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Improving the Student Journey From Interest to Enrollment With AI

Higher education, like many industries, is undergoing spectacular disruption as technology provides students with more learning modalities, more specialized learning tracks, and more flexibility in scheduling. Student enrollment overall is on the decline—though online enrollment is helping to stem the tide—with 15.4% of all college students now taking courses exclusively online, and a third of all students now taking at least one online course. In this landscape, post-secondary institutions distinguish themselves by ensuring that their students are supported in a way that is specialized to their needs. Fortunately, from application through graduation (and beyond), institutions of higher learning have access to a massive backlog of student engagement history, making the push to support learners in their own context much more feasible.

In this and subsequent articles, we'll identify some of the many potential use cases for predictive modeling in the higher education space. Some of these use cases have been explored and deployed in a select collection of schools to great effect. Others are in their nascency and are ripe for exploration. Here, we explore the stage known as "acquisition": the path from interest to acceptance.

Marketing	Acquisition	Conversion	Education	Post-graduation	More school?
Student leads are generated by marketing strategy	Qualified leads are vetted and shepherded through the process by an Enrollment Advisor	Accepted students bide their time until courses begin	Two, Four, Six, or Eight years of education, through myriad courses and life events	Successful students leave the halls of academe and navigate the workforce	Former students become interested in higher levels of education
- Social media propensity scoring	- Lead scoring for call prioritization - Segmentation for EA specialization - Recommendation engine for degree placement	- Propensity to "melt" (accept but not start) - Chat bots for FAQ engagement - Smart assistants for document-completion tracking	- Propensity to continue/graduate - Secondary degree recommendations - Smart scheduling	- Job placement assistants - Fundraising campaign design	- Propensity to re-enroll/re-engage

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Background

It can often feel that everything in higher education is becoming more expensive. From increasing investment in student opportunities and offerings (academic and extracurricular), to staffing reasonable class sizes, to covering shortfalls in external research funding, any source of cost savings through innovation must maintain quality education without breaking the bank. One oft-ignored cost in the student journey is the so-called "acquisition cost." The focus on acquisition cost is not on the investment it takes to bring one student onboard, but rather how much it will cost to identify and foster the interested students through the process in a timely manner.

The educational landscape is also more diverse for prospective students these days. The most selective schools have an acceptance rate of just 5%, while others have acceptance rates closer to 85%. Clearly, the challenges facing schools will differ along that spectrum: highly selective schools require process flows for redirecting ineligible students quickly, while those at the other end may need to be more proactive in recruiting and guiding leads to success. No matter the perspective, an intelligent experience can bring about efficiencies in this part of the life cycle.

Interest-to-Application

Two umbrella use cases for augmented intelligence sit nicely in this period of the student journey: intelligent lead management and degree matching. In the past, these notions have been largely driven by human intuition, and not by data.

Intelligent Lead Management
At Atrium, we've analyzed lead data for one institution that suggested some notable trends. These types of insights were then used to craft an individualized lead experience for the students on their path in a way that one-size-fits-all logic cannot.

For example, in this particular group, we found that adult students sprinted through the enrollment process (perhaps already fully aware of what they want), while students coming directly from high school took much more time to apply. Students interested in technical degrees responded more positively to electronic communications while liberal studies preferred phone calls. By modeling out these behaviors into experiences or "themes," we can now create unique enrollment pathways, such as "Self-Service" for the non-traditional student, "Personalization" for the undergrad and liberal studies prospect, and an "Automation" track for our technical learner.

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Degree Matching

Aside from lead management, schools also owe it to their prospective students to help them find a track in which they can succeed. According to the National Student Clearinghouse Research Center, 36 million students left college without a degree, many after only a single term[1]. Furthermore, a bachelor's degree translates to an average 46% bump in income relative to those whose college progress was incomplete. Why does this happen? Of course, student support during the term is crucial. But the US Department of Education found that 30% of undergraduates changed their major within the first three years of enrollment. It stands to reason that some of these students who leave early simply made it into a course of study that didn't suit them[2]. Routing students to degrees that more closely match their skill set, background, and interests can have a major impact. Machine learning models such as learner clustering, user-user similarly-based recommenders, or multivariate success models for multiple tracks can be deployed to aid enrollment advisors as they guide prospective learners to their eventual plan of study.

