



## **Cisco Interactive Experience Platform Content Creation Guidelines**

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**Content Guidelines**





# CHAPTER 1

## Content Types

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### Guide Overview

This guide provides general information on how to create content for the IEC4600 Series.

The targeted audience for this guide includes:

- Cisco partners
- Customers
- Creative agencies
- Web design professionals
- Web application programmers

To create content for the IEC, a person should have the following:

- Basic programming skills including JavaScript
- Knowledge of HTML and CSS

### Chapter Overview

This chapter describes the types of content that are supported in the Cisco Interactive Experience Platform.

Refer to Appendix A for the Content Guidelines table.

The topics in this chapter include:

- [Content Types, page 1-2](#)
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## Content Types

Content may range from video clips, Flash animations, static images, or HTML pages. Content can be facilitated by incorporating standard multimedia file types such as MPEG, WMV, JPEG, GIF, TIF, WMA, etc. JavaScript applications can be developed to enable various functionalities (event triggers to change signage content, etc.). Video and graphics can be interlaced.

### HTML

HyperText Markup Language (HTML) version 4 is supported by the IEC4600 Series. There is also early support for version 5.

Both HTML caching and offline caching are supported on COBRA.

### CSS

Cascading Style Sheets (CSS) are used to define content presentation including colors, fonts, layout, etc. CSS can either be embedded in the HTML or can be provided by a separate file which is referenced from within the HTML. The IEC4600 Series supports CSS version 3.

### Graphics

IEC4600 Series supports the following graphic file formats:

- JPEG, GIF, PNG, TIFF, BMP
- Interlaced PNG, Interlaced GIF, Progressive JPEG
- Transparent GIF, Transparent PNG
- Animated GIF

### Animations/Flash

Flash up to version 11 is supported by the IEC4600 Series. Use of Flash should be limited to small size and non-video rendering functionality.

The Adobe Flash animation format is a proprietary file format originally developed by Macromedia (now Adobe). One of the primary advantages of Flash animation is that it supports the ActionScript programming language, allowing for a Flash animation to be embedded in an HTML page and played back with a browser plug-in rather than requiring an external application to be launched in the operating system background to play the file.

For flash content creation, the designer should realize that any hardware, including the IEC4600 Series, has its processing limitations. Animations of small objects with little movement work very well. Many small animations will work better than one big file if there are different types of movements.


**Note**

Embed all desired fonts within a Flash file so that the font will display exactly the way you want it to display.

When using Flash, you may encounter a problem with the Cobra browser failing to render the view if you rely on the parameter: `<param name="wmode" value="opaque" />`. For example, upon clicking the "Home" button the application redirect to "Home" page fails to refresh the screen. You can see a graphic as you move your mouse across the screen so you know that the Home page loaded successfully but not the graphics. The fix is to have the "wmode"(window Mode) property of the embedded SWF tag to "opaque" instead of "Transparent" in the HTML file.

```
<object classid="clsid:d27c6b6e-ae6d-11cf-96b8-444553540000" width="100%"
height="100%" id="DIY_APPLICATION_V2.1" align="middle">
<param name="movie" value="DIY_APPLICATION_V2.1.swf" />
<param name="quality" value="high" />
<param name="bgcolor" value="#ffffff" />
<param name="play" value="true" />
<param name="loop" value="true" />
<param name="wmode" value="opaque" />
<param name="scale" value="showall" />
<param name="menu" value="true" />
<param name="devicefont" value="false" />
<param name="salign" value="" />
<param name="allowScriptAccess" value="sameDomain" />
<!--[if !IE]>-->
<object type="application/x-shockwave-flash" data="DIY_APPLICATION_V2.1.swf"
width="100%" height="100%">
<param name="movie" value="DIY_APPLICATION_V2.1.swf" />
<param name="quality" value="high" />
<param name="bgcolor" value="#ffffff" />
<param name="play" value="true" />
<param name="loop" value="true" />
<param name="wmode" value="opaque" />
<param name="scale" value="showall" />
<param name="menu" value="true" />
<param name="devicefont" value="false" />
<param name="salign" value="" />
<param name="allowScriptAccess" value="sameDomain" />
<!--<![endif]>-->
<a href="http://www.adobe.com/go/getflash">
```

## Audio

Multiple audio formats are supported on the native player including:

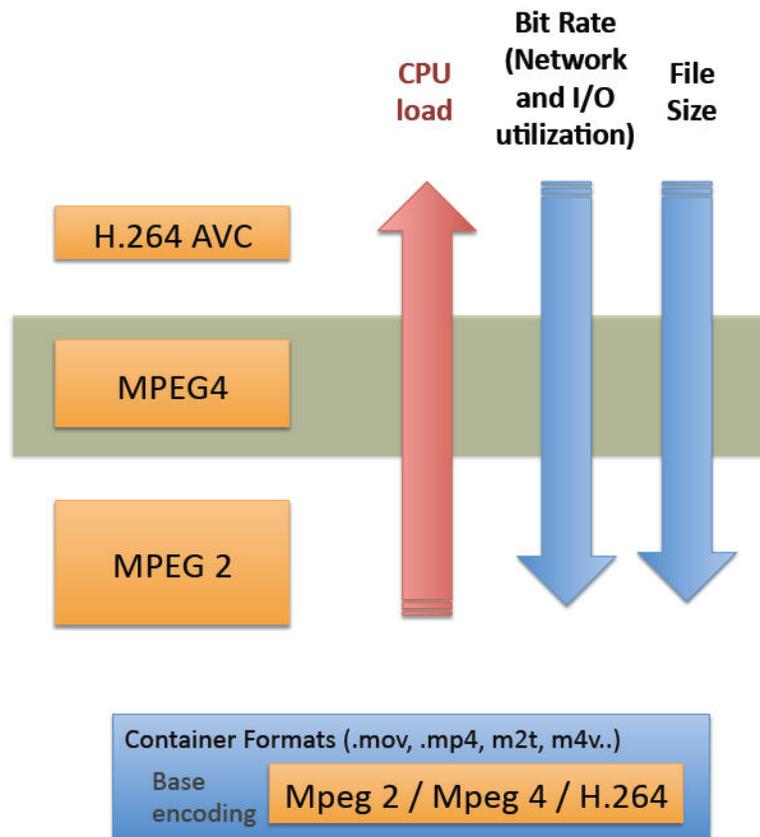
- mp2
- mp3
- aac
- mp4a
- wma1

- wma2
- flac
- mpga

## Video

- Multiple video formats are supported on the native player including MPEG-1, MPEG-2, MPEG-4, and H.264.
- Multiple containers/muxers are supported on the native player including AVI, MOV, MP4, MPEG2, and MPEG-2/TS (extensions: .wmv, .avi, .mov, .mp4, .mpg, .ts).
- Formats not recommended: On2 VP 6 (used by old FLV)

**Figure 1-1 Video Encoding Standards and Implications**



**Note** Native video is strongly preferred over Flash video.



**Note** The IEC 4600 series supports WebM (VP8/Vorbis) and Ogg (Theora/Vorbis) for HTML5 video.



**Note** Use of the native player strongly preferred over HTML5 video.



**Note** The native player's video compatibility can be validated by using VLC 2.0.8.

- Video performance limitations: When using a native player, the IEC 4610 can support H.264 video up to 720p @ 6Mbps.



**Note** The amount of CPU power required to decode a video clip depends on multiple factors such as codec, bitrate, and resolution of the video source.

Different video codecs have different compression algorithms. H.264 offers much better compression efficiency than MPEG-2 or MPEG-4 but uses much more a complex algorithm and requires more CPU power to decode. For example, to achieve the same level of quality, it may require 5 Mbps using MPEG2 but less than 2 Mbps using H.264.

The IEC 4610 can decode 1080p 14Mbps MPEG2 video with less than 90% of CPU usage, but cannot decode 720p 8Mbps H.264 video without obvious frame drops.



**Note** When the video source is interlaced (1080i, 480i, etc.), you may see interlacing artifacts due to the lack of de-interlacing capability on the native player.



**Note** The size of the native player object does not affect the CPU usage. If the video source is the same, the CPU usage is the same regardless of the player's height and width. That is, if the video source is 1280x720, the CPU usage will not change by setting the native player's size to 320x180 or 1920x1080.

- Screen saver video playback should be postponed when the kiosk is being interacted with to avoid audio conflicts and preserve responsiveness.
- Regularly-playing videos should be cached locally.

**Table 1-1 Flash versus Video**

	<b>Flash</b>	<b>Video</b>
File Size	Larger — will require more bandwidth and/or longer transmission times	Smaller — requires less bandwidth and/or shorter transmission times
Cost of production	Generally higher	Generally lower
Bit rate	Higher	Lower
Picture clarity	Supports HD (720i, 720p, 1080i, 1080p, etc.)	Supports HD resolution and can incorporate HD video elements
Picture quality	From ~24 to ~60 frames per second	Variable depending on hardware, but generally ~20 frames per second

	Flash	Video
Ability to update based on external data sources	Minimal to none	Extensive
Flexibility in updating messages	Updates to images and/or text generally require complete reproduction/ retransmission of spot	Text and or image updates can be produced/transmitted independently of the spot, reducing transmission time and permitting more effortless and affordable message localization

Video caching is handled by a separate caching mechanism (assuming the videos are played via native player widget), which has a rich browser API.

If a video from a web site will not play, it may be the player. Many external sites implement their own video players and create logic to detect the browser capabilities and choose an appropriate player. Because the Cobra browser is unknown to a lot of the sites and resembles the Safari browser, they may pick the wrong player. To counter that you can change the User Agent for the particular page once you find what user agent works properly with your video provider.

