



3 Things Every New Network Manager Ought to Know...

For nearly three decades, John Cusack has been a network operations man in education—starting out as a programmer while he was a student to currently serving as the Network Services Manager of the San Diego County Office of Education. Cusack handles everything from database management to network configuration to system security and staff management.

We sat down with him to ask the simple question—*What are three things every new network manager in education IT ought to know?*

“First of all, know your network. Get the inventory, get the layout, understand the existing configurations, understand the wiring, know the ports, and physically inspect the site. Don’t just rely on the documentation.”

Cusack explained that although knowing the documentation (if it exists at all or is even up to date) is important, there are authorized elements on a campus and rogue elements to consider. Without getting into every classroom, every building, every nook and cranny of a site, you won’t know if what the documentation states is true or even remotely accurate.

“Second, understand that education IT and business IT services are very similar. They differ inasmuch as there are cycles that the network manager needs to understand about the school calendar and understanding those cycles takes about a year” Cusack explained. Knowing the critical dates, such as CBEDS period 1 and period 2, SIS input cutoffs as well as required reports contract dates, class caps, various

attendance schemes, and how various budget cycles work (e.g. State vs. Federal) is critical to functioning as an effective network manager. As for the technical knowledge, well...a Linux server works the same way on a school campus as it does for a mid-sized business. What’s critical to be aware of are the legal stipulations such as CIPA and how reliant the education community is on the networks. “You can’t just take a server offline whenever you need to.”

Lastly, Cusack’s advice is “Be nice.” Ultimately, a network manager is a leader of people, not gadgets. Working respectfully with operators and specialists can go a long way. “Being nice to people you work with and work for pays off dividends that are often totally unexpected.”



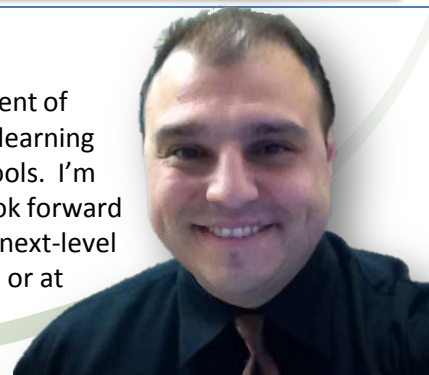
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A Message from the Director...

On behalf of the San Diego County Office of Education and the California Department of Education, I’d like to thank you all for the work you do in support of our students’ learning and the efficient, seamless technical support services you provide California’s schools. I’m pleased to have been selected as the new Director of the TechSETS Project and look forward to continuing the project’s tradition of excellence as well as to bringing a series of next-level services to the table. Please feel free to contact me at anytime at (858) 292-3502 or at eahangarzadeh@sdcoe.net Thanks!

Emil Ahangarzadeh





K12HSN in Full Swing

One of the Golden State’s most revered education technology services is the K12 High Speed Network and yet the services it provides still elude some in education (despite their well-designed and informative website which may be found at www.k12hsn.org).

Teri Sanders, who coordinates the program is probably one of the few people in the State that knows its inner workings. “The most common misunderstanding about K12HSN is that we strictly deal with infrastructure--hardware, circuits, etc...” Sanders said. In fact, K12HSN provides videoconferencing and related distance learning capabilities in its effort to coordinate network uses to benefit teaching and learning. The program administers K-12 education programs’ participation in the California Research and Education Network (CalREN) which is the actual high-speed, high-bandwidth statewide network linking the participating UC, CSU, K-12, community college, and some private colleges through 14 hub sites and over 200 node sites.

Under the Corporation for Education Network Initiatives in California (CENIC), CalREN provides multi-tiered, advanced network-services fiber which serves educational and research institutions throughout California. CalREN’s backbone consists of 2,700 miles of managed fiber including 472 routers, 81 switches, and 51 optical components.

The TechSETS eNewsletter will be featuring each of the five K12HSN services in future issues. These services include:
Videoconferencing, Applications Coordination, Data Reporting, Technical Assistance, and Network Services.



TechSETS is proud to associate with the K12HSN and the Imperial County Office of Education. [What K12HSN services does your organization use?](#)



IaaS vs. SaaS vs. PaaS vs. DaaS

It seems like everywhere you turn these days in the IT world, the word “Cloud” seems to rear its head. What’s more, the terminologies used in this field, not to mention the myriad of other complexities, are expanding rapidly. What is the difference between IaaS, SaaS, PaaS, and DaaS? Well, we all know the “aaS” part abbreviates “as a Service”. So let’s take a look at each of these terms to see how they differ from one another.

