

Music & the Internet

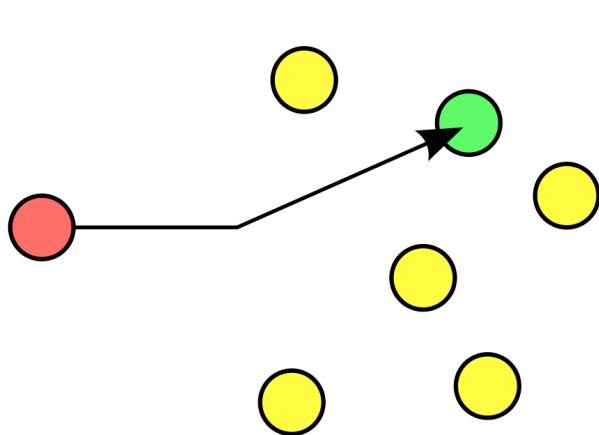
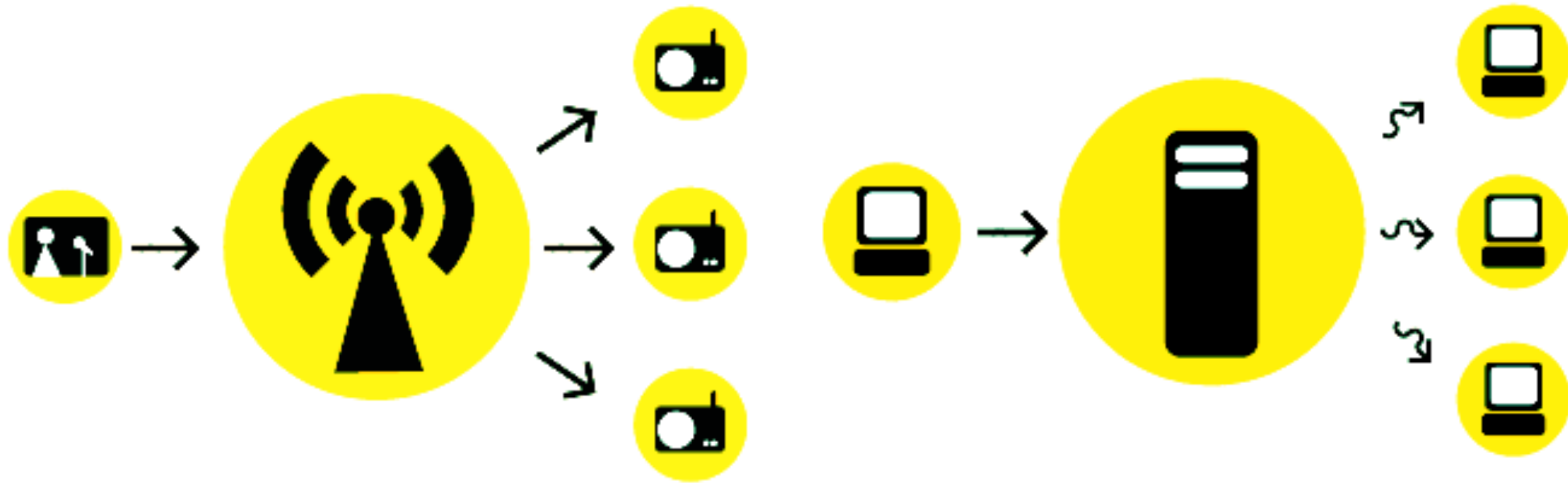
MUMT301

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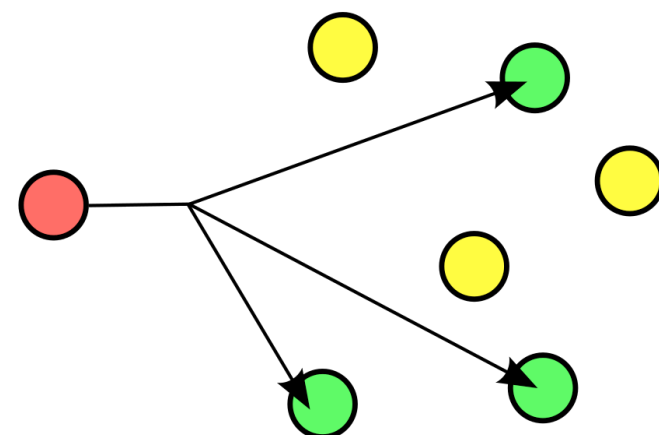
Plan

- Review of the last class
 - Music distribution
- Internet Radio
- On-demand music services presentation
- HTML DOM
- Writing and changing DOM elements with JavaScript

