



Secondary Schools Master Scheduling Process Improvement

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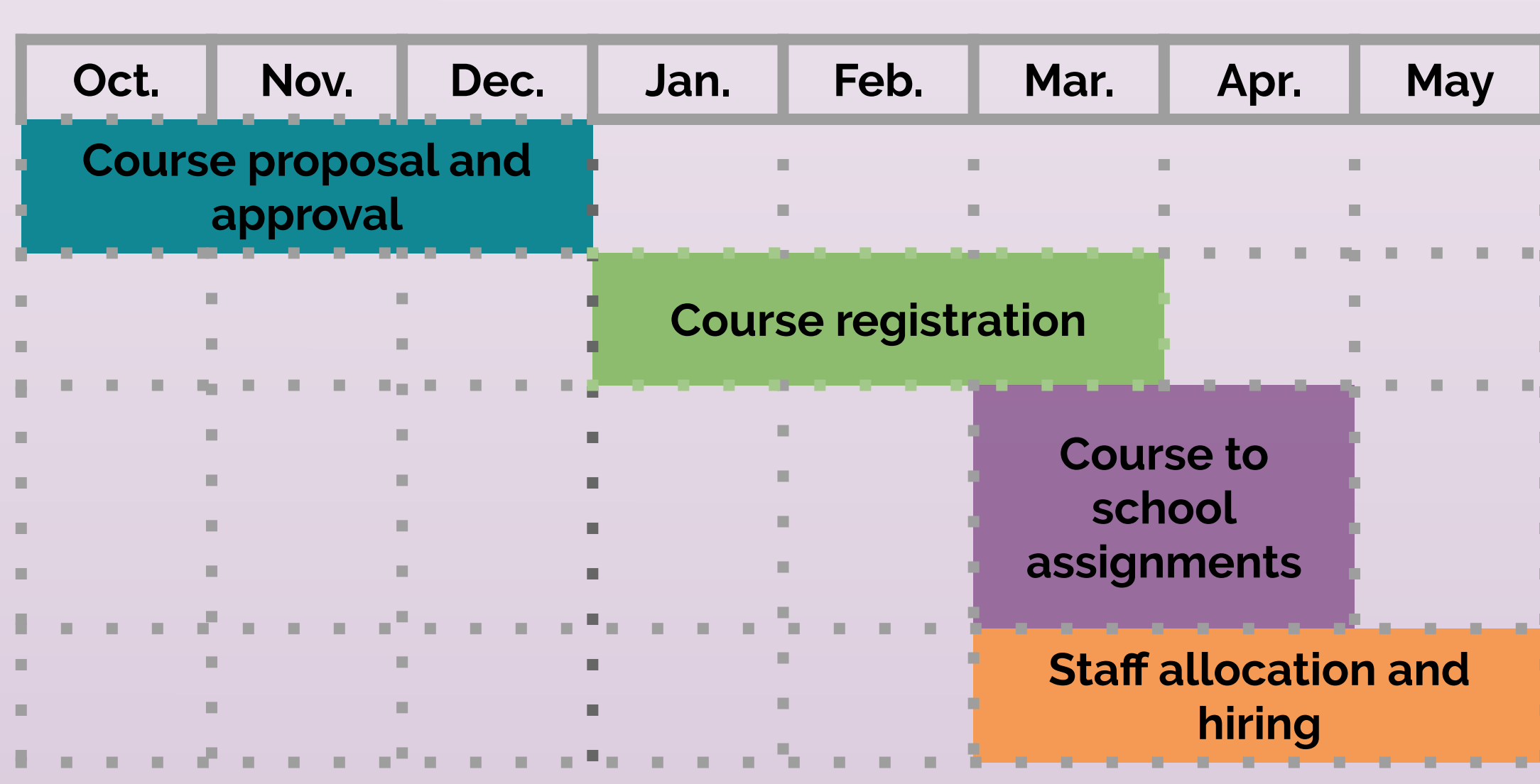
MCPS Mission

Every student will graduate career and college ready and become a productive, responsible citizen

Problem Statement

An 8 month master scheduling process leads to delays in hiring from a competitive pool of teachers and limits course offerings.

