Agenda

• About Umass Amherst and Analytics
• Why HelioCampus?
• The Product
• The Journey
• Lessons Learned and the Future
UMass Amherst Profile

• Flagship of the UMass System
• Only public Carnegie highest research university in MA
• Sponsored research expenditures $210M
• Enrollment: 30,000+ in Fall 2018
• 23,515 undergraduates, 7,078 graduate students
• Entering class of 5,010
• 9 Schools and colleges + Graduate School and Commonwealth Honors College
• Over 50 academic department, over 100 undergraduate majors
UMass Amherst and Analytics
The Beginning

Tool Selection
UMass system-wide collaboration to select tool

Investment
Campus supports investment in a reporting solution

Census
Student and enrollment census implemented

Go Live
Student reporting goes live

2006
2007
2008
2009
2010
2011
2012
...

Admissions and degrees censuses
~70 reports, 300 users
1 IT resource to support
UMass Amherst and Analytics
IR’s Perspective

• Number of requests for data on the rise
• Requests more and more complex
• Office is data rich but information poor
• No good tool to distribute and visualize vast amounts of data

Strategic Plan
Part of IT strategic plan, no details

IR exploring options Looking for leadership buy-in
UMass Amherst and Analytics IR & IT Partnership

Tableau Desktop
IR gets licenses
How to distribute?

Tableau Server
Purchase for pilot

Strategic Plan
Strengthen business analytics, become a data-driven campus
# Build or Buy?

<table>
<thead>
<tr>
<th>Build It Ourselves</th>
<th>Buy a Product</th>
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<tbody>
<tr>
<td>Workload for IR is essentially the same</td>
<td>Requires more money up front.</td>
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<tr>
<td>Requires IT resources:</td>
<td></td>
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<tr>
<td>- People</td>
<td></td>
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<tr>
<td>- Budget</td>
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<tr>
<td>Internal politics don’t change</td>
<td>Can facilitate process and improve relationship</td>
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Why HelioCampus?

- HelioCampus is a purpose-built platform to serve needs of higher education
- UMass Amherst chose to partner with HelioCampus based on certain fundamental criteria
  - Cutting-edge technology, with a cloud solution in Amazon Web Services (AWS)
  - Secure, private connections, and robust data solutions
  - Flexible data models that can be customized for Amherst’s specific needs
  - On-going data science services Requests more and more complex
  - Deep knowledge of higher education marketplace
Enabling Decision Making

- How can we break down students into sub-populations to better serve them?
- Are we recruiting students who will be most successful at our university?
- Are we discounting tuition for the right students?
- Which degree programs are driving demand, degree production, and margin?
- Are there significant opportunities to improve student persistence?
- What are my degree completion patterns and how do we improve time to degree?
## HelioCampus Offering

<table>
<thead>
<tr>
<th>CLOUD TECHNOLOGY</th>
<th>DATA INFRASTRUCTURE</th>
<th>DATA VISUALIZATION</th>
<th>ONGOING SERVICES</th>
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<tbody>
<tr>
<td>Virtual Private Cloud, High Performance Computing, Analytics Toolsets, Network and Security</td>
<td>Data Lake, Data Warehouse, Reporting Models</td>
<td>Dashboards and Key Performance Indicators</td>
<td>Data Analysis, Data Storytelling and Data Science</td>
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</table>
Connecting Data

STUDENT LIFECYCLE
- App
- Admit
- Enroll
- Persist
- Retain
- Graduate

DATA MODELS
- Admissions
- Enrollment
- Course Completion
- Retention
- Degrees Awarded
- Financial Aid
- Persistence
- Student Accounts

DASHBOARD & PREDICTIVE MODELS

UMassAmherst
HelioCAMPUS
Project Objectives

• Provide university leadership with an intuitive, interactive analytics solution that centralizes and connects key student data across the institution to provide a homogenized and comprehensive view to facilitate forecasting and enable better decision-making. These data sets include Admissions, Financial Aid, Course Enrollments, Persistence, Retention, Degrees Awarded, and Course Faculty.

• Deploy priority analysis areas and dashboards (Enrollment and Student Success) to campus leadership by Spring 2019.

• Provide ability to conduct ‘deep dive’ analyses based on strategic priorities and create and display Predictive and Statistical Models using HelioCampus data science resources and capabilities.

• Provide OIR and other analysts with a flexible, extensible analytical data platform with the ability to create new data and reporting models to answer business questions that haven't been addressed before or via standard HelioCampus models.
Implementation Phases

1. Planning
2. Technical Build
3. Discovery Interviews
4. Data Model Validation and Content Development
5. Analysis and Support Planning
6. Training & Rollout

We Are Here!
Implementation Progress

Jun
- Network Build
  - Set up VPC
  - AWS Servers
  - SSO Integration

- Data Replication and ETL

- Census Data Mapping
  - Students
  - Classes
  - Enrollments

- Data Model Build
  - Enrollment
  - Student Success
  - Financial Aid

- Data Validation
  - Enrollments
  - Student Success
  - Financial Aid

- Dashboard Build
  - Enrollment
  - Student Success
  - Financial Aid

- Dashboard Validation
  - Enrollments
  - Student Success
  - Financial Aid

Jul
- August
- September
- October
- November
- December
- January
- February

Remaining Models
- Admissions
- Class Faculty

Platform ready to begin ‘deep dive’ analysis

UMA-Managed Tableau Site
- Research & Engagement, IT, etc.

Data Replication and ETL

Progress-to-date

Previewing initial dashboards to Exec. Sponsors
Adventures in Analytics
Implementations – Lesson Learned

• Someone has to own the project and drive it → needs a champion
• Importance of IR/IT partnership
• Other areas need to buy-in: executive and functional areas
• Early-process internal alignment
• Requires institutional bandwidth: IR, subject matter experts/operational folks
What Else Has Happened?

• IR/IT joint discussions about Business Intelligence Roadmap
  – Current ETL tool is out of support ➔ exploring options
  – Redundancy in reporting systems (OBIEE/HelioCampus)
  – Resources needed going forward

• Managing the Tableau Server – IR has input

• Security and accessibility protocols

• Better understanding of strengths of IR vs IT and what is important to each
Next Steps

• Next components: Student Success, Financial Aid,…
  – Nearly completed student component is foundation of other components.
• Deep dive into data!
• Leveraging the campus Tableau server for use
• Data governance: Access to data and dashboards
• Training
Questions?

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Additional Resources

- eBook: The Institutional Research Revolution in Higher Ed: Top Five Trends Shaping the Transformation