Internet Radio broadcasting

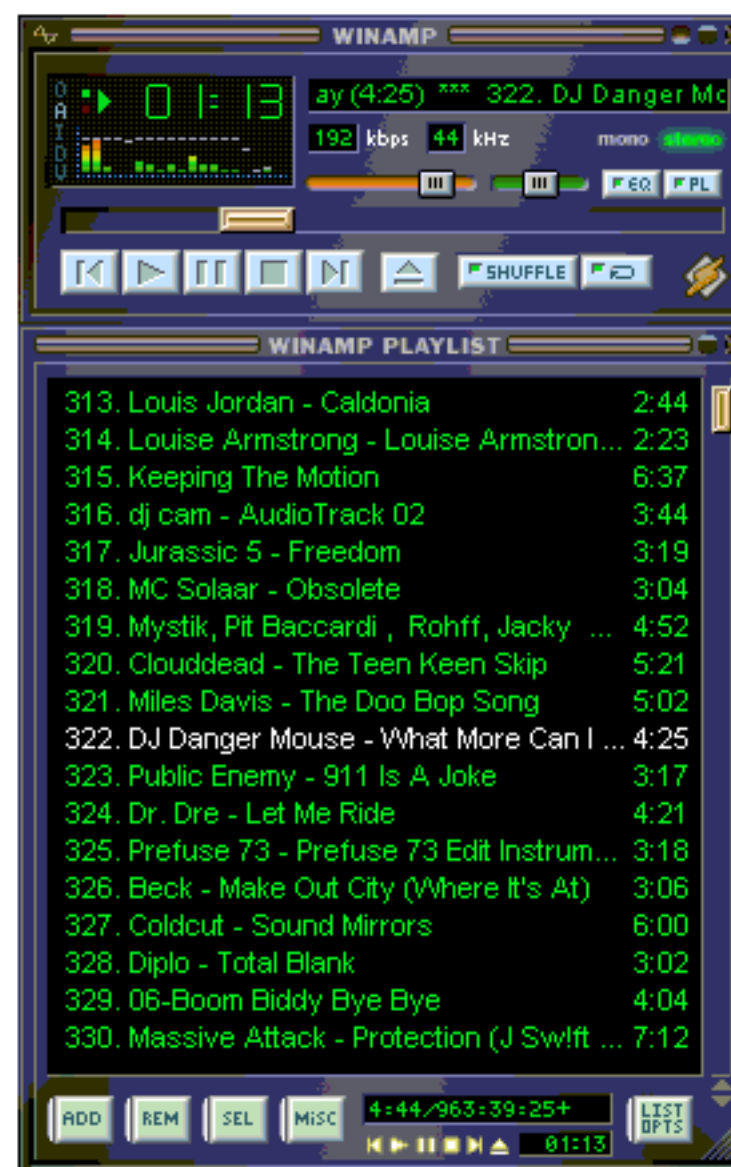
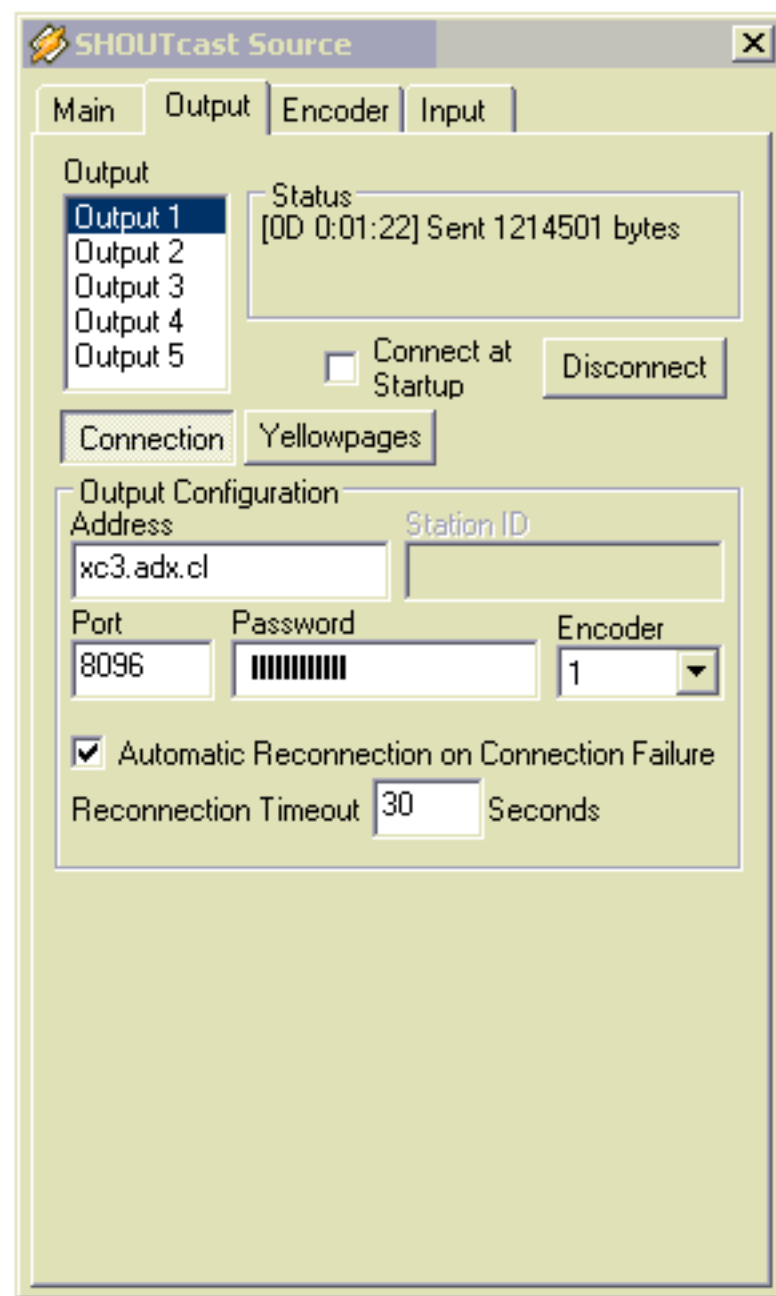


Unicast: Sends IP packets to identified recipients on a network, with added bandwidth



Multicast: sends IP packets to a group of hosts on a network, with no added bandwidth, and not requiring prior knowledge of who or how many receivers there are.

Playlist creation applications



Playlist creation applications

The screenshot displays the Nicecast Broadcast application interface. The top window, titled "Broadcast", shows the "On Air" status and a level indicator. Below it, there are buttons for "Source", "Info", "Titles", "Quality", "Share", and "Effects". The "Share" section provides the broadcast address: `http://192.168.1.118:8001/listen.m3u`. A "Server Checker" button is also present.

