Heuristic Evaluation

DICE

iOS 4.130

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Executive Summary

DICE is one of the leading mobile applications for events and tickets. Ranked #23 in Music by Apple's App Store, DICE connects fans with **artists**, **venues**, and **events** in large cities (like New York City) seamlessly, and creates a singular platform for tickets and reservations. It features a large selection of events in a user's area, and has useful **browsing**, **searching**, **personalization**, **sharing**, and **ticketing** features for the user.

Employing the **Heuristic Evaluation** method, **four usability** experts evaluated the usability of **DICE's iOS interface**. Evaluators used **Nielsen's 10 Usability Principles** (or **heuristics**) as guidelines to identify a list of problems with the interface. The **scope** of the study was to **examine the use of DICE by young adults looking for free or cheap events happening in the near future**, thus evaluating the efficiency of browsing, searching, sharing, and ticketing features of the interface.

Despite being a powerful tool for event-goers in New York City, this evaluation made it found some areas of improvement. A total of **ten usability problems** were identified. We identified **three key issues** that need to be addressed to improve the browsing, searching, and sharing functions.

- **Recommendation #1:** Improve discoverability by expanding the Sort By feature on Events List pages
- **Recommendation #2:** Differentiate between the Share and Invite features to encourage community building
- **Recommendation #3:** Standardize event labels for improved browsing

This report details the methodology used, outlines and explains the findings of the heuristic evaluation, and provides an in-depth review of the recommendations mentioned above. The goal of this report is to provide a prioritized list of recommendations for improved usability of DICE in browsing, searching, and sharing functions, as well as improve the overall quality of the application.

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Introduction

DICE is one of the leading mobile applications for events and ticketing. With a goal of reshaping the ticketing industry for fans, artists, and venues, the DICE mobile app provides an all-inclusive interface for finding and buying tickets. Popular in big cities such as New York, DICE connects fans with artists, venues, and events seamlessly, and creates a singular platform for tickets and reservations. It offers a range of search features to find a variety of events such as live music, festivals, parties, raves, comedy nights, and more. Additionally, its design also includes an element of community building and engagement with friends, where users can follow each other, as well as venues and artists.

In young adult communities of New York City, DICE is popularly used to find cheap or free events to attend within a short timeframe (tonight, this week, this weekend). Our team of evaluators thought it was important that this function could be performed easily, efficiently, and promptly, to ensure a smooth experience. This includes navigation of the application, utilizing the various browsing and search features for events, sorting and filtering events according to preferences, sharing events with friends, and seamless viewing and ticketing for an event.

The **Heuristic Evaluation** method was chosen to evaluate **DICE's iOS interface**. A team of experts utilized **Nielsen's 10 Usability Principles** to identify problems with the interface that violated the principles. While DICE's iOS interface is beautifully designed, conducting a heuristic evaluation will provide specific problems related to the task being examined that may have been missed otherwise, identify the crux of the problem and its impacts by the heuristic it is violating, and understand how to improve the overall usability of the interface. **Three usability experts** conducted an in-depth evaluation of DICE based on the tasks provided. Analysis of these reports lead to **three critical recommendations** to improve the usability of DICE. This report provides details on methodology used in this evaluation, the problems identified, and proposed solutions to implement.

Methodology

Heuristic Evaluation is a widely implemented usability evaluation technique in the design industry. This methodology includes utilizing a set of guidelines (called **heuristics**) appropriate to the interface in question to recognize and identify usability problems that users may encounter. This study utilized **Jakob Nielsen's Ten Usability Heuristics for User Interaction Design** which specifically identifies 10 heuristics that are important to consider when designing the user interfaces (Nielsen, 1994)

This evaluation method was chosen because heuristic evaluation relies on testing and feedback from a set of **design experts**. In comparison to user testing, which relies on users, heuristic evaluations can be performed quickly and efficiently, leading to problems that violate the set of heuristics an interface is tested against, and implementable recommendations and solutions. The four steps are summarized below.

Step 1: Prepare

In preparation for the evaluation, **4 evaluators** were chosen to evaluate **DICE (iOS Mobile Application) (Version 4.130) interface**. The scope of the task was as follows:

> You want to find a free event to go to this week (February 8th to 14th, 2024) in New York City. Look through Dice to see your options, and find the event Valentine's Jazz happening on February 14th, 2024.

1. Search DICE for free events happening this week in NYC
2. Look through DICE to find the specific event mentioned above
3. Where is the event going to take place?
4. Save the event to your favorites
5. Share the event with a friend

Step 2: Data Collection

Each evaluator is provided with the task mentioned above and asked to individually evaluate DICE's interface against to compile a list of usability issues that violate Nielsen's 10 Usability Heuristics (Table 1). They are asked to explain the problem, how it violates a heuristic, and give it a **severity rating** (Table 2) to prioritize problems. An outline of the 10 heuristics and severity ratings are seen on the next page. A more detailed description of each is attached in the appendix (Figures 4 & 5)

Usability Heuristic	Type
H1	Visibility of System Status
H2	Match Between the System and the Real World
H3	User Control and Freedom
H4	Consistency and Standards
H5	Error Prevention
H6	Recognition Rather than Recall
H7	Flexibility and Efficiency of Use
H8	Aesthetic and Minimalist Design
H9	Help Users Recognize, Diagnose, and Recover from Error
H10	Help and Documentation

Table 1: Jakob Nielsen's Ten Usability Heuristics for User Interaction Design

Rating	Severity
0	No Issue
1	Cosmetic
2	Minor usability problem
3	Major usability problem
4	Usability catastrophe

Table 2: Severity Ratings for Heuristic Evaluation

Step 3: Analysis

After individual evaluations, the lead evaluator compiles the list of problems, assigns them heuristics they violate, and give it an average severity rating for prioritization. This final list of problems can be viewed in the Appendix section of this report (Table 3).

