



NBC Universal Video Player 2.0 Functional Specifications v.11 March 27, 2006

Prepared for:
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Schematic

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Overview

The purpose of this document is to describe core functionality and behavior for the NBC Universal Video Player 2.0, as well as some additional features for 2.1. The wireframes document is intended to supplement this specification and provide more detail about specific components.

Revision History - Functional Specification

Project	NBC Universal Video Player 2.0
Subject	Revision History - Functional Specification
Date	March 27, 2006

Revision History

Version	Date	Author	Reason	Sections
v. 6	3/16/06	Grant Houston	Updates	Video Player 2.0 Features: Video; Video Player 2.0 Features: Character Lengths; Video Player 2.0 Features: Network Promotion Panel; Video Player 2.0 Features: Navigation
v. 7	3/17/06	Grant Houston	Updates	p. 13; p. 16; p. 17; p. 18; p. 19;p. 21; p. 21; p. 22; p. 23; p. 26; p. 27
v. 8	3/17/06	Grant Houston	Updates	p. 20; p. 15; p. 12; p. 19; p. 25; p. 27; p. 28; p. 29; p. 30
v. 9	3/23/06	Grant Houston	Updates	Sections not specified
v. 10	3/24/06	Grant Houston	Updates	Sections not specified
v. 11	3/27/2006	Grant Houston	Updates	Sections not specified

Version 6 Amendments

Section Title	Amendment Summary
Video Player 2.0 Features: Video	Updated to include notes about revised sizing and new illustration to show: • New sizing • Changed functionality of network promotion panel • Six nav tabs instead of five
Video Player 2.0 Features: Character Lengths	Updated to reflect revisions to video player size
Video Player 2.0 Features: Network Promotion Panel	Updated to reflect revisions to functionality
Video Player 2.0 Features: Navigation	Updated to reflect SIX tabs instead of five

Version 7 Amendments

Page Number	Amendment Summary
p. 13	Changed to (16 "W" 45 "i") to be clearer.
p. 16	Corrected first paragraph, which was repetitive and is missing a closing parenthesis.
p. 17	Removed *** and just left the note.
p. 19	Corrected Figure 11 caption, which was incomplete. Corrected, "it's" to read "its"
p. 22	Corrected, "Skin-able" to read, "Skinnable"
p. 23	Corrected second sentence of first paragraph, which was incomplete. Correct "Visitors and Demo," which was italicized
p. 26	Corrected (.) after "admin tool / CMS," which was missing period
p. 27	Modified wording about serving different FLVs based on the user's bandwidth in order to clarify. Corrected sentence to read: "This will help to provide the best possible user experience for supported connection speeds."
p. 29	Corrected, " explore" to read, " explored."
p. 30	Corrected, "Skin-able" to read, "Skinnable"

Version 8 Amendments

Page Number	Amendment Summary
p. 20	Added that the video player does NOT use playlists and does NOT automatically advance to the next clip in the Clip Grid
p. 15	Corrected "Clickable Content" When clicked, a new window will be opened for the link associated with the ad."
p. 15	"Synchronous Units" - Clarified that only one banner ad is associated with each video (i.e., we are NOT displaying multiple, synchronized banner ads using queue points).
p. 12	Added, "Through normalization, each clip will be associated with all metadata outlined on page 12."
p. 19	Modified list item 1 and last paragraph to state that selected clip in the List component will be highlighted.
p. 25	Changed "Bit Rate" bit to kbps
p. 27	Changed, "This automatic bandwidth detection will be done on the server side using Flash Media Server 2." to reflect that bandwidth detection will take place on the server side,
p. 27	Changed, "Basic Controls" - "There will also be fast-forward and rewind buttons that allow them to scrub through the current clip. The performance and response time of these features will depend on the CDN and its ability to move to keyframes in the stream and re-buffer accordingly."
p. 28	Changed, "Motion" - "the user should not be able to interact" to be clearer
p. 29	Changed, "Database" - "...any clustering technologies used/employed to facilitate quick data queries."
p. 30	Changed "SciFiTab" to read, "Tab"

Version 9 Amendments

Updated the following to be in accordance with the design comp:

- Player Control Bar
- Video Info Panel
- Network Promotion Panel

Added Spotlight area next to the banner ad.

Updated Search functionality to reflect removal of radio buttons, as well as breaking out Search functionality for 2.0 from Advanced Search functionality in 2.1.

Added a sixth tab, Other NBC Networks, in accordance with discussions.

Updated Content Tile - expanded view - structure in accordance with discussions and design comps.

Updated Video Playback Panel size to be 384x288 pixels.

Added "Browser Chroming" where necessary.

Updated "Send to a Friend" functionality to illustrate a popup version for 2.0 and an embedded version for 2.1.

Modified behavior of content tiles when they're clicked in the list; they are no longer documented as being removed from the list and re-inserted. They stay in the list and are highlighted.

Added additional information about Falk per Stanley.

Added a section for Video Player 2.1 features which covers Spanish Language Support, Advanced Search and Send to a Friend - Embedded.

Version 10 Amendments

Changes to search functionality for 2.0 and 2.1

Changes to character counts per latest design comps

Clarified statements surrounding E-commerce linking (it won't be included in 2.0)

Changed "Network Content Panel" to "Network Promotion Panel"

Removed character counts for "Most Watched" and "Around NBC Universal Networks"

Removed "or animations" under Advertisements

Revised tab counts to reflect number of dynamic tabs (five) and the "Other NBC Networks" tab.

Search - changed "CloseResults [x]" to "Close Results [x]"

Figure 10 – changed "Content Panel" to "Content Tile"

Removed mention of "Player Server"

Version 11 Amendments

Amendment Summary

Updated Search functionality for 2.0 to be more explicit with regard to types of results returned.

Video Player 2.0 Features

Video

Default Viewing Mode

Upon instantiation, the video player will start in the default viewing mode. Included in this mode are:

- Video Playback Panel
- Video Info Panel
- Network Promotion Panel
- Expandable Advertising banner
- Search Panel
- Tab Navigation Panel
- Content Navigation Panel
- Branding elements

Based on requirements, the player window will be operable, without scrollbars, on a monitor set at 800x600 pixel resolution.

NBCU had initially permitted Schematic to design for a 779x550, but recently changed the requirement to 750x550. The bulk of the wireframes in this document were laid out using the first measurement, therefore they may inaccurately depict the amount of space available for elements on the right-half of the player. However, design comps presented to NBCU in recent weeks DO reflect accurate measurements. Additionally, NBCU has requested the re-introduction and presence of a sixth navigation tab.

It is recommended that JavaScript code used to launch the Video Player set “scrolling=auto” so that scrollbars will appear for only those users who are unable to view all of player content. For users whose screens are large enough to accommodate the players’ dimensions (which will be the majority), scrollbars will not be shown. This determination is browser-specific.

