

SJSU • INFO 246-14 • Professor V. Tucker

**Spotify**

**is the Future**

Traci Lyn Mitchell and Margaret Snyder

5.14.2018

## EXECUTIVE SUMMARY

The purpose of this project is to create a flexible and efficient redesign of the information architecture (IA) of Spotify. The goal of our redesign is to create a design that will grow the user base, address the needs of current users, and position Spotify as the future of music. Our goal will be accomplished by creating a simplified and prioritized point of entry based upon user research that represents the needs of three primary user types; casual listeners, fans, and artists. We recommend that Spotify maintains a process of continuous user research and assessment in order to anticipate the constantly changing demands of the marketplace, artist, and consumer.

Launched in Sweden in 2007, Spotify is the world's largest online music streaming and sharing service, catering to both music lovers and music creators. Introduced to the U.S. market in 2011, the site endeavors to maintain a broad user appeal that allows for networking between average consumers and music industry professionals, including small labels, club bookers, music promoters, music distributors, and music producers. There are several available tiers of service. All users are allowed free access to the site's catalog of podcasts, videos and over 30 million songs, but premium users receive extra perks such as ad-free content streaming, offline access to content, and multiple users on one account. There are trial, student, and family plans available, and streaming can be accessed on multiple platforms including computers and mobile phones.

Our goal with this project is to help build upon this amazing service, and in the context of competition and debate, to demonstrate that Spotify *is* the future of the music industry for consumers, artists and producers. Data collected from tests conducted previously by researchers have been primarily focused on the ease of use of the streaming functionality of the service. While the data gathered in these studies has also revealed some relevant information regarding the social aspects of Spotify, this topic has been less examined. Therefore, our research for this project focused on revealing the pain points that interfere with the networking and interaction between the users as media access units (MAU): specifically interactions between consumers and those that create content. Based upon the current literature on the topic and our own user research, several recommendations emerged:

1. Deepen the integration of Spotify with additional social media platforms.

Users can connect and sign-in via Facebook, but Spotify should branch out and add variety to their social media platform integration to include Instagram, Twitter, LinkedIn, etc. Allowing users to log in to Spotify through existing social media accounts would simplify signing up and logging in to the service and provide greater security, while also allowing users to explore the Spotify catalog for content of artists or venues they follow

on other platforms. Innovate designs that make Spotify a social portal itself, through our Spotify “LIVE” design concept.

2. Streamline the recommended songs function and improve exploration features.

Improvements to metadata and refinement of the search algorithms would create an improved system of music recommendations. This would include reducing the number of suggestions offered and selections repeated. By refining the recommendation process, users will be encouraged to explore new music, which would be a great benefit to content creators. Put Discover Weekly on the back burner until sufficient user data is collected to improve algorithms. Add in feedback options for users to help improve recommendations.

3. Highlight playlists.

User research resoundingly indicates that playlists are the primary point of entry for all users. Playlists should be prominently positioned in the IA as playlists remain users preferred mode of engaging with music. We recommend Spotify innovate strategies for how users can access and share playlists.

### **OBJECTIVES: Business Objectives & Design Objectives**

Our current understanding of Spotify’s business objective is to grow the user base and expand the company’s presence in social media and the music industry. Our goal is to increase influence and revenue for Spotify. Our business objective is to present Spotify as the future of music. To do so, we will seek to align the objectives of the company with the needs of current and future user base. In terms of user base in the United States, nearly half of the users, 47%, are under the age of 13-24 and thus, designing for the future user and the future of users is key (Statista, 2018). Another large portion of users, 40%, is between the ages of 25-44, so we intend to ensure our design incorporates the needs of this other majority user age bracket (Statista, 2018). We will be conducting user research, outlined more specifically below, and referring to other user research recently conducted, in order to gain a better picture of user needs.

In terms of stakeholders, our current understanding is that Spotify’s co-founder Daniel Ek, currently the CEO, controls 37.3% of the voting power in the company, and co-founder [Martin] Lorentzon, who sits on the board and was chairman from 2008 to 2016, controls 43.1% of the company (Pressman, 2018). Chinese Internet giant Tencent has 2.4% of voting control, and hedge fund firm Tiger Global has 2.2% (Pressman, 2018). We also are aware that Spotify intends to go public in 2018, so the need to impress and innovate for stakeholders will become all the more crucial (Pressman, 2018). Our business objective is to diversify the user base and revenue of Spotify through designing IA that both addresses broader

user needs and potential investors interests, while creating unique, immersive, socially engaging experiences for artists and fans.

We understand that a large portion (up to 88% in the past few years) of Spotify revenue goes to major labels, and this left not much money to pay staff, develop new products, or even advertise (Pressman, 2018). Thus, part of our objective is to find ways to efficiently incorporate new options within Spotify that both improve user experience, and function as a free way of advertising. In addition, designing an interface and support system that encourages artists to self-publish, or crowdsource, the release of new music could alleviate some of the grip major labels have on the revenue. In addition, by focusing on collaborative strategies that bring both listeners and artists together, could work towards Spotify as aggregator and publisher, eventually cutting out the label middleman and creating more revenue for Spotify stakeholders and Spotify artists.

Our design objective will support Spotify's business objective of expanding and growing user base, increasing user-generated content and connections, and driving revenue directly through Spotify, rather than 3rd parties and labels. Our design objective is to offer a user-driven design that positions Spotify as the ultimate hub for music fans, music artists, and music industry professionals, such as small labels, club bookers, music promoters, music distributors, and music producers. We will present IA strategies to better meet Spotify's current, and future, user needs. Our goal will be to design for our concept: Spotify is the future of music. Considering Brown's (2010) first principle of IA, "the principle of objects," our design objective is to "treat content as a living, breathing thing, with a lifecycle, behaviors and attributes" (p. 30). A two-dimensional space on a two-dimensional screen becomes a three-dimensional reality through the intentional, thoughtful IA that elicits user engagement, and elevates virtual engagement to a lived experience (Brown, 2010). Spotify content needs to exude a story and lifestyle, and building integration with Instagram into the IA will connect users with other user's or artist's "Instagram Stories," can immediately begin to address this design principle.

