative, and auxiliary functions.

**Human Resources**
- Set individual position compensation based on market rates and university classification.
- Manage demographic and budgetary data related to all university positions.
- Assist Provost and finance budget office with forecasting employment growth and needs.

**Dean / Leader**
- Allocate and manage budgetary resources at college / school level.
- Assist department chairs in determining staffing needs.
- Coordinate with Provost’s Office and department chairs to evaluate programs for contraction / expansion, and the development of new programs.

**Budget Responsibility**
- Assign state appropriations, including tuition and fees, research funding, and grant revenue allocations to units.
- Develop University cash flows and annual consolidated revenue statements, and create long-term financial projections.
- Develop individual salary bands and schedules consistent with broader regional and/or higher education markets.
- Oversee spending and allocation within school and departments.

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Budgetary Authority Transition Considerations

Assessment findings and targeted best practices may shape and inform Virginia Tech’s budget model transition.

Overview

VT’s multi-year transition to a performance-based budget (PIBB) developed through the Beyond Boundaries process is consistent with broader industry best practices. Institutions continue to move to adopt hybrid budget models that incorporate the best elements of centralized and decentralized budgeting.

Key Observations

- Leadership has acknowledged difficulty in determining which institutional goals are best achieved through decentralized incentives versus central investment and oversight.
- While there is not a uniform "one-size-fits-all" hybrid model that every institution should emulate, there are consistent areas of alignment designed around an institution’s strategic priorities, mission, and culture.
- Budget Processes should be mapped; As budgeting becomes more decentralized it is critical to determine the specific budgeting processes and controls at each level: central, college, and department.
- Central Level processes should be optimized to avoid overlap and duplication. With multiple offices having budgetary control, clarification of roles and functions needs to be developed through a comprehensive governance process.
- Technology infrastructure needs to be aligned to meet the needs of a decentralized PIBB process. Budget leaders at various levels require more transparency and access to data.
- Training should be given to budget leaders at all levels to better understand and manage processes.
- Budget governance needs to provide structure between all levels of the budget process, defining the relationship between central and departmental budget priorities.

Next Steps

Under the new PIBB process, budgeting authority for resources will be more decentralized with multiple offices exercising greater authority and control over a portion of the budget process. These offices include Provost, Finance, Human Resources, and College Deans.

- How these offices integrate through the budget process can determine the success or failure of reform. Multiple points of budgetary control and oversight can result in confusion and a lack of oversight over the budget process, leading to uncertainty regarding lines of authority and responsibility.
- The ambiguity over the budget process could stifle the innovation and transparency envisioned in the Beyond Boundaries Strategic Vision.

1

2
# Bursar Current State Observations

The Bursar’s Office has made significant progress in streamlining common payment processes. However, there are still many manual, paper-based tasks and parents/students experience significant confusion with complexity of many payment processes.

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Historically the Bursar’s Office has been a paper-driven department, but it has steadily shifted processes into electronic workflows. For example, payment plans, 3rd party scholarships, and loan collections have been or will shortly be streamlined. However, select Bursar processes (e.g., cash receiving) still include data entry or other manual tasks. The Bursar’s office is striving to utilize technologies, including robotic process automation (RPA), to streamline processes further.</td>
<td>Bursar’s Office employees continue to spend time on data entry, and other manual tasks, rather than more strategic priorities. Bursar’s Office customers may experience slower customer service than necessary.</td>
<td>- Limited Central Finance employee capacity and budget to rapidly expand process improvement and technological improvement programs. - Limited Central IT support to improve connections among CASHNet, Banner, and other software systems.</td>
<td><img src="image" alt="RPA" /> <img src="image" alt="IT Support" /></td>
</tr>
<tr>
<td>The Bursar’s Office may still have opportunities to streamline and simplify payment methods, especially for students/parents with more complex payment needs. For example, parents of students must sometimes use 3-4 different systems to submit payments for their students. Additionally, study abroad students still need to manually call in to the Bursar’s office to apply a separate payment to their account.</td>
<td>Students and parents express significant confusion and confusion with multiple payment systems, processes, and screens. Students with more complex payment needs (e.g., international students) especially face complex and hard-to-understand Bursar processes.</td>
<td>- Limited Central Finance employee capacity and budget to rapidly expand process improvement and technological improvement programs. - Limited historic integration of student-facing payment portals to streamline processes for parents and students.</td>
<td><img src="image" alt="Central Finance" /> <img src="image" alt="Integration" /></td>
</tr>
</tbody>
</table>
Finance Transformational Opportunities
## Transformational Opportunity List

High-priority, Transformational, future state opportunities would enable significant improvement in the Finance unit. Outside of these transformational opportunities, additional opportunities are listed in the following section. Transformational opportunities are:

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Fundamentally Redesign Processes and Policies.</strong></td>
<td>Launch a comprehensive financial process assessment to outline how to optimize core University financial management technologies and practices. A process and policy review and redesign would identify gaps, redundancies, and inaccuracies and would enable efficient and accurate processes for the university. Services provided would also improve for both internal and external customers.</td>
<td>Cross-Functional</td>
</tr>
<tr>
<td><strong>2. Develop a Technology Roadmap</strong></td>
<td>That supports the goals and long term strategy of the University. A technology roadmap will enable individual units to understand where technology investments will be made over the next three to five years. Further, it will enable central campus to make rational decisions around where to focus investments in supplemental technology, workflow and RPA.</td>
<td>Cross-Functional</td>
</tr>
<tr>
<td><strong>3. Master Data Management &amp; Business Intelligence Strategy.</strong></td>
<td>Establish an University-wide reporting center of expertise to improve the quality and consistency of reporting. Accelerates the University’s ability to identify, respond to, and remediate financial reporting challenges. Increases efficiency by decreasing current data cleansing, aggregation, validation, and reporting efforts, and establishes “one version of the truth” for financial reporting and analytics across the University.</td>
<td>Cross-Functional</td>
</tr>
<tr>
<td><strong>4. Launch a Procurement Center for Excellence.</strong></td>
<td>Create Center of Excellence that consolidates sourcing, vendor management, and transaction processing for select spend categories. Increase transaction cycle time and accuracy through more consistent processes, tools, and methodologies for vendor management and purchasing. Free up unit-level financial employee time previously spent managing processes and paperwork so that units can have more financial employee capacity to focus on their core mission. Obtain greater capability to obtain discounts through more effective purchase and contract centralization across the University.</td>
<td>Cross-Functional</td>
</tr>
</tbody>
</table>
## Transformational Opportunity Template

The following format will be used to summarize larger, transformative opportunities:

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of the opportunity</td>
<td>What is the expected outcome if this opportunity is implemented?</td>
<td>What will happen if Virginia Tech does not pursue this?</td>
<td>What level of support and commitment of institutional resources is required to implement and sustain this opportunity?</td>
</tr>
</tbody>
</table>

- **Quick Wins** - Relatively low-complexity improvements to build momentum for significant change.
- **Heavy Lifts** - Difficult but required improvements which must be executed in the short-term.
- **Marathons** - Efforts with long implementation timelines which create significant long-term benefits but must be started in the near term and may show little to no initial return.
**Transformational Opportunity #1: Fundamentally Redesign Processes and Policies**

Fundamentally redesign Finance processes and policies to streamline how work is done. Launch a comprehensive process assessment that would outline how to optimize core University financial management technologies and practices.

<table>
<thead>
<tr>
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<th>Impact</th>
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<th>Effort</th>
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<tbody>
<tr>
<td>• <strong>Conduct comprehensive assessment of Banner functionality and map common financial process to identify major limitations and develop solutions.</strong> A plan for improving Banner and processes should then be developed, prioritizing the most important challenges. Potential solutions may include:</td>
<td>• Bolster ERP functionality for Central and unit-level financial staff.</td>
<td>• Continued software system frustrations caused by Banner ranging from minor inconveniences (e.g., transaction delays, navigating through multiple screens) to major flaws (e.g., unsupported processes).</td>
<td>• Marathon—This opportunity would require significant Central IT, Central Finance, and unit-level financial employee time and resources to identify and prioritize both technology and process challenges and opportunities.</td>
</tr>
<tr>
<td>o • Consider role-based access, security, and permissions.</td>
<td>• Significantly reduce cycle time of core financial transactions (e.g., journal entries).</td>
<td>• Ongoing risk from lack of consistent and central financial, HR, and Student access authority granting and maintenance.</td>
<td>• While it will take substantial time to work through core process improvement opportunities, the University can begin to change the culture around business practices by creating a business process redesign team, and systematically convening frontline work teams to engage in systematic redesign.</td>
</tr>
<tr>
<td>o • Improve user interface to improve usability for staff.</td>
<td>• Reduce avoidable errors caused by paper-based financial transactions.</td>
<td>• Tedious, delay-inducing and highly manual work for financial employees to complete common financial transactions.</td>
<td></td>
</tr>
<tr>
<td>o • Reduce approval layers for common financial transactions.</td>
<td>• Reduce manual work to free up financial employee time for more strategic tasks.</td>
<td>• High number of required signatures diverting senior leadership time away from more strategic priorities.</td>
<td></td>
</tr>
<tr>
<td>o • Improve integration between Banner and with other University software systems.</td>
<td>• Potentially reduce widespread use of departmental shadow systems.</td>
<td>• Ongoing poor integration and transaction delays among different Banner modules (e.g., A/R, HR).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Enable employees to more effectively utilize Banner features.</td>
<td>• Continued high reliance on disparate and duplicative shadow systems for day-to-day financial work.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Improve software system use of ease for University employees.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Accelerate process of obtaining and maintaining appropriate Banner access for new hires and internal transfers.</td>
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</tr>
</tbody>
</table>

*Related to cross-workstream transformational opportunity detailed in separate section.*
Transformational Opportunity #2: Develop a Technology Roadmap*

Develop a technology strategy that will set the University’s technology vision and outline planned investments over the next 5 years.

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Develop a Technology Strategy that will set the University’s technology priorities and determine planned investments over the next 5 years.</td>
<td>• Engage leaders across the University to create a shared path forward for technology modernization.</td>
<td>• Missed opportunities to develop holistic technology solutions to meet cross-campus stakeholder needs.</td>
<td>• <strong>Heavy Lift</strong>: This opportunity would require broad, campus-wide alignment on strategic technology priorities. In addition to leadership alignment, it would take significant employee time and resources to analyze the current technology landscape, identify capacity gaps, and develop a roadmap forward.</td>
</tr>
<tr>
<td>• Enable University-wide stakeholders to align on a shared technology vision.</td>
<td>• Establish a vision for the future state that is focused on addressing the needs of all T&amp;R faculty and staff.</td>
<td>• Continued multitude of manual, paper-based processes.</td>
<td>• While it will take substantial resources, this shorter-term, defined initiative will lay the foundation for wholesale university-wide technology transformation.</td>
</tr>
<tr>
<td>• Identify/validate potential technology gaps compared to leading Higher Education practice.</td>
<td>• Identify the level of transformation, and associated impact, that Virginia Tech desires from investment in modern technology.</td>
<td>• Perpetuation of disconnected, inconsistent shadow systems across academic and administrative units.</td>
<td></td>
</tr>
<tr>
<td>• Estimate high-level investment requirements to bridge the gaps identified between current state and desired future state.</td>
<td>• Enable Virginia Tech to make smart technology investments and work toward an integrated, holistic approach to software systems.</td>
<td>• Fragmented, disparate investments in unit-specific technology solutions disconnected from broader strategy.</td>
<td></td>
</tr>
<tr>
<td>• Develop roadmap based on University’s investment priorities, including risks, success factors, and decision points.</td>
<td>• Ultimately, generate a Virginia Tech enterprise-wide technology operation that can enable more efficient and effective processes to serve T&amp;R faculty and staff.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Related to cross-workstream transformational opportunity in detailed in separate section.
### Transformational Opportunity #3: Master Data Management & Business Intelligence Strategy*

Establishing an University-wide reporting center of expertise would improve the quality and consistency of reporting and increase financial employee time spent on analysis and advising, rather than data aggregation and cleaning.

<table>
<thead>
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<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Establish a single point of reporting and data management expertise, with appropriate University-wide governance which is accountable for reporting and data management. Current capabilities exist – nascently within the Central Finance reporting-focused employees (who have limited capacity), and, in a more developed manner, in the Provost office– the University should determine the optimal location for a single, comprehensive analytic and reporting center of excellence.</td>
<td>• Improve financial management effectiveness by freeing up financial employee time that can be spent more strategically advising T&amp;R faculty, staff, and leaders on allocating and spending funds.</td>
<td>• Continued manual creation of reports requiring detailed reconciliation between different data sources.</td>
<td>• Marathon– Developing an actionable and impactful reporting center can build on existing BI resources. However, it still requires a University commitment to providing comprehensive BI approach across the institution; as well as a commitment of leadership, resources, and ongoing oversight.</td>
</tr>
<tr>
<td>• Staff Center with functional experts who understand functional data as well as analytic experts who can build reports.</td>
<td>• Increase efficiency by decreasing fragmented nature of current data aggregation, validation, and reporting efforts.</td>
<td>• Lack of early warnings of financial challenges (e.g., overdrafts) due to limited financial projection capabilities.</td>
<td>• In addition to hiring employees and improving existing BI tools to standup a center, this effort will require significant time and resources with working with Central and unit-level financial employees to identify, create, and maintain essential reports and dashboards.</td>
</tr>
<tr>
<td>• Create, maintain, and distribute limited number of high quality reports and dashboards that satisfy essential reporting needs.</td>
<td>• Develop &quot;one version of the truth&quot; for financial reporting and analytics across the University.</td>
<td>• Continued investment in maintaining shadow systems and spreadsheets perceived to have more readily accessible and accurate financial information.</td>
<td>• Bolster collaboration, planning, and transparency across Schools/Colleges and Central units, building trust in data and reducing units’ needs to maintain shadow systems.</td>
</tr>
<tr>
<td></td>
<td>• Accelerate the University’s ability to identify, respond to, and remediate financial challenges.</td>
<td>• Perpetuation of inconsistent reports across University leading to multiple versions of the truth regarding unit-level financial information.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Bolster collaboration, planning, and transparency across Schools/Colleges and Central units, building trust in data and reducing units’ needs to maintain shadow systems.</td>
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</tr>
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</table>

*Related to cross-workstream transformational opportunity.
Transformational Opportunity #4: Launch a Procurement Center of Excellence

Moving to a center-led procurement model will enable Virginia Tech to obtain better vendor prices, improve procurement cycle time, enhance compliance, and generally provide improved service to T&R faculty and staff.

### Opportunity

- **Create Center of Excellence that consolidates sourcing, vendor management, and transaction processing for select spend categories.**
  - Structure Center of Excellence to consist of both strategic buyers (example tasks include managing vendor relations and contracts) and more tactical transactional employees (example task includes processing POs).
  - Require certain categories of good/service spend to be fully managed by Center of Excellence.
  - Enable Central Procurement buyers to become subject matter experts and develop strong relationships with vendors in their categories.
  - Develop robust transactional organization consolidating tasks currently conducted by generalist financial employees in academic departments/administrative units.

