

case study



BELLEVUE SCHOOL DISTRICT

Enterprise Application Integration Project

SUMMARY

The Enterprise

Bellevue School District is located just east of Seattle, and serves 15,000 students. Several years ago Bellevue moved away from being a full service IT organization and began implementing third party software solutions to address the districts core software needs. While this significantly reduced operational costs over the short term, the district was left with silos of information. As the demands for more accurate and timely information have grown, extracting and leveraging information across these platforms has become increasingly difficult and expensive. Recent legislative changes have also made the ability to make data driven decisions of paramount importance.

The Challenge

Maximize the use of Information Technology as a strategic tool to enhance the teaching and learning experience. The districts' IT infrastructure was a collection of applications that served the functional needs of the various departments. Integration between these various applications was manual or non-existent. The results included redundant data entry, poor data quality and a time consuming and tedious process to collect and report on critical information. The goal was to tie these solutions into a unified data system providing key information to Teachers, Administrators, Students and Parents on a real time basis.

When Jack McLeod, Director of IS took the reins of Bellevue's Information Technology group he was faced with some daunting challenges. Primary among these was a lack of standardization. Multiple hardware and software platforms created silos of information and the inability to provide information in a timely manner across the District. Third party software solutions didn't talk to each other. Support costs were spiraling out of control. Multiple applications distributed across the district provided overlapping functionality and no centralized management or backup.

A New Vision for IT

With the support of Superintendent Dr. Mike Riley, Jack McLeod and Nancy Larson, IS Manager, sought out a new vision of Information Technology as a key enabler for enhancing the teaching and learning experience. Key to this vision was a unified data system that provided interoperability, standardization, and centralized management. In addition it was imperative that critical information was available to teachers, administrators, students and parents on demand.

Partnering for Success

With the Vision in place a task force was created with key business partners Dell, Microsoft, and Cisco to develop a plan for implementation. Dell enlisted Zone Integration Group, a Dell Professional Services partner to provide Project Management and Consulting services. Over several months the partners helped scope, refine and develop a plan to put the new vision to work.

A Phased Approach

The first order of business was to lay a foundation on which to build the new infrastructure. This included 15 Dell Power Edge Rack Mounted Servers and a Dell/EMC SAN containing nearly 3 Terabytes of disk space, for centralized storage, fault tolerance and streamlining administration of district data.

In conjunction with the new data center infrastructure, new Dell laptops were rolled out to the High School Teachers, replacing outdated Apple PowerBooks. Access is provided across a high speed backbone, as well as Wireless access at most schools

The Solution

Integrate the various third-party software applications using Schools Interoperability Framework (SIF) specification and a Zone Integration Server. Create a data warehouse to provide robust reporting capabilities from the newly aggregated data. Implement Microsoft Class Server productivity tools for teachers and students. Implement a Portal solution utilizing Microsoft's SharePoint Portal Server to enable collaboration, information delivery, and a consolidated user interface across the Enterprise.

The Results

Data is now shared and aggregated across core district applications. Data integrity is greatly enhanced through a single point of entry. Robust reporting capabilities exist across the district and are available through the portal. Teachers now have new productivity tools for developing and delivering curriculum. Parents and Students will have on-line access to pertinent and timely information. A unified User interface provides single log on access to information across the district. An open standards platform that is scalable will take Bellevue into the future.

Key Features and Benefits

Based on the open standard of SIF, which is a data exchange model based on XML applications can be integrated together without costly replacement or custom programming work. No more redundant data entry.

Phase Two was with the implementation of a new software infrastructure. This began with the installation of a Zone Integration Server (ZIS) based on the Schools Interoperability Framework (SIF). This provides a mechanism for synchronizing data across the various third party applications currently running in the district. This included the Pentamotion Student Information System (SIS), Library System, the HR/Financial System and Microsoft Class Server.

Future integration will include Food Services, Transportation, Special Education and point of sale application (POS). The Zone Integration Server is based on Microsoft's BizTalk Server for the business logic and employs Microsoft's SQL Server for the data repository. The ZIS architecture is built upon open standards and allows the flexibility of adding future applications to the data sharing Zone.

With the ZIS in place data entered into any one of the applications is replicated with other software applications that are linked to the Zone. This eliminates the need for timely and costly redundant data entry while greatly improving data quality.

As important as getting quality information into the system it was critical to provide easy access to the various constituents groups across the district. The solution was to build a data warehouse using Microsoft's SQL Server. The data warehouse pulls information from the ZIS data repository and other critical systems into a central data store. Preformatted reports were developed and Ad Hoc reporting tools implemented to provide quick and flexible access to district wide data. These tools were then integrated into the Districts Web Portal providing access through the intranet.

Phase Three was the implementation of Microsoft's Class Server. Class Server provides a platform for collaborating, sharing, and designing teaching and learning resources. Class Server provides productivity tools that significantly enhance the teachers' and districts' ability to develop, administer and evaluate curriculum and student outcomes.

Finally the new services and tools were tied together through Microsoft's SharePoint Portal Server. SharePoint provides a highly customizable point of entry for sharing information and resources with Teachers, Administrators, Students and Parents. Through log-in profiles each constituent group will be presented with a unique user interface and the ability to retrieve and view pertinent data for their respective needs. All of this using open web standards and available any time any place from any internet enabled device.

The Results

Through the use of Open Standards and web based tools Bellevue has transformed their information technology from a collection of stand-alone silos of information to an integrated information systems platform. This will provide teachers, administrators, students and parents with the resources and tools that enable world class educational experiences now and into the future.