
iTunes User Testing Report



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EXECUTIVE SUMMARY

This report provides a detailed analysis of the results of user tests used to evaluate iTunes, Apple's digital music application. The test was written to investigate the usability of core iTunes functionality and to explore the real-life impact of possible design flaws suggested by the previously conducted user survey and heuristic evaluation. These core areas of functionality consist of importing music from a CD, adding music to play lists, and burning a play list to a CD.

For this project, five people were tested, ranging from novice to advanced user. The test consisted of four tasks. They were read out loud by the test facilitator and following each task a series of relevant questions were asked in order to better understand why the users chose the methods they did and how they understood the interface. Each task also included sub-tasks which attempted to probe advanced features or areas that the survey or heuristic evaluation suggested might be problematic for users. Once the test was completed, the user was asked some debrief questions regarding their experiences with the test as a whole.

Eight problem areas were defined from the analysis of the results of the user tests. They are prioritized by their level severity and ease at which a problem can be fixed. The most severe and easiest to fix are listed first:

1. Burn Disc interaction does not flow smoothly.
2. The use of highlighting is inconsistent within iTunes and in comparison to external operating system standards.
3. Critical buttons blend in with interface and symbols do not accurately convey meaning.
4. Feedback for numerous iTunes functions either does not exist or is not cognitively processed by the user.
5. Conditional matching for artist in the Smart Playlist auto fills inconsistently with album metadata.
6. Check boxes in song list interface are not fully utilized by the users.
7. Some clickable areas of the interface do not look clickable - no tool tips or hover text.
8. Advanced features less accessible to novice users.

For each problem, evidence is given to prove its existence followed by a high-level recommendation for solving the problem.

By investigating these problems more in depth, iTunes designers will be able to further improve an already easy to use and aesthetically pleasing application.

INTRODUCTION

This report describes the user testing process and resulting findings for Apple's iTunes digital music application. It begins with summary information describing the product and its target population and then continues with an overview of the user testing technique used, the specific goals of this testing, and the nature of the tasks and participants involved. Following is a summary of the problems identified by the user testing and a more detailed exploration of the findings related to these specific problems prioritized according to their severity and the relative ease with which they could be fixed. The appendix to this report includes specific testing materials, such as the script, questionnaire, and debrief used in the actual testing.

PRODUCT INFORMATION

Product Description

iTunes is a digital music application that allows both Windows and Mac users to create and manage their digital music library on their computer. Users can rip songs from their favorite CDs to store as MP3s in the music library; they can make their own mixes by creating customized play lists, including smart play lists; and they can burn play lists to CD. While listening to music, users can watch visualizations either in the iTunes window or as a full screen graphic. iTunes also interfaces easily with iPod, Apple's popular MP3 player, for simple transfer of music between the computer and the mobile device. A unique feature of iTunes is the iTunes® Music Store where users can search for and buy music for 99 cents a song without having to subscribe to anything. iTunes can be downloaded free from the Apple website - www.apple.com.

Target Population

iTunes is targeted to people using computers running MacOS X, Windows 2000 or Windows XP. In addition, anyone who listens to, organizes, or downloads digital music is part of the target population. There are no specific demographic targets identified.



Figure 1: iTunes Interface

USER TESTING TECHNIQUE

General Methodology

User testing is a valuable user research method that usually follows the completion of other analysis techniques such as heuristic evaluation, cognitive walk-through, and vocabulary or keystroke analysis. Software engineers and other information professionals can execute the latter analysis techniques without the direct involvement of users. In general, they provide clues about areas in a system or application where users will experience problems. User testing is used to investigate these areas and determine if they cause real usability problems for users. It is the best way to determine how people actually use a system or application and whether they understand the design in the way it is intended (Kuniavsky, 2003 p. 259). In user testing, a relatively small number of participants similar in demographics to the target population are observed performing a series of tasks using the system or application. User testing can be effective in determining if a specific design is clear to users, uncovering design flaws and suggesting improvements, or assessing the overall quality of the system or application before its release to the public (Olson, lecture notes, February 17, 2005).

Specific Project Goals

The user test described in this report was created to investigate the usability of core iTunes functionality and to explore the real-life impact of possible design flaws suggested by the previously conducted user survey and heuristic evaluation. The core areas of functionality investigated were importing music from CD, working with play lists, and burning new audio CDs. Each task was read aloud to the participants, who were encouraged to explain their decision-making processes aloud during the test. After each task, a series of relevant questions were asked in order to better understand why the users chose the methods they did and how they understood the interface. These questions were especially valuable in iTunes because there are many different ways to accomplish each task, and we were curious about some of these methods in specific.