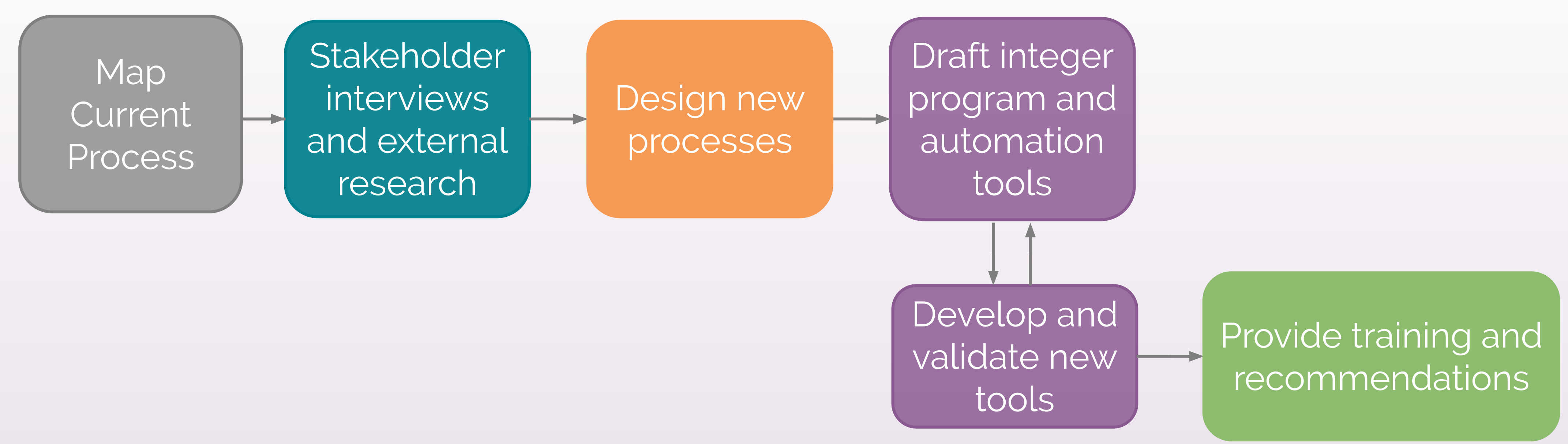
Original Process



Objectives

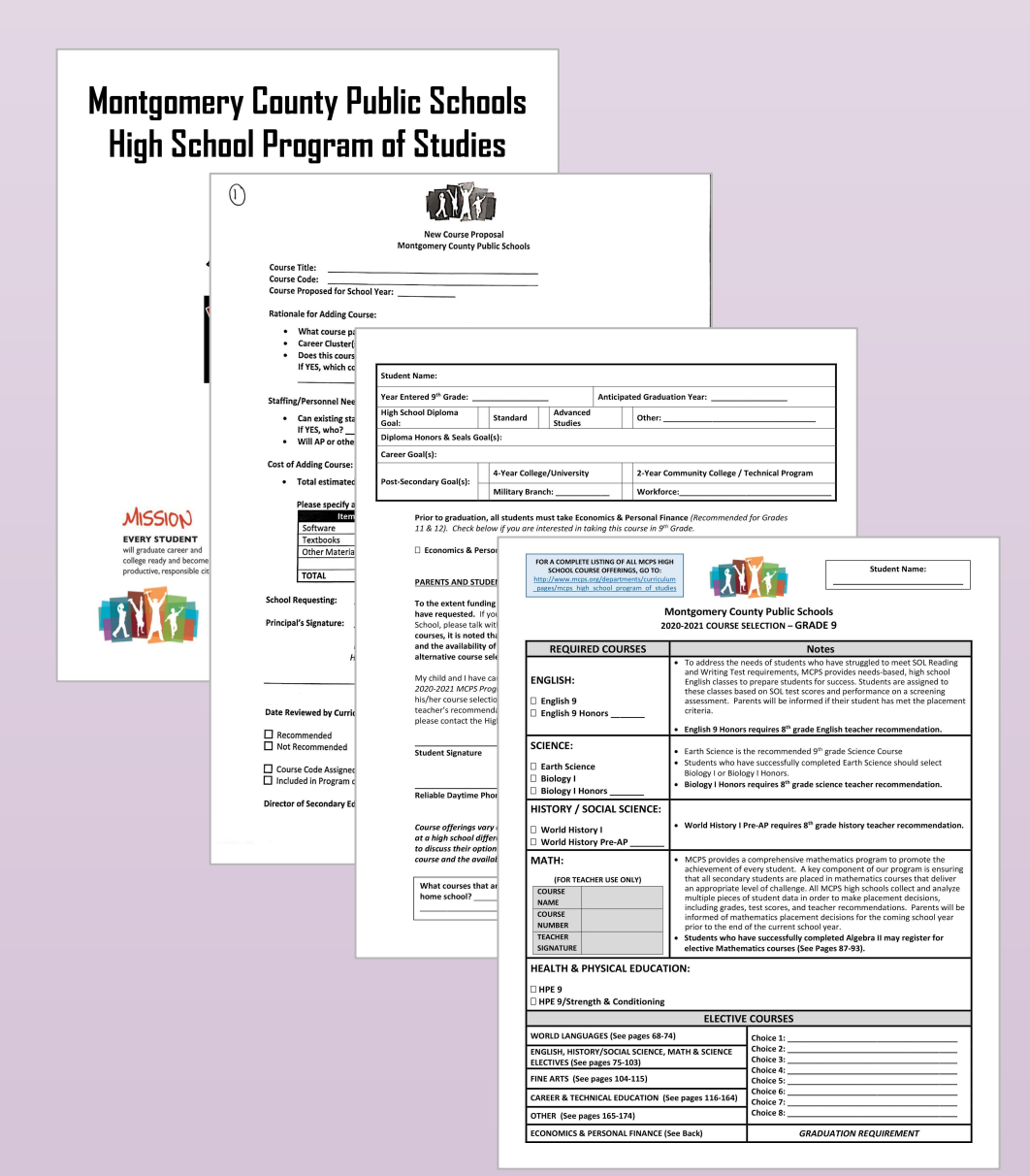
- Reduce time to complete master schedule to **less than 8 months**.
- Reduce manual data entry and handling by **75%**.
- Reduce number of student course registration changes for upcoming year.

