



# ACHIEVING SUCCESS FOR YOUR SCHOOL WITH CHROMEBOOKS

ERICOM SOFTWARE  
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# Introduction



Today's students and educators leverage a vast array of digital content, applications and computing devices throughout the course of their education, from pre-school through post-graduate study. Schools and universities, however, face a significant challenge in enabling students and staff to access these data and applications, securely and easily, from any location and any device.

Google Chromebooks have proven to be a very viable response to the challenge of making digital teaching and learning resources more easily accessible for educational institutions operating under tight budgets. This paper examines the challenges that IT professionals face in academic environments and discusses how Chromebooks directly address those challenges. It also presents a case study of one US-based school district that has transitioned from Windows PCs to Chromebooks.

## IT Challenges in Education

The education market presents a number of unique challenges for IT professionals tasked with providing access to applications and content resources. Perhaps the biggest of these challenges is the sheer magnitude of IT department responsibilities. Schools tend to have very small IT departments, which are typically responsible for managing substantial numbers of faculty and student user accounts, as well as a seemingly endless array of computers, tablets, and other devices in labs, classrooms and other facilities.

Easing the burden of system management and maintenance is essential to ensuring that IT staff members can keep up with demands placed on them and provide students and staff with access to computing and learning resources from home, school, lab, library, or field.

**Application & Desktop Management:** One of the most challenging tasks for IT administrators in schools is application deployment and maintenance. Provisioning student and faculty computers with the required applications is no small feat, and this challenge is compounded by the need for ongoing patch and configuration management.

**Hardware Distribution:** IT departments in schools also face challenges related to providing and managing end-user equipment (PCs, Macs and/or tablets). For example, many schools need to provide students with computer hardware. However, ever shrinking IT budgets can make complying with such mandates difficult.

Unfortunately, hardware acquisitions are rarely one-time expenditures for schools. Computer hardware becomes obsolete relatively quickly and must typically be replaced every few years. Furthermore, some students abuse or neglect computers that are issued to them, requiring the school to incur replacement costs for lost, stolen, or heavily damaged equipment. Corrupt files, viruses and unsupported applications installed by students also cause damage to school-owned devices. As such, improving hardware longevity and security could go a long way toward stretching the IT budget.

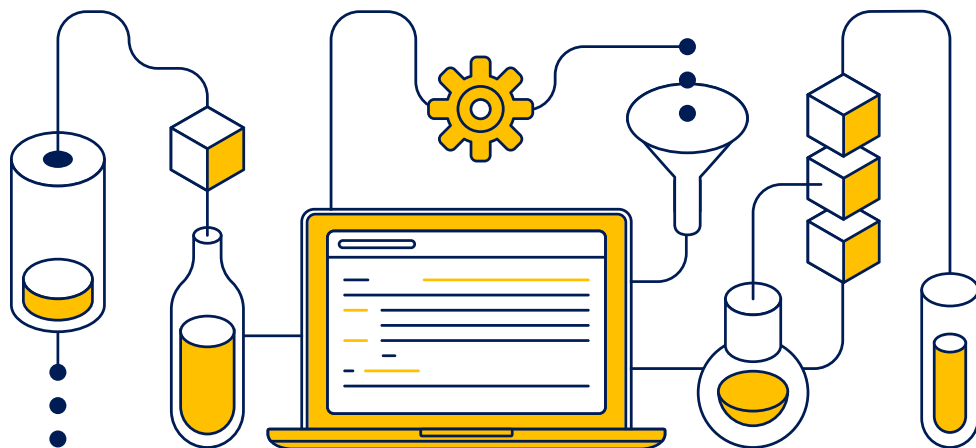
**Cyber Security:** Although it is tempting to view the loss of student laptops purely as a monetary loss, security implications must be considered as well. Depending on how the computer was used, the hard drive might contain personally identifiable information, or even cached passwords or other information that could potentially be used by a hacker to gain access to the school's network.

Another challenge that is somewhat unique to the education market is that in terms of cyber security, school labs can be among the most hostile environments imaginable. In almost every academic institution there will be a few aspiring hackers who seek to use what they've learned in computer class for malicious purposes. It is therefore critical for administrators to protect devices issues to students in a way that makes them resistant to tampering.

Even if no students have malicious intent, security is still a major concern. Students are notorious for visiting all manner of Web sites and downloading content from questionable sources. Such activities inevitably lead to malware infestations.

## Chromebooks as a Solution

Although the challenges of providing IT services in an educational institution can be daunting, there is a surprisingly simple solution – Google Chromebooks. Chromebooks' native capabilities, combined with Google Chrome Web Store's ever-growing selection of apps and access to hosted Windows resources, together enable Chromebooks to easily address virtually all requirements of academic users.



## Easing the Management Burden



Issuing Chromebooks to students and faculty means that IT administrators are no longer required to carry the burden of individual user-device configuration and maintenance; as soon as someone logs into their Chromebook and connects to the Internet, the latest updates are automatically pushed to the Chromebook without any administrative action.