In addition, the example Brown (2010) discusses is of a cooking website and how to bring the recipes to life by exciting within the user a natural cognitive flow of suggestivity. As Brown (2010) explicates, "you can even think of recipes as having behaviors. Recipes can "reproduce" when people comment on them with their own twist" (p. 31). There is a fundamentally social component to living design, and building IA upon user cognitive processes requires extensive research to see how users classify, organize, and organically engage with the material. When we search for something online, we want the content to behave like a thought-process, as in Brown's example, if someone searched for spring roll recipe, this user might also be interested in pad Thai recipes, hot weather recipes, appetizers, etc. The concept of creating a compelling treatment of objects that are not necessarily in real-time is the fundamental goal of Brown's first principle. Our design objective is to imbue objects, which include everything from a playlist,

to a just-released video of a new artist, to a 1971 Rolling Stones album, with behaviors, lifecycles and cognitive associations or actions. Part of this lies in finding new ways of engaging users to make Spotify a dynamic environment that can replicate real experiences through IA.

Our objective is to focus research on several IA principles, suggested by Covert (2012): findable, controllable, and delightful. Our user research will help address IA opportunities and directions for improvement. Is the user easily able to find what they are looking for and control content? Is the user delighted by Spotify? In order to make design delightful, we must ask, “what can you take that is now ordinary and make it extraordinary” (Covert, 2012). Our design objective is to suggest ways Spotify can become extraordinary. Along with this objective, we seek to identify ways Spotify IA could provide clearer spaces, and broader opportunities, for social engagement, between both listeners and other listeners, and fans and artists. This idea is based upon design principles outlined by innovative architect Ole Scheeren (2015). Scheeren (2015) focuses upon the essential need people have to collaborate and connect and how design should allow for and encourage this.

In conclusion, our design objective is to emphasize the digital identity of both Spotify (the service, website, and aggregator) as the future of music, and the digital identity of the Spotify user as the future of music. By enabling pervasive cross-platform collaboration and encouraging social engagement and self-generated content, our IA objective is to diversify Spotify and build the foundation of sustainability.

## **CONTENT STRATEGY/INVENTORY**

We did a qualitative audit of a partial content inventory of Spotify, with an focus on the site’s web player and its content for artists and industry professionals. Our audit revealed that the multitude of entry points led to an unclear navigation structure, and too many options for most users. Please refer to Appendix A for the Content Inventory document. We observed that by logging into a user’s Spotify Premium Account, the user can choose to enter (as in start streaming music) from the right side via Friend Activity (what friends, or record labels the user followers are currently playing), or the left side menu options of Browse, Radio, Your Daily Mix, Recently Played, Songs, Albums, Artists, Stations, Local Files, Videos, Podcasts, Playlists, to center menu options of Overview (including Discover Weekly), Podcasts, Charts, Genres and Moods, New Releases (including your Release Radar), More (consisting of Discover, Concerts, and Video). After reviewing this inventory, our strategy became how our IA design could simplify points of entry and be used as the basis for a properly prioritized and streamlined user interface.

The first step of our content strategy consists of highlighting key entry points that we considered to address user needs based upon both the larger body of user research literature and our own user research (both will be outlined below). For our survey, we will focus upon user opinion of the Daily Mix, Playlist features, and Discover Weekly. For a content card sort, which helps indicate how users prioritize

and navigate information, we will focus on entry point categories of Daily Mix, Release Radar, New Release, Browse, Friends, Discover, Charts, Comedy, Podcasts, Genres, Videos, Radio, Mood, and Library. Thus, the next step in our content strategy will be to synthesize the existing body of research, and our own research, to see which of these entry point menu options the user prefers and uses. This information will then inform how we prioritize content for our proposed site structures. The final step of our content audit and strategy, will be to create wireframes, or site storyboards, based upon this user feedback. The overall goal of our content strategy is to find both a more simplified site structure with less initial entry points, and to recommend an innovative way to engage users with site navigation.

## **USER RESEARCH PLAN**

Due to the prominence of Spotify in the online streaming marketplace, there have been multiple studies published containing user research analyzing the site's IA. In 2015, Hagen's study of 12 heavy Spotify users in Norway combined self-reports in user diaries, observation of the user's online behaviors, and interviews that examined utilization of playlists by tracking user habits of curation and collection of music within the system. Hagen's study reveals the role pre-digital behaviors play in the persistence of user needs to collect and curate digital music. Hagen's study also recommends that Spotify diversify the functionality of static and dynamic playlists based upon these behaviors.

Png's (2017) study consisted of 25 subjects and conducted a series of several tests including an heuristic evaluation of the site, affinity mapping, contextual inquiry, customer journey mapping, card sorting, and tree testing. In addition, 6 users from various service tiers participated in an in-depth, one-on-one interview regarding experience with the site. A quick survey asking users about Spotify's shortcomings revealed that 28% of participants felt that the site's mechanisms for song recommendation needed improvement, and 20% felt that the social sharing aspects of the service were inadequate. Most users tended to focus usage upon accessing personal playlists and music library, thus allocating very little time for finding new music. Many were also entirely unaware that Spotify has a messaging function allowing for communication and song sharing among users.

Something that all of these studies agree upon is that, within the literature, there is a lack of dedicated focus regarding the study of discover tools. One exception is Tang and Yang's (2017) study. Tang and Yang's (2017) pool of subjects were recruited through online music forums and social media in conjunction. The study utilized subjective user experience to analyze the impact and effectiveness of four music discovery tools noted as most popular by Spotify MUA's: radio recommendation, genres and moods, regional charts, and personal recommendations made by contacts through Facebook (Tang and Yang, 2017). The consistency and accuracy of recommendations was measured and then these tools were compared to each other, and independent search tools offered by the site (Tang and Yang, 2017). This study found that a user's preference characteristics, including the diversity of their musical tastes,

insight into a user's own musical preferences, and openness to novelty, all had a significant impact on the effectiveness of the site's discovery tools (Tang and Yang, 2017).

