Usability of iTunes and Spotify

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Abstract

In CMSI 370, Interaction Design, we have been studying usability measurements and assessing how well software complies with its guidelines as well as design principles, and theories. Our group decided to test Music Applications. After a short discussion we decided that iTunes and Spotify were the two current titans clashing for user dominance. Through our field testing and analysis we discovered that Spotify better implements design principles and theories, making it more efficient to use and better able to satisfy users than its rival iTunes.

1 Introduction

Music software for years has, for the most part, been dominated by Apple through iTunes. iTunes was always the simplest and easiest to use. There were others such as Windows Media Player and Rhapsody that tried to rival iTunes but none really could. So iTunes reigned supreme. But now a new challenger, Spotify has entered the game. It's popularity has risen mostly through the fact that it does not require users to actually buy songs to be able to listen to them in full. Rather a free subscription gives unlimited access to any song the user desires with ads in between every few songs and paying for a monthly subscription removes the ads. But features mean nothing if the software is not user-friendly.

2 Usability Metrics

2.1 The Field Test

Our team decided to perform fields test to measure the Usability Metrics in Spotify and iTunes. Before each user performed the test, their level of experience with the software was recorded. Ideally we would have liked to be able to test *Learnability* but our subject pool on the iTunes side were all familiar with iTunes

which gave us no grounds for comparision with test subjects who had never used Spotify before. So instead, we will evaluate iTunes and Spotify for *Efficiency*, *Errors*, and *Satisfaction*.

2.2 The Users

Before diving into the field test, some background information on the users is necessary to be able to better understand and interpret the data.

Timestamp	User	How proficient is the user in using computers?	What platform is the user testing?	Has the user ever used the platform?	How long has the user been using the platform?	How experienced does the user say they are at using the platform?
9/22/2014 20:28:52	1	10	iTunes	Yes	10 years	8
9/22/2014 23:48:57	2	10	iTunes	Yes	7 years	8
9/22/2014 23:53:14	3	7	iTunes	Yes	8 years	9
9/23/2014 0:16:41	4	7	iTunes	Yes	8-9 years	8
9/23/2014 1:19:21	5	6	iTunes	Yes	5 years	7
9/23/2014 12:47:06	6	7	iTunes	Yes	8 years	9
9/23/2014 18:03:07	7	7	iTunes	Yes	4 years	9
9/23/2014 18:32:36	8	5	iTunes	Yes	8 years	7

Figure 1: iTunes User Background

Timestamp	User	How proficient is the user in using computers?	What platform is the user testing?	Has the user ever used the platform?	How long has the user been using the platform?	How experienced does the user say they are at using the platform?
9/22/2014 17:13:07	9	7	Spotify	No	n/a	1
9/22/2014 20:35:27	10	10	Spotify	Yes	none	3
9/22/2014 23:57:26	11	10	Spotify	No	0	1
9/23/2014 0:05:00	12	7	Spotify	No	Never	1
9/23/2014 0:23:03	13	7	Spotify	Yes	6 months	7
9/23/2014 1:23:45	14	7	Spotify	Yes	2 months	4
9/23/2014 18:26:08	15	5	Spotify	Yes	18 months	8

Figure 2: Spotify User Background

iTunes users rated their proficiency with computers at an average of 7.375 and Spotify users rated their computer proficiency at 7.5714 so both groups are very similiar with overall computer proficiency. Spotify users had an average experience level of only 3.57 with using Spotify. iTunes users reported an average experience level 8.125 with iTunes, suggesting they are far more familiar with the iTunes software than the Spotify users were with Spotify.

2.3 The Tasks

Each user was asked to perform the following tasks. Users were timed and their satisfaction evaluated on a scale of 1 to 10. Any errors the users made were documented by the proctor of the test.

1. Starting out on the music library of the platform, time how long it takes the user to create a new playlist with the title "Hello World".

2. Starting out on the music library of the platform, record how long it takes for the user to start "Tiesto Radio".

3. Start out on the main music library of the app. Record how long it takes the user to go to the existing playlist and set the playlist to repeat indefinitely.

2.4 The Results

- **Task 1:**

Task 1 (seconds)	How many errors were ma	Describe any errors made	How satisfied was the user with the ease of creating the playlist?	Notes
16	1	Initially right clicked on another playlist to see options to create new playlist but then saw the plus to make playlist	10	
14.84	2	typos spelling "hello world"	9	didn't use cmd N used file menu instead
20	None	The user took about about 7 seconds to find the new playlist button.	8	User decided to use mouse rather than trackpad.
26	None	None	8	User reports that iTunes constantly changes their layout and makes it difficult to know where everything is from version to version.
10.84	0	None	10	easy for user
10.07	0	None	10	used file menu instead of CMD N
18	0	None	9	looked around the screen for a bit, then found the create playlist button on the bottom of the playlist screen
15	None	None.	8	However, the user looked around the screen for about 5 seconds trying to figure out what to do to create a new playlist.