DaaS (Desktop as a Service) is just another term for desktop virtualization. It’s a term designated to describe the separation between the machine and the software. Over the last two years, it has also been an abbreviation for *Development as a Service* and *Database as a Service*.

SaaS (Software as a Service) seems to be the most used term in Cloud-computing as it’s a deployment model for content providers, such as software developers, to be able to offer their services on demand. An example of SaaS would be Study Island or SuccessMaker.

Now this is where it gets a little murky. *PaaS (Platform as a Service)* is a model for deploying actual applications but without purchasing the hardware/software layers required. PaaS offers schools a suite of services such as messaging applications, security tools (e.g. forced SSL and Single-Sign-On), collaboration applications, video hosting applications, etc... Zoho Creator or GoogleApps are examples of PaaS. They host your applications, provide analysis and reports, and, in some cases, provide scripting language for you to create apps.

But *IaaS (Infrastructure as a Service)* is about virtualizing the actual platform (confusing, isn’t it?). Amazon Web Services is an example of IaaS. Servers, software, network equipment, and data center space is completely outsourced by the client.





Top 5 Most Confusing Terms IT Professionals Try to Explain to Educators

Sometimes, when education IT professionals work with administrators or teachers on a computer problem, they use language that many teachers may only pretend to understand. So, why not make it simpler for them? Here are five terms that may need just a little more explanation when working with educators:

- 5. Intranet-** A private computer network (think of it as a closed Internet). Teachers can still access the Internet and email. It's not the opposite of the Internet. If the Internet communicates between organizations, the Intranet communicates WITHIN an organization.
- 4. Cookie-** A piece of computer code that gets stored on your computer by web browsers. It lets the computer know that you've visited a particular site so it saves your preferences like remembering what you put into the Amazon shopping cart (even though you didn't buy it). You can delete cookies saved on your computer or not even allow your browser to save cookies (but that may seize some of the functions a site may provide).
- 3. Dongle-** Any small piece of hardware that connects to a computer (like a USB Flash memory stick or a USB signal receiver from remote use devices like a clicker to advance a PowerPoint slide).
- 2. Server-** A computer that serves up files (like websites, documents, etc...) over the Internet. When a teacher looks for a website, his computer connects to another computer to get the files for the website. The computer it connects to is called *the server*.
- 1. Router-** The data traffic director. Routers read the address that pieces of information are labeled with and then tell that information where it should be heading as it travels across the Internet (usually, either to a server or your computer).

What other terms would you suggest we look at? Let us know by sending a message to techsets@gmail.com.

What's the Buzz Around TechCONNECT-IT?

Thanks to the San Diego County Office of Education, IT professionals in education now have a virtual professional networking system all to themselves. *TechCONNECT-IT* is the first project of its kind to focus specifically on K-12 Information Technology professionals using the *elgg* platform. Created by technical people for technical people, the tool supports leaders and IT



professionals responsible for making computer networks, software, media services, and hardware function smoothly. It's used by those individuals responsible for planning, installing, leading, and supporting technology in schools.

[By registering for a free account](#), you gain access to resources, reviews, and news of interest to the K-12 IT community. *TechConnect-IT* features a unique blend of original content by IT professionals, peer advice, blogs, community forums, vendor whitepapers, research articles, micro-blogging, and much more.

As of this publication, over 300 education IT professionals have active accounts. Have you [signed on](#) lately?



Gadgets & Gizmos

IT professionals work with so many different tools, it's sometimes challenging to keep up with what's new. Here are a few featured items you may be interested in. *NOTE: TechSETS and the San Diego County Office of Education do not endorse the purchase or use of these tools. Use at your own risk...*

The Steadicam Smoothie from Tiffen

Designed specifically to work with Apple's iPhone, this "handy" steadicam uses the same technology that the major studios use. It can be used with the Motorola DROID, the FLIP Mino (RIP), and is adjustable to other similar devices. One catch: It's not out yet. But you can [reserve yours...](#)



Magnetic LED Flashlight Telescoping Pick Up Tool

When was the last time you dropped a screw in the casing of that old PC tower and near pulled out all of your hair trying to snag it back? This tool uses three AG13 button cell batteries (included), has a soft grip handle and can extend up to 32". Plus, with its LED light, you can track those tiny screws that hide even in the darkest of crevasses or pull out objects that weigh up to 6 lbs.! We were able to find them for under \$7 on Amazon.com.