In order to better understand MUA's needs regarding music discovery, we first conducted a survey to obtain specific data regarding use of music discovery tools and playlists, primarily looking at satisfaction with playlists, general searching and Discover Weekly. We then gathered user research from a content card sort, which helped indicate how users prioritize and navigate information, focusing on entry point categories of Daily Mix, Release Radar, New Release, Browse, Friends, Discover, Charts, Comedy, Podcasts, Genres, Videos, Radio, Mood, and Library.

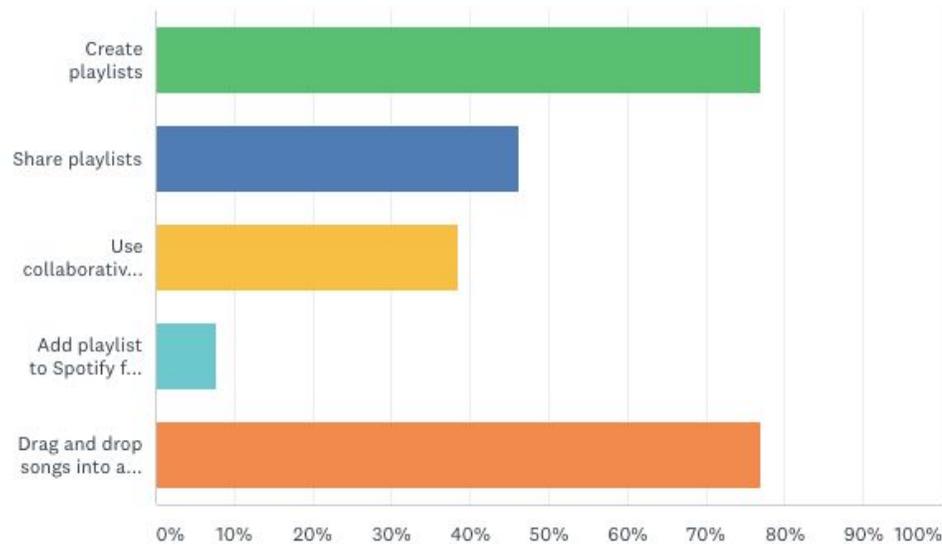
We conducted our survey through SurveyMonkey in order to ensure ease of use and ability to generate graphs of the results. We were able to receive 13 survey responses, with 53.85% of those responding being between the ages of 30-39 which fits the age range of the average user profile suggested by age demographics above (Statista, 2018). About 30% had Spotify free account users, 61% had premium accounts, and 8% did not have Spotify accounts. 15% of those surveyed were involved in the music industry, and 85% were not. Results were fairly split between Spotify meeting needs "very well" (38%) and "somewhat well" (46%), and evenly matched between "extremely well" and "not at all," both at 7% respectively. Again this level of user satisfaction was mirrored in the user's ability to find things easily, with 30% responding that finding something was "somewhat easy," and 38% responding "easy," and the extremes of "very easy," and "very difficult" each at 15%. These survey results indicate that users are moderately satisfied in Spotify overall, and specifically in searching on Spotify, but certainly not as satisfied or delighted as possible. This user research already identifies that what Spotify can improve include a simplified site design, and better algorithms for searching and suggestions.

The most resoundingly positive responses came from our questions regarding playlists. 76% of our survey respondents create playlists, 76% drag and drop results from searchers into playlists, 46% share these playlists, 38% use collaborative playlists, and 7% add playlists to Spotify from an email or webpage. Thus, the survey highlights the prominence of the playlist in frequency of use, and popularity, as the academic studies referenced above also indicate. Thus, the existing body of user research corroborates the information discovered in the user research we conducted for this project. Refer to the graph below to see these statistics emerge as all the more striking through visual representation.

Figure 1

Which of the following Spotify playlist features do you use?  
Choose all that apply.

Answered: 13 Skipped: 0

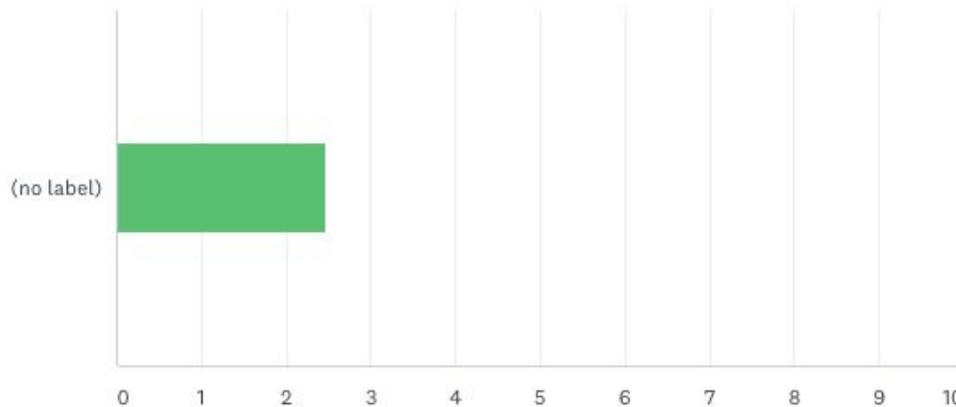


While this enthusiasm for playlists is clear, the Discover Weekly tool was met with resoundingly mixed reviews. Only 53% of those surveyed browse Discover Weekly to discover new music, only 69% of users even “sometimes” like the Discovery Weekly suggestions (with 7% evenly divided between always and never liking these suggestions). These results indicate that Discover Weekly should not be a major point of entry into finding music until the algorithm is improved. At the current success rate, the Discover Weekly feature will continue to disappoint a large portion of users, and thus potentially cause a loss of popularity and revenue for Spotify. Not only are popularity and revenue at stake, the user’s trust in Spotify could be undermined, causing a decline in brand loyalty and brand influence. Along these lines, the survey results also indicate that 0% of users always save Discover Weekly suggestions, with only 7% at usually save, 47% at sometimes save, 30% at rarely save and 15% as never save. This result average out to a 2/10 or a 2.4% chance of a user saving a song from Discover Weekly. These odds indicate the algorithm needs improvement, or that this feature requires complete redesign and re-examination. As this would be an exhaustive overhaul, it falls outside of the scope of this project, but exists as a crucial component of our recommendations. Please see the chart below for a visual representation of this UE opportunity.

