



DATA VERIFICATION REPORT

OneApp Public School Enrollment Lottery

Submitted to
Recovery School District

On the date of
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Background

1.1 PROJECT SUMMARY

The purpose of this report is to verify the accuracy of school assignments made through the EnrollNOLA OneApp (“OneApp”) unified enrollment lottery. In consultation with the Recovery School District’s Office of Student Enrollment (“RSD”), Tembo conducted a series of data audits throughout 2016 to thoroughly review the output of the OneApp system. Data analysts at Tembo began working with the RSD in April to acquire, clean and analyze various administrative data files from different stages of the OneApp process. This report distills the key findings from that effort.

Broadly, the central goals of the audit were to ensure that OneApp functioned as intended by: 1) confirming the appropriate use of school priorities in OneApp assignments; and 2) ensuring that the highest priority applicants, through a combination of their qualified priorities and random lottery numbers, were assigned over lower-priority applicants.

The project team conducted a series of three analyses to accomplish these goals. They are described in detail in Section 2.

1.2 ABOUT ONEAPP

EnrollNOLA manages admissions, re-admissions, and transfers for 92% of New Orleans public schools and 84% of its students. As part of this work EnrollNOLA administers OneApp, the unified application process families use to apply to the schools of their choice, anywhere across the city. Families who participate in OneApp fill out a single application with all of their school preferences listed, and receive a single best offer to the highest ranked school with a seat available to accommodate their child. OneApp has adapted over time to include a diverse portfolio of schools with various programmatic models, governance structures and admissions criteria.

1.3 ABOUT TEMBO

Tembo was founded as a small business in 2010 in response to a need for better data management, analysis, and visualization services in the education sector. Tembo has since become a trusted partner and analytic leader in K-12 education, and provides a wide range of custom data services to state departments of education, school districts, charter management organizations, schools, and philanthropists.



Verification Findings

2.1 SUMMARY OF DATA AND METHODOLOGY

The project began with a data and documentation acquisition period during which RSD team members provided OneApp's administrative data files to Tembo. These included both school- and de-identified applicant-level datasets inclusive of data elements used to make school assignments. Such elements included students' randomly assigned lottery number; their schools and grade levels of application; their OneApp assignment status (an indication of whether or not the student was assigned or waitlisted, for example); and their qualified priorities (indications of the school-level admissions structures for which the student was eligible).

Tembo also obtained written requirements documentation accompanying those data. In some cases, the RSD also directly provided code or pseudo-code that was used internally by the RSD to manage its own data verification processes. These artifacts helped analysts at Tembo identify the correct parameters for each of the analyses below.

In conducting the analyses, Tembo followed an iterative approach to defining, executing and reviewing the key data verifications. This process is summarized as follows.

1. First, Tembo conducted an initial discovery interview with an RSD subject matter expert to understand the intended functioning of OneApp in a given area (e.g., waitlist assignments), and which data elements could be used to directly assess its accuracy.
2. Tembo then wrote formal business rules for each data verification and approved these with RSD to ensure they were aligned to the intended functioning of OneApp.
3. Analysts at Tembo then wrote custom code to automate the verification. These verifications were conducted in Stata 14, a statistical software package commonly utilized for data management and analysis.
4. Finally, Tembo convened a formal verification interview to review the results of the analysis, discuss any possible discrepancies and identify if and how the RSD mitigated these issues when they arose during the OneApp administration timeline.
5. In some cases, multiple rounds of verification were required as additional business rules and nuances in the data were identified.

2.2 SUMMARY OF DATA FILE VERIFICATIONS AND FINDINGS

There were three main verifications conducted on OneApp's main output file, referred to as the Master Match file. **Together, these verifications confirm that OneApp participants received fair and definitive school assignments aligned to the intended functioning of the OneApp system.**

1. Uniqueness. The first verification assessed the Master Match file's level of enumeration to ensure that it did not contain any duplication of students' school choices. The analysis involved assessing any duplicated information by applicant identifier and choice rank. **Tembo found no cases of duplicated student information or conflicting school assignments.**
2. Partial Priority Allocation. The second validation centered on ensuring that the total number of assigned seats within a school by priority type did not exceed the total number of available seats in that school, as apportioned by the school's partial priority structure. (For example, a school should not have more students assigned through its geographic priority than the total number of seats available to which the geographic priority applies.) **Tembo found no cases of mis-assignment to schools based on student and school priorities.**

To complete this analysis, Tembo followed three steps.

- a. Tembo first assessed the accuracy of the partial priorities file (PPF) itself. The PPF is a separate dataset containing information on the priority structure of each school-grade combination. It indicates, for example, what percentage of a school's available 5th grade seats are subject to geographic, at-risk and feeder-based admissions priorities. In its review, Tembo identified a duplicated record for one school and grade level, but the two records contained no conflicting information. Upon further investigation with the RSD, it was confirmed that the presence of this record did not present any downstream risks to the lottery assignment process.
- b. Second, Tembo ensured that each student's individual qualified priorities could be matched to the priority structure of their choice school and grade. In the few cases where student records did not match to the PPF, Tembo confirmed that no school priority information was required to make school assignments. (This included, for example, statewide scholarship students whose assignments are guaranteed.)

- c. Finally, Tembo directly assessed whether or not the total number of assigned students by qualified priority type exceeded the available seats based on each school and grade-level's priority structure in the allocation of feeder, geography and at-risk seats. Tembo identified one case where more students were assigned than expected based on the school-grade's geographic allocation. However, upon further investigation with the RSD, each of the placed students had an individual priority characteristic of greater significance that ensured their accurate placement in the school.
3. FamilyLink and Waitlist Assignments. The third validation analysis took two parts. First, it assessed whether or not any students whose FamilyLink selection was "broken" could actually have been assigned together. (FamilyLink is a process whereby siblings that apply to the same schools in the same rank order can indicate a preference to be placed together. These Links can be "broken" to enable siblings to be assigned separately.) After reviewing broken FamilyLinks, Tembo extended this methodology to assess more generally whether or not any accepted students had worse random lottery number assignments than non-accepted students with the same qualified priorities to the same school and grade level. **Tembo found no cases of students improperly assigned to different schools after a broken FamilyLink. Further, Tembo found no cases of students improperly assigned based on their random lottery numbers and qualified priorities.**
 - a. Tembo's review identified 84 cases of school assignments where all students in a broken FamilyLink had better random number assignments than accepted students with the same qualified priorities. In each case, students' specific qualified priorities or a legitimate manual correction ensured that a proper school assignment was made.
 - b. Tembo's review identified 21 cases of school assignments where accepted students had worse lottery numbers than non-accepted students with the same qualified priorities. In each case, a specific manual correction was made to ensure students received a proper school assignment.