BLACK BOX®

Seven Pitfalls to Avoid When Planning Digital Signage

Falling victim to these common mistakes can cost you both time and money.

Planning It   Shopping for It   Implementing It
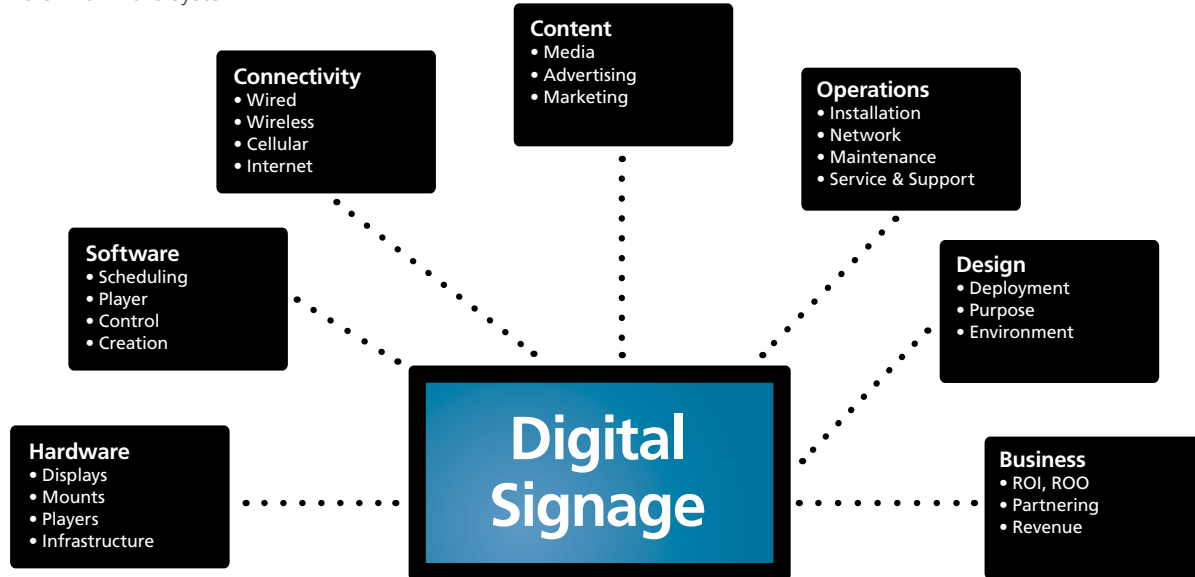
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◆ BLACK BOX®

An industry-leading digital signage and multimedia solutions provider, Black Box serves 175,000 clients in 150 countries with 200 offices throughout the world. Black Box offers an extensive range of products, including integrated hardware/software platforms for affordable, easy implementation of high-impact digital signage. Its product portfolio also includes LCD screens; AV extenders, splitters, switches, scalers, and converters; as well as display mounts, display enclosures, cables, and other AV and data infrastructure products. No one is better suited to bring you the total digital signage solution than Black Box.

We're here to help! If you have any questions about your application, our products, or this white paper, contact Black Box's FREE Tech Support at **724-746-5500** or go to **blackbox.com** and click on "Talk to Black Box." You'll be live with one of our technical experts in less than 30 seconds.

1. Not clearly understanding the elements of a digital signage ecosystem

Digital signage includes seven key elements, which together, make up an ecosystem of interacting components for a fully performing solution. Every digital signage system contains all elements in one form or another and if ignored, can become the weak link in the chain. The disparate "parts" of a project can become a tangled web of technologies if not understood as standalone elements and then as a whole within the system.

Content
• Media
• Advertising
• Marketing

Connectivity
• Wired
• Wireless
• Cellular
• Internet

Operations
• Installation
• Network
• Maintenance
• Service & Support

Software
• Scheduling
• Player
• Control
• Creation

Design
• Deployment
• Purpose
• Environment

Digital Signage

Hardware
• Displays
• Mounts
• Players
• Infrastructure

Business
• ROI, ROO
• Partnering
• Revenue

These elements are:

• **The hardware.** This includes the players, where they're placed, and how you communicate with them, as well as the displays, mounts, and enclosures, and any components required to extend AV and data signals to the players and screens.