**Figure 2**

## How often do you save songs recommended on Discovery Weekly?

Answered: 13 Skipped: 0

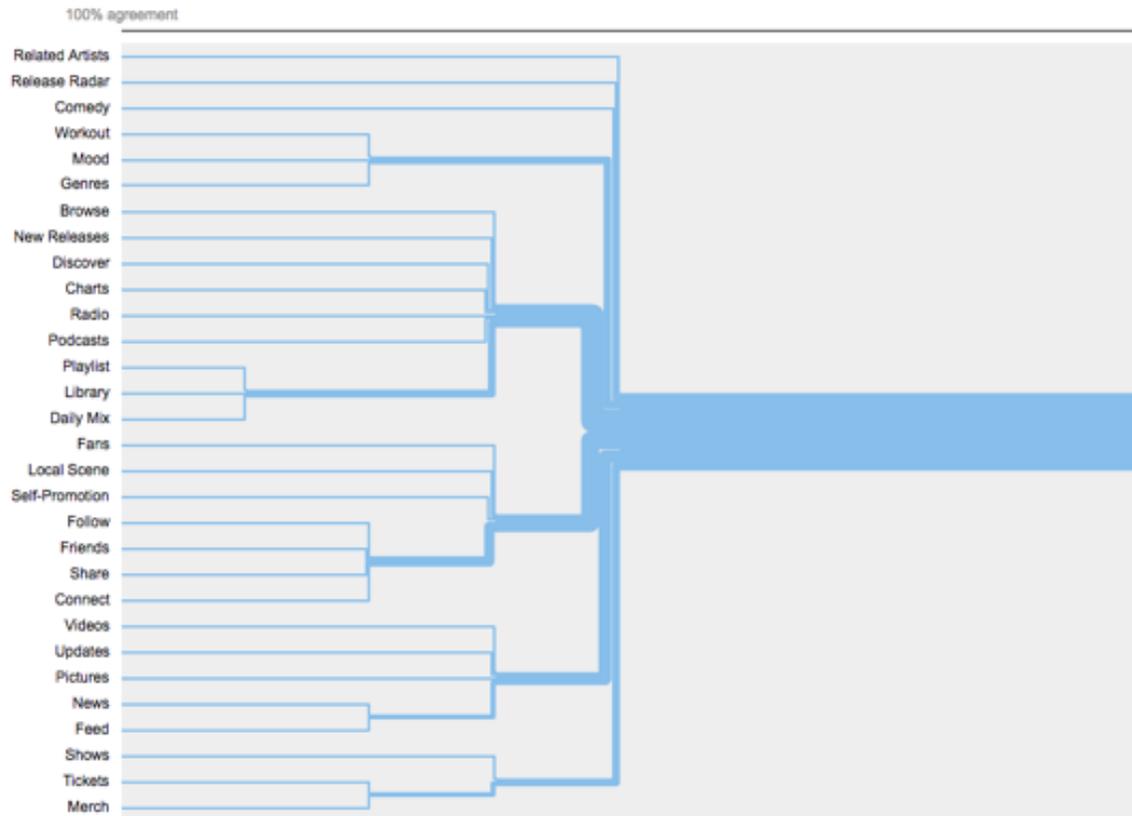


Overall, the results from the survey indicate that Playlists should be prioritized as a point of entry in site design and that Discovery Weekly needs a better back-end structure before being tested again as a primary navigation portal on the user interface.

As the other portion of our user research, we did a Card Sort with the objective of finding ways to increase “a system’s findability,” and help design “an overall structure for your information” that is user-generated (Spencer, 2004). Card sorting can also provide “suggestions for navigation, menus, and possible taxonomies” (Spencer, 2004). For the card sort, we used Optimum Card Sort as it generates helpful dendrograms, which are tree diagrams indicating taxonomic, or classification, relationships. The Card Sort dendrogram results showed that of the 10 users surveyed: 78% group together library, daily mix, playlist, 67% group together mood, genre, workout, 67% group together fans and self-promotion, 55% group together friends, follow, share, 55% group together podcasts and comedy, 55% group together pictures and videos, 22% group together feed, merch, news, video, pictures, tickets, 22% group together browse, new releases, chars, library, daily mix, playlist, and 0% agreed how to group radio, shows, related artists, local scene, release radar, and updates. These results indicate categories such as radio, shows, related artists, local scene, release radar, and updates are difficult to classify and should not be primary forms of entry or navigation, and lead to an overly complex user interface.

Please see the below dendrogram for a visual look at the classification systems suggested by our surveyed users.

Figure 3



These results show that we can simplify the site design by grouping together multiple entry options into classification groups, as suggested by the above dendrogram. We conducted an open card sort, so that users suggested titles for the cards each grouped together. Users suggested a few very interesting categories to help simplify initial points of entry; our favorite of these suggestions include: “What You Like” (Library, Playlist, Daily Mix,) “What’s Happening” (Charts, Feed, New Releases, News, Release Radar, Updates,) “Looking for New Stuff” (Browse, Related Artists, Discover, Local Scene, Podcasts, Radio), and “Selling What You Do” (Fans, Merch, Self-Promotion, Shows, Tickets), “Connections” (Friends, Follow, Fans, Connect, Related Artists, Local Scene, Share). These classification suggestions will help inform our site design and recommendations.

