

Enterprise Case Study: Increasing Student Success and Retention

How VSU determined risk and success factors with data discovery and predictive analytics

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Summary

Catalyst

As student services become digitized, the size of the digital footprint left by students increases, creating a wealth of information. This data is becoming an increasingly important tool in the drive to improve student success and retention rates. However, for many higher education institutions, analyzing this data is a daunting prospect. Among key concerns for institutions is the lack of in-house expertise to manage the data or identify trends to determine whether specific metrics play a role in student success. Moreover, there are also fears that exploiting such activity data could cross the data protection line. However, institutions such as Valdosta State University (VSU) recognize the benefits that data discovery and predictive analytics can offer in terms of enabling students to be successful in their academic careers.

Ovum view

Improving student success and retention are key strategic goals for higher education institutions globally. However, to meet these goals, institutions must first understand the specific metrics that play a role in student success, which – as the experience of VSU demonstrates – is not a straightforward task. VSU wanted to ensure that it was able to provide targeted opportunities for student success, and by following a multiphase approach the institution has seen an improvement in its student success and retention rates. Oracle's solutions have been instrumental in achieving these results as part of VSU's strategic plan.

There is no universal answer to student success and retention problems; different student cohorts require different kinds of outreach, organizational models, and technology solutions. However, a key takeaway from VSU's case is that institutions must look to vendors with experience to help them understand what is and is not possible, and move toward the realization of their strategic goals.

Key messages

- VSU was disappointed with its 67% one-year student retention rate, which was costing the institution \$6.5m in lost revenue each year.
- VSU needed better insight into student data to identify at-risk students, retain them, and make up for lost revenue.
- As part of the Complete College Georgia (CCG) plan, VSU embarked on a multiphase project to improve student success.
- Oracle Business Intelligence Enterprise Edition and Oracle Endeca Information Discovery have enabled VSU to promote student success and improve retention rates.

Recommendations for the higher education industry

Recommendations for institutions

Develop a sustainable student success and retention strategy

There is no quick fix to any institution's retention and student success problems. Nor is there a single organizational model that can be implemented across all institutions, because different student cohorts require different kinds of outreach. However, a sustainable student success and retention strategy can be devised if institutions know which types of students best "fit" their institutions, if all of the academic and administrative functions necessary for a successful plan are involved, if a strategy is based on actionable research, and if individuals are willing to make necessary changes. Most of all, it is important to have flexibility in systems to support a range of student types.

Break down the barriers between IR and IT

A successful student success and retention program can only be attained with better communication between institutional research (IR) and information technology (IT). At some institutions, silos are so rigid that success is difficult to achieve, and breaking down the silos between the two functions often means a complete cultural change. Nevertheless, student success and retention are not the responsibility of one designated administrator. Rather, they are the joint responsibility of IR, IT, and the individual faculties. All of these constituent parts must work together to achieve strategic student success and retention goals.

Recommendations for vendors

Create user-friendly data analytics solutions

The higher education industry has always been involved in data and data analysis, whether in the form of enrollment management, academic records, or otherwise. However, data analytics tools can be difficult to understand, and it is important for vendors not to make assumptions about the institutional capacity to use them. Rather, vendors should discuss with institutions the business problem they face, understand the level of in-house expertise, and develop user-friendly solutions to address the business issues accordingly. Ultimately, leveraging data and analytics is not so much disruptive as it is evolutionary, and these tools will only have the desired effect on student success and retention if they are simple to use.

Invest in customer service and support as well as the technology

Implementing analytics solutions is never simple, and institutions are likely to experience "initiative fatigue" or "overload." Vendors that can ease this burden through customer service and support, and guide institutions through these processes, will be viewed favorably. In an increasingly competitive landscape, vendors must continue to provide high levels of support and product innovation, reducing the likelihood of institutions switching out incumbents in favor of new providers.

Using data and analytics to drive student success

Higher education context

Increasing student success and retention

Improving retention and ultimately ensuring student success are two of the most important business challenges for institutions globally. Although enrollment increases year-on-year, the ability to retain students is a costly and problematic issue. Part of the problem is that as the barriers to entering higher education have lowered, the nature of the student body and their pathways to success have changed. According to the National Center for Education Statistics (NCES), 85% of students in higher education today are considered "nontraditional." The profile of today's student population looks very different to that of decades past, when the average higher education student was an 18-year-old moving directly from high school to campus. Today, however, these students are older, more experienced in work, and more socioeconomically diverse.