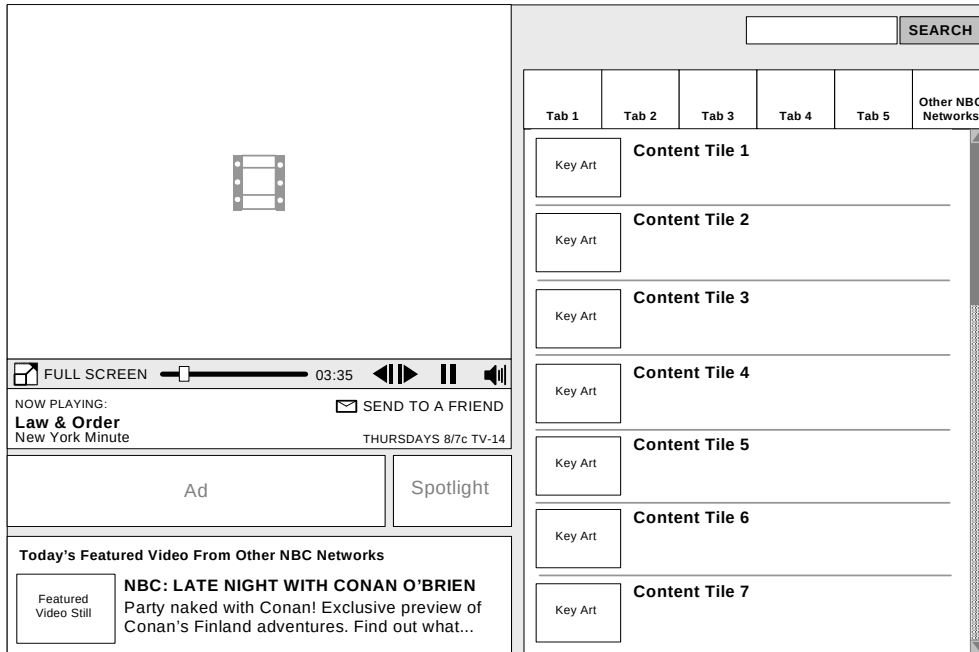


Figure 1: Default layout of Video Player when it's instantiated; new sizing of 750x550 pixels is represented.

Aspect Ratio

The player is optimized to handle 4:3-aspect ratio video within a 384x288 pixel space designated as the Video Playback Panel.

Full-Screen Viewing Mode

The user will be able to view video at near-full-screen by clicking a button on the player control bar. This will open a new browser window to the maximum size allowed; browser chroming will be visible.

To exit full screen, the user can click a button in the full-screen window or use the browser's close button in the chroming.

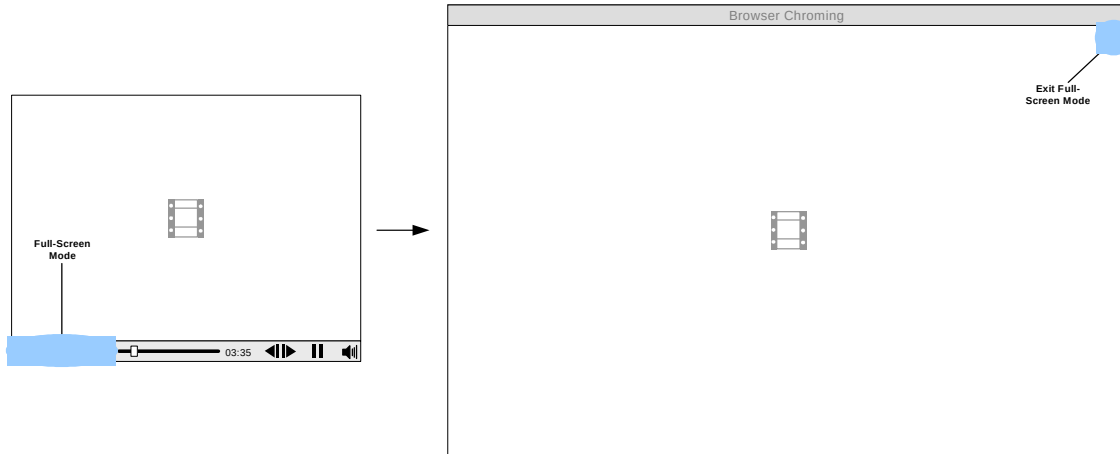
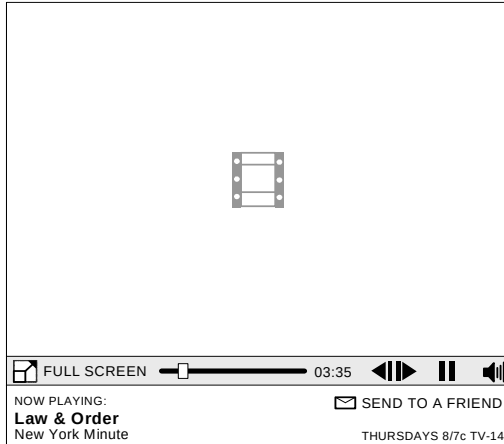


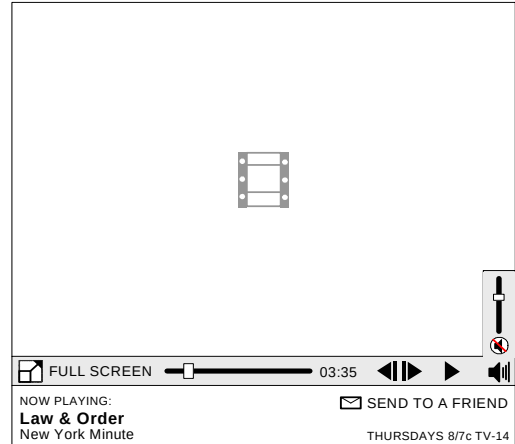
Figure 2: Full-Screen button on player control bar (left) and Exit Full-Screen button (right).

Player Controls and Information

The user will be able to control video playback and related functions through the Player Controls that are located beneath the Video Playback Panel.



Default play mode



Volume / Mute controls revealed when icon clicked; this also shows paused state.

Figure 3: Comparison of two different states of the player control bar.

Send to a Friend - Popup

When network content is being played in the Video Content Area, a user has the option to email a link of that clip to a friend. When the user clicks the appropriate button, a popup window appears, as illustrated below.

The “From” and “To” fields are required, and the “Message” field is optional. When they’re done, they can click the “Send” button to send the message. A confirmation displays, and the user can click “Continue” or close the window to go back to the video player.

If the user clicks “Cancel” the popup window closes.