Tasks

Each individual user test consisted of 4 tasks. These tasks were designed to focus on the core functionality available within the iTunes application – importing music from CD, working with playlists, and burning new audio CDs. Each task also included sub-tasks, which attempted to probe advanced features, or areas that the survey or heuristic evaluation suggested might be problematic for users. For instance, some specific sub-tasks required users to change the encoding format of music being imported, stop and restart the import process, and reduce a playlist to a specific length of time. In addition, follow-up questions were asked at the end of each task to probe the participants' awareness and use of various iTunes features, such as Browse, Search, and Smart Playlists.

Participants

Over the course of one week, five people participated in user tests. Of the five, two were novice iTunes users with 10 or fewer songs in their iTunes library and two were advanced iTunes users with 1,000 – 10,000 songs in their iTunes library. The final user was an intermediate iTunes user also with 1,000 – 10,000 songs in their iTunes library. Four of the five users were graduate students and all ranged in age from 22 to 35. Four of the five participants also used Windows as their primary computing platform. Interestingly, the five participants ranged widely in the length of time they had been using iTunes – from novice users with only zero to five months of experience to an advanced user with more than twenty four months of experience.

Prioritization of Problems

In order to usefully group the findings resulting from the user testing process, we summarized user behavior and comments for each task together. Based on both the users' actual behavior and the comments made, we created approximately 9 areas that we considered usability problems. To further understand the impact of each of these problems, we rated both their severity in terms of usability principles and the ease with which the problem might be solved. Problem severity ratings were impacted by the frequency with which the problem occurred, the ease with which the user could overcome the problem, and the persistence of the problem—whether it could be solved once or would bother the user every time a task was attempted. This resulted in a dual rating for each problem found, which was used to prioritize the problem areas for presentation in this report. The tables below define the severity and ease of fix rating systems applied. Severity ranks are based on those defined by Jakob Nielsen (*Severity ratings for usability problems*).

Severity Rankings	
Rating	Definition
0	Superficial usability problem: may be easily overcome by user or occurs extremely infrequently. Does not need to be fixed for next release unless extra time is available.
1	Minor usability problem: may occur more frequently or be more difficult to overcome. Fixing this should be given low priority for next release.
2	Major usability problem: occurs frequently and persistently or users may be unable or unaware of how to fix the problem. Important to fix, so should be given high priority.
3	Usability catastrophe: Seriously impairs use of product and cannot be overcome by users. Imperative to fix this before product can be released.

Ease of Fixing Rankings	
Rating	Definition
0	Problem would be extremely easy to fix. Could be completed by one team member before next release.
1	Problem would be easy to fix. Involves specific interface elements and solution is clear.
2	Problem would require some effort to fix. Involves multiple aspects of the interface or would require team of developers to implement changes before next release or solution is not clear.
3	Usability problem would be difficult to fix. Requires concentrated development effort to finish before next release, involves multiple aspects of interface. Solution may not be immediately obvious or may be disputed.

SUMMARY OF FINDINGS

After completing the user testing, nine problem areas within iTunes core functionality were identified. These problems have been prioritized below, with the most severe and easiest to fix problems listed first. The results of the tests show that iTunes has usability issues related to feedback. While feedback itself is a specifically listed problem, it also factors into some of the other problems noted. These feedback problems deal with a lack of tool tips or instructional dialogue boxes as well as a lack of notification that a function/task completed. iTunes has many hidden functions that users may not find until they have been using the application for quite some time. As a result, novice users can get frustrated with the interface, while more advanced users may experience pleasure at finding new functionality. The interface itself also has design issues. Some buttons blend into the interface and do not look active while other clickable areas do not appear to be clickable. They are either too subtle, have no tool tips, or simply do not look clickable.

#	Problem	Severity Ranking	Ease of Fix Ranking
1	Burn Disc interaction does not flow smoothly	2	2
2	The use of highlighting is inconsistent within iTunes and in comparison to external operating system standards	2	2
3	Critical buttons blend in with interface and symbols do not accurately convey meaning	2	3
4	Feedback for numerous iTunes functions either does not exist or is not cognitively processed by the user	1	1
5	Conditional matching for artist in the Smart Playlist auto fills inconsistently with album metadata	1	1
6	Check boxes in song list interface are not fully utilized by users.	1	2
7	Some clickable areas of the interface do not look clickable - no tool tips or hover text	1	2
8	Advanced features less accessible to novice users	0	2

SPECIFIC PROBLEM AREAS

1. Burn Disc interaction does not flow smoothly.

#	Problem	Severity Ranking	Ease of Fix Ranking
1	Burn Disc interaction does not flow smoothly	2	2

Problem:

When burning a CD with iTunes, a user is required to click the “Burn Disc” icon twice: once to start the process and then a second time to actually confirm the process and start the burn. However, there is a significant pause or lag time between the two clicks that can be confusing. Users are sometimes unsure if they have successfully started the burn disc process or if something went wrong. If the user does not click the ‘Burn Disc’ icon again quickly enough, the burn process times out. The major problem is that the burn process times out before users have a chance to understand what action is expected to continue burning their CD.

