CLASSROOM TECHNOLOGY DESIGN GUIDE

HOW TO APPLY TODAY'S CLASSROOM TECHNOLOGY WHILE PLANNING FOR THE FUTURE

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1. Overview

The most important thing that schools can do is not to use technology in the curriculum more, but to use it more effectively. Your challenge is to build a classroom presentation solution that will support your organization for many years to come. This document will give you some things to consider before you choose a solution and put together a classroom technology deployment plan. We've compiled this information from years of experience, planning, deploying and supporting small and large scale learning spaces (we consider large scale, multiple auditoriums and lecture halls networked together using distance learning technology), we hope this will help.

2. Gathering information

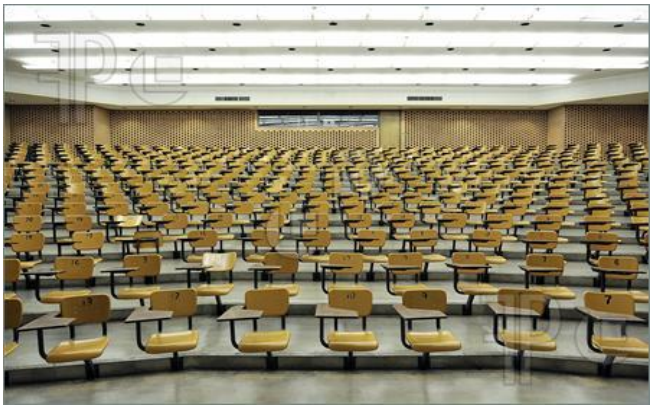
You will need to consider two key things before installing Audiovisual (AV) gear in your classrooms**:** What are the current needs for my classrooms and How can technology meet those needs?

It's not as easy as installing a really expensive projector and loud speakers, and hoping that this solution will be beneficial to students and instructors. You'll have many different classroom presentation solutions to choose from; some you may have already considered such as interactive whiteboards, and others you may not even be aware of, such as collaboration rooms and distance learning classrooms

2.1. What are the current needs for my classrooms and how can technology meet those needs?

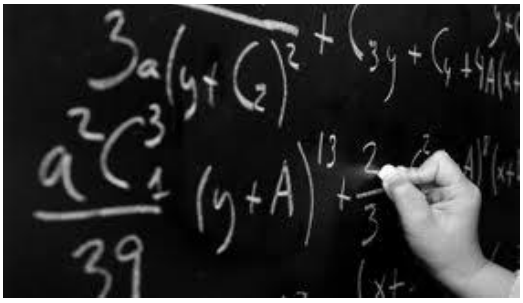
These are the areas where classroom size and instructor teaching styles can be a deciding factor in how the room is designed and what technology is right for you. Some important questions to consider are as follows:

- **Who will be using the classroom?** K-12? Higher Education?
- **What is the physical size of the classroom and how many students will it seat ?** For example, you may need multiple displays installed to ensure that each student has an acceptable view of the instructor's content.



- **What sources, (teaching tools), are used most frequently by your instructors?** Each instructor has their own teaching style. Some instructors have embraced the use of today's teaching tools, such as the iPad, while others would rather just pick up a dry erase marker. There is no reason to push teachers into the pool of new technology, and expect them to learn how to swim, in the middle of teaching a class. We embrace the needs of the teachers, and address them in our classroom technology solutions. This allows teachers to gradually blend their teaching styles with the advances in technology, for the best possible learning environment.

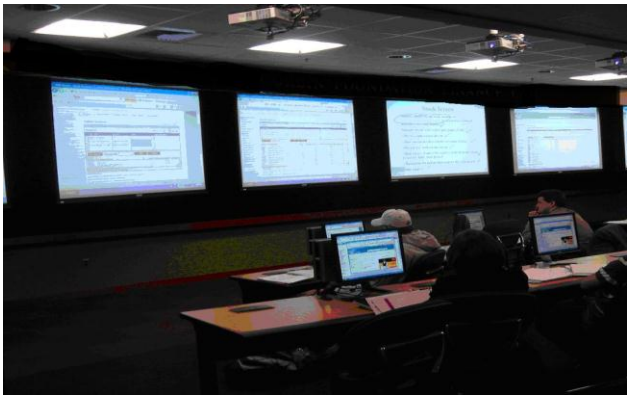
  One example of this is a request we had from a university to allow an instructor to work math problems out on a chalk board for student instruction, while in a distance learning session with a remote classroom hundreds of miles away. Using the chalk board - Simple! Making sure that 125 students in another classroom, hundreds of miles away, can see your work - Also Simple! Yes, with the correct camera placement and control system, the instructor can initiate the video call and set all camera views with the push of a single button.