The main window shows a playlist titled "pherinfonprozession" by "Mouse on Mars - Abschaffung der Arten". The playlist is a table with columns: Name, Time, Artist, Album, Genre, Rating, and Plays. The current track is "pherinfonprozession" (4:29).

| | Name | Time | Artist | Album | Genre | Rating | Plays |
|----|--------------------------------------|-------|---------------|-----------------------|-----------------------------|--------|-------|
| 1 | Faith | 5:53 | Ada | Meine zarten Pfoten | Rock | | 1 |
| 2 | On The Mend | 4:33 | Ada | Meine zarten Pfoten | Rock | | 1 |
| 3 | Likely | 3:36 | Ada | Meine zarten Pfoten | Rock | | 1 |
| 4 | The Jazz Singer (re-imagined by Ada) | 4:40 | Ada | Meine zarten Pfoten | Rock | | 1 |
| 5 | Intro | 4:06 | Ada | Meine zarten Pfoten | Rock | | 1 |
| 6 | At The Gate | 7:29 | Ada | Meine zarten Pfoten | Rock | | 1 |
| 7 | Interlude | 3:15 | Ada | Meine zarten Pfoten | Rock | | 1 |
| 8 | Happy Birthday | 6:14 | Ada | Meine zarten Pfoten | Rock | | 1 |
| 9 | 2 Likely | 10:08 | Ada | Meine zarten Pfoten | Rock | | 1 |
| 10 | Ritual Union | 3:30 | Little Dragon | Ritual Union | Electronica | | 3 |
| 11 | Little Man | 2:42 | Little Dragon | Ritual Union | Electronica | | 3 |
| 12 | Brush The Heat | 4:13 | Little Dragon | Ritual Union | Electronica | | 3 |
| 13 | Shuffle A Dream | 2:55 | Little Dragon | Ritual Union | Electronica | | 3 |
| 14 | Please Turn | 3:33 | Little Dragon | Ritual Union | Electronica | | 3 |
| 15 | Crystalfilm | 4:49 | Little Dragon | Ritual Union | Electronica | | 2 |
| 16 | Precious | 3:51 | Little Dragon | Ritual Union | Electronica | | 2 |
| 17 | Nightlight | 3:25 | Little Dragon | Ritual Union | Electronica | | 2 |
| 18 | Summertearz | 3:54 | Little Dragon | Ritual Union | Electronica | | 2 |
| 19 | When I Go Out | 6:02 | Little Dragon | Ritual Union | Electronica | | 2 |
| 20 | Seconds | 4:31 | Little Dragon | Ritual Union | Electronica | | 2 |
| 21 | aggro moderato | 1:50 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 22 | veränderungen | 6:28 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 23 | femtotöne | 1:08 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 24 | hawai | 2:17 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 25 | pherinfonprozession | 4:29 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | ★★★ | 1 |
| 26 | ferngefühl | 2:13 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 27 | cyrus hill | 0:43 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 28 | news of gente | 1:53 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 29 | durch die wüste | 1:57 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 30 | dramus | 4:16 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 31 | ortlos | 0:56 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 32 | holos | 0:22 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 33 | opium | 2:44 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 34 | windhunde | 0:31 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 35 | arten braten | 0:47 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 36 | viele fragen | 1:45 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 37 | thema der gente | 1:28 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 38 | tutti genti estinti | 1:01 | Mouse on Mars | Abschaffung der Ar... | Soundtrack | | 1 |
| 39 | Black Scars | 3:14 | The Residents | Dolor Generar | avantgarde, experimental... | ★★ | 1 |
| 40 | Burning Madrone | 2:15 | The Residents | Dolor Generar | avantgarde, experimental... | | 1 |
| 41 | Mary Achi | 2:42 | The Residents | Dolor Generar | avantgarde, experimental... | | 1 |
| 42 | Memorv of Transaression | 2:41 | The Residents | Dolor Generar | avantaarde. experimental... | | 1 |

The bottom left corner shows a "Now Playing" section with a visualizer and the album art for "Die Abschaffung der Arten" by Mouse on Mars.