Evidence:

3 out of 5 users timed out during their burn process at least once, some more than once. This always happened after clicking the “burn disc” icon once. It did not happen when users used other ways to begin burning a CD.

Recommendations:

A simple recommendation for this problem is to lengthen the time until the burn process times out. This would provide the users enough time to notice what is going on before their burn process is cancelled. Another option is to have a much more obvious message explaining what is happening, maybe with a countdown until timeout. That way, there is less or no confusion when the burn stops.

2. The use of highlighting is inconsistent within iTunes and in comparison to external operating system standards.

#	Problem	Severity Ranking	Ease of Fix Ranking
2	The use of highlighting is inconsistent within iTunes and in comparison to external operating system standards	2	2

Problem:

In common operating systems, when the users highlight something and then executes a specific action, that action is usually carried out upon whatever has been highlighted. Many users assumed this standard would be maintained within iTunes, but they discovered that it is not true all of the time. A user can highlight specific songs to delete, but cannot highlight specific songs to import from a CD. Attempting to do so results in iTunes importing the entire CD. In addition, a user cannot highlight specific songs to burn because iTunes will burn the entire play list. This inconsistent highlighting functionality is contrary to common operating system standards.

Evidence:

3 out of the 5 users tried to highlight when performing the tasks related to importing and burning. In the import, the users did not know that the highlight did not work until the incorrect songs began to be imported. In the burn functionality, error messages kept coming up because the play list was too long to burn. This clued the users in that highlighting as a means of object selection for a task did not work. One user commented that she believed that the time indicator at the bottom of the screen was for what he/she had highlighted, and not the length of the entire playlist, which is its actual function.

Recommendations:

Highlighting objects as a means for task/action selection needs to either be enabled in all areas of iTunes or not allowed at all. It is very important to be consistent in such an application with operating system functionality in order to eliminate user confusion. Also, enhanced feedback should be provided when action taken on highlighted selections is not successful. A dialog box suggesting the correct way to import or burn selected songs would help to eliminate user confusion and frustration.

3. Critical buttons blend in with interface and symbols do not accurately convey meaning.

#	Problem	Severity Ranking	Ease of Fix Ranking
3	Critical buttons blend in with interface and symbols do not accurately convey meaning	2	3

Problem:

One aspect of iTunes that users commented on favorably, both in the survey and the user testing, was its very simple and subtle interface. Users like it because it is not confusing or cluttered, yet still very useful. However, user tests displayed a couple of interface design flaws related to buttons that could be extremely detrimental to iTunes functionality. Several critical buttons blend

into the interface to the point that users either did not know they were there or figured the functionality represented by the button was currently unavailable.

The other design flaw is that some of the buttons do not accurately convey their purpose. Their icon design does not represent their functionality.

Evidence:

One very obvious place where the buttons blend into the interface to the point of being overlooked is with the “Burn Disc icon.”



As you can see, the button does not look like a button because it is completely the same color as the interface background. While users saw it, they believed that it was not available for use due to it being the same gray color as the rest of the window, similar to grayed out options in menus. The gray usually means that the option's/object's functionality is not available. One user, who burned a CD by an alternate method, said “I didn't even notice the icon until it started spinning.” This inconsistency caused severe usability problems.

Another area where users frequently did not notice an element was the search bar. Often when performing a task, the display area in the center was what drew users attention, and they just glossed right over the search bar. One user, when asked if he had considered searching for his music instead of browse, said “oh, I didn't even see that there was a search bar there. There's so much other stuff going on.” A reason for this is the labeling for this area does not stand out much. The same can be said for the words “Burn Disc” under its icon. One user said that without the “Burn Disc” label, he would not have known that it was even a button because it blended in so much.

The buttons that have confusing or vague icons are mostly located at the bottom of the interface. Here are of the buttons in question.



For example, the first button with the “+” is for adding a new play list. Once a user learns this, the plus sign makes sense, but currently it is very out of context so a user would not know what it is for without mousing over it and reading its tool tip. Another example is the button with the icon that looks like a flower. This is to turn on the visualizations. However, there is nothing in this symbol that suggests visualizations. Finally, these two buttons look very similar, yet are for two very different functionalities. They both look like eject buttons, which the one on the right is. However, the one on the left is to display album art, which is not suggested by that icon.

Recommendations:

Many buttons need to be redesigned in order to convey their functionality and purpose and inform users of their availability. Conducting additional user testing specifically on buttons will help to inform this redesign. Going through the interface, asking users what each button means without the use of tool tips or hover text, and then asking them to decide if each icon can be used for a specific function can help to identify the buttons in need of redesign. The ones that are wrongly named should have an icon redesign, and the icons that blend in should have more highlighting or shadow, or a new shape all together. In addition, labels below existing buttons should be written in a color other than gray, such as black.

