



Waverly Community College

BI Justification

Student Retention Post-COVID

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Sponsor(s): n/a

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EXECUTIVE SUMMARY

The BI solution for Waverly Community College will attempt to address the low levels of student retention following COVID 19. These retention and enrollment levels directly affect the college's funding. With an increase in student retention the school could increase its grant money by approximately \$1,500,000 which would open a myriad of opportunities to improve programs, further improve student retention, or begin new programs. Students who do not complete school are not putting their money to work and not working to set up their lives and the community for improvement.

This project will encompass every aspect of the student experience and not only supply an analytical database with scalability for further initiatives, but create a model to predict student outcomes based on key components of each student's file. There is risk in this as students do not always complete data fully or correctly and there is a high risk that the data may not be complete for every student. Steps will be taken to mitigate this risk factor by making application fields mandatory for the application to be submitted and requiring and more detailed student survey in the process.

The benefits of the project far outweigh the risks and Waverly College would see a significant return on the investment for the business intelligence solution. I recommend the college proceed with the project as not only will it have immediate benefit, its expected scalability will aid the college in further business solutions.

BUSINESS OPPORTUNITIES

According to the National Clearinghouse student retention took a marked decline in the fall of 2020 after holding steady for four years (Persistence and Retention, 2021). The class of school with the greatest impact was the community college sector with a decrease of 2.1% to an average of 51.6% (Persistence and Retention, 2021). Other studies show that "fewer than 40% of community college students earn a certificate or degree within six years of enrollment (Levesque, 2018). With so many students beginning school, but not completing a degree they are not fulfilling the pathway they set out on to better their lives. With performance based funding being implemented in more than 30-states (Bell, 2018), Waverly Community College is

concerned their retention rates will cause a decrease in funding to the scholarly programs on campus. Waverly would like to use BI to determine markers for student retention and use the information to improve this statistic at their institution.

PROJECT DESCRIPTION

The Business Intelligence project will extract student data from the college systems, organize, and evaluate to build a predictive model for student retention. With this model the college will be able to identify students who are highly unlikely to succeed and deploy supportive methods to aid the students in their progress. These areas of support could look like a review of financial aid, assigning a mentor, or success coach, providing access to local resources when they are struggling with life outside of school, introduce them to a counselor, etc. These support efforts can be tracked along with the students continued time in the program, and, eventually, it will be determined which interventions are the most effective at aiding in student retention. This combination of data science processes will increase the student retention rate at Waverly College.

PROJECT FINANCIALS

Costs and Revenue	Amount
Cost of Testing	\$35,000
Cost of Project Management Work	\$50,000
Cost of Business Analytics	\$25,000
Cost of Development	\$95,000
Total Costs/Investment	\$205,000
Revenue to Be Gained in Grants	\$1,500,000
Return on Investment	22%

PROJECT BUDGET

Costs and Revenue	Amount
Cost of Testing	\$35,000
Testing Labor	\$10,000
Testing Staff Loss of Work	\$10,000
Testing Data Set	\$5,000
Testing Software	\$10,000
Cost of Project Management Work	\$50,000
Project Management Labor	\$20,000
Project Management Loss of Work	\$20,000
Project Management Software	\$10,000
Cost of Business Analytics	\$25,000
Business Analytics Labor	\$10,000
Business Analytics Loss of Work	\$5,000
Business Analytics Software	\$10,000
Cost of Development	\$95,000
Development Labor	\$40,000
Development Loss of Work	\$25,000
Development Software	\$30,000
Total Costs/Investment	\$205,000
Revenue to Be Gained in Grants	\$250,000
Return on Investment	632%

TOTAL COST OF OWNERSHIP (TCO)

Costs and Revenue	Yearly Amount
Business Analytics Staff Salary	\$65,000

Costs and Revenue	Yearly Amount
Software Manager Salary	\$75,000
Software Licensing Fee	\$25,000
Updates and Management	\$50,000
Total Costs/Investment	\$205,000
Total Yearly Cost of Ownership	\$215,000
Cost of Ownership and Development Costs	\$420,000
Revenue to Be Gained in Grants	\$1,500,000
Return on Investment	257%