Scosche flipSYNC

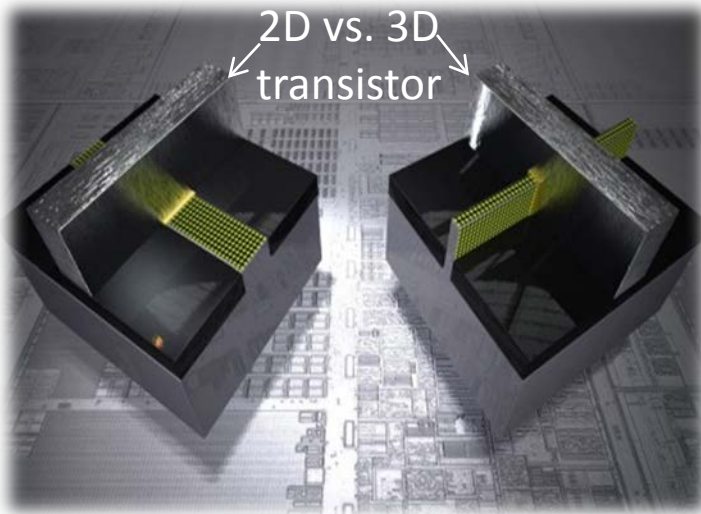
Even though it has received some mixed reviews, we thought it would be worth your while to check it out. The flipSYNC conveniently lets you sync and charge your portable device (Apple or Blackberry) with its nifty flip out style key chain connector. When was the last time you needed your sync cables but didn't have them on you? Now, just look onto your keychain. Anyone use this device? [Let us know what you think...](#)



Intel's Newest Innovation

Intel announced one of its most significant moves toward the mobile, desktop, and CPU space this month with the new 3D Tri-Gate transistor.

Of course most folks think of chips when they hear Intel but those of us in IT know that chips are made up of transistors. Since the early 1960s, transistors have been getting smaller and more efficient but the industry seems to have hit a plateau with regards to the size vs. output ratio.



Generally speaking, transistors control the flow of electricity. The conventional design (or planar) transistor is a bit of silicon that lets electrons flow with a metal gate that controls the flow.

What Intel has done is to turn the flow of electrons across the silicon piece on a 2D plane into a flow that runs along a 3D gate providing less power leakage and using lower levels of voltage.

So what does this mean? Some analysts are suggesting that Intel is going to move much deeper into the mobile device production industry. They have announced that they will be using these 3D Trigate 22nm transistors in their next-generation processors (dubbed "Ivy Bridge"). With this new technology, Intel will be able to take on UK-based ARM Holdings which produces chips that power most of the world's tablets and smartphones.

What will this mean for consumers? Possibly triple the life span of even the best hand-held device batteries and much thinner screens (as well as, well, pretty much thinner everything else).





CTO's Corner

CTOs and directors of technology are often called on to support the development of policies (e.g. Acceptable Use Policy, social networking policies, Standard Operating Procedures, etc...). To that end, here are a few philosophies to consider:

- Educational leaders should strengthen their literacy with regards to policy processes
- Educational leaders need both theories and practical information about education policy and policy making
- Educational leaders must understand power and how to use it responsibly
- All public policy, but especially education policy, is value-laden

The adage "politics and education don't mix" is simply inaccurate. Without a strong understanding of the policy development process, education technologists will always be reactive rather than proactive when it comes to emergent trends and scaling needs.

The relationship between theory and practice has got to be strengthened. Too often, a distinction is drawn between the two which simply appeals to the sensibilities of those that are challenged by tasks and policies. The *reality* is that theory must be shaped by practice and practice must be informed by theory.

Frances Fowler, a noted scholar from Oxford University, framed the issue of policy development as one that grows out of some conflict--whether between individuals, groups, or institutions. The outcome of these struggles is shaped by the balance of power among the parties which is why it's so important to fortify our grasp on this large theoretical house. Should leaders be focused on the dynamics of practical politics or view them from more pluralistic and critical perspectives on ways to resolve issues? Policies are about people and people are social entities that are

drenched with values and perspectives. To presume that a policy can be devised that is value-free is frankly impossible.

So what are your thoughts? Send your commentary regarding the challenges and processes CTOs undergo in developing policies by [emailing them directly to us](#). Don't forget to give us express permission to print your opinions.