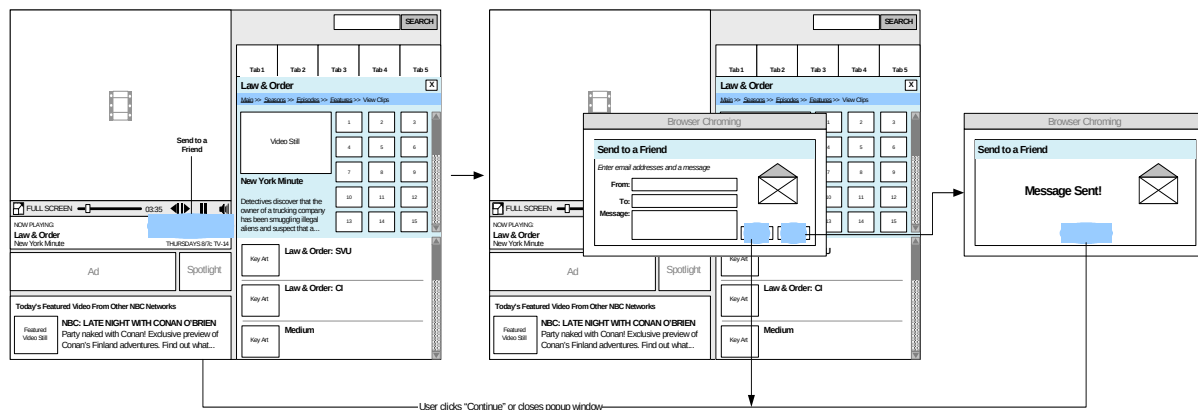


Figure 4: Process flow illustrating “Send to a Friend” functionality.

Clip Duration

The total running time for any video clip loaded into the video content area will be displayed in the player control bar. This applies to both content pieces and advertisements.

Player Control Bar Details

While graphic design and treatment will yield a player control bar that looks different than that represented in the wireframes, its functionality will include:

- Play/Pause
- Fast Forward
- Rewind
- Scrubbing
- Clip Duration
- Volume / Mute
- Full Screen
- Send to a Friend (Email Video Link)

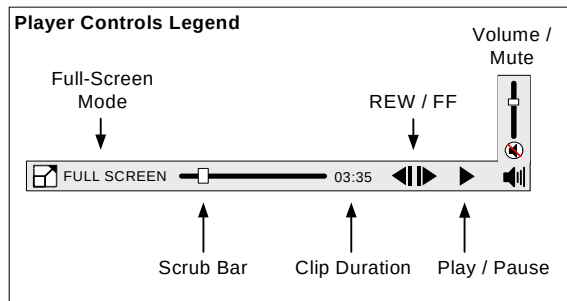
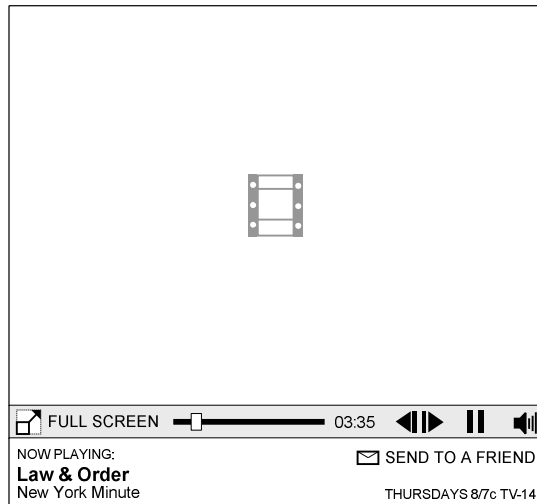
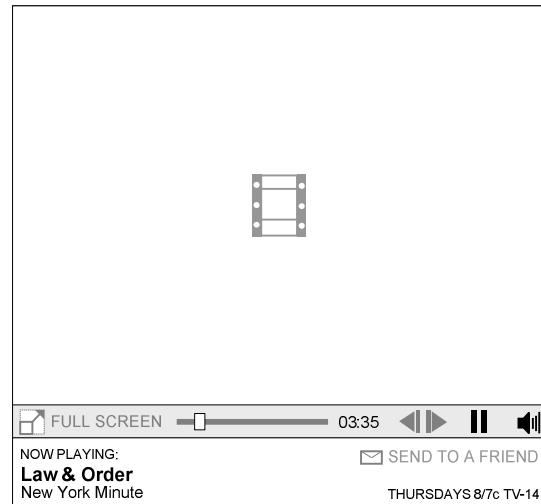


Figure 5: Player control bar and its components.

For network video, all functions will be enabled; for advertisements, only Play/Pause and Volume/Mute will be enabled; for transitional messages, no controls will be enabled.



Default play mode



Player Controls during advertisement; user can only play/pause and adjust volume.

Figure 6: Comparison of player controls during playback of network content (left) and advertisements (right).

Content Requirements

Media Metadata

Metadata for each clip will be made available to the player, and can appear in two different places: within content tiles in the Content Navigation Panel on the right, and within the Video Info Panel on the left.

Metadata includes:

- Headline/Title
- Subtitle
- Description/Summary
- Video Still
- Tune-in Information
- Clip Length
- Catalog Information
- E-commerce product link
 - This feature is not enabled in 2.0
- Related Link
 - This feature is not enabled in 2.0

The table below describes where specific pieces of metadata for networks will be displayed within the video player interface.

2.0 Metadata Label	2.0 Location
Headline/Title	Video Info Panel, Content Tile, Network Promotion Panel
Subtitle	Video Info Panel, Content Tile, Network Promotional Panel
Description/Summary	Content Tile, Network Promotion Panel
Video Still	Content Tile, Network Promotion Panel
Tune-in Information	Video Info Panel, Content Tile
Clip Length	Player Control Bar
Catalog Information	Content Tile
E-Commerce Product Link	Content Tile
Related Link	Content Tile

Through normalization, each clip will be associated with all metadata mentioned above.

Character Lengths

Given the constraints for real estate a fixed-size interface imposes, there are certain guidelines with regard to field lengths that NBCU should follow so as to maintain the aesthetic integrity of the interface. The character lengths below are only best-guess approximations – they are not absolute numbers that hold any guarantee, especially if the final font used in content tiles is changed through design.

The maximum number of font families allowed for embedding within 2.0 is three.

Panels / Fields	Networks			
	NBC / Telemundo	USA	SCI-FI	Bravo
Consistent Across Networks				
Video Info Panel				
Clip Name	47 characters			
Secondary Info (i.e., Episode Name)	31 characters			
Network Promotion Panel				
Feature Title	48 characters			
Summary	89 characters			
Content Tile - Collapsed				
First Line (Show name)	35 characters			
Second Line (Episode Name)	34 characters			
Third Line (Clip Name)	40 characters			
Content Tile - Expanded				
Header	33 characters			
Secondary Header	23 characters			
Description	92 characters			

Network Promotion Panel

The Network Promotion Panel is the region through which NBCU will handle cross-promotions between its networks. A promotion is loaded upon instantiation of the video player, and a new one is shown whenever a new video clip is played.