Few institutions have found solutions to address these challenges. However, many are working hard to retain students using strategies that focus on the first-year experience, which is undoubtedly an important and sometimes unsettling time for students. A key driver of this is the increasingly competitive nature of the higher education market. Not only does turnover of enrolled students cost an institution financially, but low retention rates degrade the quality of the educational experience on campus, and as a consequence, damage the institution's reputation. For these reasons, institutions should do everything possible to enable them to develop the right strategies to increase student success and retention, from building a better understanding of the metrics involved to improving communication between the various constituents of an institution.

Providing targeted opportunities for student success is paramount for VSU

Based in Valdosta, Georgia, VSU was founded in 1913 and is one of three public institutions in the University System of Georgia. It serves approximately 12,500 students from all 50 states and more than 60 countries globally. Given the diversity of the student population, providing targeted opportunities for student success is important to VSU. In 2012, Governor Nathan Deal announced the Complete College Georgia (CCG) initiative, designed to increase the number of Georgia's citizens earning a degree. However, for VSU, the factors relating to student success were not clear, which made it difficult for the institution to retain students and ensure they remained on a pathway to graduation. VSU realized that it needed to make investments in its business intelligence and analytics solutions to retain more students and increase student success opportunities.

Improving student success and retention rates required a new approach

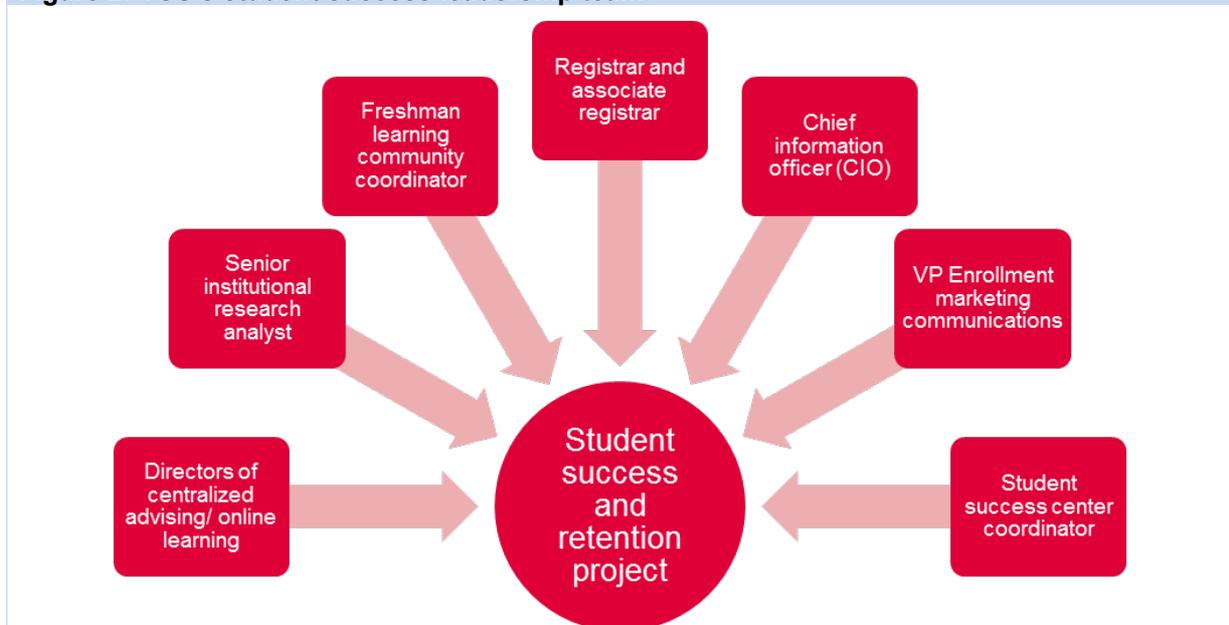
Enabling students to be successful in their academic careers has always been a key strategic goal for VSU. However, low retention rates were not only preventing this goal from becoming a reality for many students, but were also costing the institution \$6.5m in lost revenue each year. This prompted the institution to develop a new project that would not only address how it would use data to create reports and develop strategies to address student success and retention, but would also help ensure college completion for Georgia's citizens as part of the CCG plan. A student success leadership team was formed to share responsibility for the project and ensure goals were met. The strategic goals of the project are illustrated in Figure 1, and the members of the student success leadership team are illustrated in Figure 2.

