ALPHACAST

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Abstract

AlphaCast explores the impact of digital technologies and decentralised communications on radio and its current distribution model. Radio is still very dependant on a centralised distribution model, where the transmitted media is unidirectional. Users have no real input over what they are listening to other than switching stations. This centralised broadcast model dominated media production and consumption throughout the 20th century.

The birth of the Internet, the web and decentralised means of communication ushered in a new era for media consumers. Themes which have manifested themselves include the need for on-demand, interactive and customisable content. Media consumers now expect ultimate control of what, when and how they consume media. Other themes which have developed, particularly in social networks, is the ability to share information and content with peers.

Music listening is a large part of radio, and one that is also being affected by this shift. Jukebox services such as Last.fm, Pandora and Spotify also offer customised music listening and the chance to discover new bands. Similarly digital technology such as MP3 players and mobile phones have also opened the door for consumers to carry their entire music collection in their pocket. Both allow for music to be on demand and customised to the listeners tastes.

It is because of these changes in the way that people view and consume media which has highlighted radio's continuing dependency on a centralised model. By not allowing interaction for its listeners, radio is in danger of alienating younger listeners, for whom these themes of on-demand, interactive and customisable content are the norm. As Adam Bowie from Absolute Radio recently commented on his blog:

> 'Keeping young people listening to the radio should be a major industry objective... is the industry really doing enough to get young listeners involved?' [1]

AlphaCast is an exploration into how radio can cater for these growing trends amongst younger media consumers to keep the next generation of listeners interested in radio.

Related Works

There have been various attempts to take advantage of developing technologies and introduce a less rigid method of broadcasting. I have given an overview of those which have influenced this project, and informed my research.

Blogtalkradio

Blogtalkradio was launched in 2006, and offers the chance for anyone to become a DJ. Without having to download any additional software users can host their own radio shows using their phone, and chat live with listeners. Not only does it allow live broadcasts, but shows are automatically saved as podcasts once the broadcast is complete. Blogtalkradio has over 2.6 million listeners a month according to their press kit, and thousands of hosts creating their own radio shows[3]. It also presents an interesting financial model as it allows companies to advertise in users shows, and blogtalkradio splits the revenue 50/50 with the host. It is still running and expanding, and has proven that there is interest in user interaction and user generated content in radio.[2]

Radio Pop

There has also been an interesting application developed by BBC Radio Labs, who are dedicated to researching and exploring new ideas for BBC Radio. The application is called Radio Pop, and it is described as 'social radio listening'. It keeps track of what BBC shows your are listening to and the collected data allows users to connect with people listening to the same shows as them. It also allows the BBC to generate graphs and records of which shows are being listened to by whom. Radio Pop also has a 'POP' function which allows users to flag up shows or content that appeals to them. This idea is powerful as it connects users listening to radio. In the standard broadcast model, users are disconnected from each other. Radio Pop helps create a link between radio listeners, and the ability to see what other people like on the radio is an exciting concept. [3]

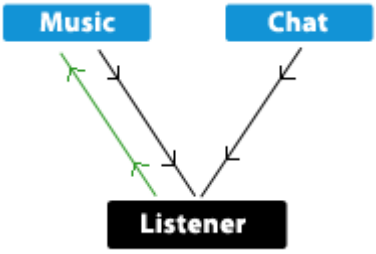
Last.fm

Although classed as music radio, it is not radio in the conventional sense as there is no DJ, and no chat involved. Last.fm is at the cutting edge of music streaming. It has over 7 million tracks and builds up information on users listening habits to be able to recommend new music. It also lets users stream music based on similar artists to their favourite bands, similar genres and users can inform Last.fm of tracks they like and dislike. It is a powerful concept, and has over 25 million users. Their focus is on music, and uniting users through a shared love of bands, genres and tracks.[4]

Concept

Having identified the key themes of interactivity and customisation, I wanted to create an application that

provided benefits for both music and talkshow listening. Having looked into Last.fm and the way that it allows users to actively select the music they listen to, I wanted a way to allow users to customise the music that they hear on the radio. Allowing users the ability to tailor their music playlists creates a link from the user back to the station. This feedback helps to break up the one-way nature of the broadast model.



