

THE SOFTWARE-AS-A-SERVICE (SaaS) SOLUTION

How SaaS-Enabled Services Address 3 Key Challenges for IT in Education

In both K-12 and higher education, today's IT departments face tough challenges with open networks, and a huge range of devices to manage and monitor. A shift in how software and services are handled, enabled through the Software-as-a-Service model, offers direct benefits to IT in managing assets like desktop / notebook PCs and software. This paper describes how SaaS-enabled services offer an immediate return on investment and a clear path to affordable IT manageability.

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Executive Summary

Educational institutions, from local school districts to colleges and universities, face daunting technology challenges. Explosive growth in the number and types of devices used by students, staff and instructors, along with the difficulty of tracking and managing those devices, is just the beginning. Ever-higher expectations for fast, pervasive access to the Internet, and the open networks common in higher education, must be balanced against escalating security threats and asset control issues, making the campus or district IT administrator's job a tough one.

The maturity of the Internet, along with major advances in software design and security, have positioned Software-as-a-Service as the way IT services will be purchased and delivered in the future.

Technology today is complex, and nowhere more so than in education. In addition to the various software applications installed by individual departments, districts and schools within any educational institution, students, professors and teachers often bring their own software with them. On college campuses in particular, that can mean a huge influx of new software each fall.

All businesses struggle with tracking assets and data, but in education, the challenge is even greater. Take higher education -- in what business do a quarter of the customers leave every spring, followed by an influx of new customers each fall? That leads to a yearly summer crunch, as campus IT staff struggle to push out software patches and install and test new hardware and software before September. Because today's networks must be open to the Internet at some levels in order to function, rogue software downloads, misuses of campus bandwidth, and malware and viruses are tough to block.

Faced with scarce IT dollars, school districts may let disaster recovery plans slide during budget discussions. At the same time, incidents like Hurricane Katrina, which left New Orleans schools in a shambles from which they are just recovering, continue to painfully remind planning, and business continuity plans.

Fortunately, the computer industry is in the midst of a massive shift in how software is delivered. Under a new model, called Software-as-a-Service, or SaaS, vendors offer software and SaaS-enabled IT services not as a one-time purchase, but as a service delivered over the Internet and supported as part of an

ongoing, regularly renewed contract. The maturity of the Internet, as well as major advances in software design, have positioned this long-awaited approach as the way most software and IT services will be purchased and delivered in the future – and many already are. According to Jeffrey M. Kaplan, managing director of the research and analysis firm THINKstrategies, “The world is definitely moving in the direction of Software-as-a-Service.”¹

SaaS and SaaS-enabled IT services can deliver the same software capabilities, with the same or better speed, availability and performance, as traditional applications running on campus or in the district office. But with SaaS-enabled IT services, management, maintenance, upgrades, security, and the infrastructure itself, are all handled by an offsite provider. And SaaS-enabled services are scalable, allowing an institution to choose what level of software and services to out-task, then gradually increasing the scope of out-tasked items over time. SaaS-enabled IT services are thus a new class of IT services powered by “on-demand” technology, enabling them to be flexible, modular, and configurable. These new services can help educational institutions create high performance, flexible, and cost-advantaged IT environments that rapidly adjust to changing education conditions such as budget crises and shifting student populations.

The benefits of SaaS-enabled services are many. Unlike with a traditional software purchases and in-house management, there’s no big capital outlay initially. Instead, there’s a predictable, pay-as-you-go yearly expense, which can yield a nearly immediate return on investment. And with SaaS-enabled services, although the IT department still plays a role – generally managing the software contracts and vendor relationships – much of the time spent in performing mundane tasks like virus checking, software updates, and user support, is shifted to outside vendors. The savings can be considerable in some cases – a reduction of as much as 50 percent, according to some analysts, compared to the cost of purchasing software outright.² In short, SaaS-enabled IT services offer a compelling solution to a number of IT issues, a solution that is especially attractive to education institutions from K-12 through college campuses. In this paper, we’ll look specifically at some of the biggest IT challenges schools, colleges and universities face today, and how SaaS-enabled IT services address them.

¹ THINKstrategies, Inc. is a leading market analysis and consulting firm focused on the business implications of on-demand services. <http://www.thinkstrategies.com/>

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Challenge No. 1: IT Complexity

IT budgets everywhere are shrinking, while competition for students in higher education is growing. Campuses and K-12 need top technologies to attract students, to meet student and instructor needs and expectations, and to deliver quality education.