Acceptance-to-Enrollment

The term "summer melt" is used in the education space to describe a phenomenon in which a student thought to be college-bound doesn't appear. Definitions differ based on the interested party. To the university administration, this vexing problem appears when a student pays their deposit (indicating they'll be attending), then either decides to attend another institution, or decides not to attend any college. In any case, the result can be misallocated teaching resources, early-term course shuffling, and overall higher costs. From the perspective of social science, summer melt is the broad phenomenon of college-directed students simply not attending. One study indicated that between 10 and 40% of "college-intending students" melt away by this definition, with those in the lower- and moderate-income households being hardest hit[3].

1 National Student Clearninghouse, "Factsheet".
2 Data Point, "Beginning College Students Who Change Their Majors Within 3 Years.".
3 Harvard Edu Publishing, "Summer Melt".

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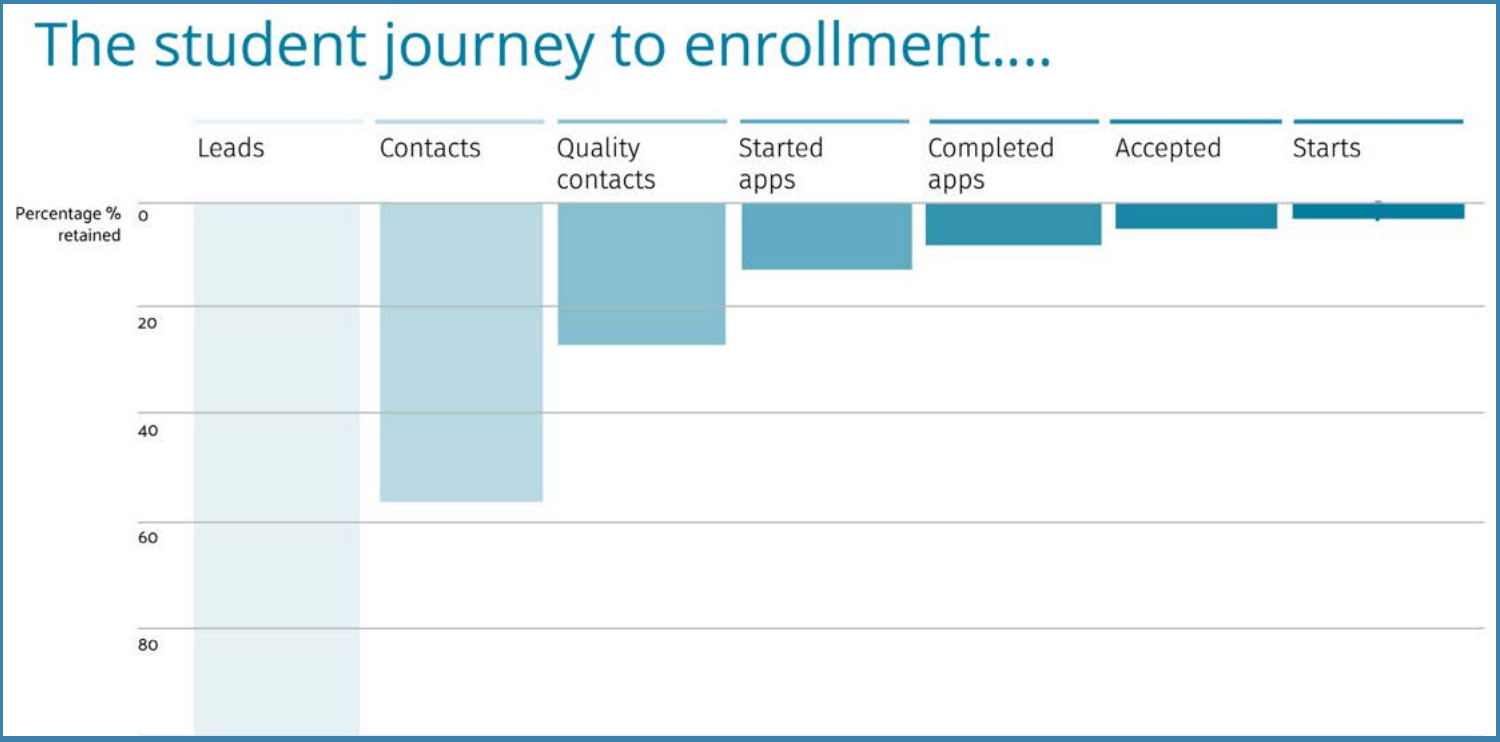