**Note**

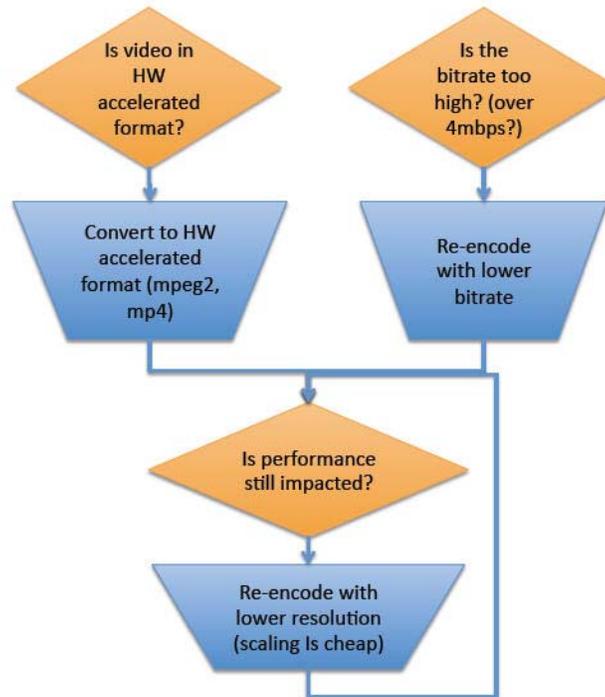
Support for external video sites is limited and video playback is not accelerated. Cisco recommends that you use the native video player.

Other video considerations:

- You cannot overlay content on top of video. Use HTML5 video to put an overlay on top of video.
- It is best to optimize video. Review the graphic below to determine which video optimization technique you should employ.

**Figure 1-2 Video Optimization Techniques**

*Most performance problems are video related or can be addressed by re-encoding the video..*



*If video becomes too pixelated after re-encoding, make sure that the original base encoding format matches the final one.*

## Video Collaboration

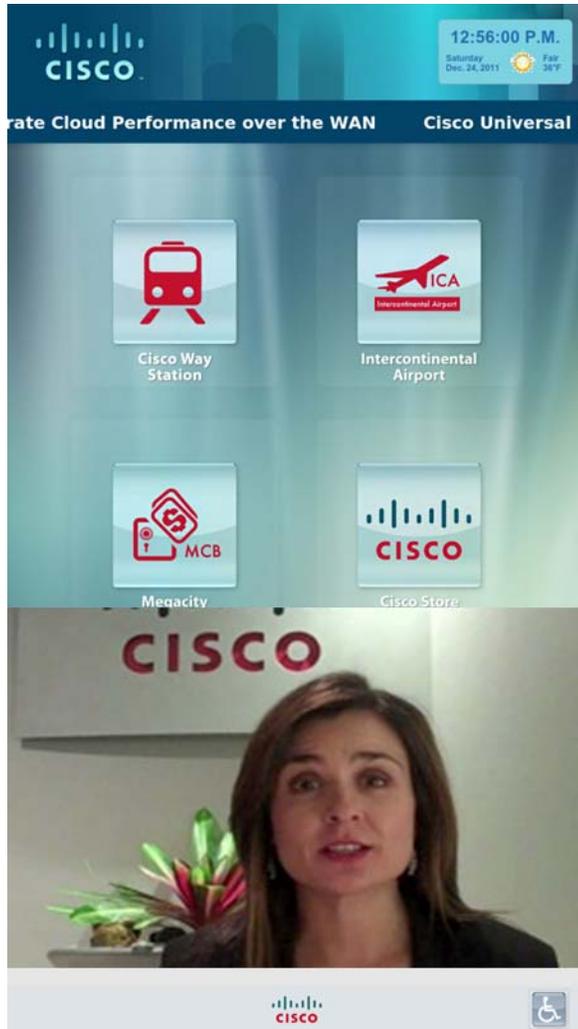
Video collaboration enables a kiosk user to obtain assistance from a remote service representative via video chat. This tool utilizes the IEC4600 Series' rich communications and content sharing features. The benefits of video collaboration are:

- Assist customers with live two-way video interaction
- Provide expert product information and service that can efficiently scale to support all stores or stations
- Address customer questions and concerns to improve their experience
- Provide multi-language support
- Reduce staffing needs

Video collaboration can be used a number of ways:

- **Virtual Concierge/Attendant/Receptionist/Greeter:** A kiosk with a virtual concierge can be placed at the entrances to buildings or within lobbies. They can greet customers, answer questions, verify identities, and help the customers get to where they need to go.
- **Virtual Station Agent:** A virtual station agent could help passengers find the correct train, answer questions, and assist with problems.
- **Remote expert:** Whether for a bank or retail store, a remote expert can answer questions about products and services.

**Figure 1-3** Virtual Concierge at Cisco



## Video Feeds

Live video feeds can be displayed on the display. The feeds can be capturing an event, such as a new store opening, visit by a celebrity, a raffle, lighting a Christmas tree, etc. They could also be capturing visitor traffic inside or outside a store, station, or terminal. Local or cable news, weather, or sports channels can also be streamed live to the kiosks.

## RSS feeds

Really Simple Syndication (RSS) feeds can supply information such as local weather, amber alerts, stock tickers, or news. Many content stakeholders will use RSS feeds, like local weather, to initially capture people's attention to the display. Unless you have a specific need for it, it is advisable to use no more than one ticker or "message crawl" area on a screen. When designing and placing tickers, keep in mind that too much on-screen motion can be distracting, and can detract from the quality of the presentation.

Ticker tapes should be using CSS3 for scrolling.

## Applications

HTML/JavaScript is a preferred mechanism for building kiosk applications.

Applications can be built for this solution that will benefit kiosk users. The following are some of applications that can be built:

- **Location Search:** This type of application allows users to search for businesses, landmarks, or public facilities around a transit station based on categories or by typing in the location name. Users can click on a location and view instructions on how to get there from the transit station. The application also lists the distance and estimates the duration of travel and cost based on selected traveling modes (walking, bus, or taxi). A map could be printed if the kiosk is connected to a printer.
- **Bus, Train, or Plane Information Schedule:** The application can show the departure times, track or gate numbers, and arrival status of buses, trains, or flights. The user could sign up to be notified via email or text message of the status of their bus/train/flight if they enter their information into the application.
- **Notifying The User:** This type of application allows the user to sign up for notifications. The notifications can be flight/train delays, boarding announcements, product releases, etc. A virtual keypad will appear for the user to enter his/her mobile number. Once the user keys in the mobile number, the system will then send the requested information schedule to the user via SMS. The system can store user's mobile number into the database for notification sending purposes only.
- **Ticket Booking and Seat Selection:** An application can be built to allow users to book tickets for movies, sports, or concerts at the kiosk. An interactive seat map allows a user to select a seat at a cinema, stadium, or theater. Once the user confirms a seat selection, the system will save the information and print the ticket.
- **Taxi Booking:** This application allows a user to book a taxi. The user can choose the pick up time and pick up location.
- **Coupon Catalog:** This application displays a catalog of coupons currently available. Users can download the coupons via BlueTooth, SMS, or Email to enjoy great discounts and offers on various items from participating vendors. This would be an application appropriate for a mall kiosk.

## Content Rendering

How do you ensure that content will be rendered correctly on the IEC?

The Cobra browser supports the most recent browser techniques and is designed to be compatible with most web content. To validate whether specific content will render properly on Cobra browser, use an open source browser such as <https://code.google.com/p/arora/> to test the content for compatibility.





## CHAPTER 2

# Design Considerations and Best Practices

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## Chapter Overview

This chapter describes design considerations and best practices when creating content for the Cisco Interactive Experience Platform.

The topics in this chapter include:

- [Considerations, page 2-2](#)
  - [Audience, page 2-2](#)
  - [Brand Consistency, page 2-2](#)
  - [Compelling, Relevant, and Current Content, page 2-2](#)
  - [Playlist, page 2-2](#)
  - [Dayparting, page 2-4](#)
  - [Display Logistics, page 2-5](#)
  - [Bandwidth Considerations, page 2-5](#)
  - [Caching, page 2-5](#)
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- [Best Practices, page 2-6](#)
  - [Text, page 2-6](#)
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  - [Graphics, page 2-7](#)

## Considerations

It is very important to match your content to your business objectives. Depending on your goals, various types of content work better in some environments than others. It is important that the content is compelling and relevant. A good mix of content will keep users engaged. Branding should be consistent across all your advertising media so that users recognize your brand at the kiosk. Consider limitations of the video displays and bandwidth.

## Audience

Effective communication starts with knowing your audience and understanding their needs. If the message is not relevant to the audience, you may miss a prime opportunity to captivate your audience. Content that has been specifically designed to appeal to a particular audience will always be more effective than broad content for the masses.

## Brand Consistency

It is important that the messaging and branding elements displayed on the kiosk are consistent with your company's brand strategy. Consider how other formats of advertising (in store, print, web, television, etc.) complement one another. The tone of messages and images should be consistent. Colors and logos should be consistent. Do the different formats of advertising complement one another or are they unrelated?

## Compelling, Relevant, and Current Content

Content must be interesting in order to draw users to the displays. To attract and engage users, the displays need to offer something that a user would value whether it is information, assistance, or entertainment. Customers will ask themselves "What's in it for me?".

Another consideration is message relevancy. The content needs to be relevant to the user. Just because a message plays well in one country doesn't mean it will play well in another. Content that has been specifically designed to appeal to a particular audience will always be more effective than a broad message to the masses.

Content should also be current and accurate. Outdated or inaccurate content, such as a promotion that has already expired or inaccurate stock levels, will indicate to the user that the information on the kiosk cannot be trusted.