- **Increase transaction cycle time and accuracy through more consistent processes, tools, and methodologies for vendor management and purchasing.**
  - Free up unit-level financial employee time previously spent managing processes and paperwork so that units can have more financial employee capacity to focus on their core mission.
  - Enhance compliance through stronger controls and oversight of Center staff.
  - Obtain greater capability to obtain discounts through more effective purchase and contract centralization across the University.
  - Promote contract usage by building stronger connections and relationships with campus end users.

- **Slower cycle times and lower accuracy of generalist unit-level financial employees completing most procurement transitions.**
  - Reactionary and limited Central Procurement role in informing purchasing decisions made by T&R faculty and staff.
  - Limited cross-institution leverage for contract management and discounts.
  - Scattered vendor relationships across University campus.
  - Difficult to maintain a degree of procurement transaction commonality/standardization

### Impact

- **Heavy Lift**—Virginia Tech procurement is currently highly decentralized and the culture will take significant change management efforts to become more supportive of more centralized procurement and contracting.
  - The University should first start with improving the maturity level of core Procurement staff, processes, and technologies and then move to consolidate activity currently taking place in the units.
  - Then, in medium-term, the university should develop a proof of concept around a specific category to demonstrate long-term benefits to cross-campus stakeholders.

### Cost of Inaction

- **Increase transaction cycle time and accuracy through more consistent processes, tools, and methodologies for vendor management and purchasing.**
  - Free up unit-level financial employee time previously spent managing processes and paperwork so that units can have more financial employee capacity to focus on their core mission.
  - Enhance compliance through stronger controls and oversight of Center staff.
  - Obtain greater capability to obtain discounts through more effective purchase and contract centralization across the University.
  - Promote contract usage by building stronger connections and relationships with campus end users.

### Effort

- **Slower cycle times and lower accuracy of generalist unit-level financial employees completing most procurement transitions.**
  - Reactionary and limited Central Procurement role in informing purchasing decisions made by T&R faculty and staff.
  - Limited cross-institution leverage for contract management and discounts.
  - Scattered vendor relationships across University campus.
  - Difficult to maintain a degree of procurement transaction commonality/standardization

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<td>Create Center of Excellence that consolidates sourcing, vendor management, and transaction processing for select spend categories.</td>
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<td>Slower cycle times and lower accuracy of generalist unit-level financial employees completing most procurement transitions. Reactionary and limited Central Procurement role in informing purchasing decisions made by T&amp;R faculty and staff. Limited cross-institution leverage for contract management and discounts. Scattered vendor relationships across University campus. Difficult to maintain a degree of procurement transaction commonality/standardization.</td>
<td>Heavy Lift—Virginia Tech procurement is currently highly decentralized and the culture will take significant change management efforts to become more supportive of more centralized procurement and contracting. The University should first start with improving the maturity level of core Procurement staff, processes, and technologies and then move to consolidate activity currently taking place in the units. Then, in medium-term, the university should develop a proof of concept around a specific category to demonstrate long-term benefits to cross-campus stakeholders.</td>
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Transforming the Administration & Operations Enterprise

Current State Observations and Opportunities

**Human Resources**

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<tr>
<td>Transformational Opportunities</td>
<td>77</td>
</tr>
</tbody>
</table>
Human Resources Current State Observations
What’s Working Well

The below observations summarize the key themes of what is working well in Human Resources.

<table>
<thead>
<tr>
<th>Theme #1: Moving Towards Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Human Resources has a <strong>vision</strong> for the <strong>future</strong> and a commitment to move the organization to a <strong>leading-practice HR model</strong>.</td>
</tr>
<tr>
<td>• Human Resources has numerous <strong>in-flight initiatives that are working to drive efficiency and effectiveness</strong>, including software implementations and new leadership in key roles.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Theme #2: Enthusiastic Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Employees are committed to helping others on campus</strong> and welcome streamlined processes that will enable service delivery improvements.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Theme #3: Software Plans and Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Team Dynamics software was implemented to track customer service levels, demonstrating the <strong>commitment to provide improved customer service levels based on data</strong>.</td>
</tr>
<tr>
<td>• There is <strong>excitement around the promise of PageUp</strong> in the hopes that this will alleviate manual work and paper-forms.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Theme #4: HR Transformation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Employees and Departmental Directors have generally been receptive to the <strong>HR transformation</strong> pilot, illustrating <strong>buy-in</strong> across campus and serving as one step toward a successful rollout.</td>
</tr>
</tbody>
</table>
Virginia Tech’s Current State Human Resources Effectiveness

The Administrative and Operations assessment revealed stakeholder perspectives on Human Resources functions.

How would you rate your overall satisfaction with the Division of Human Resources?

- Very Satisfied: 8%
- Satisfied: 2%
- Neutral: 28%
- Dissatisfied: 10%
- Very Dissatisfied: 53%

Key Insights

- A majority of respondents (~63%) were Satisfied or Very Satisfied with HR services while Leave Administration had the highest favorability at 69%.
- Customers on campus feel that they receive courteous service from Human Resources personnel, but that additional training is needed in order for HR to consistently and accurately address issues and requests.
- Stakeholders perceive a lack of consistency in HR, and VT has an opportunity to streamline and clearly define Human Resource processes. For example, opportunities exist for greater use of electronic workflows and electronic signatures to reduce paper-based processes.
- Increased levels of communication from Human Resources related to processes, policies, changes, and guidance would be highly valued across campus.
- Survey respondents noted that there are inconsistencies and lack of accurate knowledge around benefits policies and the level of customer service received. More customer service and consistency across the department to support stakeholders across campus would be valuable.
In-Flight Initiatives

Below summarizes the in-scope initiatives underway by Human Resources:

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Impact</th>
</tr>
</thead>
</table>
| PageUp Implementation              | • Provides an electronic application and hiring process  
• Reduces the number of paper forms utilized in the HR Department  
• Streamlines the application processes, specifically eliminating redundant offer letter templates |
| HR Transformation                  | • Provides strategic and tactical support to operations  
• Allows cross-department HR leadership collaboration  
• Streamlines communication between the Department and Central HR |
| Team Dynamics                      | • Enables tracking of customer service volumes  
• Enables document tracking if implemented campus-wide  
• Improves customer service; employees are able to provide real time feedback based on the status of documents and processes notated within the system |
| HR Resource Guide Review           | • Provides consistent and accurate processes to all users  
• Improves navigating of interdepartmental policies and procedures  
• Improves adherence to policies and reduces risk and inconsistent work |
| Compensation Review                | • Identifies wage gaps between similar roles and provides a clear comparison to market rates  
• Increases the success rate of recruiting and promotes equity  
• A hiring search for a Compensation Analyst is now active; the role will streamline HR operations and improve compensation processing time |
## Table of Contents

### Human Resources In-Scope Function(s)

- Cross-Functional
- Employee Administration
- Benefits Administration
Current State Observation Summary

Current HR operations are tactical and reactive. While HR services enable day-to-day, transactional activities, they limit the University’s ability to effectively steward Virginia Tech talent.

Virginia Tech’s current HR operations are characterized by:

- **Inconsistent Job Architecture**: Despite a push toward greater standardization, title and compensation inconsistencies exist across campus.
- **Resource Constraints**: Limited resources and a lack of deep HR expertise across campus drive the level of support that is provided within the services currently offered by HR.
- **Transactional Focus**: HR is not perceived to be a strategic partner across campus; rather, their role is seen as tactical and transactional.
- **Manual Processes**: Paper and ink processes utilize an excessive amount of employee time, and technology has not been effectively leveraged to improve efficiency.
Current State Observation Template

The following format will be used to summarize current state observations:

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
<th>Identified Root Causes</th>
<th>Lever</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the observation?</td>
<td>What impact is this having on current state operations?</td>
<td>What is the underlying cause of this observation?</td>
<td>Business Practices</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>People &amp; Organization</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Data and Information</td>
</tr>
</tbody>
</table>
Human Resources Process and Paperwork Current State Observations

Human Resources (HR) is undergoing a transformation that will take time to implement. However, several key issues that exist today are impacting internal and external customers, including employees, T&R faculty, and potential employees.

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
<th>Identified Root Causes</th>
<th>Lever</th>
</tr>
</thead>
</table>
| **Wet signatures are required to process key HR transactions.** Employees depend on interoffice mail or may walk documents directly to the recipient to obtain ink signatures. | **Excessive processing times** due to delays caused from waiting for wet signatures from leadership. | • While policies have been reviewed on an ongoing basis, there is a **lack of leadership alignment** across the University that the signature process can change  
• Lack of modernized **technology systems** to enable electronic signatures |       |
| **Multiple levels of approval are required for many HR transactions.** Processes or transactions that request a monetary change greater than 10% of the original amount require the President’s signature. | **Many layers of management** are involved in the decision making and approval processes for standard HR transactions, slowing processing times. | • **Undefined signature authority** and a lack of organizational hierarchy to determine reporting lines  
• Lack of **empowerment and trust**  
• Maintaining historical processes that no longer address issues in the current environment |       |
| **Excessive paperwork for transactional activities (e.g., P-Forms).** Paper forms inhibit a central, accurate, and real-time tracking system to identify the location or status of the paper form. Employees depend on interoffice mail or may walk documents directly to the recipient. | **Inefficient receipt and delivery of forms,** which may lead to risks associated with loss of confidential information and increased processing times. Customer service is negatively impacted due to lack of an accurate and immediate current status of documents. Retention of files due to compliance and regulatory requirements adds to workload. | • Continuously adding new forms in response to audit findings has led to majority of effort given to maintaining status quo rather than improving processes  
• Lack of **formalized, standardized policy review** has led to stagnant progress around procedures and paper form processes, and hinders compliance  
• Lack of strategic support around **maximizing use of technologies** |       |
### Human Resources Process and Paperwork Current State Observations

Human Resources (HR) is undergoing a transformation that will take time to implement. However, several key issues that exist today are impacting internal and external customers, including employees, T&R faculty, and potential employees.

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</tr>
</thead>
</table>
| **Leveraging of technology is not maximized and is inconsistent.** Various departments use their own systems or processes to perform tasks (e.g., document tracking is done in separate Excel sheets and saved on personal desktops). Manual processes and paper forms cannot be reduced or eliminated because an electronic alternative does not exist or is not sufficient. Internally developed systems are used for key HR activities, such as the FMLA and the performance review processes, which are not integrated with broader university systems. | There are increased risks associated with manual processes across multiple, non-integrated systems. High level of effort on manual processes and tasks reduces time available to think strategically about reengineering processes. Recruitment and retention of talent is at risk if the technology is not on par with market standards. Departments are attempting to address this challenge by purchasing their own technology, but limited budgets and systems expertise result in unmet needs and inefficient spending. | • Lack of strategic support from Central IT around maximizing use of technologies  
• Current Banner HRIS implementation is reportedly not sufficiently robust to meet the University’s evolving needs  
• Lack of effective spend management to support smart investments, reduce risk, and prevent redundancies | |
| **HR governance and clear roles and responsibilities are not defined.** Multiple layers of decision makers are associated with establishing or updating central HR practices (e.g. multiple committees and the President’s signature). | Employees can see more effective and efficient ways of getting work done, however they are hampered in the efforts to change. This is because HR does not fully own business practices that typically HR has authority for and Employees are not empowered to make changes without leadership sign-off. | • Roles and responsibilities of key HR decision makers at the managerial level are not clearly defined  
• Authority for HR practices are not fully owned by the HR Department | |
Human Resources Current State Observations

Human Resources (HR) is undergoing a transformation that will take time to implement. However, several key issues that exist today are impacting internal and external customers, including employees, T&R faculty, and potential employees.

<table>
<thead>
<tr>
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<th>Identified Root Causes</th>
<th>Lever</th>
</tr>
</thead>
</table>
| HR is viewed as a transactional department rather than a strategic decision maker across campus. HR has limited power to create or update policy, and therefore cannot hold others accountable. | The University’s talent strategy and how the University achieves its mission is left to departments and leaders to determine without the benefit of leading practice from a human resources perspective. Lack of authority and executive buy-in can result in efforts that fall victim to politics, too many exceptions, or lack “stickiness.” | • HR leadership has been in flux and interim leadership has not been fully empowered to make sustainable changes  
• HR business practices are not fully owned by the HR Department | • HR leadership has been in flux and interim leadership has not been fully empowered to make sustainable changes  
• HR business practices are not fully owned by the HR Department |
| Data is not used as a strategic asset. Access to data is not provided to key decision makers. Data is held tightly within individual units and is not shared across the campus. | Leaders are not able to make timely, fully informed decisions without a central source of truth. Decisions may be on hold until data requests from various units or key individuals are fulfilled, compromising data quality and integrity. | • Multiple systems are in use and a sole source of data does not exist  
• There is no systematic way to integrate data across all systems  
• Culture of protecting data; “knowledge is power” | • Multiple systems are in use and a sole source of data does not exist  
• There is no systematic way to integrate data across all systems  
• Culture of protecting data; “knowledge is power” |
| Performance management processes and system do not support effective career pathing within the University. Employees are unclear of their performance. Leaders are frustrated with the archaic process. The lack of a consistent and fully established job architecture has prevented the creation of a performance management process that is clear and effective. | Retention of talent is a risk. Inconsistent performance management processes hinder the University’s ability to build and sustain a culture of continuous improvement. There are no succession plans to incentivize internal promotions, and performance results are not enabling such activity. | • Lack of culture of performance management across the University  
• Lack of clear policies and processes  
• Lack of performance management training for and oversight of managerial staff  
• The current system is homegrown, cumbersome to navigate, and perceived as ineffective by end users | • Lack of culture of performance management across the University  
• Lack of clear policies and processes  
• Lack of performance management training for and oversight of managerial staff  
• The current system is homegrown, cumbersome to navigate, and perceived as ineffective by end users |
### Human Resources Current State Observations

Human Resources (HR) is undergoing a transformation that will take time to implement. However, several key issues that exist today are impacting internal and external customers, including employees, T&R faculty, and potential employees.

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</tr>
</thead>
</table>
| Inconsistent job titles and compensation bands are used across similar roles in the University. Many job titles associated with leadership roles (e.g. Director) are used without a distinct job description or supervisory duties. Individuals jump from the same positions in other departments in order to gain higher wages, leading to cannibalization of employee across the University. Processing of hires and pay changes is inconsistent. | Despite in-flight initiatives toward equity and standardization, significant inconsistencies exist within T&R faculty and employee compensation and titles. **Inconsistent job architecture may lead to unintentional biases across similar roles and unclear differences with regard to compensation.** Lack of consistent roles directly hinders succession planning, compensation, and benefits equity. This does not promote internal growth at the University, and could lead to loss of talent. Effects on compensation further exacerbate hiring and talent retention. | • Individual departments create titles for positions, which are **not fully vetted by HR**  
• A consistent **policy or practice is not used to establish new roles**, or to update roles consistently  
• Authority to define roles either **unclear or does not lie within HR**  
• A standard policy based on market data cannot be established because of **inconsistent job titles and job descriptions**  
• Compensation has not been a process that is **owned in the Central HR office**  
• Lack of data sharing prevents HR and other units from establishing a consistent framework for wages and salaries | Indicators there is an In-Flight Initiative that impacts an observation(s) or implication(s) |
## Current State Observations

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
<th>Identified Root Causes</th>
<th>Lever</th>
</tr>
</thead>
</table>
| **Lack of clarity around existing HR practices.** HR practices documented within the internal HR Resource Guide may be incomplete or out of date. Central HR employees perceive that many policies that are used have not been updated or reviewed since 2005. Departments and other units are reportedly performing core HR tasks differently. | Employees may engage in inconsistent or incorrect activities which may lead to additional steps or repeating of processes and inefficiency. Employees become frustrated and must reach out to the Service Center or to individuals with confirmed knowledge. Vague procedures leads to multiple interpretations and inconsistent work, which increases the risk of error. | • **HR business practices do not exist** or have not been documented or well communicated  
• Policies and procedures in the HR Resource Guide have **not been consistently maintained**, and is a task requiring a high level of effort from resources that are limited  
• **HR Policy exists in multiple places** (e.g., University Policy, Faculty Handbook, and HR), making it difficult to maintain consistency |       |
| **Over 150 forms exist**, which users must select from to carry out an action.            | Employees are **frustrated by the time it takes** to find and process forms. Further, processing is delayed and error prone. | • Forms have **grown over time** in response to evolving needs and in reaction to situations and issues that arose on campus. |       |
## HR – Benefits Administration Current State Observations

Human Resources (HR) is undergoing a transformation that will take time to implement. However, several key issues that exist today are impacting internal and external customers, including employees, T&R faculty, and potential employees.