ROI

Revenue Optimization	<ul style="list-style-type: none"> • Increase grant money and decrease the amount spent getting each student the help they need to succeed.
Decrease Costs	<ul style="list-style-type: none"> • Streamline the process from admission to graduation decreasing students cost of attendance. • Reduce the amount of employee built spreadsheets and tracking freeing these employees to complete regular work on schedule and decreasing cost of work completion.
Risk Reduction	<ul style="list-style-type: none"> • Automate student retention and decrease the risk of errors on accreditation reporting.
Ability to Create New Programs	<ul style="list-style-type: none"> • With the extra grant money we have a opportunity to create new programs, bring

	in more students, and potentially open even more grant funds.
Regulatory Requirements	<ul style="list-style-type: none"> • Comply with accreditation reporting requirements more stringently allowing for less likelihood of having flagged areas during visits.

DEPENDENCIES, ASSUMPTIONS, RISKS AND ISSUES

PROJECT DEPENDENCIES

For this BI project to be successful there are some dependencies that need to be considered. The tasks in this project include creating new SOR's for each department and this must be finished before the next stage of the project begins, referenced a finish-to-start dependency. Once the SOR's are established the job of building the data warehouse begins and this is a finish-to-start dependency to creating the BI data silos. Once the silos are created, the BI tools can be implemented so the BI implementation starting is dependent on the completion of the data silos. It is imperative each portion of the project moves forward in a timely manner to meet project task completion deadlines and budget requirements. If one step of the project goes off-track, the rest of the project will follow, causing a cascading increase in budget and timeline completion deadlines.

PROJECT ASSUMPTIONS

Assumptions to this project include the primary assumption that the student data is complete and correct. This is a formidable assumption as most of the student data is proffered by the student and not collected through outside resources (aside from financial data). Other assumptions include that students desire to complete their program of study, that the student is willing to accept help to complete their program of study, and that the student is willing to make the necessary life changes to make further progress towards completing their program of study.

PROJECT RISKS

Risks of this project include the risk of incomplete or insincere data. Some fields on the applications and other sources of record are not required, so they could be left blank. This will be corrected going forward but could mean there are holes in the historical data. Insincere data comes into play as some students may not put correct information into the sources of record. As we do not have outside data sources to verify or qualify the data the project is trusting the students to provide correct and up to date information on the sources of record.

PROJECT ISSUES

The primary concern identified by the team is the assumption and risks this project faces. The assumption that students want to complete a degree and are willing to accept help and make lifestyle changes to do so are strong assumptions to make about a large group of people. There are invariably those who do not fall into this grouping. Couple that with the opportunity to have incomplete and insincere data and there is a risk that a model, if built, would not be all encompassing, or will show bias.

BUSINESS SPONSORS AND STAKEHOLDERS

BUSINESS SPONSORS

1. Rachel Zambonini
 - 1.1. President of Waverly College
 - 1.2. Final sign-off of project
2. Kasey Ray
 - 2.1. Vice President of Academic Affairs
 - 2.2. Project Oversight
3. Judy McNabb
 - 3.1. Assistant Vice President of Academic Affairs
 - 3.2. Project Manager
4. Josh Coltrane
 - 4.1. Director of IT
 - 4.2. IT Oversight
5. Randy Mechling
 - 5.1. Assistant Director of IT
 - 5.2. IT Manager
6. Lundy McNair
 - 6.1. Director of Institutional Effectiveness
 - 6.2. Business Team Oversight
7. Olga Huffaker
 - 7.1. Institutional Effectiveness
 - 7.2. Business Team Management

PROJECT STAKEHOLDERS

1. Ron Mission
 - 1.1. President of the Waverly Foundation
 - 1.2. Provide College donor response and feedback

REFERENCES

- Bell, E. (2018, July 5). *Why Performance Based Funding Fails to Improve Graduation Rates and How States Can do Better*. Retrieved from Scholars Strategy Network: <https://scholars.org/contribution/why-performance-based-funding-fails-improve-college-graduation-rates-and-how-states>
- Levesque, E. M. (2018, October 8). *Improving COmmunity College Completion Rates by Addressing Structural and Motivational Barriers*. Retrieved from Brookings: <https://www.brookings.edu/research/community-college-completion-rates-structural-and-motivational-barriers/>
- Persistence and Retention*. (2021, July 8). Retrieved from National Student Clearinghouse Research Center: <https://nscresearchcenter.org/persistence-retention/>