Education Services

Education Data Management:
Turning data into actionable information to enhance student success
An effective Education Data Management system optimizes technology and information to enhance teaching, boost student performance, and improve operations. Adopting a powerful, robust, and reliable Education Data Management (EDM) system is critical to the success of students in any educational institution. Building and implementing a comprehensive EDM program delivers the tool sets needed for educators to effectively capture and process information to inform instructional practice, improve student achievement, and streamline operating performance.

Meeting the challenge

While most schools collect an abundance of information electronically, they face daunting challenges cleansing, integrating, identifying, consuming, and analyzing that data to improve educational outcomes. Common obstacles around mining and analysis include: ensuring high-quality data, isolating the right information, relating data to performance, documenting workflow and data management processes, outdated and disjointed technology systems, and difficulty compiling accurate and meaningful reports. Unfortunately, the adage that there is "too much data and too little information" is proving true in many schools.

To meet increasingly challenging education goals, many schools are looking to modernize their information technology resources to deliver the timely and meaningful feedback they need to positively impact instruction initiatives, operations, and decision-making. A strong EDM program provides high-value information to students, administrators, teachers, faculty, staff, parents, and other stakeholders.

Introducing … Dell’s Education Data Management solution

The Dell Education Data Management (EDM) solution is an information management and analytics framework designed to meet and exceed organizational goals while addressing federal, state, and local mandates. Once deployed, your institution’s EDM strategies and technologies can not only help enhance student achievement, they can also track and optimize information flow relating to HR, financials, facilities, and other enterprise operations, all of which have an impact on your institution’s ability to educate students.

Our EDM portfolio is an end-to-end solution with offerings from an initial readiness assessment, to a planning and design roadmap, to solution implementation, to long-term maintenance and support. To help ensure sustainability and future success, current technology assets and capabilities are taken into consideration when designing the best long-term solution.

The Dell services team can help you build an EDM environment with the tools, technologies, systems, training, and guidance that empower timely, relevant, high-quality data for high-impact decision-making. The results include improved educational outcomes, increased efficiency, and less tedious reporting.

The foundation of the Dell EDM system is high-quality data that is:

- Complete
- Accurate
- Reliable
- Timely
- Consistent
- Accessible
- Relevant
- Valid

The core components of the Dell EDM system are: Master Data Management, Data Warehousing, Education Intelligence tools, and an Education Data Portal.
Master Data Management

Master Data Management (MDM) is a set of processes and technologies that define, identify, and manage critical data objects that exist throughout multiple systems, applications, and business processes across the organization. MDM collects, aggregates, matches, consolidates, and validates high-quality data to arrive at a “single source of truth” across the enterprise. The accuracy and accessibility of Master Data forms the basis of an institution’s Education Intelligence program.

Why MDM is increasingly important

There is a continuing need to provide a broader analytical view of information. A strong MDM program creates an authoritative view of core data for key constituent groups while optimizing transactional and reporting systems to reduce Total Cost of Ownership (TCO). MDM is now a fundamental organizational need because:

- Information capture and flow is more pervasive than ever
- There are more regulatory requirements at all levels
- There is a greater need to communicate with students, teachers, faculty, staff, parents, alumni, regulators, and the community
- There is a greater need to get more out of existing technology investments

The Dell approach

Dell has logged more than 500,000 hours of combined MDM services expertise from past customer engagements. This experience means our team brings the skill sets and best practices needed to build proven processes and technologies that collect, store, integrate, validate, and distribute data. Our disciplined governance methodologies help ensure that data is used with greater accuracy and standardization across the enterprise.

The Dell MDM Solution

Dell’s holistic MDM offerings include: strategic business transformation services, tactical data integration, management support, and operational sustenance services. Our solution enables education institutions to manage information capture, standardize and correct data, identify and merge duplicate records, enrich constituent profiles, enforce compliance and risk policies, and distribute a “single source of the truth” to downstream consuming systems.

Your Benefits

Our MDM solution makes it easier for your organization to:

- Integrate and reconcile data from disparate sources
- Improve data quality and integrity
- Track educational performance and facilitate analytics for decision support
- Establish accountability and governance
- Meet regulatory compliance requirements

Case in Point

Data Management technology promotes school district’s ability to improve learning outcomes

A prominent district in the Southeastern U.S. partnered with Dell to enhance their Education Data Management (EDM) processes and improve the quality, accessibility, and timeliness of information. Through the integration of new hardware, software, and services along with analytic tools, dashboards, and flexible reporting, Dell empowered the district with the technologies to use their data effectively.

The EDM solution includes an integrated, central repository data warehouse for district data related to student outcomes and achievement, and the processes to transform, clean, and integrate information from a variety of disparate systems. This solution includes a streamlined web site portal to publish the district’s scorecards and on-going progress towards goals in a user-friendly and consumable format for access by district constituents, interested parents, and the general public.

