Melt Rates

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Student Enrollment Process

Apply → Register → Add Courses → Drop Courses → Start Semester
Melt Rate

• Many definitions with different advantages
• Can be analyzed at
  • Different levels
    • Division, Course, Section, Instructor
  • Different timeframes
    • Day to day
    • Semester to semester
• Allows deans to be reactive and predictive in scheduling
Melt Rate=$\frac{\# Students that Drop}{\# Students that Add}$ between semester start and census date

Insight: Increase enrollment capacity to maximize fill rates

Melt Rate=$\frac{\# Drops}{\# Adds}$ up to census

Insights: Instructor effects, Times and days of course effects

Melt Rate=$\frac{\# Students that do not register}{\# Students that apply}$ up to census

Insight: Enrollment retention rate

Insight: Gain understanding to optimize yield rates
What decisions can be made using melt rate?

• Enroll x number of students above section capacity for instructors with high melt rates
• Decrease section offerings for courses with historically high melt rates
• Increase section offerings for courses with historically high fill rates, high waitlist count and low melt rates
• Let more students from waitlist enroll for sections that have high melt rates
• Recruit strategically and increase yield rates
Predicting Melt Rate

• Create models to forecast melt rates for future terms
  • ARIMA
  • Recurrent Neural Network/Long short-term memory network
  • Hidden Markov Model
  • Vector Auto Regression
  • Generalized Additive Model

• Create schedules around projected melt rates to optimize fill rates
• Which definition of melt rate would be most impactful to analyze at your college?

• Who would you present your melt rate analysis to?

• What decisions do you think they would make using your analysis?

Melt Rate = # Students that do not register/# Students that apply

Melt Rate = # Drops/# Adds up to census

Insight: Gain understanding of which students are more likely to apply

Insights: Instructor effects, Time and day of course effects
Strategy

- Develop data application for visualization and decision making by connecting enrollments, waitlists, and melt rates at each level: division, department, course, section
- Be reactive to enrollment demand through daily metrics using data application
- Be predictive of student demand by forecasting future enrollments using historic enrollments, waitlists, and melt rates
Moving Beyond Data Visualization to Data Applications

By Exaptive Team | 03/27/2018

One thing we love doing at Exaptive – aside from creating tools that facilitate innovation – is hiring intelligent, creative, and compassionate people to fill our ranks. Frank Evans is one of our data scientists. He was invited to present at the TEDxOU event on January 26, 2018.

Frank gave a great talk about how to go beyond data visualization. The verbatim of his script is below the video. Enjoy!

Exaptive data scientist Frank Evans speaks about using data science for discovery at the TEDxOU event in Norman, OK, on January 26, 2018. Source: TEDx Talks on YouTube.