Chromebooks also offer significantly easier application management, either through extensions from the Chrome Web Store or via cloud-based applications such as Google Docs or Google Apps. Significantly, however, they cannot run Microsoft Windows applications.

This raises a major issue: There are quite a few Windows applications that are used extensively within the education vertical and for which Google apps alternatives are either not available or are inadequate.

Although Chromebooks are not natively capable of running Windows operating systems or Windows applications, this significant challenge can be solved by enabling Chromebooks to access hosted Windows desktops and Windows applications, by establishing an RDP session to a Windows host. The best way to create such remote sessions is via HTML5 clientless connectivity that requires no installation on the end-user device and runs within the Chrome browser.

Ericom AccessNow software allows students and faculty to easily connect to Windows resources by establishing an RDP session through the Web browser that is natively included with the Chromebook.

For administrators who aim to make user device management as painless as possible, Ericom AccessNow is a particularly attractive option. Unlike traditional RDP clients, Ericom AccessNow is deployed only on the server side. IT administrators do not need to configure anything on end-user devices.

Administrators requiring a fully managed end-user device environment have the option of using Google's Chromebook management service, or services from the many vendors who offer Chromebook device management.

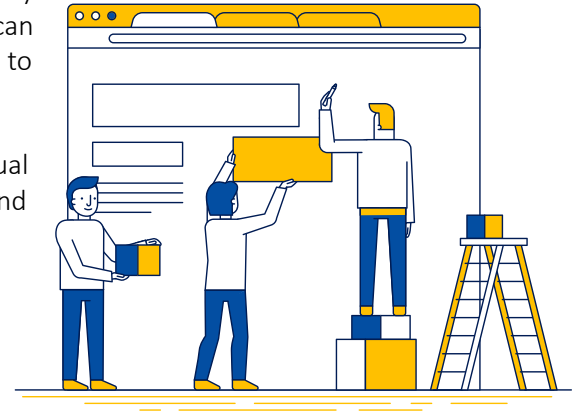
## *Bring Your Own Device*

While Ericom AccessNow's unique approach to RDP connectivity works well in organizations that use Chromebooks, an added benefit is that Ericom AccessNow makes it practical and easy for schools to support and implement Bring Your Own Device (BYOD) policies. Historically, most schools have avoided BYOD because it is typically a support nightmare. Support staff must be able to support any device that a student happens to own, running the gamut from Windows laptops to iPads, Androids and Macs to knockoffs, homebrews and legacy products.

Ericom AccessNow solves this problem by allowing any device to connect to an RDP session so long as it has an HTML5 compliant Web browser. This means that any laptop, smart phone, or tablet with a compatible Web browser can access and run Windows applications. There's no need to download, install and maintain any software.

As such, IT staff is freed from the burden of supporting individual devices. Instead, they can focus on ensuring that backend infrastructure is functioning properly.

## *Hardware Longevity*



As mentioned earlier, hardware acquisition costs can be a major issue for budget strapped schools. Because hardware purchases represent a major expenditure, it is important for schools to take steps to maximize the hardware's longevity. Academic institutions need to be sure that the computers that they purchase today will not be obsolete by the next school year. Historically, this has often meant paying a premium price for cutting-edge systems in the hope of forestalling hardware obsolescence for a few years.

With a price point of around \$200, Chromebook prices are on par with or lower than commodity laptops. However, whereas a traditional laptop quickly becomes obsolete as technology evolves, Chromebooks have a much longer useful lifespan thanks to two factors.

First, Chromebooks are automatically kept up to date, so students and faculty always have the latest Chrome operating system.

It is also worth noting that because no user data is stored locally on the Chromebook, administrative staff never needs to worry about Chromebook backups. A lost or damaged Chromebook can be replaced with a brand-new Chromebook in a matter of minutes with no data loss and no loss of functionality.

## *Effectiveness in the Classroom*

As important as factors like ease of management and resistance to malware are, the Chromebook's usefulness ultimately boils down to how effectively it performs in the classroom. One aspect of Chromebook design that makes it well-suited to classroom environments is that it boots in a matter of seconds. Students do not waste classroom time waiting for computers to boot. Furthermore, Chromebook batteries are designed to last long enough to make it through an entire school day.

## Security



Even with firewalls and web filtering in place, schools must assume that students' online behavior will expose the organization's computers to constant malware threats. Schools have traditionally struggled with hardening student computers against malware. When malware infections do occur, significant IT resources are expended to manually remove the infection or re-provision the device from scratch. In contrast, Chromebooks are specifically designed to be malware resistant. The Chromebook browser was designed so that each tab is considered to be its own process. Each tab has all the code needed to function properly; hence, each Web page and each application runs in an isolated sandbox environment. If a malware attack does occur, the malware is isolated and the operating system is protected.

Chromebooks are also designed to perform a verified boot. The boot process performs an integrity check to verify that no system files have been altered. If any form of tampering is detected, the operating system automatically resets itself to a pristine state. Hence, there should never be a need for an administrator to clean a malware infection from a Chromebook.

