HORIZON DISPLAY'S GUIDE TO

INTERACTIVE VIDEO WALLS

TIPS & TRICKS

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This is Josh Tonasket, creator of technological bliss. Josh has had a passion for AV/IT since first taking apart his grandmother's transistor radio. Josh brings to Horizon Display a decade of interactive digital signage hardware and software expertise and is the resident expert on all things technology.

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@JTONASKET

Meet Mark Coxon, our very own 30-something Muay Thai kick boxer. Mark has over 12 years of IT and AV experience, and besides being generally brilliant at his job, he also writes for an AV trade magazine focusing on hardware and business practices. Most recently Mark worked for a niche museum AV Integrator, where he helped tell unique and engaging stories through the use of cutting edge technology. Mark has also worked on award winning, innovative, and interactive video wall projects for Universities.

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Trading in his specialist hat for that of a generalist, Stephen Gladden has become Horizon's modern marketing pundit. Notably known to walk into a meeting with nothing more than a box of magic markers, he drafts Horizon Display's integrated multi-channel marketing strategies - or Gladdy-o-Grams as they have come to be known - with ease. Wading waist deep in touch technology for 5 years he also serves the role as leader of our creative services and software offerings – we let him call that Studio 5.

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what we will cover:

1. interactive or static
2. touch technology
3. glass options
4. installing components
5. mounting advice
6. digital strategy
7. natural user experience
8. think outside of the box

introduction.

Here at Horizon, we tend to look at challenges as opportunities for innovation, improvement and a chance to tell our more curious brethren just how its done. Take video walls for example, which to most, are a big mystery. You plug it in, you press a button and almost by magic, your message is larger than life.

But before you press that "on" button there are a few not so magical steps you must pay special attention to.

This white paper is authored by Horizon Display's video wall experts Mark Coxon, Josh Tonasket and Stephen Gladden, specialists who have worked with some of the largest era defining companies in the world. Nike and General Electric can do a lot to build credibility, wouldn't you agree? It will focus on several tips to help you break down the barriers to allow easy adoption of video wall technologies

1 interactive or static?

First, you must decide whether your video wall be touch enabled. Converting your audience from spectators to players is a way to improve your wall's effectiveness; however in some cases it may not be necessary.

Video walls may not be the direction to go for a company just getting their feet wet in the digital space, but for the right organization, there is no doubt they are an impressive, effective tool that has no natural predators.

2 touch technology.

Place an LCD screen within reach of a passerby and a funny thing will happen, people will touch it. That is because people now expect that touch will be part of the "screen" experience, and there is an escalating demand for these technologies.

The touch experience can be delivered in several ways, (in fact there are 8 different touch technologies, some with multiple subcategories) and choosing the right solutions can be daunting without the help of a partner with a proven track record.

There are many environmental factors that can affect the interactive video wall experience, as well as some technology specific features that may give one technology an edge over another. Touch points can be a major consideration. If the experience just requires mouse-like control via a fingertip, dual touch is fine, however if the experience leverages multi-touch gestures like pinch and swipe, and the new custom gestures offered with Windows 8, a minimum of 6 points is recommended for full hand and zero occlusion. If the screen wall will be utilized by several users simultaneously, then you will most likely need to look at 12 or 32 points of touch to accommodate that.

The most well rounded option is typically an IR based touch screen, as it can handle from 2-32 simultaneous touch points for single or multiple users, and Windows 7 and 8 gestures, it can be used with a gloved hand or stylus, and it is more accurate than some of the other options, while still being resistant to higher levels of ambient light. There are other factors or interactive needs that may come into play, and a proven partner can assure that those considerations are made when determining the final solution.

3 glass options.

Substrate selection (i.e. tempered or plate glass, Lexan, Acrylic) can also make or break your deployment.

For example, large sheets of glass are typically optically imperfect, so up close viewing within 2 feet can be impacted by glass contaminants of waviness due to being tempered. If you go with a plastic derivative and purchase it in too thin of a sheet the heat from the from the LCD's will casue the sheet of plastic to bow out into the the infrared plan of the touch frame causing false touches or a completely useless touch frame.

Other parameters for substrate selection are shipping and handling and overall durability in high-use/traffic deployments. Handling large sheets of glass in tight spaces requires nerves of steel and steady hands. Can you imagine cracking or breaking a large sheet of non-tempered plate glass while installing it? Plastic substrates are much lighter and safer to handle overall. The down fall to plastic substrates is durability against scratches. Lexan or MR10 is virtually unbreakable due to their soft/flextible properties, but easily scratches with items like rings and keys that might be in/on the end-users hand. Acrylic is harder and somewhat harder to scratch, but none the less easier to scratch than glass. So, it all comes down to how specific the client is in regards to surface scratches and how comfortable you feel handling glass.

4 installing components.

Installing all of the touch screen components (i.e. substrate, support bracketing and bezel) that make up a video wall touch screen technology stack may sound daunting so you must find an integration partner with engineers who keep ease of installation at the forefront of their designs.

A video wall technology stack is like a cake, if you rush on the core ingredients the frosting (touch screen components) may look fine, but the filling (LCD's mounts) might be all wrong. Therefore, proper installation of the underlying LCD's is key to staying on budget and executing a successful deployment of video walls with touch capabilities. Did you know that ultra-narrow LCD's cannot bear any weight from an adjacent monitor above in the array?

The beauty of the ultra-narrow LCD's is the almost seamless mullion between the monitors. This ultra-narrow bezel design is also the Achilles Heels of the monitor, in that the LCD polarizer micro wiring and internal glass is extremely fragile and only protected by 2mm of flexible tin. Any weight placed on the bezel can damage the polarizer and cause entire columns of the LCD display to fail or the internal glass to break.