4. Feedback for numerous iTunes functions either does not exist or is not cognitively processed by the user.

#	Problem	Severity Ranking	Ease of Fix Ranking
4	Feedback for numerous iTunes functions either does not exist or is not cognitively processed by the user	1	1

Problem:

Feedback provided by iTunes is generally extremely subtle and often missed by the user. In other situations, no feedback is provided. The main areas of iTunes where this problem occurs are during importing music, adding songs to play lists, and burning discs. When importing, it is difficult to tell which songs are importing. There is an indicator, but it very small and easily overlooked. While adding songs to play lists, there is no feedback at all to tell the user that the songs were successfully transferred. The only way to know for sure is to actually open up the new play list and make sure the new songs are inside. And finally, the feedback problem with the burn disc functionality has to do with when the burn is completed. The feedback for this area is subtle and can go unnoticed by the user.

Evidence:

During the test, users made several comments about iTunes' lack of feedback. One mentioned that he/she did not know which songs were importing, and did not see or understand the small indicators that show up next to the song currently imported and the songs already imported. He/she said the indicators "were not intuitive." This user also did not know when he/she had managed to stop the import. He/she clicked on the import button multiple times, then kept clicking on it as if waiting for something to happen.

Several users commented on the lack of feedback when adding songs to a play list. One even said that he/she opened the new play list to check and make sure that the songs arrived because there was no other way to know for sure.

And finally, with the burn process some users stared at the screen after the burn completed as if expecting something to confirm that the CD was actually done. Other users commented that they knew the burn was completed simply because Windows lets users know when it detects a new CD. But none of this feedback actually came from iTunes.

Recommendations:

A solution for this problem would be to go through all areas of functionality in iTunes looking specifically at feedback messages. This could be done by designers or by user testing focusing only on feedback. The areas that come up lacking should be redesigned with less subtle and more obvious feedback. Dialog boxes could appear, rather than just having messages appear in iTunes's existing display bar. Every time an action is performed, it must have some sort of feedback to let the user know if that action was successful, even if it seems obvious.

5. Conditional matching for artist in the Smart Playlist auto fills inconsistently with album metadata.

#	Problem	Severity Ranking	Ease of Fix Ranking
5	Conditional matching for artist in the Smart Playlist auto fills inconsistently with album metadata	1	1

Problem:

A cardinal rule concerning applications is consistency. When an action is performed, it should be consistent throughout the entire application. However, this is not true in the case of auto fill in certain text boxes based on song metadata. When building a Smart Playlist, a user can identify criteria to generate the play list based on matching an artist, album, genre, rating, etc. iTunes will then build the play list based on these criteria. When typing these criteria, iTunes will often auto fill what the user begins to type based on the metadata being matched. For example, if you are specifying an album, album names matching what you're typing appear in the text box. Unfortunately, an inconsistency with the artist criteria of the Smart Playlist was discovered. It does not always work when the user is selecting songs based on artist. However, the auto fill works correctly with every other criteria area, and sometimes even with the album criterion.

Evidence:

This problem was observed specifically with one user, but it was interesting enough to catch our attention and to play with the Smart Playlist functionality to see if it happened again. One of the tasks dealt with building a Smart Playlist of songs by the artist David Byrne, which was represented in the library as "Byrne, David". As the user typed in "David" the text box auto filled with "David Byrne". When the user saved the playlist they found it empty. No songs matched the criteria of artist equal to "David Byrne," which confused the user. The text box had

auto filled based on the album name “David Byrne” while the user was expecting it to auto fill based on the artist name. In this instance the auto fill was not restricted to metadata for the selected criteria. When retested with other artist names, the problem did not appear. For example, when typing in “Chris” the text box did not auto fill with “Chris Isaak” even though this was an album name. It did correctly auto fill when typing in “Isaak, Chris.”

Recommendations:

This does not appear to be an overall design issue, but rather just a minor bug in the program. Therefore, the only solution is to attempt to fix the bug and have the auto fill correctly restrict entry based on the metadata criteria selected.

6. Check boxes in song list interface are not fully utilized by users.

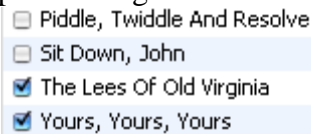
#	Problem	Severity Ranking	Ease of Fix Ranking
6	Check boxes in song list interface are not fully utilized by users.	1	2

Problem:

Functionality of the check boxes in the iTunes song list interface seems to be unclear to users. They are either completely overlooked because they do not stand out or their entire spectrum of functionality is not known. They can be used to select specific songs to be played from a play list or the library, which is the most commonly known action. However, they can also be used to burn CDs by checking only the songs to be burned, which is less familiar. The metaphor used by checking songs to be played does not seem to transfer to burning CDs. Also, they have no hover text and no tool tip.