The second issue I wanted to address was that the programming content itself was not interactive and accessible enough to those not necessarily tuning in. Radio shows are often saved down to podcasts after broadcasting has completed. These podcasts are either released on a daily, weekly or monthly basis. There is no way for users to make interesting bits of content available to others who might not be tuning in. Drawing inspiration from Radio Pop I took their concept and developed it further to allow users to save and share snippets of content in real time. I also wanted a way in which users could see what their peers were up to. This manifested itself in an interactive live feed of users activity.

Technical Implementation

AlphaCast makes use of 4 key technologies:

- Adobe Air - Actionscript 3.0
- Streaming metadata
- Last.fm API
- PHP

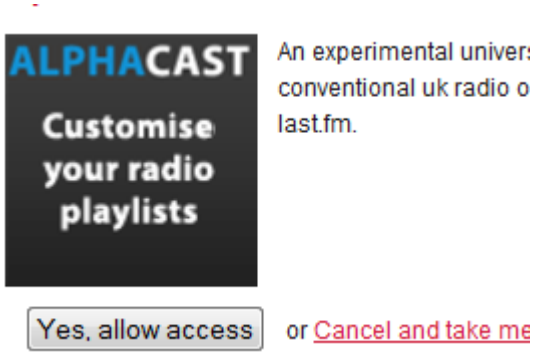
I chose Actionscript 3.0 for its versatility and its ability to interact with web services. It allowed me to successfully communicate with the Last.fm Application Programming Interface (API). The Last.fm API allows full integration of Last.fm services. For example it can give information about artists, suggest similar artists, allow for music streaming and also allow users to 'love' and 'ban' tracks, both of which get saved to a users profile. Calls to the Last.fm API are made by sending variables via http GET and POST requests.

Radio station metadata (additional information sent alongside the radio stream) provides now playing information, such as station title, currently playing track/DJ and additional DJ information.

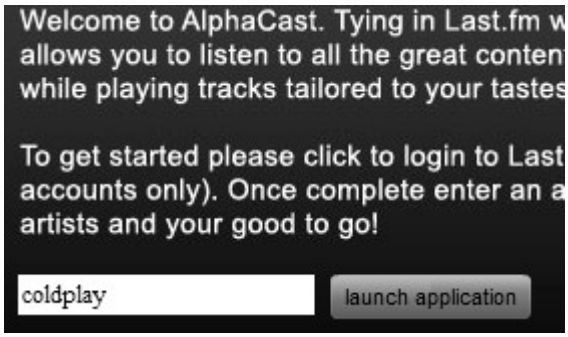
The PHP is used to write the shared data from the application to a server. When the 'Share Content' button is pressed, a ByteArray of the radio stream is passed from the application to a php script which gives it a unique name and returns its location to the application.

A step by step walk-through is the best way to demonstrate its functionality and the technologies involved.

Step 1
The user is asked to login to Last.fm using their subscription account and allow my application to access their information.



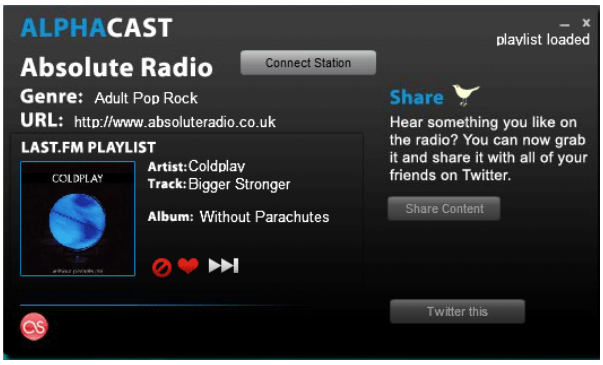
Step 2
The user is then prompted to enter an artist. Last.fm then returns a list of similar artists to the one submitted.