• **The software.** This may be a hosted or software as a service (SaaS) solution or a single-purchase licensed software application that you load on a digital signage appliance/player or is integrated into the player hardware itself.

• **Connectivity.** This is the cabling connection used to reach the players at the screen(s), often over a network and either shared with other applications or a dedicated connection. This infrastructure is a key contributor to actual signage performance. But if the screens are far from a source, you may also need additional extension or network switching equipment. Connectivity may also involve integrating video or data from another source into your content feed or having the means to distribute audio as well as serial control signals (for turning the screens on and off or for touchscreens). And, if you are locating signage in an island kiosk or out-of-way area without a network drop, wireless may be the preferred connection route.

• **Content.** Likely one of the most overlooked elements of the digital signage ecosystem when getting started. When it comes to content creation, you have a few options to consider. You can create the content internally using your own resources, outsource the content creation to a marketing or advertising agency, or do some of both. You need to consider a number of factors to determine the best approach for your needs, goals, and budget. For more about this, see **page 5**.

• **Operations.** This element encompasses everything that you need to do to not only get your signage up and running but also to keep it working at an optimum level so you produce value from your signage investment. Understand at the start not only who is responsible for what and who else you need to involve from other parts of your organization, but also what you need to do to provision for system backup.

• **Design.** How you plan to implement your signage in a systematic way with a clear idea of what it's set up to do and who it will reach. Do you intend to deploy the signage in more than one location, perhaps internationally? Also, are you planning an incremental roll-out or will the entire system go live at the same time? It may make sense to start small and launch a beta project to work out the logistics of delivering content to your screens and experiment with presentation methods.

• **Business.** How you want your signage to benefit your bottom line and give you a return on your investment. This includes analyzing how it will help you save the time it takes to distribute and correct information, make internal operations more efficient, and boost sales and/or reduce expenses. If the purpose of the signage isn't to help increase revenue, are you looking to attain objectives, aka ROO (return on objectives), and, if so, what is the strategy? Also are there participating partners in the project and if so, what is the division of responsibilities and metrics of completion of tasks?

2. Not having a defined objective for the signage before it is deployed.

You need to understand and articulate the objective at the start. Clearly define the goals and determine how you will measure and analyze against the goals. Otherwise, you will find yourself constantly stopping and restarting to accommodate a change in direction.

Many customers that we speak with don't have a clear objective of what they want to do, the type of message they want their signage to present, and the type of resources they have for creating the content. Frequently, we tell them that they need to determine what their content requirements are before we can recommend the resources they will need run that content. One size does not fit all when it comes to digital signage platforms.

Part of the problem is customers have a price in mind when evaluating systems and then they're disappointed when some piece of content doesn't run correctly. The reasons vary. Sometimes, they don't understand how many frames per second is required for videos or Flash to run smoothly. If they've purchased a player with a lightweight processor, it's unlikely they'll be able to play bulky media files and stream video seamlessly.
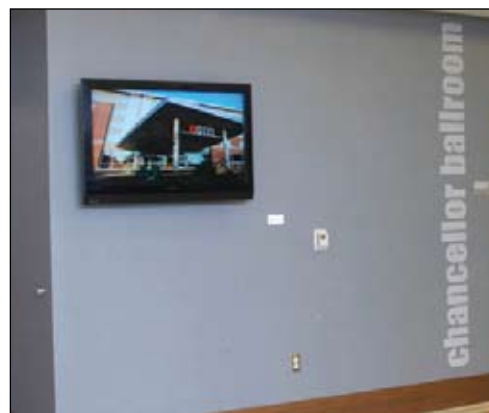
To avoid this, begin with a thorough needs analysis. Identify what type of content will be displayed (e.g., static images, video, RSS feeds, live TV, etc.), how many locations and displays will the content run on, and whether the content will be the same on each screen, or will the content be run on different screens.

At the beginning, it's also very useful to know if the system needs to be interactive. Will you need local input for touchscreens or will you need to interface with external hardware (a card reader or point-of-sale device)? Also, what will the network look like? To achieve a particular objective, you need to know if the network configuration (the local LAN, WAN, or Internet) will support your intended application.

