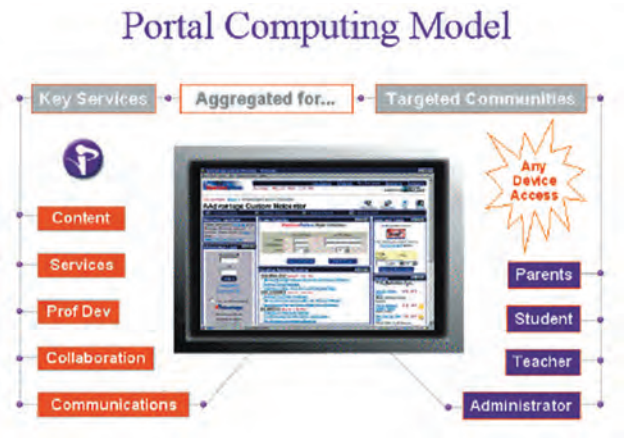
e-Visioneering: A Vertical Portal to the Internet

Portal computing is a web-based computing solution that integrates all the user's on-site applications (including desktop and back-office applications) and makes them securely accessible from any browser-based device through a single sign-on.

The evolution of computing and information needs is fueling a new model for school districts: portal computing, which leverages the power and flexibility of the Internet to cost-effectively and securely deliver learning and enterprise business applications for students, teachers, administrators, parents and suppliers. This new model is enabling schools to reap much greater value from the $8 billion spent annually on K-12 education technology.

Portal computing is a new suite of services and products targeted at small to medium-size enterprises, like K-12 schools, that are looking for a productive, easy-to-use, reliable and secure technology infrastructure without the typical complexity of managing and maintaining the networks and software systems. This solution simplifies the management of IT technologies, the training of users and the management of network and bandwidth resources.

The new model keeps what is working in education computing and replaces what isn't working. It utilizes the best applications and software offerings available for learning and business functions, at considerably less cost than in the past. Rather than schools and districts having to invest in expensive hardware that becomes obsolete before it can be fully amortized, it allows access to a virtual desktop customized for each school and personalized for each user.



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Historical Perspective

Up until the age of the Internet, computing was based on the idea that one box should be able to perform all functions. Mainframe machines became more powerful. Miniaturization allowed for the development of the personal computer (PC), which essentially became a small version of a mainframe device. While many schools will continue to utilize PCs and Macs, so-called "thin-clients" are gaining in popularity. Thin-clients are network computers that download and process applications from a server but, unlike PCs, do not store data locally.

Now there are even more options for accessing applications and data. Today's user can access all data through any device that has a browser, whether that device is a desktop PC, a laptop, a Macintosh, a network computer, or a hand-held device like a Palm Pilot. Using existing networked desktop PCs as well as thin-clients and other devices, teachers, administrators, students and parents are now able to access–from any location–school-centric information including content, communication tools and enterprise applications through a standard web browser.

In short, the new model allows anyone with an Internet connection and a browser within the system to access the applications they need anytime and from anywhere. With a browser connected to the Internet, the user thus has access to an almost endless offering of applications, content and data–plus a world full of ideas.

Because it leverages the popularity of the world wide web and the practicality of browser-based computing to make deployment of applications and information easier and more cost-effective than client/server computing, application outsourcing is the direction of choice for K-12 education today.

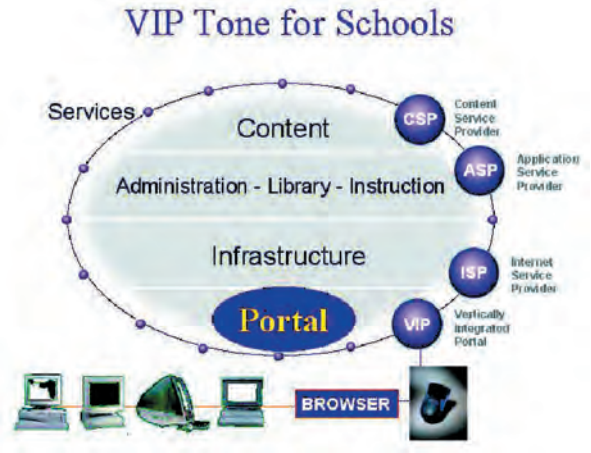
A webtop is a secure virtual desktop environment that is customized and individualized for and by each user in the organization. It is always accessible, through a password protected entry point, from the browser of any web-enabled access device, including a PC, Mac, network computer, TV set-top device, hand-held device, or mobile phone.

How it Works

On a personal computer, users rely on a desktop, which provides access to a file management system, where all of the user's files and data reside. The user also accesses applications like office automation tools (word processing, spreadsheet, for example) and e-mail from the desktop, along with a web browser and other applications (like tutorial programs, seating charts, etc.) that are typically loaded from a CD-ROM.

The integrity of one's system depends on the desktop, so the loss of a desktop means the loss of everything stored on it. Even with backup systems, after a "crash," a user can never exactly duplicate the desktop that existed before.