Compelling, relevant, and current content should result in an action from the user - buy a product, order a service, etc.

## Playlist

One of the goals of a good content mix is to capture the attention of users and engage them for the longest possible time. When planning your content, create content from multiple categories so that users do not become bored by only one category of content.

- Advertisements: Create ads for your company, products, or services. Advertisements created for other media such as television commercials or website could possibly be re-used for the interactive digital displays; all they may need is to be shortened or simplified. Consider whether the

advertisement will have both audio and visual components. If there is an audio component, make sure that the area where the kiosk is placed is quiet enough for the user to clearly hear the advertisement. While advertising is important, do not display ads on a continual basis else users will come to the conclusion that is the kiosk's true purpose causing them to leave the kiosk and not return to it in the future.

- **Education:** Educating the user is another content category. Product demonstrations, product information, product comparisons, and customer testimonials can all inform customers. If customers are informed, they are more likely to purchase the products and services that meet their needs.
- **Entertainment:** Consider including content to entertain the user. It could be a snippet of a music video, an interview with a celebrity, trivia, or sports highlights. Some users may be drawn to a kiosk by the entertainment content and then stay to experience the other content.
- **Feeds:** Engaging content grabs attention and continues to keep the user's interest. Tickers featuring sport scores, weather, news, or stock market prices give user's real-time, relevant content. Live video or video from local or cable channels are another option.
- **User generated content:** User generated content is material created by the users (customers, consumers, commuters, travelers, visitors, citizens, etc.) such as videos, blog entries, tweets, discussion forum postings, etc. Companies often initiate social media programs to stimulate dialogue with customers and develop relationships. At the same time, useful content serves to fuel much of brand participation on social networks and media-sharing sites.

Playlists can be data driven, event triggered, or rule-based.

- **Data-driven:** Data-driven playlists are those that are created based on user interactions or traffic flow. If users are using the kiosk for one type of information over another, the playlist can then pull content related to that topic. Similarly, low sales of a product could trigger a playlist highlighting that product.
- **Event triggered playlist:** Playlists With the integrated interactive technologies, the playlists could have conditional branches to engage the individual viewer for in-depth information exchange or targeted marketing. Interactive screens can be updated by SMS text messages from cell phones.
- **Rule-based playlist:** There are many cases where content in a playlist is formed based on a series of business rules instead of manual programming. Some well-designed content management systems systematically construct the playlist based on the business rules and tags that are associated with the content. The rule-based playlist ensures the content mix and flow to achieve desired results without involving ongoing content programming efforts.

The following are best practices when building a playlist:

- **Media choices:** Choose media based on how the user will interact with the kiosk. People quickly walking past the kiosk will grasp static content better than an animation or video than has a beginning, middle, and end. If that static graphic conveys a relevant enough message, that person may stop and return to the kiosk to find out more.
- **Rotate media:** For example, start with an animation, show a video, and then display a static graphic. One video after another will not be as effective.
- **Rotate layouts:** Playlists can also alternate between layouts.
- **Transitions:** Transitions between messages and media should appear seamless. This can be done with fading or a static graphic of your company name before each message.
- **Multiple messages:** Change the messages during the playlist. Don't focus on just one message even if you are changing up the media (videos, animations, static graphics, etc.). Begin with an ad for a product, show a video about a related product or service, show a demo of the product, follow with a customer testimonial about your company, and then show a static graphic of how they can purchase the product.

- **Message duration:** Change the duration that each message plays. For example, the first message may run for 15 seconds, the second message for 30 seconds, the third message for 20 seconds, and the fourth message for 45 seconds.
- **Playlist length:** The playlist length should be planned according to the venues and the average dwell time of the user. Ideally, you will want users to have a chance to see the content at least two or three times during their visit to your store or station. For the screens that are planned to reach users walking past the kiosk, such as at tourist sites or along sidewalks, use a short content loop perhaps thirty seconds in length. A playlist in a mass transit station could be two-three minutes long to engage commuters waiting for a train or bus. A playlist for a retail store may be longer if customers tend to dwell in the store looking at the merchandise. Kiosks at airport gates should consider longer playlists since passengers will be exposed to the content for an extended period of time.
- **Shuffle playlists:** Multiple playlists can be built and shuffled when it is expected that users will dwell in those areas for a long period of time or for locations where users frequent often such as mass transit stations.

**Table 2-1**      **Sample playlist for a 5 minute loop:**

<b>Content</b>	<b>Length</b>
Company logo, name, and slogan	10 seconds
Company overview video	30 seconds
Product A overview	30 seconds
Customer testimonial for product A	20 seconds
Third party ad	40 seconds
Message from company leader	20 seconds
Company logo	5 seconds
Product B overview	30 seconds
Video of Product B at customer premises	20 seconds
Product A features	25 seconds
Corporate philanthropy video	15 seconds
A different third party ad	25 seconds
Promotions for Products A and B	20 seconds
Company logo	10 seconds

## Dayparting

Dayparting is the technique of targeting different audiences throughout the day by offering them content geared specifically for them. Dayparting is a valuable tool to deliver the right message to the right target at the right time. It is a common practice for television and radio stations. Dayparting can also be used with this solution by creating different playlists tailored for different audiences throughout the day. For example, the morning and evening passengers at an airport during weekdays are typically business travelers. Their needs and wants are different from the mid-day or weekend passengers traveling for pleasure. Content geared for business travelers could include where to find electrical outlets to charge laptops, information on how to quickly get into the city from the airport, and business services at the airport such as printing and video conferencing. Content geared for leisure travelers could include

promotions for family-friendly restaurants at the airport (“kids eat free!”), demonstrations on how to go thru security, pinpointing the best locations for watching planes take off or land, and cheap transportation into the city.

## Display Logistics

When designing the content, consider the following logistics of your displays:

- The IEC4600 Series can support a video display that is up to 1920x1080 (1080p). The IEC4600 Series defaults to the monitor’s native resolution.
- To ensure the content scales well, build for the lowest resolution expected. Then use stretchers to make sure it can stretch to the highest resolution expected.
- Both horizontal (landscape) and vertical (portrait) modes are supported with 90, 180, 270 degree turns.
- The content should be laid out naturally.
- Kiosk placement should be planned to optimize viewing distance from foot traffic.
- Determine how far away users will be from the screen when it is first seen. If users will first see the screens at close range, the layout can be divided into more zones than if users will be seeing the screens from far away.
- Preview your designs on a touch screen that is the same size as the ones that will be installed.

## Bandwidth Considerations

The most compelling content can have little impact if it never reaches the user. This can happen if there is limited bandwidth to the kiosk. Find out the bandwidth capabilities of the kiosk locations and build content with the limitations in mind. If different locations have different bandwidths, create different playlists. In locations with limited bandwidth consider using more static graphic, reducing the size of videos, and cutting up a video and distributing the segments throughout the playlist.

## Caching

Web caching is limited to HTTP1.1 caching specification meaning that the client has to consult the server for caching instructions, file timestamps, time-to-live, etc.

Video caching is handled by a separate caching mechanism (assuming the videos are played via native player widget), which has a rich browser API.

## Refreshes

How often you refresh content is dependent on a variety of factors:

- Frequency of visits: How often does your audience return to the area where the kiosk is located - once a day, once a week, once a month?
- Audience expectations: Will your audience expect to see new content every time they visit your store, branch, station, or terminal?

- Release of new products or services: When are new products or services released? Retailers typically have four release cycles - one for each season of the year.
- Budget for refreshes

## ADA Compliance

Interactive content should be accessible to all. There are features built into the IEC4600 Series that will allow those with disabilities to interact with the kiosk. The disabilities assistance button can be displayed at the bottom corner of the screen. When it is pressed, a sub menu of individual disabilities appears:

- The wheelchair button will swap the services and application zones at the top of the screen with the commerce zone at the bottom of the screen so that an individual in a wheelchair can use the touch screen to interact with the kiosk.
- The hearing impaired button will output audio to a wired USB headset that can be plugged into the kiosk.
- The visually impaired button will allow a braille USB keyboard to be plugged into the kiosk so that a visually impaired individual can use the keyboard to interact with the kiosk.

## Best Practices

The following sections provide tips on creating content for interactive displays:

### Text

The following are best practices for text:

- Use Ubuntu supported fonts.
- Larger fonts are easier to read than smaller fonts particularly at a distance. Text font size should not be smaller than 24 points.
- Avoid using italicized fonts.
- Sans-serif fonts such as Verdana and Arial since they are easier to read on video displays than .serif fonts such as Times New Roman and Courier New.
- Limit the number of text lines per screen to no more than 10 text lines.
- Use as many visuals as much as possible rather than text.
- Only use one ticker per screen. More than one ticker will be distracting.

### White Space

White Space is the area in a layout that has no text, graphics, videos, or animations. White space can be any color.

- Use white space as much as possible. Customers can then focus their attention to the text and images.

- Ensure that there is a white space border along the sides of the screen to avoid any of the text or images from being distorted at the edges. It will also make it easier for users to see the entire screen if they are viewing the display at an angle. This border does not have to be white; it can be any color.

## Color

The text and background colors should contrast each other. Light text on dark background reads best. If you prefer to use a light background, make it slightly grey instead. Bright white backgrounds tend to bleed into the dark text making it appear fuzzy.

## Content Chunks

Avoid lengthy videos, animations, or text. Chunk content into smaller pieces that can be grasped within seconds not minutes. Shorten copy. Break up lengthy videos and animations.

## Graphics

- Visuals are more effective than text.
- Avoid complicated graphics that require the user time to decipher.
- Use low resolution images.





# CHAPTER 3

## Layouts

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Revised: September 4, 2015

### Chapter Overview

Layouts are the blueprints for how content will appear on the screens. This chapter gives ideas about how you can create templates and zones for different types of information and content.