Lastly, determine what information you want to communicate and for what purpose. You may want it to give you one or more of the following:

- **Sales uplift**, with the specific aim at increasing sales using digital messaging. Although this type of display network is of primary interest to retailers, it also is used in other verticals such as banking and food service.

- **Brand messaging**, with the goal of enhancing a customer's opinion of your business.

- **Entertainment for customers.** Everyone hates waiting in lines, and retailers long have known that if you give customers something interesting to look at, they'll feel as if the wait is shorter than it actually is.

- **Better internal communications.** Digital signage also can be used for improving internal corporate, government office, or institutional communications. This "inward facing" signage can be used to boost morale, recognize achievements, and improve business or organizational processes.

- **Public messaging.** Keep the general public connected with the services they need and broadcast critical, time-sensitive information, or even evacuation orders, by pushing impossible-to-ignore audio and video to screens where people gather.

- **Third-party advertising.** Sell some or all of the screen real estate to third parties.

It is not only imperative to understand what you want the signage to accomplish but also how it will be evaluated. Once the objective has been set, the second most important question revolves around what we call the criteria for judgment. In short, "How will the success or failure of the system be judged and by whom?" What metrics of judgment will be used: ROI, ROO, or other qualifiers? How much time do you have to succeed and what are the repercussions if you do or do not meet your objectives? On the reverse side of the coin, if you are wildly successful, are you prepared to scale the system for a large deployment?

3. Not clearly defining the content strategy and plan.

The most challenging part of any signage system is the content. It's critical that you have a plan in mind and the resources in place to create and manage the content.

You can display the same content at multiple screens or you can display unique content at each individual screen. You can even schedule the content to change at regular intervals or scheduled times based on your desired messaging or audiences.

But be sure to keep in mind: What mix of content will make your signage attention-getting and memorable, for instance? To be truly engaging, combine marketing content with informative, even entertaining, content. You can also display one message or incorporate multiple messages on the same screen. Some areas of the screen can change while other areas remain fixed. One zone might show a streaming video feed while another shows the local weather update. Still another area might show a changing menu or schedule.

It's all up to you. Your digital signage system can be as simple as a rotating PowerPoint® show or as complex as a very elaborate six-zone display with live feeds, real-time messaging, and dynamic content scheduling.

For your content strategy, you not only need to outline your objectives (as covered on the **previous page)**, you also need to determine how you can most efficiently create the content to support the objectives. In many cases, different people will perform different functions. You need to identify who those people will be and ask: Who will be responsible for the overall "look and feel" of the content? Who ultimately will be the "owner" of the information? Will it be HR, corporate marketing, MIS, a Web content/design team, or your AV department? Do you have the internal expertise required, or will you need to outsource content creation?

Also add to your checklist:

- Is local input (local messages) from remote sites required?

- Do you have graphic designers on staff or the services of a design firm?

- Can your product suppliers, vendors, or partners help supply content?

- Will you need to reformat your existing content for the display?

- Will you be streaming multiple media streams and files simultaneously and does the software interface support this (and will your player have enough CPU processing and memory to prevent lag)?

- Do you plan to send HTML content and XML and RSS feeds to your digital signage?

- Will you need to add audio with your content—and is audio even permissible in the environment that you have chosen for the digital signage system?

- Will you need to log content playout for reporting purposes?

- What's your 30-, 60-, 90- and 120-day plan? Do you have in mind what fresh, relevant content will be added later, after the novelty wears off?

In addition, if you're looking to rely on cable or satellite TV for news feeds, you'll need to ensure there's a CATV or satellite TV jack near the player (as well as ensure that the player itself has the right type of video capture card for connecting to a set-top box with either F-Type coax or digital HDMI input).

You'll also want the capability to make real-time changes to broadcast cancellations and changes in schedules, or other events, or to customize content for special audiences.

If you're starting to feel a little intimidated by all the available options and decisions, don't be. The good news is that many of today's digital signage players are preloaded with a wide selection of templates and user-friendly design tools that make in-house content creation a viable, affordable option.

4. Not having the right personnel involved at the start.

Involving all the key stakeholders is often overlooked when beginning any digital signage implementation. Oftentimes, it's the company's or institution's PR or HR department that thinks it's a good idea and gets the ball rolling. But getting too far ahead of other departments can create problems, so it's a good idea to involve not only key staff from marketing, HR, and purchasing, but also IT and any senior leadership to get the buy-in from others.