Step 4: Communication

The final step of heuristic evaluation is to identify the most pressing problems from the evaluation, form useful and usable recommendations for them, and effectively **communicate** findings to other members of the design team. This is the function for the rest of the report.

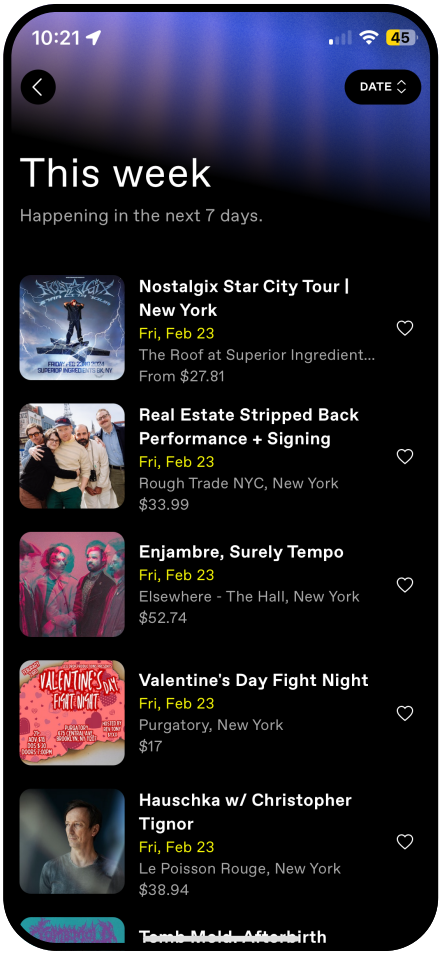
Results

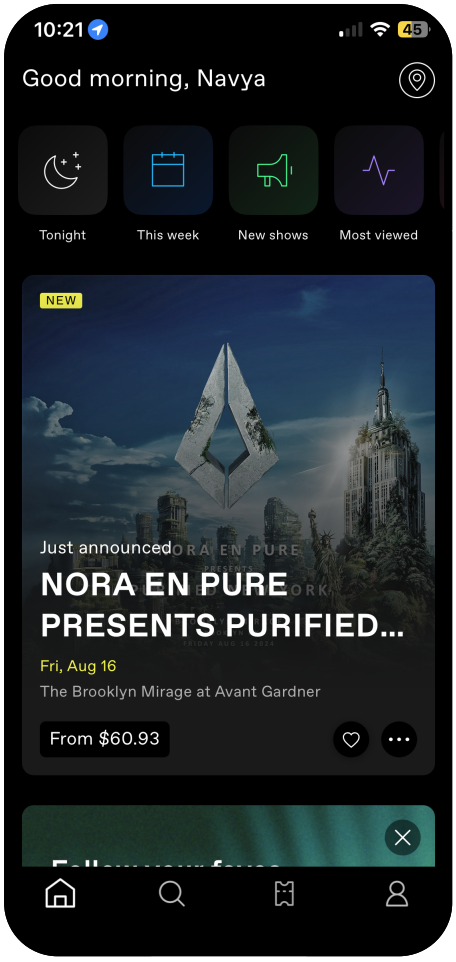
Overall Findings

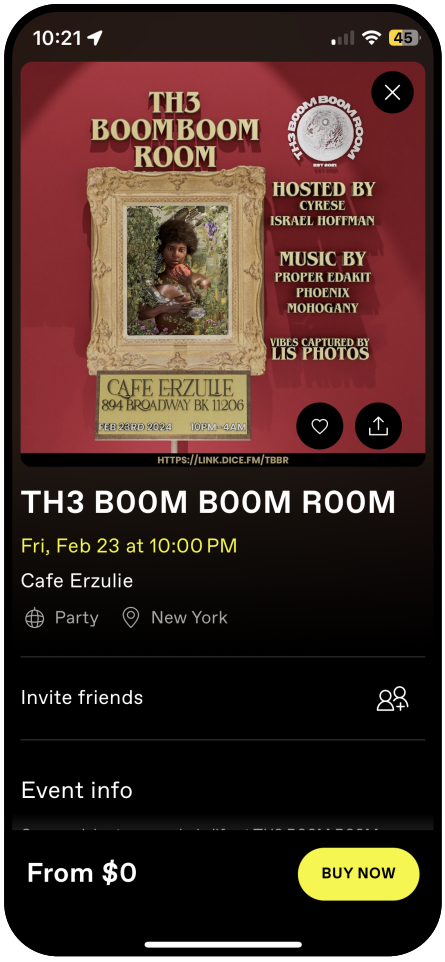
The **DICE iOS mobile application** is a powerful tool because it allows users to 1) browse and search for a wide variety of events in their area, 2) buy tickets to different venues on the same platform, and 3) engage with artists, venues, and friends from the DICE app itself. However, several issues were identified during the process of browsing, searching, and sharing events.