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
<th>Identified Root Causes</th>
<th>Lever</th>
</tr>
</thead>
</table>
| FMLA process is complex. There are limited resources with expert knowledge around the policies. Inconsistent policy interpretation is made across campus. | Inequitable and inconsistent policy interpretation and processes increase risk associated with audits. There are multiple departments providing guidance around the same policy. | • Limited resources to review policies and procedures associated with FMLA  
• The final decision maker for HR policy is not clearly defined |       |
| FMLA system is homegrown and maintained by Virginia Tech IT. There are multiple leave codes which complicate the process. | There are increased risks associated with non-integrated systems. High level of effort on manual processes and tasks is reducing time available to think strategically about processes. Recruitment and retention of talent is at risk if the technology is not on par with market standards. | • The system was created to address historical needs and has not been revisited to align with current and future requirements  
• FMLA regulations and multiple levels of leave codes and requirements |       |
Human Resources Transformational Opportunities
Transformational Opportunity List

High-priority, Transformational, future state opportunities would enable significant improvement in the HR division. Outside of these transformational opportunities, additional opportunities are listed in the following section. Transformational opportunities are:

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conduct a Job Architecture review of roles across the University.</td>
<td>This is an opportunity that impacts the University in its entirety. A Job Architecture review reduces risk of inequitable pay across similar roles, provides clear expectations of individuals, reduces manual processes, eliminates ad-hoc processes associated with inconsistencies in titles and pay grades, and simplifies technology modernization efforts. Job architecture framework supports the organization’s data strategy and talent management through Talent Engagement, Efficiency, and Simplification.</td>
<td>Cross-Functional</td>
</tr>
<tr>
<td>2. Develop a Technology Roadmap that supports the goals and long term strategy for the HR department.</td>
<td>Establishes a cohesive plan to incorporate technologies consistently across campus and departments. Provides decision support aligned with business needs for short and long term goals the University. Establishes the opportunity for one data source and streamlined electronic processes.</td>
<td>Cross-Functional</td>
</tr>
<tr>
<td>3. Fundamentally reexamine each process and policies to streamline how work is done.</td>
<td>Allows the University to assess, validate, and improve policies and procedures in alignment with mission and vision, and enables leadership to drive compliance while clarifying roles and responsibilities. Improves processing time and lays a foundation for continuous improvement and customer service excellence.</td>
<td>Cross-Functional</td>
</tr>
</tbody>
</table>
Transformational Opportunity Template

The following format will be used to summarize larger, Transformative opportunities:

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of the opportunity</td>
<td>What is the expected outcome if this opportunity is implemented?</td>
<td>What will happen if Virginia Tech does not pursue this?</td>
<td>What level of support and commitment of institutional resources is required to implement and sustain this opportunity?</td>
</tr>
</tbody>
</table>

**Quick Wins** - Relatively low-complexity improvements to build momentum for significant change.

**Heavy Lifts** - Difficult but required improvements which must be executed in the short-term.

**Marathons** - Efforts with long implementation timelines which create significant long-term benefits but must be started in the near term and may show little to no initial return.
Transformational Opportunity #1: Conduct a Job Architecture review of roles across the University

Job architecture is the foundation of an organization’s workforce. It is necessary to provide clear expectations and responsibilities to employees, a defined progression path, enables consistency, and supports equity in pay and opportunity. The HR office owns this process, and would implement the review and results with the support of University leadership.

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct a Job Architecture review of roles across the University, which includes:</td>
<td>A single job architecture framework supports the organization’s data strategy and talent management through:</td>
<td>• Risk of inequitable pay across similar roles will remain</td>
<td>Heavy Lift - A comprehensive review will take specialized expertise and employee time. The University will need to hire specialized employees and/or invest in an external partner. The actual review will make a significant impact on the HR department and the University as a whole.</td>
</tr>
<tr>
<td>• <strong>Job Leveling</strong> identifies the number of job levels and creates consistent criteria for entry and movement within/between jobs</td>
<td>• <strong>Talent Engagement:</strong> Reduces role ambiguity and clarifies accountability; Supports consistent career pathing; Clarifies succession planning and skills gaps; Supports enterprise-wide talent management</td>
<td>• Unclear expectations of individuals would remain and hinder performance management processes and understanding of career paths</td>
<td></td>
</tr>
<tr>
<td>• <strong>Title</strong> review creates meaningful job profiles/job titles that accurately reflect level and work, and provide consistent terminology used in the job profiles. It would also determine the link between job titles and HRIS data capabilities</td>
<td>• <strong>Efficiency:</strong> Compensates consistently for like jobs/work internally and externally; Creates governance for administering pay and talent decisions; Provides consistent and efficient market analysis; Establishes a common basis for compensation programs</td>
<td>• Manual processes would remain status quo in order to accommodate for existing inconsistencies</td>
<td></td>
</tr>
<tr>
<td>• <strong>Career Pathing</strong> develops job groups and job families, which provides for greater clarity around career paths and progressions</td>
<td>• <strong>Simplification:</strong> Supports technology modernization and enhancement; Identifies functional duplication and accountability overlaps; Supports mobility across the organization; Increases accuracy of HR data reporting for planning</td>
<td>• Utilization of ad-hoc processes around inconsistencies in titles and pay grades would continue, increasing risk associated with inconsistent processes</td>
<td></td>
</tr>
<tr>
<td>• **Pay Grade reviews allow for designing of pay structure(s) /grades with geographic pay ranges to appropriately compensate for work, and develops pay administration processes for managing costs</td>
<td></td>
<td>• Technology modernization efforts would remain ever more complex in order to accommodate inconsistent processes around job titles and pay grades</td>
<td></td>
</tr>
</tbody>
</table>
Job Architecture Defined
A combination of changing business environments, shifts in strategy, and changes to organizational structure(s) often render approaches to job management outdated.

Job Architecture

**Job Leveling**
- Identify number of job levels
- Create consistent criteria for entry and movement within/between jobs and career tracks and jobs
- Assign jobs to levels as titles are harmonized

**Titles**
- Create meaningful job profiles/job titles that accurately reflect level and work
  - Provide consistent terminology used in the job profiles from management through the clerical roles
    - Determine the link between job titles and HRIS data capabilities

**Career Pathing**
- Develop job family groups and job families; assign job profiles/job titles under each, providing for greater clarity around career paths
- Define career progressions irrespective of reporting relationships

**Grades**
- Design pay structure(s)/grades with geographic pay ranges to appropriately compensate for work
- Determine linkages to pay grades
- Develop pay administration processes for managing costs
Benefits of Job Architecture
Moving to a consistent job architecture framework helps employees better understand and drive their careers and it supports the following:

- Compensates consistently for like jobs/work internally and externally
- Establishes a common basis for compensation programs
- Provides consistent and efficient market analysis
- Creates governance for administering pay and talent decisions
- Establishes a common basis for compensation programs

Setting clear criteria expectations for movement through careers

Constructing a consistent language of work across the organization including a consistent approach to job titles

Providing better understanding of career paths through grouping jobs into family groups and families—this enhances visibility to potential opportunities

A single job architecture framework will support both an organization’s data strategy and talent management through improvements in:

**Efficiency**

- Supports technology modernization and enhancement
- Identifies functional duplication and accountability overlaps
- Supports mobility across the organization
- Increases accuracy of HR data reporting for human capital strategic planning and forecasting

**Simplification**

- Reduces role ambiguity and clarifies accountability
- Supports consistent career pathing
- Clarifies succession planning and skills gaps
- Supports enterprise-wide talent management programs

**Talent Engagement**
Transformational Opportunity #2: Fundamentally Redesign Processes and Policies*

Launching a comprehensive process assessment would outline how to optimize core University technologies, and would align processes with policies.

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
</table>
| • Fundamentally redesign HR processes and policies to streamline how work is done* | • Standardizes procedures, and eliminates duplicative and inconsistent processes  
• Aligns procedures to policy, therefore increases procedural effectiveness  
• Increases opportunity to shift to electronic workflows once streamlined | • Inconsistent and dated procedures, which will maintain current state of manual processes and paper forms, leading to noneffective services  
• Unsustainable levels of effort required to maintain work based on University growth | Marathon: Difficult, but required improvements which must be executed in the short-term. |
| • Perform process mapping exercise of HR business processes to identify redundant and non-value add steps to create streamlined processes |                                                                        |                                                                                  |                               |

*Related to cross-workstream Transformational opportunity detailed in separate section.
Transformational Opportunity #3: Develop a Technology Roadmap*

Develop a Technology Strategy that supports the goals and long term strategy for the HR department.

<table>
<thead>
<tr>
<th>Opportunity</th>
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<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>• <strong>Develop a Technology Roadmap</strong> that supports the goals and long term</td>
<td>• Establishes a cohesive plan to incorporate technologies consistently across campus and</td>
<td>• Continued maintenance of manual processes/paper forms</td>
<td>• <strong>Heavy Lift</strong>: This opportunity would require broad, campus-wide</td>
</tr>
<tr>
<td>department, and is in line with the technology strategy of the University</td>
<td>departments</td>
<td>• Decreasing sustainability and increasing risks of retaining and recruiting</td>
<td>alignment on strategic technology priorities. In addition to leadership</td>
</tr>
<tr>
<td></td>
<td>• Establishes the <strong>opportunity for one data source</strong> and streamlined electronic processes</td>
<td>talent, and of providing accurately and timely service</td>
<td>alignment, it would take significant employee time and resources to</td>
</tr>
<tr>
<td></td>
<td>• <strong>Provides decision support</strong> aligned with business needs for short and long term goals</td>
<td>• Unsustainable levels of effort required to maintain manual work based on University growth</td>
<td>analyze the current technology landscape, identify capacity gaps, and</td>
</tr>
<tr>
<td></td>
<td>of HR and the University</td>
<td></td>
<td>develop a roadmap forward.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Increases competitiveness in the market when compared to peers</strong></td>
<td></td>
<td>• While it will take substantial resources, this shorter-term, defined</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>initiative will lay the foundation for wholesale university-wide</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>technology transformation.</td>
</tr>
</tbody>
</table>

*Related to cross-workstream transformational opportunity.
Transformational Opportunity #4: Realign HR Organizational Chart

Realign the HR organization to align with best practices, and to maximize effectiveness and efficiency.

<table>
<thead>
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<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Realign HR organizational structure to allow for maximum effectiveness and efficiency, and to align with industry standards</td>
<td>• Provides opportunity to align similar and related units within HR to each other so related processes are housed together</td>
<td>• Continued risk associated with inconsistent practices and duplicative efforts across multiple departments</td>
<td>Heavy Lift - Difficult but required improvements which must be executed in the short-term.</td>
</tr>
<tr>
<td></td>
<td>• Creates commonality around expertise in specific operations (e.g. Service center and Administration units)</td>
<td>• HR employees will continue to have limited insight into dependent and interrelated processes, therefore increasing risk associated with gaps in knowledge and expertise</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Identifies departmental dependencies across the University and creates opportunity to align dependent departments (e.g. ADA and Affirmative Action, EEO)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Transformational Opportunity #4: Realign HR Organizational Chart

The diagram represents the current organizational alignment in HR. The highlighted units including: Wellness, Talent Development, Compensation, Service Center, Conviction Process, and Compliance and Policy, could be realigned within HR to meet best practices within the industry as well as provide a more effective structure to complete work and achieve goals across the University department.
Transformational Opportunity #4: Realign HR Organizational Chart

Realign units within HR to align with industry standards. The organization chart below is a sample future state example to contrast the current alignment. The ultimate alignment should focus on customer service, and increase effectiveness and efficiency of the delivery of services.

**Current State & Opportunities – Human Resources**

- **HR Strategy Planning and Management**
  - Finance
  - HR programs (Organizational Effectiveness, Diversity and Inclusion)
  - HR Analytics & Reporting
  - HR Applications

- **VP of Human Resources**

- **HR Business Partners**
  - Advise and consult departmental leaders on operational decisions & development of departmental systems or protocols that promote HR strategy
  - Integrates with COE and leadership team to bring forward work goals

- **HR Shared Services**
  - Service Center (managing inquiries)
  - Data management
  - Transaction processing
  - Total Rewards Administration

- **Centers of Expertise**
  - **Employee Relations**
    - Coaching & Counseling
    - Performance Management Counseling
    - Grievance/Dispute Management
    - Workplace Investigations
    - Administration
    - Consulting
  - **Total Rewards**
    - Design, Compliance Benefits
    - Compensation
    - Work Absence Management
    - Wellness
  - **Talent Management**
    - Talent Acquisition
    - Talent and Workforce Management & Administration
  - **HR Policy & Compliance**
    - Program & Process Oversight
    - Regulatory Administration
    - Policy Administration

* The Centers of Expertise enable and the support the work that is done by the Business Partners and Shared Services.
Transforming the Administration & Operations Enterprise

Current State Observations and Opportunities

Facilities
Facilities Current State
Observations
Facilities Management Lifecycle and Key Terminology

Virginia Tech Facilities and Capital Assets and Financial Management (CAFM) have responsibilities that span the full facilities management lifecycle. Key facilities-related terminology is noted in bold.

**Capital Asset Management**

- **Capital Planning:** Developing a forecast of facilities capital needs to support the University’s physical assets, including buildings, space, land, and equipment. The process should be closely tied to the University’s integrated planning and resource allocation process.

**Operations & Maintenance**

- **Deferred Maintenance:** Postponing maintenance of buildings and equipment in order to save costs, meet budget funding levels, or realign available monies.

**Planning, Design, & Construction**

- **Capital Project/Construction:** A new building, renovation, or major maintenance project that increases the value of the site or extends the useful life of a building.

- **Capital Renewal:** A large project that replaces aged or obsolete equipment and building systems or utility and plant infrastructure. Capital renewal also refers to remodeling, renovation, and exterior restoration of buildings.

**Definition Source:** Capital Planning Project Toolkit, EAB, 2018.

Note: This is an illustrative lifecycle and not fully representative of particular University policies and procedures.
What’s Working Well

The below observations summarize the key themes of what is working well in Facilities.

