

## CASE STUDY

# New Jersey Institute of Technology Expands Freshman Class, Grows Net Tuition Revenue

  
by LIAISON 

## THE CHALLENGE

- Create a financial aid strategy that would be expected to yield as many enrolled students as possible while not exceeding their funding

## THE SOLUTION

- Othot's Advanced Analytics Platform

## THE RESULTS

- NJIT improved the profile of its entering 2018 class and saw an increase in net tuition revenue, while maintaining a flat financial aid budget during yield season

## Attracting New Jersey's Best and Brightest Through Analytics

New Jersey Institute of Technology (NJIT), a public research university founded in 1888 and located in Newark, N.J., is one of 32 polytechnic institutions in the country and boasts an enrollment of more than 11,400 students. It offers 125 undergraduate and graduate programs across six specialized schools, including one of the oldest engineering schools in New Jersey. Forbes in 2018 ranked NJIT #1 in the nation for student upward mobility among colleges with the highest percentage of students from the bottom fifth income distribution who end up in the top fifth.

"Our student population is reflective of the population of New Jersey, something we're very proud of," says Wendy Lin-Cook, Associate Provost, Enrollment Management and Academic Services at NJIT. "We have a large underrepresented population and want to make sure we don't lose that as we seek to increase the profile."

According to its strategic plan, NJIT is seeking to expand its undergraduate class while increasing its freshman profile and improving its overall national ranking, and as usual, will rely on predictive and prescriptive analytics to accomplish these goals. Upon realizing their homegrown model only allowed them to control for a very limited number of variables (read: one year of enrollment data) and that they didn't have the capacity to update their model on a daily basis, NJIT administrators knew they needed to find a more robust predictive analytics solution to truly make an impact on enrollment.

"When we started looking at different predictive modeling companies, what I liked about Othot was the ability for the software to adapt to the most updated information," says Lin-Cook. "Other predictive modeling products out there only run the model at the beginning of the recruitment cycle and then it's stagnant, so it doesn't allow us to be reflective of what's happening throughout the recruitment cycle. Othot's model allows NJIT to continue to monitor the freshman class using the live data, which is very powerful and very different from other products out there."



## The Challenge: Increase Class Profile, Not Scholarship Spending

NJIT started partnering with Othot in February 2018, and by April, the models were delivering actionable insights. Lin-Cook and her cross departmental team were able to make strategic, timely decisions and adjustments based on the data that helped them to increase their class size—up until the last possible moment, in May. The results were significant. In fall 2018, NJIT experienced:

- an increase of 173 new freshmen,
- a gain in SAT scores of 2 points, and
- a major increase in net revenue.

However, even more significant than these results: Scholarship spending remained flat during its appeals process.

Every year, NJIT sets aside a total institutional aid budget for first-time freshmen students. The

challenge had always been to determine the optimal amount to offer any given student. Thanks to Othot's sensitivity analysis function, Lin-Cook and her team were able to drill down to the individual student level determine an amount that would be mutually beneficial for both the student and the institution.

"We were able to utilize Othot's sensitivity analysis to identify students where our base financial aid strategy wasn't expected to be enough to influence their decision to attend NJIT," says Lin-Cook. "We were able to track on a daily basis our scholarship spending, the size of the class we were enrolling, as well as the diversity of the class. Based on that we were better able to craft a class we wanted by redistributing some of the available funds. That really helped NJIT to be very efficient with our money and maximize our return on investment of our scholarship funds."

## What's Next?

Lin-Cook says she and her team are so happy with the results of NJIT's partnership with Othot, they already have started implementing new models and improvements for this year's recruitment cycle, including

- working closely with Othot to create the matrix model for the fall 2019 class that incorporates additional variables important to NJIT. Othot's model allows for tracking influencers such as campus visits and other events that might impact a student's behavior, and Lin-Cook is confident the addition of these new variables will strengthen the model.
- working closely with Othot to complete NJIT's financial aid picture. Lin-Cook and her team want to look at the impact of the institutional fund, not just merit based but need based, as well as provide support throughout the student population and address student need gaps.
- working closely with Othot to maximize return on investment, not just for the university as a whole but at the individual college and program levels. Like all universities, NJIT has some programs that underperform compared to others. Lin-Cook and her team plan to target these programs and review the matrix models to make sure they're maximizing funding for these programs.
- working closely with Othot to build a profile of NJIT's ideal freshman class, as well as focus on retention and graduation rates.

"I have a lot of plans; I'm very excited to continue with Othot," says Lin-Cook.

## Takeaways

Lin-Cook has some advice for those colleges and universities looking to get started with using advanced analytics for recruitment; enrollment; retention; or to plan, budget, or allocate financial aid.

First, assemble a strong team and equip them for success.

"Our selection of Othot was a collaborative one, which involved the offices of the provost, institutional research, admissions, and financial aid," she says. "I am the lead on the project, and we work directly with Othot on the model. As the data become available, we share them with the rest of [the team]. They are thrilled to have the option to go on to the dashboard to see the daily recruitment objectives and whether they're being met. This also enables us to identify issues and concerns very early on, especially with our scholarship spending. Everybody likes to keep an eye on that, and this model lets us know if we are on target or not, which is very important for us."

Second, start now, take the time to build your platform the right way, and be prepared for actionable insights.

"It takes awhile to build the platform because it's so customized," says Lin-Cook. "You need a strong IT team that is able to start the transfer of data very quickly. We worked with our executive director of admissions, who's very familiar with the data, and we were able to pull the data very quickly and start to analyze them."

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“Around April, we started getting daily reports that were meaningful. We were able to compare those to our own predictive modeling, and between the two we were able to start making some very strategic decisions with our enrollment class.

I believe that if we would have had Othot throughout the entire recruitment cycle we would have seen greater gains toward our enrollment goals.”

Third, you'll get out of this process what you put in—but don't be afraid to ask for help.

“I'm always looking at yield and whether there are patterns for particular programs or colleges, how are they doing compared to prior years with the number of students admitted, number of applications completed, etc. The Othot platform allows me to do this very fast. The dashboard is very sophisticated. It highlights the patterns you should be looking for, so if you're not as familiar with data, it helps you by giving you pointers.

“Members of our team were able to review the data and provide us with feedback, which was very powerful. The modeling went from something I did myself to a campus-wide initiative.” ■

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