A total of **ten usability problems** were identified while conducting a heuristic evaluation using Nielsen's 10 Usability Principles. None of the problems received a 4 (the highest) on the severity rating, but two received a severity rating of 3, and six received a severity rating of 2. S**ix heuristics were violated**, with most problems falling under the category of heuristics four and seven.

The following section identifies and describes three critical recommendations for usability problems.





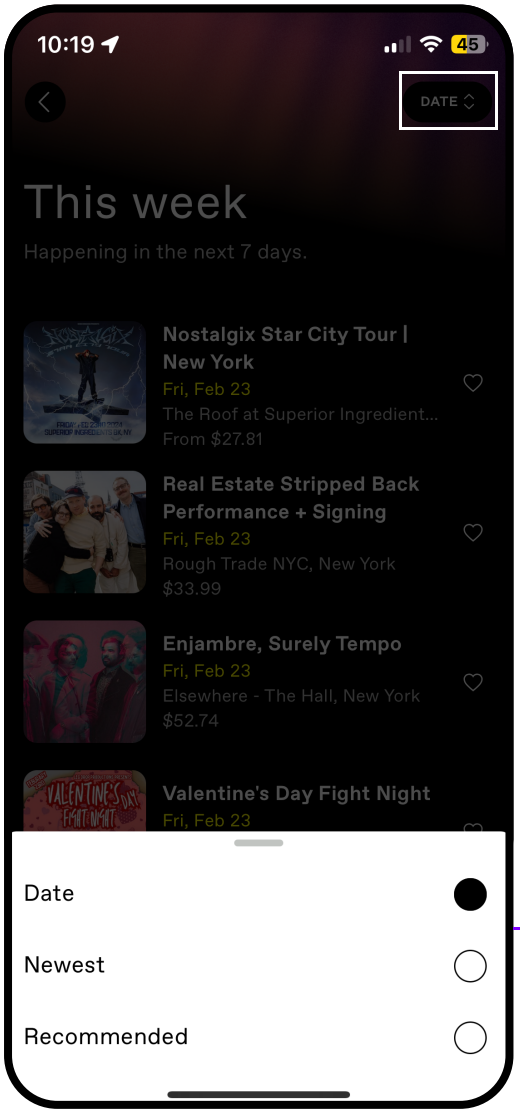


Problems & Recommendations

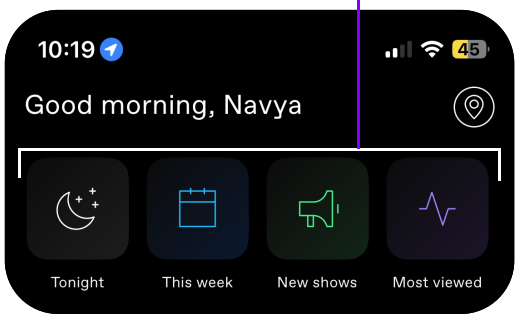
Recommendation #1: Improve discoverability by expanding the Sort By feature on List pages

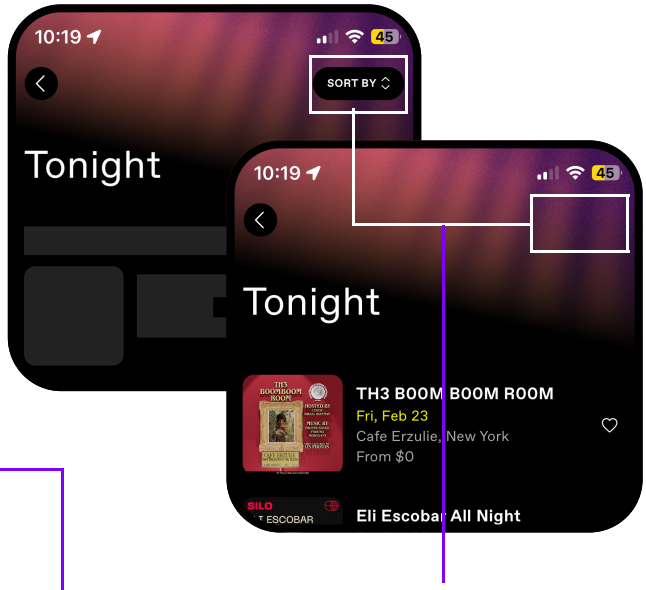
THE PROBLEM

A critical issue we encountered is with the limitations and inconsistencies of the 'Sort By' feature on DICE's events list pages.



DICE's events lists





H4, H7 Violation

The 'Sort By' option is limited and inconsistent on list pages. It does not show up on some lists, and only provides sorting through, date, newest, and recommended events. There is no option for sorting through pricing.
severity rating: 3