Enterprise Training Solutions

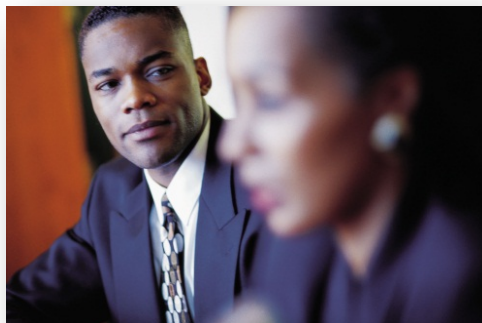
Thanks to an ongoing partnership with *Enterprise Training Solutions*, TechSETS has been able to bring web-based IT training to California's education IT community for nearly a decade through its [My SkillSource program](#). At inordinately discounted rates (over 65%), TechSETS offers complete training in Microsoft, Cisco, CompTIA, CISSP, ITIL, and much more through *My SkillSource*.



In addition to higher-end training, the program offers office productivity training solutions for just \$40/year which includes desktop applications (e.g. MS Office, Crystal Reports, Adobe Acrobat).

[Sign up for a FREE TOUR to find out more](#)

Next LIVE Demo--June 8th, 2011



Backup: A Tempest in a Teapot

Most database administrators feel they have a strong grasp of their storage growth rates—they keep up with compliance regulations, adhere to best practices for retention, and have processes in place which are automated. But, according to a report put out by IBM in March of 2011, data growth is fast outpacing the ability for administrators to store and analyze the data.

Generally, enterprise storage needs are growing by 20%-40% each year which will require that much more funding, equipment, and space for database administrators. As a rule of thumb, 1GB of data stored costs about \$1K annually (including power, maintenance, labor, cooling, etc...). When we get into higher data storage needs, you can add nearly \$1M annually for each TB to the data center costs. What's more disconcerting is the loss of productivity and application performance which occurs when data growth is combined with inefficient storage ability. Schools call up internal pages but have to wait longer and longer for the data to appear as their query drags through vast amounts of obsolete and poorly prioritized data stores.

So how are education IT leaders facing these challenges? By approaching their storage design through the lens of three principles. First, they are optimizing their storage environment before buying more equipment. Second, they are ensuring efficient compression and deduplication processes are in place and automatic processes are in place for data migration between tiered storage solutions (e.g. solid state to disk to tape). Third, they are prioritizing data storage based on the frequency with which the data is handled—if the data is less than a week old, they may store it on solid state. Data that hasn't been accessed in three months may be stored on disk-based or tape-based systems.

So what's your approach? Are you continuing to throw hardware into the mix to meet your needs? What technology are you using to maximize your data stores? [Send in your comments](#) about your data center management design for our next issue...



Chromebook: A Game Changer?

If you followed along the torrent of Tweets

about the subject in the middle of May, you probably already know about the big news out of Google I/O—Chromebooks (laptops running the Chrome OS made by Samsung and Acer) are going to be leasable by businesses and educational agencies as of June 15th. The question is how this move by the juggernaut organization will shift the industry. Here are some of the details and their possible implications for IT professionals.

Chromebooks are not directly comparable to Windows or OS X-based computers because local applications cannot be added to them. However, if the trend toward Cloud-based application use continues, they are going to be much more relevant to the mainstream market than they are today. Plus, \$20/month/user for educational agencies seems like a very affordable price point. But what is being glossed over by many in the media is that there is a three-year contract attached to the lease fees. So, a school can get a Samsung machine (which would generally cost about \$430-\$500) that runs the Chrome OS from Google for \$720 (over a three-year period). That's nearly 150% of the cost of the same machine if you were to purchase it with Windows 7.

What, then, is the big deal? Basically, the IT support that schools provide: full warranty and replacement provisions, technical support, and continuous updates behind the scenes. Even though GoogleApps doesn't come with each Chromebook, for educational agencies that qualify (non-profit), it's free. With the cost savings in labor and time (updates, defrag, patches, management, etc...), CTOs and Directors of Technology are going to face a tough call when considering the amortized costs and the TCO arch that comes with the Chromebook subscriptions. Plus, there won't be a need for domain administration or online account provisioning.

Then, there's the savings in Internet data costs. If a school system is able to get a 3G policy in place, Verizon is throwing in 100MB/month of data free of charge. But be aware—there is no way to terminate a contract once it's started. So, as you can see, Chromebook subscriptions may in fact be a game changer. But what about the robustness of the OS?

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New TechSETS Cadre

TechSETS is proud to announce the formation of a new cadre of education technologists from across the Golden State. In an effort to expand our services, four professionals with exceptional experience in educational and information technologies will be working closely with TechSETS members, CTAP Liaisons, as well as others in their communities with one goal—supporting the needs of education IT professionals throughout California. The cadre team functions as the driving force behind content development, community building, and leadership development that the TechSETS Project has undertaken. Cadre members are peer leaders representing IT staff across California.

