Radio has been an established part of Danish culture since broadcasting began in 1925. However, for many years, locating a particular recording was a difficult process and as a result many researchers were not able to include radio programmes in their studies.

Prior to digitisation, someone interested in listening to a particular radio broadcast would have to go to the basement of the Danish Broadcasting Corporation, search manually for the correct tape, and listen to it there.

Around one million hours of material was then digitised. But listening to it all would take someone 115 years. The question arose of how to organise and access this material.

Larm.fm was created, based on a framework called the Culture Heritage Archive Open System, or CHAOS. Despite its name, this underlying structure is in fact very well organised.

One solution to the issue of how to organise the archive was to digitise the radio broadcasts that were published in daily newspapers. Users can now search these programmes for what they are looking for and use the data on broadcast time and radiochannel to retrieve the broadcast in the archive.

The creators developed a specialised interface for the resource, which allows users to search and create folders to save particular broadcasts. Being interactive, users can add annotations and tags to recordings and add metadata to help build the archive. The interface also allows them to collaborate with other users and create their own user profile. The whole resource is now an easy to use tool for an audio-focused research community unskilled in coding or command-based analysis of digital data.

"Sound recordings represent a massively untapped resource in the field of education."

Lynne Brindley, British Library
WHAT ARE THE MAIN OUTCOMES?

Now the LARM.fm radio archive has opened up one million hours of radio broadcasting for the benefit of education and research.

Clearly it’s now much more practical for researchers to carry out work related to Denmark’s rich broadcasting history. The project has also created a much more tangible source of information for academics: they can now insert links to the audio they are referring to into their writing online, so there is now potential for others to listen to and build on these recordings.

The possibilities for research made possible by LARM are mindboggling. Three projects that exemplify such research are:

**The interactive dialect map of Denmark.** Although Danish is spoken by around six million people, it has a number of dialects. One researcher filtered out recordings in which dialects were spoken, and then geo-tagged those broadcasts. Using Google Maps, the researcher then created an interactive map of Denmark where you can click on an icon and hear the broadcast in the vernacular of that particular region.

**Researching Danish bridge openings.** Denmark consists of the Jutland peninsular and several hundred islands, of which 72 are inhabited; many of these are linked by bridges. In the 20th century the opening of a new bridge, often signifying considerable change for the relevant island, was invariably surrounded by festivities and broadcast on the radio. So one research project is using those broadcasts to better understand the bridges and how the media coverage developed over time.

Listen to a broadcast about the opening of a large bridge, the ‘Oddesundbroen’ in 1938

**Urban sounds of Copenhagen.** During the 20th century, the sounds of Copenhagen changed from horse carts to cars, from shouting merchants to adverts. When the street noise became unbearable, pedestrian areas were created with another sound environment. This project examines that street noise and looks at its evolution.

Listen to an educational broadcast from 1947 about the ‘big city’

KEY LESSONS LEARNED

The Larm.fm creators carefully studied the needs of researchers before developing the interface, so that it would be an intuitive and comprehensive tool for them.

A large proportion of the million hours of material is subject to copyright rules and therefore cannot be made openly accessible. However, the creators were able to use the Danish education authentication system WAYF (‘where are you from?’) to allow users in higher education institutions to gain access to the radio archive.
FUTURE DEVELOPMENTS

Developing new access points into the archive is something the creators are now working on. Currently, a project with the Technical University of Denmark (DTU) is aiming to automatically generate new metadata. This metadata will provide users with useful information such as where the music and speech are in a recording through automatic segmentation of these two types of audio; speech to text recognition; and voice recognition of important people. If this last proves successful, metadata will be generated to allow users to search for recordings including a particular person or group, like Prime Ministers of Denmark.

There are several further possibilities for development. Firstly, the underlying framework CHAOS also has the potential to include video materials. Interest in the platform has already come from media, theatre and history researchers so another route might be to develop functionality for specific research disciplines.

The original funding for the research project has now finished so any plans will depend on the ongoing discussions about new ways to finance and maintain the archive.

FIND OUT MORE

See a full bibliography of publications about LARM

References

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Based on an interview with Torsten Andreasen on 9 January 2014 by Maurits van der Graaf

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