This web portal provides single sign-on capability for teachers, allowing them to securely and more effortlessly access a number of internal systems used throughout the day. It also provides a platform for users within the schools and classes to share information, submit and track assignments, and view data relevant to the class. The portal is the online interface that enables data analysts and other authorized users to access data specific to their needs 24/7.

The district can now share data with stakeholders and truly use it to influence education outcomes.
Case in Point

Robert Morris University realizes $60,000 in annual cost savings with a Microsoft solution designed and implemented by Dell

Reports pertaining to admissions statistics, student demographics, and institutional information were diverting IT staff time from strategic activities such as upgrading legacy software and developing new user interfaces for internal applications.

Dell Services designed and helped the university implement a robust reporting solution using Microsoft SQL Server 2008 data warehouse along with SQL Server Reporting and Analysis Services. Through Microsoft Office SharePoint Server 2007, the solution enables self-service reporting by end users.

Benefits to the university include:

- Projected 13 hours/week reclaimed for programmer and 18 hours/week reclaimed for data analysts
- $60,000 annual cost savings
- Six-figure cost avoidance on purchase of alternative software solution

“We’ll no longer have to reinvent the wheel every time someone needs a report. I expect to free up about one-third of my time for more value-added tasks.”

Dino Cehic
Programmer Analyst
Robert Morris University

Data Warehousing

Data Warehousing (DW) is the platform architecture that provides a secure, integrated information repository that enables and standardizes data flow to increase productivity throughout a district, school system, or university. A powerful and centralized DW system makes it easier and more efficient for users to access, retrieve, and analyze data.

What Makes a Successful Data Warehouse

Data quality, availability, governance, processes, and training are key components to establishing a high-performance data warehouse environment. Common objectives include:

- Integrating data from various islands to deliver a "single-source-of-truth"
- Optimizing infrastructure to achieve economies of scale and lower TCO
- Building a centralized, secure storage system to keep data available continuously
- Automating and standardizing to improve accuracy and minimize risk
- Adding efficiency to data storage, management, and distribution

The Dell approach

Using innovative strategies that balance performance and value, Dell has a proven record of implementing both large and small data warehouse environments. We support more than 111 million systems – many of which are in data warehouses – and offer a full team of technology professionals with a deep understanding of DW and Education Intelligence. Our DW strategy centers around three key phases of repository management: Staging, Information Delivery, and Analytics.

The Dell Data Warehousing Solution

We have extensive expertise deploying and running Dell tools and technologies, as well as those of other providers including IBM, HP, Microsoft, Oracle, SAP, and SAS. We can also help you evaluate and establish a private cloud environment to add IT flexibility, control costs, and provide a better way to handle seasonal peak loads. Our services and solution packages include:

- Readiness Assessment Consulting
- Data Warehouse Solution Architecture and Development
- Database Migration, Integration, and Cleansing
- Tool Migration and Upgrades
- Application Development, Maintenance, and Testing
- Data Governance Strategies
- Performance Engineering
- Cloud and Software as a Service (SaaS) options

Your Benefits

Dell’s high-performance DW solution helps you:

- Positively impact education outcomes
- Optimize productivity and performance
- Leverage IT assets to create added value while minimizing costs and risks
- Empower access and consumption of information easier, faster, and more intuitively
- Solidify the storage environment to improve business continuity
**Case in Point**

Dell is providing critical planning, development, and integration services to help a progressive school district implement a revolutionary Education Intelligence system.

Laramie County School District #1 wanted to improve student achievement, increase effective and efficient practices, and better use resources through data-driven, metrics-based decision-making. To provide the foundations for a robust Education Intelligence system while implementing a Longitudinal Data System, Dell is delivering frontline services to the district’s technology staff for key initiatives including virtualization, data storage, data warehousing, and information analytics. A flexible and easy-to-use data portal is included to allow users to access, process, and categorize dynamic information and obtain immediate information in a variety of formats. The results will help the district obtain deeper data on student achievement and information trends that affect the organization. Phase 1 of the Education Intelligence project is scheduled to launch in the Fall of 2011.

“When we decided to create a powerful new Education Intelligence system, Dell provided technology and services to help us with the project. We are excited for the expected results.”

Gordon Knopp
Director of Technology (CIO)
Laramie County School District #1, Cheyenne, WY

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**Education Intelligence**

Comprehensive, enterprise-wide Education Intelligence (EI) initiatives drive better information access, stronger decision-making, and improved educational performance. Your EI platform should not only provide background analytics for student achievement, budget, and operations management, but it should also deliver information instantly when handling day-to-day requests from parents and students, as well as other departments and institutions.