Evidence:

As mentioned in a previous problem, three out of five users tried to import/burn by highlighting specific songs, which did not work. They did not know that they could simply uncheck the songs they did not want. Only one user out of five used the check boxes at all. The other four users found alternate methods to complete their tasks, even though the check boxes are a quicker method to task completion. Two users mentioned that they knew the check boxes were there, but they only used them to uncheck their Christmas music from their library during the off-season. They never thought about the possibility that the checkboxes could be used in areas of iTunes other than just play lists and the library. When asked, one user mentioned that they simply did not see them. The checkboxes did not stand out enough, and if they are not important enough to be used, they should not be given space throughout the entire interface.



Recommendations:

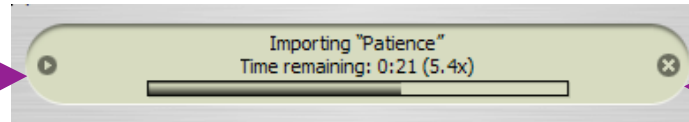
Give the check boxes hover text and/or tool tips in order for users to have a better idea of their complete functionality. Another solution would be to provide feedback when users try to highlight songs to burn them. A dialog box could tell users how to shorten a play list using the check boxes. In addition, the check boxes could be given more distinctive colors so that they were more visually obvious to users. If the check boxes are truly not utilized, they should be removed from the interface.

7. Some clickable areas of the interface do not look clickable – no tool tips or hover text.



#	Problem	Severity Ranking	Ease of Fix Ranking
7	Some clickable areas of the interface do not look clickable - no tool tips or hover text	1	2

Problem:


There are buttons in the interface that do not look like buttons--they simply do not look clickable. In addition, they usually have no tool tips or hover text, which further adds to the confusion. These buttons are usually discovered by accident when a user has been using the application for some time. They are like a surprise. One example of such a button is the small “x” button within the display window.



This button can stop the burn and import process but is easily missed because it does not look like a button and has no tool tip. Another example is the small triangle button in the display, which is used to change display mode. This button is also easily missed and has no tool tip. A final example is the icon to create a Smart Playlist. This icon is not permanently visible in the iTunes interface. It is found by holding down the shift or control button, and the icon for creating

a play list turns into the icon for creating a Smart Playlist.   However, there is no hover text above the play list icon that tells the user about this functionality.

Evidence:

When asked to stop the import during the first task, every user expressed uncertainty at how to do it. All were forced to guess to some degree. Some guessed right and some guessed wrong. The most popular choice was to click the import button again, which works. Only two out of the five found the  button, and both were unsure that this would actually stop the import. The others, when asked about that button had no idea what it did, and did not realize that it was a button. One user said that it only looked like a static part of the display.

For the Smart Playlist button, only one person used it, and only two people knew about it. The rest of the users only knew how to create a Smart Playlist through the file menu. And interestingly, there is a difference in opinion about these hidden functionalities. The more experienced users suggested that they liked stumbling upon the hidden buttons, comparing it to finding an “Easter egg,” an enjoyable process increasing user loyalty. However, the novice users had the opposite opinion. They were more frustrated by the hidden buttons. One person did not understand why such important functionality was not more prominent.

Recommendations:

Create tool tips/hover text where there is none, and improve the tool tips and hover text where it is poorly done or vague. More descriptive hover text shows up when the control button is pushed, however, most people just hover over the icon and get the simple text. They do not know that this enhanced help text exists. Another suggestion would be to get rid of the simple text and only have the enhanced text.

8. Advanced features less accessible to novice users.

#	Problem	Severity Ranking	Ease of Fix Ranking
8	Advanced features less accessible to novice users	0	2

Problem:

iTunes does not make advanced features readily accessible to novice users and survey data shows that novice users use advanced features less. For example, you have to know to look in Preferences to change encoding when importing music. iTunes does not provide the option in a dialog box during import. However, iTunes default values are set to work well for novices, so novices don't need to know about these advanced features in order to use the product successfully.

Evidence:

Only the two advanced users knew where to change the encoding when importing music. The other three users mentioned where they thought it would be, or where they believed it *should* be. Many thought they should be able to right click on the songs to be imported and do it that way. Or that it should be another column in the library/play list display.

Recommendations:

Dialog boxes could easily fix these problems. When users are in specific areas of functionality, a dialog box could pop up to ask them if they want to change the file encoding. Then, they can click "do not show this box again" and never see it again.

SUMMARY

While Apple's iTunes digital music application is usually commented on having a simple interface and considered easy to use, a series of user tests covering the functionalities of importing music, creating play lists, and burning CDs revealed a number of specific usability problems. The user test tasks were based on the findings from the previous heuristic evaluation and user survey. Problem areas identified by applying heuristics were then further tested with real users. These specific usability problems were clustered into nine general problem areas and ranked according to severity and the ease with which they could be fixed. They are addressed in detail in this report, providing information about the general problem, some specific examples, and a high-level recommendation for solving the problem.

