Student Retention and Loss Prevention

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WEALTH ADVISORY | OUTSOURCING | AUDIT, TAX, AND CONSULTING

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Learning Objectives

- Recognize the Early Warning Indicator (EWI) Systems and learn how colleges and universities are beginning to utilize them

- Identify, at a high-level, how an EWI System can be created, deployed, and utilized at colleges and universities

- Identify how to introduce tangible action items to jumpstart an EWI System at your college or university
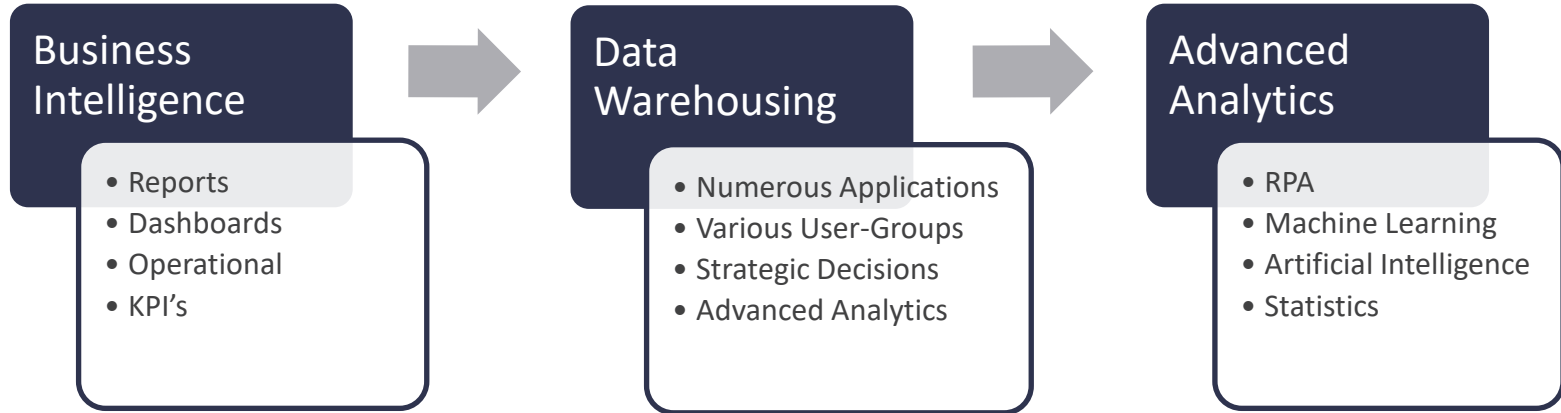
Agenda

- Introductions

- Data and Analytics: What is it?

- Potential Use-Cases in Higher Education

- What are Early Warning Indicator Systems?

- Why are Early Warning Indicator Systems utilized?

- How are Early Warning Indicator Systems deployed?

- Examples

- Q and A

Data and Analytics: What is it?

Business Intelligence

- Reports
- Dashboards
- Operational
- KPI's

Data Warehousing

- Numerous Applications
- Various User-Groups
- Strategic Decisions
- Advanced Analytics

Advanced Analytics

- RPA
- Machine Learning
- Artificial Intelligence
- Statistics

Data and Analytics Use-Cases in Higher Education

- Leadership Dashboard

- Probability Modeling

- Mergers and Acquisitions

- Continuous Alumni/Student Engagement

- Student Financial Aid Compliance

- Financial Aid Matrix

- Early Warning Indicator Systems

What are Early Warning Indicator Systems?

- Broader than Higher Education
- History of EWI's
- Data-Driven
- Student-Level, At-Risk Predictions

Why Early Warning Indicator Systems?

- Increase student retention and graduation rates

- Promote social and emotional learning in colleges and universities

- Grow student engagement

- Generate more meaningful dialogue between students and administration

- Improve academic performance

- Assists colleges and universities in achieving their mission

How to Deploy Early Warning Indicator Systems?

Planning / Envisioning → Data Transfer → Model Building and App Build/ Load → Maintenance and Refresh

- Use discrete stages to set up for long term delivery success
- Provide consistent service across clients, with ability to meet client specific needs

How to Deploy Early Warning Indicator Systems?

- Planning and envisioning
  - Introductions, discuss fields collected / of Interest
  - Existing hypotheses from the field

- Data transfer: meet our clients where you are
  - Manual data hand off
  - Semi automated data pipeline
  - Scheduled data refresh

How to Deploy Early Warning Indicator Systems?

