

Presentation Script

The Case for Resource Reallocation: A Decade of TXST Library Circulation Trends

Team NAND — ~5 Minutes Total

DAVOS — Opening & Problem Statement

~1 minute

“Hey everyone, we’re Team NAND from the Department of Computer Science. I’m Davos, and with me are Nathan, Aleena, and Nathaly. Our project is called *The Case for Resource Reallocation: A Decade of TXST Library Circulation Trends*.”

“So here’s the big picture — Alkek Library’s total circulation has dropped 58% over the last ten years, from about 152,000 transactions down to 64,000. At the same time, Texas State is pushing toward R1 status and enrollment is approaching 40,000 students. So the question we asked is: does this decline mean students stopped engaging with the library, or did their needs just fundamentally change? And either way — how should the library reallocate its resources?”

NATHAN — Data & Methods

~1 minute

“I’ll walk you through our data and methods. We pulled ten years of TXST Library annual circulation reports — FY14 through FY24 — and merged that with IPEDS enrollment data from NCES to get institutional context. After cleaning and cross-verifying everything against the original workbooks, we engineered a key metric: checkouts per enrolled student, which lets us normalize against enrollment growth so we’re comparing apples to apples.”

“For modeling, we used a quadratic fit on the full ten-year range to capture the overall decline, then a linear fit on just FY21 through 24 to identify where things are stabilizing. And for our recommendations, we built a CAGR-based priority matrix — basically any collection declining faster than negative 10% annually gets flagged for reallocation.”

ALEENA — Results & Key Findings

~1.5 minutes

“So what did we find? A few big things. First — the engagement gap. Even adjusting for enrollment, per-capita checkouts fell from 2.89 to 1.60 between FY19 and FY24. So the decline is real, it’s not just more students diluting the numbers.”

“But here’s where it gets interesting — the technology pivot. Equipment and key checkouts surged with an 18.4% compound annual growth rate from FY21 to 24. That category now makes up 28% of all transactions, up from about 20% in FY20. Laptops are growing too.”

Meanwhile, print and media are steadily declining.”

“On the positive side, we do see stabilization. The recent linear trend shows roughly 370 additional transactions per year, so we’re projecting a baseline of around 63,600 to 64,000 going forward — the freefall is over.”

“And using our CAGR threshold, we identified clear ARC candidates — DVD shelves are declining at negative 24% per year, and Music Library and Juvenile collections are also well below that negative 10% line.”

NATHALY — Findings Framework & Implications

~1.5 minutes

“So pulling all of this together, our findings fall into three action tiers. First — **move to ARC**: DVD shelves, Music Library, and Juvenile collections. These are declining fast and should be relocated off Floors 5 and 6 to free up prime real estate. Second — **monitor**: General Collection, Graphic Novels, and Game Shelves. They’re declining but still generating meaningful volume, so they don’t need immediate action. Third — **invest more**: Equipment, Keys, Laptops, and the Secured Collection. That’s the growth story.”

“The implications are pretty clear. Space-wise, moving those ARC-tier collections opens up room for collaborative and tech-enabled spaces. Budget-wise, equipment lending needs more investment given that 18% growth trajectory. And staffing should start shifting from traditional circulation desk roles toward technical support and equipment management.”

“Basically, as TXST moves toward R1, Alkek doesn’t need to be a storage repository — it should be an innovation hub. And the data supports making that transition now. Thanks — happy to take any questions!”

Anticipated Q&A

Q: Why did you choose a -10% CAGR as your threshold for ARC candidates?

A: We tested several thresholds and found that -10% effectively separated collections in sustained freefall from those that are declining more gradually. Collections above that line, like General Collection and Graphic Novels, still generate meaningful loan volume and serve active user communities. Below it, the usage is so low that the floor space cost outweighs the access benefit — especially when ARC retrieval can fulfill the occasional request.

Q: How did COVID-19 affect your analysis? Aren't the declines just pandemic effects?

A: Great question. COVID definitely caused a sharp dip around FY20, and you can see that on our circulation chart. But the decline started well before the pandemic — circulation was already falling from FY14 onward. What COVID actually did was accelerate a trend that was already in

motion. And importantly, the post-pandemic recovery didn't bounce back to pre-COVID levels for physical materials, while equipment and technology checkouts surged past their pre-pandemic numbers. That tells us the shift is structural, not just a temporary disruption.

Q: How did you account for enrollment growth when analyzing circulation trends?

A: We created a 'checkouts per enrolled student' metric using IPEDS total headcount data. This was critical because TXST enrollment grew significantly over the decade. Even with that normalization, per-capita checkouts still fell from 2.89 to 1.60 between FY19 and FY24, confirming that this is a genuine engagement shift and not just a denominator effect from more students.

Q: What would you recommend the library do with the freed-up space on Floors 5–6?

A: We'd recommend a mix of collaborative tech-enabled spaces — think more equipment lending stations, group study rooms with integrated AV, maker spaces, or dedicated research computing areas. The data shows that students are increasingly coming to the library for technology access rather than physical books. As TXST pursues R1, spaces that support active research workflows would be a high-impact investment.

Q: What are the limitations of your study?

A: A few key ones. First, FY2024 class-level patron data was unavailable due to the FOLIO system migration, so we couldn't break down usage by undergraduate vs. graduate for that year. Second, circulation data only captures physical checkouts — it doesn't reflect digital resource usage like e-book downloads or database access, which have likely grown significantly. Third, our CAGR calculations are sensitive to the time window chosen, which is why we used separate windows for legacy collections versus recent demand signals. A fuller picture would integrate digital usage data alongside physical circulation.

Q: How confident are you in the stabilization forecast of ~63,600–64,000?

A: Our linear fit on FY21–24 shows a slight upward trend of about 370 transactions per year, which gives us that baseline projection. We're reasonably confident for the near term because the post-COVID data points are fairly consistent. That said, any major change — like a new digital platform rollout or a shift in university policy — could move that number. We view it as a stable floor rather than a precise prediction.

Q: Did you consider the impact on students who still rely on physical materials?

A: Absolutely. Moving collections to ARC doesn't mean eliminating access — it means shifting to a request-based retrieval model. Items stored in ARC can still be requested and delivered, usually within 24 hours. For the small number of users who still need those materials, the service level remains. But it frees up prime campus real estate for the majority of students whose needs have shifted toward technology and collaborative spaces.

Q: How did you use AI tools in this project, and how did you verify the results?

A: We used Claude and Copilot primarily for data extraction assistance and code generation — things like parsing messy CSV files and writing visualization scripts. Every data value was

manually verified against the original TXST Library reports. All analytical conclusions, the CAGR framework, and the recommendations are entirely our own work. AI sped up the grunt work, but the thinking is ours.

Team NAND — Davos DeHoyos, Nathan Negera, Aleena Tomy, Nathaly Ingol
Department of Computer Science, College of Science and Engineering, Texas State University