Portal computing is based on a webtop, which resembles what a desktop looks like, except that all applications and data reside outside the device itself. The user accesses applications and data through the browser, which connects to a data center via the Internet. After connecting to a particular site on the world wide web, the user must authenticate himself–using a password or some other security device–to gain access to the webtop.



The concept of the webtop gives the user independence of the hardware. One of the key differences between the client/server (PC) model and the portal model is the device. Whereas with a PC the information can only be accessed with one device, in portal computing the data and information can be accessed from the Internet using any device that has a browser. No matter where a user is, or what device he or she is using, as long as the user has a browser, he or she can access his webtop.

The hardware is considerably less expensive than a PC. Because the hardware is a simple, stand-alone consumer appliance, the user can manage the device much more easily because there is no need to learn about managing the inside of the machine. The user must simply remember his or her login and how to use the data and applications when they appear on the screen, a much easier task. There is no need to worry about how to organize data, files, applications, etc., because that is all handled elsewhere. It's like using a telephone: the device can plug into any jack and access any number or service through the network; the telephone device itself does not contain all the switching equipment for routing calls, nor does it contain software programs for voice mail, call waiting and call forwarding, for example.

Each user can customize his or her webtop, so a teacher's webtop would look different from an administrator's, a student's or a parent's. That unique webtop is the "portal" through which the user accesses data and applications.

Advantages

Portal computing offers a number of advantages, including:

- Continuous operation on the latest technology
- Consolidated access to a large variety of aggregated content
- Independence from one content vendor
- Immediate access to learning and administration due to minimized deployment time
- No large, up-front technology and software acquisition costs
- No cumbersome implementation behind firewalls
- Flexible, convenient and fast access to learning and administration from multiple locations
- Low maintenance costs
- No congestion or overload of network infrastructure
- Reduced in-house IT demands
- Overall cost lower than customized e-Learning or e-Business solutions

Another advantage for the user is that all data and relevant applications are accessible through just one login. Once an eighth grade science teacher has authenticated herself, for example, she has access to those applications she would need to do her job; those applications will be different than what a purchasing agent would need to access for his or her job; which will be different than what parents would need to access from their hand-held computing device.

Finally, when the user logs out, the webtop maintains all data and applications in the exact location so when the user logs in again, he or she can continue right where he or she left off. This allows a user to leave his or her computer at work, continue working from a laptop on the train on the way home, or from a PC after arriving home.

All applications are obtained from application service providers and all data is stored securely in a data center. Having all applications and data available in a lease/subscription arrangement from an outside source eliminates the need for school districts to build, for example, the necessary Enterprise Resource Planning (ERP) systems in house.

Application Service Providers (ASPs) host software applications from a remote location and deliver them over the Internet, eliminating the need for maintaining computer systems and software applications onsite at a district owned building.

The Future

Because the education market needs a zero-administration solution that does not require a full-time system administrator in every school, the market for selling thin-clients to schools is expected to grow to $2 billion annually. While laptops, PCs and Macs will continue to be very effective access devices, under webtop computing thin-clients are a great economical solution for schools that lack desktop computers and that do not have the budgets to afford full-time technologists to support complicated local area networks (LANs).

In the past year as volume has ramped up, there has been a similar increase in network bandwidth, more web-based applications and content, and enhanced versions of the thin-client hardware at lower prices. In the long-term, as schools lower their total cost of ownership for technology by eliminating the need for full-time system administrators–and as the reliability and availability of web-based services for K-12 users expands–schools will shift to these dedicated appliances that are easier to use and support than general-purpose "fat-clients" like conventional PCs.

As the market matures, schools will look to broad, customizable content solutions that can work in many environments. The thin-client will be just one of a host of school technology options that support web-based solutions, which can be accessed from any browser without requiring any emulation technology. The end users–students, parents, teachers and administrators–will not need to be concerned with the specific hardware solutions because access to applications and content will be browser-based.

With fewer investments in traditional PC hardware and staff training to support and manage complex fat-client solutions, schools will be able to devote resources to the business of education and using technology to improve learning opportunities. Network technology advances that leverage these universal access devices will make e-Learning an integral part of the learning process.

Vertically Integrated Portal

A vertically integrated portal combines customized portal content with a managed infrastructure. This computing solution can be delivered as a turnkey package with consolidated customer support and billing. The vertically integrated portal computing solution integrates e-Learning and e-Business tools in one place as an outsourceable, service model solution. It interconnects all services, content and data, which places all necessary tools and information at the user's fingertips. Operating under a service model allows for access through many different browser-based appliances in addition to PCs and Macs. Moreover, managing appliances is less expensive and much easier. For the school district, the entire information technology infrastructure becomes much more manageable and allows for reallocating IT resources while minimizing the amount of teacher training required.

A vertically integrated portal for education is a safe, secure, dependable, scalable and accessible location for students, teachers, administrators, vendors, parents and other users on the Internet. VIP Tone has the breadth of knowledge and expertise to deliver on this promise of e-Visioneering.

VIP TONE™
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