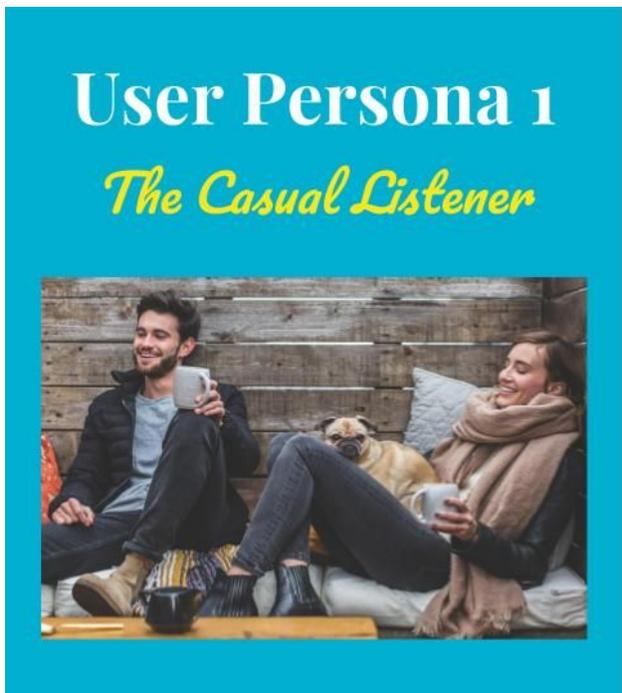
The qualitative information regarding user behaviors and expectations collected from these studies will be used to advise improvements to metadata creation, algorithm creation, and user interface. First, our results indicate that users do not utilize all the features presented as points of entry on the home page, so the log-in interface can be greatly simplified. In addition, our research suggests changes will allow for an improved experience for all users by helping them take full advantage of Spotify’s networking capabilities.

By guiding users to be more connected to each other, while also being more connected to Spotify's extensive catalog, the sense of community will foster greater engagement with Spotify.

## USER PERSONAS

We created user personas based upon the body of literature on Spotify user research, and our own user research. The goal of the user personas is to see how Spotify can grow user base through IA that meets the needs of these three types of users. The three user personas: the casual listener, the music superfan, and the self-producing artist represent three crucial components of the user base for Spotify as the future of music. Please see Figure 4.1, 4.2, and 4.3 below.

**Figure 4.1**

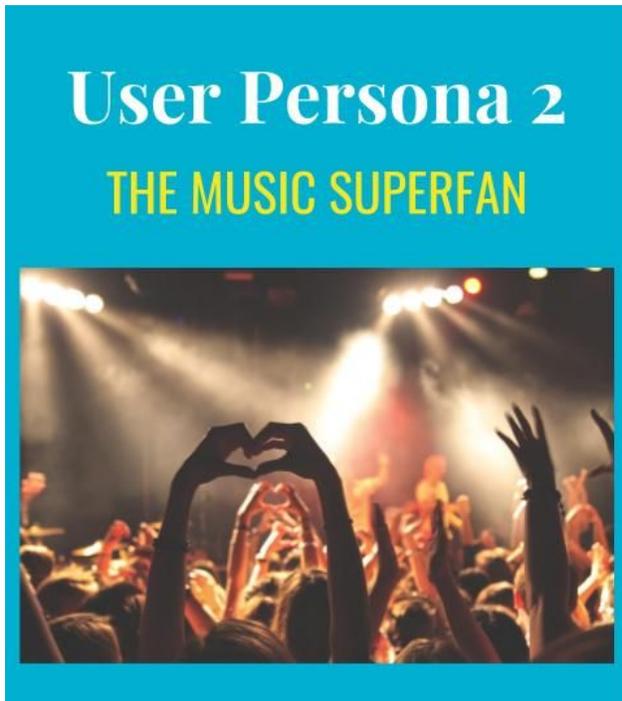


The image shows a man and a woman sitting on a wooden bench, smiling and holding coffee cups. A small dog is sitting between them. The background is a rustic wooden wall. The text 'User Persona 1' is written in white, and 'The Casual Listener' is written in yellow cursive below it.

- Personalized mood-based playlists.
- Integrated social media connections.
- Following taste makers.
- Life-style playlists.

---

Figure 4.2



Music news; up-to-date videos; receive updates when new tour dates and videos post.

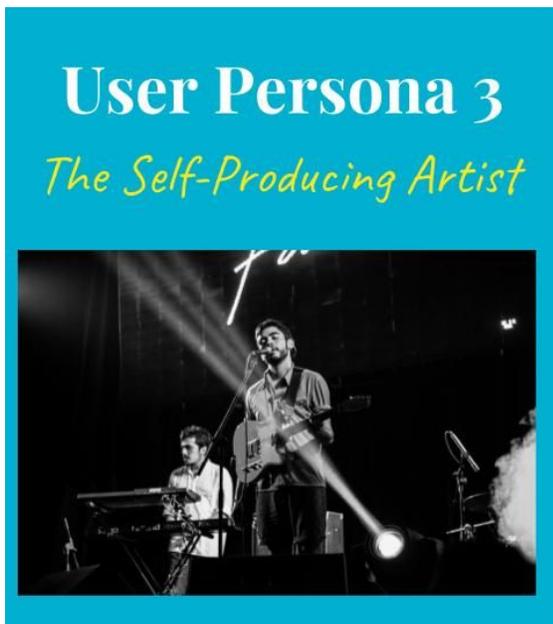
Access to special merch, limited edition releases, advanced tickets.

Advanced music discovery tools.

DJing / sharing playlists.

---

Figure 4.3



Notifications of listens; ability to connect with listeners.

Info on maximizing exposure, self-publishing, copyright, and promotion.

Ability to export stats.

