

# Enterprise University Applications Project

---

## Executive Summary

The goals of Transform IT's Enterprise University Applications project were to develop:

1. A categorized catalog of all purchased and custom-built software at the university;
2. A suite of recommendations on a category-by-category basis for possible changes to the purchase, hosting, management, and support of that software;
3. Recommendations for the delivery of custom application development as a service and associated organizational changes.

### Summary of Recommendations

It is our recommendation that, where possible, applications be hosted, supported, managed, and purchased in an enterprise manner — i.e., centrally.

It is also our recommendation that work already started to develop a centralized process for purchasing and acquiring applications be completed. It is our vision that this process would review, approve, and direct acquisitions of applications for campus use.

The project team has organized its specific recommendations about categories of applications into the following groupings: the highest priorities, low-hanging fruit, consolidation projects already underway, existing enterprise solutions, and other recommendations. We also share recommendations for the application catalog itself.

#### [Summary Table of Application Data and Recommendations](#)

All aggregate cost data listed in this report is annual.

*Note: Although we made every effort to gather information about what applications are in use on campus, we recognize that there will be applications that we were not able to identify. The sheer volume of applications and complexity of university operations made this effort very difficult. Also, most of the data came from a snapshot in time and should not be seen as capturing the fluid and ever-changing patterns of application use.*

### UO Application Catalog

This project really brought home the need for an up-to-date catalog of applications in use at the university. We see great value in departments having visibility into what applications are available and for what purposes those applications are being used. This could save the university significant money and staff time in purchasing, managing, hosting, and supporting applications.

Although this project did develop an extensive catalog of applications, we feel strongly that it is not yet in a state that would be easy for Information Services to maintain or for the university community to use. For this reason, we recommend that a separate project be launched, led by the Information Services Application Services group, to take our catalog to the next level. It would have the following goals:

- Identify, develop, or acquire tools and methods for creating a public application catalog;
- Seed that catalog with data from this project;

- Integrate with four other sources of information:
  - Development staff;
  - Network discovery tools, to identify applications found on user's machines;
  - Purchasing systems, to automate data gathering for future software purchases;
  - License servers/usage APIs, to gauge software usage.
- Create a related model for consultation services about applications to avoid future duplication purchases.

## The Highest Priorities

We recommend the following four categories of applications as the highest priority to consider in the first round of implementation projects:

- Custom software development
- Databases, data, and analytics
- Password management
- Project management

Each of these categories represents a high aggregate cost, high security risk, and/or includes applications or services used by a broad range of departments at the university. We recommend that projects are launched to gain efficiency in cost and/or management and oversight.

Below is more information about each of these categories.

### Custom Software Development

We found 31 departments building over 100 custom applications on campus. We were not able to associate a cost to this development as it would involve tracking staff time. This count does not include custom-developed integrations between systems as those are not captured in this inventory. However, they are a major development effort across the university. This also does not necessarily include applications developed within, or solely utilizing, other services.

We recommend the following areas of focus for this project:

1. Supportability of developed applications and solutions;
2. Consistency of tools and technologies used to develop applications;
3. University prioritization, agility, and availability of software development services;
4. Application security;
5. Identification of common areas and types of software development;
6. Definition and implementation of roles and responsibilities related to software development, such as development, project intake, business analysis, and quality assurance;
7. University demand for custom software development;
8. Impact (financial, resource, security) of third-party vendor-developed solutions;
9. Distinguishing web application development from creation and development of informational websites.

### Databases, Data, and Analytics

We found 38 departments using 55 applications at an aggregate cost of about \$564,621. Although this category contains a wide range of applications used for varied and sometimes divergent purposes, the team believes some significant efficiencies may be possible through consolidations.

### Password Management

We found 6 departments using 3 applications at an aggregate cost of \$2,516. We consider this category a high priority despite those low numbers because of the inherent risk of managing passwords at the university. We also believe there is a large unmet need in this area based on requests fielded by members of the project team. Some members of the campus community are using non-UO-provided password management solutions to manage both university and personal passwords. With most of the university currently in remote status, the risk is even higher. We recommend that this project be sponsored by the UO Information Security Office (ISO) and that the ISO manages the recommended application(s).

