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Automatically Adapting Content To Audio-Only Versions

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AUTOMATICALLY ADAPTING CONTENT TO AUDIO-ONLY VERSIONS

ABSTRACT

A device and method are disclosed for automatically adapting content to audio-only versions for video playback in situations with bad network connectivity. The method includes replacing a video stream with a non-video version of content stream on detection of poor internet connection. The non-video version of the stream is a different asset in comparison with audio of the video stream, for example, the non-video version might be shorter as they don't have leading or trailing periods of silence that might be required for on screen transitions, scenes, credits, etc. Further, the method may also include recommending audio-only version of the content to the user instead of mixed media content. When the device recognizes that it is in a poor connectivity state, it can adjust the recommendations, the endpoints, or both.

BACKGROUND

Music plays contribute hugely to watch-time on media-sharing platforms. For instance, a platform may attribute 40% of watch-time to music. Such platforms are also extremely popular in emerging markets where network conditions keep switching and are often quite unreliable. Such poor network conditions may lead to longer buffering periods more often, causing inconvenience to users.

DESCRIPTION

A device and a method are disclosed for automatically adapting content to audio-only versions for video playback in situations with bad network connectivity, as illustrated in FIG. 1. In one implementation, on detection of poor internet connectivity (Step A), the device replaces a video stream with a non-video version (Step B), such as audio-only version of the content stream. The audio-only version of the content is a different asset in comparison with audio of the

video stream. For example, the video version of the stream may include a variety of sound effects that make sense in context of the music video but not in context of the audio only stream. Additionally, audio-only versions of the content might be shorter as they don't have leading or trailing periods of silence for on-screen transitions, scenes, or credits. The audio-only version of the content is then played on the device seamlessly (Step C).

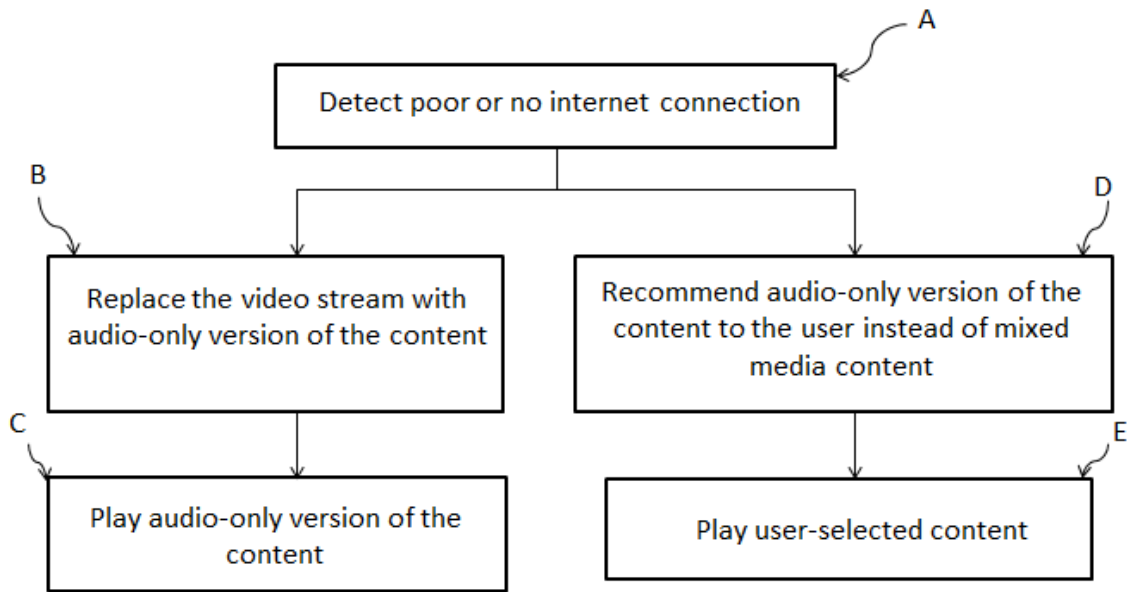


FIG. 1: Method for automatically adapting content to audio-only version

In another implementation, audio-only version of the content is recommended to the user instead of mixed media content (Step D), on detection of poor internet connectivity (Step A). For example, song selection does not change. Instead, the endpoint or media asset associated with the song recommendation is changed. The device may then play the audio-only version selected by the user based on the recommendation (Step E). In some implementations, this can be accomplished on the client side by supplying both a mixed media and audio-only endpoint with decoration for the content recommendations to the client. The recommendation enables caching several songs on the device, since the audio content is significantly smaller than mixed media.

The client may therefore operate seamlessly when the user clicks on a content recommendation or skips to the next song even when they have lost internet access.

Further, music applications can store data about entities on the client, such as alternate audio content assets, which ensures that no matter how spotty the users' internet connection, they can always listen to music seamlessly. For example, if a user listens to the first 5 minutes of a playlist (that he hasn't downloaded offline yet) and then loses internet connection, then the next several songs on the playlist may still continue to play with audio.

The method may also be implemented by relying on the client data model where data about individual entities is cached on the client for fast lookup. In this model, the locally cached entities themselves store the alternative audio-only version of the content assets (or references to those assets). At serve time, whether for media content playback or for content recommendations, the client decides whether to use the audio-only content or the mixed media content based on the client's internet connectivity state.

Further, music streaming apps can utilize the mechanism disclosed above to seamlessly play music in poor internet connectivity. Additionally, the music is served to the user consistently with the lowest possible latency.