

# From Prediction to Prevention

How AI Helped Drive Historic Lows in Student Melt

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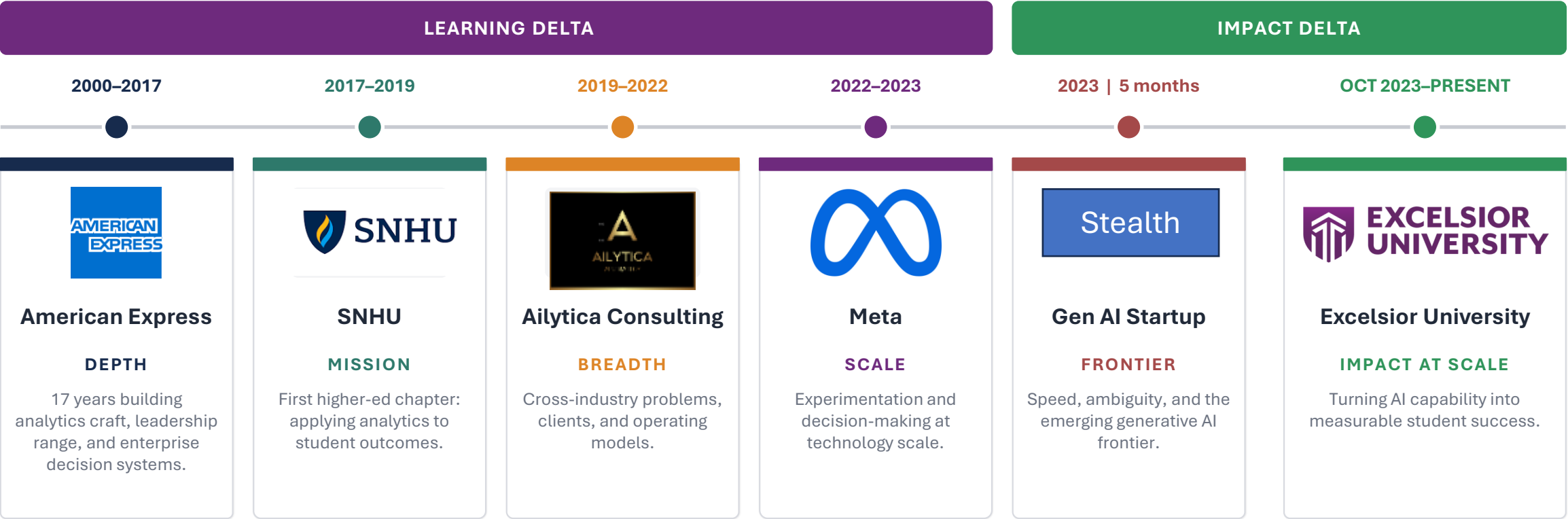


**EXCELSIOR  
UNIVERSITY**

# From Learning Delta to Impact Delta

The organizations changed. The objective function changed even more.