The nine problem areas are:

1. Burn Disc interaction causes confusion or surprise
2. The use of highlighting is inconsistent with external operating system standards
3. Critical buttons blend in with interface and symbols do not accurately convey meaning
4. Feedback for numerous iTunes functions either does not exist or is not cognitively processed by the user
5. Conditional matching for the artist in the Smart Playlist auto fills inconsistently with album metadata
6. Check boxes in song list interface are not fully utilized by the user.
7. Some clickable areas of the interface do not look clickable - no tool tips or hover text
8. Method of stopping an import is unclear
9. Advanced features less accessible to novice users

By investigating these problem areas in more depth and implementing user-centered solutions, iTunes designers will be able to make an already well-designed product even easier to use.

RESOURCES

Kunisavsky, M. (2003). *Observing the user experience: A practitioner's guide to user research*. San Francisco: Morgan Kaufmann.

Olson, J. (2005, February 17). *User Testing*. Slides presented in a lecture at University of Michigan School of Information, Ann Arbor, MI.

APPENDIX A: USER TESTING SCRIPT

<Set up instructions>

- **Computer** should be up and running
- **Delete iTunes.pref** (if it exists) from C:\Document and Settings*<username>*\Application Data\Apple Computer\iTunes\
- **Delete iTunes Music Library.xml & iTunes 4 Music Library** (if they exist) from C:\Document and Settings*<username>*\My Documents\My Music\iTunes\
- **Copy iTunes.pref** from C:\Document and Settings*<username>*\My Documents\My Music\iTunes\StartUp to C:\Document and Settings*<username>*\Application Data\Apple Computer\iTunes\
- **Copy iTunes Music Library.xml & iTunes 4 Music Library** from C:\Document and Settings*<username>*\My Documents\My Music\iTunes\StartUp to C:\Document and Settings*<username>*\My Documents\My Music\iTunes\
- **Run iTunes**
- **Make sure the “favorites” playlist is set up!!!**
- **Make sure that in Edit → Preferences → Importing, music is set not to play while importing**
- **Minimize iTunes**
- **Camtasia should be OPEN but NOT RUNNING**
- **Microphone** should be plugged in and ready to go
- **Begin with American Idiot in the CD drive. The Library should be selected.**

<Bring in subject – sit him/her down in front of computer>

Hello, and thank you for coming. My name is _____ and I am currently taking SI 622, which is called Evaluation of Systems and Services. Our semester project is to evaluate and test Apple’s digital music player, iTunes. We’ve invited you here today because we are testing iTunes’ functionality and usability in order to discover how it can be improved. So, thank you very much for agreeing to be one of our subjects. Your actions and insights will aid us in understanding how iTunes can be a better product.

As I’m sure you’ve already noticed, I’m reading directly from this script. This is because what I say and do can affect the outcome of this test, and I want to make sure I get it right. I’m sorry if this is awkward, so please bear with me.

Before we begin, I’d like you to sign an IRB form. It is from the Institutional Review Board and basically states that you have given your consent to participate in this study and that you have the right to stop at any time.

<Give subject IRB form – wait until he/she finishes>

Thank you! Next, I'd like you to fill out a short demographic questionnaire so that we know more about you, your computer experience, and specifically your level of experience with iTunes.

<Give subject questionnaire>

Wonderful! Now, before we begin the test, do you have any questions for me? Excellent. Let's get started.

<Beginning of Test>

Now, on the computer in front of you, iTunes is already running. Camtasia, a screen capture program, is also running in the background. Camtasia will allow us to record what you do during each task. But do not worry, your recording will be used for anonymous analysis. There is also a microphone to record what you say during the test.

The test itself will focus on some of the capabilities of iTunes with regards to importing, organizing, and burning music. It consists of four tasks, which I will administer one at a time. I will describe each task to you as well as give instructions. After each task, we will pause and I'll ask you a few follow up questions. So, please let me know when you believe each task has been completed and we will then move on. Any questions so far?

To set the stage, you're an iTunes user with about 1500 songs in your music library. Since you still like to have physical copies of your music with album artwork and song information, you still regularly buy CDs. However, you use iTunes to import music from CDs and then make mixes you burn to CD for use in your Discman and car. You haven't had the opportunity to acquire an iPod yet.

Following me so far? Good.

Now remember, this is a test to study the functionality of iTunes and has nothing to do with you. So don't worry if you make mistakes or can't figure something out, it only gives us further insight into the shortcomings of iTunes.

And during each task, if you could speak out loud, that would be great. We want to know what you think about iTunes and why you are making certain choices. Any insight you give us will help in our analysis of where iTunes is lacking.

Any questions? Then let's begin.