In higher education in particular, highly “siloeed” departments add to the complexity. It’s not unusual to find three, four or five varieties of key applications or even operating systems running within different colleges at a single large university. Licensing agreements and security issues further complicate things.

As software grows more complex, additional specialized skills are required to manage it. Security, always a key concern in educational installations, has mushroomed in importance as relatively open access to the Internet feeds students’ needs for online information.

Solution: SaaS-Enabled Services Shift Asset Management Offsite

SaaS-enabled services help address these issues through a management structure that takes software deployment and maintenance off of IT’s plate, without adding additional complexity or infrastructure. Since SaaS-enabled services mean that educational institutions can engage an offsite third party to be responsible for keeping things up and running, there’s an immediate ease of the strain on staff – and on the budget.

These types of managed services can help bring IT spending under control because costs are predictable and measurable. With an onsite solution, IT departments may end up buying software no one is using, or paying for more user licenses than they need. With SaaS-enabled services, costs like that are brought under control up front, since pricing is based on actual services contracted.

SaaS-enabled services are also scalable. That’s important in education, where the number of students can grow and shrink as class sizes change, and as new departments or schools are added or subtracted based on yearly budget fluctuations and changing state and federal policies.

With SaaS-enabled services, districts or campuses can try out a service solution in a single department, college or school – then scale up later, building on that success. In that way, IT departments can work with rather than against the fragmented infrastructure that is common in higher education in particular.

Making the SaaS Case to Management

IT staff and management are often first to see the benefits of the Software-as-a-Service model, because they live and breathe the frustrations of managing the technology infrastructure. The challenge, then, is convincing top management – the president or provost, the superintendent or school board – of the wisdom of SaaS and SaaS-enabled IT services.

Here are some suggestions from industry analyst Jeffrey M. Kaplan, who as managing director of consulting firm THINKstrategies has been observing the SaaS phenomenon for years.

A foremost focus of management is typically cost considerations and risk-versus-return calculations. To clearly calculate the financial benefits of SaaS, Kaplan suggests comparing not only upfront price comparisons (the purchase of software licenses versus the cost of a service contract, although that difference alone can be striking), but the cost of additional systems and servers deployed to support traditional software applications.

In calculations for management, Kaplan says, include “the amount of staff time and effort that it takes to deploy and maintain the software.” Consider as well the additional consulting services often needed to integrate and maintain new software. “Add all that up over the lifetime of the product,” Kaplan suggests, “and now you’re looking at the total cost of that ownership. Then compare *that* number to the [SaaS or SaaS-enabled IT service] subscription price.”

To illustrate risk-versus-return issues, look at software utilization levels. Historically, many institutions over-provision – paying for more software licenses than they need – through a false hope that the organization will grow into the license. But if IT miscalculates, and students, teachers, faculty or staff end up not using the software, there’s no turning back. “You can’t give software back,” Kaplan points out.

With SaaS-enabled services, educational institutions can avoid the risk of over-provisioning by piloting the service, measuring utilization, tracking how people use software and services, then incrementally expanding or contracting the use contract.

To further mitigate risk, SaaS-enabled services can scale along with pricing. IT departments can ramp up or scale back on usage fees each time the contract is renewed – typically every year or several years.

“If you can reduce that estimated 70 percent of time spent just keeping systems up and running,” Kaplan says, by making system uptime and maintenance the service provider’s responsibility, you can free up staff for other tasks and realize dramatic savings in IT dollars.

“When you add everything up,” Kaplan suggests, “you should find that that the [SaaS or SaaS-enabled managed service] solution can come to 20 to 30 to 50 percent cost savings.”

Challenge No. 2: Tracking Assets and Data

How familiar is this scenario on a college campus? Students leave for summer break and IT staff goes into “crunch mode,” frantically installing new software and rolling out whole systems, both hardware and software, while downloading patches and working to test everything by September.

On college campuses in particular, the fall then brings its own challenges as students return to campus in huge numbers carrying their own devices, often several per student, ready to connect to the network. That can mean viruses, malware, and a wide variety of untested software. In K-12, teachers and staff may bring laptops or PDAs running new software they want to introduce to students via the school network.