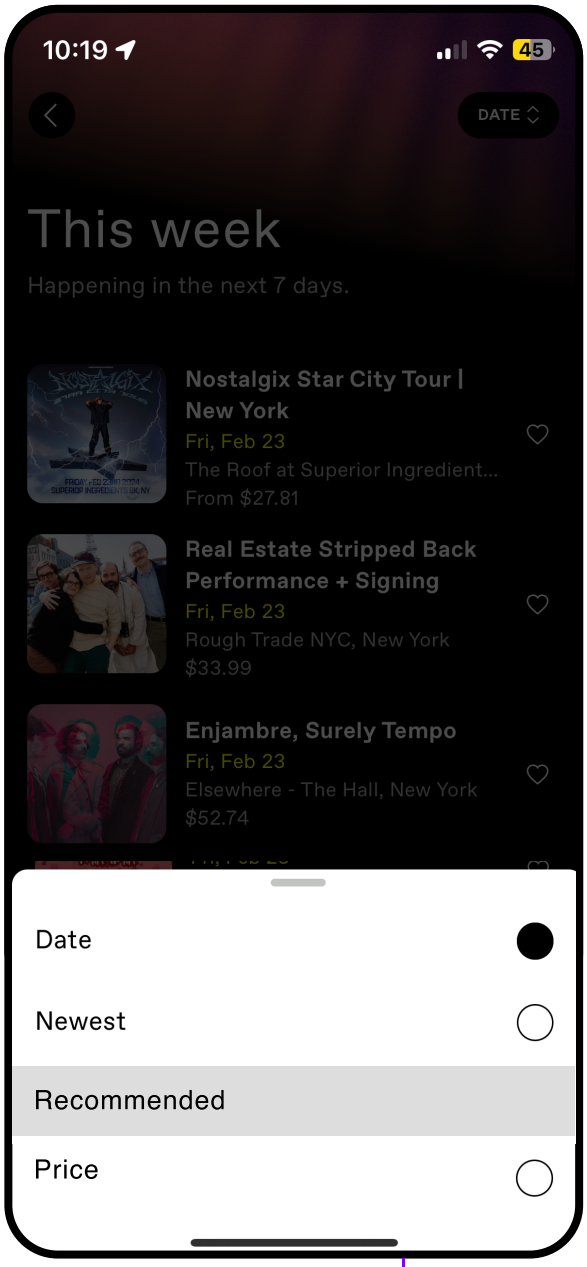
H1, H2 Violation

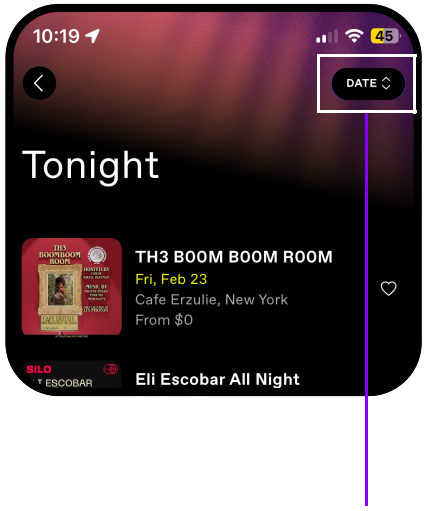
The 'Sort By' feature appears and disappears after a few seconds on the 'Tonight' events page, which makes it look like a design error, and users are unable to sort the events on that page.
severity rating: 2

OUR RECOMMENDATION

The Sort By option provided by DICE is crucial to the user's browsing of events offered. Therefore, the function should include all sorting options that could be helpful to the user. The proposed solution for this standardizing the Sort By feature across all list pages. If a page does not allow for sorting by content, include the feature, but gray out unusable options.

Additionally, provide for sorting by price to add another layer of browsing for the user.





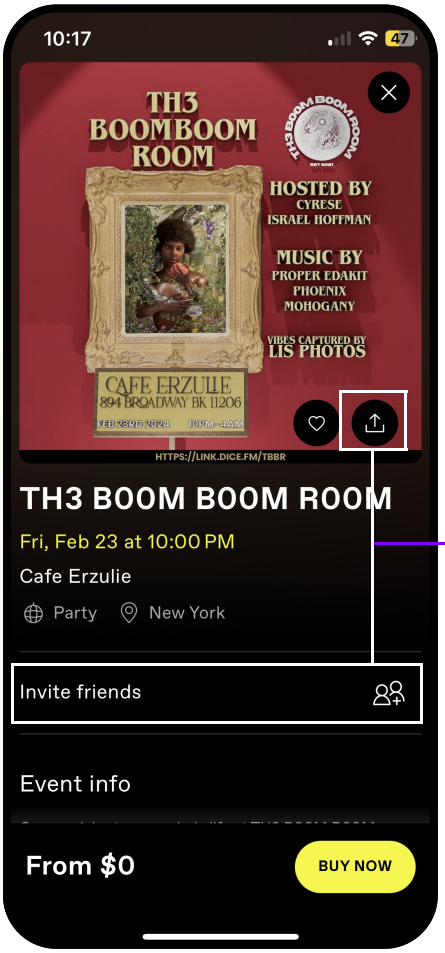
1. Applying the Sort By feature consistently across events list pages

2. Providing a Price sorting feature within the Sort By pop-up
3. If needed, greying out options that are not possible to sort with, instead of removing the Sort By feature itself

Recommendation #2: Differentiate between the Share and Invite features to encourage community building

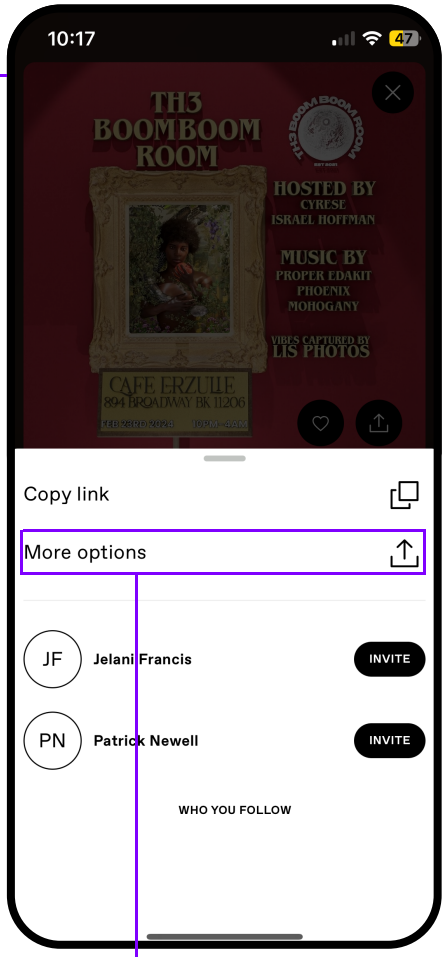
THE PROBLEM

The Share/Invite feature for individual events is a crucial function for community building and engagement on DICE. However, we noticed that there was a duplication in function with these features.