Determine upfront who will be responsible for content sourcing and the actual uploads. What are their skill sets? Who are their backups? Are they technically able to handle all of this?

Also, generating content and keeping it current may require coordination from staff not accustomed to receiving creative and editorial contributions from others; if content originates from various sources, quality control and accountability can be challenges, too.

The IT department might be one of most important departments to involve. They're aware of how many resources and applications might already be taxing the infrastructure. They'll be able to prevent future problems by answering questions like these:

• Do you need to integrate signage with in-store or company-centric databases?

• Who specifically will be responsible for installing the equipment on the network?

• Where will primary servers reside? Centrally or remotely? Are there security or firewall issues to deal with?

• Will they be available to help with entering IP or DNS settings correctly so the player works on their network and can access the Internet?

• Is there enough server space for storing and backing up multimedia files?

• Can they administer passwords and permissions from a central console?

• Who exactly will troubleshoot players and which staff will be notified if they go off-line?

• How will information be relayed electronically in case of system and/or screen failure?
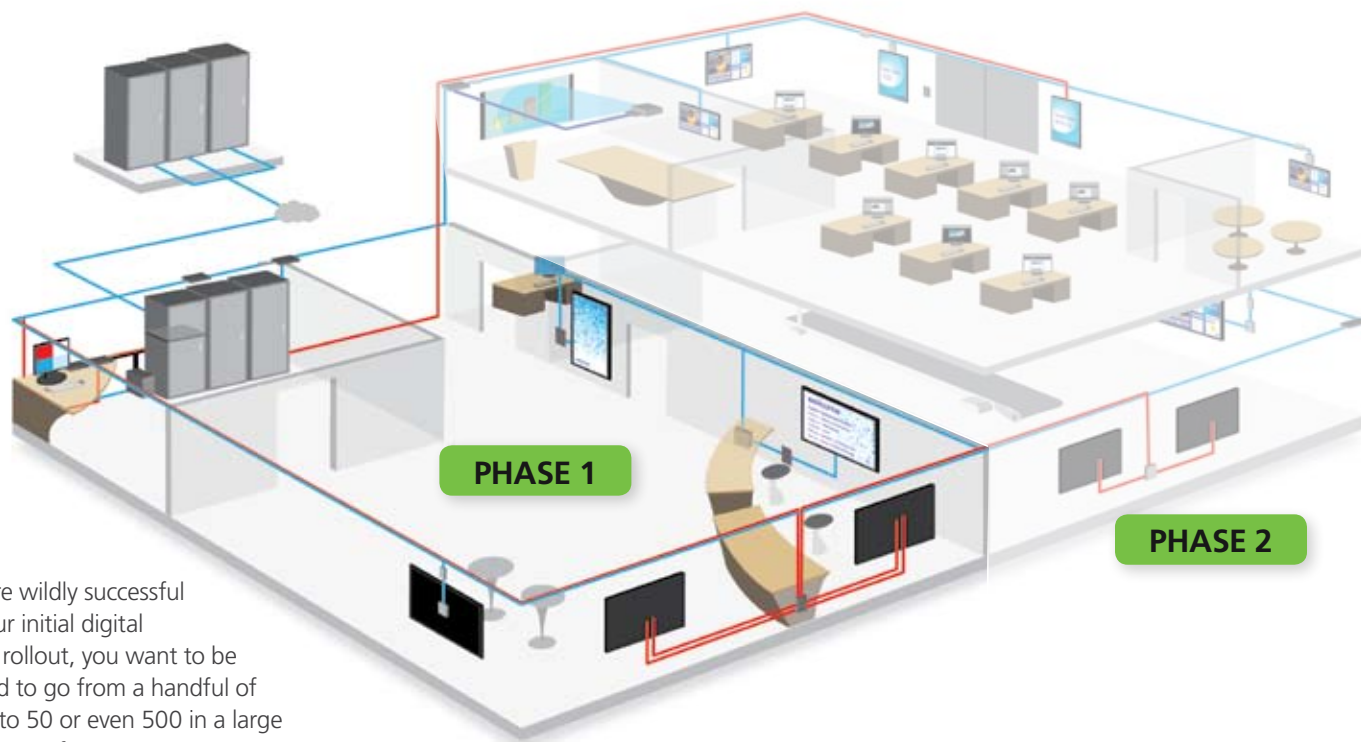
You also have to think about who is going to install and maintain the screens. If you have screens at different sites, someone may have to troubleshoot from a remote location.

