Advances in DVLED and LCD display technologies help deliver crisp resolution, long lifespan, and flexible presentation options.

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Command and control centers are a crucial tool for government agencies, transportation authorities and utility providers to monitor daily operations, identify problems and respond to emergencies or natural disasters. Armed with the latest digital display technologies, including DVLED displays, LCD flat panels and projection systems, these spaces allow response teams to quickly gather large amounts of actionable information from a variety of sources. With so many different ways to design a system, choosing the right components is important to maximize utility and value.

When we visualize a command and control (C&C) center, there are distinct needs that must be met. While the size of the room, the team that works in it and the responsibilities they hold are all variables, virtually every C&C center relies on desktop workstations and large wall-mounted displays to enable rapid research and present information. As IoT sensors become more common and more widespread in functionality, they will likely be tied into centers to deliver nearly unlimited real-time information and support more informed decisions.

Seeing Everything All At Once

As personal computer displays have evolved, the bigger, brighter, sharper canvasses have benefited emergency response and oversight operations. In fact, manufacturers like LG in recent years have unveiled a number of ultra-widescreen desktop monitors with aspect ratios of 21:9 or greater, and resolutions as high as 5K. These generous landscape displays provide the ability to host multiple windows on a single screen, allowing workers to quickly research, evaluate, discuss and disseminate pertinent data. Curved models add ergonomic user benefits, and displays with IPS panels exhibit excellent off-axis viewing that can aid in collaboration.
Custom DVLED Solutions Suit Unique Needs

In addition to individual desktop monitors, any number of large displays may be needed to share real-time surveillance feeds, images, live news feeds, charts, graphs or other data to the entire room. For permanent needs, wall-mounted DVLED displays are quickly becoming a preferred technology based on their reliability, custom sizing options, off-axis visibility and an industry-wide expectation of 100,000 hours of operation. For 24/7 C&C centers, this means users can expect a minimum of 11 years of consistent performance.

DVLED displays are also highly flexible. With multiple manufacturers offering customizations that include size, shape, brightness, pixel pitch and curvature, DVLED displays can fit virtually anywhere they are desired, even on curved walls or pillars. When combined with proper content management systems, users can split up and arrange the available screen space to broadcast multiple feeds from various sources. Some models offer specialized features or add-ons such as weatherproofing for dusty or humid environments, or ambient light sensors that enable automatic brightness adjustments.

For rapid installation needs, LG offers all-in-one DVLED solutions at sizes up to 136 inches that can be installed in just a few hours, as opposed to a few days for larger custom designs. These products come color calibrated and ready to mount, although they still require professional installation.
LCD and Projection Open More Options

Video walls also comprise a significant share of screen real estate in modern C&C centers, with LCD panels providing up to 4K resolution, consistent color and brightness, and the ability to use individual panels to present individual inputs. There are many LCD options to choose from, with 4K bezel-less and ultra-thin models representing the cream of the crop. Based on budget and needs, paneled video wall configurations may be as small as 2x2, or as big as 5x5 or even larger.

Because the control room is a mission-critical environment, power/signal redundancy is very important. Even if there is a problem with the power supply, some video wall displays, such as those from LG, can operate using a backup. Moreover, in the event of a problem with the signal supplied on the large screen, viewers are able to see the content on the rest of the modules – excluding the LED module with the problem – via a different signal delivery system.

Such remote power supplies allow stable power management, convenient service, efficient space utilization, and reduced noise and heat.

In order to support overflow workers or enable temporary use of other spaces, multiple manufacturers also offer mobile LCD displays on wheeled carts or moveable stands. This can add flexibility to any size C&C center and may also be a desired solution to temporarily reduce room congestion for operational efficiency or social distancing.

Projectors are the final display solution used in C&C centers, although they are less common. Projection systems are advantageous in that they don’t necessarily require permanent installation, so they can be moved to other rooms and allow adjustment to picture size to accommodate extra staff or outside participants. This can be beneficial for training or for major occurrences where multiple agencies or departments send representatives to work in and monitor the C&C center.

Expanding Beyond Critical Infrastructure

Traditionally, C&C centers are utilized by law enforcement and government agencies, but an increasing number of industries have begun building spaces to provide monitoring and help improve decision making. Hospitals, college campuses, shopping malls and even skyscrapers may benefit from having a single location where all pertinent data is accessible, especially in emergency situations. Private businesses with this capability can congregate data to aid law enforcement response, protect customers, residents or guests and quickly find solutions to immediate problems.

Regardless of the type of display, some organizations require TAA compliant technologies to provide security assurances, so specific manufacturers and models may be needed. Consistency and system reliability may be improved by utilizing a single display manufacturer for desktop, permanent and mobile displays. That’s why companies like LG are investing greatly to strengthen their supply chains. Such investment is needed to support the desires of integrators and operators looking to leverage LG as their single source for all C&C needs.

There really isn’t a one-size-fits-all solution for C&C centers, because the space, needs and budget of every organization is different. Using a mix of display technologies, these centers may help improve public safety, protect critical infrastructure and help organizations small and large effectively respond to emergencies.

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