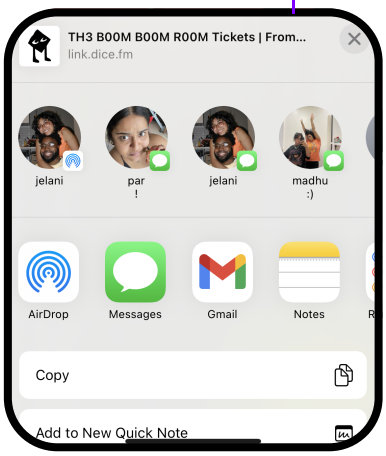
H2, H4, H8 Violation

The "Share" icon and the "Invite" feature are put forth as different features, but lead to the same pop-up when clicked. Users expected them to have different actions, an "invite" being more formal than "sharing." This is a duplicate behavior.
severity rating: 2



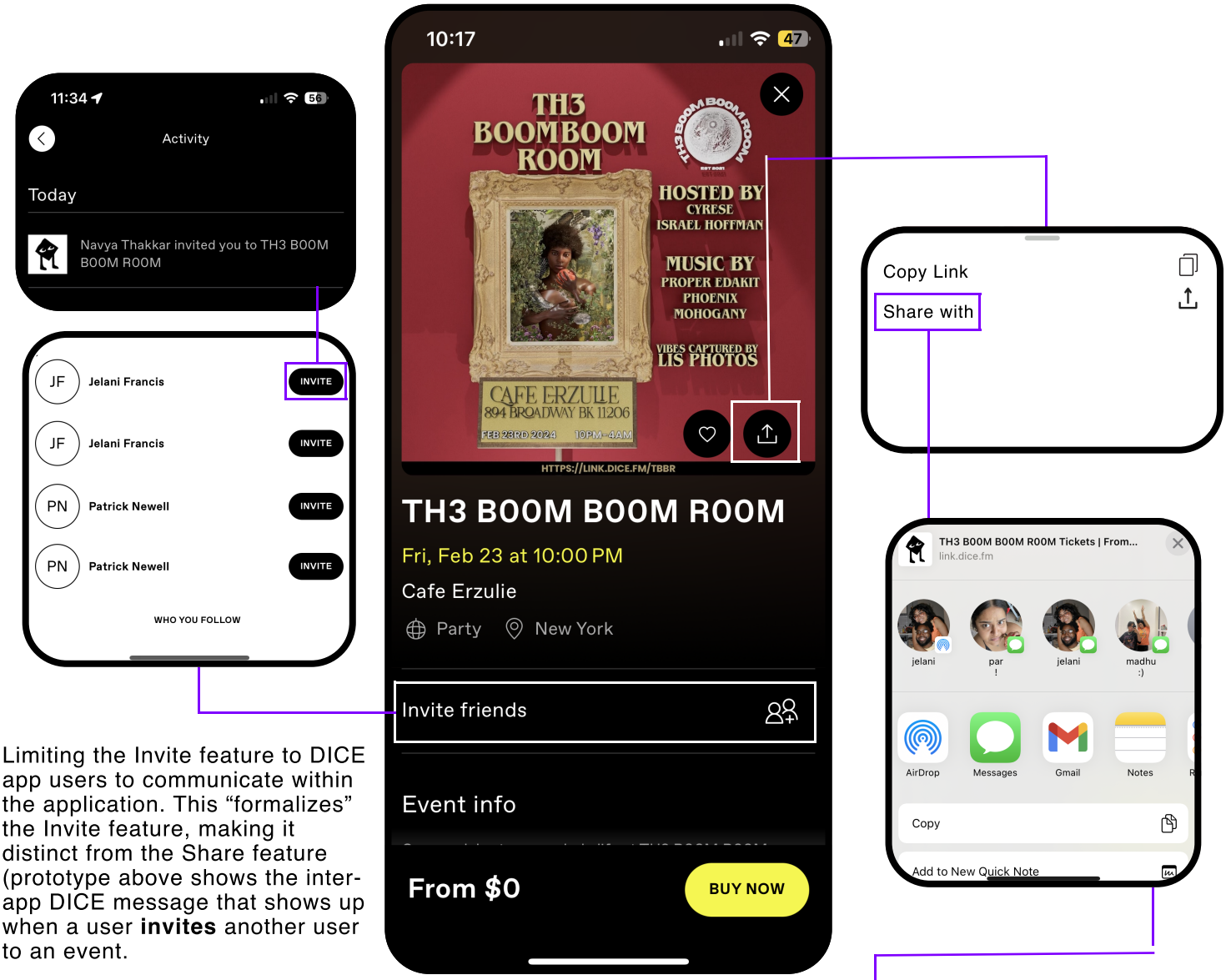
H6, H7, H8 Violation

The 'Share' or 'Invite' pop-up has a 'More Options' button that leads to sharing through third-party applications. Users feel this step is redundant, and that the function of this button should be integrated into the initial pop-up.
severity rating: 2



OUR RECOMMENDATION

The Share/Invite feature for individual events is a crucial function for community building and engagement on DICE. While you can share events, DICE also has some features where users can follow each other. Therefore, our recommendation would be to separate the two features, making the Invite feature more formal and only for the DICE community, while the share feature helps send events to friends and more.