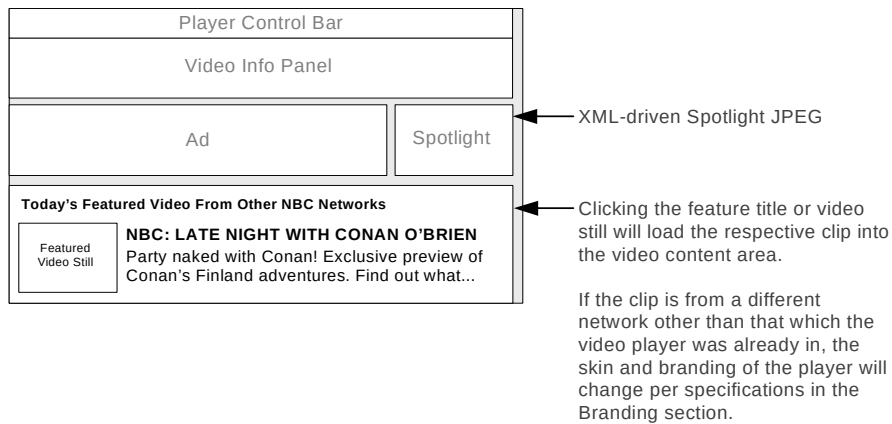


Figure 7: Example of content for network promotion panel.

The Network Promotion Panel will “grey out” when the ad banner is expanded over it.

Advertising

Pre-roll

The platform and design will support video that play in the video content area before each piece of network content. These will be determined by the CMS.

Clickable Content

The click-ability of ads is a function that will be defined by the ad itself. When clicked, a new window will be opened for the link associated with the ad.

Expandable Banners

By default, banner ads consume 300x60 pixels of space. However, they will expand to 300x250 pixels when a video advertisement is being played in the Video Playback Panel, or when the user mouses over them. They will cover whatever interface elements are beneath them, if necessary. The Network Promotion Panel will “grey out” when the ad banner is expanded over it.

Synchronous Units

The advertising banner on the page can be synchronized to show content related to content in the video content area. Only one banner ad is associated with each video.

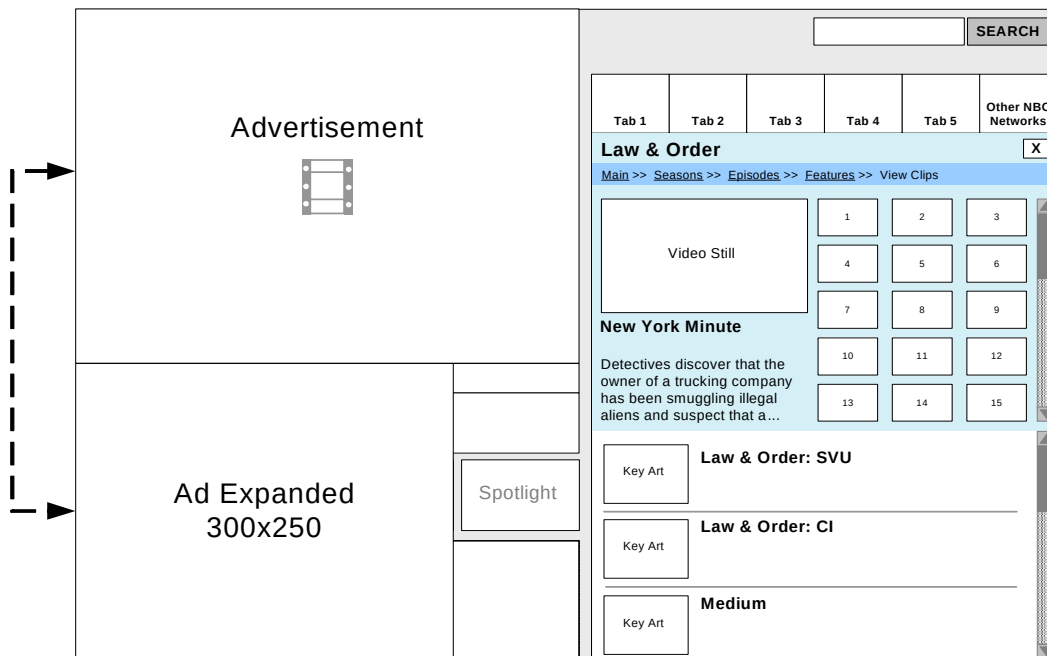


Figure 8: During Video Ad playback, the ad banner expands.

Navigation

Persistence

The Content Navigation Panel will always be viewable – persistent – while in the default viewing mode (i.e., when not viewing video content in full-screen).

Content Navigation

The primary means of navigating media in the video player is through the Tab Navigation Bar and the Content Navigation Panel. For each network channel, there must be at least THREE tabs, and at most there can be FIVE plus the “Other NBC Networks” tab. Initiating a search or clicking a tab will load its respective contents (as determined by NBCU) into the list as content tiles.

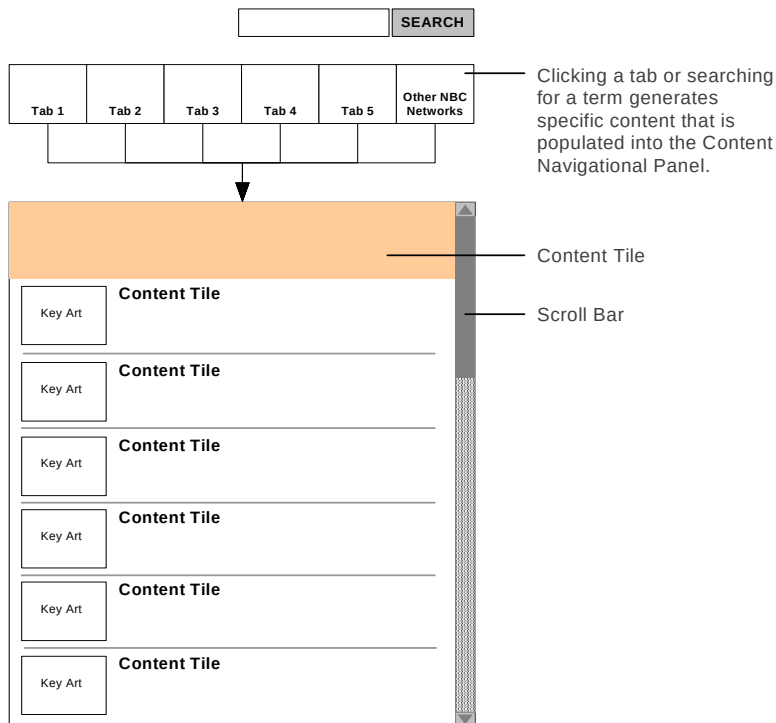


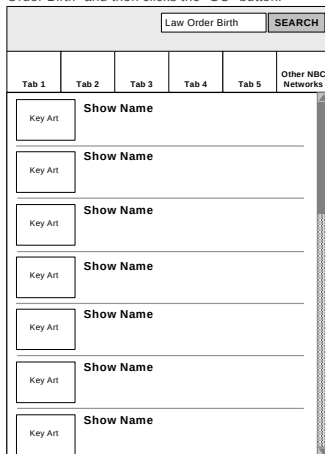
Figure 9: Content is generated by initiating a search or clicking one of the navigational tabs.