For this, network managers, facilities/maintenance personnel, and operations managers should be involved—locally and remotely—to tell you if you need to provision for:

• Potential security issues at the displays, such as someone able to turn off the display, change channels, or tamper with or remove the player.

• Safety issues with the signage and/or player installation—a big concern in public areas or K–12 school environments.

• Heat-dissipation issues, requiring extra cooling and/or shielding players and screens from direct sunlight.

• Protecting screens and electronic equipment from dust, debris, and moisture (something to consider in manufacturing areas).

• Power supply, that is, are there power outlets near your screen(s) and player(s), and do you have power consumption limits?

• Applicable electrical wiring and municipal signage codes. Similarly, will a building owner take issue with signage visible from the outside?

• Whatever it takes to integrate the signage with building operations, such as paging, security, or fire alarms.

5. Not provisioning a system for future signage needs.

PHASE 1

PHASE 2

If you are wildly successful with your initial digital signage rollout, you want to be prepared to go from a handful of screens to 50 or even 500 in a large deployment, if necessary.

So when shopping for a signage system and talking to vendors, be sure to ask the question: How scalable is the platform? If it's not adaptable or requires a forklift upgrade of hardware, software, and licenses, you may be in a difficult position later. Do you really want to go back to your boss the following year and tell them the technology you recommended earlier is obsolete or can't be scaled to meet future needs?

If you didn't invest a lot at the start—for example, buying a screen and an entry-level media player for a simple lobby setup—lack of scalability may not be a problem, particularly if the purpose of the signage was mainly to simply demonstrate how digital signage could be used. If that's the case, you've accomplished your goal.

However, Black Box has found that from talking to its customers, digital signage tends to sell itself when a company puts up a single screen for everyone in an organization to see. Other departments and offices begin to think of its potential and how signage would benefit them. Soon, they're requesting a screen or two of their own. You should be prepared to meet the increased demand.

So if there's a chance you'll expand later, be sure it is somewhat expandable and the product you choose isn't near the end of its life. Scaling to a multichannel network with many screens at geographically isolated sites should be simply a matter of adding more subscriber players to your configuration. You'll want to be able to clone media over a network so signage presentations appear on display devices at multiple sites.

Also, publishing playlists to different screens should be somewhat intuitive. This is important if you think you'll need a system for a national or global signage application, in which case an enterprise-grade solution should be considered. You will want a platform that installs easily as you scale your network and geographical diversity, and manage the multiple content channels in a time-efficient way.

If you think you'll be expanding the system globally, you'll also certainly want global time zone support for playing content at correct local times, as well as a management interface that enables you to centrally manage content and playlists, and provides player operation verification and alert reporting functions to ensure smooth 24/7 operation—regardless of location.

(Another thing to consider when rolling out worldwide: Does the software provide language translations, or is it shown only in English? Also, if you plan to integrate TV into the signage, is the system offered with a DVB-T capture card for PAL connections?)

And, while making sure that a digital signage platform can be scaled in terms of screens and locations, you should also consider how well it integrates into a changing IT network architecture without taxing your overall bandwidth.

The supplier should regularly provide updates to keep the system and its software compatible with where the IT industry's heading. Will it support the latest browsers, SSL certificate files for use with HTTPS, and changes in IPTV streaming standards? Will it natively support easy integration of social media and popular apps and widgets?

6. Not adequately anticipating or budgeting for possible ongoing costs.

Too many companies buy a signage solution based on a vendor's glossy brochure touting everything it can do, only to find out later that many capabilities cost extra or require a yearly license renewal. Some customers realize the potential of digital signage only after it is implemented, and the features outside of the original scope are not available in the solution they deployed.

For instance, RSS and XML feeds, remote control and management, and playback verification may be standard features with some digital signage packages, but cost extra on others. Software upgrades may also get expensive (especially if the developer is issuing upgrades and fixes every few months), and so are per-user publisher licenses and meta tagging and IP streaming licenses. Likewise, you may have to pay for technical support costs after the initial implementation as well as any training expenses. What are the shipping terms, return policies, and warranties?