- Model building and app loading
  - Using historical data, data science team explores and models the data
  - Data science team loads data into data product application
  - Data Science team deploys (in CLA environment or client environment)

- Maintenance and refresh
  - App maintenance performed at CLA/client discretion
  - Data refreshed on schedule to be determined – discuss improvements to data transfer, etc.
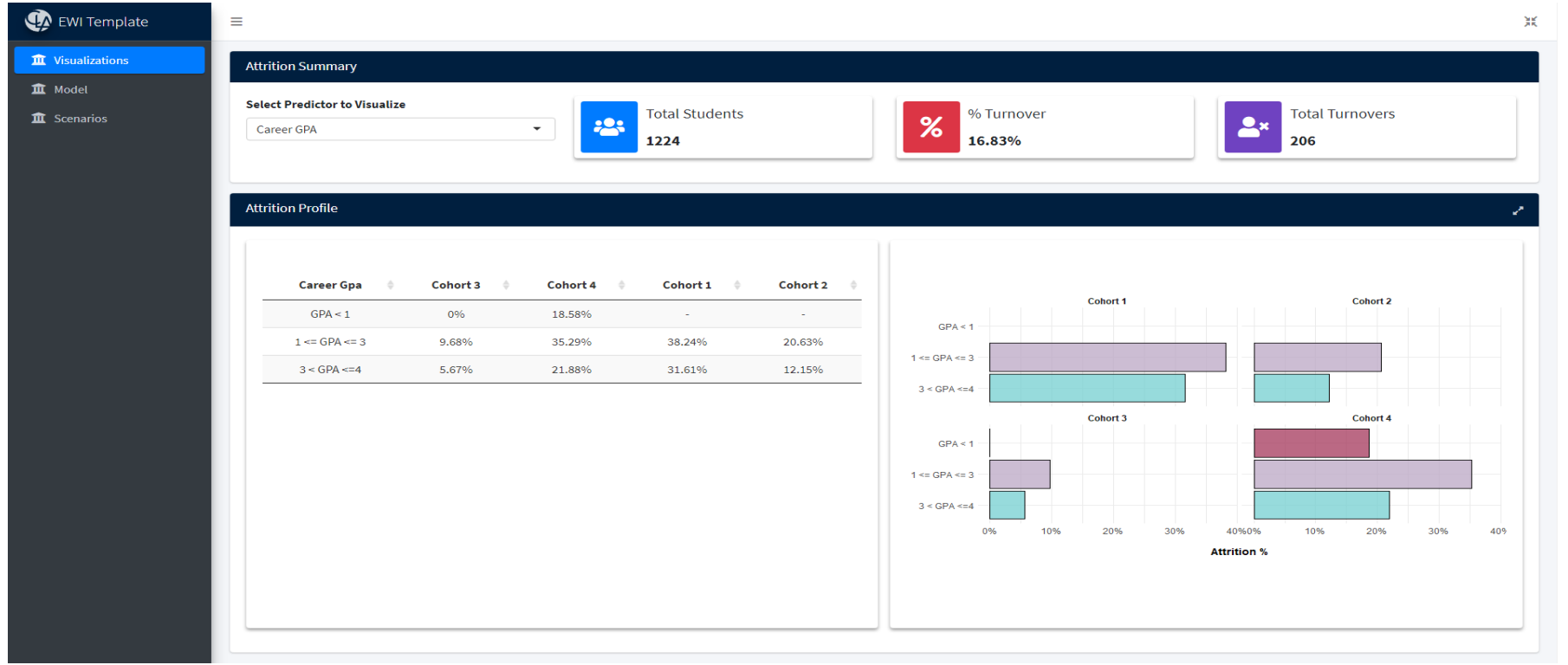 - Discuss need / desire for additional views, add-ons to data product