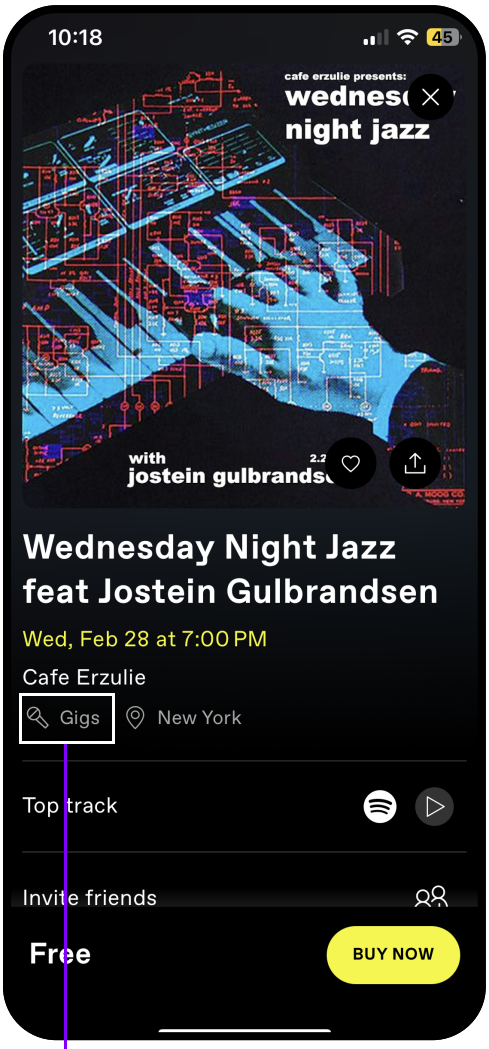
1. Limiting the Invite feature to DICE app users to communicate within the application. This “formalizes” the Invite feature, making it distinct from the Share feature (prototype above shows the inter-app DICE message that shows up when a user **invites** another user to an event.

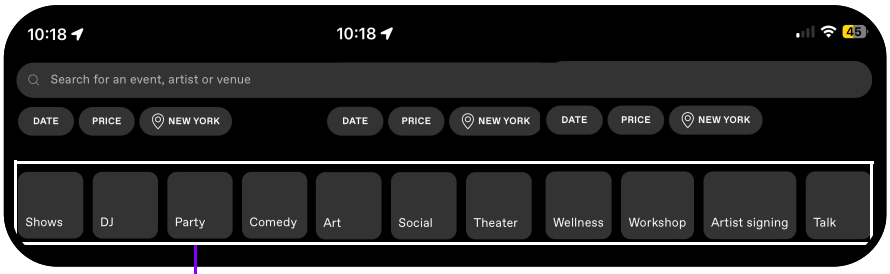
2. The Share feature would lead to a distinct pop-up from the Invite feature, showing ways to share the event with non-DICE users.
3. Options to share with third-party apps integrated within the DICE application for ease of access. The Share with feature would still lead to the iOS share feature if needed.

Recommendation #3: Standardize event labels for improved browsing

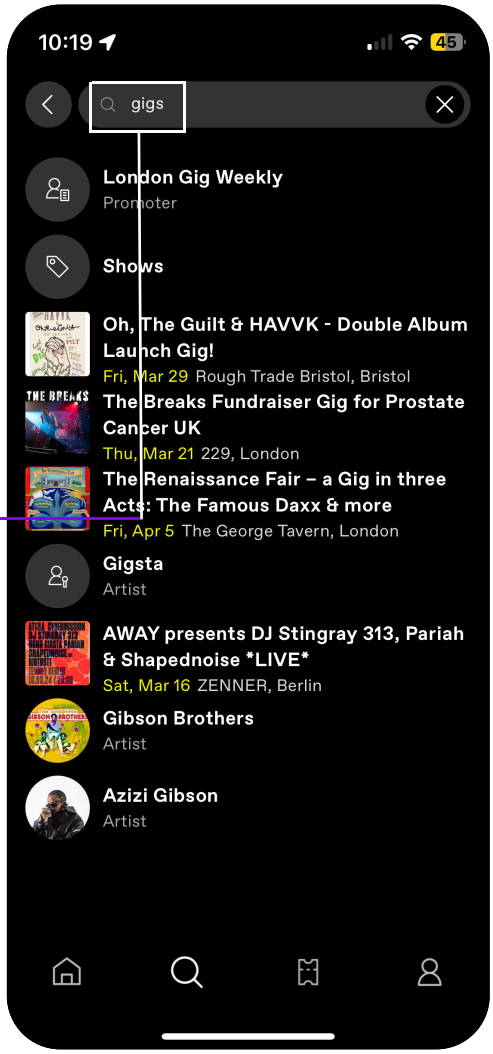
THE PROBLEM

DICE's event labels are important for recognition of event type. They play an important roll right from the Home Page in enhancing event browsing according to user preferences. We found an inconsistency in these labels and those attributed to individual events that may hinder usability.