Search

A user can search for other content by doing a simple search. The search field is located at the top right corner of the player window, and the user can type several words into the field. To exit Search Results, the user clicks the “Close Results [x]” button at the bottom of the panel.

Interface

The user clicks on the search field, types in “Law Order Birth” and then clicks the “GO” button.



When the user clicks “GO” the Tab Navigation Panel slides downward to reveal the Search Results.

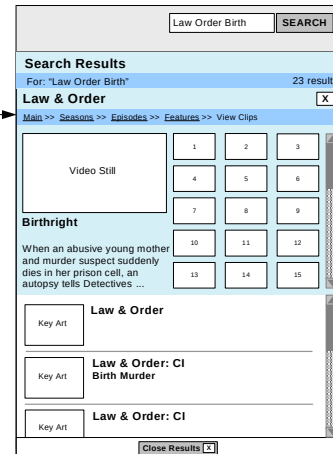
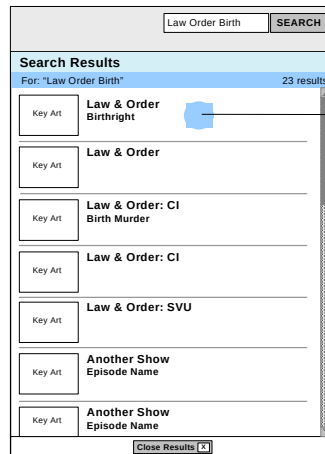


Figure 10: The user enters a search term (left), the results are shown in the Content Navigation Panel (middle) and each resulting content tile can be clicked on to have its content shown above the navigation panel. (right).

Technical Explanation

The server will split the search term into individual words and run a query against three columns (specifics regarding this will be refined and/or changed by the technical team) in the database:

1. episodeDescription (or equivalent)
2. episodeTitle (or equivalent)
3. showName (or the equivalent)

The following query statement is included only to provide an example of how the search query might be structured; the technical team will be responsible for this.

```
SELECT metadata FROM videoPlayerData
WHERE episodeDescription, episodeTitle, showName
LIKE '%searchTerms%'
LIMIT 30
```

The ordering of the data set will be determined at a later time, and will be limited to a pre-set number (in this example, 30), also to be determined later.

Search in 2.0 will only return folders, which can be episodes, seasons, shows or any number of entities.

Content Tiles

Content Tiles are the means through which a user can navigate video content relating to a specific clip or show.

When a content tile is selected in the content navigation panel, the content navigation panel reduces in size to allow an expanded version of the selected content tile to be shown above it.

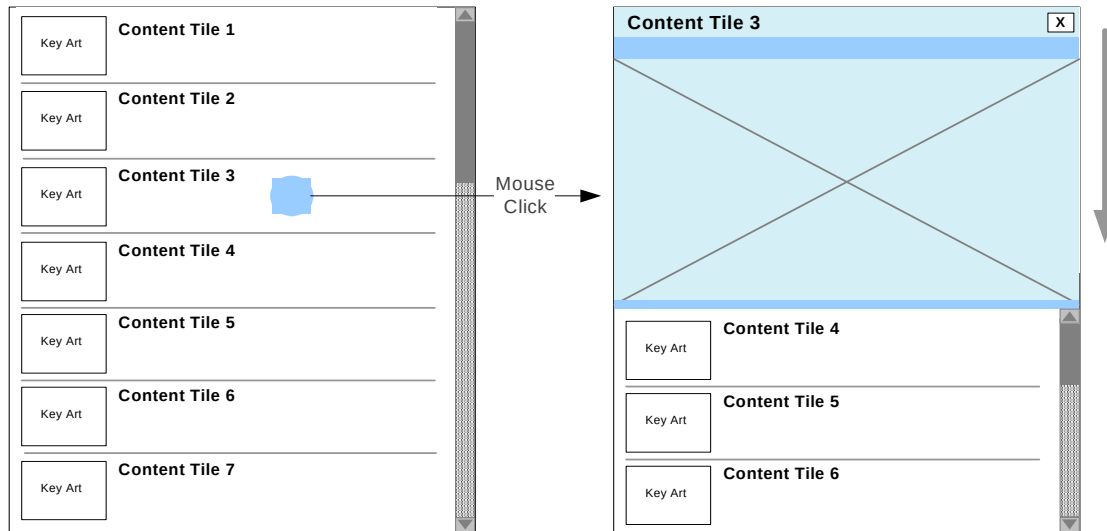


Figure 11: Content tiles (left) can be clicked to expand their contents (right).

Once any content tile is expanded, a user can navigate to specific content within it they might be seeking. In either case, all content tiles, when expanded, have a common structure, outlined on the next page.

When a content tile is clicked:

1. The content tile in the list is highlighted, and an expanded view of the contents for that tile are shown above.
2. The expanded view is closed when the user clicks the close [x] button.
3. The contents of the expanded tile changes when the user clicks on a different content tile from the list.

Content Tile Structure

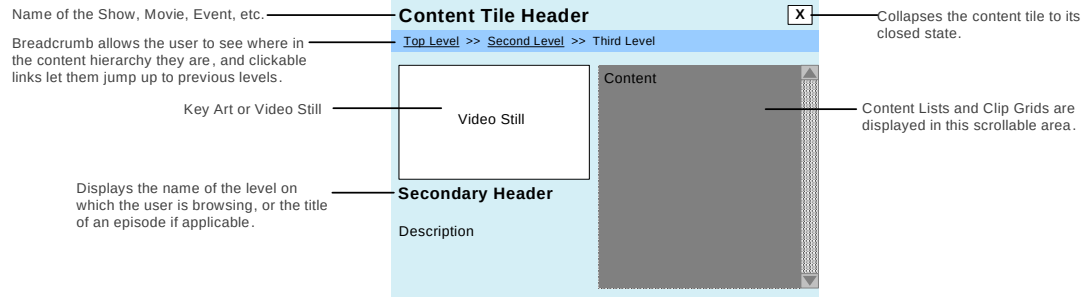


Figure 12: Common structure of all expanded content tiles.