Step 3
Once the user has submitted their artist the application is started, and the user can connect to the station. Now playing information is displayed, such as station genre, station website, the DJ currently on air including a picture of the current DJ and, if available, any other information.

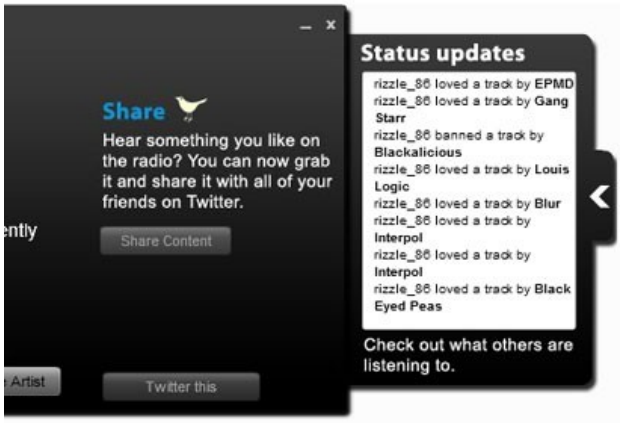
Step 4
The now playing data is refreshed every few seconds. As soon as it detects that the station is playing a song, it fades out the radio and initiates a track from the Last.fm playlist. It triggers a pop-up

which overlays over the station information. Last.fm functionality such as the ability to 'love' and 'ban' tracks has been included, as well as displaying information about the currently playing track. If a user doesn't like the track selected they can skip to the next one in the playlist.



Step 5
If users hear something interesting or amusing on the radio they have the ability to 'Share Content'. This saves the last 5 or 6 seconds of audio to a web server, and returns a dynamic link that they can share how they like. The ability to share the link on Twitter has been included to demonstrate a potential application of this technology. The length of this clip could easily be extended to two ot three minutes. It's size was limited to 5 or 6 seconds purely to facilitate a demonstration of this technology.

Step 6
Users activity on Last.fm, such as banning and loving tracks is also fed in to a real time 'status' feed, which indicates what other users of the application are listening to. By clicking on artists loved and banned by others, users can change their own Last.fm playlists to those selected by others.



Evaluation & Conclusion

The key aim of AlphaCast was to explore how current technology can help radio to go above and beyond the linear constraints of the broadcast model. By allowing listeners to customise their playlists, it caters for the growing emphasis placed on customisation of media content. It demonstrates that customised listening is possible with current radio streams. It is unfortunate that other radio stations in the UK do not offer nearly as much 'now playing' information with their radio streams, limiting its reach. However it is my hope that a national standard for UK radio station metadata will come into effect in the near future, opening up online radio listening to a whole new age of interactivity.

Limitations

One of the key limitations of my application is that the now playing information will often change before a song has begun or ended, so that there is occasionally a crossover of a song played through Last.fm and a song played on the radio.

There were also some difficulties with Flash connecting to online streams, which occasionally results in the radio stream playing at half speed.

Potential Applications

I feel there is real potential for the implementation of these ideas in commercial radio in the UK. For music, the basic premise would be similar, but instead of streaming music from an external provider such as Last.fm, music could be accessed from the stations own music library. By offering listeners who want a more tailored playlist the choice of subscribing to this service, it could also be a new source of revenue for commercial stations. The most difficult aspect would be finding a way around the music royalty system which has caused Last.fm some trouble[4].

The share feature is a much more easily implemented idea that can quickly create a viral aspect to radio, allowing listeners to interact with station content in a new way and hopefully entice more listeners to tune in via social networking sites such as Facebook and Twitter. The status feed is also a nice feature which will help bring more connectivity between listeners. It does not just need to be limited to loving and banning music, but could also be used to document other actions, such as saving clips of audio and even eventually allow listeners to communicate directly with each other.

References

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