

Scala White Paper



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Topic: Dynamic Signage Networks: Scala's Rules for Success
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Dynamic Digital Signage is popping up everywhere. Retailers such as Best Buy use signage to coordinate the weekly specials from the newspaper with the on-screen messaging in the store. Wal-Mart has a network of in-store TVs to promote "what's new". Movie Theatre owners such as Regal Cinemedia use a satellite network of digital projectors to entertain and advertise before the feature film starts. Fast food operators such as McDonalds have experimented with digital menu boards to motivate sales. Grocery stores such as ShopRite use plasma screens behind the deli counter to inform customers on the special of the day, and entertain customers while waiting. Even relatively innocuous locations such as your local bank or your doctor's waiting room, are likely to have a digital display network to inform, educate, entertain and promote products and services relevant to that venue.

The big question is: What does it take to make this all work? Getting the traditional advertising or visual merchandising people, who have a lion's share of the clients, together with the IT and display specialists can be challenging. It's not normal for these two camps to speak with each other! And even when they do, have they considered ALL of the ramifications that are necessary to have a successful deployment? Example: Many times, the software that drives the network is not even considered, as everyone is focused on big-ticket items like plasma screens or satellite networks. Software is actually one of the most critical components to operating a profitable and successful network on a day-to-day basis. The good news is that it's not rocket science any more.

As an aid to the new person looking to deploy a network of screens, allow me to share with you some of my experiences over the last 15 years in deploying such networks. Here's my top list of things to consider.

CONTENT IS KING

I know this sounds corny, and everyone says this, but it is absolutely amazing how many people are still missing the boat on content. Content MUST be lively, relevant and appealing. It's not TV. It's not the web. It's signage. You can't just have the same advertising 24 hours a day. And it MUST be relevant to where the customer is and what he or she is doing. For example, I've seen a network in a fast food chain that had some very nice LCD screens, but instead of up selling the customer on the new menu item, they have ads for toilet paper. What does this have to do with fast food? Is this the impression you want to give your customer? Of course not. Wouldn't you rather find out about the new menu items as a customer? And as a venue owner, wouldn't you rather up sell your customer to increase your revenue per customer? Of course. The customer's wallet is open. Go for the up-sell!



And you need to be sensitive to WHERE your customer is. If you are a home improvement store, selling snow blowers in the wintertime might work well in Minneapolis, but is definitely not going to work in New Orleans. You must have a system that is able to generate individualized content easily and cost effectively. If your system is only able to play MPEGs, how can you afford to create unique videos for each store? And if all of your content is MPEG, how can you afford to SEND the content. Five hundred stores needing 1 gigabyte of MPEG video each month is 500GB of traffic on your network. Few retailers have this kind of “spare bandwidth lying around”. You might want to consider a satellite multicast network. You also might want to look carefully at your software, to efficiently produce lower bandwidth content more easily.

MAKE YOUR CONTENT LIVELY

If your content looks like TV, people will tune it out. Your employees will hate the repetitive nature of the loop. It just won't work. You might want to consider a system that allows you to interface your signage easily to your point-of-sale system, inventory management system, web store, etc. This way your screens can automatically adjust their price with little or no manual intervention. This allows you to directly advertise the same products in different stores for different prices to maximize your profits. If your signage network doesn't have a call to action, “buy now for this price”, it might not be that effective in retail. Let's take another example. A convenience store has a promotion on Sprite -- a very effective campaign with a call to action. Everyone is incredibly happy with the results...or are they? On day two, sales fall to zero. What happened? They ran out of Sprite and the driver for Coke isn't scheduled to restock for another two days. Major problem. What if your system were instead attached to the point of sale system, where it could substitute another product automatically when one product was sold out. It's possible and not hard, but will require the right software solution and a plan up front to deal with that possibility. Providing national, regional, and local content can also be a way to make your system more interesting. This sounds simple, but have you done that before and is your system capable of that? What impact does this have on your production costs? Can you make changes without re-encoding your MPEG files? What impact does that have on the bandwidth requirements when you now need to do national, regional and local insertion?