Figure 3: iTunes Results 1

Task 1 (seconds)	How many errors were ma	Describe any errors made	How satisfied was the user with the ease of creating the playlist?	Notes
19	0	None	9	
6	none	None	10	
15.69	2	typos spelling "hello world"	8	typos then took a second to press enter with the playlist
7	None	None	10	User was satisfied because they immediately saw the widget labeled New Playlist.
9.5	1	The user mistyped the title "Hello, World" and so had to fix their mistake.	9	
13.03	0	None	10	user has barely ever used spotify but task is easy
8	1	User mistyped "Hello World"	10	User reports "It was pretty easy."

Figure 4: Spotify Results 1

The average time it took users on iTunes to perform Task 1 was 16.34 seconds while the average time on Spotify was 11.17 seconds. As far as errors go all errors on Spotify were user typos spelling the playlist name "Hello World" which is not even an error involving confusion on how to use Spotify rather user input error. There were few errors in iTunes but they involved trying to find how to create a new playlist. As far as satisfaction goes, for Task 1, iTunes had an average satisfaction rating of 9 and Spotify had a 9.42 satisfaction rating. Users on iTunes often did not see the create playlist button and instead went into the file menu to create a playist while Spotify users saw the widget to create a playlist immediately.

- **Task 2:**

Task 2 (seconds	How satisfied was the user overall in using the system?	How many errors were made?	Describe some of the errors made	How satisfied was the user with the ease of starting "Tiesto" radio?	Notes
9	10	0	none	10	surprised at how easy it was, had never done it before
21.4	8	0	n/a	9	took a few seconds to realized that had to add a new station
121	9	2	User went into iTunes Store. The user looked up the artists Tiesto, and then attempted to click a button on the bottom of the screen which said iTunes radio. This didn't do anything.	5	User went into iTunes help an looked up how to create a new radio station. Then the user was able to quickly make a new radio station.
8	6	None	None	9	None.
24.83	8	2	clicked wishlist button before finding the create radio station button	7	user was confused on creating a new station versus searching for an existing station called tiesto radio
28.28	10	2	went through the file menus on top of screen first spelled Tiesto wrong when searching	9	took awhile to find the radio tab user has never used iTunes Radio before
90	3	0	0	8	n/a
30	8	2	The user was prompted to submit their password for iTunes, and the user mistyped their password twice.	6	The user reports it was annoying to have to submit their password. There was a popup when the user attempted to create a new radio station and they had to dismiss it by clicking on the radio button.

Figure 5: iTunes Results 2

Task 2 (seconds	How satisfied was the user overall in using the system?	How many errors were made?	Describe some of the errors made	How satisfied was the user with the ease of starting "Tiesto" radio?	Notes
14	10	0	0	10	none
15.82	8	0	n/a	8	slight delay when realized had to create a new station
18	10	None	None	10	The user described the process as "Easier than iTunes."
10.5	8	None	None	9	None
18.04	9	0	no errors made	9	user easily figured out how to create a station from the radio
8	10	None	None	9	User reports that they would prefer a button on the artist's profile page that allows the user to make a radio rather than having to to choose the button labelled ... opening more options.

Figure 6: Spotify Results 2

The average time it took users on iTunes to complete Task 2 was 41.56 seconds while Spotify users took an average of 20.62. It should be noted that iTunes had more extreme outliers than Spotify but the experienced iTunes users were still clearly a good deal slower than the newer Spotify users. The average satisfaction of iTunes users was 7.88 while the Spotify users average was a score of 8, still beating iTunes despite the fact that one Spotify user gave it a score of 1. iTunes had 4 user errors made while Spotify only had one user make an error.

