

## SECTION III

# INFORMATION SYSTEMS ADVANCEMENTS

Throughout the 2010-2011 school year, the Information Services department continued to adapt, not only to current budgetary challenges, but also to the growing and evolving technology demands of providing a 21st century education for all students. Combining innovative new technologies with traditional sensibility and frugality, the I.S. department is enabling the District to deliver essential tools and services to our classrooms without incurring unnecessary and burdensome new expenses.

### **Server Virtualization**

In the fall of 2010, a major server overhaul was done at the Central Office which took advantage of a cutting-edge technology called virtualization. In short, virtualization allows one new server to replace and perform the same functions as several old ones. As the 2010-2011 school year began, the District was operating 22 servers at the Central Office, all of which were out of warranty and imminently in need of replacement.

Rather than spending money on warranty extensions for aging servers and budgeting for their replacement, the Information Services department investigated the potential for a virtual server solution and found that it would be an excellent fit. Planning for this project began in February 2010 and it was fully implemented by mid-October 2010.

Server virtualization allowed the District to replace its 22 old servers with just six new servers. Not only are the new servers doing exactly the same work as the 22 retired units, but they still have some untapped potential for growth. In other words, the District now has greater flexibility with increased storage capacity and the ability to add new server functionality without purchasing any additional hardware.

Virtualization provides a number of other valuable short and long term benefits:

- Significantly reduced power and cooling costs;
- Lower ongoing warranty, repair, and replacement expenses;
- Full hardware redundancy, keeping servers online even when hardware failures occur;
- Increased capacity for data storage and deploying new services;
- Simplified backup and disaster recovery methods

The substantial financial savings noted above are expected to completely offset the cost of this project within three to five years. Beyond that break-even point, the project will actually generate an ongoing net cost benefit until such time as the servers need to be replaced again. The next server replacement will cost less, however, as all the software

licenses associated with virtualization will not have to be purchased again.

### **Application Development**

Two years ago, the Information Services department began developing custom web-based applications to meet a variety of specialized needs. These products are being developed and maintained 100% in-house by I.S. staff. To date, applications in use include a professional development registration database, several opt-in e-mail services, an RTI database, and a curriculum mapping system.

These projects utilize the expertise of existing staff to produce customized solutions at no cost to the District. As more and more essential functions are modernized and migrated to electronic format, the District's library of web applications will surely continue to grow each year.

### **Computer Upgrade Plans**

Budgetary challenges in recent years have meant that computers across the District haven't been replaced as often as would be optimal. In order to ensure that the equipment in our schools does not become outdated, the Information Services department has been developing an affordable hardware replacement plan. This plan calls for the purchase of off-lease computers rather than brand new units. Off-lease equipment is typically two to three years old and is resold in like-new condition with three to five year warranties. These units come at a cost savings of approximately 50% compared to purchasing new computers. This strategy is growing in popularity among school districts and represents a very cost-effective method of keeping school computers in excellent working order for years to come.

### **Mobile Computing**

Mobile devices have long been essential tools in everyday life outside of the school environment. In the very near future, they will be relied upon in classrooms as well. This technology is ever-evolving and school districts are struggling with plans to harness the power of mobile computing. The Information Services team is working with District and school administrators to start utilizing mobile devices in ways that will enhance our classrooms today, without over-investing in specific devices or platforms that may not have lasting value.

In the past year, several pilot programs have been deployed which use Apple iPads to help teachers deliver engaging, targeted instruction to students in a small-group setting.

## SECTION III

# INFORMATION SYSTEMS ADVANCEMENTS (CON'T)

iPads have also been used to provide vital services to students with special needs and to distribute new teacher training materials. A project is currently underway to create a powerful teacher evaluation system that runs on the iPad. This will allow administrators to easily move from classroom to classroom performing evaluations on the spot, without disrupting instruction.

More general plans are being developed to deliver the benefits of mobile computing to larger populations of students. However, there are many budgetary, technical, and instructional challenges to overcome. The Information Services team is working closely with District administrators on strategies to acquire and deploy mobile computing technology in ways that will be the most cost-effective and educationally beneficial.

### Wireless Networking

It is clear that wireless, web-enabled devices of one kind or another will soon be a staple in our schools. These devices will require a robust wireless network infrastructure that reaches every classroom in our district. Providing this wireless access may be the greatest single challenge facing the Information Services department in the coming years. Preparations are underway to meet this challenge as wireless products and services from four major vendors have been evaluated over last year.

The expansion of 4G cellular networks may soon alter the way we think about wireless networking in general. Cellular vendors are currently tailoring mobile computing products and services to fit the needs of school districts. The Information Services department is actively reviewing these offerings as well.

### Looking Ahead

The role of technology in education has grown at a staggering pace in recent years and that trend will only continue. The importance of teaching 21st century skills and a renewed focus on data-driven methods and results in our classrooms will place an even greater reliance on technology. The Information Services department is hard at work preparing to meet these demands head-on. As new products emerge on the marketplace, the I.S. team proactively researches their features and benefits and determines their potential role in our classrooms.

While the sophistication and prevalence of available products and services may be changing every day, the mission of the Information Services department remains the same: to deliver and support the most effective and beneficial technological tools to every student in our district.