**Theme #1: Mission Alignment**
- Facilities leadership, mid-level managers, and frontline employees broadly note strong alignment with the University’s strategic priorities, particularly Virginia Tech’s ambitious growth goals.
- Facilities employees report that they are deeply committed to meeting T&R faculty, staff, and student needs at the highest possible service levels.

**Theme #2: Ready for Change**
- Facilities leadership is midway through a significant organizational transformation that has made progress in addressing some challenges and has installed many new managers ready for continued change.
- Facilities leadership and employees have begun to work with and learn from peer institutions (e.g., Auburn) and broadly report an appetite for making continued improvements to align Facilities’ operating model with University goals.

**Theme #3: Select Areas of Excellence**
- Zoned preventative maintenance team structure is aligned with industry best practice and has facilitated strong working relationships among Facilities employees and campus customers.
- VTES utility has historically been highly reliable with few to no campus power outages over the last few decades.

**Theme #4: Sustainability**
- Collectively, Facilities has successfully been leading cross-campus sustainability efforts, as evident from numerous successful initiatives and national-level recognition (e.g., highest sustainability rating in ACC and an APPA award).
- Facilities has also made strides in reducing its carbon footprint through a new energy action plan and long-term reductions in coal usage by the power plant.
Virginia Tech’s Current State Facilities Effectiveness

The Administrative and Operations assessment revealed stakeholder perspectives on Facilities functions.

- Overall, 42% of survey respondents indicated that they were satisfied or very satisfied with Facilities in terms of maintenance requests, construction, renovation, space management, and sustainability. However, further examination reveals pockets of dissatisfaction within those components.

- The management of University space and the price of renovations received the lowest satisfaction results of the survey: 32% do not believe that space is effectively managed at Virginia Tech.

- 57% believe that renovation prices are too high and do not accurately reflect the value of the services.

- VT stakeholders noted that excessive layers of approvals exist in Capital Assets processes, and that timelines and budgets suffer as a result.

- Housekeeping and Grounds received the highest levels of satisfaction in the survey with 72% either very satisfied or satisfied. While overall response is positive, quality concerns exist with outsourced services. Specific challenges were further identified through stakeholder interviews and focus groups.

**Key Insights**

- There is a dramatic price premium for working with Gilbane for renovation projects.

- We have students conducting experiments in hallways and stairways since we do not have enough space.

- I find myself not submitting work orders since there are so many in [the queue] already. Also, there is no communication on work order status.

- Too much red tape in Capital Assets. Ten people have to sign off on something they do not understand in order to make something happen on time.

- I do not know how my College’s space is used and I don’t have access to Facilities space data.

Initiatives In-Flight
Below summarizes the in-scope initiatives underway by Facilities:

<table>
<thead>
<tr>
<th>Theme</th>
<th>Initiative</th>
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</table>
| Improve AiM/HokieServ functionality | • Establishing a unified Facilities ERP to reduce/eliminate the use of the other 10 Facilities different systems  
• Streamlining processes through greater use of AiM/HokieServ and electronic workflows  
• Improving user interface for campus customers  
• Increasing system functionality for real estate and space management |
| Unify and Improve Customer Service | • Communicating project milestones and quarterly updates  
• Combining call centers to increase efficiency  
• Implementing night/weekend shifts to increase coverage  
• Creating more specialized crews  
• Expanding in-house renovation teams and PMs to increase capacity |
| Facilitate Space Management    | • Continuing to create and enforce policies, procedures and governance  
• Verifying and integrating data through hiring of a space management consultant |
| Support Employee Engagement    | • Improving transparency about Facilities initiatives  
• Improving internal communication through a new newsletter, fast facts, and an employee advisory committee  
• Launching Facilities orientation and onboarding program |
| Prepare for Building Boom      | • Completing renovation and capital project employee manuals to better standardize capital project procedures.  
• Procuring Real Estate Consulting Services to analyze current use, growth and aid with interactions of local municipalities |
## Current State Observations Overview

### Facilities In-Scope Function(s)

<table>
<thead>
<tr>
<th>Function</th>
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<tbody>
<tr>
<td>Cross-Functional</td>
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<tr>
<td>Capital Design</td>
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<tr>
<td>Facilities Operations</td>
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<tr>
<td>Real Estate</td>
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<tr>
<td>Space Utilization and Management</td>
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<tr>
<td>Utilities &amp; Energy Management</td>
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<tr>
<td>Sustainability</td>
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</tbody>
</table>
## Current State Observation Template

The following format will be used to summarize current state observations:

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
<th>Identified Root Causes</th>
<th>Lever</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the observation?</td>
<td>What impact is this having on current state operations?</td>
<td>What is the underlying cause of this observation?</td>
<td>Business Practices</td>
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<td>Technology</td>
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<td>People &amp; Organization</td>
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<td>Data and Information</td>
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</tbody>
</table>
## Cross-Functional Current State Observations

Facilities’ employees and organization has been hampered by a high employee vacancy rate and insufficient HR and training support. These people and organization challenges are hampering both Facilities leadership’s organizational transformation and, increasingly, core Facilities functions.

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</table>
| **High overall Facilities’ vacancy rate is beginning to impede core Facilities functions.** Facilities faces a high overall rate (~15%) with numerous vacancies in key Facilities management (e.g., AVP for Facilities Ops) and skilled staff positions (e.g., vacancy rates of 50% for building electricians and 46% for one 11-person capital projects team). | Facilities employees are stretched thin and vacancies have almost led to significant operational issues (e.g., no linemen available for power line repairs). Facilities employees applying for internal positions become so frustrated by long hiring timelines that they leave the University completely. Managers spend significant time and energy covering for missing employees rather than managing existing staff. Facilities leaders faces knowledge transfer challenges when managers retire in units with multiple long-term vacancies (e.g., Utilities division’s upcoming succession “crisis”). University leaders may not unable to deliver on ambitious University building growth goals without sufficient capital projects employees to manage projects. | • Significant increase in demand for middle managers and senior leadership as new Facilities leadership is midway through an organizational transformation.  
• Increasingly delayed and highly manual hiring process (e.g., highly email-reliant process that can take 40 emails and 3-7 months from posting to new hire start).  
• Lack of clear role delineation and defined recruitment process among Facilities and Central HR staff.  
• Recruitment often does not appear to follow best practices (e.g., wide range of job board postings, qualified candidate “pool”).  
• Compensation has reportedly not kept up with high region-wide labor demand. |  |
| **Facilities management and employees do not have sufficient training and HR support for essential onboarding, employee relations, career advancement, and day-to-day HR transactional tasks.** | Employees experience frequently flawed everyday transactions (e.g., forms that become lost) and urgent issues (e.g., disability leave questions) and feel that they have few options. Employees perceive support as not available which leads to situations escalating quickly. Managers do not feel they have guidance/support for employee relations issues and often go to part-time clerical employees or senior Facilities leaders for guidance. Outside of informal conversations and shadowing, Employees do not feel formally trained, resulting in avoidable errors and longer task cycle times. Employees frequently leave for other employers where they feel better supported. | • Significant roles and responsibilities confusion and lack of process documentation regarding Facilities management and Central HR’s responsibilities.  
• Insufficient change management as Facilities went through two HR operating model shifts (from Facilities-specific to Operations-wide and then to Central HR) over the last two years.  
• Significant institutional knowledge losses as all legacy Facilities HR employees have departed.  
• Insufficient career pathing and succession planning reportedly reduces employee job satisfaction with advancement opportunities. |  |

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*Note: The table above summarizes the current state observations and challenges faced by Facilities employees and organization, highlighting the impacts and root causes.*
Cross-Functional Current State Observations

Facilities’ business practices still have significant room to improve as different Facilities units do not effectively communicate with each other and collaborate on essential cross-functional tasks that touch on multiple units. Across functions, Facilities units reactively outsource tasks without strategic planning or quality assurance considerations.

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<tr>
<td>Different Facilities teams (e.g., construction, maintenance, housekeeping) find it challenging to communicate and collaborate with one another, especially on cross-functional tasks that touch on multiple teams (e.g., capital design decisions, project warranty period repairs, snow removal near buildings).</td>
<td>Employees in one area make decisions without considering the longer-term impact on other functions (e.g., new construction material choice decision that reduces short-term capital costs, but increases long-term maintenance costs). Employees complete tasks to accomplish their unit’s goals, rather than Virginia Tech’s holistic interests. Managers frequently argue over unit-level responsibilities and/or ignore cross-functional tasks that they do not believe lie in their units.</td>
<td>• Insufficiently documented and understood roles &amp; responsibilities across different Facilities functions. • Limit of strong central leadership overseeing related teams. • Limited official channels for communicating across Facilities employees and contractors (i.e., communicating upcoming renovation project to housekeeping employees responsible for building). • “Hierarchical” culture with managers requiring employees to follow chain of command rather than collaborating.</td>
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<td>Facilities outsourcing decisions are made reactively to employee shortages and audit findings, rather than strategically, from a cost/benefit perspective.</td>
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<td>Facilities leadership may be paying significantly more for outsourced maintenance tasks and renovation project management compared to expanding internal employee capacity. Facilities employees conduct extra work to correct/manage external vendors, diverting Virginia Tech employees from core job responsibilities. T&amp;R Faculty and campus-wide employees express frustration with low customer service levels of external contractors who are often unfamiliar with University buildings and considerations of working in a university environment.</td>
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</table>
Cross-Functional Current State Observations

Facilities-specific and university-wide software systems hamper organizational effectiveness as managers and employees do not have sufficient technological functionality, data access, and analytical capabilities to efficiently complete both long-term planning and day-to-day tasks.

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</table>
| Facilities software system (HokieServ/AiM) has limited communication and workflow functionality and is too time-intensive for many common Facilities tasks, especially in capital projects, space management, and real estate units. | T&R Faculty and employees find it challenging and confusing to file work orders and do not receive automatic updates on work order progression. Facilities employees take additional time to fill out many required work order fields, diverting time away from tasks. Facilities employees are not able to track histories of tasks and equipment, forcing them to go back to paper records. Facilities employees must switch among 10 different additional software systems to complete everyday tasks. Facilities employees build and maintain their own shadow systems and conduct most transactions through email. | • Perceived underinvestment in Facilities software system capabilities and user interface. • Software configured for portions of core Facilities organization (e.g., management, operations center staff), rather than frontline employees and specialized functions (e.g., real estate). • Software not configured for campus customers to effectively file work orders and receive status updates from Facilities staff. | |}

| Facilities employees do not have ready access to university-wide ERP data essential in conducting work. For example, the list of terminated employees takes months for employees to obtain. | Employees devote significant time to obtaining and reconciling basic information from University systems. Facilities frontline supervisors must spend significant time reconciling university-wide systems (e.g., leave and payroll) and Facilities systems (e.g., HokieServ/AiM) to appropriately track employee effort. | • University-wide culture of restricting data access to narrowly defined organizational silos. • Insufficient university-wide investments in user functionality of software systems (e.g., Banner). • Lack of technological integration or policy alignment across different leave, overtime, and work order systems. | |}

| Significant and growing Facilities data, but limited capacity to effectively analyze and use data to improve operational efficiency and performance. For example, limited standardized reports and KPIs used to make decisions. | Managers have limited capacity to analyze data and KPIs and may miss significant opportunities to improve operational performance and efficiency (e.g., electrical grid efficiency data collected, no manager time to analyze). Even when analyzed, managers devote time to consolidating, rather than analyzing essential data. | • Insufficient HokieServ data governance across wide range of Facilities functions. • Insufficient analytics capacity in Operations’ IT unit to build reports and/or analyze data. • Limited technological systems and BI reporting tools to facilitate analysis. | |
## Capital Design Current State Observations

Continued major capital project delivery challenges impede viability of Virginia Tech’s ambitious growth plans and threaten long-term building quality.

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</table>
| Stakeholders and Facilities employees report that major capital projects frequently experience significant delays and reduction in buildings’ academic mission capabilities. | **Student Affairs and Academic leaders** experience unexplained delays that impede short-term student housing needs and long-term academic ambitions. **Academic leaders** experience unexpected and unplanned scaledowns of essential academic initiatives. **T&R Faculty, staff, and students** experience greater overcrowding due to lack of building capacity. When projects are excessively delayed, **University leaders** encounter greater difficulty obtaining additional capital project appropriations from the Commonwealth of Virginia. | • **Inconsistent and undocumented project procedures and governance structures leads to widespread confusion** around administrative (e.g., Finance, Operations) and academic (e.g., academic sponsor) roles and decision-making authority.  
• **Insufficient project oversight as capital projects employees report being overwhelmed with work** due to significantly lower staffing levels compared to peer institutions.  
• **Finance and Facilities employees are all not fully aligned on essential upfront capital project decision-making authority and governance** (e.g., project start date, building capabilities, and project budget finalization).  
• **Finance uses cost models and benchmarks to budget projects that do not necessarily fully account for site-specific requirements and infrastructure needs** (e.g., utilities) that then need to be added late in the process, leading to decreases in building capabilities and/or delays.  
• **Common capital project processes require executive-level paper-based signatures** (e.g., VP of Operations signs even $700 change orders for $30M projects and reportedly manually signed a foot-tall contract). | **Lever** |

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Capital Design Current State Observations

Insufficient on-campus capital construction and architecture employee capacity is a particularly significant factor behind the University’s significant capital project delivery challenges.

<table>
<thead>
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<tbody>
<tr>
<td>Capital projects employees do not have capacity to effectively enable on-time and on-budget project delivery. <strong>Capital projects employees</strong> may not have time to effectively ensure building quality. Academic and administrative leaders do not have visibility or sufficient input into capital project decisions and status for their unit’s projects. <strong>University leaders</strong> may be unable to deliver on large-scale growth goals for the University. <strong>Future University leaders</strong> may need to spend significant funds remediating flawed capital projects.</td>
<td>• Historically lean capital projects staffing is no longer viable as workload has grown considerably (e.g., Facilities will be soon managing a capital project portfolio that is 3-4X larger than just a few years ago, with an employee count significantly below peer institutions.) • Professional skills vary significantly among University major capital project managers. • Overwhelmed capital projects employees do not follow appropriate roles &amp; responsibilities delineation (e.g., an office manager has reportedly drafted building plans). • Inconsistently documented and followed capital project procedures. • Capital projects employees receive contradictory guidance from project sponsors (e.g., deans) and administrative leaders about project timeline, building program decisions, and other essential questions.</td>
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Capital Design Current State Observations

Renovation projects’ expense, timeline, and insufficient coordination with stakeholders generate significant frustration for campus customers. This has even led to an increased reporting of University stakeholders bypassing Facilities completely to manage their own projects.