**What is Education Intelligence?**

Education Intelligence (often called Business Intelligence in commercial enterprises) delivers data that impacts business and operations while providing the basis for timely and informed decisions that affect student achievement and institutional performance. In addition, a strong EI program provides major informational insights to target and recruit the best students, administrators, faculty, and researchers. It also provides reliable reporting for regulatory compliance, grant applications, alumni records, and other critical institutional data.

**The Dell approach**

By leveraging integrated technology systems, Dell consolidates information from various departments and data silos to deliver information you need in a format you can use. We use metrics-driven processes and methodologies based on deep domain expertise and global best practices. Our strong partnerships with Microsoft, Oracle (including PeopleSoft and Hyperion), SAP, and SAS, as well as other education applications, help ensure that EI programs provide the best results possible to drive continuous improvements. We use consultative advising to help you design, implement, and optimize an EI program that:

- Harnesses predictive analytics to better manage student outcomes
- Optimizes enterprise-wide operations
- Benchmarks data to measure performance and facilitate improvement
- Drives institutional alignment based on information-sharing

**The Dell Education Intelligence Solution**

With so many demands on their EI programs, most institutions need an experienced partner to help create the best strategic, analytic, and reporting solutions. Our capabilities include:

- Lifecycle Services for implementing and maintaining high-productivity EI and reporting
- Development Services to optimize master data, the data warehouse, and an LDS solution
- Support and Maintenance Services for production and metadata management
- Testing Services to ensure performance and functionality
- Solution Accelerators to improve accuracy, reduce cycle time, and drive quicker Time-to-Value
- Assessment Services that evaluate business needs, organizational support, and infrastructure requirements

**Your Benefits**

Our Education Intelligence programs are designed to provide:

- Innovative education delivery to improve student performance and educator effectiveness
- Better management of student learning activities and programs
- More accurate, complete, and timely information
- Increased efficiencies in data-heavy departments
- More effective tracking of teacher certifications and placement
- Reduction of paper records and streamlining of approvals processes
Case in Point

Dell implements a university portal to improve online registration and overall communication

A major university in the northeast needed a less costly and more effective solution to share information with students, faculty, and alumni. Dell designed and deployed a single user interface with a streamlined approach to sharing information with key constituent groups.

The solution enables document and content management along with core workflow processing. The university can now more effectively manage online registration and distribute information to specific audiences including schedules and class rosters, class registration, alumni reunions, fundraising campaigns, news, and more.

Education Data Portal

An effective, web-based Education Data Portal is a self-service site for users to access and process the information they need wherever and whenever they need it. Your institution’s portal can be designed to present information in easy-to-interpret dashboards and scorecards that help focus on the most critical, actionable data. To increase ease of use, a single sign-on can be used to access other digital assets elsewhere on the network.

What makes a successful Education Data Portal?

A flexible portal architecture sets up a central site for students, administrators, teachers, faculty, staff, and stakeholders to access information, manage core content, analyze data, and collaborate with others. Options can be built in to support:

- Intranets, internets, extranets, and more
- Communication options such as blogs, wikis, enterprise Web 2.0
- Community group categories
- Content management systems, reporting, and archiving

The Dell approach

We deliver a secure and reliable interface platform enhanced with robust search capabilities that help users rapidly find and use information. Our long-term commitment to education technologies provides us with a unique perspective to manage and report from Student Information Systems, transportation, food services, athletics, and other core education applications including financials, HR, facilities, grant management, and more. We also have an established track record of finding ways to reduce time, costs, and risks throughout each project.

The Dell Education Data Portal Solution

A multitude of organizations across industry segments have partnered with Dell to design and maintain their information portals. Many of our Solutions Architects are Microsoft Certified and we are recognized experts in supporting SharePoint tools, as well as other portal technologies, including Agilix. Our services include planning and requirements consulting, system architecture, integration services, and user adoption management.

Easy-to-use dashboard screens improve report interpretation and analysis

Your Results

Our Education Data Portal solution delivers:

- Around-the-clock access to reliable and accurate information
- Access to self-service reporting tools that increase productivity and reduce IT management costs
- Automated and centralized online reports that reduce error-prone spreadsheets
- An overall increase in efficiency and innovation through access to better intelligence analytics
- Better information-sharing to reduce meetings and travel costs

Education Data Portal
Complete end-to-end Dell EDM solutions optimize cost-efficiencies and information accuracy across your school system

In addition to Master Data Management, Data Warehousing, Education Intelligence tools, and the Education Data Portal, the Dell EDM solution can also include whatever level of assistance you need. Including:

- Professional Learning
- Strategic Planning
- Process Management
- Infrastructure Services
- Applications Services
- Unified Communications
- Readiness Assessment

**Professional Learning.** For your EDM initiatives to get adopted and used effectively, Dell offers a unique professional learning program for your school or district based on current skill levels, usage, subject areas, and user groups. Your customized PL plan combines development, training, and experiences to help teachers, support staff, and administrators confidently integrate EDM technology into their work stream to save time and improve performance. Dell can also provide data coaches that help teachers target instruction based on the data gathered.