It's all in the fine details of a credit card's width of space (2-3mm) between monitors and whether you succeed or drastically fail. In that case you may have to take apart the touch components to replace a $5,000 ultra-narrow LCD.

5 mounting advice.

Video walls are where many marketers put most of their best branding, but for video walls that live in an unattended public area, it may be where some children do some of their best climbing.

Plus, video walls are heavy! So while everyday mounts may be your go-to for hanging a typical display, when it comes to a video wall that may double as a jungle gym, you're going to need something a bit more hefty.

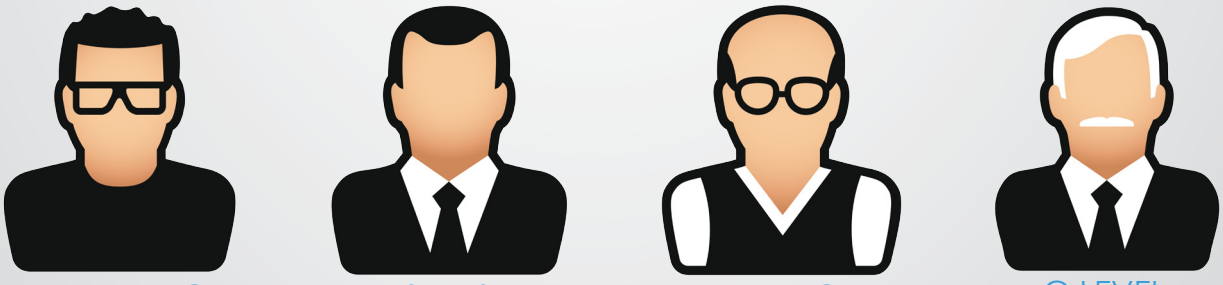
"We've hung more on less" is not the right answer, but that answer was actually given by a general contractor on a job site where he was asked whether or not 600lbs of mounting hardware and screens could be mounted to the wall. There is a better way. If the construction is new, hardware and mounting hardware weights can be attained early in the process, and the mounting points and surface designed accordingly to hold the weight. If existing construction is being utilized, the structure will have trouble bearing the weight, there are options that allow support "legs" to be integrated into the vide? wall mount, utilizing the floor to support the weight vertically. Either way, proper engineering is a must to provide a safe and sound solution.

Serviceability is also an often overlooked factor of digital signage deployments. Back to the analogy of layers of a cake, the inner layers cannot be touched without removing the outer layer. Using video wall specific wall mounts that pop out in some fashion are nice for multi-row arrays where center monitors can be difficult to access. Another area to consider is cable management and how you organize cables and make access to key components in a wiring scheme. If any type of signal extension is used (i.e. Cat5 HDMI and USB based extenders) it is important to place those extension devices in an accessible location that is quickly and easily identified as they are often the root cause of a failure.

6 digital strategy.

We have certainly saved the best for last, but in reality your content and experience strategy is where you begin.

Even that assumes you have clearly defined what actions you want users to take when engaging your touch screen video wall. What does success look like and how do you prove and report that to the financial stakeholders? This technology certainly does wow the audience, and the ticket price may wow the CFO - so careful planning of experiential strategy, not *may be*, but *will be* the difference between a digital fish tank and a key business driver that can change organically with your business climate.



7 natural user experience.

A video wall implies, more times than not, that there is the intention of simultaneous user engagement. But should each experience be private and personal to the user, or do you intend to have users share content back and forth?

With the amount of digital real estate available, you may develop widgets intended for lead capture and widgets that invoke a playful interaction, that can be passively experienced by those walking by, the former requires size control, and so you may not want a data form to allow for pinch/zoom gestures.

Another key point to consider is clutter of content. We have seen several deployments whereby every possible interaction is laid out on the top layer - or at just inside of the attraction loop. This information and behavioral request can be information overload - causing users to either assume complexity or to lose clarity on what actions should be taken. Consider a navigation experience that subtly leads your users to a desired end point. This is a conversion tenet well established in the web UI development community - and applies just as well to the interactive digital signage applications.

8 think outside of the box.

This is why you invested in multi-touch. Instead of a click-by-click navigation pathway, you can now involve commonly understood touch gestures, or even those made well known by the new Windows 8 platform.

Imagine for a second that as you zoom in, the layers change before your eyes, offering up new pathways not visible on the top layer. Calls-to-action become dynamic based on which direction you swipe. This is immersion defined, and should remain a vital ingredient to your experience planning. For critical applications we would recommend no less than 6 months for this initial phase of planning, content development and user experience design.

Lastly, the game is always changing. Having a network of partnerships who spend their days and nights in touch hardware and touch experiences will greatly mitigate your learning curve and will ensure that you are applying best practices based on all available software at any given time. One such example will be the change of android into public facing software applications. The ultimate image of combining mobile OS platforms with enterprise level computing is not yet fully understood - but we'd venture to say that the user expectations are driven by their mobile devices, and so the convergence of methodology is a no brainer.

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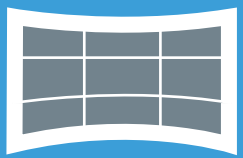
Horizon Display, based in Lake Forest, Calif., specializes in large format touchscreen displays and interactive digital signage solutions. Horizon Display is committed to championing the impact of display technology as a means of communication by educating our audience, consulting our customers and becoming intimately familiar with their business objectives. Their motto is "first to respond, first to resolve." Horizon Display translates your vision into tangibles and provides the solutions to do it all. www.horizondisplay.com



schedule your free video wall consultation today!

need additional guidance on your touch solutions strategy?