The open networks at educational institutions make management of desktop assets – indeed, management of the entire network -- a tremendous challenge. IT must allow access, along with quick, pervasive connectivity, but at the same time, control who can access what portions of the network. IT must also track assets – who is using what computers and other equipment on what parts of the network.

What is needed is a centralized system for managing desktop and laptop services that is management-ready each fall, with flip-on services flexible enough to be rolled out to some departments now, and to others later. That system must be open and extensible, allowing its use with a variety of software. It needs to be highly scalable, so that it can grow with the institution. It must be Internet-based, and able to manage a wide range of devices. A successful solution also needs to offer a single, integrated user interface, and allow IT to choose who performs which desktop management tasks, whether internal IT resources or an offsite provider.

There’s an additional reason that educational institutions need to bring inventory management under control. Government Accounting Standards Board (GASB) Statements 34 and 35 require nearly all educational institutions, except fully private ones that do not expect any federal funds, to keep an accurate inventory of all assets, and to report any changes. That includes IT assets such as hardware and software. Clearly, compliance with GASB Statements 34 and 35 requires an accurate picture of the IT environment.

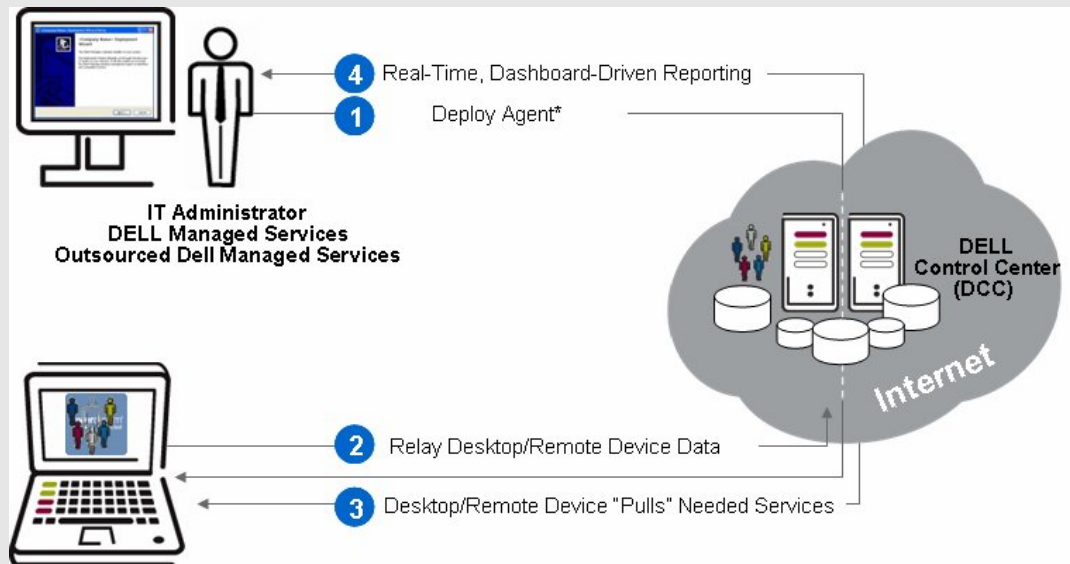
In addition to accounting requirements, a variety of federal laws require educational institutions to ensure that sensitive data is kept secure and private. Regulations like FERPA (Family Educational Rights and Privacy Act), HIPAA (Health Insurance Portability and Accountability Act) and the Gramm-Leach-

Bliley Act require schools to protect student, health and financial data. In addition, regarding e-commerce operations, the credit card industry's data security rules, known as PCI (Payment Card Industry Data Security Standard), regulate the credit card information chain.

How SaaS-Enabled Services Help Increase Visibility and Control

A classic IT task for SaaS-enabled IT services is management of the desktop and notebook computers within a network. Within a school, district, or college campus, that can mean hundreds or thousands of computers, many of which return to school each fall. When their owners connect them to the network, they may be loaded with outside software, viruses and other malware.

The sort of open network that today's Internet connectivity requires dictates a centralized management approach delivered over the Internet. Individual point solutions simply can't work. Although IT departments using a centralized system have traditionally used IT staff to manage a school or campus network, Dell offers a better SaaS-enabled services solution. By downloading an agent onto each computer the first time it attempts to access the network, the Dell Control Center first checks to see that the networked computer is running up-to-date software and is free of viruses and other malware. Other sorts of rogue software and network uses can be checked for as well.