Examples

- Early Warning Indicator System Template
- Three Views
  - Visualization
    - Understand the impact of most important predictors of attrition, identified by machine learning
  - Model Insights
    - Deep dive into the machine learning model, including individualized explanations of why the model identified students as high/low risk
  - Scenario Modeling
    - Define criteria for successful intervention campaigns based on deflecting most important predictors of attrition
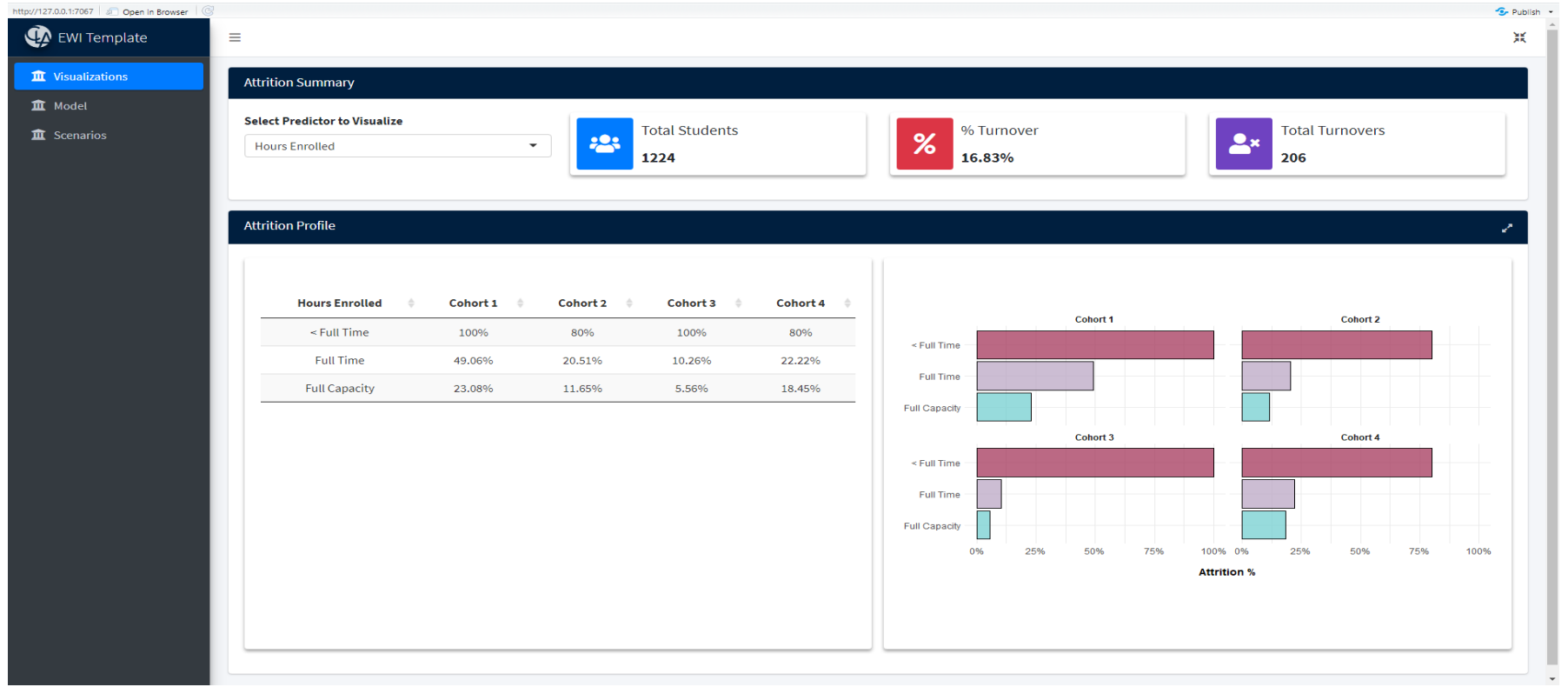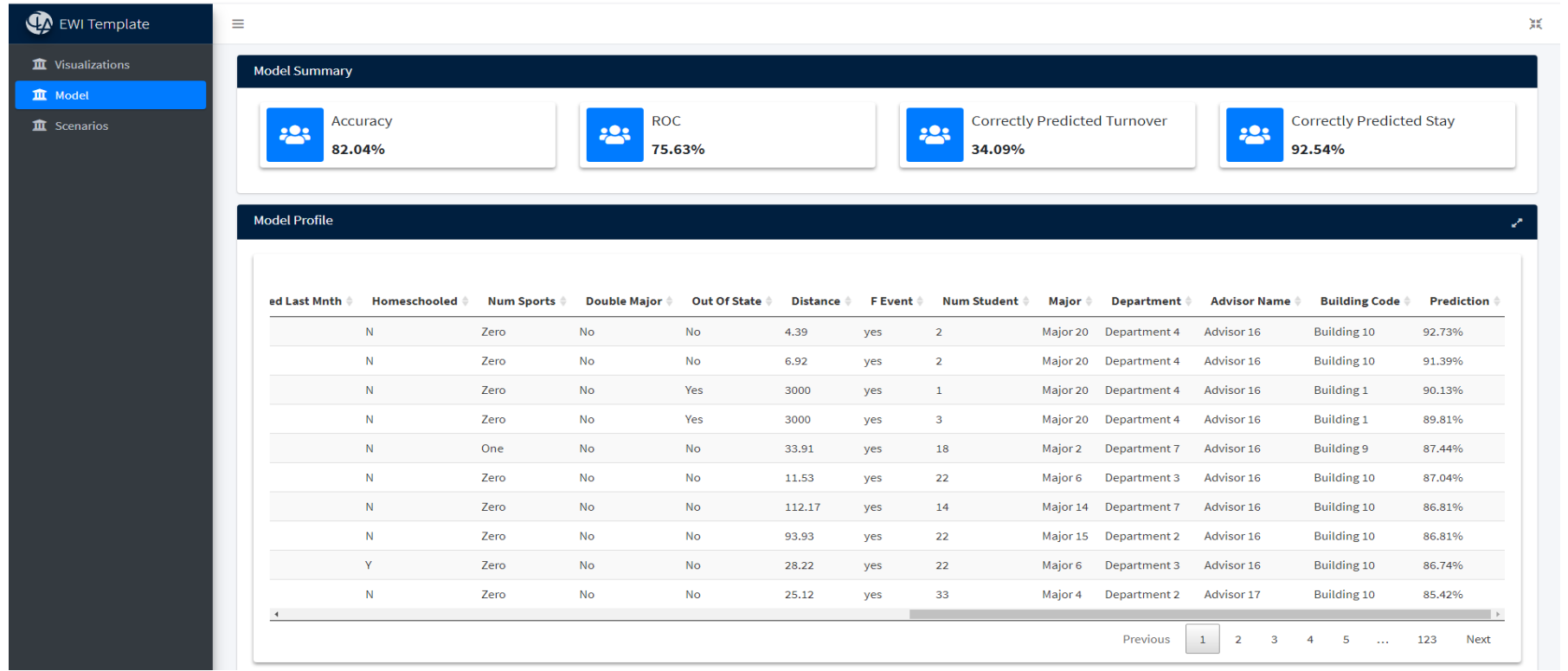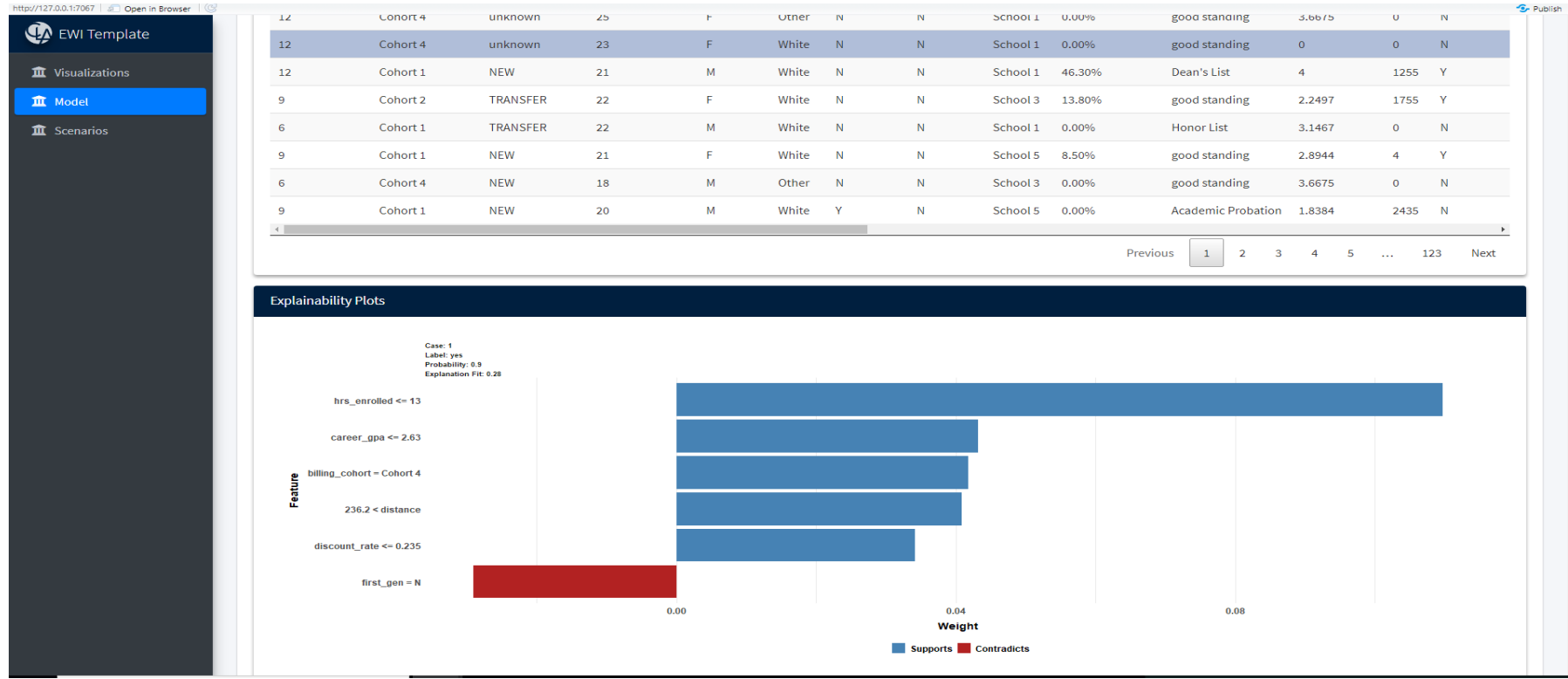
Examples: Visualization Tab
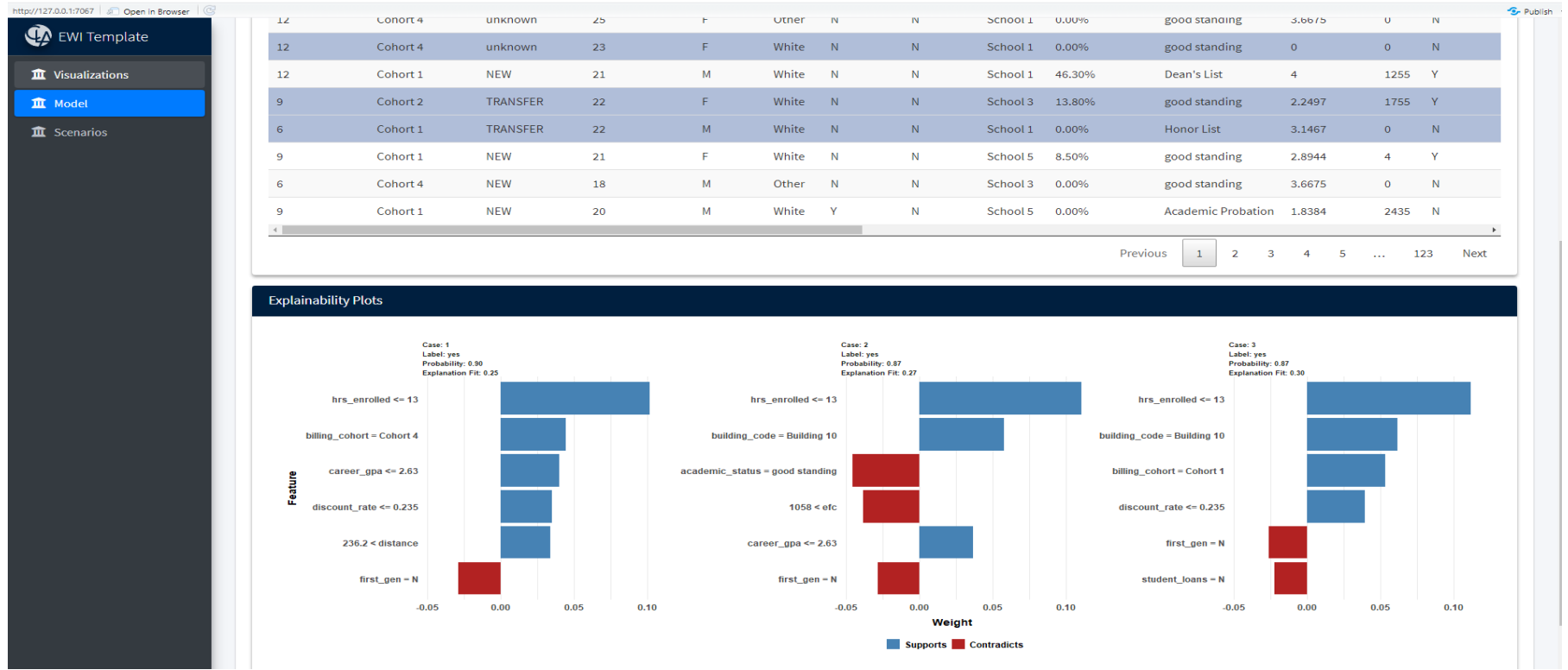
Examples: Visualization Tab