Antwon Lincoln represents Area 1—southern California. With an impressive track record as an instructional technology and media coordinator in districts such as Chula Vista ESD, Paramount USD, and Long Beach USD, Lincoln is an expert in strategic planning as well as computer networking.

A former high school teacher, Martha Valencia represents Area 2—Los Angeles County. With a Master of Science Degree and her administrative credential, Valencia works with Los Angeles USD to develop online learning content as well as manage projects and provide training for hundreds of educators in her district.

Rolland Kornblau is currently the Supervisor of Network Services for the Whittier City School District with over a decade of experience in education IT. His experience with 1-to-1 laptop initiatives, network installation, cyber security, and procurement has garnered him a great reputation as a leader in IT.

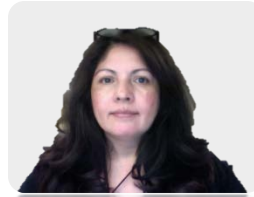
Finally, Menko Johnson, representing the central coast and Bay Area of California, holds a Master Degree in Education Technology and currently serves as Technology Coordinator for the Fremont UHSD. Specializing in such areas as learning space design and technology infrastructural planning, Johnson will prove to be an effective asset for you and your IT team.

For more information, email the Cadre members directly...



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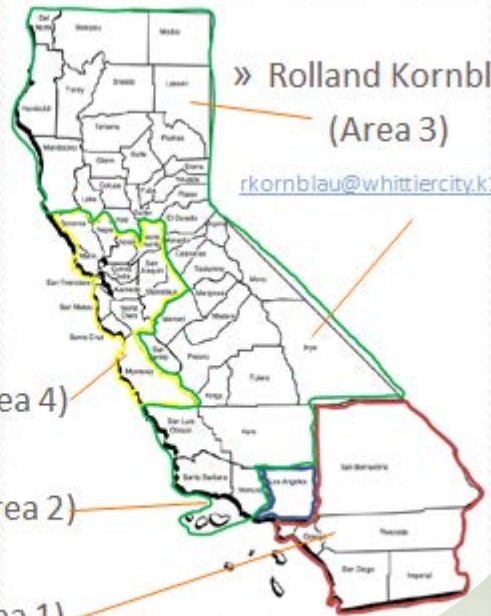
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Chromebook—A Game Changer?

continued...

You can't install desktop-based local applications (e.g. MS Office, Photoshop, etc...). However, Citrix is partnering with Google to provide software that can push out applications via a local server to the Chromebooks. But, Citrix will undoubtedly raise the bottom line costs. Neither the Samsung nor the Acer version of the Chromebook is going to offer up anywhere near the speed of a conventional laptop or desktop computer.

The Samsung Series 5 will have a 12.1" display running 1280x800 resolution, weigh a little more than 3lbs, and provide 8.5 hours of continuous usage battery life. The machine runs on Intel Atom Dual Core processors and has built-in dual band Wi-Fi. Additionally, it comes with an HD webcam, noise-cancelling microphone, 2 USB 2.0 ports, a mini-VGA port, a full-size keyboard and an oversized clickable track pad.

The less expensive Acer will have a slightly smaller screen (11.6"), weigh just almost a pound less than the Samsung, and sport 6 hours of continuous usage battery life. Everything else will be identical except for one major difference—the Acer will have an HDMI port.



So what's your take? Do you think the Chromebook subscription program is going to be a game changer in how education does computing? What about the role of the IT specialist? How do you think it will effect the way things are done in today's education IT ecosystem?

[Send your thoughts to the TechSETS eNewsletter](#) and let us know.

Events & Opportunities...

June 1st, 2011-

Annual TechSETS Member Survey

Be sure to participate in this needs survey by [registering your email](#).

June 6th, 2011-

WWDC 2011

Apple's coveted World Wide Developer's Conference kicks off in the Bay Area.

June 8th, 2011-

My SkillSource Site Tour

[Register](#) for a FREE 45-minute live online instructor-led class experience and learn about how you and your team can take advantage of world-class IT training on your terms.

June 20th, 2011-

Gartner Summits

The premiere event for senior IT leaders, Gartner Research is hosting two summits this year during a week-long event in beautiful San Diego. The first summit is focused on [PPM & IT governance](#) and their second summit will focus on [enterprise architecture](#).

June 21st, 2011-

Windows Server 2008 Training

Hosted by the San Marcos USD (southern CA), this two-day event is specifically designed for technical support teams interested in learning about configuring, managing, and maintaining Windows Server 2008. [Contact Bill Simpson](#) for details.



For more information, visit
www.techsets.org