The agents provide a direct connection via the Internet between each device and the Dell Control Center. Once installed, agents not only constantly monitor to make sure all software is up to date, but also collect information for inventory reports and usage calculations.

Dell's Internet-based management platform can handle a wide variety of devices and operating systems, can scale up or down depending on circumstances, and can be managed by IT staff or Dell services personnel through a universal web browser interface that can be accessed from anywhere on the Internet.

Solution: SaaS-Enabled Services are Flexible, Configurable

An SaaS-enabled services solution offers flexibility – it's configurable, so IT can select services based on the structure of the environment. IT can also manage the infrastructure to varying degrees, or choose to let an outside service help out.

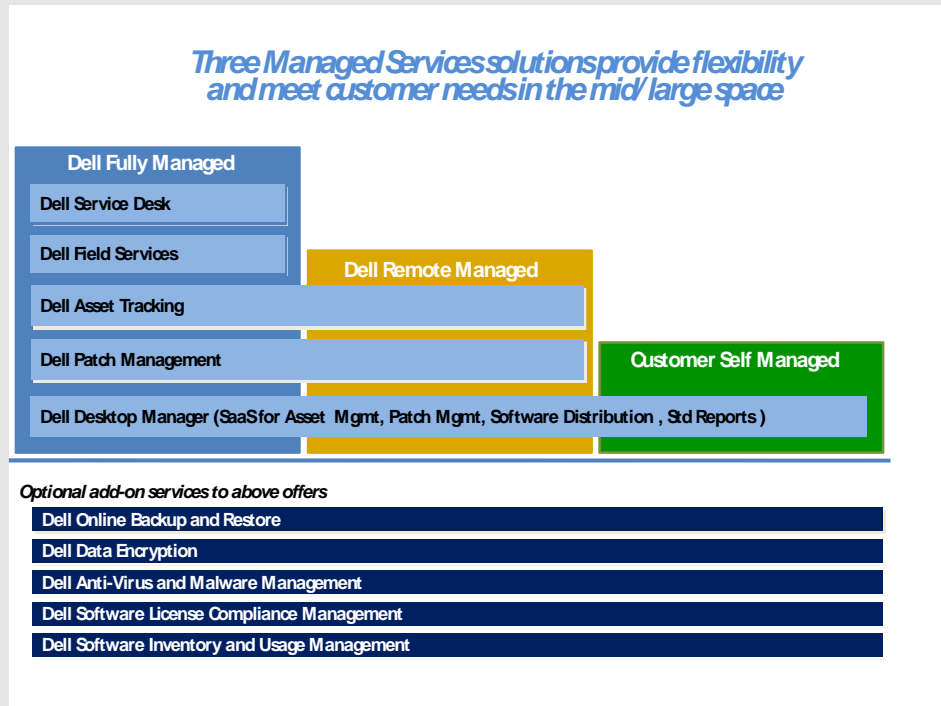
With SaaS-enabled services, institutions can add additional services to the plan over time, turning services on (or off) as needed. If a district adds a school – or closes one down – services can be scaled back. If the university opens a new building, or launches a new program, IT can be ready to turn on IT infrastructure services immediately.

To ensure compliance with the many privacy regulations that apply to educational institutions, including FERPA, HIPAA and PCI, an accurate, up-to-date picture of the IT environment is necessary. The sorts of detailed controls and reports that an SaaS-enabled solution provides can clearly establish, for IT management and in the event of an audit, that every computer that has access to the network, even those without sensitive data themselves, has the latest security patches, along with antivirus and anti-malware protection.

Open networks and bright, inquisitive students on a variety of network devices are a flammable combination when it comes to network security. With the right SaaS-enabled solution, the security of each laptop and desktop can be managed over the Internet. SaaS-enabled services can handle various aspects of privacy and security, including asset management, patches, antivirus, and even data encryption.

Flexibility of SaaS: Three Tiers of Service

One of the great strengths of Software-as-a-Service and SaaS-enabled IT services is flexibility. Since a SaaS-enabled services contract is negotiated based on actual services contracted, as a school, college or university's needs change over time, contract costs can be scaled up or down.



As evidence of that flexibility, Dell offers three tiers of service in its portfolio of IT infrastructure services. The tiers allow institutions to scale up or down, based on how many services they choose to contract for during a given school year.

Under the first tier, the institution purchases Dell's SaaS-enabled services solution and uses the SaaS platform to manage its own infrastructure.