Examples: Model Deep Dive

EWI Template

- Visualizations
- Model
- Scenarios

Model Summary

Accuracy	ROC	Correctly Predicted Turnover	Correctly Predicted Stay
82.04%	75.63%	34.09%	92.54%

Model Profile

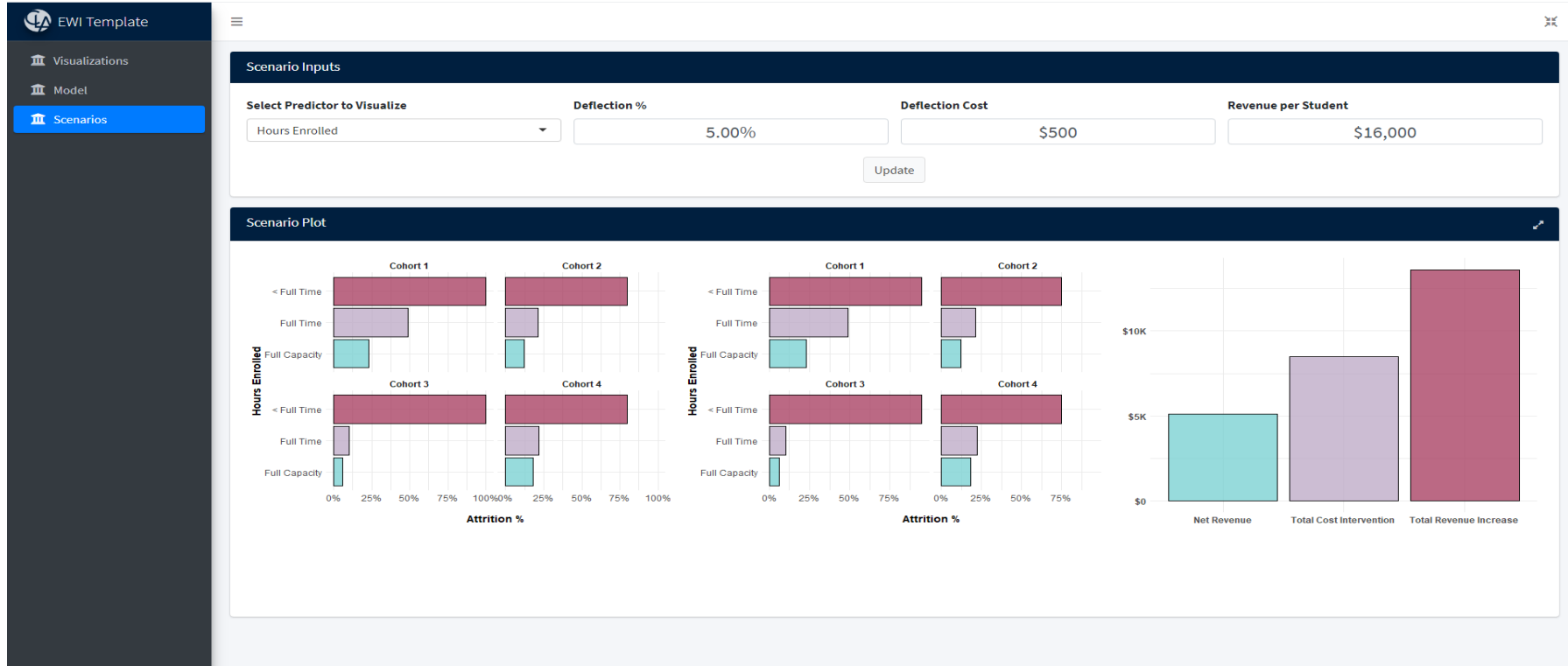| ed Last Mnth	Homeschooled	Num Sports	Double Major	Out Of State	Distance	F Event	Num Student	Major	Department	Advisor Name	Building Code	Prediction
N	Zero	No	No	4.39	yes	2	Major 20	Department 4	Advisor 16	Building 10	92.73%
N	Zero	No	No	6.92	yes	2	Major 20	Department 4	Advisor 16	Building 10	91.39%
N	Zero	No	Yes	3000	yes	1	Major 20	Department 4	Advisor 16	Building 1	90.13%
N	Zero	No	Yes	3000	yes	3	Major 20	Department 4	Advisor 16	Building 1	89.81%
N	One	No	No	33.91	yes	18	Major 2	Department 7	Advisor 16	Building 9	87.44%
N	Zero	No	No	11.53	yes	22	Major 6	Department 3	Advisor 16	Building 10	87.04%
N	Zero	No	No	112.17	yes	14	Major 14	Department 7	Advisor 16	Building 10	86.81%
N	Zero	No	No	93.93	yes	22	Major 15	Department 2	Advisor 16	Building 10	86.81%
Y	Zero	No	No	28.22	yes	22	Major 6	Department 3	Advisor 16	Building 10	86.74%
N	Zero	No	No	25.12	yes	33	Major 4	Department 2	Advisor 17	Building 10	85.42%