LOCAL BUY-IN IS CRITICAL

With a system that is able to do national, regional, and local insertion (a term I borrowed from cable TV), we're now able to have participation at a store-by-store level. Take a grocery store for instance. Imagine being able to have the Store Manager's picture on the screen welcoming you to his store, or perhaps Betty from the Deli department welcoming you to her part of the store. Perhaps the Manager can add an unadvertised special that he needs to move. Perhaps the bananas are looking a bit ripe, and he's not looking to have a sale on banana bread any time soon. How can he push the things at a local level? Will the signage system that you choose empower the local staff to work WITH you, not against you? If the employees are a part of the network, it provides a sense of ownership and pride to your staff, and more importantly to you, they won't try to sabotage the network. Imagine a system in the same grocery store where the screens are at the checkouts (with a really short loop time because your customers have a



short dwell time in line), but the audio with that system is so obnoxious that it drives the checkout people mad. They will find a way to cut the speaker wires, or worse yet, pull the plug on the entire system. On top of that, I'm guessing that you've just grabbed whatever TV commercials you happen to have lying around, and the content **WOULD NOT WORK WITHOUT AUDIO**. Major problem. And let's not forget rule number one again... what is your content? Are people going to "get out of line" to go back and pick up the thing that you are advertising? Guess again. The products better be within arms reach at the checkout. Chewing gum and breath mints might be good sponsors for this screen, but you had better create specialized content that works without audio, and better yet, provide some other localized content that might be of interest to your shoppers. Maybe there's a community bulletin board announcement on the system. Perhaps include the store manager's picture thanking you for shopping at his store today. All of these things can make a huge difference in the success of your network. This is not to say that you can't reuse any of your b-roll from your TV ads. Please do, but remember where the content is going and how the viewer will perceive it.

YOU GOTTA HAVE A HOOK, LOCATION, LOCATION, LOCATION

This sounds simple enough, but unless you have a reason to look at the screen, **NO ONE WILL LOOK AT THE SCREEN!** You need a "hook" – a reason to look at the screen. It could be as simple as a "Now Serving Ticket number 25 at counter number 3" or as sophisticated as a customized CNN feed from Turner Private Networks, blasting in over satellite, the news, weather, sports and stock headline news four times a day that could be interspersed with your venue specific content and advertising. How easily does your system integrate with these sorts of "hooks"? Guess what? It's back to what software you choose. (that little annoyance that no one thinks about until it is too late!).

And let's not forget the famous real estate saying "location, location, location". This is absolutely true in signage networks today. Proper placement of the screens with the appropriate content is absolutely critical. No one is going to strain his or her neck to look 12 feet up in the air at a cheap TV set. Screens by the check out are "too late" unless you're selling chewing gum or breath mints. Find a location where people need to visit or have a natural waiting time and, hopefully, your content will be able to influence purchase decision at the last minute while improving the overall customer experience.

IS IT EASY TO DO SMALL UPDATES?

Everyone can do a big update. No problem. Just send hundreds of MPEGs to each location. Brute force and ignorance can make this happen (although perhaps not as easily as you might have originally thought). But what if you need to just update the price of something at the last minute? How hard is that? How long does that take to make the change? And how many megabytes (or better yet kilobytes) do you need to send in order to make this change? And if we're talking megabytes, how long will it take to transmit, for instance, 100 megabytes to 500 stores for a "simple price change"? Choosing the right architecture can make the difference between a system that is a joy to work with and a system that looks to your IT department as a



“denial of service attack”. Obviously having a system that can do small updates with small file sizes makes this a breeze.

YOU MUST HAVE A CLOSED LOOP SYSTEM

One of the key drivers in terms of a network of advertising based displays is the revenue you can expect to get from the ads. This is measured in CPM (cost per thousand viewers). Some signage networks have failed in the past because they were not able to get a high enough CPM to cover their costs. Obviously having a cost effective network is key, but don't forget that this should not jeopardize your CPMs. The best way to achieve higher CPMs with advertisers is to be able to prove to them with affidavits that the ads actually ran as scheduled, with full ability to drill down to a specific ad in a specific location. In order to support this, you'll need a two-way network to return those “billing logs” and to roll that up into a report that can be sliced and diced by the advertiser. Having a cheaper one-way satellite network with no return might sound good to your CFO, but it may have an adverse impact on your ability to charge a premium CPM because you can't prove that any ads ran. And you will need the back office system to keep track of this for billing purposes as well. Make sure you look into this aspect when choosing a system. Having a full two-way network also brings the possibility of continuous monitoring of your network. Your Network Operations people can then pro-actively respond to a fault in the network, instead of waiting for the phone to ring (if anyone bothers to call at all with a one-way network).