DICE's set event categories does not include a category for "gigs"



A search for "gig" does not include any of the events labeled as gigs on their event pages or any clarifying category with a list of these events

Non-clickable Event labels include "gig"

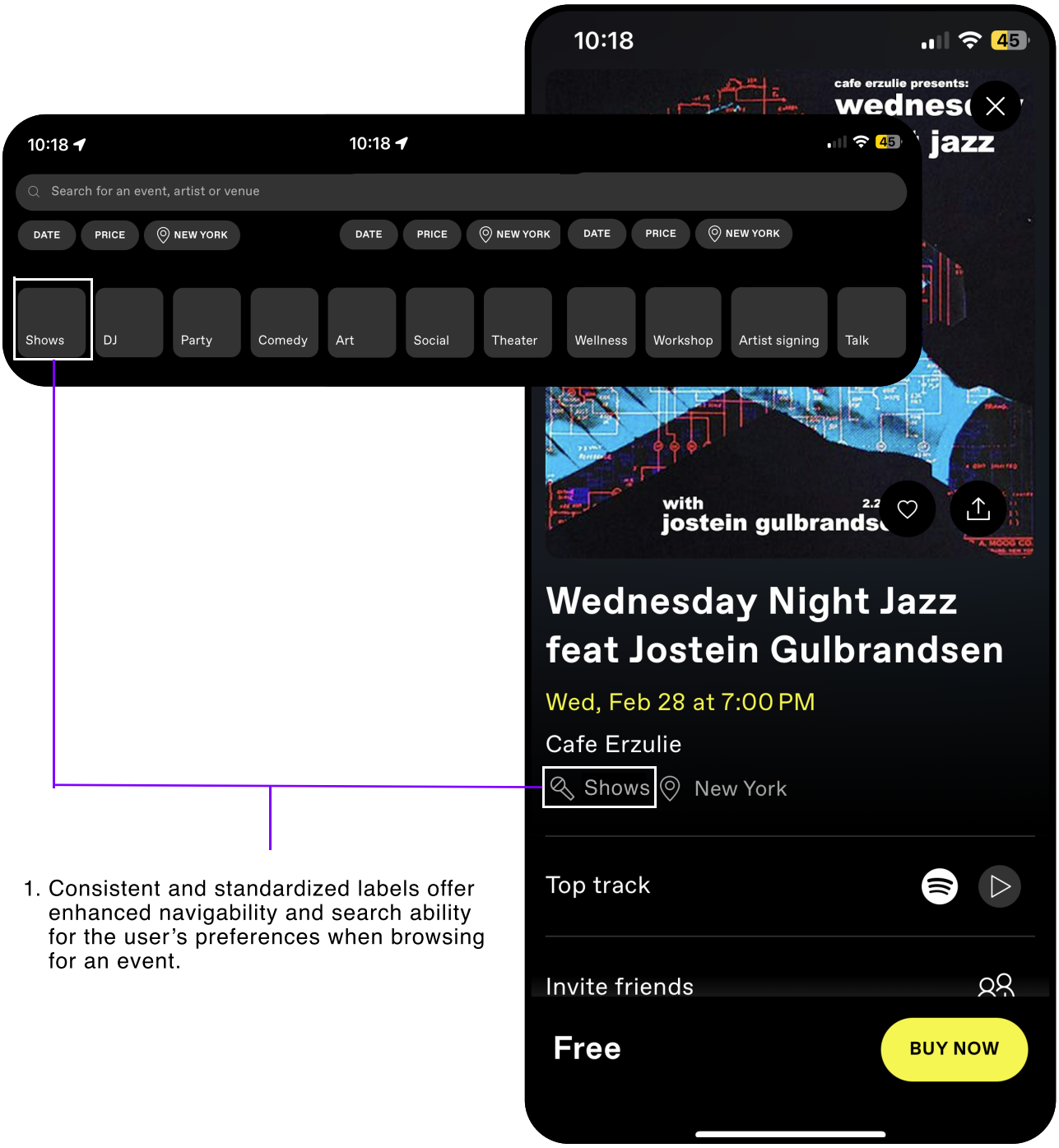
H4 Violation

The event has a label of 'gig,' which is an ambiguous label since it can mean a lot of things. It also is not a filterable or searchable category from the options given on the 'Search' page

severity rating: 3

OUR RECOMMENDATION

While “gigs” is a common colloquialism used in the world of events, it is an ambiguous label for categorization in DICE. The label shows up in isolation on event specific pages only, therefore making user wonder what the label means. Standardization of labels is extremely important for DICE’s interface. Our recommendation is to fold events with the label “gigs” into the category **Shows** to provide standardization and consistency across the interface.



1. Consistent and standardized labels offer enhanced navigability and search ability for the user’s preferences when browsing for an event.

Conclusion

The **DICE iOS mobile app** provides an all-inclusive interface for finding and buying tickets. Popular in big cities such as New York, DICE connects fans with artists, venues, and events seamlessly, and creates a singular platform for tickets and reservations. While the interface offers many features for browsing, searching, and sharing events, improvements to features for sorting and filtering events for a user's preference and sharing events will enhance its usability and the user's experience.