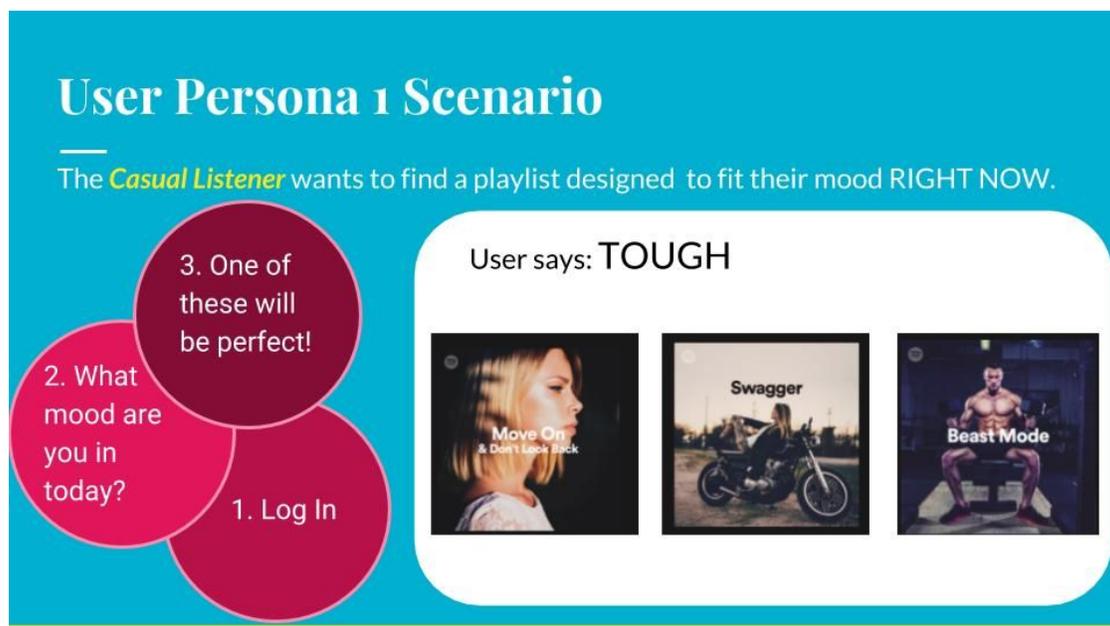
Streamlined ability to share show dates, merch, promotional content.

---

## USER SCENARIOS

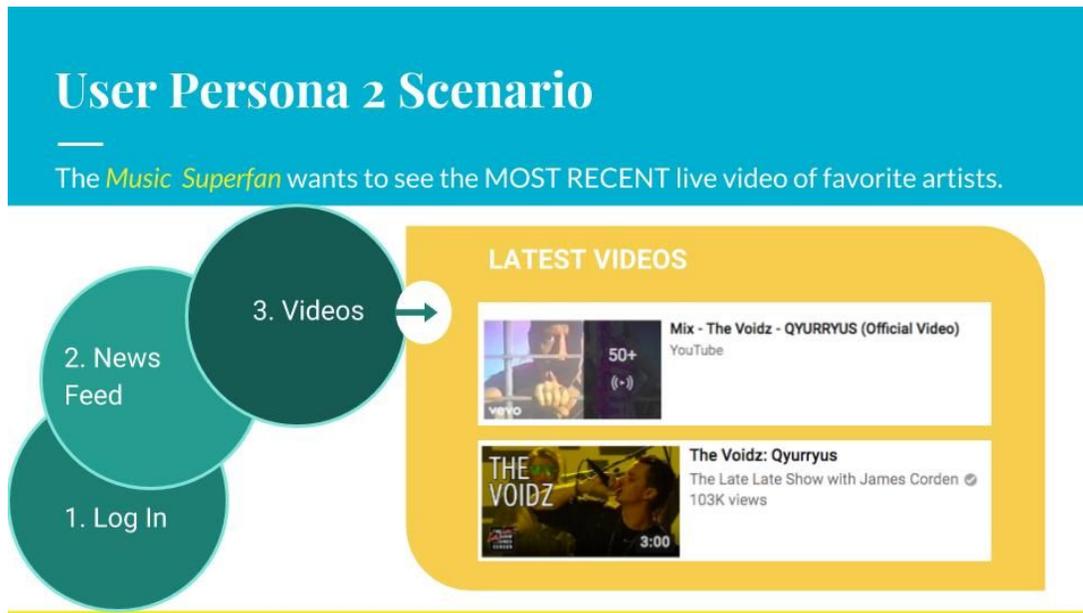
The **Casual Listener** wants to find a playlist designed to fit the mood right now. So, when the casual user logs in, the screen will hover on a prompt screen that asks “What mood are you in today;” the user can then utilize voice automation to say a mood, or type a mood. This will then generate a new screen suggesting “one of these will be perfect!” with 3 selections and a small box in the corner that says “not quite right” which will generate more options including “not in the mood to be in a mood.” The user is then able to deactivate this feature, a review of international research, indicates mood based listening is the primary approach taken by casual listeners. See the three step process illustrated below in Figure 5.

Figure 5



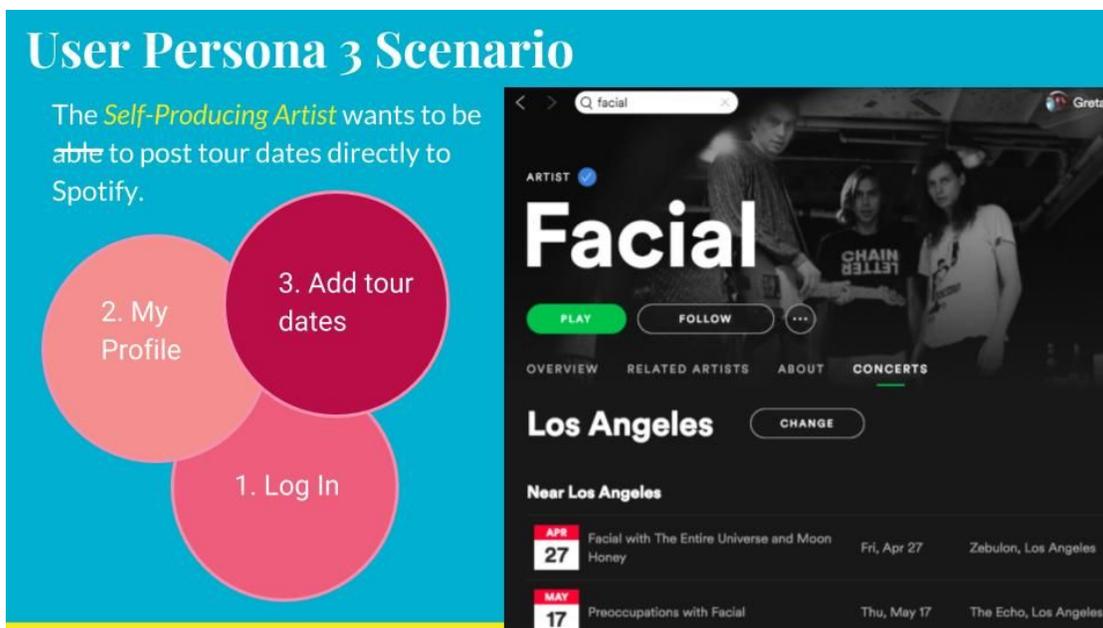
The **Music Superfan** wants to see the most recent live video of their favorite artists. This user will log in, navigate to news feed, and this will open up a new page where the user will select the category of videos. This will guide the user to a new page featuring latest videos of artists they follow (or might like based on who they follow). The videos will be aggregated from YouTube, Vivo, artist uploads, and any other relevant sources for both live and official music videos. Observe these three steps outlined below in Figure 6.

