

# Music, Media & DRM

Chris Elsmore

# Music

- an art form that involves organised sounds and silence.
- Wikipedia

# Music

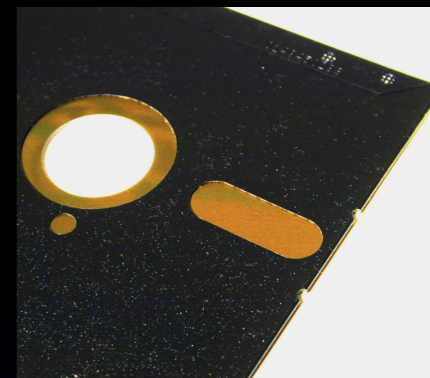
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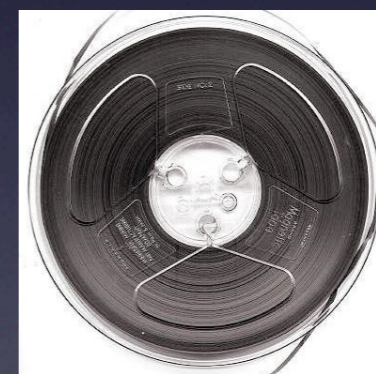
History of music predates the written word.

The earliest record of musical expression is to be found in a 4,000 year old cuneiform from Ur.

# A Brief History Of Recording



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# Timeline

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2000

1982

1948

1940s

1870s +

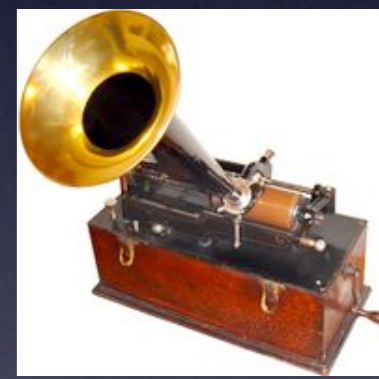
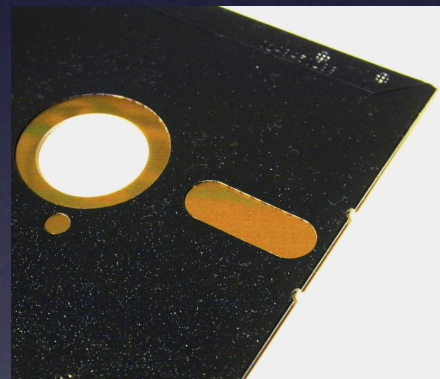
MP3s

CDs

Records

Tape

Early Media



# First recordings



# First recordings

First recording device invented in 1857, but it could not play back what it had recorded. Thomas Edison invented the first record / playback device called a phonograph. It used tinfoil covered cylinders to record the sound.



# First recordings

The graphophone was a version by Chichester bell, which used cheaper wax coated cylinders. The gramophone was created by Emile berliner sometime after, and used horizontal motion instead of the previous vertical method.



Tape

# Tape

Tape was developed in 1940s for sound recording, using reel to reel tape recorders.

Electromagnets were used to record the signal onto the tape as it passed over the recording head.



# Tape

The read head converted the magnetised tape into an electrical signal. Later the tape would be placed in a cassette which was easier and faster to use, and more robust.



# Records

# Records

Styluses made a comeback!  
Increased refinements in record  
creation made records an older  
technology but a higher quality  
sound. Records also became  
stereo!



# Records

45 singles and 33 LPs became popular. Still popular today with DJs for “scratching” and audiophiles for their warm sound.

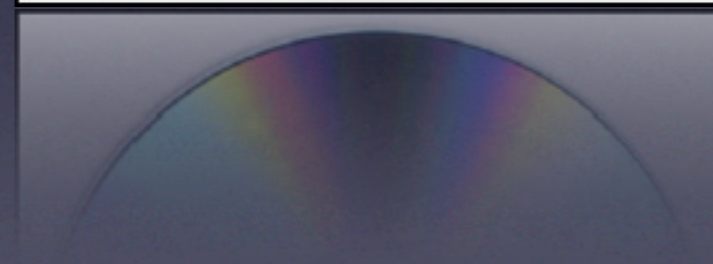




CDs

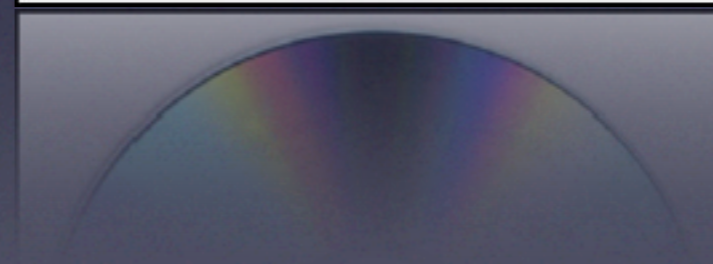
# CDs

Invention of the “indestructible disc”. CDs were created by a partnership between Philips and Sony and were created from a demand of higher quality audio. Smaller disc was more portable than records and sounded better.