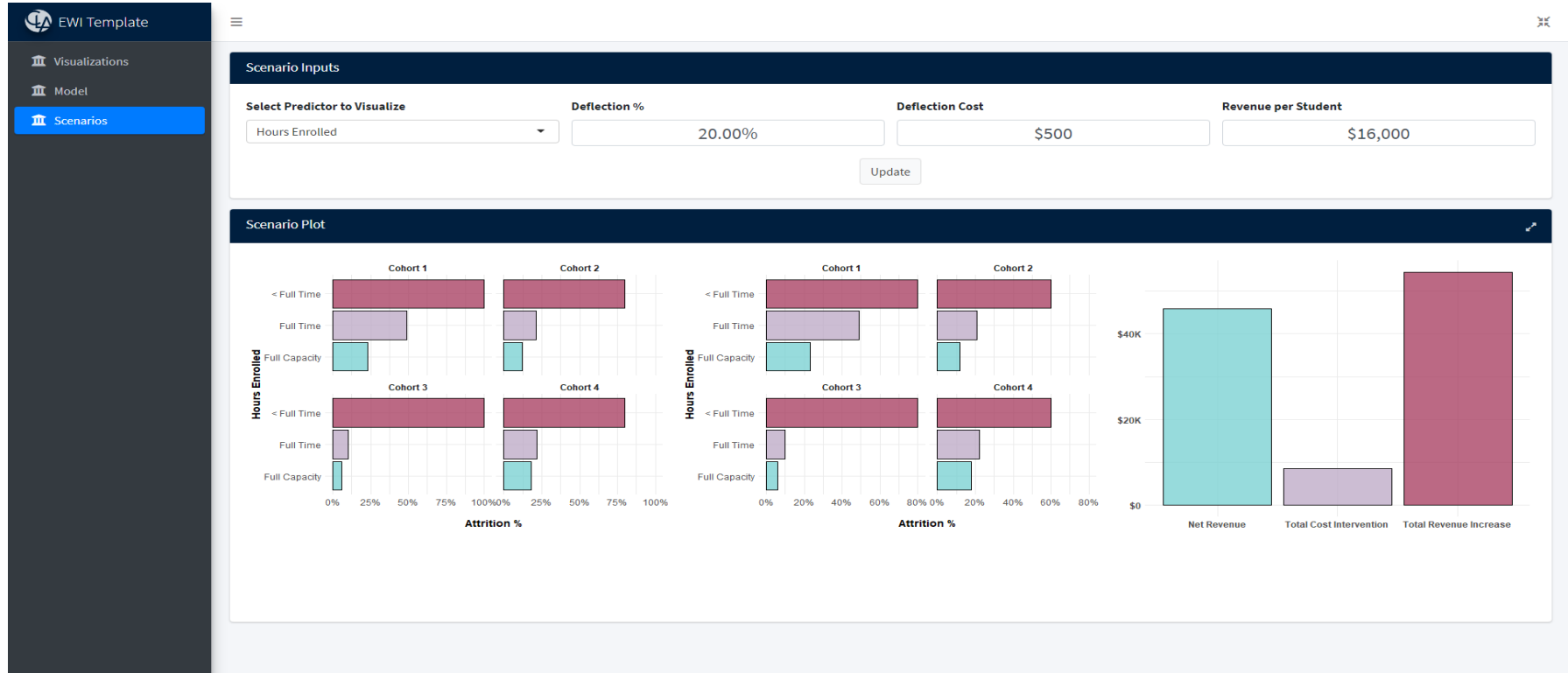Previous 1 2 3 4 5 ... 123 Next

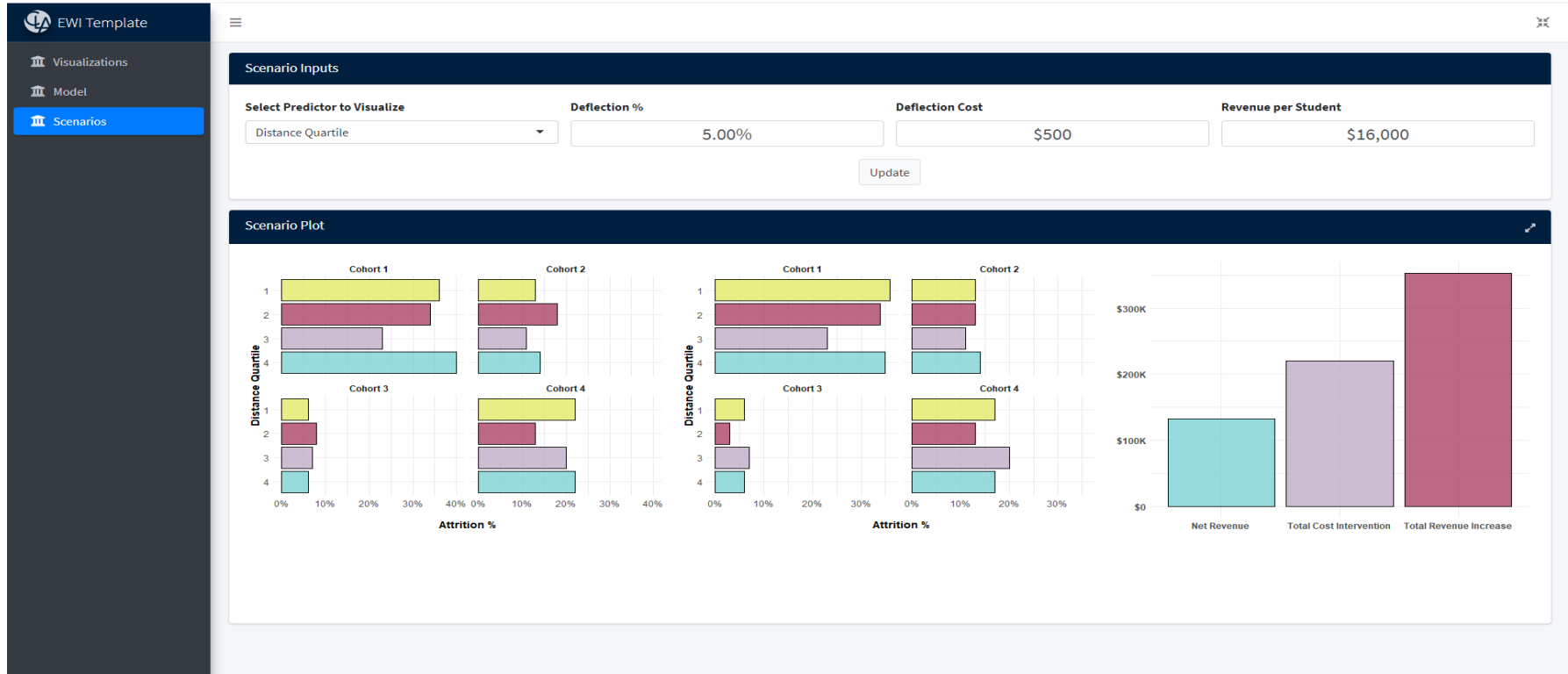# Examples: Model Deep Dive

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