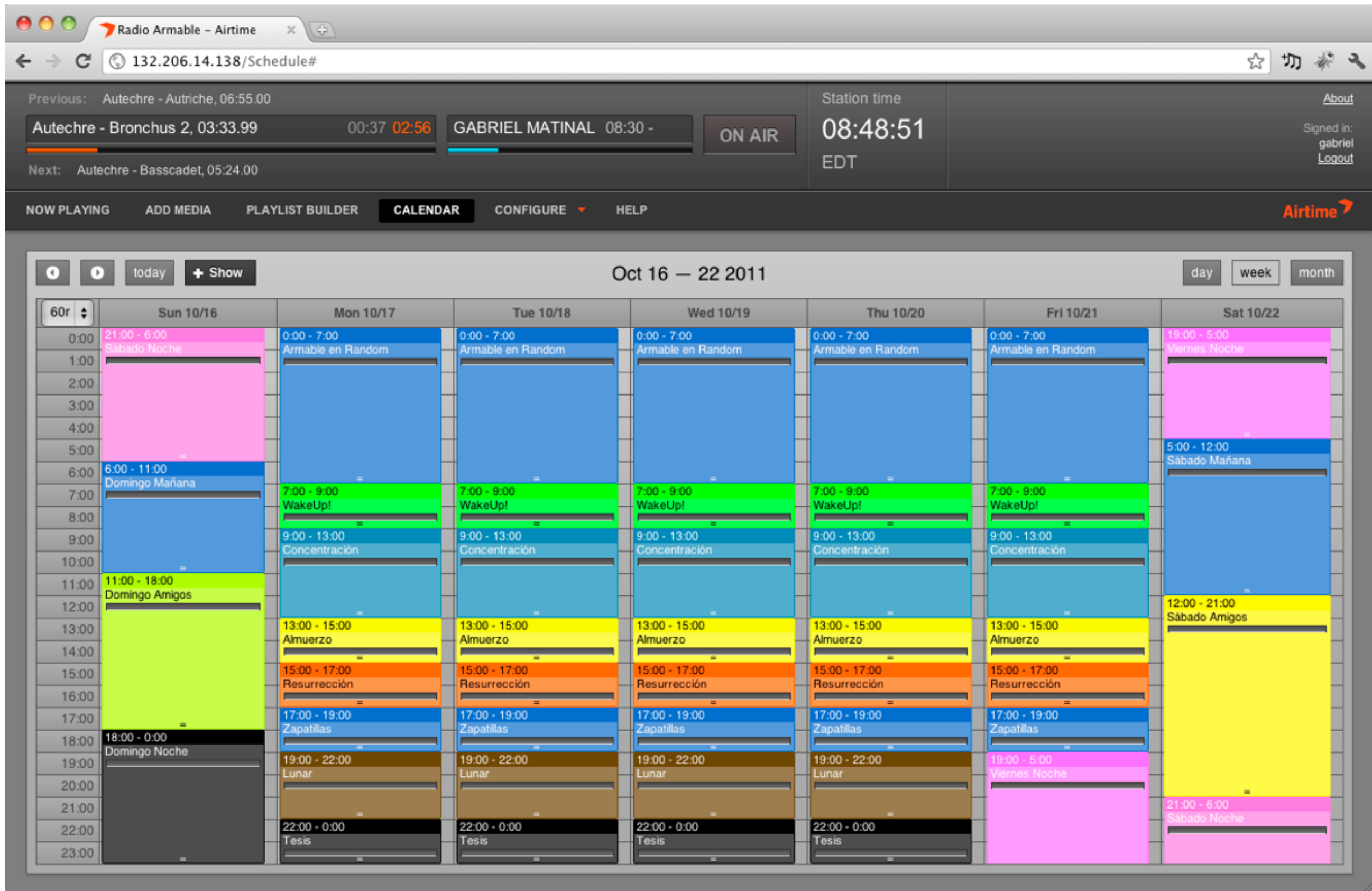
Automated radio broadcasting

The screenshot displays the SAM Broadcaster - Radio Armable software interface. The top menu bar includes File, Player, General, Window, Layout, Tools, and Help. The status bar at the top right shows the time 23:27:50 and 45 viewers, peak of 45.

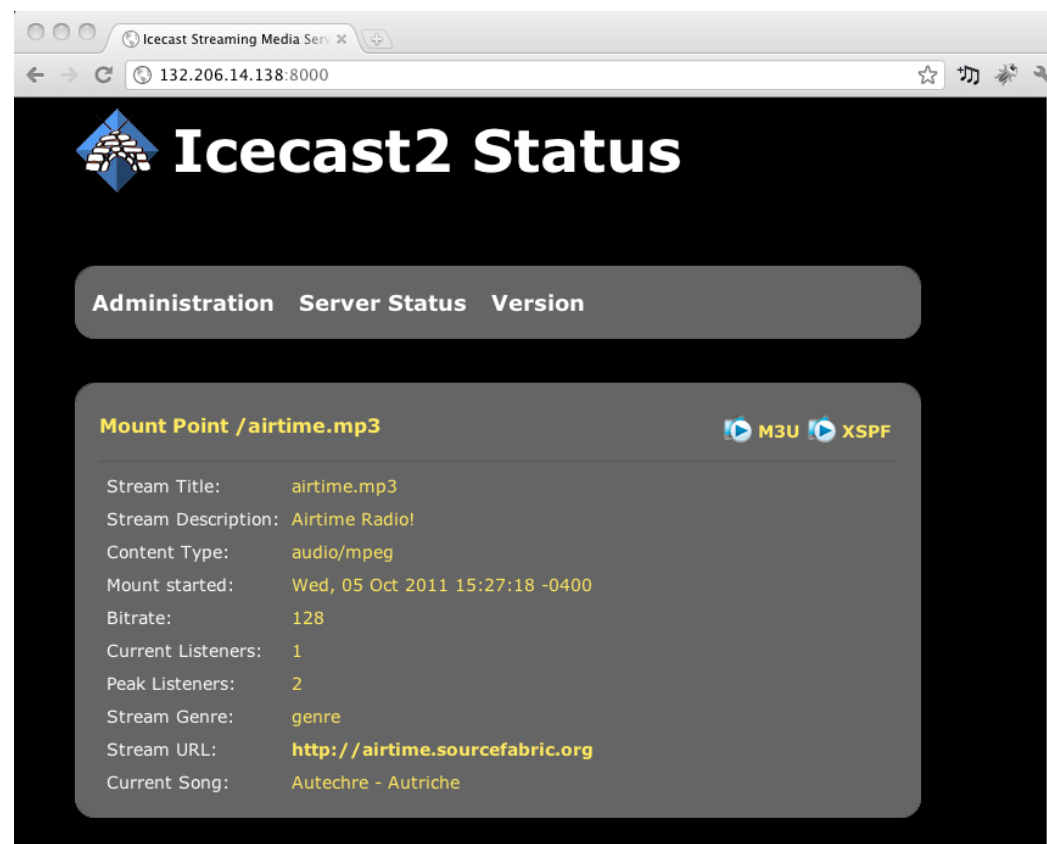
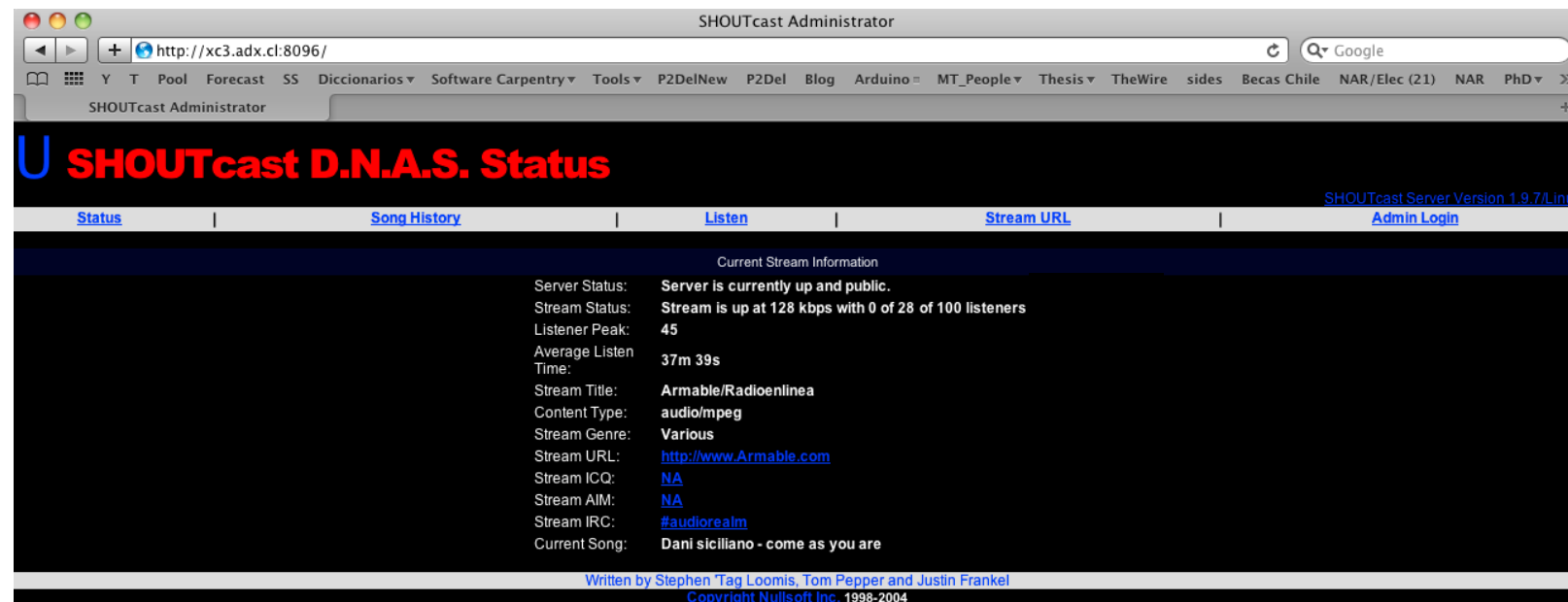
The interface is divided into several sections:

- Deck A:** Shows the current track "The Knife - We Share Our Mother's Health" with a volume slider and playback controls. The current time is 0:24.3, total time is 4:11.4, and the bitrate is 192 kbps.
- Deck B:** Shows the current track "Sleeparchive - Sleep Cycle 6" with a volume slider and playback controls. The current time is 0:00.0, total time is 0:40.0, and the bitrate is 192 kbps.
- Playlist:** A list of tracks with columns for #, Artist - Title, and Duration. The list includes tracks by Zomby, Closer Muzik, Losoul, David Tudor, Villalobos, and Roots of Chicha.
- History:** A list of recently played tracks with columns for Time, Artist - Title, and Duration. The list includes tracks by The Knife, ARMABLE, Roots of Chicha, Can, Alex, Lee Scratch Perry & The Upsetters, Morgan Geist, Closer Muzik, and Villalobos.
- Queue:** A list of tracks to be played next with columns for ETA, Artist - Title, and Duration. The list includes tracks by Boards of Canada, Chet Baker, Burial, Alvin Curran, Milton Babbitt, Raymond Scott, ARMABLE, DJ Raff, Arthur Russell, and Zomby.
- FTP log:** A log of file transfers, showing a successful transfer of a file named "226-File" and a message about the upload of 7 files.
- Playlist Categories:** A list of categories including Playlist, WakeUp, Tesis, Concentracion, Almuerzo, Resurreccion, Zapatillas, and Lunar.