- **Task 3:**

Task 3 (seconds)	How many errors were made?	Describe some of the errors made	How satisfied was the user with the ease of going to a playlist and making it loop indefinitely?	Notes
82	2	First clicked the shuffle icon thinking it was the same function Then clicked the gear icon at the bottom to see the options but none were what he was looking for	9	At first was confused but then after finding the icon, decided it was easy
26.13	2	hit the shuffle button instead of the repeat button twice	8	was confused between repeat and shuffle symbols
7	None	None	10	User at first moused over the shuffle icon, then quickly changed their mind and moused over the repeat button.
63	1	The user accidentally set a single song on repeat rather than the whole list.	9	Now that they know how, the user is very satisfied. The user decided to go to iTunes help in order to solve the problem. iTunes did not give him a walkthrough, but rather created a pop up menu so he could activate the setting. Side Note: User says that they like iTunes but they have had to learn how to use every new version.
12.09	0	n/a	10	user easily found the repeat button and set the playist to repeat
9.97	0	n/a	10	easy for user slight delay when realized need to play the playlist before setting the repeat
61	1	1. clicked on wrong navigation button--instead of playlists tab, she clicked on dropdown menu"	9	
7	1	The user moved their mouse towards the shuffle icon, but then quickly adjusted and went to the repeat symbol.	10	None

Figure 7: iTunes Results 3

Task 3 (seconds)	How many errors were made?	Describe some of the errors made	How satisfied was the user with the ease of going to a playlist and making it loop indefinitely?	Notes
7	0	0	10	
12.92	0	n/a	8	slight delay trying to find repeat button to click
7	None	None	10	User said it wasn't too hard, but that they did have to find the button.
5	None	None	10	Side Note: "I don't mind that they have ads, they just have the worst ads."
11.52	0	n/a	10	user easily figured out how to set playlist to repeat found button quickly
20	2	User did not start playlist so they were unable to activate the repeat button.	7	Took a while to find it. User reports that they would prefer if button was easier to find, if it was "in their face."

Figure 8: Spotify Results 3

On average it took iTunes users 33.52 seconds to complete Task 3. This is suprisingly high considering their experience. Spotify users took on average 20.06 seconds. Both groups had an outlier of over 60 seconds. iTunes users made 7 errors opposed to Spotify's 4 errors. A common error in iTunes was users going for the shuffle button instead of mousing to the repeat button. As far as satisfaction goes iTunes users rated their satisfaction at a average of 9.375 while Spotify users rated at an average of 8.71, a bit lower than iTunes.

2.5 Overall Efficiency

There is no doubt that Spotify is the winner of the efficiency battle. Spotify demolished iTunes in average time elasped to complete each task despite the fact that users had far less experience with using Spotify.

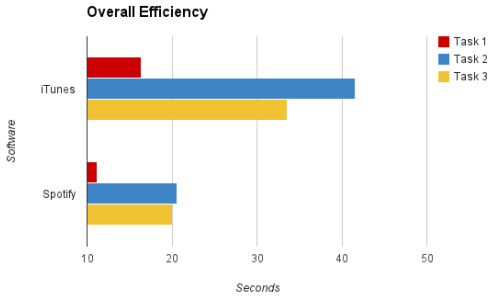

Figure 9: Overall Efficiency

2.6 Overall Errors

With regards to errors, iTunes totaled 18 errors. Spotify only had 10 user errors. Most errors involved either a typo or the user being unable to locate where the button to perform a certain function was located. Users of Spotify experienced significantly less errors.

2.7 Overall Satisfaction

At the end of the day, after the users had finished the tasks and the usability tests, they ranked their overall satisfaction. iTunes had an average satisfaction was a 7.75 while Spotify's average satisfaction was a 9. Despite not being nearly

as experienced as the iTunes users, the Spotify users were far more satisfied than the users of iTunes.

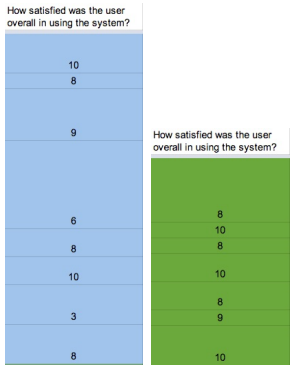

Figure 10: iTunes (Blue) vs Spotify (Green) Satisfaction

3 Heuristic Evaluation

The data definitely speaks for itself. Spotify clearly dominated iTunes in every aspect. Spotify users were more efficient, more satisfied, made less errors despite less experience. Both Spotify and iTunes have done good things with their software but Spotify has cleary implemented a few sublte design principles and theories better than iTunes. Since efficiency leads very often to fewer errors and higher satisfaction, we will analyze the efficiency side of our field tests to see what Spotify did to make their software more efficient than iTunes.

3.1 Head to Head: Creating a New Playlist

In Spoitfy, the "New Playlist" button is clearly visible in the left side menu. But what mades Spotify really excell is its implementation of Fitts's Law. Upon clicking the "New Playlist" button, the new playlist appears right below it, ready to be named thus minimizing the distance a user must travel in order to name the playlist.