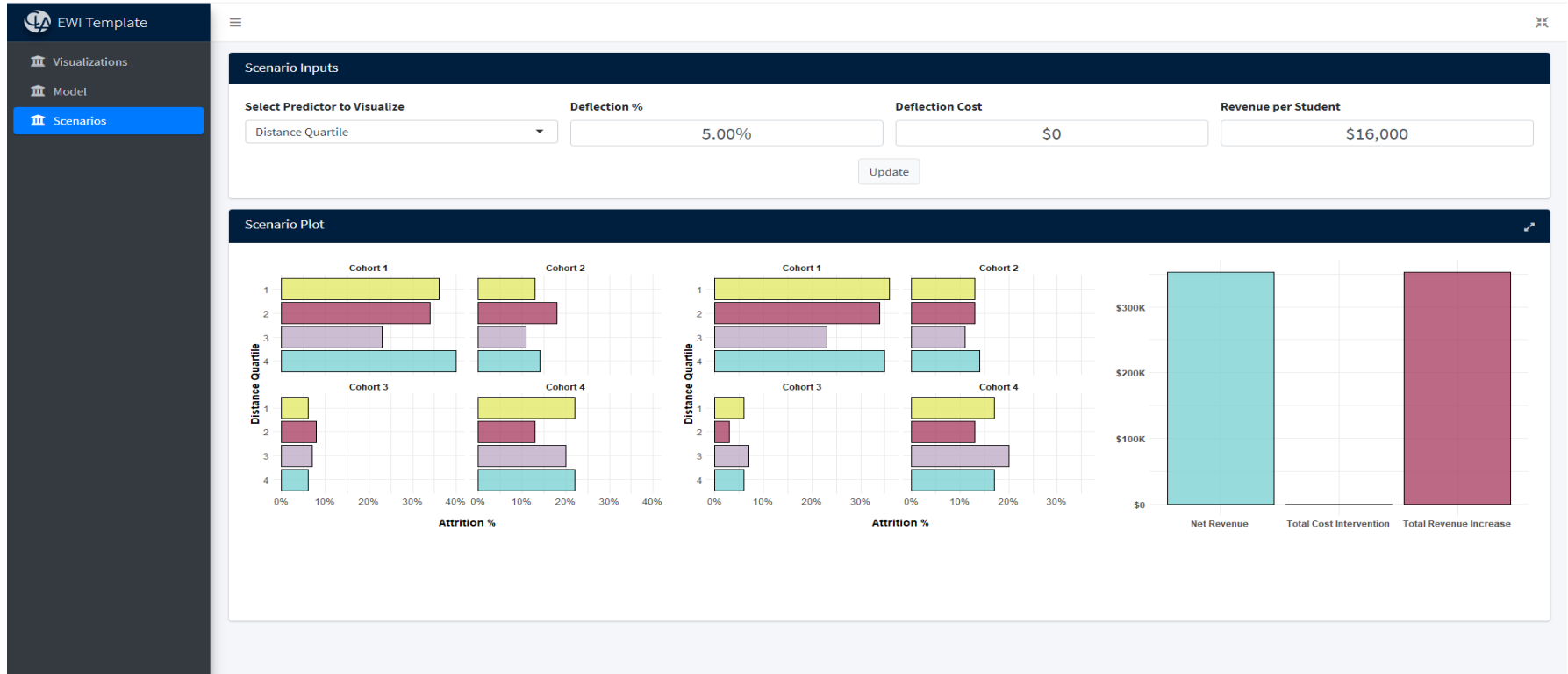# Examples: Scenario Modeling

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Ask your hardest questions!!!

Ready…Set…Go…!

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