Social radio applications



Streaming Media Servers

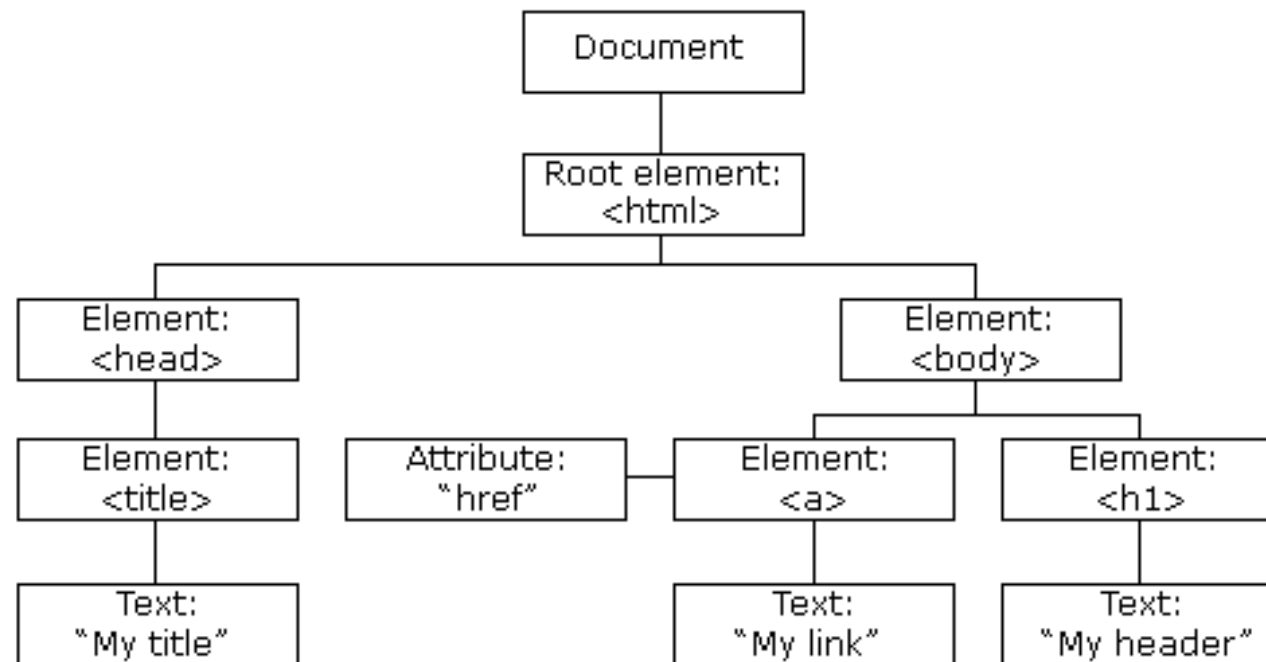


On-demand music services presentation

BREAK

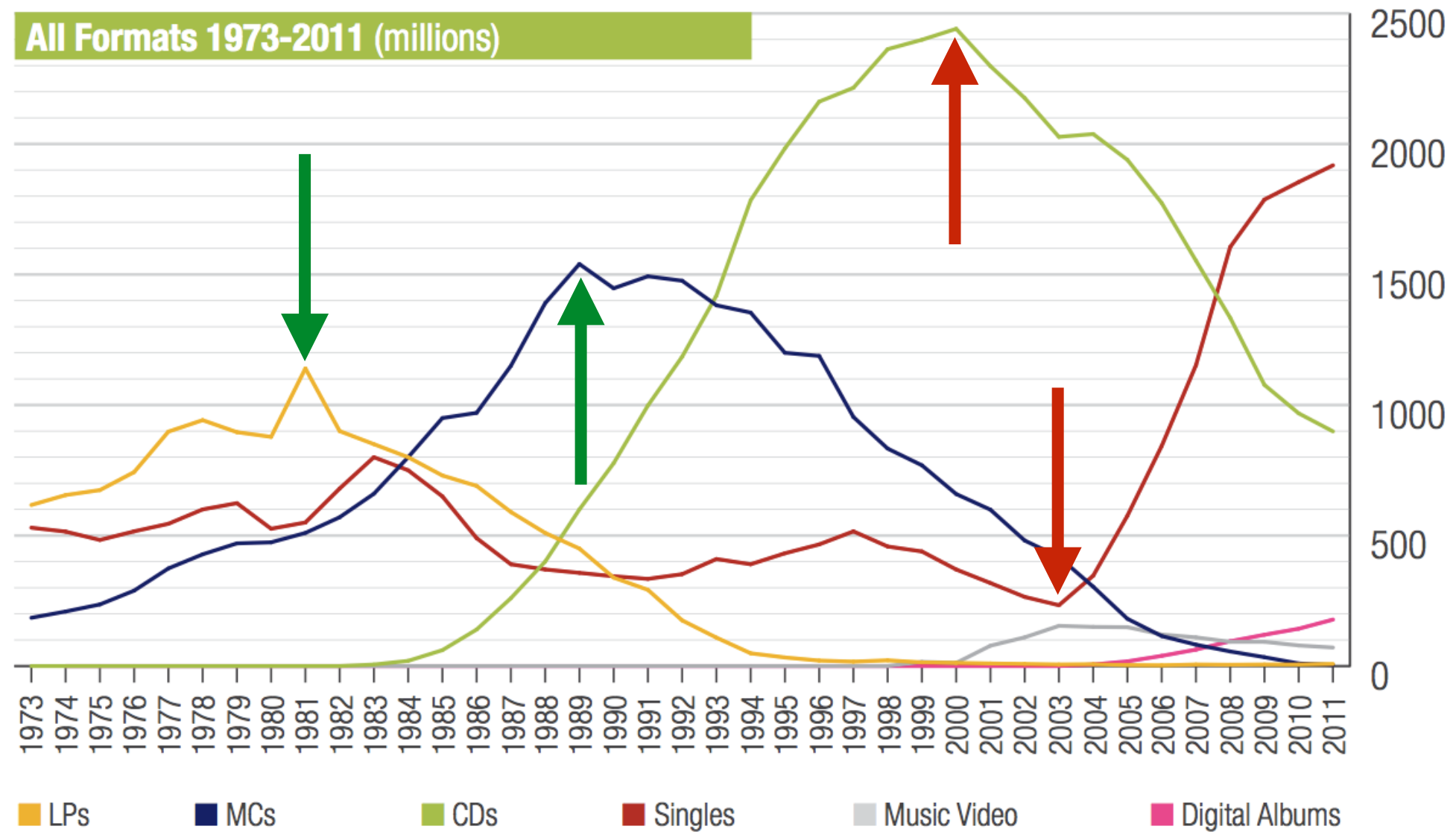
HTML DOM

- "The W3C Document Object Model (DOM) is a platform and language-neutral interface that allows programs and scripts to dynamically access and update the content, structure, and style of a document."
- When a web page is loaded, the browser creates a Document Object Model of the page
- The DOM is constructed as a tree of objects