Breadcrumbs are progressively built as the user drills down into content. As the user makes a choice, a link is added to the breadcrumb; clicking that specific link would return the user to the corresponding screen. The title of the specific level should be used as the link name. This is illustrated in more detail on page 8 in the wireframes.

Viewing Clips and Display of Metadata

When clips are shown in a Content Tile, there are two options for the user:

1. Rolling over the clip thumbnail with the mouse will magnify (or “lense”) the thumbnail and also load a larger version of the image into the “Video Still” area just above the clip grid in the Content Tile.
2. Clicking the clip thumbnail will load the video into the Video Playback Panel, and its associated metadata into the Video Info Panel.

Metadata will be displayed in the Video Info Panel from the time a user clicks the clip box from the Content Tile until the clip itself has finished playing in the Video Playback Panel (this means it will be displayed during an advertisement, even though it will effectively be covered by the expanded banner ad).

When a clip has finished playing, a transitional message (as described elsewhere in this document) will be displayed in the Video Playback Panel, and the Video Info Panel will be cleared.

Note: The video player does NOT use playlists and does NOT automatically advance to the next clip in the Clip Grid

Transitional Messaging

Purpose

The purpose of transitional messaging in the Video Player is to provide clarity around specific events to the user. For 2.0, the following events are supported:

1. Welcome to Video Player – Welcome the user to the video player and encourage them to browse through content from the Content Navigation Panel to the right.
2. Pre-Roll Ad Loading - Inform the user that a short advertisement will play before the clip they selected appears if a pre-roll will play before the clip.
3. Video Loading - If there is no pre-roll ad, or the pre-roll ad has finished playing, inform the user that their selected video is loading
4. Browse Content – Inform the viewer they should make a new selection from the Content Navigation Panel to the right.
5. Clip Not Viewable Based on Country – Inform the user the clip they're attempting to watch is not viewable based on the country they're in.
6. Error Handling – messages to handle errors for display to the user (“i.e., Video Not Found, etc.). This message will be the only one able to accept dynamic input specific to the error.

Placement

Since the Video Playback Panel is already used for video playback, it is the most ideal location for placement of transitional messaging.

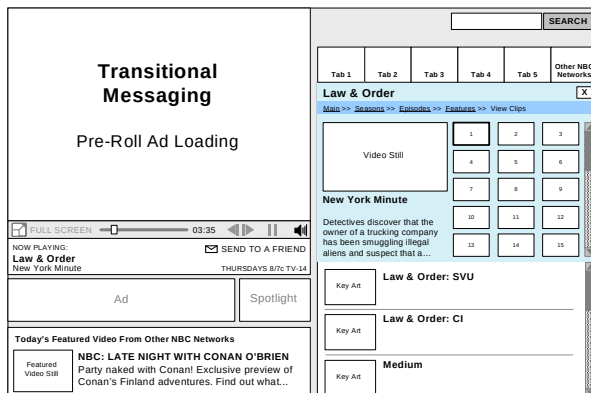


Figure 13: The Video Playback Panel can be used for displaying transitional messages to the user.

Variables in Transitional Messages

For 2.0, transitional messages will NOT support the use of variables (i.e., network/channel name). Message #6, as described above, is the only exception to this rule.

Branding & Skinable Elements

The brand of the player can be changed to best fit each network, and changes whenever a user clicks on a clip belonging to a network other than the one they are currently on.

A complete list of skinable elements and their respective attributes is detailed in Appendix A.

Integration

Metrics

The player must be able to integrate with Omniture for web metrics. This will allow NBCU to see path analysis, track time spent watching video and abandon rate by clip. All standard web metrics with Omniture should be available for the video player as well.

Video Player Metrics

Behavioral Analysis

- Most/Least Requested Clips
- Track all Clips
- Average Visit Length - New vs. Returning Users
- Number of Clips Viewed Per Visit
- Average Viewing Time of Clips Per Visit
- Average Viewing Time of Clips By Site
- Total Number of Clips viewed by site, show
- Total Number of Minutes of video watched by site, show
- "Like" Clips e.g. People Who Watch "x" Watch "y"
- Top Entry Pages
- Top Exit Pages
- Single Access Pages
- Top Paths Through Player
- Email a Friend Frequency

General Traffic

- Peak Users
- Concurrent Users
- Top Networks
- Returning Registered Users
- Visits by New vs. Returning Users

Visitors and Demo

- Monitor Resolution
- Operating System
- Browser and Version
- Visits by Country
- Visits by State
- Visits by City

Notes

- Need to pass friendly names to Omniture (asset_id is not enough)

Geographical restriction of data

The player will handle geographical restriction of data on a clip-by-clip basis. For 2.0, when a non-USA-based user clicks on a clip that's restricted for play only within the USA, the corresponding transitional message will be shown in the video playback panel ("Clip Not Viewable Based on Country").

Content Protection

The player will support content protection so that video content cannot be downloaded to the user's computer.

Delegated Administration

The player will be able to support delegated administration so that each network has access to only their clips.

CDN (Content Distribution Network) - Integrate with Akamai or Limelight

Schematic is recommending Limelight because it supports the latest version of Flash Communication Server.

Requirements

Component Download

User will be able to watch video without registration and without downloading any components beyond Flash Player 8; if the users' computer does not have the Flash 8 Player installed on their computer, they will be prompted to install it at that moment.

Browsers supported:

- Microsoft Internet Explorer 6.x and above on Windows
- Firefox 1.5x and above on Windows
- Safari 2.x and above on MacOS

Bit Rate

The default bit rate for video content will be 500kbps bit. Other bit rates will be supported, but NBCU must encode at whatever bit rates they require and additional configuration with the CDN partner may be required.

Other

Interim CMS/DAM Solution

Schematic is providing the Remoting gateway between the Flash Player and the content database itself. NBC is providing the content admin tool / CMS. This is an interim CMS/DAM solution until NBCU's permanent solution is in place.

Performance Requirements

Introduction

In this section we will look at the performance requirements of the NBC Universal Online Video Player. This will include the possible performance capabilities as well as the risks involved and other issues that may hinder performance. Each section and part of the player will have its own set of challenges that will have to be addressed.

The goal is to produce a video player that integrates an interface that allows the user to access as much of the content as easily as possible, a player that can be used across several of NBC's brands and properties, and a player that integrates well with advertising and metrics.

The video window itself will be able to play several bit-rates, allowing users with different connection speeds to access the content while having an easy to navigate interface.

As the timeframe for making this player is relatively short, the priority is to make the highest quality player possible, while saving some of the less pertinent and higher-risk features for future versions of the player. The foundation of the player will be built in an open-ended manner to allow for these features to be included in future releases.

Performance will rely heavily on the quality of NBCU's backend servers.