Figure 6



In the third user scenario, that **Self-Producing Artist** wants to post their tour dates to Spotify. Currently artists have to go to a 3rd party website called TourBox, powered by Songkick to upload tour dates or videos. So this user will Log In to Spotify and go to my profile, then select add tour dates. Then followers are updated of tour dates via the artist, rather than Bands In Town or other tour aggregators. Please see this scenario below in Figure 7.

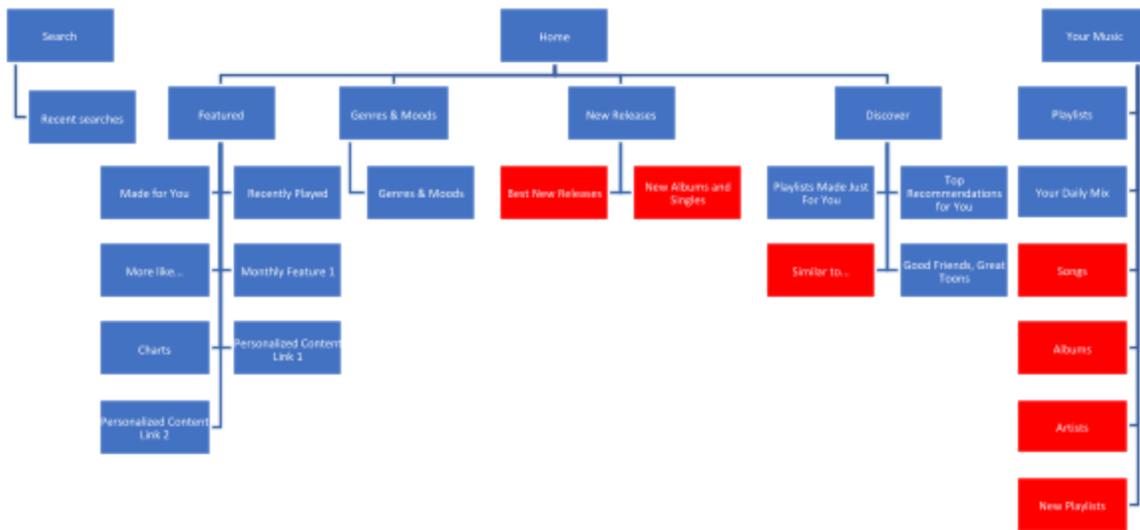
Figure 7



**SITE MODEL**

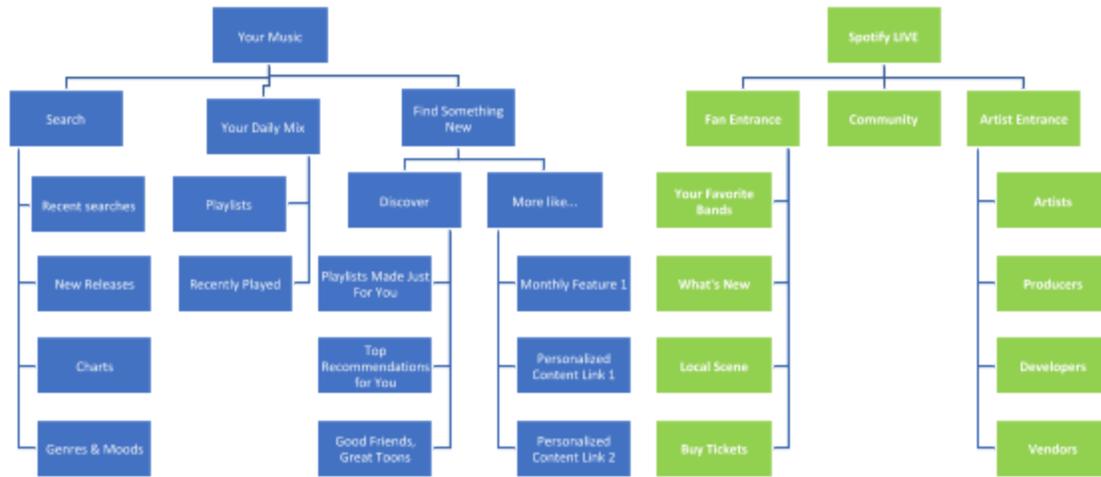
As user research indicates, we need to simplify the number of points of entry from the home page, or user interface, and preference the playlist functionality as a point of entry. Please see Figure 8 of the wireframe below for this site model.

**Figure 8**



Before our user research, we designed a new program around the concept of “Keep it Local” with emphasis on tastemakers, brick and mortar record stores, and college radio stations, but after user research feedback from the card sort that did not preference the “local scene,” we have put forward a design for Spotify “LIVE.” Please see Figure 9 the wireframe of this design below.