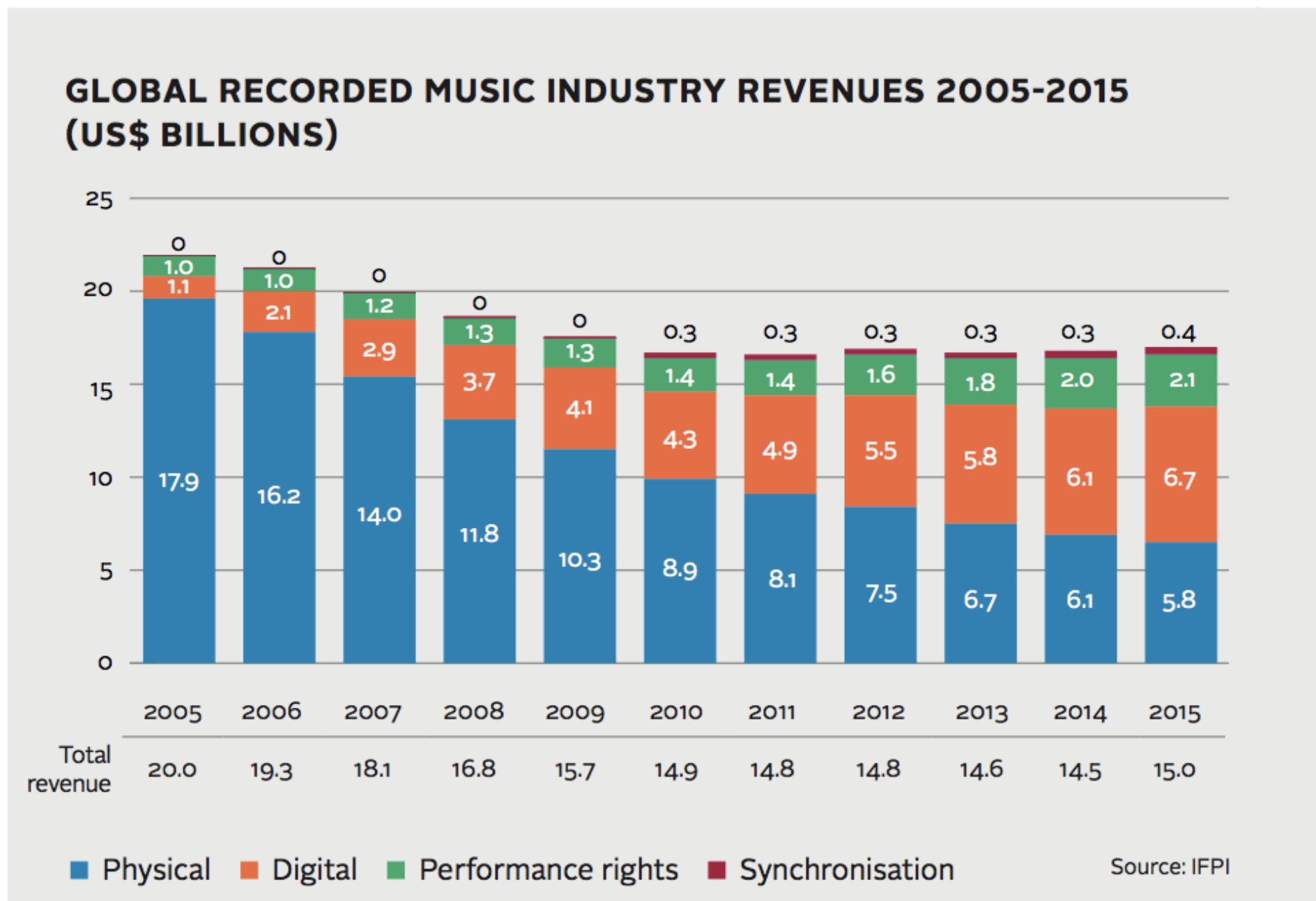
- With the object model, JavaScript gets all the power it needs to create dynamic HTML

Global music sales by format



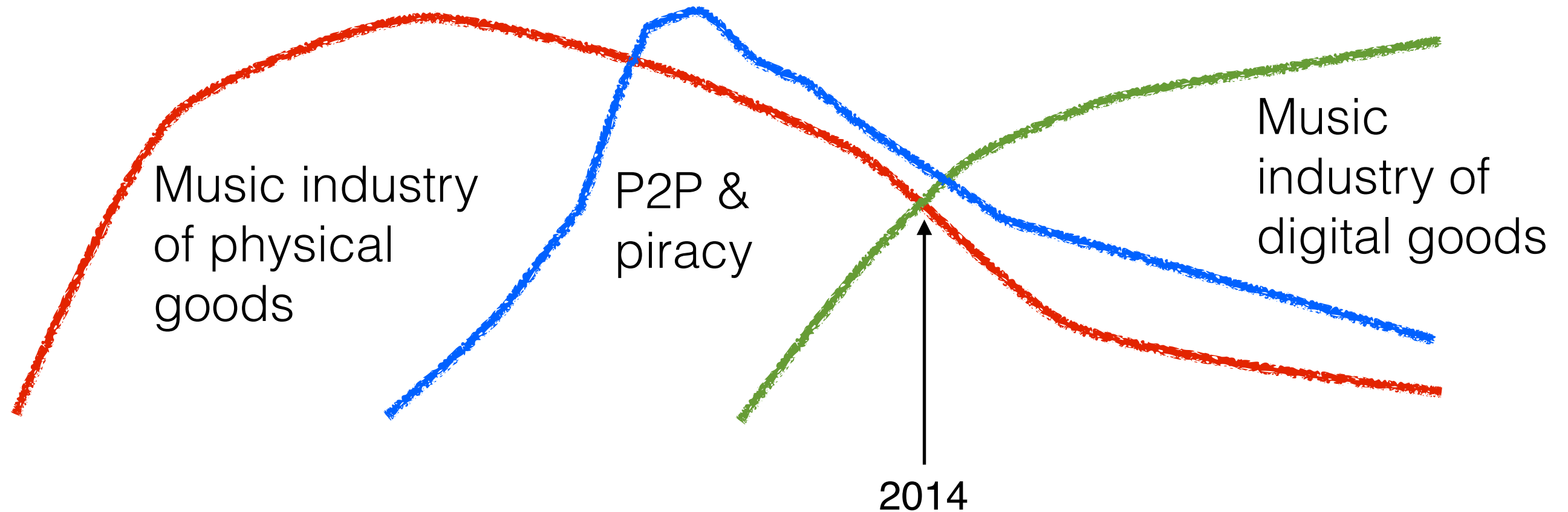
Taken from [Record Industry in Numbers 2011 \(IFPI\)](#)

Global recorded music revenues



Taken from <http://www.ifpi.org/downloads/GMR2016.pdf>

Music industry



Peer to peer (P2P)