A streamlined master scheduling process decreases district-wide delays when forming curriculum and increases time available for promoting instruction and hiring new teachers.



Exploration

Paper Forms



Stakeholder Interviews and Research

- Met with many stakeholders ranging from the superintendent, principals, guidance counselors, directors, and a parent
- Met with a counselor in Loudoun County Public Schools

Takeaways

- Aspects of PowerSchool registration interface can be controlled at district level
- Each school follows a different registration process
- Students do not understand the courses offered to them in the Program of Studies
- LCPS and MCPS both complete the course-to-school portion of scheduling process manually

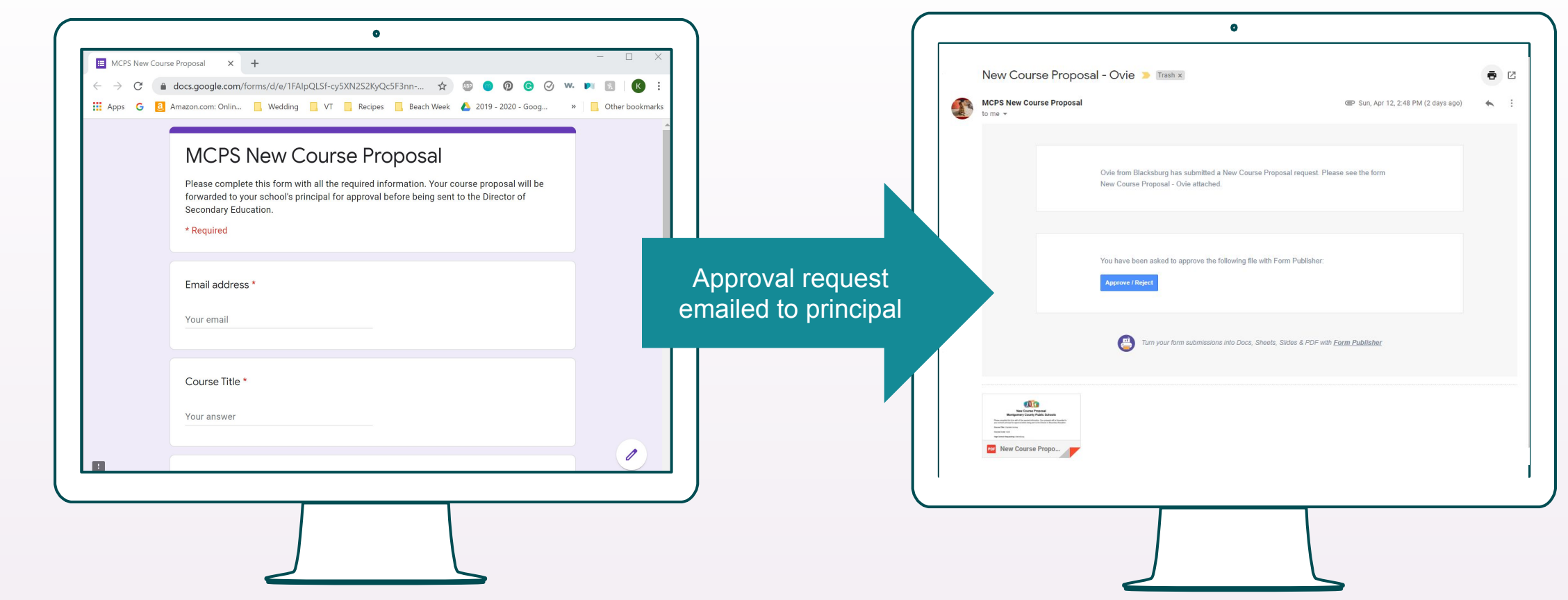
Solutions

Tools which automate the workflow of information and assign courses to schools based on student demand.



Deliverables

Digitized Course Proposal Process



Course Sorter and Section Calculator

Sort course demand into subjects in standardized format

Calculate sections with Integer Program
Objective: Minimize squared deviation from ideal class size

Inputs	Constraints	Outputs
# of Requests for Each Course	Class Section Student Capacity	# Students per Class Section
Ideal Class Sizes	Sufficient courses to meet student demand	# Sections Offered per Course
Limits for Class Sizes		

Recommendation and Implementation Document

- Outlines recommendations for digitized course registration
- Includes videos and step-by-step instructions for using tools

Impact and Results

7 → 3

Manual Tasks

619 hours

\$20,133

Saved in 3 years

Student Driven