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| **Managed by an external contractor, Gilbane, renovation projects are perceived to be slow, not coordinated with University employees and often left incomplete. Gilbane’s fees and actual renovation project costs are perceived to be overly high compared to the scope and quality of work.** | Academic and administrative leaders express frustration at the high costs and project management fees of renovation projects compared to other Facilities tasks. **Facilities maintenance employees** encounter significant safety and operational violations by outside contractors (e.g., shutting power with no notice to a building floor that contained sensitive research labs). **T&R Faculty and employees** observe incomplete or unfinished work (e.g., unpainted rooms) after contractors leave. **Facilities employees** divert time and money from core job responsibilities to correct outside contractors’ errors. | • Current Gilbane contract does not provide sufficient enforcement power for University to compel Gilbane to manage projects effectively or efficiently spend University money. • Gilbane has insufficient number of managers to confirm whether contracted work was conducted. • University does not conduct sufficient quality assurance of Gilbane performance. • Virginia Tech’s contracts with subcontractors do not provide sufficient authority for Gilbane to effectively manage vendors. • Reportedly poor relations with area subcontractors have reduced number of vendors willing to bid on University contracts. • University partially regulates contractors through requiring permits in excess of state regulations, rather than through better management of employees and contracts. • Significant Facilities employee confusion around actual scope/responsibilities of contractors. | **Academic/Administrative stakeholders are increasingly bypassing Facilities completely and hiring their own contractors and/or conducting renovation projects themselves.** | Unit-level employees managing their own renovation projects can cause significant safety issues (e.g., asbestos exposure) and ADA compliance violations. **Virginia Tech leadership** may experience longer-term costs as employees may need to remediate projects not conducted up to University building standards. | • Overly high costs and slow renovation processes have led frustrated academic/administrative stakeholders to explore non-Facilities options. • Recently increased threshold for required procurement approvals has removed previous review step when departments were blocked from spending money on Facilities projects. | **CURRENT STATE & OPPORTUNITIES – FACILITIES**

**Academic/Administrative stakeholders are increasingly bypassing Facilities completely and hiring their own contractors and/or conducting renovation projects themselves.**

**Unit-level employees** managing their own renovation projects can cause significant safety issues (e.g., asbestos exposure) and ADA compliance violations. **Virginia Tech leadership** may experience longer-term costs as employees may need to remediate projects not conducted up to University building standards.

**Overly high costs and slow renovation processes** have led frustrated academic/administrative stakeholders to explore non-Facilities options.

**Recently increased threshold for required procurement approvals** has removed previous review step when departments were blocked from spending money on Facilities projects.
Facilities Operations Current State Observations

Virginia Tech has historically underinvested in capital renewal and Facilities operations, which has caused significant downstream operational challenges, including a significant deferred maintenance backlog and increased work order cycle times that have reduced facilities quality for T&R faculty, staff, and students.

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<tr>
<td><strong>Even as new projects break ground,</strong> <strong>significant deferred maintenance backlog</strong> (~$550M) reduces existing building occupant satisfaction and increases long-term costs. <strong>Even when capital renewal is funded,</strong> it is reactively allocated, rather than part of a strategic, long-term plan to enhance building conditions and reduce deferred maintenance backlog.</td>
<td><strong>T&amp;R Faculty, staff, and students</strong> experience more reactive maintenance problems (e.g., leaks) that stem from aging building infrastructure. <strong>Facilities maintenance employee</strong> time diverted to emergency work orders in old buildings, rather than essential routine/preventive maintenance, contributing to long-term backlog. <strong>Facilities management</strong> divert limited time and money to piecemeal building projects, rather than more efficient overhauls of high priority buildings.</td>
<td>• Overall, irregular E&amp;G capital program expenditures prioritize new buildings over longer-term capital renewal projects. • Finance and Facilities employees do not effectively collaborate on prioritizing E&amp;G building renovation needs as part of capital planning, creating disconnect between existing building needs and capital planning. • Insufficient maintenance employees leads to limited number of preventative maintenance employees devoting significant time (~20-30% of time) to reactive maintenance.</td>
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<td><strong>Significant increase in average work order completion cycle time</strong> (from under ten days in June 2017 to ~ 53 days in 2019), not consistent with work order volume growth. <strong>Continued campus frustration over insufficient work order visibility and effectiveness.</strong></td>
<td><strong>T&amp;R Faculty and employees</strong> experience significant delays for many Facilities tasks, especially reactive maintenance requests. <strong>T&amp;R Faculty and employees</strong> express frustration into lack of visibility into request status. <strong>T&amp;R Faculty and employees</strong> perceive maintenance employees as insensitive to occupant (e.g., entering a sensitive biochemical research lab without warning or permission). When tasks require multiple teams, some <strong>Facilities employees</strong> become delayed by their Facilities colleagues’ slow response times. <strong>Future University leaders</strong> may need to divert more funding into expensive capital renewal projects to compensate for maintenance being deferred.</td>
<td>• Insufficient software capabilities and prioritization reduces work order efficiency. • Numerous vacancies in key positions. • Overly centralized signature authority and many approval layers delay tasks. • Internal policies overly restricted overtime causing employees to leave projects before completion, triggering downstream delays. • Increased procurement centralization without accompanying central stores staffing causing significant parts-related delays. • Overburdened central operations center delays estimates and customer communications. • Insufficient knowledge management as essential building information is scattered across different electronic and paper-based systems.</td>
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Facilities Operations Current State Observations

Across highly visible, customer-facing Facilities operations (e.g., housekeeping), “Universal” Virginia Tech service levels, procedures, and charges appear highly variable to building occupants. Additionally, housekeeping and grounds service quality are hampered by staffing levels and limited quality assurance of external contractors.

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| Duplicative functions across multiple Virginia Tech facilities organizations (e.g., E&G, Student Affairs, and Athletics) reduce efficiency and create service level inconsistency. | Students and employees experience inconsistent service levels across different buildings types (e.g., residence halls vs. academic buildings). Facilities employees across University exist in silos that reduce collaboration opportunities. Facilities leadership misses out on opportunities to divert funding from redundant management to mission-critical needs. | • Historic separation of organizations due to different missions and funding streams.  
• Perceived differences in frontline employee job requirements. |       |
| “Universal” Virginia Tech building service levels, procedures, and charges appear highly variable to building occupants, generating significant confusion and frustration. | T&R Faculty and employees express frustration their buildings are not cleaned to similar standard as other campus buildings. T&R Faculty and employees also express confusion over charges for tasks in some rooms and not others (e.g., carpet cleaning is free for conference rooms, but not private offices). Housekeepers attempt to ad-hoc meet customer preferences/needs (e.g., Vet Med requires different cleanings due to animal needs), but can be penalized for diverging from “standard regulations.” | • Lack of established SLAs to facilitate building care standards aligned to stakeholder preferences/needs.  
• Insufficiently documented and communicated building charges across public vs. private room responsibly split.  
• Inaccurate building maps that do not reflect current uses for cleaning.  
• Buildings managed by outside contractors have different service level and task charges. |       |
| Housekeeping and grounds employees do not consistently achieve goal service levels.      | T&R Faculty, students, and employees express frustration that their buildings are not cleaned properly. Housekeeping and grounds employees divert time and energy to fix contractor mistakes, rather than complete their own tasks. Housekeeping and grounds employees express feelings of burnout and low job satisfaction due to inability to complete all required tasks. | • Insufficient quality assurance managers to confirm completion of contracted work.  
• Significant delays (1-2 yrs.) between new building occupancy and budgeting for Housekeeping funds.  
• Terminated Virginia Tech Facilities employees are often rehired by outside contractors.  
• Reportedly high absenteeism rate hamper employee ability to complete required tasks.  
• Employees lack common tools (e.g., map of all trees for grounds staff) to complete tasks. |       |
## Real Estate Current State Observations

Virginia Tech’s real estate portfolio has grown significantly in complexity, size, and locations, but business practices and technologies have not kept up.

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<tbody>
<tr>
<td>Virginia Tech has grown lease portfolio to ~$35M in annual spend, but has not invested in accompanying software system and staffing capacity.</td>
<td><strong>Employees</strong> manage real estate portfolio using Excel-based shadow system spreadsheets. <strong>Facilities leadership</strong> does not have strategic view of real estate portfolio needs. <strong>University leadership</strong> may be missing out on opportunities to more effectively manage lease portfolio.</td>
<td>• Insufficient AiM/HokieServ lease management module functionality. • Historically transactional, rather than strategic mission of real estate unit.</td>
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<tr>
<td>University takes significant time (~1.5 months) to sign leases, regardless of complexity and amount.</td>
<td><strong>T&amp;R Faculty and employees</strong> become frustrated by extended timeline that is particularly challenging for short-term and summer leases. <strong>Landlords</strong> have reportedly begun to perceive the University as a difficult customer, which is especially troubling for highly competitive DC real estate market.</td>
<td>• Highly centralized and many approval layers (e.g., all leases, regardless of size must be signed by VP of Operations). • <strong>Paper-based approval processes</strong> require manual signatures from some staff.</td>
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## Space Utilization & Management Current State Observations

Operations does not effectively serve as a central space data manager nor does it have a realistic plan for updating space data after the in-progress space management consulting project is completed.

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</table>
| **Space management system is not viewed as having an updated, centralized view of all campus spaces’ current configuration and occupancy** for both tactical (e.g., intra-unit space assignment) and university-wide (e.g., space reallocation) purposes. | Campus-wide space governance committee can not effectively make strategic space allocation decisions without accurate space occupancy and purpose data. **Unit-level space representatives** can not maximize intra-unit space utilization if they do not have up-to-date knowledge of their own units’ space occupancy and purpose. **Facilities managers** (e.g., minor modifications, housekeeping) inform decisions based on space data significantly different from day-to-day realities (e.g., allocating housekeeping employee capacity based on inaccurate building occupancy data). | • **Space management is highly decentralized across the University**, creating historic data gaps in units’ and central’s understanding of what space is available. • **Facilities’ space management system (AIM/HokieServ)** reportedly does not have necessary technical capabilities to assist Facilities in effectively managing campus-wide space over time. • **Facilities’ space management system (AIM/HokieServ)** is not readily accessible and does not have all necessary data for campus stakeholders to manage their spaces. • **Facilities’ space management employees have experienced significant managerial turnover** (6 supervisors in 3 years). | |}

| Ongoing space management consulting project has a limited scope and after it concludes, the **University does not have a realistic plan for consistently updating space usage database on ongoing basis**, beyond relying on unit-level space representatives. | **Campus stakeholders** may find Facilities space database outdated since it will not continuously reconcile with other campus databases. **Space representatives** may not accurately update space, due to competing job responsibilities and/or their potentially misaligned incentive to provide space data that supports their unit’s, rather than the University’s space priorities. **Facilities leadership** may need to invest in a future, additional space audit, as space data goes out of date. | **Facilities space data is inconsistent with and does not automatically reconcile with IT, Registrar, and HR databases.** **Facilities has no policies to provide enforcement power** to ensure that unit-level space representatives accurately update space system over time. | |}

---

Space Utilization & Management Current State Observations

University stakeholders report high space utilization and significant space shortages. However, many academic/administrative units may not be utilizing space effectively.

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
<th>Identified Root Causes</th>
<th>Lever</th>
</tr>
</thead>
</table>
| **Space utilization (especially classroom space) is reported to be quite high**, with significant reported space shortages, especially of student-facing, core campus space. **However, many spaces may not be utilized to their highest and best purposes** (e.g., reports of low research expenditure PIs with large labs and an office-sized central campus closet used for Christmas decorations). | **University leaders** spend a significant and growing amount of money building and/or leasing additional spaces that may not be necessary. **T&R Faculty and employees** experience seemingly arbitrary variation in quality and quantity of office and lab spaces. **T&R Faculty and employees** report inability to obtain space for mission-critical academic and administrative activities (e.g., student advising, swing spaces needed for renovations). **Students** face significant challenges in obtaining private space for coursework (e.g., engineering students reportedly building senior year projects in stairwells). | • **Limited incentive for academic and administrative units** to improve space usage efficiency, rather than “hoarding space” by exceeding University space usage guidelines with inefficient floorplans and uses.  
• **Incomplete and inaccurate unit-level space utilization and occupancy data** to facilitate data-driven space allocation decisions by unit-level space owners.  
• **Facilities does not effectively support newly established space representative role** with sufficient data or best practice unit-level policies to enable strong intra-unit space usage. |       |
| The University has a clearly established process and goal metrics for vetting new space requests, but does not set existing space KPIs and act to improve continuous improvements in campus-wide space utilization. | **Cross-campus space leaders** (e.g., Facilities, Provost’s Office) do not have clear targets for improving campus-wide space utilization and efficiency. **Unit-level space representatives** do not have necessary data, clear goals, and are not held accountable for improving intra-unit space utilization and efficiency. **University leaders** may be unnecessarily spending funds to lease or construct buildings to obtain space that could be found through space reallocation. | • **No “space planner” role in Facilities’ space management unit** with expertise and authority to encourage departments to more effectively utilize space.  
• **Incomplete and inaccurate unit-level space utilization and occupancy data** to create and act on KPIs.  
• **Decentralized space governance with no clear accountability** regarding ownership over improving space utilization metrics. |       |
Utilities & Energy Management Current State Observations

VTES and University energy management have been operated for maximum reliability, but there are significant improvement opportunities to improve efficiency. Additionally, VTES faces a significant transformational choice, but Utilities/Finance leadership are not aligned on costs/benefits.

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
<th>Identified Root Causes</th>
<th>Lever</th>
</tr>
</thead>
<tbody>
<tr>
<td>The University has only recently started to implement long-term technological and capital renewal opportunities to reduce long-term energy usage.</td>
<td><strong>Academic and administrative leaders</strong> are using more power and spending more money than necessary on electricity overall. <strong>Academic and administrative leaders</strong> have not fully acted on opportunities to use renewable energy (e.g., solar and geothermal) to enhance environmental and financial sustainability.</td>
<td>• Historic, insufficient VTES and building capital renewal budgets has led to underinvestment in longer term electrical grid, and power plant efficiency upgrades. • The University has only just implemented its first ever energy action plan for reducing campus-wide energy usage. • Utility still does not have long-term technological roadmap for bolstering grid and power plant efficiency.</td>
<td></td>
</tr>
<tr>
<td>Peak building power demand charges are unusually high (~50% of total wholesale bill) and represent a significant opportunity to reduce peak campus energy usage.</td>
<td><strong>Academic and administrative leaders</strong> are spending more money than necessary on electricity at peak times.</td>
<td>• Insufficient, highly manual building energy saving processes (e.g., calling building manager to reduce A/C at peak times), reduce potential to decrease energy demand at peak times, triggering expensive demand fees. • Utility rate does not separate demand and non-demand charges, reducing campus leaders’ visibility into utility cost drivers.</td>
<td></td>
</tr>
<tr>
<td>Significant misalignment between Utilities leadership and Finance over costs/benefits of potentially transforming VTES’ role to be a larger generator, rather than mainly a reseller of power. Upcoming power purchase agreement renegotiation (with regional utility) heightens urgent to align quickly.</td>
<td><strong>Virginia Tech leadership’s continued misalignment</strong> on VTES’ role may delay required capital investments to enable either proposed power purchase strategy to succeed. <strong>Academic and administrative leaders</strong> may experience significantly higher utilities charges if clear strategy is not developed and successfully completed.</td>
<td>• After summer 2019 retirements, majority of senior Utilities leadership will have less than 1 year of tenure, reducing unit’s capacity to rethink business model. • Finance is interested in a shift away from low-risk, low-return business model of primarily reselling power, to a high-risk, high return model of increasing generating capacity. • Utilities employees feel that Finance under-estimates costs/risks of potential new model.</td>
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</tbody>
</table>
Sustainability Current State Observations

Virginia Tech’s sustainability program has achieved significant national recognition for its strengths. However, the University should consider business practice and organizational structure changes to enable the office to build on its successes.