Under the second tier, an institution works with Dell to out-task some services, such as virus updates and software patches. Other tasks are retained in-house, but can be easily switched to Dell later, since the software agents are already loaded on each system.

The third tier offers a full-service IT services package, in which Dell takes over specific IT functions completely.

No matter which tier an institution chooses, the same SaaS platform from Dell is used – only the management of those components shifts if an institution chooses to move among tiers of service. As management becomes more comfortable with the concept, or as success is realized in one department and extended to others, making a change is simple and flexible

Challenge No. 3: Disaster recovery

If a hurricane, flood, earthquake or other natural disaster struck your school or campus tomorrow and took down the entire network, do you have systems and data stored offsite? Could you be back up and running quickly? When Hurricane Katrina hit New Orleans, schools, colleges and universities quickly learned what it means to have flooded buildings, entire networks down, and no access to campus facilities for days, weeks or even months.

Education continues to struggle with disaster recovery plans. Regarding IT crisis management, Kenneth Green reported in his 2007 Campus Computing Project that “six years after 9-11 and two years after Hurricane Katrina ravished the Gulf Coast area, a significant number of colleges and universities have yet to develop a strategic plan for IT disaster planning and crisis management.”³

Green found that in fall 2007, close to 30 percent of public and private four-year colleges and universities reported no strategic plan for IT disaster planning. Among private four-year colleges, that number rose to just over half. He found it “striking and surprising that so many campuses have yet to develop an initial IT crisis management plan, let alone revise plans that may now be two, three, or four years old.”

In K-12, immediate access to student records, financial systems and payroll is critical after a disaster. But cost constraints often push disaster recovery plans, offsite backup, and business continuity to the bottom of the superintendent’s or school board’s list of priorities.

Solution: Offsite Backup through SaaS-Enabled Services

Disaster planning and recovery, along with offsite backup, is an area where SaaS-enabled services can shine. Because the software and services are by definition located offsite, systems and data can be backed up much more quickly. Rather than spending additional revenue on “hot sites” located elsewhere, IT staff can focus on the many other concerns with business continuity, such as incident management teams and regular revisiting of business continuity plans.

³ Begun in 1990, the Campus Computing Project is the largest continuing study of the role of information technology in American higher education. Each year some 600 two- and four-year public and private colleges and universities in the U.S. participate in the survey. <http://www.campuscomputing.net/blog>

In his Campus Computing Project, Green also found that emergency notification systems, the importance of which were brought to light by the tragedy at Virginia Tech in spring 2007, are an item of spending and focus for higher education, but are often poorly implemented.

E-mail management offered as a SaaS-enabled managed service can address that, with alerting capabilities tied to email and phones. Again, such services are by definition located offsite, meaning that even if the entire network and all servers are down, messages can still be delivered to devices such as cell phones and PDAs no matter where they are, once students and staff reconnect to the Internet from any location.

Conclusion

From managing the complexity of today's open networks, to tracking hardware and software assets, to preparing usable, up-to-date disaster recovery plans, today's IT department faces tough challenges. Fortunately, new ideas in how software and services are delivered are changing the industry. SaaS-enabled IT services offer immediate solutions to many of IT's most pressing problems, and is especially promising in education. Through contracted offsite management of a range of software and services – depending on the client's needs and wants – SaaS-enabled IT services offer an immediate return on investment for education, and a clear path to IT manageability.

About Campus Technology

The only monthly publication focusing exclusively on the use of technology across all areas of higher education, Campus Technology provides in-depth coverage of specific technologies and their implementations, including wireless networks and mobile devices; enterprise resource planning; eLearning and course management systems; 'smart classroom' technologies; telecom, Web, and security solutions—all the important issues and trends for campus IT decision makers.

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Powered by Dell's SaaS-Enabled Remote Management Platform

Dell Desktop Manager helps simplify IT by centrally managing PCs to reduce support costs, automating asset discovery and monitoring software usage while simplifying compliance, and protecting sensitive information through data encryption and online backup. Built around a powerful, scalable and cost-effective Software-as-a-Service (SaaS) enabled delivery platform, Dell's suite of remote management services enables customers to monitor, manage and troubleshoot IT services with minimal up-front investment, and provides the flexibility to leverage ongoing innovation and to configure these modular offers to their needs.

For more information on Dell Desktop Manager Software Services, visit www.dell.com/desktopmanager.