Figure 1: Strategic goals of VSU's student success and retention strategy



Source: Ovum

Figure 2: VSU's student success leadership team



Source: Ovum

The role of ICT/services in solving the problem

Existing landscape and solution selection

Institutions must pull data from a variety of different applications and leverage a range of tools to make informed decisions about student success and retention. VSU used data discovery and predictive analytics to determine both risk and success factors, and specifically, to identify students at risk of not completing their courses to drive interventions to enable their success. VSU is currently using the following business intelligence solutions and architectures to improve student success and retention rates:

- Custom data warehouse
- Oracle Cloud
- Oracle Application Express

- Oracle PeopleSoft Enterprise CRM
- Oracle Data Integrator
- Banner by Ellucian
- Oracle Advanced Analytics
- SPSS
- Eloqua
- RStudio
- Oracle Business Intelligence Enterprise Edition
- Oracle Endeca Information Discovery.

VSU assessed a number of reporting tools, and although they had many similarities, according to VSU they did not have the robust capabilities needed to support a student success and retention strategy. Oracle, however – particularly Oracle Business Intelligence Enterprise Edition (OBIEE) and Oracle Endeca Information Discovery – quickly became a key strategic partner in helping VSU identify key student retention, progression, and graduation metrics, and provide targeted opportunities to students to support their success.

OBIEE is a business intelligence (BI) platform which enabled the VSU faculty to receive recurring reports via email, eliminating the need for administrators to log in and run reports at specific times during the semester. Moreover, it enabled faculty to easily communicate with one another across campus, which expedited and simplified the process of flagging student issues and delivering help to students. The solution also provided faculty with access to an interactive class roster containing student photos, thus personalizing communication between faculty and students and improving interactions.

VSU built on its success with OBIEE by deploying Oracle Endeca Information Discovery, a data discovery platform. The institution used the platform to collect and analyze student data from multiple sources, such as student surveys and ID card usage, to more quickly and effectively identify at-risk students, engage appropriate faculty and staff, and develop targeted programs to improve student retention.

Ultimately, VSU chose Oracle solutions because the company provided a clear framework, and within a short space of time OBIEE and Endeca were implemented to combine and analyze structured and unstructured student data to boost retention and support student success.

Bringing the strategy to life

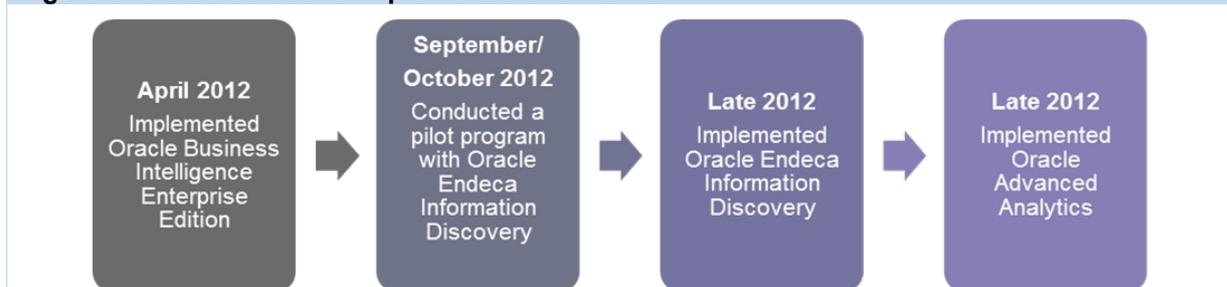
VSU began implementing the multiphase project in April 2012, and released phase one – OBIEE – to faculty and staff campus-wide in August 2012. In the fall of 2012, the institution conducted a pilot program with Oracle Endeca. The first step in VSU's strategy was to build a data warehouse with OBIEE that focused on data and key performance indicators to predict and analyze student success metrics. Instead of following the traditional approach of designing reports and dashboards for administrators, VSU focused solely on those who could make the biggest difference – faculty and advisors. Once the right data was extracted, the next steps for VSU were data-driven decision-making, predictive modeling, and better operational performance.

The second step in the strategy was to build processes to proactively enhance collaboration between faculty and student support services, including the tutoring center, centralized advising, athletic

academic coordinator, and the housing support office. The majority of institutions provide student support services, but they often require the student to take the first step. VSU created a faculty portal that leveraged application development and data warehousing to allow the faculty, advisor, or system triggers to reach out to the student. This provided support to students within the first few weeks of each semester, which improved their chances of success in the course. Both the faculty portal and MyVSU student portal, a one-stop shop for students to access all campus resources, were being used to promote student success.