The topics in this chapter include:

- [Layouts and Templates, page 3-2](#)
  - [Portrait, page 3-2](#)
  - [Landscape, page 3-4](#)
- [Content Zones, page 3-5](#)
  - [Information Zone, page 3-5](#)
  - [News Zone, page 3-6](#)
  - [Application Zone, page 3-7](#)
  - [Services Zone, page 3-10](#)
  - [Commerce Zone, page 3-11](#)
  - [Logo Zone, page 3-12](#)
- [Industries and Sectors, page 3-14](#)
  - [Transportation, page 3-14](#)
  - [Airports, page 3-14](#)
  - [Retail, page 3-15](#)
  - [Banking, page 3-17](#)
  - [Public Sector, page 3-18](#)
  - [Corporate, page 3-19](#)

# Layouts and Templates

When dividing the layout into multiple zones of content, consider the size of the screen, the amount of information that is desired, and the amount of screen space needed by the applications. In some cases a simple layout with just a few zones has more impact particularly if the time that the user will typically spend with the kiosk will be short. If it is expected that a user will spend considerable time with the kiosk, more zones may be preferable to the user. Similarly, more content is visible at any one time if more zones are used.

Once a layout is decided upon, create a template. Content templates organize content not only for the user but for the developer. Templates allow web designers and content developers to develop a library of assets that are then rotated into the template as they are developed. Templates are created using common authoring tools.

Templates are divided into zones. Each zone supports multiple content formats and is an independent component that can be easily updated or changed. One zone can contain an instructional video, another zone can contain an interactive map, and another zone can contain information such as train departure times or store promotion. Common zones are for information, interactive applications, and commerce. Zones can also be populated automatically through dynamic data feeds such as the news, weather, or sports scores.

All zones can be controlled by a single development team within your company or some zones can be controlled by other companies. For example, if one zone is used for advertising products and services other than those of your company's, that zone could be populated and controlled by an advertising company.

**Note**

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Using the same template for a long period of time can cause image retention (burn-in) on LCD and plasma screens. It is best to change the templates on a periodic basis. This can be done by simply using a mirror image of the same template. Alternatively insert a full-screen video or animation in the playlist.

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When designing a template, it is important to understand the size and setting of the video display. A smaller screen should have fewer zones than a larger screen. If the user will be standing directly in front of the display, position the zones for interactivity where the user can reach the screen. For example, if the user will interact with a map of the subway, place that zone within easy reach of an adult. Take into account how far the screen is from the floor. Ideally, you will want to access to a mounted screen during the design phase so you can test several design layouts.

The screens can be oriented either vertically (portrait orientation) or horizontally (landscape orientation). Templates should be created for the orientation of the screens.

## Portrait

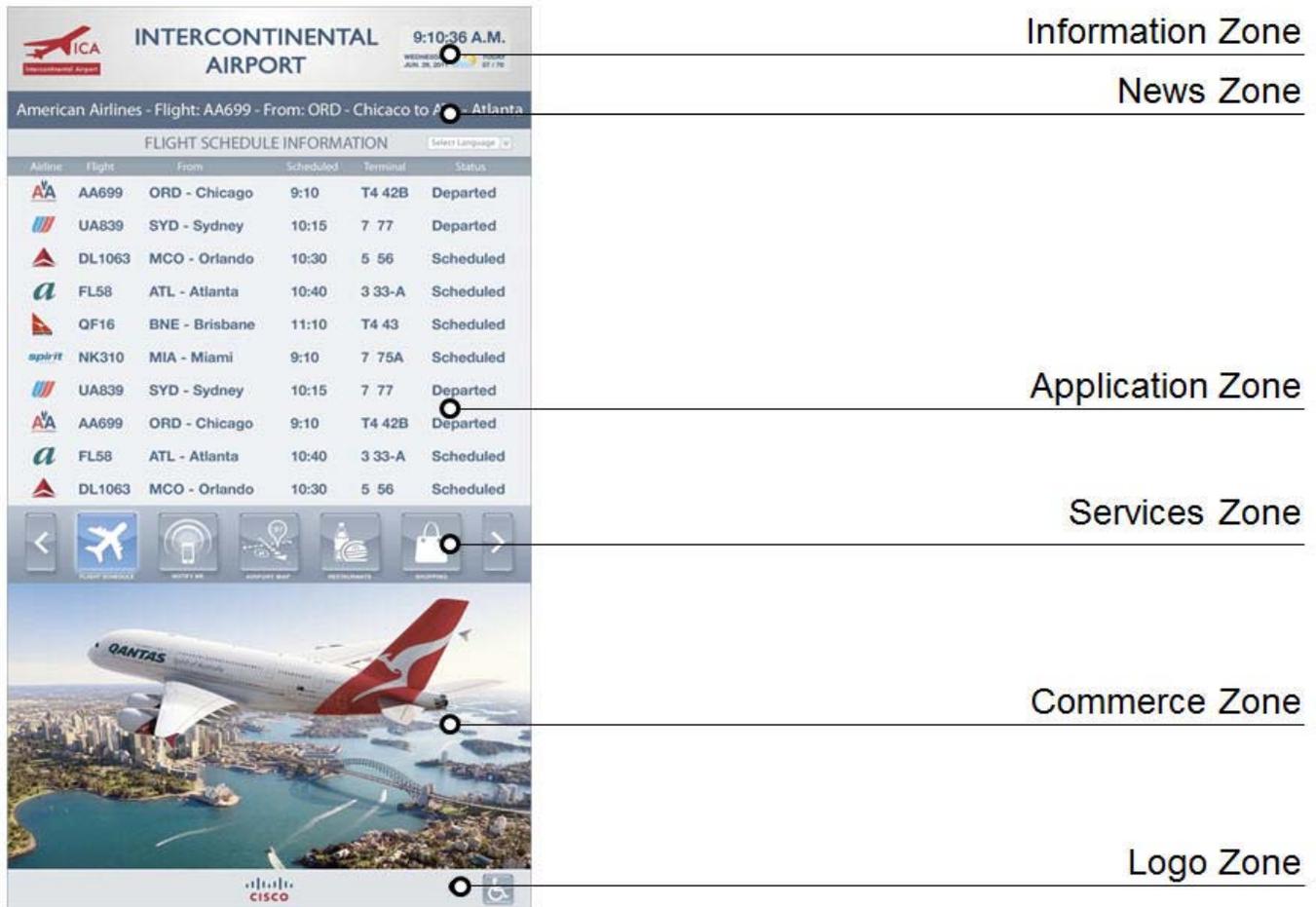
The following templates were designed for vertically mounted displays. These templates assume the display has a widescreen aspect ratio of 16:9 and a screen resolution of 1080 pixels wide by 1920 pixels high.

The first template example contains six zones for the portrait template:

1. Information zone - Identifies the company or location
2. News zone - Displays a ticker
3. Application zone - Displays the application that the user chooses
4. Services zone - Includes the icons of all the applications available to the user

5. Commerce zone - Displays advertisements, videos, animations, or static graphics
  6. Logo zone - Identifies a sponsor's name and the displays the accessibility button
- The zones will be discussed in detail later in this chapter.

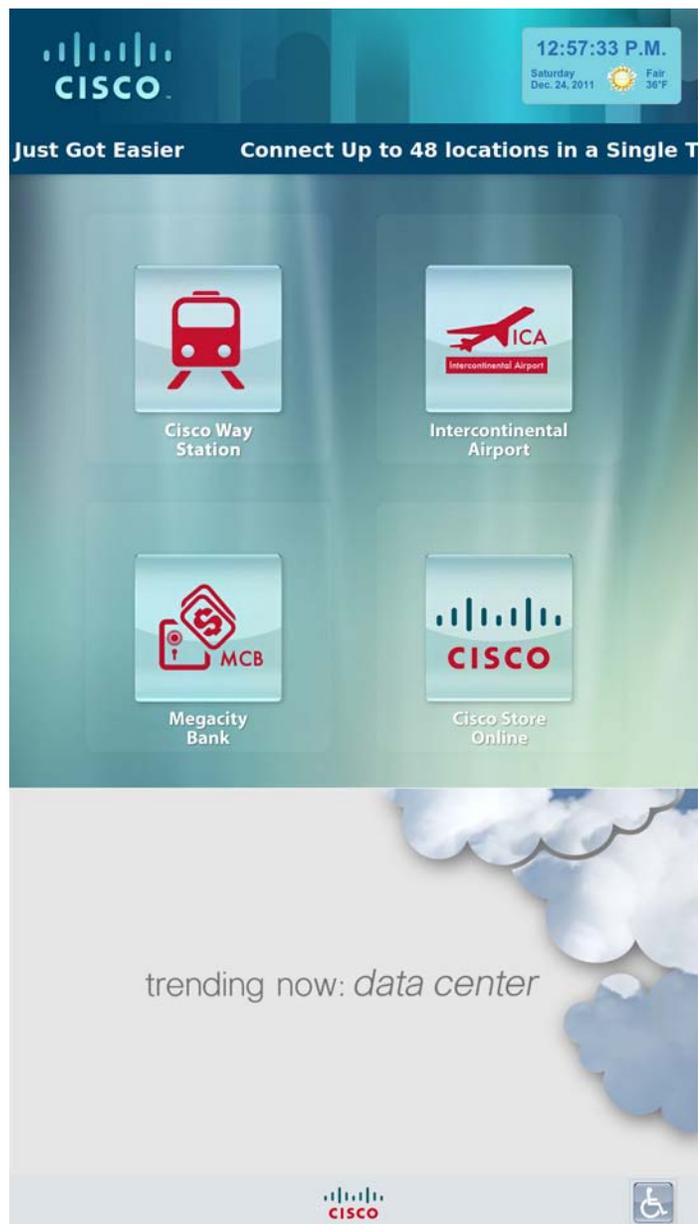
**Figure 3-1** Portrait Template with Six Zones



In this template, the zones have the following dimensions:

1. The information zone is 1080 x 180 pixels.
2. The news zone is 1080 x 80 pixels.
3. The application zone is 1080 x 800 pixels.
4. The services zone is 1080 x 165 pixels.
5. The commerce zone is 1080 x 608 pixels.
6. The logo zone is 1080 x 87 pixels.