# CDs

As CDs became cheaper and cheaper, they killed off most other media. CDs becoming recordable was the final blow for tape media. Records still have a small following.

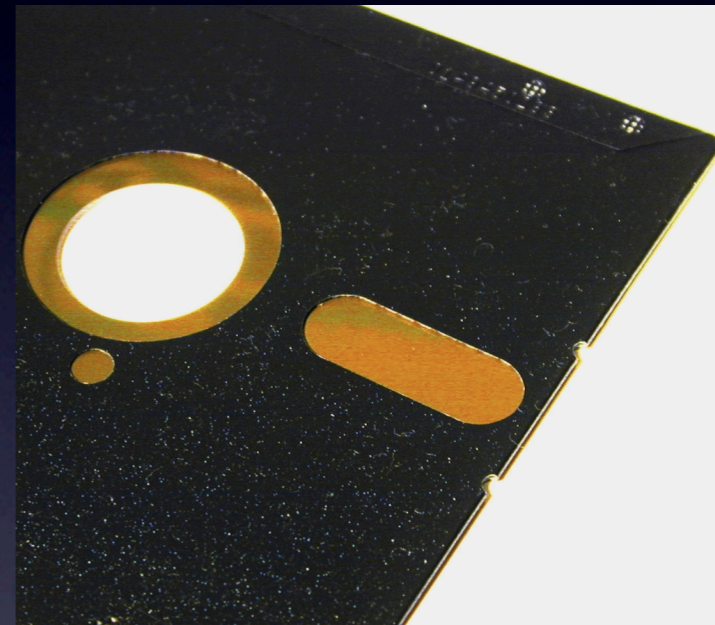


Dude - where's my  
media!?

# Music Files

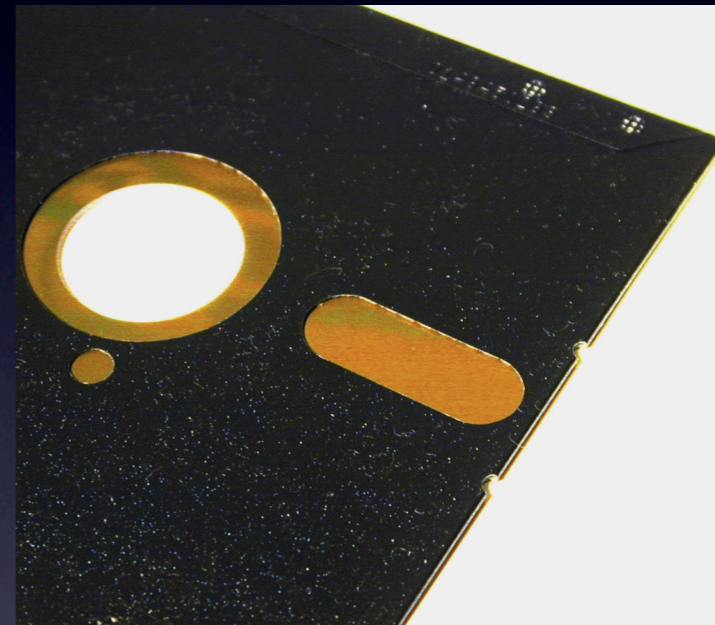
# Music Files

The popularity of CDs and computers meant people could “rip” tracks from CDs onto their computers having huge jukeboxes of songs. The birth on the internet gave way to sharing these files. Free music!



# Music Files

The birth of the MP3 codec meant music files were small enough to send over the then slow averages connections to the internet. Artists and recording labels became worried!



**DRM**



# Digital Rights / Restrictions Management

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- RIAA claim millions of dollars is lost through illegal downloads of music
- An interesting problem, as the music is in no physical media. How can anyone “own” 1s and 0s??

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- Apples ITMS opened on 28th April 2003, and of January 2007 has sold 2,000,000,000 + songs
- Convenience is king!



Thank you.