Understanding users of cloud music services: selection factors, management and access behavior, and perceptions

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Interview Protocol

Experience with cloud music services

1. How many and what devices do you use to listen to music?
2. What kind of cloud music services do you use?
3. What initially motivated use to use this kind of service?
4. What was the reason you initially started using the particular cloud-based service you are currently using?
5. How long have you been using those services?
6. How often do you use those services?
7. How is your cloud music collection organized?
8. How much time do you spend on organizing your cloud music collection?
9. Do you manually generate playlists? If so, what are your criteria for generating playlists?
10. How do you search for music you want to listen to from your cloud music collection? Or do you rely on another source for listening to music?
11. Can you give me an example of a situation where the services worked really well for what you were trying to do? Were there particular features or functions that were useful to you?
12. Can you give me an example of a situation where you could not do what you wanted to do while using those services?
13. If you can imagine an ideal cloud music management system, what kinds of features or functions would it have?
14. Do you backup your music data on the cloud? If so, where do you backup your data and how often?
15. Has your experience changed over time? (e.g., organization might be more difficult as they put more stuff on cloud)
16. How long do you expect to continue to use your current cloud music service?
17. Would you ever consider switching to another service? What would it take for you to switch?
18. Are you paying to use any of these services? If you are paying for some and not others, why? Do you think what you are getting out of these services is worth the amount you are spending? What do you feel is a reasonable cost?
19. How safe do you feel about keeping your music data on the cloud?
20. Do you do any offline listening? e.g., without a data connection, or while traveling?
21. What are their long-term plans? Are they expecting that their music will stay on the cloud "indefinitely"? Or is it something that they don't really think about?
22. Do you think about what happens once you put your file on the cloud? (e.g., how Google treats and backs-up the file)

General experience with cloud services

23. Do you use cloud services to listen to spoken word audio? (podcasts, comedy, etc.)
24. Do you use cloud services to share?
25. What other cloud services do you use for what purpose?
26. How long have you been using those services?
27. How often do you use those services?
28. Does anyone else in your family or household use your cloud services with you?
29. How is your data on the cloud organized? How much time do you spend on organizing your cloud data?
30. Do you backup your data on the cloud? If so, where do you backup your data and how often?
31. How long do you expect to continue to use your current cloud service?
32. How safe do you feel about putting your data on the cloud?

About their music collection

33. How big is your music collection?
34. What kinds of music you do have in your collection?
35. How would you describe your style of collecting?
36. How is your music collection organized? (physical + digital)
37. What proportion of your collection is being actively used?
38. Do you have music that is not uploaded to your cloud music collection? Are they physical music collection or digital collection? What are the reasons for not uploading them to the cloud?

Managing music collection

39. Where do you purchase or obtain your music from? Is it through the cloud music services that you use? Or is it through different services?
40. Do you use streaming services as well? How do you decide between streaming and cloud when deciding to listen?
41. Do you ever find that music is unavailable through the services you use? What do you do?
42. How often do you purchase or obtain music?
43. Do you ever weed out your music collection? If so, how often and on what criteria?
44. Do you share your music collection with someone else? If so, how do you share your music with other people?

General music listening behavior

45. How often do you listen to music?
46. What kinds of music do you prefer to listen to?
47. Have your musical tastes changed over time? If so, can you please tell us how? Do you still actively listen to the different types of music you previously liked?
48. How do you find out about new music and artists/bands?
49. How do you get the variety of music you want?

Mobile music consumption behavior

50. What kinds of mobile devices do you use for listening to music?
51. How often do you use those mobile devices for listening to music?
52. When do you use these devices?
53. How did you select which devices to use for listening to music?
54. How much music do you put on each of the devices?

55. How do you select which music to put on each of the devices?
56. Do you use multiple devices? If so, why? What roles does each serve?
57. How do you select music you want to have available in your mobile devices so you can access it even when you are not online?
58. How often do you refresh or update your music selection on your mobile devices and on what criteria?