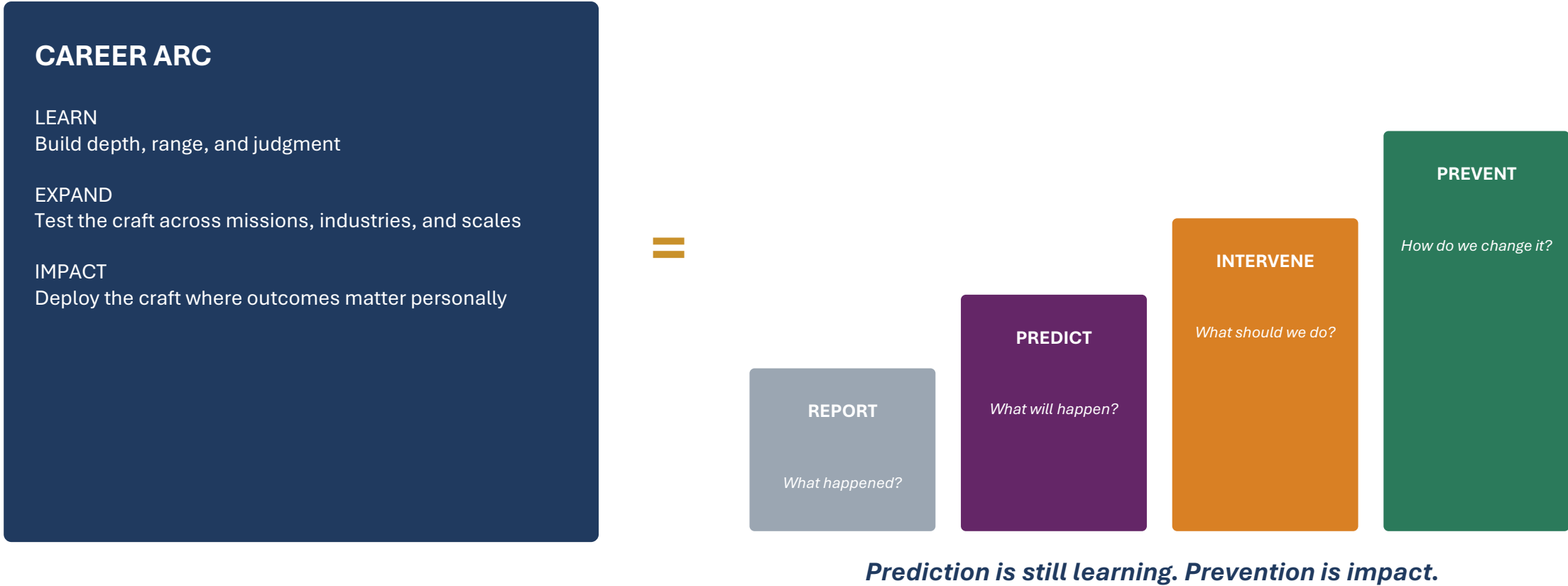
What am I optimizing for?



The pivotal career move was not changing employers. It was changing the objective function.

# My Career Shift Mirrors the Evolution of Analytics

*Learning becomes meaningful when it changes an outcome.*



## Four Things We'll Cover

### 01 The Problem

Student melt: a costly, preventable challenge

### 02 Our Approach

StIR, the Student Intervention Recommender

### 03 What Made It Work

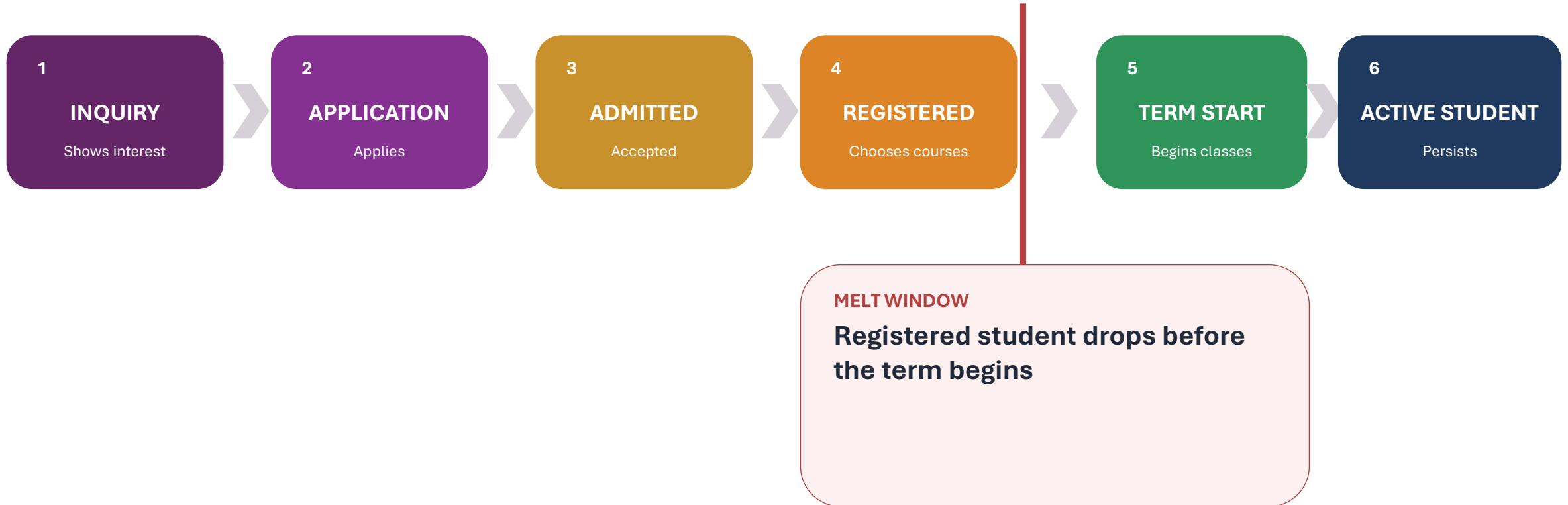
Partnership, trust, and the learning loop