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
<th>Identified Root Causes</th>
<th>Lever</th>
</tr>
</thead>
<tbody>
<tr>
<td>University’s sustainability program has been highly recognized on state and national levels by the Commonwealth of Virginia, APPA, and other organizations for its programs (e.g., notable sustainability internship program.)</td>
<td><strong>It currently has the highest sustainability rating</strong> (through the STARS program) of any Atlantic Coast Conference institution.</td>
<td>• Deep, executive-level commitment to sustainability as an enterprise-wide goal.</td>
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<tr>
<td></td>
<td>T&amp;R Faculty and students have many opportunities to engage deeply in sustainability through partnerships with various Virginia Tech units. Facilities employees are encouraged to work closely with the Sustainability office to make sure their decisions align with University sustainable goals.</td>
<td>• Cross-silo collaboration across Facilities units and Virginia Tech offices.</td>
<td></td>
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<tr>
<td></td>
<td>The University requires new building and significant renovation projects to conform to LEED standards, but the University still has significantly fewer LEED certified buildings (16) than peer institutions (e.g., UVA has 49).</td>
<td>• Limited capital expenditure budgets have reduced potential for retrofitting existing buildings to meet LEED certification cost and project requirements.</td>
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<tr>
<td></td>
<td><strong>Capital projects employees</strong> are making decisions not fully aligned to University-wide sustainability goals. Academic and administrative leaders may be utilizing more resources (e.g., power, water, steam) in day-to-day building operations than they could be.</td>
<td>• Prioritization of new buildings over capital renewal projects has reduced potential for significant building overhauls that require LEED certification.</td>
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<tr>
<td></td>
<td>The sustainability program relies heavily on its founding program director’s relationships/stature for operational success.</td>
<td>• Central sustainability program is leanly staffed compared to peer universities (only 2.5 FTEs compared to 5-6 FTEs at peer schools).</td>
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<td></td>
<td><strong>Future sustainability directors</strong> may find it challenging to replicate current director’s success in tying disparate sustainability efforts across the university together.</td>
<td>• Significant number of distributed sustainability employees that have informal connections to Facilities’ sustainability office.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Founding sustainability program director has not felt need to formalize his informal direction of significant number of sustainability employees distributed across the University.</td>
<td></td>
</tr>
</tbody>
</table>
Facilities Transformational Opportunities
Transformational Opportunity List

High-priority, Transformational, future state opportunities would enable significant improvement in the Facilities unit. Outside of these transformational opportunities, additional opportunities are listed in the following section.

Transformational opportunities are:

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Enhance executive- and sponsor-level capital planning and capital project governance by establishing clear roles &amp; responsibilities for executive capital planning and capital project decision-making.</td>
<td>Improve project effectiveness and efficiency through clearly defining accountability and authority for executive- (e.g., project start date) and staff-level (e.g., change orders) decisions.</td>
<td>Capital Design</td>
</tr>
<tr>
<td>2. Enhance contract management governance and expand quality assurance employees across all Facilities contracts.</td>
<td>Improve vendor performance and reduce contractor spend when vendors do not perform up to contract standards.</td>
<td>Cross-Functional</td>
</tr>
<tr>
<td>3. Enhance Capital Construction, Renovations, and Planning Business Practices to establish clearer roles &amp; responsibilities and processes to improve the University's day-to-day capital projects operating model.</td>
<td>Accelerate ongoing capital projects-related unit transformation to enable University to more successfully implement ambitious capital program.</td>
<td>Capital Design</td>
</tr>
<tr>
<td>4. Conduct a comprehensive cost/benefit assessment of potential changes in VTES’ business model in response to upcoming expiration of the utility’s power purchase agreement with AEP.</td>
<td>Make an informed decision regarding future, potential transformation of VTES operating model as a pure play reseller of power, its current hybrid generator/reseller structure or a more generator-focused utility.</td>
<td>Utilities &amp; Energy Management</td>
</tr>
<tr>
<td>5. Conduct comprehensive review of Facilities outsourcing to determine whether Facilities should insource, outsource, or implement a hybrid model for essential tasks and functions (e.g., renovations).</td>
<td>Strategically, rather than reactively, outsource tasks and functions (e.g., renovation projects) to reduce University spending, increase institutional controls, and improve operational effectiveness.</td>
<td>Cross-Functional</td>
</tr>
<tr>
<td>6. Develop comprehensive space data governance and performance management program to link disparate space-related databases together, develop space utilization KPIs, and establish clear accountability for meeting KPI targets.</td>
<td>Enable data-driven space allocation decisions through more accurate space usage data and KPIs tied to specific improvement goals.</td>
<td>Space Utilization &amp; Management</td>
</tr>
<tr>
<td>7. Improve Facilities data governance and implement new BI tool to consolidate, visualize, and analyze data from all relevant systems (e.g., HokieMart, Banner, and HokieServ) to build more sophisticated leadership-level reports and staff-level dashboards.</td>
<td>Enable Facilities leaders and employees to spend more time on analyzing and making data-driven decisions and less time on consolidating and reconciling data.</td>
<td>Cross-Functional</td>
</tr>
</tbody>
</table>
## Transformational Opportunity Template

The following format will be used to summarize larger, transformative opportunities:

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of the opportunity</td>
<td>What is the expected outcome if this opportunity is implemented?</td>
<td>What will happen if Virginia Tech does not pursue this?</td>
<td>What level of support and commitment of institutional resources is required to implement and sustain this opportunity?</td>
</tr>
</tbody>
</table>

- **Quick Wins** - Relatively low-complexity improvements to build momentum for significant change.
- **Heavy Lifts** - Difficult but required improvements which must be executed in the short-term.
- **Marathons** - Efforts with long implementation timelines which create significant long-term benefits but must be started in the near term and may show little to no initial return.
### Transformational Opportunity #1: Enhance Executive- and Sponsor-Level Capital Planning and Capital Project Governance

Enhance executive-level capital planning and capital project governance to improve the transparency, effectiveness, and efficiency of the University’s capital program.

<table>
<thead>
<tr>
<th>Opportunity</th>
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</tr>
</thead>
</table>
| • Enhance executive- and sponsor-level capital planning and capital project governance to clearly delineate roles and responsibilities and inclusively incorporate employee and stakeholder perspectives. | • Improve project effectiveness and efficiency through clearly defining accountability and authority for executive-level (e.g., project start date) decisions.  
  • Clarify decision-making authority to eliminate conflicting orders sent to capital projects staff.  
  • Enable Virginia Tech project sponsors to more fully understand their roles and provide essential, early stage project input.  
  • Reduce late-stage project delays caused by conflicting and changing executive decisions and unclear project sponsor guidance.  
  • Improve transparency and communication with academic and administrative leaders sponsoring capital projects (e.g., deans).  
  • Establish best practice cost modeling to enable more accurate and agreed-upon upfront cost estimates. | • Continued opaque decision-making around capital project prioritization frustrating academic and administrative stakeholders and making stakeholders feel that decisions are based on relationships, rather than University priorities.  
  • Continued frustrations and delays caused by academic and administrative leaders’ inconsistent inclusion in capital projects.  
  • Insufficient training of project sponsors and Facilities employees about their roles in making essential tradeoffs regarding building capabilities, cost, and timeline.  
  • Significantly conflicting directions given to capital projects staff, causing downstream (3-6 month) delays and hiring contractors without authorization to spend funds.  
  • Inability to deliver on large-scale growth goals for University. | • Heavy Lift - Reforming capital project governance will require significant stakeholder input and challenging decisions around decision-making authority.  
  • It will then require significant change management and communication to educate a wide range of campus stakeholders and Facilities employees on the new governance structure and decision-making authority. |
| • Project Prioritization: Create transparent capital project prioritization criteria to score projects and better communicate final decision rationales to all potential project sponsors. |                                                                                                                                            |                                                                                                                                                |                                                                       |
| • Project Budgeting: Obtain university-wide alignment on project cost model used for state funding requests (e.g., historical cost per square footage vs. actual expected cost of project). |                                                                                                                                            |                                                                                                                                                |                                                                       |
| • Project Performance: Establish university-wide roles & responsibilities to demarcate who has authority/accountability for each project. |                                                                                                                                            |                                                                                                                                                |                                                                       |
| • Change Management: Widely distribute and train staff/stakeholders on finalized governance program. |                                                                                                                                            |                                                                                                                                                |                                                                       |

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Transformational Opportunity #2: Enhance Contract Management Governance and Expand Quality Assurance Employees

Develop a comprehensive contract management organization and expand quality assurance staffing levels across all Facilities contracts.

<table>
<thead>
<tr>
<th>Opportunity</th>
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<th>Cost of Inaction</th>
<th>Effort</th>
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</thead>
<tbody>
<tr>
<td>• Develop advanced contract management and quality assurance organization across all Facilities functions.</td>
<td>• Provide more effective housekeeping and maintenance to campus stakeholders through improved vendor performance.</td>
<td>• Diffuse contract management responsibilities leading to unclear authority or ownership over contractor performance.</td>
<td>• Quick Win/Heavy Lift - Facilities has begun to add employees and procedures to improve contract management and quality assurance.</td>
</tr>
<tr>
<td>• Hire specialized quality assurance managers solely devoted to ensuring University contractors are completing work and quality assurance across Facilities functions (e.g., Renovations, Maintenance, Housekeeping).</td>
<td>• Reduce cost and improve quality of campus renovation projects.</td>
<td>• T&amp;R Faculty and employee frustration regarding high costs and low quality of renovation projects.</td>
<td>• However, it will take additional staffing investments and comprehensive policy/procedure establishments to significantly advance the contract management maturity level of the Facilities organization.</td>
</tr>
<tr>
<td>• Develop expertise and establish clear roles &amp; responsibilities for all Facilities contract managers.</td>
<td>• Reduce contractor spend when vendors do not perform up to contract standards.</td>
<td>• Allocation of limited Virginia Tech Facilities employee time and funding to correcting vendor mistakes and incomplete tasks.</td>
<td></td>
</tr>
<tr>
<td>• Solicit ongoing frontline employee feedback regarding contractors to broadly source non-performing contractor information.</td>
<td>• Improve internal controls to reduce waste and more effectively manage external contractors.</td>
<td>• Future procurement decisions lacking consistent data into past vendor performance, leading to more low performing vendors.</td>
<td></td>
</tr>
<tr>
<td>• Keep consistent quality assurance records to inform future procurements.</td>
<td>• Encourage contractors to provide more effective customer service to T&amp;R faculty and employees.</td>
<td>• Continued observations of contractor violations of campus safety and operations.</td>
<td></td>
</tr>
<tr>
<td>• Establish contract performance KPIs and comprehensive reporting program.</td>
<td>• Consistently review invoices to identify inaccurate or overbilling practices.</td>
<td>• Growth of trend of frustrated campus stakeholders hiring and managing their own contractors, rather than going through Facilities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Improve existing Facilities contract management employee expertise to advise unit managers on contracts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reduce instances of Facilities employees and campus customers diverting time from job responsibilities to fix vendor mistakes.</td>
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</tbody>
</table>
Transformational Opportunity #3: Enhance Capital Construction, Renovations, and Planning Business Practices

Bolster Virginia Tech's day-to-day capital projects and renovations business practices and roles & responsibilities to more effectively operationalize the University's long term growth plan.

<table>
<thead>
<tr>
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</tr>
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</table>
| • Comprehensively review the University’s capital projects-related units’ operating model across processes, policies, and roles & responsibilities. | • Improve project effectiveness and efficiency through clearly defining accountability and authority for staff-level decisions (e.g., change orders).  
• Enable more projects to stay on-time and on-budget to align with campus stakeholder needs and University budgets.  
• Bolster employee effectiveness and efficiency through the use of standardized project management software tools and electronic workflows.  
• Improve communication with campus project sponsors and stakeholders.  
• Enable stronger, and more consistent capital project employee professional skills  
• Establish clear capital project performance accountability at all levels of the University (e.g., from VP of Operations to frontline capital projects manager).  
• Achieve University’s ambitious capital project growth goals through high quality buildings. | • Project sponsor and other campus customer frustration and confusion around project timing, building capability changes, and other opaque project decisions that impede short-term and long-term University goals.  
• Inconsistent manual processes, skill levels, and performance across capital projects staff.  
• Continued reports of major capital projects frequently experiencing significant delays and academic mission capability reductions.  
• Capital projects staff's continued confusion around administrative (e.g., Finance, Operations) and academic (e.g., academic sponsor) roles and decision-making authority.  
• Inability for University to deliver on long-term growth goals.  
• Continued concerns that inconsistent procedures may lead to suboptimal building quality and need for future remediation. | • Heavy Lift - Restructuring a mission-critical University division’s roles & responsibilities and business practices will be a significant lift.  
• Even though the division is already making progress to improve its practices, a full operating model enhancement needs to happen more quickly so that the University can meet its growth ambitions.  
• Employees then need to be comprehensively trained on new processes, procedures, and responsibilities to enable the new operating model’s success. |
Transformational Opportunity #4: Conduct a Comprehensive Cost/Benefit Assessment of Potential Changes in VTES’ Business Model

Conduct a comprehensive business model assessment of Virginia Tech Electric Service (VTES) to develop a long-term strategy and align the strategy with its upcoming, potentially transformative power purchase agreement with AEP (its regional utility).

<table>
<thead>
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<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Conduct a comprehensive business model assessment of VTES to prepare for the upcoming expiration of the utility’s power purchase agreement with AEP.</td>
<td>• Make a fully informed decision regarding VTES’ long-term business model before negotiating and signing any new power purchase agreement with AEP.</td>
<td>• Lack of data-driven, informed, strategy before signing a large, long-term contract that will impact the future of VTES and Virginia Tech.</td>
<td>• Quick Win - A comprehensive review will take specialized expertise and employee time. The University will need to hire specialized employees and/or invest in an external partner. However, the actual review itself will take a limited amount of time and make a significant impact on informing leadership decision-making about the future of VTES.</td>
</tr>
<tr>
<td>• Fully consider all potential business models (e.g., pure play reseller of power, current hybrid generator/reseller structure or generator-focused utility)</td>
<td>• Align essential cross-campus leaders and employees on the future of VTES.</td>
<td>• Continued misalignment of senior University leaders around the business model and goals of VTES.</td>
<td>• However, operationalizing the agreed-upon business model will take multiple years and potentially require significant capital and operating investments.</td>
</tr>
<tr>
<td>• Develop total cost model that fully incorporates all short- and long-term costs of potential strategy (e.g., additional power plant infrastructure).</td>
<td>• Advance utility’s dual mission to both serve the University and ~6,000 non-University customers.</td>
<td>• Missed opportunities to pursue larger-scale, impactful energy solutions such as geothermal heating/cooling that could reduce long-term costs and advance sustainability goals.</td>
<td></td>
</tr>
<tr>
<td>• Consider change in utility rate structure to include demand charges and/or capital renewal fees.</td>
<td>• Obtain a high-level roadmap for the technological and organizational transformation of the utility.</td>
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</tr>
<tr>
<td>• Consider opportunities for renewable energy (e.g., geothermal) and grid modernization as part of plan.</td>
<td>• Advance utility operations (e.g., power plant, electrical grid) to be a more modern utility.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Finalize new business model and obtain cross-campus agreement on VTES’ long-term goals and plans.</td>
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</tbody>
</table>
Virginia Tech and Virginia Tech Electric Service (VTES) Overview

Virginia Tech Electric Service sells power to both Virginia Tech and 6,000 commercial and residential customers in Blacksburg. VTES acquires most of its power from a larger utility, AEP.