The third phase in the strategy was focused on student engagement. Most educational analytics focus solely on academic information, but measuring a student's engagement on campus provides a major indicator of success. Measures of engagement include a student's use of library services and recreation center, participation in social events and intramural sports, and time spent at the student success center or social areas on campus. This data is often spread across many independent information systems. VSU leveraged Endeca and Oracle Advanced Analytics to create student success dashboards that incorporated academic, social, and engagement metrics. For VSU, the advantages of Advanced Analytics included the models operating in real time against recent data, real-time predictive analytics, course grade predictions, and major-matching. Furthermore, not only did the algorithms and models operate against academic advising data, but also provided analysis across all data sources, i.e., ADP, PeopleSoft Financials, D2L, and Banner.

Figure 3: Oracle solutions implementation timeline

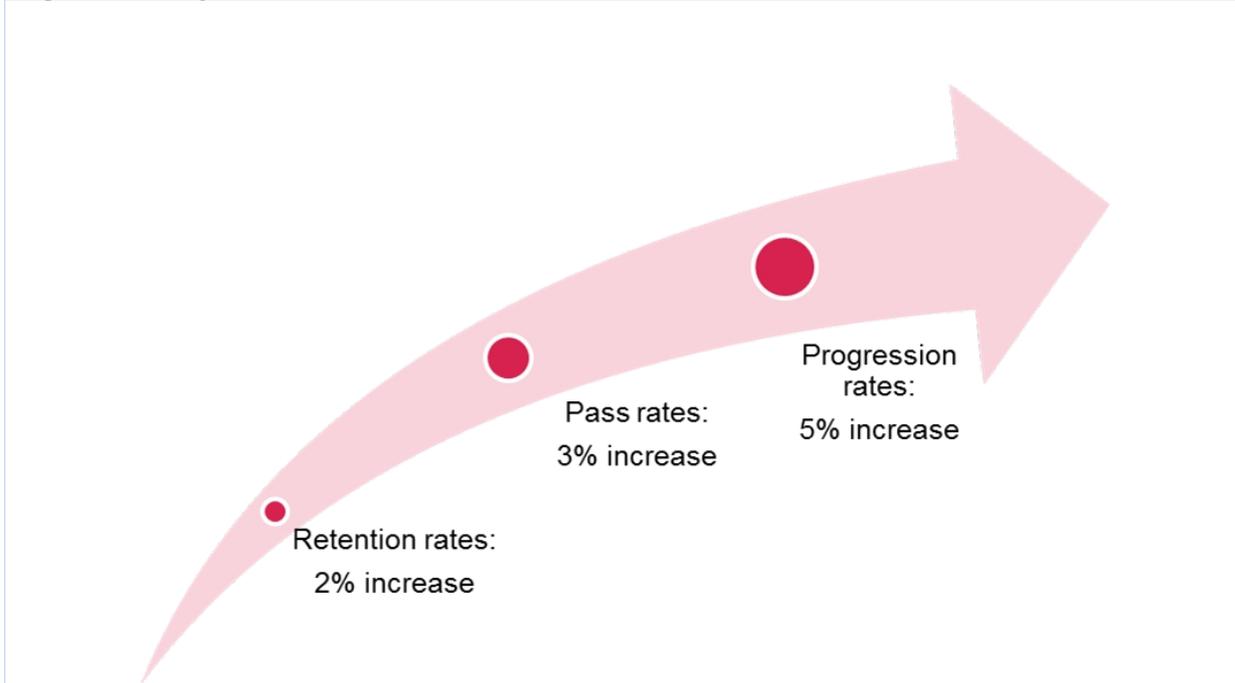


Source: Ovum

Outcome assessment

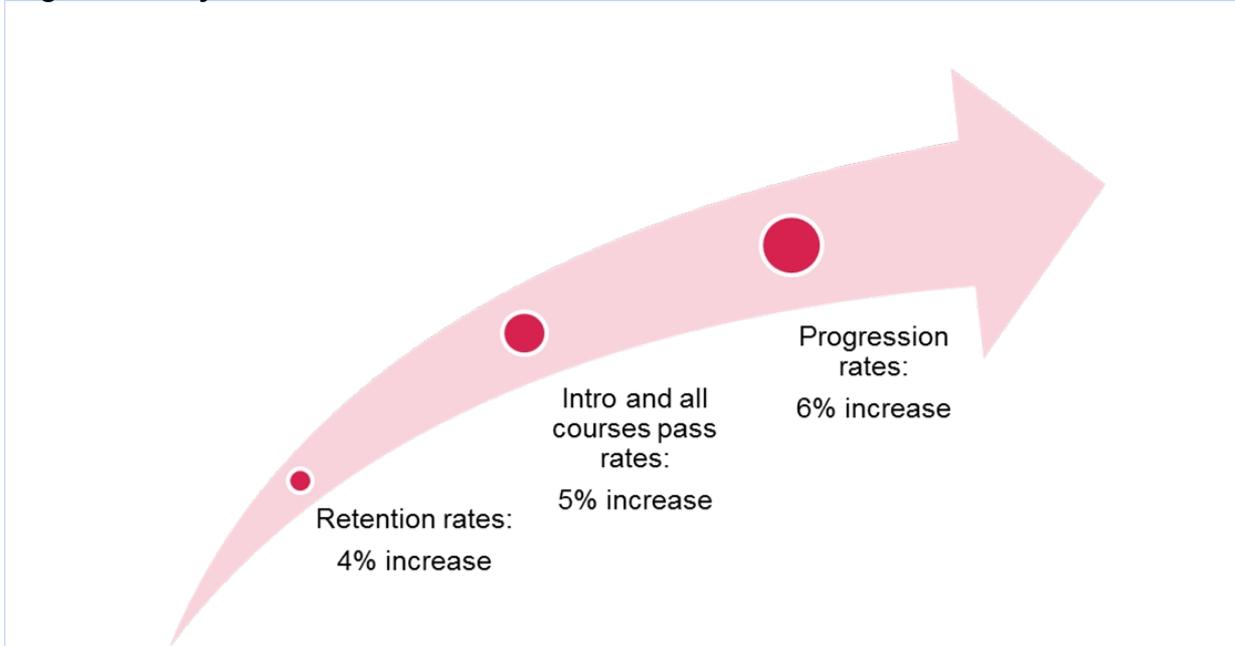
Although the student success and retention strategy at VSU was not technology driven, the technology solutions implemented allowed the institution to make data-driven decisions and better utilize the available resources. The integration of OBIEE and Endeca rapidly combined structured information from the data warehouse with unstructured data from other systems, which enabled VSU to identify data trends and determine whether specific metrics play a role in student success. For example, Endeca's ability to identify previously unknown correlations revealed that students who eat breakfast on campus have a 10% higher retention rate, which led VSU to promote on-campus eateries and other student services to specific student segments. VSU also discovered that freshmen who work on campus have an 85% retention rate, compared to the 55% retention rate of the general freshman population. This finding prompted the institution to make a \$200,000 investment in student jobs on campus, which was forecast to save \$2m in retention costs over the course of four years. Overall, the percentage increases in student success and retention rates are illustrated in the following figures.

Figure 4: VSU year one results



Source: Ovum

Figure 5: VSU year two results



Source: Ovum

The two-year return on investment (ROI) included the total cost of infrastructure, personnel, software, and training. The improvements in retention and progression after the second year of VSU's implementation exceeded the investment in the business intelligence suite of technologies.