The second portrait template has five zones. It does not have the services zone as the first template. Instead, the services icons are placed in the applications zone. When an icon is pressed, an application is launched in that zone.

**Figure 3-2** Portrait Template with Five Zones

## Landscape

Landscape templates are designed for horizontally mounted displays. The examples below are designed for displays that have a widescreen aspect ratio of 16:9 and a screen resolution of 1080 pixels high by 1920 pixels wide.

Landscape templates generally have fewer zones than portrait templates.

The first template below has four zones:

- Information Zone: Name, date, time, and weather

- Services Zone (left): Listing of applications available (local train schedules, banking, e-commerce)
- Application or Commerce Zone (right): Applications or playback of live or pre-recorded video or advertisements
- News Zone: RSS posting of local or company news, security alerts

**Figure 3-3 Landscape Template with Four Zones**



Templates can also be created with fewer zones. For example a template created with two zones (e.g. location zone and information zone) could be used to display information that users want quickly as they are passing the kiosk such as track or flight information or station closure information. A template with two zones (e.g. location zone and application zone) would be ideal for emergency notifications so that users can quickly grasp the information (e.g. “FIRE!”) and take immediate action with a map of the nearest exits.

## Content Zones

When designing a template, designate zones. Start with the zones that contain the most mission critical content for your company such as the Application Zone. Determine the size needed for that zone and design the other zones around it. Then when you are designing content, you will create content specifically for each zone’s dimensions.

## Information Zone

The information zone can be used to display information that the user needs or wants including:

- Company logo
- Company name
- Kiosk/display location - If the company has a number of sites with kiosks, it may want to identify the location (city, station, street, address, etc.) of the kiosk to help customers. For example, kiosks used in transit stations can display the station name so commuters can identify quickly which station they have arrived in.

- Time
- Date
- Weather - Real time weather information based on user defined location. Weather data provider is also customizable based on local availability.

## News Zone

The news zone appears underneath the information zone in the portrait templates above but as the bottom zone in the landscape template with four zones. The news zone displays RSS feeds such as news tickers or service advisories. A kiosk on a city street can use the news zone to display a ticker containing information pertinent to that city's residents and visitors. News related to the buses and trains, weather advisories, and school closures are displayed as needed: "City buses will not be running today due to a strike. Use trains as the alternative method for your travels".

In the figure below, the news zone announces new products or updates to existing products at kiosks placed in Cisco System's Executive Briefing Center.

Figure 3-4 News Zone on Cisco's Kiosks



## Application Zone

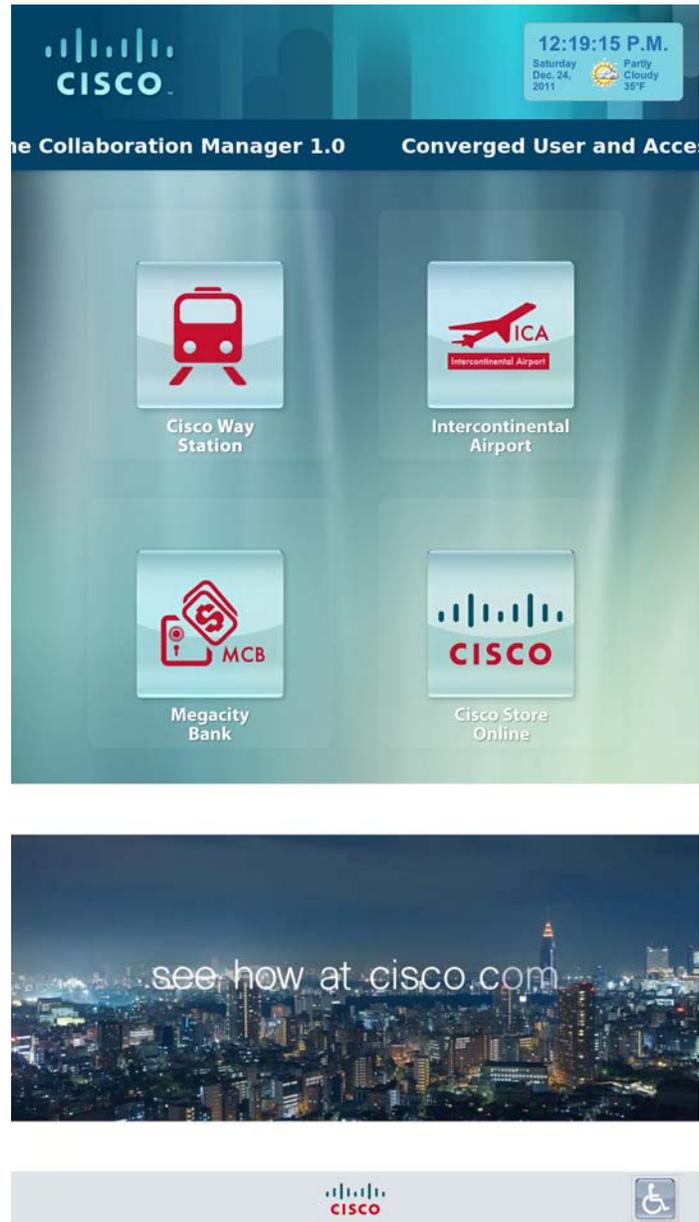
The application zone is interactive. Applications run in a multi-tasking fashion, even if they are not currently displayed. This zone can also display a website or play audio or HD video. The example below is an interactive map.

**Figure 3-5** Interactive Map in the Application Zone



If there are multiple applications available, users can choose from application icons in the services zone. The application then appears in the application zone. Alternatively, application icons can be the default screen in the application zone. The drawback of that is that the user cannot quickly move from one application to another; they first have to go back to the default screen to choose another application.

**Figure 3-6** Application Icons in the Application Zone



When a user interacts with this zone, it can cause other zones to change the content they are currently displaying. For example, if the user wants to see a demo of a product or watch a video, the user requests it in the application zone which then can trigger a video or animation to play in the commerce zone. An advertisement tied to an application can automatically be launched in the commerce zone when the user interacts with the application. For example an advertisement or promotion for a restaurant can display when the user views a map of restaurants in an airport.

Refer to Chapter 1 for a list of applications that could be developed for this zone.



**Note**

When designing an application, it is a good practice to place a descriptive title of the application at the top of the application so the user identifies that application. A bank, for example, can title an application “Special Offers” so that customers knew what application they were interacting with. Airports can use: “Plan and Book Your Trip”, “Airport Information”, “To and From the Airport”, and “Shop and Eat”.

The application zone is also used to launch virtual assistance. This topic was covered in Chapter 1 “Content Types”.

If the content is available in multiple languages, customers can choose the language in which they want to view the content. New language will remain in effect for a specified period of time (set by the Administrator) and then the content reverts to the default language.

## Services Zone

The services zone contains quick link buttons for the applications that display in the application zone. Icons for those applications are displayed in the services zone. Examples are icons for Train Schedule, Trip Planner Map, Route Planner, Virtual Station Agent, Coupons, Remote Expert or Virtual Station Attendant, etc.

**Figure 3-7 Sample Icons for Airports**



**Figure 3-8 Sample Icons for Mass Transit**



**Figure 3-9 Sample Icons for Retail Stores**



**Figure 3-10 Sample Icons for Banking**



## Commerce Zone

The commerce zone is an area that is ideal for playing videos or animations to advertise products or services. The advertisements can be for your company or for other companies if you sell the ad space.

The ads can be controlled by a playlist, which can change over the course of the day to target different users' needs. For example, the morning playlist on kiosks in shopping malls can include advertisements for breakfast restaurants; the afternoon playlist can include lunch and dinner restaurants.

They can also be triggered by the application with which the user is interacting for targeted advertising. For example if the user is searching store inventory for coats, the application can trigger an ad for coordinating scarves and hats in the commerce zone. Or if the user is searching an interactive map for the nearest hotel, an ad for one of those hotels could display in the commerce zone. An application for booking rooms at a hotel can also be made available to the user.

When consumers click on a catalog application on kiosks, a video of some of the products is displayed in the commerce zone.

A quick response (QR) code can also be displayed in the commerce zone so that consumers or commuters can scan it with their smartphones to use as their train ticket, coupon, or download more product/service information.

**Figure 3-11** Quick Response Code



The commerce zone can also display the virtual assistance application. This is particularly useful if the virtual agent or remote expert will be assisting the user to use the application in the application zone.

**Figure 3-12** Virtual Assistance in the Commerce Zone

The screenshot displays the Intercontinental Airport mobile application interface. At the top, the ICA logo and "INTERCONTINENTAL AIRPORT" are visible, along with the time "9:10:36 A.M." and the date "WEDNESDAY JUN 26, 2014". Below this, a notification for "American Airlines - Flight: AA699 - From: ORD - Chicago to ATL - Atlanta" is shown. The main section is titled "FLIGHT SCHEDULE INFORMATION" and contains a table of flight details. At the bottom of the app interface, there are navigation icons for "FLIGHT SCHEDULE", "CHECK IN", "AIRPORT MAP", "SECURITY", and "BAGGAGE". Below the app interface is a photograph of a smiling female virtual assistant wearing a headset. The Cisco logo and a accessibility icon are visible at the bottom of the image.

