# Scalable School Technology

How to Plan for the Unknown, while Delivering Education Excellence



## FINDING THE RIGHT SOLUTION FOR TODAY'S SCHOOLS AND TOMORROW'S TECHNOLOGY LANDSCAPE

Technology is now an integral part of most U.S. school systems—ranging from servers and networks supporting administrative services to classroom PCs from kindergarten through high school. Administrators, IT managers, teachers, and students are in a continual process of adaptation and discovery as they balance new learning paradigms, operational and management costs, and an expanding array of devices. Security compliance adds another layer of complexity for IT managers meeting stringent demands.

With the number of school computing systems increasing and 1-to-1 eLearning (where each and every student and teacher has a dedicated laptop) proliferating, schools are resembling businesses in the complexity of their technology requirements. School IT managers must now consider supporting technology-based activities both within school and without, as students, teachers, administrators, and parents expect to use school-owned equipment remotely or access school applications on their own devices and systems.

Cloud computing, both internal and external, SOA, SOE, Web 2.0 and 3.0, SaaS, 3-D Internet, WiMAX*, virtualization, mobility, 1-to-1 computing—these and a host of other technologies and services are now impacting today's education landscape. What will be available or necessary tomorrow is uncertain at best. Many IT professionals in school systems are finding that creating and maintaining a sustainable infrastructure amidst the dizzying array of choices and compliance requirements is complex and difficult.

## PREPARING FOR SCALABLE, PLANNED GROWTH

What's needed is a stable, solid plan centered on technology fundamentals—one that is inherently flexible no matter what lies ahead. Intel recommends an achievable, cost-effective model for education infrastructures, based on common configurations in today's schools. The model is designed to help schools adapt, serve, and scale without having to reinvest in new infrastructure each time the device or learning landscape changes. It is an evolutionary model, allowing schools to start where they are and move as budget and resources allow, toward systematic, planned, short- and long-term growth.

The core of the long-term solution—whether for cloud computing or any of the other available technologies— is simple: a rich, full-featured PC, most often a notebook. Rich PCs offer the safest and best choice for educational institution deployments. Rich clients deliver the necessary applications, digital content and content creation, administrative services, and support that schools and school systems require.

## SOLUTION COMPONENTS

- **Dynamic Virtual Clients (DVC)**: A family of application delivery methods that centralize management and data security, but provide the rich user experience and mobility of client-side execution. Technology investment and maintenance costs are reduced as schools increase their ability to centralize and consolidate IT management, licensing, and delivery.
- **Rich Clients That Act Thin**: A traditional, rich PC provides the best performance and solution for schools moving into DVC's thin client architecture. It offers the local processing power and resources teacher and student clients need in order to adapt to an ever-changing software and classroom footprint.
- **Virtual Desktop Infrastructure (VD) Servers**: VDI serves applications and/or operating systems to clients. All data is automatically housed within the data center, increasing data security. Centralized serving also centralizes and simplifies management.
- **Server Capacity**: As DVC solutions evolve within a school system, the server footprint at schools can be reduced and servers repurposed to a central site to provide a centralized "cloud-like" solution. The addition of application streaming for both short- and long-term solutions is recommended.
- **Cloud Services**: Cloud services, whether internal or external, can be used to augment classroom or data center servers to provide Internet-based applications, operating systems, and CPU resources. One strong advantage is that finding a cloud vendor who offers guaranteed server compliance with regulatory requirements as part of their package can significantly reduce the time spent by internal IT staff.

## CONCLUSION

As schools strive to ensure every student has the skills to participate in the 21st century, technology is playing a central role. Supporting the evolving technology landscape cost-effectively, including an ever-changing mix of applications, while providing a high level of customization and service is a challenge faced by district-wide schools systems and single schools alike. A DVC model centered on cloud computing and rich PCs can be implemented in stages to meet the requirements, facility constraints, and budget limitations of schools. Rich clients based on Intel platforms combined with Intel vPro technology deliver optimal platform security and manageability. With the Intel Dynamic Virtual Client model, schools can meet the demands of the present, while effectively planning and scaling for the future.

**Leading education technology providers are prepared to work closely with schools to plan and build solutions based on the Intel DVC model.**

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