Integration with CDN

The player will integrate in a transparent manner with the CDN (Content Distribution Network), and will be able to do automatic bandwidth detection and serve the appropriately encoded FLV. This will help to provide the best possible user experience for supported connection speeds.

This automatic bandwidth detection will be done starting on the server side. Most of the performance of the video player will depend on how many people are accessing it simultaneously. A high number of simultaneous accesses could have an impact on server performance, although most professional level CDNs are designed to handle a large number of concurrent streams.

Despite this, there still remains a small- to mid-level risk for overloading the CDN. This could lead to slow-down and/or congestion in the video stream, resulting in an unsatisfying user experience.

As the video player will work separately from the rest of the interface, issues dealing with the interface will not affect the actual loading and playing of the stream.

Basic Controls

The video player will allow the user to pause and restart the video, or stop the video completely and start from the beginning. There will also be fast-forward and rewind buttons that allow them to scrub through the current clip. The performance and response time of these features will depend on the CDN and its ability to move to keyframes in the stream and re-buffer accordingly. It is expected the displayed play-head position will be accurate throughout the period of clicking through the play/pause, fast forward, and rewind buttons, as this information is an accurate representation coming from the video itself.

The buffering time in the stream when clicking fast forward or rewind should take about 3 to 5 seconds depending on connection and user processor speed.

Omniture and Falk

The video player will integrate transparently with Omniture and a Falk ad server via JavaScript. Sending information to the appropriate servers will have a minimal effect on performance. The challenge with this approach will be in parsing the information that is returned by the ad server so that synchronization with the video server will be qualitative.

The ad server poses a high probability of bugs and risk for performance. This is largely due to the process behind serving ads relating to the content being played.

Combinations or ad data that is going to be contained in data file returned from Falk.:

1. Pre-roll + companion ad URLs exist: Pre-roll starts playing, companion ad starts in its expanded state. On Pre-roll end companion ad collapses. Show is starting.
2. Pre-roll URL does not exist, companion ad URL exists: Show is starting, companion ad in its collapsed state (there is no expanded state for companion ad when there is no Pre-roll).
3. Both Pre-roll and companion ad URLs are absent: Show starts, previous companion ad stays on the screen. Alternative way: show starts, default collapsed ad (empty ad) is loading into ad component.

When user clicks on companion ad (click-through) `getURL( url, "_blank" )` action opens up a new browser window using same URL that we called while loading ad assets from Falk only this time URL parameter "cmd" is set to "lnk". Exact number of parameters and their names TBD discussed with Falk and entered into tech specs.

All pre-roll ads will be served as progressive FLV download.

1 ad per 5 minutes of content:

Pre-roll and companion ads will be served on "1 ad per 5 minutes (300 seconds) of content" basis. Viewed content length should be stored in seconds into Flash Shared Object.

Navigation

At the moment there is not enough information to make any prediction on the performance of navigation until it is finalized.

Loading a Video Clip

Once the user clicks on a video clip box, 3 to 5 seconds of time may elapse for the video to load into the Video Playback Panel. This is dependent upon the users' connection speed, their computer's processor speed and the CDN.

Full Screen Mode

It is expected to take 2 to 5 seconds to take the display to full screen mode depending on the connection and the user's processor speed. It would take 1 to 3 seconds to go back to normal mode depending on the connection and the user's processor speed.

Motion

Certain components of the Video Player will incorporate motion.

1. Motion should be used only to convey a change to the user.
2. Motion should consume no more than 1-2 seconds at a time.
3. The user should be able to interact with components or panels NOT involved in a motion action. For example, while the advertising banner is expanding or collapsing, the user should be able to interact with the Content Navigation Panel, and vice versa. However, if a motion action is taking place in the Content Navigation Panel, the user will not be able to interact with elements within that panel at the same time.

Backend Performance Considerations

Search

Search is almost always a performance risk for any Web site or online application. This is due to the unknowns with regard to user input, and the resulting amount of data returned by the server. Often, it requires constant performance monitoring and tuning, so while performance at launch might be somewhat sluggish, performance monitoring can facilitate the tuning process to improve performance.

Database

The database structure (i.e. indexes, data (de-) normalization, etc) and SQL statements used can significantly impact the performance of the queries and the application. The number of writes vs. reads will have an impact upon deployment configuration and any clustering technologies employed to facilitate quick data queries. These factors should be explored more in-depth.

HTTP Server and PHP Config

Depending on the environment that PHP and Apache are running in (i.e. php.ini settings and apache 1. vs. 2.x), the application could (and should) be developed with those settings in mind. Schematic needs to be aware of the environment so that any server-side logic we use does not affect the integrity of the rest of the NBCU Video Player 2.0 application infrastructure.

Appendix A – Skinable Elements & Styles

Overview

The objective of this document is to explain how styles are implemented for the NBC Universal Video Player. Flash Player supports only a subset of the original CSS1 specification, so we are not able to style Flash elements to the same extent as HTML elements (for example, **body** is supported, but the **background** selector is not).

Styles for various elements and components will be configurable using an external style sheet (e.g., **nbcuvp.css**) that's loaded into Flash at runtime. To update the style sheet, NBC Universal has several options:

- 1) Edit the CSS file on the server using CMS.
- 2) Generate CSS file dynamically from database.

The next sections offer specifics about what is stylable in the NBC Universal Video Player.

Elements

This section explains what elements can be styled via the external style sheet.

Navigation Tabs

At this time, the background of the tabs will likely be part of the overall tile background image. The "on" state will be a dynamically loaded image file (GIF, JPG, or PNG) specified in an external XML file (e.g., config.xml). The dimensions (width, height) of the Navigation Tabs will have to be uniform.

Because the text will be generated dynamically, the font-weight ("bold" or "normal"), point size, and text color can be controlled by a CSS class.

Example:

```
.Tab {  
    font-weight: bold;  
    font-size: 12pt;  
    color: #000000;  
}
```

These style properties can also be applied to the text fields inside the Network Promo Tabs.

Text Fields

The following TextField properties are stylable: font-weight, point size, text color. The naming conventions used in the external style sheet will clearly indicate which panel or content tile the style will be applied to.

Example:

```
.VideoInfoPanelTuneinInfo {
```

```
font-weight: normal;
font-size: 10pt;
color: #ffffff;
}
```

Hyperlinks/Anchors

Flash supports styling the **a:link** and **a:hover** selectors.

Example:

```
a:link {
    color: #000044;
    text-decoration: underline;
}
a:hover{
    color: #996600;
    text-decoration: none;
}
```

We will probably look for a way to define different anchor properties for each network (e.g., Bravo, SciFi Channel).

Components

This section explains what UI component properties can be styled via the external style sheet. Additional built-in and custom components will be added to this list as they are incorporated into the application.