### 04 The Results

Historic lows for 9 consecutive terms and \$3.34M retained

# The Student Funnel, in Plain English

*A student moves from interest to a live course start. Melt happens after registration, but before the term begins.*



# Student Melt: A Costly, Preventable Problem

## What is melt?

A student who has registered for courses drops out before the term begins, often silently, with no outreach trigger in legacy systems.

At Excelsior, melt had been historically high, representing lost tuition revenue and disrupted student trajectories.

## Revenue at Risk

Each dropped student means lost tuition, fees, and lifetime value.

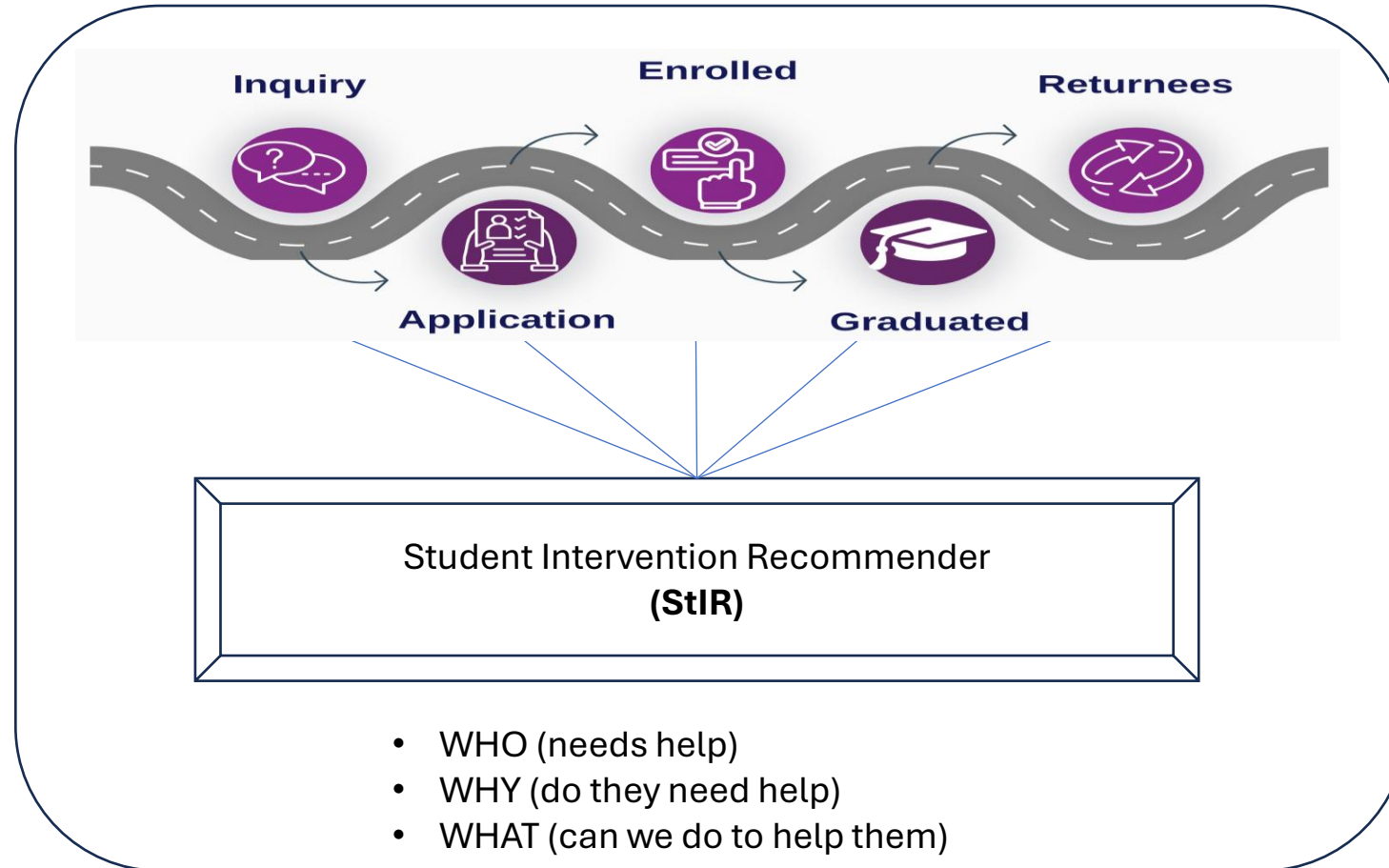
## Enrollment Volatility

Unpredictable melt makes census-day projections unreliable.

## Student Disruption

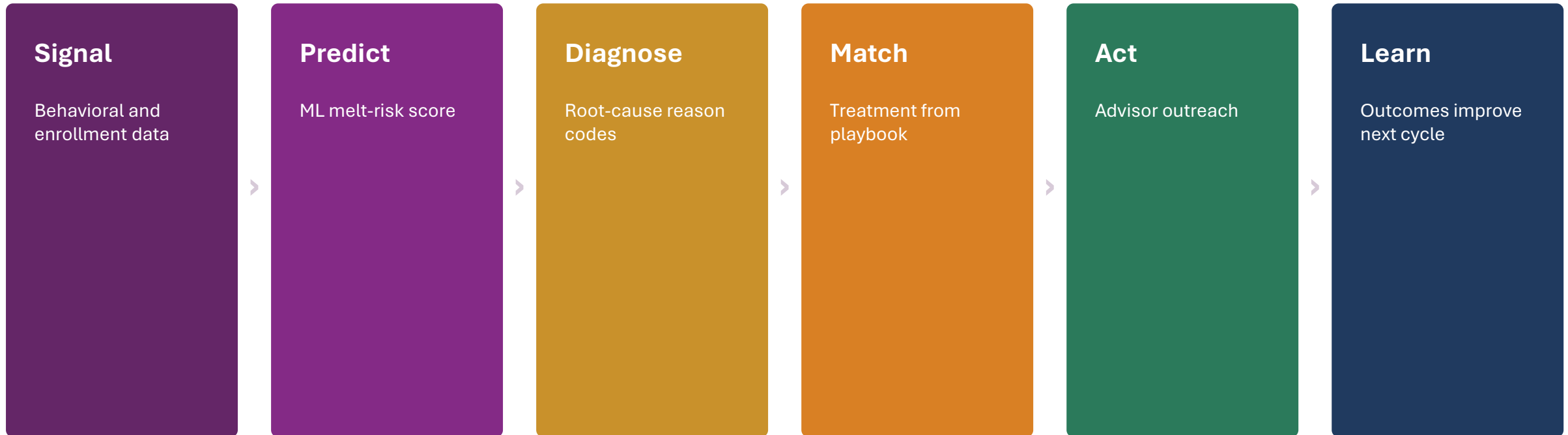
Melt can signal a student who needs support without an existing safety net.

## Introducing StIR: The Student Intervention Recommender



*StIR spans the student funnel: Inquiry → Application → Enrolled → Graduated → Returnees*