Maximize iTunes and being Camtasia – F9

For all of the tasks we should record the overall sequence of actions taken by the user – what they selected, which menus they used, did they bring up menus via the mouse, what keys they pressed, etc.

The Test

Begin with American Idiot in the CD drive. The Library should be selected.

<See Observation Tool for Task directions and follow-up questions>

When Test is over - Stop Camtasia (F9)

Very good!

Now that you've completed the test, we're going to ask you a few questions about your opinions of iTunes and experiences during the test.

<Ask debriefing questions>

Great job! We're finished! Any Questions? Comments?

Well, thank you very much for coming today. As a token of our appreciation, we will be emailing you a \$10 gift certificate to the iTunes music store. Here's a gift certificate saying "we owe you" and make sure to check your email!! Tests like these can be frustrating and we want you to know that your efforts mean a lot to us. So have a great day and thank you again for your help!

<Escort subject out!>

Tear Down:

- Save camtasia file
- Close all programs
- Begin set up instructions if another subject directly follows.

APPENDIX B: OBSERVATION TOOL WITH TASK DESCRIPTIONS

Date: _____

Participant ID: _____

Start Time: _____

End Time: _____

Task 1

Task Description	Observation Notes
<p>You just purchased Green Day's <i>American Idiot</i>, which won this year's Grammy for Best Rock Album. The CD is already in the CD drive. You'd like to add the music to your collection of Alternative music. You want to import the songs as MP3 files since you would like to share them with a friend who has an MP3 player. Go ahead and add the songs on the CD to your music library.</p> <p>You realize that you don't want to import the whole CD, but rather just 2 of the songs – <i>American Idiot</i> and <i>Boulevard of Broken Dreams</i>. Go ahead and stop the import.</p> <p>Now import just <i>American Idiot</i> and <i>Boulevard of Broken Dreams</i> into your library. You still want to add them as MP3s to your collection of Alternative music.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Opened preferences <input type="checkbox"/> Selected MP3 as import type <input type="checkbox"/> Used X button in display to stop import <input type="checkbox"/> Used other method to stop import <input type="checkbox"/> Successfully selected both songs <input type="checkbox"/> Genre changed to Alternative

Completed Task

Failed Task

Don't forget to record the overall sequence of actions taken by the user – what they selected, which menus they used, did they bring up menus via the mouse, what keys they pressed, etc.

Task 1 Questions

Where would you go to make sure your song is imported as an MP3 file?

How would you change the genre of the music you're going to import (for example, from Alternative & Punk to Alternative)?

Was it difficult to change the genre for the song information?

Task 2

Task Description	Observation Notes
You have a playlist already created that includes your favorite music. It's called <i>Favorite Songs</i> . Do you see it? You'd like to add both the songs that you just imported to that playlist. Go ahead and do that now.	Got songs from: <input type="checkbox"/> <i>Library</i> <input type="checkbox"/> <i>Recently Added</i> smart playlist Found songs via: <input type="checkbox"/> <i>Search</i> by typing _____ <input type="checkbox"/> Browsing <input type="checkbox"/> Sorted column headers <input type="checkbox"/> Attempted to search from a playlist Moved songs via: <input type="checkbox"/> Copy/paste <input type="checkbox"/> Dragged from playlist/library <input type="checkbox"/> Other <input type="checkbox"/> Moved songs one at a time

Completed Task

Failed Task

Don't forget to record the overall sequence of actions taken by the user – what they selected, which menus they used, did they bring up menus via the mouse, what keys they pressed, etc.

Task 2 Questions

Were you at all confused about the best way too find the music you just imported?

Did you consider using the Search or Browse functionality to find the songs?

Task 3

Task Description	Observation Notes
<p>While you're looking at your favorites, you realize that David Byrne features prominently in the list. You know you have a number of other songs by him in your collection, and you'd like to create a new CD for your morning commute. Make a play list with all the songs by this artist. You can name the playlist anything you'd like.</p>	<p>Found songs via:</p> <ul style="list-style-type: none"><input type="checkbox"/> Search by typing _____<input type="checkbox"/> Browsing library<input type="checkbox"/> Sorted column headers<input type="checkbox"/> Created Smart Playlist<input type="checkbox"/> Attempted to search from a playlist <p>Moved songs via:</p> <ul style="list-style-type: none"><input type="checkbox"/> Copy/paste<input type="checkbox"/> Dragged from playlist/library<input type="checkbox"/> Other<input type="checkbox"/> Moved songs one at a time

Completed Task

Failed Task

Don't forget to record the overall sequence of actions taken by the user – what they selected, which menus they used, did they bring up menus via the mouse, what keys they pressed, etc.

Task 3 Questions

Were you at all confused about where to go to find all music by David Byrne?

Did you consider using the Search (or search by different types of metadata) or Browse features?

Have you ever heard of a smart play list? Did you know what a smart play list does? What would you assume that it does, based on the name?