Before purchasing, watch in-depth product demos and take some time to research which features are standard and which are options. Extensive negotiations, including a number of RFPs and RFQs, may be necessary to specify and negotiate the price of the system for your needs. Pay attention to any software as a service (SaaS) fees outside of hardware and labor expenses.

Similar to this, buyers sometimes forget the extra expenses that can inflate the cost of a fully networked, multiscreen signage rollout. When planning, you'll want to establish a pro-forma budget in which you try to forecast early and ongoing expenses as well as your anticipated revenues (if it's meant for generating business). In addition to appliance/player hardware and management software expenses, you need to account for any extra infrastructure expenses to reach new screens with cabling and wallplates. Plus, consider what you'll need for redundancy and protection, such as backup servers, power UPSs, and surge protectors or filters.

What's more, if your digital signage will run for most hours of the day, you will need to provision commercial-grade displays instead of consumer-grade screens, so you should expect to pay more for the screens themselves (consumer-grade panels will reach their end of life more quickly and are more likely to overheat and fail).

For the content itself, keep in mind what you'll need to spend for stock images or video footage. And if you're using the signage for third-party advertising, you may also have to budget for costs associated with providing viewer audit and advertising-related reports.

When evaluating your total cost of ownership (TCO), give yourself enough leeway on your line-item expenses to account for any unanticipated cost overrides, spikes in utility rates, staffing shortages, and code compliance issues. Also keep in mind: In the first year of operation, you can expect a hardware failure rate of about 3%, so you'll benefit from having backup equipment and a vendor you can reach 24/7 every day of the year.

Obviously, the more complex the network, the higher the initial and ongoing cost of ownership. The actual cost per screen and total cost of ownership can vary greatly, but the general rule of thumb is that cost per screen decreases as the number of screens increases. The good news is: As more suppliers enter the market, equipment costs are coming down.

Again, ask good questions during the design phase. You should see a clear matrix of features and price levels, so you can easily pick the level of signage you desire and can afford. Be sure to focus on the features one level above what you pick and evaluate their value. If these features are truly unimportant, you have picked well. However, also consider what it will take to add those features later and whether a forklift upgrade will get you to the next level. Understand what the system can and cannot do and whether it is upgradable at a reasonable cost.

7. Choosing the wrong partners.

Based on your deployment size and scope, decide if you can implement it in-house or if you need the help of a professional integrator. A number of out-of-the box solutions can be set up with relative ease. But the more dynamic and complex the system, the more complicated the implementation and ongoing management— and the more likely you'll need outside help.

And this is where problems can arise. Imagine spending a lot of money on a digital signage platform only to see that provider fall short in what it promised to deliver or, worse yet, see that provider go out of business the following year.

This happens. So make sure your vendor's business is stable enough to support you long term. New companies have entered the burgeoning digital signage marketplace. So be sure to scrutinize them closely. Are they who they say they are, and is this someone you'll want to be working with as a supplier/partner moving forward? Do you believe their business is stable enough that they'll be around next year?

In addition, ensure that their expertise isn't limited to the video display components. Many have a lot of experience installing audio and video system components, they know consumer electronics and home theater systems, and how to wire them for optimum viewing, but they're not IT or data networking pros. Providing a totally integrated solution and supporting that system over the long haul may be beyond their technical expertise. Check their credentials and involve your IT department in the system-evaluation process.

This is a big consideration if you're planning a larger deployment with a fully integrated network solution. Be sure to enlist the help of a seasoned digital signage professional. And don't make it just about cost. The cheap, low-cost solution is probably just that.

Also determine whether a given supplier will meet your specific needs not only in product selection and availability, but also in service after the sale. Remember that it is not if but when a problem arises and how a supplier/partner takes care of these issues that determines the success or failure of that relationship. Things will go wrong, screens will go blank, and other issues will inevitably occur— even with the most expensive platforms. If you can't fix problems yourself, will the supplier be there to help, particularly late at night? Nail down support costs and the availability of technical support after hours.