VSU continues to ensure there are constant measures in place to remain proactive in its retention efforts, including pinpointing student issues as early as possible so that they can be addressed.

Furthermore, the innovative use of advanced data analytics underscores VSU's commitment to student success and CCG.

Lessons learned

Avoid "black box" solutions

During the course of attending an institution, students generate an enormous volume of potentially valuable information, including course selection and registration, financial and work arrangements, class participation and activity, online resource usage, textbook purchases, and more. This data can be aggregated and redeployed to help students make better decisions and succeed. More often than not, however, this information is trapped in a "black box" from which actionable knowledge is difficult to extract. Wherever possible, institutions should consider accessibility of data as a key part of any request for proposal (RFP) for systems procurement.

Take the necessary measures to ensure data security

Laws such as the Family Educational Rights and Privacy Act (FERPA) instruct that reasonable measures must be taken to secure student data relative to its sensitivity. However, there is not always clarity on the meanings of "reasonable" or "sensitive." Therefore, common definitions and standards must be developed so that metrics can be established by enterprises to quantify how well applications and services adhere to the requirements.

Actively involve all stakeholders from the beginning

To effectively prepare for and implement change management, enterprises must involve all key stakeholders. Many players are involved when it comes to purchasing and implementing a new solution. Therefore, enterprises must quickly identify and mitigate possible risks, including resistance to using the solution among some stakeholders. Moreover, enterprises must think about how to communicate the decision to implement a new solution and develop appropriate training programs for stakeholders.

Appendix

Methodology

Ovum Enterprise Case Studies leverage in-depth interviews with key enterprise stakeholders as well as a review of any available documentation such as strategic planning, RFP, implementation, and program evaluation documents.

Further reading

Oracle's Cloud-Based Big Data Analytics and Preparation Solution, IT0014-003031 (July 2015)

Transform Student Engagement with Institution-Wide CRM, IT0008-000238 (June 2015)

Increasing Investments in Analytics Solutions: Will Higher Education Catch Up in 2015?
IT0008-000223 (November 2014)

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