Virginina Tech Electric Service
- Description: University-operated utility that serves Blacksburg campus and 6,000 other residential/commercial customers.
- Buys 90% of power on a long-term (20 year) contract with AEP that is coming up for renewal (Note: Its 2027 expiration is considered soon in Utilities industry.)
- Generates only 10% of its own power through on-campus cogen (coal/natural gas) power plant.

American Electric Power (AEP)
Publicly traded, investor-owned utility with five million customers and $15B in annual revenue.
Transformational Opportunity #5: Conduct Comprehensive Review of Facilities Outsourcing

Conduct comprehensive review of Facilities outsourcing to determine the most strategic future state operating model for improved effectiveness and efficiency.

### Opportunity

- **Conduct comprehensive cost/benefit review of Facilities outsourcing to determine whether Facilities should insource, outsource, or implement a hybrid model for essential tasks and functions (e.g., renovations, housekeeping).**
- Develop full contract lifecycle financial model that includes expected short-term and long-term benefits/costs of function-level outsourcing.
- Consider expected effectiveness through incorporating past Virginia Tech contract performance from available vendors in area.
- Benchmark expected insourcing or outsourcing costs compared to public, peer institutions in similar rural locations.
- Incorporate insights from Higher Education procurement experts on industry best practices.

### Impact

- Empower University and Facilities leadership to make data-driven, informed decisions about essential Facilities functions.
- Identify financial efficiencies to reduce spending and redirect cost savings to high-priority Facilities needs.
- Enhance the effectiveness and efficiency of multiple Facilities functions’ day-to-day operations.
- Improve service to T&R faculty and employees.

### Cost of Inaction

- Continued reactive approach to insourcing/outsourcing split in response to particularly vocal stakeholder demands, lack of employee capacity and/or internal audit findings.
- Continued overly high costs for common Facilities functions (e.g., renovation projects).
- Excess long-term spending due to insufficient review of proposed outsourcing to determine if financially beneficial to University.
- Opaque, often intuition-based, decision-making about mission-critical functions’ operating models.
- Missed opportunities to improve service levels to T&R faculty, employees, and student customers.

### Effort

- **Quick Win** – A comprehensive review will take specialized expertise and employee time. The University will need to hire specialized employees and/or invest in an external partner. However, the actual review itself will take a limited amount of time and make a significant impact on informing leadership decision-making.
Contractor Sourcing Leading Practices

Regardless of insourcing/outsourcing mix, to attract and better manage vendors, Virginia Tech should consider adopting the following leading practices:

**Practice #1: Create Strategic Vendor Sourcing Plan**

- Develop consistent database of existing vendor characteristics (e.g., load capacity, expertise) and past performance (e.g., on-time delivery, campus customer feedback) to identify current weaknesses in existing vendors.
- Identify highest-potential new vendor needs to proactively grow a strong “bench” of contractors and subcontractors.

**Practice #2: Promote Virginia Tech Facilities**

- Attend contractor- and industry-specific seminars and conferences to promote University as customer.
- Highlight upcoming Virginia Tech procurements to generate more interest from the subcontractor and general contractor community.

**Practice #3: Develop Mentorship Program**

- Develop a formal Facilities mentorship program to advance high-performing smaller contractors on to bigger projects.
- Consider streamlining regulations (e.g., insurance and financial liability clauses), providing project management guidance, and reducing reporting requirements as part of this mentorship program.
Transformational Opportunity #6: Develop Comprehensive Space Data Governance and Performance Management Program

Establish comprehensive space data governance and performance management program to more effectively improve long-term capital planning and space utilization through promoting data-driven space allocation decisions.

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
</table>
| Establish data governance and performance management program to obtain and act on “one version of the truth” for enterprise-wide space management. | • Provide all university-wide and college-specific space owners the essential information they need to more effectively utilize space in their buildings.  
• Establish clear ownership and accountability for who is responsible for ensuring efficient space usage and improving space utilization.  
• Enable central- and unit-level stakeholders to make comprehensive and data-driven decisions about university-wide and intra-unit capital planning and space reallocation decisions.  
• Accelerate the University’s ability to identify, respond to, and remediate space data inconsistencies or space utilization challenges.  
• Optimize limited available space to allocate space towards the University’s top priorities.  
• Save money currently spent on leased spaces near campus. | • Inability to meet ambitious University growth ambitions due to perceived shortage of lab, classroom, and office space.  
• Potentially excessive capital construction and lease spend to accommodate campus occupants.  
• Reduced ability for university-wide and academic/administrative-specific space leaders to make data-driven decisions about space reallocation.  
• Delayed renovation projects due to lack of swing space on-campus  
• Continued significant, arbitrary variations in office and lab space quantity per T&R faculty member/employee.  
• Continued, potentially avoidable, space shortages as T&R faculty, students, and employees find it challenge to find sufficient space.  
• Continued time and energy spent reconciling multiple space data systems, rather than analyzing space data. | • Marathon - Developing a data governance plan that integrates information from multiple legacy systems will take a significant amount of employee time and cross-unit alignment.  
• Even more challenging will be to obtain cross-campus consensus on an actionable performance management plan that includes clear KPIs, KPI targets, and unit-level owners accountable for improvement. |
Space Management Maturity Level

Based on established measure of organizational space management, Virginia Tech is in the first stage, Task Manager, of its space management maturity level.

Evolution of Space Management Programs and Functions

Task Manager
Vacancy Control

- Reactive vacancy management at a building/office level
- Nonexistent or unenforced space standards
- Lack of space documentation and assignment

Advisor
Regional Portfolio Optimization

- Reactive portfolio-level vacancy management
- Existing portfolio-level space standards
- Comprehensive space library managed outside of an Space Management System (SMS)
- Space management plans not aligned to institution’s growth

Strategist
Proactive Space Management

- Proactive portfolio-level space management
- Portfolio-level space standards enforced throughout org
- Real-time, comprehensive space management, with documented procedures
- Space management goals aligned with organizations goals and planned growth
- Planned and managed costs aligned to growth
- Fully integrated SMS

Innovator
Driving Leading Space Trends

- Dedicated space management team integral to growth strategy and planning
- Leading and implementing space saving design principles
- Fully integrated SMS with real time data display and dashboards
- Planned costs and lease costs reduced due to leading efforts
- Fully enabled virtual workplace

While the University appears to be at an initial maturity stage, VT leadership can make strides toward innovation.
Transformational Opportunity #6: Space Utilization & Management

Next Steps

With Virginia Tech in the early stages of its maturity, the University can take steps to lay the foundation for a holistic, proactive, and data-driven approach to growth space utilization and management.

1. Establish Data Governance
   - Establish data governance and performance management program to obtain and act on “one version of the truth” for enterprise-wide space management.
   - Define clear roles and responsibilities, and space data ownership and accountability across campus.

2. Improve Collaboration
   - Foster collaboration across units to develop data definitions, governance policies and update procedures with clear consequences for non-compliance.
   - Perform analysis to identify co-location and cost reduction strategies.
   - Assess space management software utility and business processes.

3. Create Transparency
   - Establish one, single central database to consolidate and transparency share all space data across Facilities, Registrar, HR, and IT systems.
   - Assess work styles and align to appropriate space usage.
   - Audit leases, owned assets, and space use to identify immediate cost and space savings opportunities.

4. Standardize Reporting
   - Benchmark space utilization rates.
   - Establish standard reports and KPIs to provide decision support for space utilization decisions across all types (e.g., classroom, office, and lab).
   - Assess space management software utility and business processes.

5. Vision the Future
   - Develop future state targets for KPIs across Facilities functions.
   - Assign ownership for meeting space utilization and effectiveness improvement targets.
   - Measure impact and track KPIs for effectiveness.
Transformational Opportunity #7: Master Data Management & Business Intelligence Strategy*

Improve data governance and deploy business intelligence technologies to promote data-driven decision-making across Facilities.

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Improve data governance and deploy business intelligence technologies.</td>
<td>• Facilitate data-driven decision-making by Facilities leadership team.</td>
<td>• Continued diversion of staff/management time to obtaining and reconciling basic information from Facilities-specific and university-wide systems.</td>
<td>• Marathon - Developing an actionable and impactful business intelligence program requires executive-level leadership and resources from Facilities, Operations, and IT leadership. It will also require ongoing governance and technological support and oversight.</td>
</tr>
<tr>
<td>• Establish clear data governance strategy for reconciling data from all relevant systems (e.g., HokieMart, Banner, and AiM/HokieServ).</td>
<td>• Improve common Facilities task cycle time by empowering frontline employees to make data-informed decisions.</td>
<td>• Inconsistent and poorly defined data reducing effectiveness of current “data-driven” decision-making.</td>
<td></td>
</tr>
</tbody>
</table>

*Related to cross-workstream transformational opportunity in detailed in separate section.
Transforming the Administration & Operations Enterprise

Current State Observations and Opportunities

**Business Operations**

Section | Page
--- | ---
Current State Observations | 124
Transformational Opportunities | 137
Business Operations
Current State Observations
What’s Working Well
The below observations summarize the key themes of what is working well in Business Operations.

**Theme #1: Departmental Alignment**
- Operations leadership, mid-level managers, and frontline employees note **high levels of camaraderie** inside of departments.
- Operations employees report that they feel they can **communicate well with each other** and can engage their management.

**Theme #2: Ready for Change**
- Operations leadership is **ready for change** and have begun the process of overhauling areas like printing.
- Employees are **overall supportive of change** and are **motivated to increase efficiency**.

**Theme #3: Select Areas of Excellence**
- Hokie Passport & Parking and Transportation areas are **engaged in their external communities** and are excited about industry trends, emerging technology, and new capabilities.
- Hokie Passport employees are **cross-trained** and **multi-functional collaboration exists** within departments.
Virginia Tech’s Current State Business Operations Effectiveness

The Administrative and Operations assessment revealed stakeholder perspectives on Facilities functions.

Key Insights

- Vast majority of mail (~94%) is created by departments, largely driven by the pervasiveness of paper-based processes at Virginia Tech. For example, financial employees mail paper journal entries to Central Finance and multiple wet signatures are needed on Human Resources forms (e.g. P3A).
- Majority of interviewed people are not happy with the performance of printing services, but feel that they are required to use them due to an outdated interpretation of policy.
- Printing has been operating at a deficit since 2017, with an average (~$80K) per year underrun. This has made investing in capabilities very difficult specifically when also dealing with service cannibalization and outsourcing of services. Under new management, printing has had multiple new directives to improve performance including: consolidation of facilities print shop, expansion of sales and graphic designer FTEs, and reduction of outsourcing.
- Fleet owns 12% of the campus vehicles but accounts for 42% of the miles traveled. Meaning the remaining ~1400 vehicles only move, on average, 2,000 miles a year.

We don’t want to use the printing shop, but we have to.
I have to keep an offline excel to track my documents around campus.
Getting a parking pass is like getting a hunting permit.
Hokie Pass only matters for students, I got mine a long time ago and haven’t used it since.
It is 2019, we should have a parking app for metered parking.
I don’t use fleet services because we have our own vehicles.

Departmental Mail vs Residential Mail 2018

<table>
<thead>
<tr>
<th>Millions</th>
<th>Departmental Mail</th>
<th>Residential Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>9,279,800</td>
<td></td>
<td>584,210</td>
</tr>
</tbody>
</table>

Source: 2a. Mail Services Historical YoY
## Initiatives In-Flight

Below summarizes the in-scope initiatives underway by Business Operations:

<table>
<thead>
<tr>
<th>Theme</th>
<th>Initiative</th>
</tr>
</thead>
</table>
| **Transform Printing**               | • Increase capabilities by consolidating with Sign Shop and hiring graphic designer  
• Educate campus on printing capabilities and services by hiring sales person  
• Capture revenue that could be leaving campus by working with Procurement, Virginia Tech Foundation, and the Controller to identify external competition and ensure rates are competitive  
• Create strategy for expanding services externally |
| **Mail Operations Consolidation**    | • Move departmental and residential mail from separate locations to new locations to enable mail more efficient operations (move in progress)  
• Eliminate external vendors that are currently going into residential buildings |
| **Alternative Transportation**       | • Work with VTTI to conduct a scooter study to determine if scooters should be used on VT campus (study underway)  
• Double the number of rental bikes on campus  
• Place 150 electronic bikes on campus |
| **Unify and Improve Customer Service**| • Encourage leadership to focus on improving customer service  
• Shift to thinking of services as a business  
• Increase mobility of Hokie Pass Services  
• Identify and leverage external partners |
Current State Observation Template

The following format will be used to summarize current state observations:

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
<th>Identified Root Causes</th>
<th>Lever</th>
</tr>
</thead>
</table>
| What is the observation?  | What impact is this having on current state operations? | What is the underlying cause of this observation? | ![Business Practices](image)  
![Technology](image)  
![People & Organization](image)  
![Data and Information](image) |
# Current State Observations Overview

## Business Services In-Scope Function(s)

- Parking
- Printing
- Mail
- Hokie Pass
- Transportation
Parking Current State Observations

Parking is treated as a profit center, but has limited access to capital, authority and guidance leading to outcomes that are not in line with operational or University goals.

<table>
<thead>
<tr>
<th>Current State Observation</th>
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</tr>
</thead>
</table>
| Parking Department is required to reach financial goals and metrics, but central administration is heavily involved in operational decisions. | Currently unclear if goal is to maximize profit or strategically support VT as a holistic entity. Approach is inconsistent and unclear where authority lies. For example, visitors and other special vehicles do not pay to park, resulting in potential lost revenue, but enhancing experience. At the same time, ticketing is done without consideration of user experience. | • Operating Model is not clearly defined  
• Lack of operational authority and autonomy limits alignment with operating model and university’s strategy for parking | |
| Users and employees rely on outdated and disjointed processes and equipment, although off-the-shelf technological solutions are available to enhance operations. | Users and customers use physical passes, coin-based parking, and garage attendants rather than app-based passes, license-based parking, and automated garages. This leads to negative user experiences and potential loss of revenue from parking meters and unsecured garages. | • Multiple technological solutions exist, but they are not recognized as priorities by central administration and funding is not allocated by central administration | |
| Opportunity and demand for zonal parking exist, but it is not currently implemented. Most-attractive spaces are currently equal in cost to less-attractive spaces. | Parking is missing a potential revenue source. Users waste time looking for ideal spots over a larger area, across multiple lots, while undesirable lots sit empty. | • Pricing model is based on VT personnel categories, for example: "T&R faculty," "resident student," or "contractor," rather than attractiveness of spaces and willingness to pay. | |
## Parking Current State Observations

Parking is treated as a profit center, but has limited access to capital, authority and guidance leading to outcomes that are not in line with operational or University goals.