TextInput

The following TextInput properties can be styled:

- backgroundColor
- borderStyle
- marginLeft
- marginRight
- color
- disabledColor
- fontSize
- fontStyle ("normal" or "italic")
- fontWeight ("none" or "bold")
- textAlign
- textIndent

- textDecoration

Example:

```
.TextInputBlack {
    color: 0x242424;
    fontSize: 11;
    borderStyle: solid;
    fontWeight: none;
    textDecoration: none;
    textAlign: left;
    backgroundColor: 0xffffffff;
    borderColor: 0x787b84;
    marginLeft: 2;
    marginRight: 2;
}
```

RadioButton

The following RadioButton properties can be styled:

- themeColor
- color
- fontSize
- fontStyle
- fontWeight
- textDecoration
- symbolBackgroundColor
- symbolBackgroundPressedColor
- symbolColor

UIScrollBar

The following UIScrollBar properties can be styled. Any styles applied to UIScrollBar are inherited by the list-based components (e.g., List, ComboBox, ScrollPane):

- themeColor
- scrollTrackColor
- symbolColor

List

The following List properties can be styled:

- themeColor

- alternatingRowColors
- backgroundColor
- borderStyle
- color
- fontSize
- fontStyle
- fontWeight
- textAlign
- textDecoration
- textIndent
- rolloverColor
- selectionColor
- textRolloverColor
- textSelectedColor
- useRollOver

Button

The following Button properties can be styled. The Button component will likely be replaced with a custom NBCButton component:

- themeColor
- backgroundColor
- borderStyle
- color
- fontSize
- fontStyle
- fontWeight
- textDecoration

Video Player 2.1 Features

Spanish Language Support

2.0 Support

Spanish language will include the following:

- Change of navigation tabs for Telemundo
- Display of metadata stored in the database as Spanish text

Advanced Search

For 2.1, the ability for search to return clips, in addition to shows and episodes, will be added. This is illustrated below.

Interface

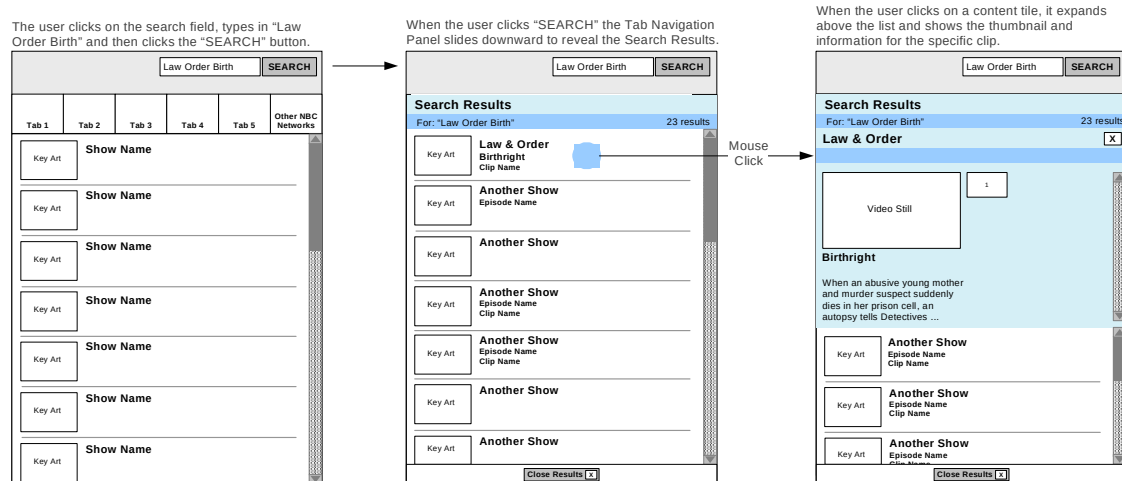


Figure 14: The user enters a search term (left), the results are shown in the Content Navigation Panel (middle) and each resulting content panel can be clicked on to have its content shown above the navigation panel. (right).

Technical Explanation

The server will split the search term into individual words and run a query against three columns (specifics regarding this will be refined and/or changed by the technical team) in the database:

4. episodeDescription (or equivalent)
5. episodeTitle (or equivalent)
6. showName (or the equivalent)

The following query statement is included only to provide an example of how the search query might be structured; the technical team will be responsible for this.

```
SELECT metadata FROM videoPlayerData
WHERE episodeDescription, episodeTitle, showName
LIKE '%searchTerms%'
LIMIT 30
```

The ordering of the data set will be determined at a later time, and will be limited to a pre-set number (in this example, 30), also to be determined later.

Each record returned to the video player will represent a specific clip, episode or show. And for each of these results, a content tile of its corresponding type will be generated in the Content Navigation Panel.

Send to a Friend - Embedded

When network content is being played in the Video Content Area, a user has the option to email a link of that clip to a friend. When the user clicks the appropriate button, the advertising banner and the Network Promotion Panel swap out to reveal a panel as illustrated below.

The “From” and “To” fields are required, and the “Message” field is optional. When they’re done, they can click the “Send” button to send the message. A confirmation displays for a few seconds and then the space reverts back to ad and network promotion panel display.

If the user clicks “Cancel” the space reverts back to ad and network promotion panel display without confirmation.

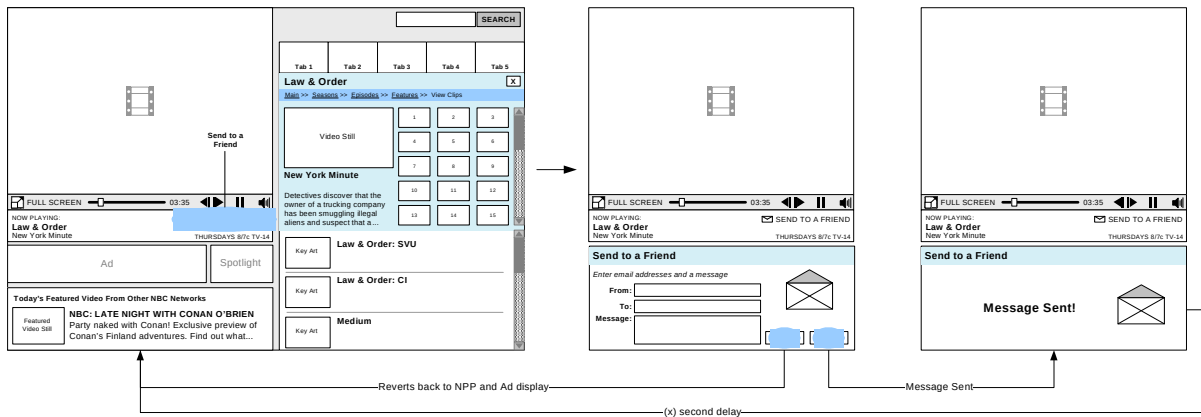


Figure 15: Process flow illustrating “Send to a Friend” functionality.