Melt is prevalent enough to have driven a group of education researchers at Harvard to produce a handbook for responding to this phenomenon, with recommended actions for intervention[1]. By building predictive models, schools can save on costs by intervening only with high risk students and by customizing the intervention.

But there is more to melt than just predicting it. Georgia State University has been a forerunner in the use of predictive analytics and artificial intelligence (AI) to drive student success. In 2011, GSU decided to prioritize data analytics to assist in their solutions. They witnessed a 21% decline in summer melt by deploying a customized student portal to organize requirements, and building an AI-powered chatbot ("Pounce") that fields questions from students through text message[2][3]. Students benefit from the on-demand access to answers they need, and enrollment advisors can focus their energies on advising.

1 Strategic Data Project, "SDP SUmmer Melt Handbook".
2 Georgia State Univ., "Pounce Case Study".
3 Georgia State Univ., "Reduction of Summer Melt".

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What's Next?

So then what's next? Insights from one school don't generally transfer to other schools. Your students are a unique blend of backgrounds, motivations and behaviors. As more programs lean towards online delivery, student needs are going to change. Processes for acquiring leads, encouraging and enabling potential students to apply, and identifying optimal tracks/programs for students to succeed may differ substantially based on student characteristics and institutional goals. Supporting them with differentiated, data-driven strategies not only builds in efficiencies to the school's workflow, but also saves students valuable time and patience in their journey.

Potential efficiencies afforded by AI are not limited to the acquisition phase of higher education. Using data to make better decisions about student interventions can help drive retention and ultimately help more students to graduate. Additionally, since many institutions front-load their expenditures towards lead generation, post-enrollment can lead to substantial organizational value add and ROI not possible in the acquisition phase. Subsequent articles will explore potential use cases, examples, and opportunities to use AI to enhance post-acceptance processes.

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KEY TAKEAWAYS

- Higher education is undergoing spectacular disruption as technology provides students more learning modalities, more specialized learning tracks, and more flexibility in scheduling.
- Student acquisition cost is an opportunity where augmented intelligence, aka “the intelligent experience,” can bring about efficiencies in the process.
- Insights can be leveraged to craft an individualized enrollment experience for the students on their path in a way that one-size-fits-all logic cannot.
- Supporting administrators and admissions with differentiated, data-driven strategies not only builds in efficiencies to the school’s workflow, but also saves students valuable time and patience in their journey.

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ABOUT ATRIUM

We're a new type of consulting firm that's helping enterprise companies navigate the world of machine learning and AI. Our world-class team is made up of some of the brightest minds in math, programming, and tech – and we're obsessed with how AI is defining the customer experience.

Our goal is to enable companies to take advantage of this next disruption in tech by blending strategy, data science, and our Salesforce expertise.

We focus on the business user and help companies enable their own intelligent experience.

The models we build provide insights and results that are:

- Actionable
- Meaningful
- Data-driven
- Automated
- Repeatable

> "It was fantastic to work with Atrium. We moved from talking about analytics to truly understanding learner segments in a rapidly changing educational market.
>
> Daniel Goldsmith
> VP Analytics and Innovation, Pearson

Ready to leverage artificial intelligence to streamline student acquisition costs and improve the student enrollment experience?
Visit **www.atrium.ai** to get started.