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</table>
| **There is a lack of customer service culture in parking department staff.** Because of the lack of customer service culture, responses to complaints are not handled in a customer-centric way. For example, incidents of escalations of issues rather than de-fusing of situation. | Lack of empathy and customer service leads to conflict between employees and customers, resulting in frustration and decreased morale. | • Operating Model is not clearly defined.  
• Lack of customer mind set affects interactions of department. |                                |
| **As VT expands its footprint in Blacksburg, it is also planning to expand parking spaces. However, parking department leadership does not see the need for more spots because of the consistent vacancy rate in parking spots.** | If Central Administration and Facilities demand more parking spaces, then the parking department must bear an increase in debt services. This increase would then have to be passed on to customers as higher permit prices. | • Lack of coordination and communication between Central Administration and Facilities and parking department leadership |                                        |
Printing Current State Observations

Printing has been historically treated as a sunk cost center, with multiple pockets of duplication across campus. A recent review of Virginia Code 23.1-2610 has determined that printing is not required and could potentially be restructured.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>VT has been operating printing under the assumption that it required by state law, rather than driven by needs of the university and demand for these services.</td>
<td>There is new flexibility in operating model. The Printing department has lacked the imperative to consider if outsourced services can best serve campus.</td>
<td>• New interpretation of legal code</td>
<td></td>
</tr>
<tr>
<td>Multiple areas and departments (those that have resources) operate their own printing operations with dedicated employees and resources, including the “library, advancement and the sign shop in facilities.” There are also several departments that have capabilities in-house for large scale printing. These are currently 8 FTE titles outside of printing or graphic designers, meaning potential printing services are being done at the department level.</td>
<td>This decentralization of printing capabilities leads to an inefficient use of resources and loss of scale for centralized printing services.</td>
<td>• Customers see printing as low quality and overpriced</td>
<td></td>
</tr>
<tr>
<td>Perception that print quality and turn-around time is below university customer standards. T&amp;R Faculty and employees outsource printing services, ignoring the policy that specifies they must check with printing first.</td>
<td>This decentralization of printing capabilities leads to an inefficient use of resources and loss of scale for centralized printing services. This circumvents established procedures, leading to a potential loss of revenue.</td>
<td>• Customers perceive print services to be both low quality and overpriced</td>
<td></td>
</tr>
</tbody>
</table>
## Mail Current State Observations

Mail locations are currently dispersed and are utilizing varying levels of technology.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Departmental mail</strong> is not electronically tracked. There are currently two different</td>
<td>Senders and recipients have no visibility to where mail is located or if it has been</td>
<td>• Lack of sufficient resource allocation by central administration for new equipment</td>
<td></td>
</tr>
<tr>
<td>locations for mail services, and only the resident mail location has the needed equipment.</td>
<td>delivered. Lost time spent inefficiently tracking documents. For example, employees use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>As mail moves through campus, it is not tracked and centrally logged along its journey.</td>
<td>Excel documents to track mail by confirming locations with participants.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Departmental mail</strong> that transports mail between units across campus is overused. T&amp;R</td>
<td>Mail services operations and staffing are potentially larger then needed. Total</td>
<td>• Outdated business processes drive high volumes of mail on campus</td>
<td></td>
</tr>
<tr>
<td>Faculty and Employees rely heavily on mail services to transport departmental forms that</td>
<td>departmental mail is over 9M in volume, or accounts for 94% of mail on campus.</td>
<td>• VT has multiple forms that require wet signatures</td>
<td></td>
</tr>
<tr>
<td>require wet signatures and hard-copy documentation. This results in increased levels of</td>
<td>Inefficient use of resources; services could be streamlined if VT adopts automation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mail around campus reflecting inefficient business processes with opportunity for</td>
<td>and technology-driven business processes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>automation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>External vendors deliver</strong> packages directly to an individual's residence on campus.</td>
<td>Granting residence hall access to external vendors leads to a potential safety</td>
<td>• Increase in online shopping trends over time lead to more packages being delivered,</td>
<td></td>
</tr>
<tr>
<td>External delivery personnel have access to student residence halls for delivery purposes</td>
<td>risk. IDs could be transferred to other drivers, creating gaps in security and</td>
<td>requiring more space.</td>
<td></td>
</tr>
<tr>
<td>through Hokie Passport. Primary drivers are background checked.</td>
<td>surveillance.</td>
<td>• Currently there is a lack of space at resident mail locations leading to direct</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>delivery to residence halls.</td>
<td></td>
</tr>
</tbody>
</table>
Hokie Passport Current State Observations

Hokie Passport currently receives high levels of customer satisfaction, however remote access capabilities could be improved.

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Customers</td>
<td>Customers are generally pleased with the comprehensive services provided (e.g. meal plans, door access, and offsite vendor transactions). Morale inside the department is high as well.</td>
<td>• Leadership focus on optimizing operations and employee development and training</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hokie Passport customer service is well regarded within VT. Departmental teams work well together. Retention is high and employees are trained cross-functionally within the Hokie Passport office.</td>
<td>• Leadership focus on customer service and employee morale</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Identified Root Causes</th>
<th>Lever</th>
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</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

| Lack of standardization of “chip or magnet strip” card technology | Different versions of Hokie Passport cards are in circulation at VT leading to increased procurement costs for legacy door scanners that accommodate both magnet strip and chip technology. This will result in roadblocks to roll out Hokie Passport building access scanners that only read chips cards University-wide which would reduce costs. | • No policy requiring older cards to be updated  
• No standard policy regarding building access methodology (for example, keys, magnet strip, or chip) |       |

<table>
<thead>
<tr>
<th>Identified Root Causes</th>
<th>Lever</th>
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<tbody>
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<td></td>
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<table>
<thead>
<tr>
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</tbody>
</table>

| Hokie Passport Operations Center space is constrained. Original space request ~19 years ago was for 2,400 sqft, but only 1,600 sqft was allotted. Since then, service growth has only increased. | Risk of physical overcrowding diminishes customer experience as foot traffic and employee support increases. | • Hokie Passport’s use of current space and interaction model with customers has not kept up with university growth and student demand for services. |       |

<table>
<thead>
<tr>
<th>Identified Root Causes</th>
<th>Lever</th>
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<tbody>
<tr>
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</table>

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<th>Lever</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

The current model is not optimal from a customer experience or process efficiency standpoint.
Hokie Passport currently receives high levels of customer satisfaction, however remote access capabilities could be improved.

<table>
<thead>
<tr>
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<th>Implications</th>
<th>Identified Root Causes</th>
<th>Lever</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently Hokie Pass does not leverage external financial services products that could result in cheaper transaction costs or returns on financial holdings.</td>
<td>Hokie Passport could be losing out on cost savings or other potential revenue streams.</td>
<td>• Previously focused on other operational areas</td>
<td></td>
</tr>
</tbody>
</table>
# Transportation Current State Observations

Transportation lacks autonomy and leadership buy in to execute efficient and effective change.

<table>
<thead>
<tr>
<th>Current State Observation</th>
<th>Implications</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Demand exists for alternative forms of transportation on campus. More bike racks, bike paths, and increased coordination with high traffic student pathways is needed to optimize student and T&amp;R faculty transportation across campus.</td>
<td>Increased bus crowding potentially resulting in students and T&amp;R faculty delays to classes, meetings, and other obligations. Increased parking demand, when it could be offset by alternative travel. (e.g., bikes, and scooters)</td>
<td>• Lack of central administrative support and prioritization for alternative forms of travel.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VT may be inefficiently allocating personnel and financial resources by maintaining its own asset heavy fleet in-house.</td>
<td>• Lack of strategy for campus alternative transportation.</td>
<td></td>
</tr>
<tr>
<td>In-house fleet of vehicles achieves minimal profits and generally breaks even in terms of generating revenue to offset costs. Customer satisfaction is low due to a limited number of vehicle options and keeping vehicles in circulation longer then industry, leading to the proliferation of department owned vehicles.</td>
<td></td>
<td>• Lack of central administrative support and prioritization for alternative forms of travel.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lack of strategy for campus alternative transportation.</td>
<td></td>
</tr>
<tr>
<td>Central administration overly involved in operational decisions. Central administration has set operational prices (e.g. shuttle bus prices between campuses). Instead of dictated to operational leaders.</td>
<td>Outside guidance is not informed by operational data and insights, which leads to inefficient pricing and usage of services.</td>
<td>• Lack of clarity around operating model for auxiliary function as profit center versus university support.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Department is not given enough autonomy in operational decisions, leading to inefficient decisions.</td>
<td></td>
</tr>
</tbody>
</table>
Business Operations Transformational Opportunities
Transformational Opportunity List

High-priority, transformational, future state opportunities would enable significant improvement in Business Operations. Outside of these transformational opportunities, additional opportunities are listed in the following section. Transformational opportunities are:

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conduct comprehensive review of the business operations operating models to determine the most appropriate operating model for each business center.</td>
<td>Strategically aligns business models to University goals and determines if current focus on cost recovery is in best interest of VT. More aligned models could lead to increased customer satisfaction, reduced costs, and improved operational effectiveness.</td>
<td>Cross-Functional</td>
</tr>
<tr>
<td>2. Review effectiveness of fleet services, the University pays for all vehicles on campus directly or indirectly and as such all vehicles should be assessed to determine operational effectiveness and if their current ownership models make sense.</td>
<td>Decreases total cost of insurance, decreases operating costs of department, and increases ability to source wider range of vehicles.</td>
<td>Transportation</td>
</tr>
<tr>
<td>3. Use consolidation and relocation of printing services to create a new service center. This new service center would include printing, outbound mail and packages, and collaboration spaces.</td>
<td>Maximize mail location as a collaborative space with increased services and computer spaces. Establishes potential for increased revenue and higher interaction with mail and printing.</td>
<td>Mail &amp; Printing</td>
</tr>
</tbody>
</table>

CURRENT STATE & OPPORTUNITIES - BUSINESS OPERATIONS
Transformational Opportunity Template

The following format will be used to summarize larger, transformative opportunities:

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of the opportunity</td>
<td>What is the expected outcome if this opportunity is implemented?</td>
<td>What will happen if Virginia Tech does not pursue this?</td>
<td>What level of support and commitment of institutional resources is required to implement and sustain this opportunity?</td>
</tr>
</tbody>
</table>

**Quick Wins** - Relatively low-complexity improvements to build momentum for significant change.

**Heavy Lifts** - Difficult but required improvements which must be executed in the short-term.

**Marathons** - Efforts with long implementation timelines which create significant long-term benefits but must be started in the near term and may show little to no initial return.
Transformational Opportunity #1: Conduct Comprehensive Review of the Business Operations Operating Models

Conduct comprehensive review of Business Operations operating models to determine the most strategic future state operating model for improved effectiveness, efficiency, and alignment to University goals.

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provide central guidance for how auxiliary operating models should consider the trade-off between providing service and support to university-centered missions and reaching maximum financial ROI</td>
<td>• Empower operational leadership to drive operations with limited interference from central administration</td>
<td>• Continued inefficiency due to lack of funding sources and interference from non-operational experts. Businesses cannot invest in operational efficiencies that could benefit campus due to limited cash flows. Businesses get directed by central administration to operate in inefficient ways that affect bottom line</td>
<td>• Heavy Lift - A comprehensive review will take employee time in planning. Implementation will also take time in terms of change management and communication. This could result in significant changes to not only business operations areas, but other areas that interact regularly with business operations, for example finance or facilities.</td>
</tr>
<tr>
<td>• Transform departments into strategic resources rather than cost recovery or profit centers</td>
<td>• Identify which units should be auxiliary, ancillary, etc. Also determine who should bear the cost in terms of cross-functional services such as parking lot construction, visitor parking, and print services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Leverage scale of VT to increase productivity</td>
<td>• Enhance the effectiveness and efficiency of multiple day-to-day operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Improve service to T&amp;R faculty and staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Increase tolerance to operate services that support strategic vision of university at a loss, for instance inter-campus shuttles</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Transformational Opportunity #2: Review Effectiveness of Fleet Services

Conduct enterprise-wide assessment of fleet and vehicular services. The university pays either directly or indirectly for all vehicles on campus. Approximately 88% of VT-owned vehicles are outside of fleet services, with little centralized governance for efficiency. All vehicular costs, services, and usage should be assessed.

<table>
<thead>
<tr>
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<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Reduce number of vehicles by centralizing control and tracking usage. There are many departmental vehicles that incur insurance costs to the university, but have little usage</td>
<td>• Reduce insurance payments by reducing number of vehicles</td>
<td>• Increased operating and fixed costs due to lack of scale and centralized control</td>
<td>• Heavy Lift- University assets are currently tracked and controlled by different cost and authority centers. While the transfer of this control and data should be relatively easy, the change to business partner operations may be substantial. Currently, departments have full control and bear few costs for their vehicles. This would be a significant shift from the way departments operate.</td>
</tr>
<tr>
<td>• Consider managing all vehicle operating costs in-house. Currently many departmental vehicles go offsite for maintenance</td>
<td>• Decrease operating costs by utilizing in-house resources and tracking maintenance in a controlled way</td>
<td>• Inability to properly address efficiency and alternative options</td>
<td></td>
</tr>
<tr>
<td>• Manage the purchasing of enterprise-wide vehicles strategically. Currently, purchases are not coordinated</td>
<td>• Reduce purchasing costs by allowing the University to strategically acquire and decommission larger volumes of vehicles</td>
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<tr>
<td></td>
<td>• Increase efficiency by managing total vehicle costs enterprise-wide</td>
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</table>
# Transformational Opportunity #3: Use Consolidation and Relocation of Mail Services to Create New Service Center

Strategically use the residential mail operations relocation to create a new collaborative space with increased services.

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Impact</th>
<th>Cost of Inaction</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Create new concept for mail operations that will increase revenue, service levels, and potentially create a new collaborative space for students</td>
<td>• Increase service levels for students</td>
<td>• No increase in service offerings for customers</td>
<td>• Quick Win – Aspects of this opportunity are already in-flight initiatives. However, additional work will require mail services to look into the feasibility of additional products to offer in conjunction with printing and consider investing in alternative solutions for outbound packages. Employees and financial resources will have to be dedicated, and business practices updated.</td>
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<tr>
<td>• Increase space to allow for outbound mail services, along with sales of mailing supplies and products</td>
<td>• Increase mail revenue from sales of additional products. Drive demand for mail services through increased use of low cost marketing and printing services.</td>
<td>• Potential loss of revenue from new products and offering printing services</td>
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<tr>
<td>• Collaborate with printing to enable marketing and use of printing services in high-traffic student locations</td>
<td>• Provide additional creative work space for student use</td>
<td></td>
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</tr>
<tr>
<td>• Create space for students where they can design and create onsite</td>
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</tbody>
</table>

**CURRENT STATE & OPPORTUNITIES – BUSINESS OPERATIONS**
Modern Mail Service Center

The current transition of residential mail services to a new location opens up the possibility to create an innovative modern collaborative space. Part mail room, part printing shop, part computer lab. This new space could be used for printing and mail services and as a collaborative space for students. This can both increase revenue for mail & printing and simultaneously increase services levels for users. It may also transform mail services from a historically passive to an interactive space.

**Mail**
- New space should have ample room to enable outbound services and storage of packages
- Kiosk for check in & package pickup allowing users to receive an automated email, then check into a kiosk, which would alert employees to pull mail. This would streamline pickup processes
- Mail supplies could also be sold here

**Printing**
- Students are not generally aware of the print shop, so printing should work with mail services to offer services to students at this location
- Printing should set up onsite kiosks so that students can print documents to mail on location and in coordination with outbound services

**Customers**
- With outbound and central mail services, all students, employees, and T&R faculty will benefit from a one-stop shop for mail and printing needs
- Students can also use the mail area as additional collaborative space where they could design and create in real-time
- Space should also be allocated for student collaboration