**Strategic Planning.** Deliverables include a business/technical/information assessment, along with a readiness evaluation and a planning roadmap to help formulate an actionable technology vision and build a business case for creating or evolving EDM. End goals are to consolidate approaches and tools for reporting, analysis, and decision-making.

**Process Management.** Education Process Management is an array of learning and action-based services that drive EDM implementations and management procedures. To deliver world-class results, Dell uses a structured approach with Lean Six Sigma tools and “voice of the constituent” data. The Process Management output uses defined performance metrics and statistical modeling that identify the key drivers and predictors that enhance education process performance while providing a framework for continuous improvement opportunities.

**Infrastructure Services.** With deep levels of experience working with most major hardware and software brands, Dell can proactively support your servers, networks, and PCs. We also deliver full end-user support services to boost productivity for your mobile student, faculty, and staff populations. Our goals are to reduce your maintenance costs and achieve continuous IT improvements. Dell is among the industry leaders in the newest high-efficiency technology management strategies such as cloud, virtualization, and environmentally-friendly IT.

**Applications Services.** Using industry-standard ITIL frameworks along with SDLC, CMM, and Agile methodologies, our applications team delivers life-cycle services including development, modernization, integration of new data sources, performance tuning, production support, and governance processes. We can help you manage all key EDM and ERP applications, including:

- Microsoft
- Oracle, PeopleSoft, and Hyperion
- SAP
- Education ERP solutions such as Banner and Datatel
- Student Information Systems such as Infinite Campus and Crosspointe
- Learning Management Systems such as Blackboard and Moodle

**Unified Communications.** Dell offers a Unified Communication (UC) program that works within your data network and phone system to add powerful new mobility and functionality. Using a cost-effective open-source Internet Protocol (IP) network, UC integrates e-mail, voicemail, telephony, text messaging, and audio/video conferencing with your core Microsoft Office applications.

**EDM Readiness Assessment.** The Dell EDM Readiness Assessment helps administrators determine whether they currently have all the resources needed in-place to deploy a successful Education Data Management solution. To add even more value, we look to reduce institutional costs and ensure sustainability for the future by optimizing existing technology resources and platforms.
Dell is committed to helping school districts, state departments of education, universities, community colleges, and technical schools create robust, high-quality Educational Data Management systems that are accessible, secure, and sustainable.

To establish a high performance environment focused on closing achievement gaps and building continuous improvement, the proven Dell approach can help you set up a complete end-to-end EDM program that can lead to:

- Improved Student Achievement and Outcomes
- Improved Instructional Practices
- Improved Management and Operations
- High Quality Data for Reporting and Compliance
- Better Collaboration with All Stakeholders

In PK-12, robust EDM initiatives drive Longitudinal Data Systems (LDS) that are often part of the technology needed to qualify for federal grants. In addition, EDM programs can help districts and specialized schools earn additional state and private funding.

In Higher Ed, a strong EDM program strengthens recruiting efforts by identifying, targeting, and tracking the strongest students and faculty. A well-managed EDM also delivers a powerful platform to maintain records on alumni, donors, grant applications, and research projects.

Dell is uniquely positioned to be the technology partner you need to succeed

The Dell team includes many thought leaders and subject matter experts who understand the educational ecosystem. We have a number of former CIOs, teachers, and administrators who have the background needed to be trusted advisors on education data management issues.

We have a deep commitment and understanding of the most prevalent reform initiatives sweeping education today, including:

- Digital Curriculum Frameworks
- Personalized Learning and Distance Learning
- Longitudinal Data Systems
- Mobility and Hand-Held Device Strategies
- Professional Learning and Visioning
- Connected Classroom, Connected Campus, and Connected Infrastructure
- Cloud-Based Tools for Data Hosting, Communication, and Collaboration
- Community Engagement
- Co-Sourcing Managed Services Models

The Dell difference

Using proven project management methodologies, deep levels of consulting experience, and broad expertise in IT infrastructure, Dell works every day to serve education customers with the latest technologies. Our learning gained from thousands of past engagements with customers in all segments provides the knowledge base needed to work within your current environment and recommend the best technologies to achieve your goals. We also invest heavily in education R&D and develop intellectual property, applications, and solutions that directly benefit educational institutions. Our company’s global presence allows for flexible project management and delivery options from your choice of locations and resources.

Contact your Dell representative to discuss how we can help meet your EDM goals. We stand ready to help you advance to the head of the class in innovation and results. For more information, visit dell.com/edm.