“PLEASE DON'T MAKE ME TALK TO THE IT GUYS! ISN'T THERE A BETTER WAY?”

A large number of signage deployments today are actually done by sending around VHS tapes and DVDs in the mail. It's the problem mentioned at the opening of this article where no one wants to talk with the IT department, because they always say “no”. So the merchandisers and advertisers alike think, “No problem, I'll just use a DVD!” I can honestly say that this is a mistake. It is extremely prone to human error (getting the right disc or tape in at the right time and pressing play) and very expensive to feed. I've seen situations where companies have switched from sending out monthly DVDs to biweekly updates with a full-featured network, where their costs were LOWERED substantially by moving away from DVDs. Plus they are able to update their screens more easily and more often (for less money). It's a win-win. So, it's probably a good idea to talk to your IT group and show them a solution that will not be a “denial of service attack” on their network, and they'll thank you for thinking of them up front.

With a DVD or VHS network you have what is called a “SneakerNet” – very prone to human errors. Plus, because the system is not connected, you have no billing affidavits, so your CPMs are very low. Making the content in the first place is very expensive (burning DVDs) and you can really only afford to do this once per month. If you run weekly specials, it's impossible to advertise those on your screens because you're running the same loop every week for a month. With a networked system, you'll be able to change this on the fly easily and have completely synchronized media campaigns, both in-store and in-home. Let's hope that your creative team doesn't make a typo with your DVDs, because re-burning hundreds of DVDs and sending



them out is time consuming and expensive. On top of that, your average cheap consumer DVD player is only rated for about 2000 hours of operation. So plan on swapping out burned out DVD players every 3 or 4 months – not a pretty sight. And for the final nail in the coffin, consider the video quality. If you are driving a plasma screen with a DVD player over composite video, the picture is going to look unbelievably fuzzy. This is true for even many networked MPEG players. If you're driving your screens in a one-to-one pixel ratio from a VGA based PC, the clarity of the resulting image is going to be night and day better.

Bottom line: Don't use a DVD player, and if you're still using VHS, get into the 21st century, please!

DO MORE THAN JUST ONE THING

As long as you are deploying a signage network for your customers, why not consider using the same infrastructure for employee information or employee training? This is a biggie. A number of deployments that I've been involved with have found that the employee facing screens have done a more significant job of influencing purchasing decisions than the customer facing screens! Think about it. You have a high turn over of staff. Your customers need to ask one of your employees a question. Even modest amounts of subliminal training from your signage network can educate your staff enough to be a genius in the eyes of your customer. With an even more proactive training initiative using the same infrastructure, you can track exactly who has, and who has not, watched the training videos (which are now digital so that the tapes don't get lost). So don't forget the employee angle of a signage network. Maybe it's just an hour before the store opens. Maybe it's interspersed throughout the day. Maybe the CEO wants to do a live broadcast to all the employees in each store before it opens. You could even have live events in-stores. A few years ago, Wal-Mart broadcast live a Faith Hill concert in all of their stores. Reportedly, this was the single largest take in Wal-Mart's history. This was a major event, and was only possible because they were able to re-use their existing signage network. Perhaps you were looking at doing some interactive kiosks. Perhaps you'd like to speed up your credit card transactions (instead of dial-up phone lines today). Why not hook them into the same infrastructure? Your signage network can be the catalyst for many powerful things, which all help to offset the investment.

YOU CAN'T PUT A DISH EVERYWHERE

While some of these advanced uses might require a satellite system, the costs to deploy a digital satellite network have never been as available and cost effective as they are today (thanks to technology born from direct to home digital satellite TV). Satellite has a ubiquitous footprint (meaning you can put a dish practically anywhere and be connected). However, there are areas where getting a southern exposure to the satellite and putting in a satellite dish are prohibitively expensive – Manhattan for instance. Paying for roof rights can be very expensive there. Fortunately many signage systems can handle a hybrid network topology where some locations are terrestrially connected, and others are satellite. Double-check that however. Also your satellite provider may be able to offer an alternative, since they deal with this sort of situation every day. Other alternatives might be DSL, but you had better do a site analysis on every



location, because all of your locations might not be within range. WiFi (802.11b) is another choice, but the coverage maps today from companies such as T-Mobile, Verizon, Boingo, and others might look good on paper, but in reality are very spotty at best (unless your name is Starbucks). Digital cellular connections might be a good alternative, if your content is not too bulky. With these services you can get upwards of 56Kbps (and perhaps 144Kbps) with better coverage than WiFi, but at a substantially lower bandwidth. Piggybacking on an existing network infrastructure can work, but not if you're going to be sending large MPEG files. Sometimes the best approach is a satellite "overlay" network with a terrestrial return. This gives you a low cost multicast one-way network, while using the existing terrestrial infrastructure for the small amount of data needed to verify transmission and system status.