But also consider also how much help you can reasonably expect on a day-to-day basis for the most routine of tasks that, for whatever reason, you can't accomplish. If you or your staff are finding it difficult to pull in and resize an image or video file at the proper rendering speed, is there someone you can get on the phone immediately for assistance? Or, say, you're having trouble repurposing data stored in Excel® or XML files, SQL Server® databases, or Microsoft® Exchange servers for display on your digital signage, will the person know how to help?

Plus, be sure that you have a clear idea of how customer service is handled and how complaints are adjudicated. In addition, be aware of your partner's warranties and shipping policies, as well as consider their plan for supporting discontinued product offerings. You may very well want to keep the system you have in place after the supplier has ended their support for it. If you haven't purchased their upgrade, will they even take your calls or answer your e-mails?

About Black Box

At Black Box, you'll find the software, hardware, and everything else you need for end-to-end signage solutions. With more than 36 years of proven experience, we're a trusted digital signage provider to corporate, SMB, healthcare, education, hospitality, retail, and government buyers, as well as resellers and system integrators worldwide. Black Box is also a industry-leading provider of AV extenders, splitters, switches, scalers, and converters—all the components you need to get HD video and audio signals to the screen in the most economical way. Also see Black Box for touchscreens, enclosures, mounts, and infrastructure products. To help you plan and provision your signage network or complete video distribution system, be sure to download our *AV, Multimedia, and Digital Signage Design and Sourcing Guide* at **blackbox.com/go/guideDS**.

iCOMPEL™

The company's premier digital signage offering, iCOMPEL, is an all-in-one, integrated hardware/software solution that gives you an affordable, easy way to set up impressive digital signage without any ongoing licenses or fees.

- Includes FREE professionally designed screen layouts and FREE software updates for low cost of ownership.
- Features drag-and-drop design and scheduling tools.
- Supports many media formats—scrolling text, photos, video, Flash, HTML, XML, RSS tickers, and more.
- Includes options for VESA mounting or standalone kiosk and interactive kiosk applications.
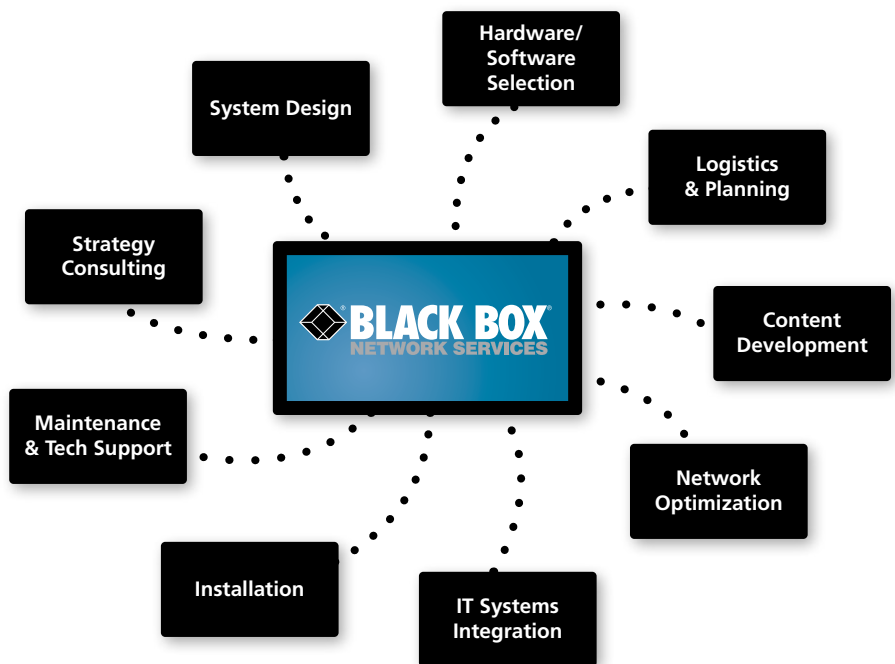
For more information, including video demos, special offers, and case studies, visit **blackbox.com/go/iCOMPEL**.

No one is better suited to bring you the TOTAL digital signage solution than Black Box.

We're your total provider no matter:

- Where you are at in the deployment cycle.
- What your level of technical or creative expertise is.
- The size of your business or organization—and your budget.