Using **Heuristic Evaluation** based on **Nielsen's 10 Usability Principles**, our team of expert evaluators were able to identify these **3 critical recommendations** for improving usability:

- **Recommendation #1:** Improve discoverability by expanding the Sort By feature on Events List pages
- **Recommendation #2:** Differentiate between the Share and Invite features to encourage community building
- **Recommendation #3:** Standardize event labels for improved browsing

The problems and solutions to these recommendations are detailed in this report, using prototypes based on DICE's design system to show how these changes can be implemented. Our team of evaluators is confident that the implementation of these recommendations will improve navigation of the application, utilizing the various browsing and search features for events, sorting and filtering events according to preferences, sharing events with friends, and seamless viewing and ticketing for an event.

Appendix

Heuristic Evaluation - Data

The table below shows the collected and collated problem descriptions, with the heuristics each violated, evaluator ratings for each problem, and an average severity rating.

Problem Description	Heuristics Violated	A	B	C	D	Rating
The event categories on the Home Page only have icons and one word descriptions. Users expressed the need for further description to understand what kind of events the list shows.	H2, H4				2	2
The 'New Shows' event list shows the 'Sort By' feature in the right corner as sorted by 'recommended' instead of 'newest' which is a contradictory use of labels	H4				1	1
The 'Sort By' option is limited and inconsistent on list pages. It does not show up on some lists, and only provides sorting through, date, newest, and recommended events. Users communicated a need for sorting by price, which would improve the feature's function for them.	H4, H7	2			3	3
The 'Sort By' feature appears and disappears after a few seconds on the 'Tonight' events page, which makes it look like a design error, and users are unable to sort the events on that page.	H1, H7		2		2	2
The event has a label of 'gig,' which is an ambiguous label since it can mean a lot of things, and it is not a filterable category from the options given on the 'Search' page	H4				3	3
On a specific event page, the 'Event Info' accordian feature expands when clicked, but it cannot be minimized after.	H3			2	2	2
Users find the feature of 'favoriting' events confusing and inconsistent. When the heart icon is clicked on a specific event page, an overlay comes up asking to add an event to a group, which makes it seem that favoriting the event requires an addition to a group, and it is unclear that the event will still be favorited without adding it to a group. This is also inconsistent with the feedback of favoriting an event on a list on the application, such as the 'Search' page or the 'This Week' page, where clicking on the heart favorites the event without a pop-up.	H4		1	2	2	2

Problem Description	Heuristics Violated	A	B	C	D	Rating
The event categories on the Home Page only have icons and one word descriptions. Users expressed the need for further description to understand what kind of events the list shows.	H2, H4				2	2
The 'Share' or 'Invite' pop-up has a 'More Options' button that leads to sharing through third-party applications. Users feel this step is redundant, and that the function of this button should be integrated into the initial pop-up.	H6, H7, H8	2				2
The overall design of the application is dense and busy, and takes time to learn the system and discover features.	H8	2			1	1

Table 3: Compiled list of problems from Heuristic Evaluation

Nielsen's Ten Usability Heuristics

Usability Heuristic	Type	Description
H1	Visibility of System Status	The design should always keep users informed about what is going on, through appropriate feedback within a reasonable amount of time.
H2	Match Between the System and the Real World	The design should speak the users' language. Use words, phrases, and concepts familiar to the user, rather than internal jargon. Follow real-world conventions, making information appear in a natural and logical order.
H3	User Control and Freedom	Users often perform actions by mistake. They need a clearly marked "emergency exit" to leave the unwanted action without having to go through an extended process.
H4	Consistency and Standards	Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform and industry conventions.
H5	Error Prevention	Good error messages are important, but the best designs carefully prevent problems from occurring in the first place. Either eliminate error-prone conditions, or check for them and present users with a confirmation option before they commit to the action.
H6	Recognition Rather than Recall	Minimize the user's memory load by making elements, actions, and options visible. The user should not have to remember information from one part of the interface to another. Information required to use the design (e.g. field labels or menu items) should be visible or easily retrievable when needed.

H7	Flexibility and Efficiency of Use	Shortcuts — hidden from novice users — may speed up the interaction for the expert user so that the design can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.
H8	Aesthetic and Minimalist Design	Interfaces should not contain information that is irrelevant or rarely needed. Every extra unit of information in an interface competes with the relevant units of information and diminishes their relative visibility.
H9	Help Users Recognize, Diagnose, and Recover from Error	Error messages should be expressed in plain language (no error codes), precisely indicate the problem, and constructively suggest a solution.
H10	Help and Documentation	It's best if the system doesn't need any additional explanation. However, it may be necessary to provide documentation to help users understand how to complete their tasks.

Table 4: Descriptions of Jakob Nielsen's Ten Usability Heuristics for User Interaction Design

Severity Ratings in Heuristic Evaluation

Rating	Severity	Description
0	No Issue	It violates a heuristic but doesn't seem to be a usability problem.
1	Cosmetic	May be easily overcome by users or occurs extremely infrequently. It doesn't need to be fixed unless time permits.
2	Minor usability problem	May occur more frequently or be more difficult to overcome. Fixing this should be given low priority
3	Major usability problem	Occurs frequently and persistently or users may be unable or unaware of how to fix issue. Important to fix , so should be given high priority.
4	Usability catastrophe	Seriously impairs uses of product and cannot be overcome by users. Imperative to fix this before the product can be released.

Table 5: Descriptions of Severity Ratings for Heuristic Evaluation

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