Future of cloud music services

59. Anything else you can tell us about your positive or negative experience with cloud services?
60. What are your thoughts/opinions about this trend (moving to cloud)? What do you think will happen in the next decade?

Summary of Codebook

CODE	COMMENTARY
Description	
Type of Service	Which cloud and streaming services are used
Genre/Style/Preference/ Taste	Any mention of an artist or type of music the interviewee prefers or dislikes; also musical listening habits, like preferring album listening over singles/shuffle listening.
Devices/Technology	What types of devices are used for cloud applications (desktop, laptop, tablet, phone, mp3 player, SONOS). Also captures hardware-related issues.
Selection Factors	
Data/Storage/Network issues	Issues with slowness, data transfer, storage caps/upload limits
Cost	Any mention of free/pay aspects of services
Convenience	Convenience of service (e.g., mobility, versatility of service, simplicity)
Capabilities	What devices or software can or cannot do, availability of features
Multi-Device Management	Liquidity of files, ability to move and use collection across devices
Brand Loyalty	User's faithfulness to a particular brand, statement of consistent use of a particular company's products (hardware or software)
Advertisement	Exposure via marketing (e.g., pushed by service, automatically added on to existing account); advertisements within service
Compatibility	Service being compatible with particular devices (e.g., with a device's hardware or software)
Influence of others	Peer pressure, suggestions, use by others at workplace
Sound Quality	Any mention of audio quality (e.g. bitrate, mono/stereo channel, subjective notions of sound quality, etc.)
Behavior	
Streaming	Spotify, Pandora, Internet radio, streaming from the cloud. Also streaming video (Netflix, YouTube, etc.)
Transfer	Downloading or moving music or files to and from devices, the cloud, the Internet/music providers, or physical storage media
Activity	When, where, frequency of use, length of time using service
Sharing	Moving music or musical information between persons; collaborative maintenance of documents; family/spouse use
Playlists	Random/shuffle function; recommender services; auto- and manually-generated playlists
Organization	Organization of files, metadata
Discovery	E.g., recommendation services, purchasing music, free downloading (legal or illegal)
Obtaining/Purchasing	Purchasing or obtaining new files
Navigation	E.g., browse, search
Weeding/Pruning	Removal of items from a collection
Mood	Use of music to reflect or influence mood; organizing of playlists by mood

Issues & Opinions	
Collection Use and Accessibility	What portions of collection are available for listening, and what portions are not; unavailability or inaccessibility of music (e.g., not on device, no service, territorial restrictions in streaming)
Backup/Preservation	Copying files, use of external hard drive, cloud as backup, duplicate physical/digital, etc.
Use of Multiple Services	Use of more than one cloud and/or streaming service, comparisons between services
Design/Interface	Comments on visual layout of software and ease of use
Physical/Digital Collections	Presence of physical media (CDs, DVDs, external hard drives, vinyl, cassette, paper files); size of physical or digital collections
Uncertainty	When users felt unsure, admitted lack of understanding, or explained systems incorrectly
Ownership/Access	Owning physical copies; owning digital copies; not owning (streaming/radio)
Privacy/Data Security	Concern, or lack of concern, about data privacy, use privacy, security of cloud services, integrity/continuance of services in future, interruptions
Online/Offline	Listening using data vs. listening to local files; listening when no internet connection is available
Future Prediction	What will the future hold, what the user expects to do in the future or see in upcoming services
Legal Issues	User understandings of legal issues surrounding music distribution and listening, e.g. copyright, royalties, DRM, illegal downloading
Miscellaneous	Placeholder for extraordinary content
Use of Other Multimedia	
Photos	Personal photograph collections, sharing of the photos of others; album art
Video	DVDs or MPEGs/other digital video files; video games
Documents	E.g., Microsoft Office files, Dropbox/Google Drive, personal notes, e-books
Non-Music Audio	Podcasts, audiobooks, comedy