- **Will students need to interact with each other to solve problems? Will the architecture of the room allow for multiple student workgroups?**

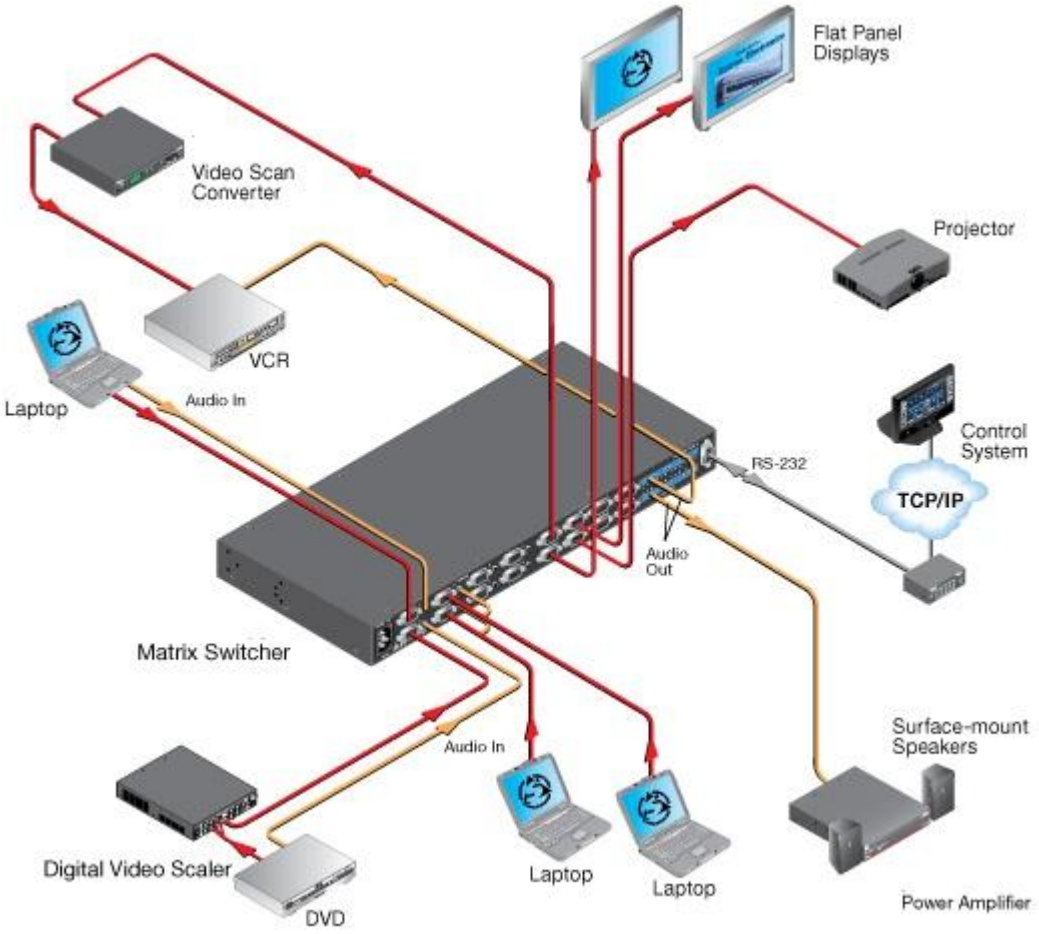
  One example of this is allowing student workgroups to share their solutions to the problems they have worked out with the class. Each of the student workgroups can be given a dedicated display in which to show their content.

  Another example of this is the use of a Video Teleconference system, which will allow the students at your local school or university, to interact with other schools located around the globe.



3. Planning For the Future

Once you have created a list of needs for your classroom, you are now ready to discuss what classroom technology solution is right for you. Budget is always a factor in building your system, but it can cost you a lot more down the road if the base system you plan to install, will not allow your classrooms future growth. If the audio and video switching and control devices you deploy in your classrooms only fit the needs you have today, what happens next year when the latest and greatest teaching tool is invented and you have nowhere to plug it in, and no way to control it ?



For example, You have made the decision to upgrade 20 classrooms with new technology. A laptop and PC connection is all that is needed. Expansion was not planned for, so the system only has two PC connections, and the room controller only has enough buttons to select between the two sources. In order to connect and control another source, new hardware will need to be purchased and the control system will need to be reprogrammed, if not upgraded. A 15% increase in cost up front to design the system for expansion, could save you from having to completely replace expensive AV switching and processing hardware, not to mention the cost associated with reprogramming or reconfiguring AV control interfaces.

