



# The CIO's Handbook for Proven and Practical Cost-Savings with Data Management





# Introduction

**In times of economic uncertainty, school districts face the daunting challenge of delivering quality education while operating within increasingly constrained budgets.**

With every penny scrutinized and resources stretched thin, finding innovative solutions is imperative. In this landscape, PowerSchool's Connected Intelligence solution emerges as a novel answer, offering a unique approach to generating substantial cost savings and enhancing operational efficiencies.

## In This Guide:

This handbook focuses on cost-saving and practical solutions for schools to utilize their data clearly, seamlessly, and securely. Inside, you'll learn how to:

- 1 Maximize cost efficiency
- 2 Eliminate operational expenses
- 3 Automate ad-hoc reporting
- 4 Mitigate data breaches and ransomware attacks
- 5 Promote transparency and accountability
- 6 Balance resourcing and talent struggles
- 7 Understand and optimize school systems with declining enrollment
- 8 Leverage AI for data analysis



# 1 Maximizing Cost Efficiency

The fragmented nature of data systems in school districts, redundant data sources, on-premise storage systems for historical student or financial data, and terabytes of files are highly inefficient and a significant barrier for districts working to drive the data transformation for maximizing the effectiveness of providing meaningful, real-time data about student performance to educators.

The secure, turnkey Data-as-a-Service platform for K12, **Connected Intelligence** provides a cost-effective solution for accessing and managing data, eliminating hefty infrastructure investments, and aiding districts' data modernization efforts. Consolidating data leads to significant cost savings, allowing districts to channel funds into critical areas such as student programs and staff development.

PowerSchool estimates annual savings of **\$200,000 to \$300,000** in infrastructure and data management expenses by securely and reliably consolidating, managing, and processing data from 10-12 disparate systems in **Connected Intelligence** for a 50,000-student district.



“ We had started a process to build a data warehouse about two years before Connected Intelligence K-12. As we were trying to identify long-term costs, we found that while we had the upfront capacity—because of ESSER dollars to make the investment in the actual creation of it—the estimated long-term cost and even the monthly cost when you’re trying to do all of that internally was beyond what we had the capacity for. ”

**JOSIE STURGIS** | Director of Assessment Data  
Des Moines Public Schools

## 2 Eliminating Operational Expenses

The most significant challenge with any data initiative is [reliable data acquisition](#), with the next obstacles typically being high latency and poor performance of data transfers. Broken and unreliable data pipelines cause end-user frustration and loss of confidence in data, which is another reason why most data projects fail.

Connected Intelligence automates the entire data management lifecycle with high performance, low latency, 24/7/365 data monitoring and observability, stringent data security, and self-healing architecture, providing the most reliable data platform that eliminates manual efforts and minimizes errors.

By providing a unified platform for storing, securing, processing, retrieving, and analyzing data, Connected Intelligence empowers districts to achieve the fastest time-to-insights with data access within two days (48 hours) of project kick-off. This ensures that sheer data management tasks don't consume valuable time and resources.



“ State reporting used to be a challenge for us as we had to manually procure data across our multiple school systems, but implementing Connected Intelligence K-12 removed this burden, making data procurement and management very convenient. Within 48 hours of our initial kick-off call, Connected Intelligence K-12 was already drawing data across each of our SIS systems including all years of history and all data elements without any constraints. Between the consolidation of our disparate data sources and the quick turnaround of making this data available for immediate use, we're excited to fully utilize this product in our technology workflows for streamlining data and research requests across the organization. ”

**MATT BARRETT** | Director of Data and Performance  
El Paso County School District 49

## 3 Automating Ad-hoc Reporting

Each week, data analysts dedicate substantial time to executing inefficient data loading procedures, involving laborious secure file transfer protocol (SFTP) transfers of files with assessment vendors or other third parties. This sluggish, manual workflow not only consumes valuable analyst hours but also constrains the school and district staff's access to crucial data insights.

Connected Intelligence automates operational reporting and one-off data requests by providing a centralized repository with all data elements and all years of history. With reliable data ingestion and stringent service level agreements (SLAs), analysts can trust that data is securely available when they need it, and they can analyze that data without manual intervention or having to babysit data syncs.

Automated workflows and scheduling can be implemented to generate and deliver reports on demand, reducing the time and effort required for ad-hoc analysis and reporting tasks.