Airline	Flight	From	Scheduled	Terminal	Status
AA	AA699	ORD - Chicago	9:10	T4 42B	Departed
UA	UA839	SYD - Sydney	10:15	7 77	Departed
DL	DL1063	MCO - Orlando	10:30	5 56	Scheduled
a	FL58	ATL - Atlanta	10:40	3 33-A	Scheduled
QF	QF16	BNE - Brisbane	11:10	T4 43	Scheduled
spirit	NK310	MIA - Miami	9:10	7 75A	Scheduled
UA	UA839	SYD - Sydney	10:15	7 77	Departed
AA	AA699	ORD - Chicago	9:10	T4 42B	Departed
a	FL58	ATL - Atlanta	10:40	3 33-A	Scheduled
DL	DL1063	MCO - Orlando	10:30	5 56	Scheduled

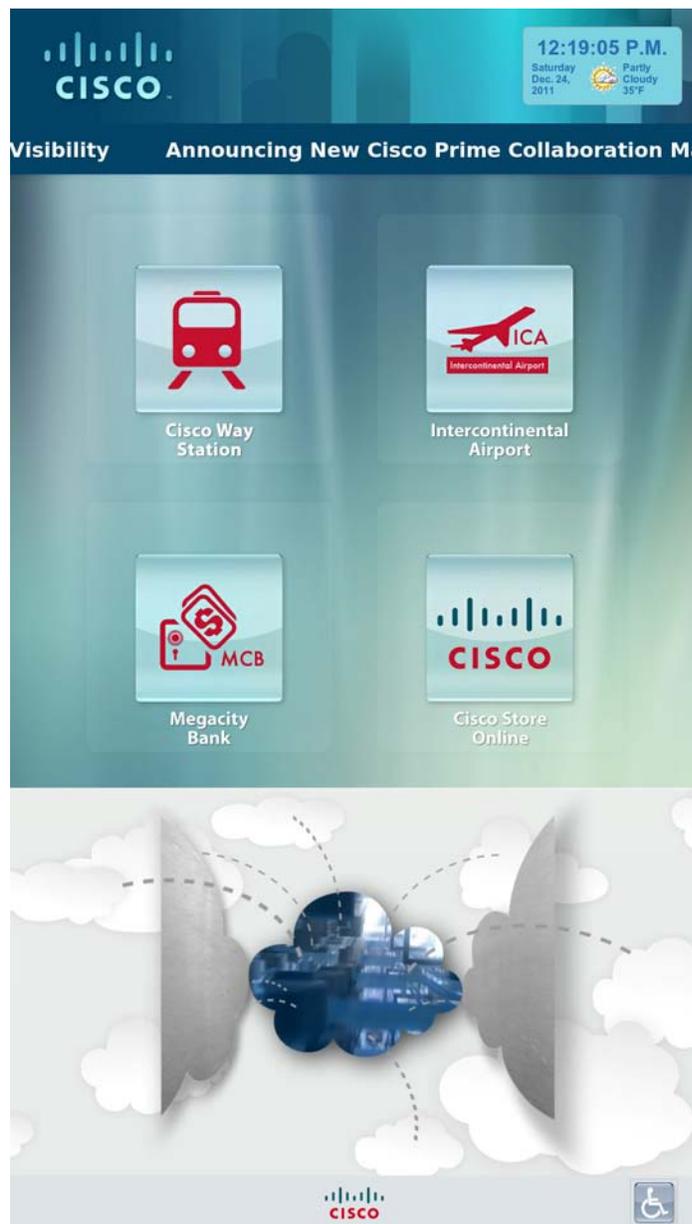
## Logo Zone

The logo zone can be used to display the following:

- A sponsor's logo
- A disabilities assistance button
- Announcement ticker: Display custom messages or live RSS news feeds in a scrolling ticker.

If the content is ADA compliant, a disabilities assistance button should be displayed at the bottom of the template so that it can easily be accessed by a person in a wheelchair. The disabilities assistance button will bring up a sub menu of individual disabilities: wheelchair, hearing impaired, and visually impaired. The wheelchair button will swap the services and application zones with the commerce zone for a person in a wheelchair to access the interactive applications. The hearing impaired button will output audio to a wired USB headset that can be plugged in to the kiosk by a hearing impaired person. The visually impaired button will allow a USB keyboard to be plugged in to the kiosk for use by the visually impaired. When the disabilities assistance button is selected, the service zone icons and fonts must be ADA compliant.

**Figure 3-13** Logo Zone with Disabilities Assistance Button



# Industries and Sectors

This section provides ideas of how content can be designed for the following industries and sectors:

- Transportation
- Airport
- Retail
- Banking
- Public Sector
- Corporate

## Transportation

The interactive kiosks and video displays can be used in bus stations or train stations. Commuters can benefit from the following information in mass transit stations:

- Date and time
- Weather advisories that could affect travel
- Travel advisories such as station closures, delays, construction, accidents, and emergencies
- Bus or train schedules and status
- Trip planning: Passengers can plan point-to-point trips across multiple bus or train lines.
- Train or bus system map: An interactive map of the entire subway or bus system
- Local information such as street plans, coffee shops, restaurants, toilets, newsstands, Internet cafes
- Virtual station attendant for assistance
- Instructional videos such as how to buy a monthly pass or how to evacuate a train
- Security and emergency notification
- Offers and promotions: Special deals and promotions from either the transit agency or merchants within the stations or nearby
- Customer testimonials: Videos of fellow commuters conveying their opinions and suggestions
- Other station services: Video or static information explaining additional services offered at the station such as a branch of the local library.
- Third-party advertising: Earn revenue by selling advertising space to third-parties

## Airports

The interactive kiosks and video displays can be used in airport terminals. Passengers will find the following information and applications useful:

- Flight information: View and select flights using touch screen to get further information
- Notification: Receive notifications of flight status changes so passengers can be better informed at all times
- Airport wayfinding: Touch screen map with shops, restaurants, and services for airport wayfinding

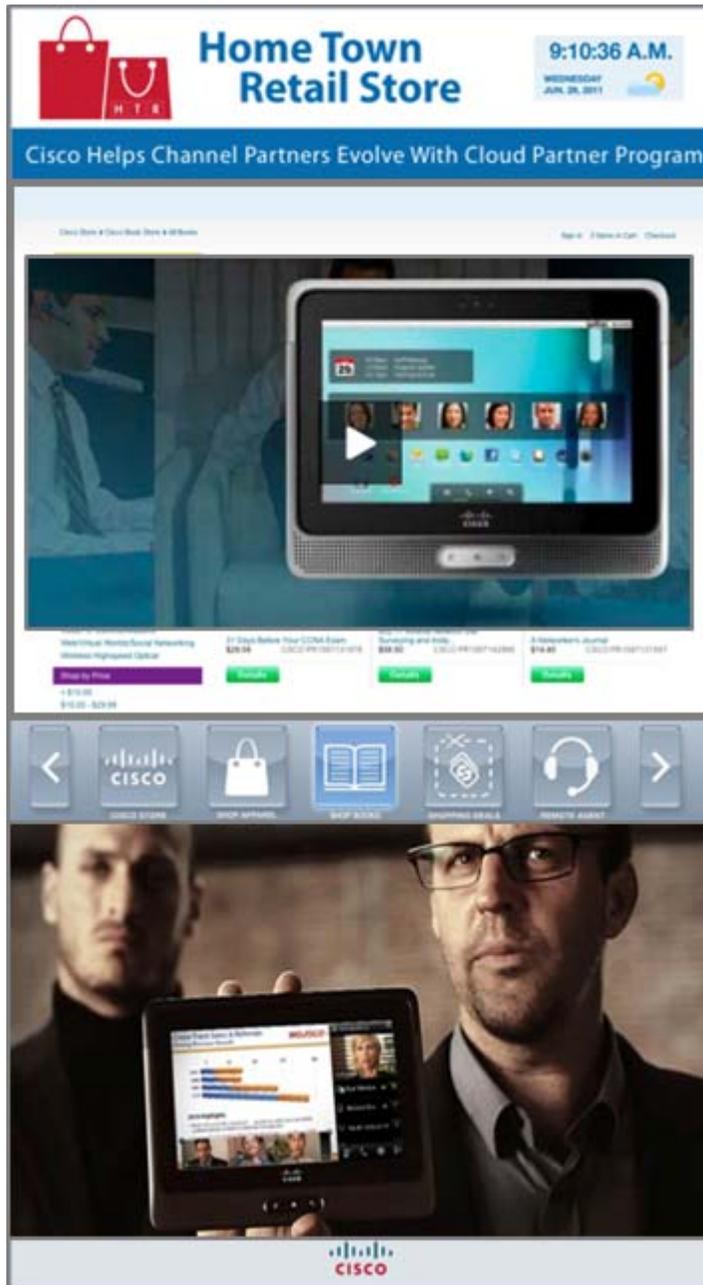
- **City wayfinding:** Touch screen map of nearest city to help passengers reach their hotel. This information should appear on kiosks/displays in the arrivals lounge, taxi ranks, train platforms, and passport and customs areas.
- **Taxi Booking:** This application allows user to book a taxi. To book a taxi, user is required to choose the taxi type, pick up time and pick point.
- **Shops and restaurants within the terminals:** Map, menus, and offers for passengers. When a passenger selects a restaurant or shop, targeted ads from that merchant can display in the commerce zone
- **Additional services:** Video or static information explaining additional services offered at the airport such as playgrounds for children, areas that pets can be walked, or free Wi-Fi
- **Third-party advertising:** Earn revenue by selling advertising space to third-parties
- **Virtual store:** Create online store for duty-free goods that will be delivered to the passenger's gate by their departure
- **Interactive demos:** Video or animation showing how to fill out immigration and customs documentation