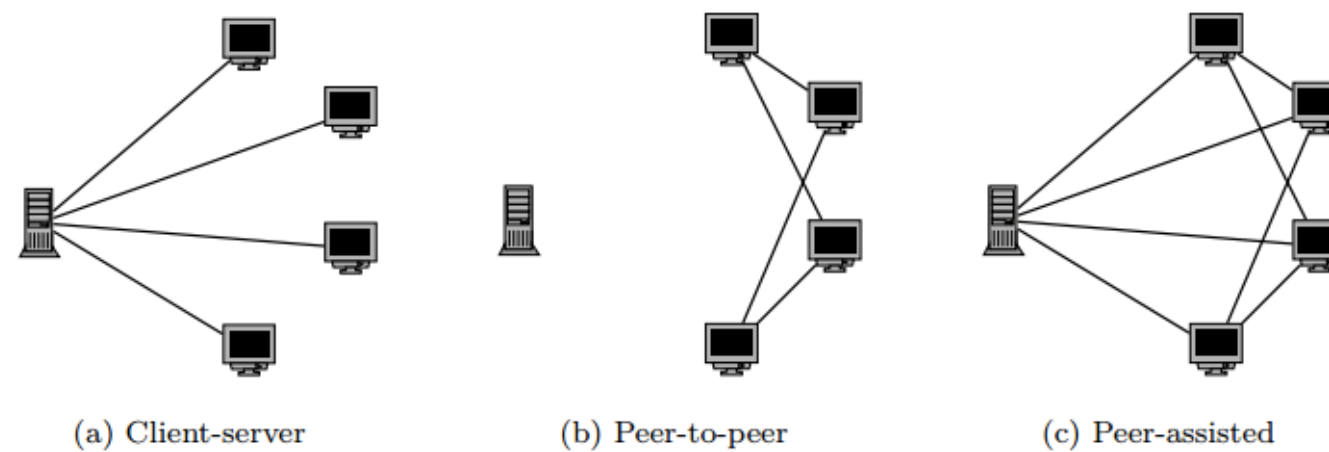
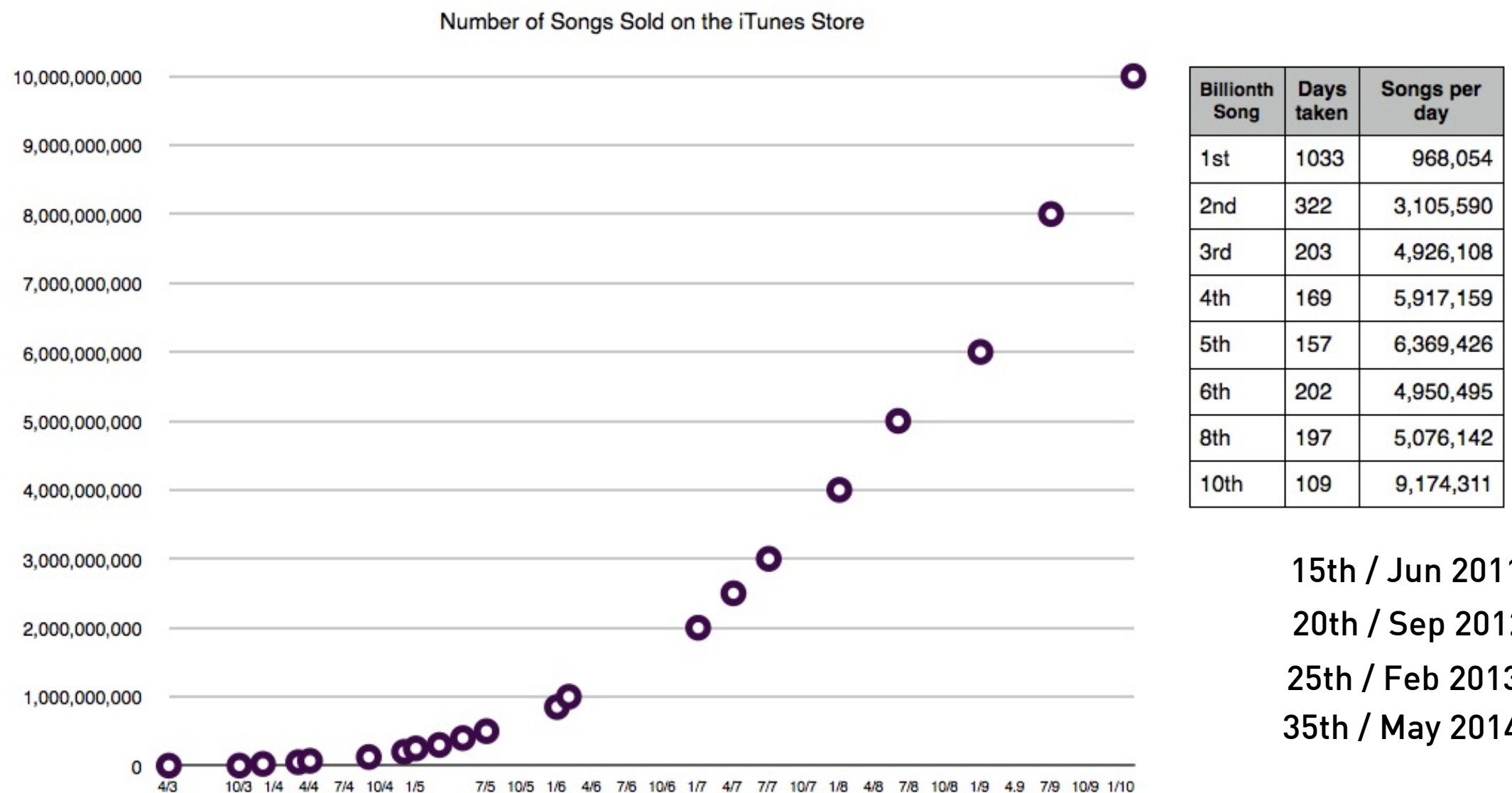


Figure 1.1: Three types of protocols.

Taken from [Kreitz, G. 2011. Aspects of Secure and Efficient Streaming and Collaboration. PhD Thesis. KTH Computer Science and Communication.](#)

iTunes Store songs sold

- Apple's iTunes Music Store is credited with finally getting people to pay for digital music, unveiled in 2003



https://en.wikipedia.org/wiki/iTunes_Store

Digital music distribution models

- Music stores (buy to own)
- Music tracks are delivered online
- Music locker
- Music streaming via subscription

The musician's POV

- None of the digital music services will let you in directly
- Artists need to be signed to a major (or big indie) record label
- Or use a **digital music distributor** to get in a digital music service