Save at least  
**12 weeks annually**  
with automated updates,  
ditching manual tasks.  
Free up analysts to  
innovate and optimize  
instructional planning  
like Volusia County.



“ Connected Intelligence K-12 has increased the efficiency of the work completed and allowed for our data analysts to continue to innovate since they no longer have to spend countless hours migrating and formatting data. With Connected Intelligence K-12, the Power BI dashboards are updated every hour from 7am - 4pm. This allows for our schools to receive the most up-to-date information in real-time. ”

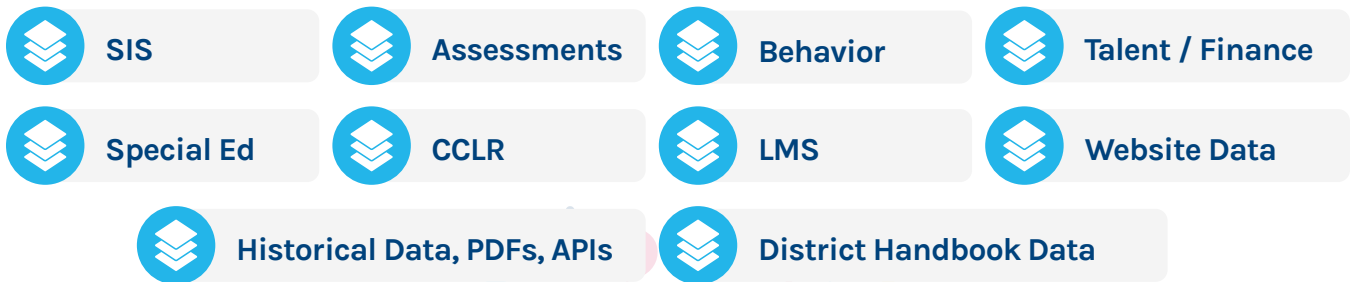
DR. ANGEL R. TERON | Coordinator Research, Evaluation, and Accountability  
Volusia County Schools

## CONNECTED INTELLIGENCE

# Unlock K-12 Data with the First Turnkey Data-as-a-Service Platform

## Advantages

- Secure data from traditional siloed environments with **real-time access**
- Suite of **end-to-end** data management and AI tools
- All data elements, all years of history, **custom schemas**, and fields
- **Fully automated**, end-to-end data pipelines for trusted, reliable data access



Within **48 hours** of Project Kick-Off



Data Governance

Time-sensitive, Real-time Updates

Simplify Integrations

Build Self-Service Data and AI Apps

Cybersecurity

Event-Based Notifications

Ad-hoc Reporting

Data for AI and PowerBuddy

Historical Data Archival

Data Quality

Query and Analyze PDFs

Cost Savings

# 4

## Mitigating Data Breaches and Ransomware Attacks

Education and government agencies have quickly become the prime target for cyberattacks due to the wealth of sensitive data they hold, including student and staff personal information, financial data, and proprietary educational resources. Additionally, K-12 districts often have limited resources and an outdated infrastructure, making them more vulnerable to cyber threats. According to cybersecurity firm Emsisoft, at least 108 K-12 districts were impacted by ransomware attacks in 2023, more than double the 45 districts that were impacted in 2022.

Connected Intelligence employs robust encryption methods to safeguard data both at rest and in transit, ensuring that sensitive information remains protected against unauthorized access. Stringent data governance, access controls, and authentication mechanisms restrict access to authorized users only, mitigating the risk of threats and unauthorized data manipulation.

Continuous monitoring and threat detection systems actively identify and respond to potential cyber threats, while

routine security audits and updates ensure that the data lake remains resilient against evolving security risks. Thus, the integrity and confidentiality of data within the K-12 district is safeguarded while relieving the district of having to invest and keep up with the ever-changing security landscape.

**According to Comparitech, Buffalo Public Schools, in New York, spent around \$10 million on recovery efforts after a cyberattack in March 2021. Baltimore County Public Schools spent around \$8.1 million. Monetary losses from K-12 cyberattacks range from \$50,000 to \$1 million per incident, according to the U.S. Government Accountability Office.**

## 5 Promoting Transparency and Accountability

Each year, K-12 districts across the nation inadvertently squander hundreds of millions of dollars due to a lack of visibility into their spending and operations. Without clear insights into how funds are utilized, districts may overspend on unnecessary services and overlook inefficiencies. This misuse of funds highlights the critical importance of consolidating data in a centralized system that makes it possible to analyze, correlate, and act upon.