SELL SIGNAGE LIKE END CAPS

Retailers often get a significant amount of revenue from their vendors in terms of co-op, MDF (market development funds), spiffs and other incentives to the channel. "You'd like to have a good position in the store for your product Mr. Manufacturer? No problem. It costs an extra \$5,000 per month per store for that." It's big money and retailers guard this heavily. In-store signage should be sold the same way. This has a dual benefit. Not only will the retailer be able to extract more funds from the manufacturers, but because of the effects of the signage display, more products will be moving through the store on an average day. Uplift in sales of advertised products have been measured anywhere in the 20% to 40% range. This also generates more turns on inventory – everybody wins. Some are fearful that this new medium will "rob Peter to pay Paul" from the precious co-op dollars. This has not been my experience to date. New money is actually found for these new opportunities.

In public networks, such as a shopping mall or electronic outdoor billboards, it may be necessary to have a higher level system in place to keep track of the "avails" (available slots open for advertising) and managing the deployment of ads to the network. In all likelihood, no two screens would be playing the same sequence of ads in this scenario, so it is very important to make sure you have a software system that can keep track of all of these things. Of course, the same system can help you slice and dice the network into demographic and geographic regions to aid the sales process for a particular campaign.

DON'T FIGHT THE PC INDUSTRY

I'm a big believer in industry standard technology. It's absolutely amazing what multimedia power is built into the average \$500 PC today, which seems to get cheaper and cheaper each day. Don't fight it. Go with the flow. Locking yourself into a proprietary design will only lead to heartburn down the road. Maybe the proprietary system that you've selected is perfect for the one thing you need today. What happens tomorrow when you have a new requirement that you hadn't thought about before? Do you end of scrapping the entire infrastructure? That can get expensive. A programmable system on industry standard hardware has the flexibility to grow and adapt to the changing requirements, without having to swap out the hardware. As one senior IT manager of a Fortune 500 company told me one time, "Jeff, I already manage a network of 12,000 PCs. What's another couple thousand?" Chances are these companies have



a four-hour on-site maintenance contract with IBM, HP or Dell and they have a pallet load of these standard PCs in the warehouse today. Use them. Even with a new requirement such as High Definition Video support can be easily done with a PC today (with the right choice of hardware and software).

ANYONE CAN DO A PILOT, BUT DOES IT SCALE?

There are plenty of suppliers doing small pilot projects with brute force and ignorance (and sometimes SneakerNet), but what happens when you have to scale for real? Does the system really handle that well? What are the limitations? How many 1000 unit deployments has the prospective supplier been involved with? These are tough questions that have to be asked. Are the systems reliable? Do they operate 24/7? What happens if you only have dial-up connections? Does the system still scale? Can the system work in a hybrid of both high speed and low speed networks? What are the implications in terms of content to support this? Is it reasonable to assume that your chosen network can support this content in a reasonable fashion? There are lots of tough questions to ask your future suppliers. These are all very critical to the overall success of your network.

My hope is that this introduction has given you enough of the basics to get started with your own successful dynamic digital signage network. It's a very exciting industry and I wish you the best of luck.

ABOUT THE AUTHOR

Jeff Porter is Executive Vice President of Scala, Inc., the leading supplier of software solutions for dynamic signage networks. Mr. Porter has been employed by Scala in various capacities since 1994. Scala today has over 15,000 units deployed plus two networks of over 1000 units each. Scala's InfoChannel 3 software suite is an off-the-shelf solution for dynamic signage networks and is in its third generation release. Prior to Scala, Commodore International Limited employed Mr. Porter, where he was responsible for worldwide product development of the Amiga computer from 1984 to 1994. He previously worked for AT&T Bell Labs and The Eastman Kodak Company. Mr. Porter holds a Masters degree in Engineering from the University of Illinois and a BSEE from Purdue University. He may be contacted at jeff.porter@scala.com or by phone 610-363-3345. <http://www.scala.com>