4. Remote Monitoring and Scheduling

Room	Display	Power ON OFF	Connection	Lamp Hours	WebCam	Calendar
Beltran: 101	Sony VPL-CX150					
Beltran: 102	Sony VPL-CX150					
Beltran: 103	Sony VPL-CX150					
Beltran: 104	Sony VPL-CX150					
Beltran: 105	Sony VPL-CX150					
Beltran: 106	Sony VPL-CX150					

No matter the solution, whether you are planning to deploy just a few basic classrooms or multiple campus distance learning lecture halls, it is always a good idea to integrate a Remote Monitoring and Scheduling Solution into your classrooms. When designing the system, we suggest that you choose devices that have an IP based connection or a bi-directional RS-232 connection, as this will allow the status of every device in the system to be monitored. The control system manufacturer specific software is usually available at no extra cost, and will provide an easy to use interface for scheduling activities or monitoring device status. Examples of this would be setting a schedule for every projector on the entire campus to power down at 10:00 PM, or setting a conditional monitor so that an email will be sent when a classroom's projector bulb life reaches 2000 hours. This is a proactive approach for preventing system downtime.

5. Warranty and Support

One of the most critical steps to building a reliable system is making sure you have the proper level of support to meet your requirements. Murphy's Law of critical systems is that something will go wrong eventually. Here are some things to think through to make sure you're ready:

5.1. Hardware/Software Replacement

Your Classroom Technology Solution will have many different component parts. You need to understand what happens if something fails or is damaged.

- How long is the warranty on the AV components (Video Switchers, System Control Panels, Video Teleconferencing Codec, etc.)?
- How quickly can you get replacement parts?
- How will they be installed when something does go wrong?

5.2. Phone Support

Being able to get an experienced engineer on the phone to help handle critical support issues is a vital asset to maintaining a complex multimedia presentation system. Support specialists should understand your specific requirements and be able to respond and resolve issues quickly.

5.3. Ongoing Maintenance/Managed Services

Your Classroom Technology Solution will have software and firmware that needs to be updated and maintained on average of once per quarter. We call this a quarterly refresh of the system to keep it up to date and ensure that the system has the latest updates available. This can be a tricky process because with typically each new release, it brings additional features and in many cases, additional bugs in the software. Consider utilizing an engineer that is an expert on that particular platform to assist with issues or even provide the service ongoing to free up your internal resources. Many times utilizing an expert on a monthly or quarterly basis is more cost effective than figuring things out internally.

6. How SecurEdge Can Help

There is a lot to consider when deploying a large scale Classroom Technology Solution. We recommend getting any expert to help with the successful roll out. SecurEdge Networks has many years of experience designing, deploying, and supporting large scale Classroom Technology Solutions. Here are a few things that make us unique.

6.1. Specialty Focus

One-stop shopping works well in some retail environments. It's our belief is that it's very difficult to achieve in the technology world. In our experience customers want a technology solutions partner to understand the problem they're facing and their industry. SecurEdge is committed to providing only the solutions we are experts in, and serving the markets we have significant expertise in. We have even developed industry specific solutions and practices. We believe this approach creates the most value for our customers.

6.2. We Are Client-Centered not Product-Centered

At SecurEdge, we take our comprehensive knowledge and experience to determine which type of solution will be the best fit for your organization. Many companies who manufacture products do a great job at marketing their products. The challenge becomes when they recommend it for everyone even though it's not the best fit for the customer's environment. SecurEdge has the

ability to work on the client's behalf, cut through a lot of the marketing jargon, and recommend a solution that is the best fit for the customer.

6.3. Our Methodology

Analyze: We have industry and solution specific experts to help understand a customer's current environment. This is the basis to build any Classroom Technology Solution.

Design: We offer complete solution design services to help address the challenges. Our design recommendations are based upon your end goal, as well as industry and solution specific knowledge.

Deploy: We deploy many solutions turnkey or we can work with your team to provide guidance on deployment best practices and customer specific integration services.

Support: We offer custom fit support services. We offer managed services, unmanaged, or hybrid support including online portal access and support tools to help you manage your system.

Deploying or expanding your wireless network? Register for a free wireless design by visiting our wireless networking hub at www.securedgenetworks.com/freewirelessdesign

Our goal is to be a resource for you.

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