With improved visibility into transportation data as an example, a district could identify specific areas where inefficiencies occur, such as inefficient routing, underutilization of buses, or even changes to where magnet programs are offered. By analyzing data on bus routes, driver schedules, fuel usage, and maintenance records, the district could pinpoint areas for improvement and implement targeted solutions to optimize its transportation operations to make it easier for students and families.



# 6

## Balancing Resourcing and Talent Struggles

As K-12 school districts grapple with tightening budgets, the competition intensifies for tech talent such as data engineers and DevOps resources with specialized skills. These professionals are crucial for developing and maintaining custom data solutions tailored to the district’s unique needs. However, PowerSchool’s turnkey off-the-shelf Data-as-a-Service solution, Connected Intelligence presents a cost-effective and sustainable alternative.

Connected Intelligence offers instant advantages of data modernization, real-time insights, and protection against cybersecurity attacks without the need for extensive technical expertise. Moreover, Connected Intelligence mitigates the risk of talent turnover, ensuring long-term continuity and sustainability of data projects which are critical to district operations.

Unfortunately, many companies are letting data infrastructure inefficiencies sap their engineering resources. **According to a new report by Wakefield Research, the average data engineer spends 44% of their time maintaining data pipelines.**



“ In looking at the type of full-time employee we needed to hire—either internally or contracting for cloud-based architects with programming and project management skills needed—we wondered if we could even get people with those specialized skillsets to come to a K-12 district when they could probably go to the private sector and make a lot more than working for us, even with great benefits. And looking at costs of consulting out that work got astronomical quickly. Even the cost of cloud storage and hosting was larger than anticipated just to make it run. ”

**EMMA KNAPP** | Continuous Improvement Coordinator  
Des Moines Public Schools

# 7 Understanding and Optimizing Declining Enrollment

In the face of [financial pressures](#) stemming from [declining enrollments](#), school districts are confronted with difficult choices, compounded by a range of challenges including [staffing reductions](#), facility underutilization, restricted extracurricular options, diminished program diversity, and negative community impacts. In this challenging environment, skillfully harnessing all available district data emerges as a vital asset, offering a potential advantage in navigating these challenges.

By consolidating data from sources like enrollment databases and Google Analytics, districts can correlate and analyze website

usage behavior with enrollment and prospective students, aiding in enrollment optimization efforts. This proactive approach not only helps mitigate financial pressures but also preserves community engagement and minimizes disruptions to student learning, particularly amidst the ongoing challenges posed by the pandemic.

Learn more about the positive impact driven by Connected Intelligence [HERE](#)



“ It’s now possible to create data products that were previously too difficult or impossible to provision with our legacy systems. With these powerful data tools and insights, the new system can help to overcome the productivity inhibiting factors of the previous system. Connected Intelligence is ultimately flexible in its design, breadth of stakeholder use, implementation of research (in whatever form), and operational time to value. ”

HUGH GOURGEON | CEO and President  
Challenger School

## 8 Leveraging AI for Data Analysis

PowerBuddy for Connected Intelligence is a virtual assistant that leverages AI to streamline the generation of SQL queries tailored to the logged-in user’s authorization context. PowerBuddy helps with fetching and visualizing data—and it presents natural language insights within minutes. This accelerates tasks that typically consume several hours for a data analyst who would otherwise need to first comprehend the data model, then decipher relationships between data entities, craft SQL queries, create visualizations, and manually interpret insights for stakeholders.



“From the ability to unify access to our data for research and ad-hoc analysis, to using predictive insights for preparing our students for the workforce, Connected Intelligence will revolutionize the way we use data for mission-critical initiatives to drive our students’ success.”

HUGH GOURGEON | CEO and President  
Challenger School

**The ultimate platform for data management and access, and the foundation for AI.**

Connected Intelligence K-12 is the first data as a service (DaaS) platform to help K-12 districts securely centralize, secure, and access their data—all powered by AI.

[VISIT THE WEBPAGE](#)



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Personalized Education for Every Journey

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