## Retail

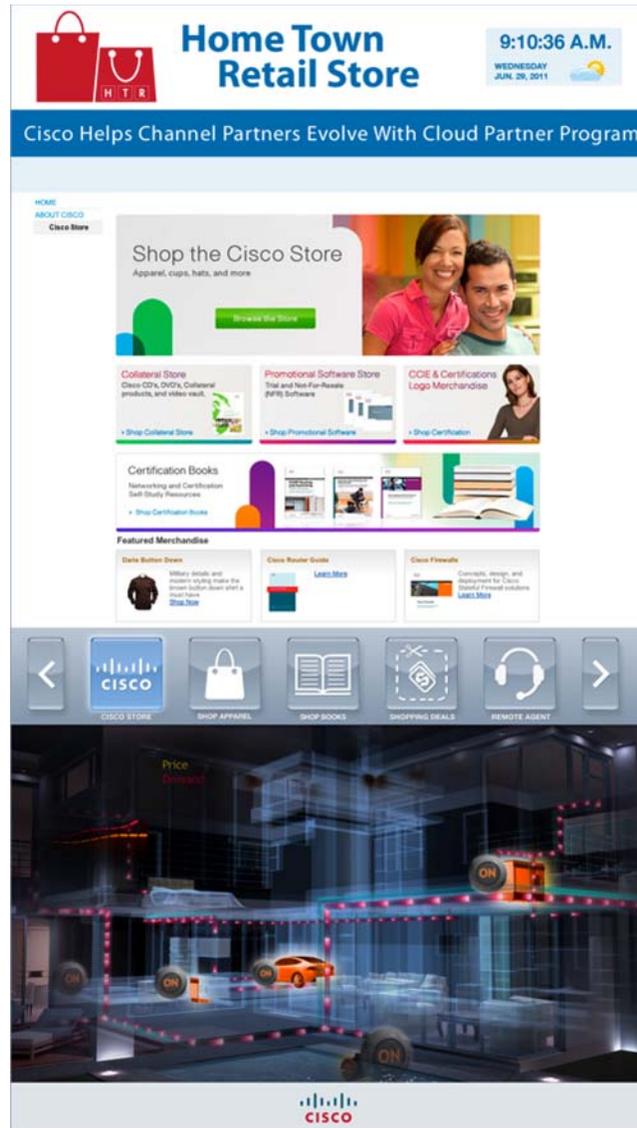
The interactive kiosks and video displays can be used in retail stores or fast food restaurants. Consumers will find the following information and applications useful:

- **Store information:** Touch screen interaction allows users to view products, categories, store maps, and services
- **Virtual store:** Online store to order products. Fast food restaurants can use kiosks to allow customers to place their orders, customize their meals, and pay for their food without having to wait in line at the counter
- **Offers and promotions:** Special deals and promotions – based on location, schedule, user, or other business rules
- **Interactive demos:** Interactive product demonstrations to show product features and allow users to interact with products

Figure 3-14 Design for a Retail Kiosk Screen



**Figure 3-15** Design for a Retail Kiosk Screen

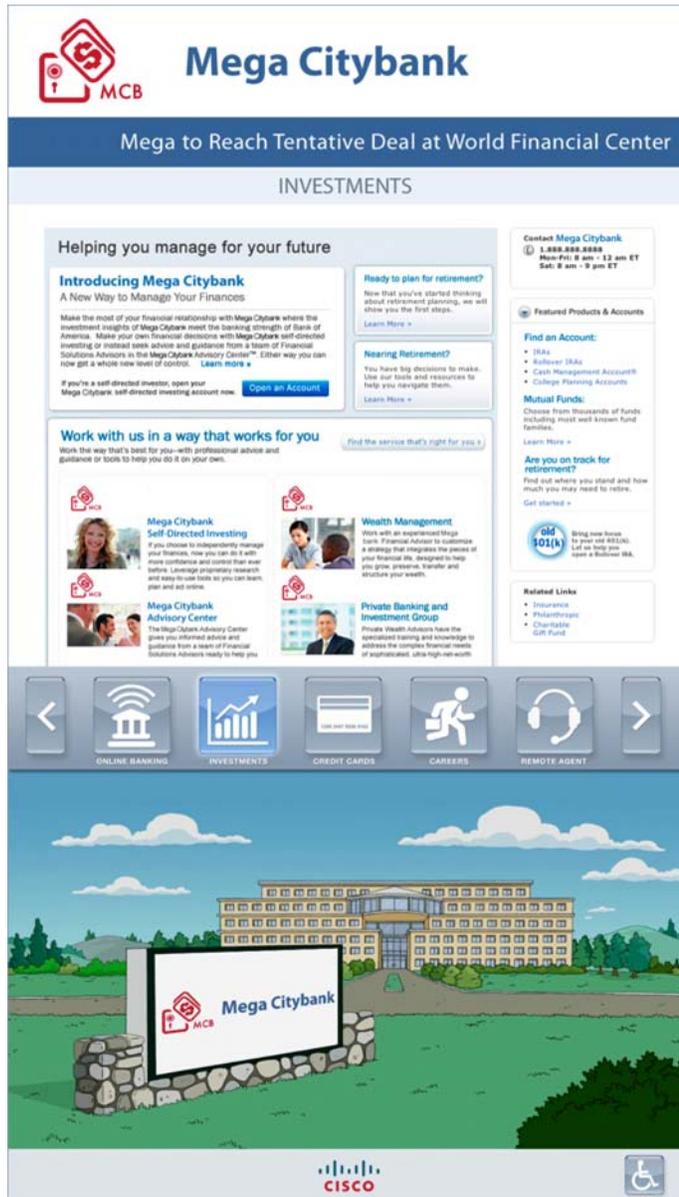


## Banking

Financial services applications include:

- **Online Banking:** Touch screen interaction allows users to perform simple transactions and avoid teller wait times
- **Product Information:** Interactive product information –provide investment, credit, mortgage products and rates
- **Cross-Sell/ Up-sell:** Provide information and recommendations on additional products based on user interaction

Figure 3-16 Design for a Bank Kiosk Screen



## Public Sector

This solution also benefits public sector. For example, tourists and citizens can get information throughout a city where kiosks are set up with interactive maps and information benefiting both tourists visiting the city and the people who live there.

## Corporate

Furthermore, companies can set up kiosks in their lobbies and cafeterias so that visitors and employees can access information. At Cisco headquarters in San Jose, California kiosks are set up in lobbies of buildings, the Cisco Executive Briefing Center, the employee store, and cafeteria.

**Figure 3-17** Design for a Corporate Kiosk Screen







## CHAPTER 4

# Content Management

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Revised: September 4, 2015

## Chapter Overview

It is important to follow a process when developing content for this solution. Developing content without a process in place or skipping a phase could be costly in the end, resulting in ineffective or irrelevant content that needs to be re-designed. This chapter provides suggestions on how to plan, develop, implement, and maintain content for the Cisco Interactive Experience Platform.

The topics in this chapter include:

- [Plan, page 4-1](#)
- [Define Business Goals, page 4-2](#)
- [Understand Your Audience, page 4-2](#)
- [Design and Build, page 4-3](#)
- [Obtain Approvals and Buy-In, page 4-3](#)
- [Conduct a Pilot and Revise Content as Necessary, page 4-4](#)
- [Measure Effectiveness, page 4-4](#)
- [Update and Refresh Content, page 4-4](#)

## Plan

Content development is often done without a plan in place. This is a mistake. A good plan can provide a clear direction by taking into consideration your business objectives, your audience, the physical environment of the interactive displays, and other marketing mediums that your customers experience. A content plan ensures that the type of content you use, and the frequency in which it's updated, is always “on-point” with your business communication objectives. A content plan helps shape where you locate screens, the type of content you develop, and how customers will engage with your displays. When creating your plan, take the following into consideration:

- Business goals: What is the company trying to achieve?
- Audience: What are your customers' needs and desires?
- Metrics: How will results be measured? What is the definition of success?
- Roll-out: Will the interactive displays be launched all at once or will they be rolled out in phases?

- **Time line:** How many weeks will be allotted to design and build the content? What are the dates for getting approval, educating employees, and conducting the pilot? When is the roll out date?
- **Budget:** What is the budget for initial content creation? What is the budget for refreshing and updating the content?
- **Communication:** How will this project be communicated internally and externally? Who is responsible for that communication?
- **Support:** If content errors (incorrect information, bugs, etc.) are identified by customers or employees, who should employees contact to fix the errors?
- **Venues:** Where will the displays be located (by entrances, by cash registers, on train platforms, in the arrivals or departure halls, at customs, at gates, etc.)? Will the displays be placed in high traffic locations or placed away from high traffic areas? Will the displays be grouped together or scattered? What is the bandwidth in the venues?
- **Displays:** Will the displays be mounted in kiosks or against walls? How high will the bottom of the screen be from the floor? What are the dimensions of the screens? What is the orientation (landscape or portrait) of the screens?
- **Refreshes:** Plan for freshness. It is also only as good as the content and the timing of delivery, so plan in advance to keep content fresh and relevant. How often will content be refreshed, rotated, and retired?
- **Content parameters:** Will content be built in-house, outsourced, or licensed from third-parties? What type of content is needed? How many zones of content are needed? How many layouts will be needed? Will multiple layouts be used in one store/branch/station/terminal? What is the minimum and maximum number of seconds that a message should play? How many playlists are needed? Will there be multiple playlists for different times of the day, week, etc.? Will kiosks in a single store/branch/station/terminal play the same playlist or will they each have a different playlist? Will playlists differ by region? What are the minimum and maximum minutes for a playlist? Is translation or localization of the content required?