Figure 9



**RECOMMENDATIONS**

We recommend that future content be designed with a dual purpose. For listeners, we want to make sure they find the specific content they are looking for while being presented with new options based upon rich, un-biased metadata. For artists, there should be a clear workflow for uploading, inputting metadata, promoting, and social media outreach. A content audit should be conducted to determine the current limits of metadata gathered when artists and labels upload music and whether the content is “owned” by major record labels, self-published, or released by smaller labels. In addition, a series of user surveys should be conducted that inquire if listeners about failed searches for content and whether the artist has specific information needs regarding self-publishing, audio-engineering, and promotion that are not currently met by Spotify. Spotify’s design should make it the future hub for all things music from listening to making it, and the information gathered through ongoing research will enable us to make better recommendations and, thereby, increase revenue for Spotify stakeholders and artists.

We recommend that further research focuses upon user interviews, with the three user types we have identified of causal listeners, music fan, and artists, for specific feedback. We recommend that Spotify continue a process of continuous user research and assessment in order to anticipate the constantly changing needs of the marketplace, artist, and consumer. In addition, continuing to survey those who do not currently use Spotify could help identify ways to grow the user base.

Position Spotify as the ultimate aggregator of music. Move to an authoritative position of bringing together the latest, most enjoyable, insightful and incisive music news, updates, and videos. Set up a feed option

for users to be updated with news, videos, tour dates, and releases by artists a user followers. Offer exclusive artist interviews, releases, videos, merch, and tickets to followers.

Grow user base through broader, varied, and increased integration of social media. Improve artist interface for connecting with fans. Improve mood and lifestyle based playlists; heighten social media integration to engage users with sharing. Utilize Instagram as the ultimate "live" portal; integrate Spotify links for users to show followers "what I'm listening to now," and for users to be able to link directly to an artists "story" on Instagram.

Promote Spotify as the ultimate resource for the self-producing artist by implementing evolved, streamlined tools. Empower artists to easily be able to upload video, merch, shows and tour-dates.

Our user research indicates, that a small percentages of users utilize or enjoy Discover Weekly, so we recommend that improvements to metadata and refinement of the search algorithms would create and improved system of music recommendations by reducing the number of suggestions offered and sections repeated. For the time being, we recommend utilizing Discover Weekly as a optional feature to long-time users to still gather user data, but not deter or disappoint users just trying it out By refining the recommendation process and algorithm before adding Discover Weekly back as a main point of entry. Discovery Weekly has a lot of potential for users, but it should be improved in order to encourage exploring for hard-to-find new music, which would be a great benefit to content creators.

We recommend that Spotify uses our design outline for Spotify "LIVE," is a virtual venue - with a fan entrance & an artist/production entrance. It could feature local entertainers, let fans meet up and discuss local groups, and content creators could have access to promotional tools (merch, ticket sales, promotion, etc.). We recommend growing this concept into a Spotify "FESTIVAL," where fans could subscribe for limited edition Spotify artist performances, access to limited edition merch, and access to virtual fan rooms.

## REFERENCES

- Brown, D. (2010). Eight principles of information architecture. *ASIST Bulletin*. 36 (6). p. 30-34.
- Covert, Abby. "Information Architecture Heuristics." *Make the Unclear Clear - Abby the IA*. (2012). [Video file]. Retrieved from [http://abbytheia.com/2012/02/04/ia\\_heuristics/](http://abbytheia.com/2012/02/04/ia_heuristics/).
- Creative Bloq. (2014, August 18). 19 common UX problems and how to fix them. Retrieved from <https://www.creativebloq.com/ux/problems-81412676>
- Crook, B. & Tepper, F. (2015). A brief history of Spotify. *TechCrunch*. Retrieved from <https://techcrunch.com/gallery/a-brief-history-of-spotify/>.
- Share of Spotify users in the U.S. by age in the U.S. 2018. (2018, March). Retrieved from <https://www.statista.com/statistics/475821/spotify-users-age-usa/>
- Hagen, A. N. (2015). The playlist experience: personal playlists in music streaming services. *Popular Music and Society*, 38 (5). 625-645. doi: 10.1080/03007766.2015.1021174.
- Lin, R. (2017, March 19). Spotify UX Analysis and Redesign – Prototype. Retrieved from <https://blog.prototypr.io/spotify-reverse-engineering-8f6a0d9850c8>
- Png, C. (2016, October 02). A UX redesign of Spotify. Retrieved from <https://medium.com/@christabelpng/a-ux-redesign-of-spotify-ca2a305ac973>
- Pressman, A. (2018). Spotify IPO: What you need to know now that the paperwork is public. *Fortune Magazine*. Retrieved from <http://fortune.com/2018/02/28/spotify-ipo-what-you-need-to-know/>.
- Scheeren, O. (2015, September). "Why great architecture should tell a story. [Video file] Retrieved from [https://www.ted.com/talks/ole\\_scheeren\\_why\\_great\\_architecture\\_should\\_tell\\_a\\_story?language=en](https://www.ted.com/talks/ole_scheeren_why_great_architecture_should_tell_a_story?language=en).
- Singleton, M. (2017). Spotify now has 140 million active users. *The Verge*, Retrieved from <https://www.theverge.com/2017/6/15/15807826/spotify-140-million-active-users>.
- Spencer, D. (2004). "Card sorting: a definitive guide." *Boxes and Arrows*. Retrieved from <http://boxesandarrows.com/card-sorting-a-definitive-guide/>.
- Spotify. (n.d.). Retrieved from <http://www.spotify.com>.
- Suskind, A. (2014). 15 years after Napster: How the music service changed the industry. *The Daily*

*Beast*. Retrieved from

<https://www.thedailybeast.com/15-years-after-napster-how-the-music-service-changed-the-industry>.

Tang, M.C. & Yang, M.Y. (2017). Evaluating music discovery tools on Spotify: The role of user preference characteristics. *Journal of Library and Information Studies*. (15) 1. p. 1-16. doi: 10.6182/jlis.2017.15(1).001.