If you haven't heard of a smart play list, *<explain purpose of smart play list>* how would you try to create one?

Task 4

Task Description	Observation Notes
You'd like to make your morning commute CD now. You know that you can't fit all of the songs from the playlist you just created onto a single CD. Go ahead and select an appropriate number of songs that will fit on a single CD which can store up to 80 minutes worth of music and burn an audio CD of the songs you select.	Removed songs from playlist by: <ul style="list-style-type: none"><input type="checkbox"/> Clearing via mouse / menu<input type="checkbox"/> Cut<input type="checkbox"/> Delete via keyboard <input type="checkbox"/> Created secondary playlist<input type="checkbox"/> Unchecked songs in playlist

Completed Task

Failed Task

Don't forget to record the overall sequence of actions taken by the user – what they selected, which menus they used, did they bring up menus via the mouse, what keys they pressed, etc.

Task 4 Questions

Did you find the burn disc icon confusing?

Were any of the messages related to burning/blank discs confusing to you?

Were you confused about when the burn task had completed?

Did you find it difficult to change the length of the mix/play list? [Did you consider deleting songs from the play list? How would you go about doing that?]

APPENDIX C: PRE-TEST QUESTIONNAIRE

1. What is your gender?

- Male
- Female

2. What is your age?

- 18-21 years
- 22-25 years
- 26-35 years
- 36-50 years
- 50+ years

3. What is your current year in school?

- Not currently a student
- Undergraduate
- Graduate

4. What is your primary computing platform?

- Windows
- Macintosh
- Linux
- Other, please specify: _____
- Not sure

5. What is your level of comfort using computer applications in general?

- 1 - Very uncomfortable
- 2 - Uncomfortable
- 3 - Neutral
- 4 - Comfortable
- 5 - Very comfortable

6. Approximately how many songs do you have in your iTunes music library?

- 0 -10
- 11-100
- 101-1,000
- 1,001-10,000
- 10,000+

7. How long have you been using iTunes?

- 0-5 months
- 6-11 months
- 12-17 months
- 18-23 months
- 24+ months

8. How would you rate your level of experience with iTunes?

- Beginner/novice
- Intermediate
- Advanced
- Expert

9. Have you used in the past or do you currently use any other digital music applications (select all that apply)?

- None
- MusicMatch Jukebox
- Windows Media Player
- WinAmp
- Other, please specify: _____

10. I have used iTunes to ... (select all that apply)

- Import music from CD
- Purchase music from the music store
- Organize music in play lists
- Burn CDs
- Sync with an iPod

11. Do you have experience with analyzing the usability of interfaces for web sites, applications, or other devices? If so, please describe.

APPENDIX D: POST-TEST DEBRIEF QUESTIONS

1. How did it go? What did you think? <elicit general feedback – the thing most heavily on their minds>

2. On a scale of 1 to 5, where 1 is very easy and 5 is very difficult, how difficult did you find the tasks in this session in general?

3. Did you find any of the terminology/labeling used in iTunes to be confusing, inconsistent, or otherwise not what you expected?

4. Were you confused by any of the buttons or clickable areas of the interface? Did they provide a good indication of what they would be used for?

5. Were there any other specific tasks or areas of iTunes that seemed especially confusing or difficult to complete?

6. Ask about any specific problems that were observed while the user was completing the tasks...Try to find out why the user had difficulty or was confused.

APPENDIX E: PRE-TEST QUESTIONNAIRE RESULTS

Question	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5
Q1 Gender	Female	Male	Male	Female	Female
Q2 Age	26-35	36-35	26-35	22-25	22-25
Q3 Student	Not student	Grad	Grad	Grad	Grad
Q4 Primary platform	Mac	Windows	Windows	Windows	Windows
Q5 Comfort level using computer apps	Comfortable	Very comfortable	Very comfortable	Very uncomfortable?	Very comfortable
Q6 Library size	1,000-10,000	0-10	1,000-10,000	0-10	1,000-10,000
Q7 Length of time using iTunes	12 to 17 months	0 to 5 months	24+ months	0 to 5 months	6 to 11 months
Q8 Experience with iTunes	Intermediate	Beginner	Advanced	Beginner	Advanced
Q9 Other DMAs	No other	WMP, WinAmp, Other...	MusicMach, WMP, WinAMP, Panasonic SD Jukebox	WMP, WinAmp	MusicMach, WMP, WinAMP
Q10 Use iTunes for...	Import, Purchase, Organize, Burn, Sync	Organize	Import, Purchase, Organize, Burn, Sync	Import	Import, Purchase, Organize, Burn
Q11 Other experience analyzing interfaces	Nope	used pdtrials.org and MI Bus Exec Education	No	SI website, wikis, search engines	Yes. S1622, 682, 658. My 622 project was on the playstation 2 as a DVD player.