## Define Business Goals

Establishing your business' objectives will drive the type of content that is built.

- Why is your company deploying this solution?
- What does the company hope to achieve? Is it to increase sales, up-sell, or cross-sell products/services? Is it to generate revenue by selling ad space to third parties?
- Do you want to entertain or inform your audience?
- Do you want to use virtual agents to supplement or reduce the workforce?
- Do you want to leverage expertise by using remote expert so that customers in all cities can tap into their knowledge?
- What results are desired?

## Understand Your Audience

If you do not already have a profile of your audience, consider the following:

- **Demographics:** What are the age range, gender, education level, and disposable income of your customers?

- Reason for their visit: What is the reason that customers are coming to your establishment (shopping, traveling, commuting, conduct transactions, becoming informed, etc.)?
- Needs and desires: What are your customers' needs? What do they desire? What are their expectations?
- Buying patterns: What is the average amount that customers spend per visit? Do they commonly increase their purchases if a sales associate up-sells or cross-sells? Are they influenced by trends? Are they motivated by promotions or offers? Does in-store financing increase their purchase amounts or frequency? Does an in-store loyalty program increase their purchase amounts or frequency? How often do customers return to the store (once a week, once a month, once a month, once a year)? What is the average time that customers linger in front of a store display or examine a product?

If you want to attract a new audience, compile a profile of that audience too.

Once you know your audience, you are able to focus on their needs and direct communications that are relevant and compelling, and which ultimately drive results.

## Design and Build

Before you begin, read Chapters 3 “Design Considerations and Best Practices” and 4 “Layouts” for design tips and ideas.

- 
- Step 1** Create a template in Photoshop.
  - Step 2** Define screen resolution.
  - Step 3** Define color palette, font, font size, and other branding elements.
  - Step 4** Determine the number of zones needed or desired.
  - Step 5** Define placement of zones with fixed content: logo, time and date, ticker, services buttons, and disabilities assistance button.
  - Step 6** Define placement of other zones such as for applications and advertisements.
  - Step 7** View your design on a display with the same resolution as users will use.
  - Step 8** Re-design zone placement and any other design elements as necessary.
- 

## Obtain Approvals and Buy-In

Content approval by leadership and key business teams within your company is critical to ensure that all messages are appropriate and aligned with the advertising strategy. Final approval can rest with a single person, such as the Vice President of Marketing, or a department. Establish a procedure to get subsequent content approved in the future.

Employee buy-in is also important as it builds momentum within the company and at the branches. If employees see the value of the content, they are more likely to encourage consumers/commuters to try out the interactive displays. To get buy-in, educate those employees who will be in stores/branches/stations/terminals as to why the interactive displays are being deployed.

## Conduct a Pilot and Revise Content as Necessary

Once the content has been approved, it is a good practice to conduct a pilot in a few locations. A pilot allows you to test the effectiveness of the design and relevancy of the content. You can also test multiple designs or messaging to see which ones have the most positive impact. When conducting a pilot, consider these best practices:

- Conduct at least one pilot in a high traffic location and one in a low traffic location. What is the percentage of people who stop and interact with the kiosk versus people who walk by it? Does the amount of traffic and placement of the kiosk affect how many people engage with the kiosk? If it is a high traffic area, does the content need to be presented in shorter spurts to grab attention as they walk by it?
- Spread the pilots to different parts of your operating territory so that you can deduce whether certain parts of the city, region, country, or world react better to the content. Does the content need to be localized or translated?
- Monitor activity throughout the day. If there is more interest in the morning, what can you do to the content to engage consumers in the afternoon?

After the pilot has concluded, determine whether you need to revise the content before rolling out the solution.

## Measure Effectiveness

You will not know if the kiosk is a success or failure without collecting data and analyzing it to determine whether your business goals have been met. Measuring the effectiveness of the current design and content will help you determine future design elements, layout, and content types. The following actions will help you measure the effectiveness:

- Determine sales increases: Compare pre-kiosk and post-kiosk sales. Compare sales in stores with kiosks to those without kiosks. Evaluate whether up-selling or cross-selling of products or services occurred when they were advertised on the kiosks.
- Observe consumers/commuters: Do they appear engaged? Are they using the applications? Do they seem confused or frustrated by any content? Do they seem bored or uninterested by any content? What is the average time spent interacting with the kiosk? What do they do after using the kiosk? Do they purchase a product or service after using the kiosk?
- Conduct interviews: Interview consumers/commuters immediately after they have interacted with the kiosk.
- Use surveys: Ask users to fill out a survey about their experience. Would they use the kiosk again? Are they more likely to buy after using the kiosk?

All of these data points will help determine the level of success.

## Update and Refresh Content

Content will need to be updated and refreshed throughout the year. When you created your content plan, you should have included when content would be updated, such as when new products are released or prices change, and when content would be refreshed (once a month? every 3 months?). Stick to that schedule and revise as necessary.

Refreshing content is important to keep consumers/commuters engaged. Just as all other advertising medium (print, television, radio, direct mail, websites, etc.) should be refreshed at regular intervals, the solution content should be refreshed often. If consumers/commuters have seen the same content each time they come into your store or enter a mass transit station, they may be less likely to interact with the kiosk making it less effective. The refresh schedule will vary by company and this is another reason why understanding your audience is so important. A retail store whose customers are teenagers who visit the store a couple of times a month will have a different refresh schedule than an international airport where the majority of passengers only pass through a couple of times a year.

Refreshing content can be expensive if all new content is rich media or applications. Consider more cost-effective alternatives such as displaying live feeds, modifying web pages, or licensing third-party content particularly if content needs to be refreshed often. You can also make minor tweaks to the content such as changing colors, using a different template, or adding seasonal graphics (red and pink hearts for the weeks leading up to Valentine's Day, snowflakes in the winter months, falling leaves during the autumn months, etc.). Another cost-effective option is to develop static graphics for special offers or promotions ("2 for 1", "30% discount", etc.) that can then be rotated into the playlist thus changing up what consumers/commuters see on a regular basis.

Selling ad space to third-party companies is another method of refreshing content. It has the added benefits of saving your company money and generating income. Mass transit companies could sell ad space to local television stations who could then advertise their daily programming on the kiosks. While commuters wait for their trains, they will be reminded to watch the local news, a few comedies, and a police drama when they get home from work tonight.





# APPENDIX **A**

## Content Guidelines

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Revised: September 4, 2015

### Content Guidelines

The following table lists the content guidelines.

**Table A-1**      **Content Guidelines**

Video formats	<p>Multiple video formats are supported on the native player including MPEG-1, MPEG-2, MPEG-4, and H.264.</p> <p>Multiple containers/muxers are supported on the native player including AVI, MOV, MP4, MPEG2, and MPEG-2/TS (extensions: .wmv, .avi, .mov, .mp4, .mpg, .ts).</p> <p>Formats not recommended: On2 VP 6 (used by old FLV)</p> <p> <b>Note</b> Native video is strongly preferred over Flash video.</p> <p> <b>Note</b> The IEC 4600 series supports WebM (VP8/Vorbis) and Ogg (Theora/Vorbis) for HTML5 video.</p> <p> <b>Note</b> Use of the native player strongly preferred over HTML5 video.</p> <p> <b>Note</b> The native player's video compatibility can be validated by using VLC 2.0.8.</p>
Audio formats	Multiple audio formats are supported on the native player including mp2, mp3, aac, mp4a, wma1, wma2, flac, and mpga.
HTML	HTML4 / CSS3 (early support for HTML5)
Flash	Up to Flash 11

Video Performance Limitations	<p>When using a native player, the IEC 4610 can support H.264 video up to 720p @ 6Mbps.</p> <p> <b>Note</b> The amount of CPU power required to decode a video clip depends on multiple factors such as codec, bitrate, and resolution of the video source.</p> <p>Different video codecs have different compression algorithms. H.264 offers much better compression efficiency than MPEG-2 or MPEG-4 but uses much more a complex algorithm and requires more CPU power to decode. For example, to achieve the same level of quality, it may require 5 Mbps using MPEG2 but less than 2 Mbps using H.264.</p> <p>The IEC 4610 can decode 1080p 14Mbps MPEG2 video with less than 90% of CPU usage, but cannot decode 720p 8Mbps H.264 video without obvious frame drops.</p> <p> <b>Note</b> When the video source is interlaced (1080i, 480i, etc.), you may see interlacing artifacts due to the lack of de-interlacing capability on the native player.</p> <p> <b>Note</b> The size of the native player object does not affect the CPU usage. If the video source is the same, the CPU usage is the same regardless of the player's height and width. That is, if the video source is 1280x720, the CPU usage will not change by setting the native player's size to 320x180 or 1920x1080.</p>
Screen Resolutions	<p>Up to 1920x1080 (1080p); IEC4600 Series defaults to monitor's native resolution</p> <p>To ensure the content scales well, build for the lowest resolution expected, then use stretchers to make sure it can stretch to the highest resolution expected.</p>
Screen Rotations	<p>Both horizontal (landscape) and vertical (portrait) modes are supported with 90, 180, 270 degree turns. The content should be laid out naturally.</p>
General Content Guidelines	<p>HTML/JavaScript is a preferred mechanism for building kiosk applications.</p> <p>Use of Flash should be limited to small size and non-video rendering functionality.</p> <p>Ticker tapes should be using CSS3 for scrolling.</p> <p>“Screensaver” video playback should be postponed when the kiosk is being interacted with to avoid audio conflicts and preserve responsiveness.</p> <p>Regularly-playing videos should be cached locally.</p>