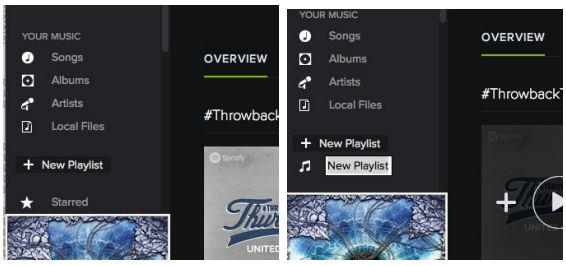

Figure 11: Creating a New Playlist in Spotify

On the other hand iTunes fails to implement this as efficiently. In iTunes, everything depends on which menu on the top of the window the user has selected. If anything other than "Playlists" is selected in the top menu, then

the only way to create a new playlist by going into the file menu the the very top of the screen. If the "Playlists" is selected then the user can mouse down to the bottom-left of the window and then click on the small plus sign there. They then must select what kind of playlist they wish to create.

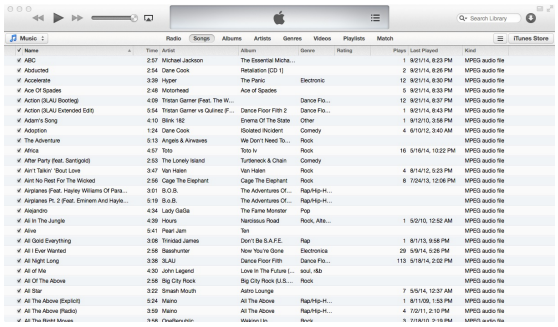

Figure 12: iTunes from Songs

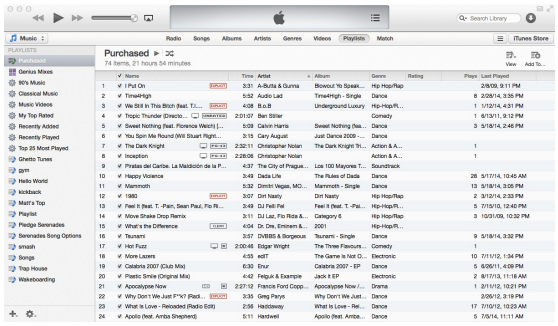

Figure 13: iTunes from Playlists

Upon creating a playlist, the iTunes user must focus their attention to the other side of the window, on the top-right. This is were a side window on the right pops up and allows them to name their new playlist.

Figure 14: Creating a New Playlist in iTunes

iTunes deserves some credit for at least working on a diagonal line across the

window but the amount of distance traveled and the number of steps it takes to make a playlist on iTunes is the reason iTunes lost to Spotify in the efficiency battle.

3.2 Head to Head: Using the Radio Feature

The Radio feature is a new one in most music applications and as the data shows Spotify users were once again far more efficient completing this task than iTunes users. In this case, the issue came down to modality and more specifically, dialogue layout. Both iTunes and Spotify utilize proper top-left to bottom-right sequencing but Spotify has utilized it in a far more efficient way. In iTunes, to get to Radio, the user must click on the Radio button in the top menu. Once in Radio, the user must get all the way down to the bottom of the window in order to get to the "Create A Station" button.

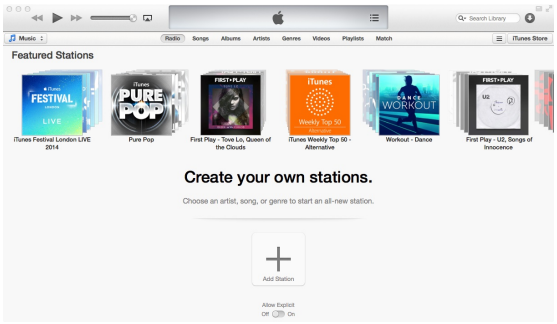

Figure 15: Creating an iTunes Radio Station

Upon entering opening Radio in iTunes, the user's attention is on the Radio button in the top menu that they just clicked. They begin to move down and the first things their eyes catch is the Featured Stations and the line of colorful albums laid out horizontally across the window. The user naturally will move from left to right then down looking for the create a station button. iTunes clearly wants to get the user focused on the featured stations first before creating their own station.

On the other hand, Spotify's left to right dialogue layout is more focused on the user having their unique experience. Spotify radio can be accessed from the top of its left-hand menu.