### Project Management

We found 20 departments using 14 applications at an aggregate cost of \$65,225, not including the portioned costs of the Atlassian suite of applications or of the Microsoft agreement (for SharePoint). Collaboration exists around project management on campus, with different groups looking for more consistency. Given the recent growth of this service and the variety of tools being looked at, there is opportunity for efficiency gains and potential cost savings.

### Low-Hanging Fruit

We recommend that projects be formed to work on combining resources where reasonable for the purchase, support, maintenance, and hosting of the following applications. We believe these could be completed with a relatively short turnaround time or low barrier to entry.

Category	Number of depts.	Number of apps	Aggregate cost	Comments
Online forms and surveys	14	12	\$357,264	
Events/calendar management	15	18	\$113,088	EMS is a new enterprise application in this category. It will require a sustained implementation effort to achieve the broad adoption necessary for efficiency gains. Onboarding more departments into EMS should be a priority.

### Consolidation Projects Already Underway

It is our recommendation that the following projects underway to centralize services be continued:

Category	Comments
CRM	We found 14 departments using some form of 17 CRM applications with an aggregate cost of \$476,568. Implementation of the selected product will require a sustained implementation effort to achieve the broad adoption necessary for efficiency gains.
Time and attendance	We recommend that the current initiative to consolidate applications be completed and, where reasonable, that usage be consolidated on the enterprise solution for cost savings and efficiency gains.
Telecom	The Communications and Collaborative Technologies Program is already addressing enterprise telecommunications services. We encourage the completion of this project as this is a critical service with high cost.

## Existing Enterprise Solutions

The team recommends that where there is currently an enterprise solution available, departments shift to using the enterprise solution.

It should be made clear to campus which enterprise solution is strongly recommended and fully supported in each category of our software inventory. Onboarding departments or users into those enterprise solutions should be operationalized and should not require a major ("big P") project scheduled well in advance.

Category	Number of depts.	Number of apps	Aggregate cost	Enterprise applications available
Office productivity	42	40	\$588,802	Microsoft Office 365
Videoconferencing	17	8	\$30,207	Zoom and Microsoft Teams

## Other Recommendations

The team believes the following categories could also offer opportunities for efficiency gains and cost savings. However, these categories are a lower priority. We recommend that projects be formed to further explore these categories after the high-priority and low-hanging-fruit categories have been addressed.

Category	Number of depts.	Number of apps	Aggregate cost
Citation management	9	2	\$3,453
Web content management	16	19	\$180,978
Facilities/building maintenance & management	9	46	\$1,035,841
Building automation	3	2	\$750,000
Atlassian products	11	3	\$46,865
Marketing/sales management	11	12	\$15,778
Mathematics and statistics	9	8	\$188,387
Printing services	6	7	\$129,696
ID card creation	2	3	\$32,000
Stock photos/audio/video	7	6	\$13,310

The team further recommends considering consolidating applications in the following three categories, with caveats:

Category	Number of depts.	Number of apps	Aggregate cost	Comments
Oracle database	1	1	~\$587,000	Although Oracle is purchased, managed, supported, and hosted centrally by Information Services, this project team recommends that an analysis be conducted to see if there are ways to reduce the significant annual cost for this application.
Work management – facilities	3	4	\$94,063	There are 3 groups that do essentially the same activities yet there are 3 independent systems being used. Aggregate spend is likely greater than reported.
Training/tutorials	10	16	\$27,936	Although this category has relatively few departments and applications, it is our opinion

				that training and tutorials for enterprise applications should be looked at as a potential for great gains in effectiveness and efficiency. We therefore recommend a project be formed to evaluate and develop a model for training and tutorials for IT applications.
--	--	--	--	--

## Appendices

- [Software Categories and Definitions adopted by the Enterprise Software Committee on 3/17/17](#)
- [Full Applications Catalog](#)