## Signal to Action: The StIR Melt Module Pipeline

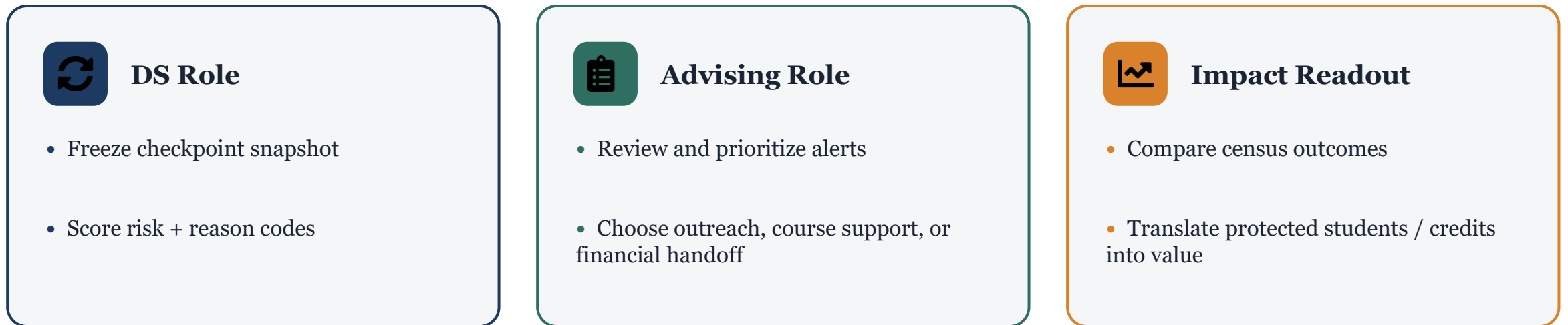
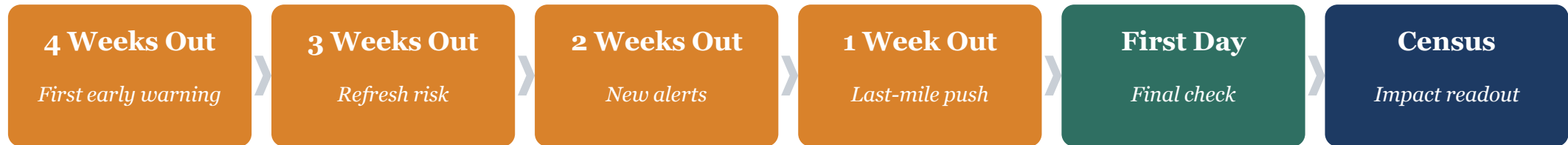


*🔄 The learning loop feeds outcomes back into every cycle, so each term sharpens the model.*

# What 'Connect and Iterate' Looks Like, Week to Week

*DS and Advising run the same repeatable cycle every term, from four weeks before start through census*

## THE WEEKLY CADENCE



# Four Things We Got Right, and Kept Re-Checking

## 1. Understand the Problem

Start with WHO, WHY, WHAT, not a modeling specification.

## 2. Articulate the Solution Path

Use a repeatable Signal → Predict → Diagnose → Match → Act → Learn pipeline.

## 3. Identify the Key Agents

Modules propose. The treatment inventory defines options. People execute. Outcomes teach.

## 4. Connect Agents and Iterate

Improvement comes from connecting the system, not from any single model.

# AI Deployment Is Hard. Trust Is the Real Work.

**“Sophisticated models are the easy part.”**

The real work is treatment development, manual workarounds where systems do not talk to each other and building trust with the staff who act on recommendations.

**Led from the front** Leadership modeled belief in the model before asking others to trust it.

**Worked through fears** One-on-one conversations happened before team-wide rollout.

**Preserved advisor agency** Model insights informed rather than replaced human judgment.

**Grew adoption deliberately** Four early adopters worked through the process before scaling.

**Earned the right to automate** Automation followed trust established through the first round.

# Historic Lows, Sustained for 9 Consecutive Terms

Since deploying the StIR Melt Module, results have been sustained rather than a one-term anomaly.

**3.5% → 3.1%**

Student melt rate

Latest-term melt rate compared with the pre-StIR baseline.

**\$3.34M**

Retained tuition value

Cumulative revenue protected since launch of the Melt Module.

**9 Terms**

Consecutive improvement

Historic lows sustained across nine enrollment periods.

## What This Means for Your Organization

01

### Start with the problem, not the model

WHO, WHY, WHAT keep data science aligned to a decision.

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02

### The model is the easy part

Treatments, integration, and trust determine deployment success.

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03

### Preserve human judgment first

Manual cycles and early adopters build the credibility to scale.

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04

### Measure, close the loop, repeat

Sustained results come from disciplined learning cycles.

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# Thank You

*Prediction without prevention is just a warning.  
StIR turns the warning into action, every term.*

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# Appendix