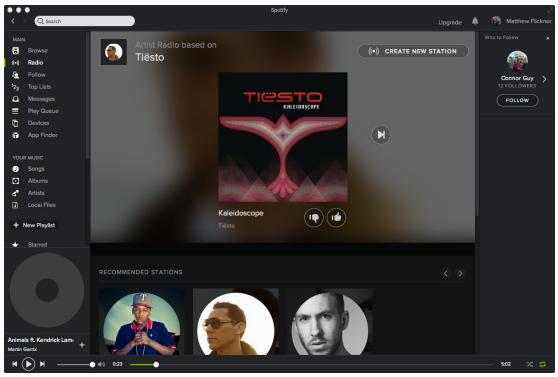

Figure 16: Spoitfy Radio

First thing in the top left is a recommendation based off the user's existing stations. From their moving right is the "Create New Station" button. Then below that is one album picture. The user then actually must scroll down to get to all other aspects of Spotify Radio. This minimizes user distraction for creating a station. An added aspect of Spotify's efficiency is more solid implementation of Fitt's Law. When the "Create New Station" button is clicked, the menu for a new station appears literally right on top of the button and thus on top of where the mouse is and the user's attention is.

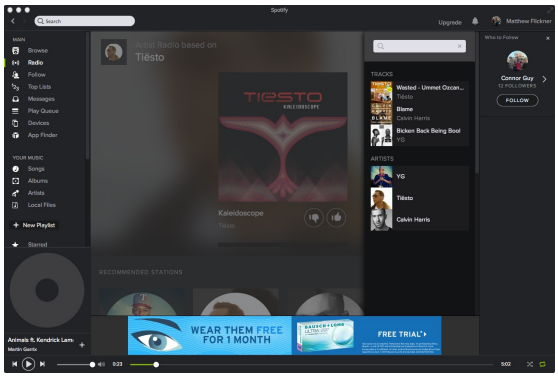

Figure 17: Creating a New Spoitfy Radio Station

In addition Spotify blurs the background, which prevents errors by direct manipulation. Spotify immediately drawing even more focus and clarity to the creating of the radio station. In constrast, the iTunes menu appears slightly above and to the right of the button. A slight difference in positioning but a huge one in maximizing user efficiency.

3.3 Head to Head: Repeating a Playlist

Repeating a playlist was by far the most interesting of the results. Despite being more efficient, this is the one task that iTunes users were more satisfied despite being slower at completetion. In additions iTunes users were more satisfied even though they made more errors. The errors in iTunes stemmed from one thing

more than anything. iTunes users became confused with the larger shuffle icon next to the playlist name and the actually repeat button in the bottom-left of the miniplayer at the top of the window.

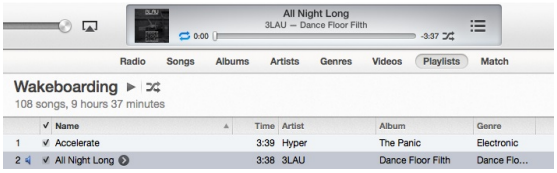

Figure 18: iTunes Repeat Button (blue)

However once users realized their error and found the actual repeat button they were more frustrated with themselves for not realizing something so simply than frustrated with iTunes. However the principle of the matter is that the larger shuffle icon drew their attention first.

With Spotify, the icons are the same size but they are located in the very bottom-right of the window.

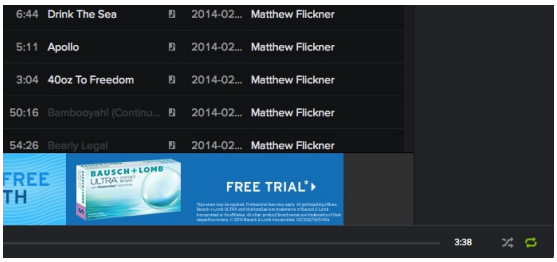

Figure 19: Spotify Repeat Button (Bottom Right)

Spotify users reported that they had to really look for it and wished it was more in their face. This has a lot to do with dialogue layout, with something in the bottom-right of the window being naturally the last thing a user scans for.

4 Conclusion

iTunes clearly lost this battle to Spotify for a few very good reasons. Spotify implemented Fitt's law far more effectively than iTunes did with it by minimizing distance users had to travel across the screen. In addition, Spotify focused on dialogue layout to make sure it was clear and fast for the user to complete their tasks. This allowed Spotify users who had little experience to outperform the iTunes users. iTunes on the other hand did not necessarily serve these principles and theories as well. In addition, the more experienced iTunes users mentioned several times that iTunes changes their layout via updates far too frequently, making it harder for the user to keep track of what is where. This created more errors for the iTunes users. But what really matters in the end is user satisfaction and Spotify users were by far the more satisfied of the two test groups.