## Case Study: Bradford Central School District

Located in New York State, Bradford Central School District serves hundreds of students in grades K-12. The school district purchased Google Chromebooks for classroom use of a broad range of Web/cloud-based content and curriculum; still, Bradford also needed the Chromebooks to be able to access several dedicated Windows applications that were not available in web versions.

Installing Windows applications on regular laptops is trivial. However, there is no way to install applications on Chromebooks, aside from Chrome-related plug-ins. The district's IT management team searched for a solution to enable access to the Windows applications and maximize usage of the many Chromebooks already owned by the schools.

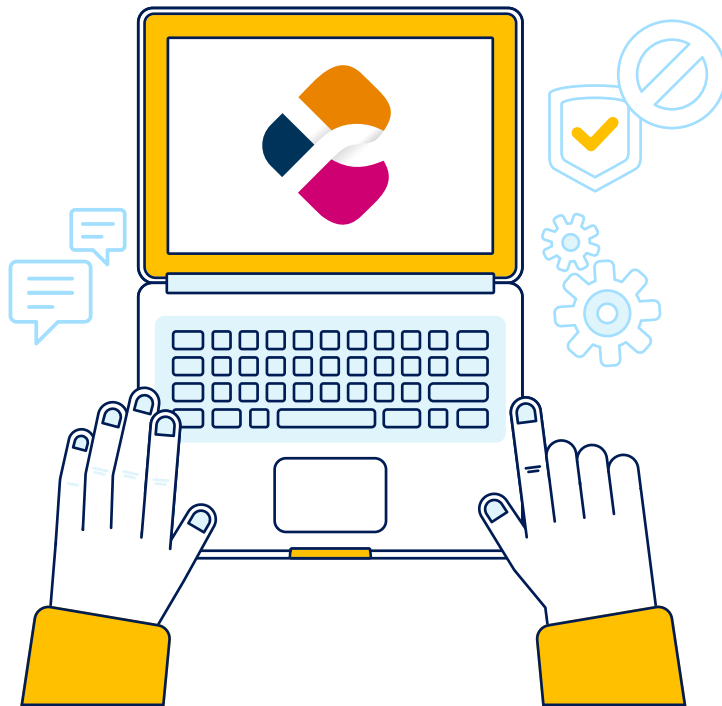
By deploying Ericom AccessNow, the school district now provides seamless access to published Windows applications, with no need to install anything on the Chromebooks. As a clientless access solution, Ericom AccessNow enables simple and straightforward access to all relevant Windows applications.

The Chromebooks proved to be a great investment. In combination with Ericom AccessNow, they provide the most cost-effective and efficient solution for all student needs. Although Bradford Central School District continues to primarily use Chromebooks today, Ericom technology offers the district freedom to embrace a BYOD approach in the future, enabling them to leverage additional devices such as tablets and smartphones.

## Summary

Managing an IT organization, especially given the (usually) limited IT budgets of educational institutions, can be very challenging. IT management must balance fiscal responsibility with the need to deliver the computing resources required by both students and staff.

Purchasing Chromebooks is a smart decision at the right price point. Combining Chromebook's native browser-based operating system with HTML5 access technologies simplifies IT administrative overhead while meeting the needs of end users. Based on experience in the field and feedback from users, there's no doubt that Chromebooks are the right solution for educational use, from pre-school on up.





## About Ericom Software

Ericom is a global leader in securing and connecting the unified workspace. Ericom empowers today's connected workforce and the IT organizations that support them by securing and optimizing desktop, application, and web content delivery to any device, anywhere. Founded in 1993, Ericom provides enterprise-grade secure remote access and web security solutions to a global customer base of more than 30,000 midsize to Fortune 100 organizations. With a focus on application delivery, cloud enablement, and secure browsing, Ericom advances secure connectivity—providing end users with a superior work experience and optimizing enterprise productivity. With over 10 million end users, Ericom has offices in the United States, United Kingdom and EMEA and an extensive network of distributors and partners throughout North America, Europe, APAC, and Africa.

For more information on Ericom's products and services, contact us at the location nearest to you. And visit our web site: <http://www.ericom.com>

### Americas

Ericom Software Inc.  
231 Herbert Avenue, Bldg. #4  
Closter, NJ 07624 USA  
Tel +1 (201) 767 2210  
Fax +1 (201) 767 2205

Email [info@ericom.com](mailto:info@ericom.com)

### UK & Western Europe

Ericom Software (UK) Ltd.  
11a Victoria Square  
Droitwich, Worcestershire  
WR9 8DE United Kingdom  
Tel +44 (0) 845 644 3597

Email [ukinfo@ericom.com](mailto:ukinfo@ericom.com)

### Rest of World (ROW)

Ericom Software Ltd.  
8 Hamarpeh Street  
Har Hotzvim Technology Park  
Jerusalem 9777408 Israel  
Tel +972 (2) 591 1700  
Fax +972 (2) 571 4737

Email [info@ericom.com](mailto:info@ericom.com)

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