Usability of Auction Software & Tablets

Abstract

The ease in which customers can interact with a website or software program not only contributes positively or negatively to their experience but also can significantly impact a company's revenue. If a process has a design flaw or if a customer never completes a task flow, the failure represents a lost sales opportunity. At a charity fundraising event, the use of tablet PC software to facilitate silent auction bidding resulted in the loss of unknown amounts of revenue by not utilizing the following usability principles: creating a match between the system and the real world, being consistent, and preventing errors.

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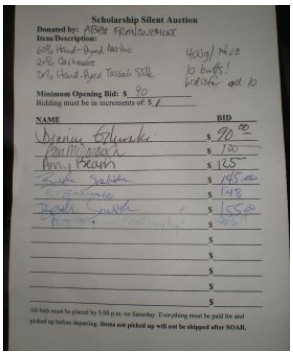
Jakob Nielsen identifies ten guidelines for use when designing user interfaces (1). One of those is to create a match between the system and the real world by using language and terms that are familiar to the user. To appropriately speak to users, designers must first understand who the users are.

The median age of a charitable donor in the United States is 56 (Rinker 9). The crowd at the event was mostly older, as well. They were most likely accustomed to bidding at silent auctions by writing down their names on a sheet of paper for a particular auction item along with a bid amount.


Scholarship Silent Auction

Donated by:

Item/Description:

Minimum Opening Bid: $

Bidding must be in increments of: $

NAME	BID
	$
	$
	$
	$
	$
	$
	$
	$
	$
	$

Example of a bidding sheet for a silent auction item.

Picture of the model of Toshiba tablet PC used to run the silent auction software.

The software system, however, required every user to be identified by a three digit "bid number" instead of his name. Each guest received a bid number upon check-in on an 8 ½ by 11 sheet of paper. The three digit number filled the entire page. Before placing a bid, a guest would have to enter her unique "bid number." Guests were confused as to what "bid numbers" were and how to get them. Several asked if they were supposed to enter their personal identification number (PIN). To the volunteers, who worked in the field of information technology, "bid number" logically suggested a unique identifier for a database transaction that represented a bid placed on one item. Instead of using the term "bid number," the system should have incorporated a term or phrase the user would understand.

Other terminology the system used that was unclear was “Find #.” This button allowed users to enter an item’s id number in order to view it on the screen and potentially place a bid. Each physical item had a description and its id number on a placard next to it. Unlike the previous method of bidding using sheets of paper, a bid could be placed on an item from any tablet PC located in the room or even outside of the room using the wireless network connection. The tablets were placed in the vicinity of a cluster of four or five items, and there were also volunteers carrying tablets roaming around the room to assist guests.

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Because a tablet was not associated with a particular item, finding the appropriate item to bid on from any tablet was a critical task made even more challenging by the fact that each tablet displayed the same default screen, allowing users to browse the auction items by category instead of having a contextual menu for the items immediately surrounding the tablet. Despite its necessary and important function, the button’s title “Find #” did not adequately capture its purpose.

In addition to creating a match between the system and the real world, another usability principle Nielsen recommends is consistency: “Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform guidelines” (1). Human beings use this principle to navigate through the world. Convention and consistency allow people to open doors, drive cars made by different companies, find the exit, and use a telephone. People do not have to learn how to use an object all over again when they come across a different version or manifestation of it in the world.

The tablet PC running the silent auction bidding software was enclosed in a case that prevented the guests from viewing the keyboard. The only visible parts of the PC were the screen, the stylus, and the electromagnetic card reader attached to the side. The electromagnetic card reader was meant for users who preferred to bid by swiping a bid card instead of entering their bid numbers. A guest could receive a bid card by approaching a volunteer and having a card registered to him. The card was a proprietary, branded card that went with the software. However, several guests tried to swipe their personal credit cards on the tablet. At an event where bidders are literally buying items and are presented with an electromagnetic card reader, the guests logically assumed the tablet would read the credit card. The tablet card reader violated the consistency principle: it did not conform to similar situations nor did it provide the function its form suggested.

The other mismatch that occurred between what users were expecting based on the appearance and form of the tablet and what it was capable of involved the screen. The screen was the largest visible part of the tablet and, as previously mentioned, the keyboard was hidden. The buttons on the screen were also quite large and because of these factors, many guests and volunteers believed the screen to be a touch screen. The tablet, though, only responded to the stylus.

Perhaps the most problematic design flaw was the addition of a confirmation screen that was inconsistent with the usual auction process. When bidding on an item, the system allowed users to enter a maximum bid; theoretically the highest amount they would be willing to pay. As an example, suppose Jane is the first to bid on a painting and begins bidding at the minimum amount of $200. She enters a maximum bid at $800. John is the next bidder and the minimum bid increment is $50. He places a bid for $250, and because $250 is lower than the highest amount Jane is willing to bid ($800,) the system then automatically places a bid for Jane at $300. Jane could continue bidding on the painting without having to constantly monitor the other bids being placed. Auction sites, like eBay, also offer this feature.

The problem was, unlike eBay, the tablet software required guests to perform an extra step before placing a bid that was below another guest's maximum bid. If Jane and John were using the software in the previous example, John would enter his bid at $250, and the software would warn him that he was about to be outbid (since the system will automatically place a bid for Jane for $300.) Before his bid was placed and before Jane's automatic bid of $300 was placed, John had to tap a button to confirm that he would still like to place the bid even though he realized he would be outbid and therefore lose the auction.

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In this scenario, despite John's willingness to pay $250 for the painting, after 45 seconds have passed and he is logged out, the last bid shown for the item is Jane's for $200 as John's bid was never completed.

What happened in reality was that guests did not confirm their bids that were going to be outbid automatically. Perhaps they did not understand the message. Many walked away and left the confirmation screen showing. In this scenario, despite John's willingness to pay $250 for the painting, after 45 seconds have passed and he is logged out, the last bid shown for the item is Jane's for $200 as John's bid was never completed. John's bid of $50 was not recorded nor was Jane's automatic bid of $50. The beneficiary of the money from the auction has just lost $100. How many times did this scenario occur over the course of the evening? How much money was lost overall?

In the pen and paper system, Jane would have written down "$200." John would have walked by and written down "$250." Jane, perhaps hovering near the painting, decides she would be willing to pay at most $800 and continues bidding by placing a new bid for $300. On eBay, John's bid of $250 would be placed without alerting him to the fact that he will shortly be outbid. The system would then, within seconds, automatically enter Jane's bid for $300 and John would have to decide his next move. In neither of these well known auction systems is the bidder warned he will be outbid and asked to confirm his bid amount.

The silent auction bidding software also did not prevent errors well. During the bidding, a projector displayed on the wall pictures of the live auction items, details about the beneficiary of the evening's donations, items that had not been bid on yet, etc. One of the screens also listed the most active bidders: those who had placed the largest number of bids. These bidders were not referred to by name but instead by bid number. The list, coupled with the fact that guests were walking around with the sheets of paper that had their bid numbers on in such a large font size, would have made it easy for someone to bid in another person's name by typing in his or her bid number, intentionally or not.

A guest could have easily accidentally bid for another guest because of the logistics of logging out. Once a user had entered her bid number or swiped her card, she would remain logged in until 45 seconds of inactivity had elapsed. She could logout by waiting 45 seconds, choosing "Logout" after placing a bid, or

When the buying process is mission critical, it is important to conduct usability testing to make an actionable, prioritized plan to address any issues that arise.

tapping "Home" at any time. These directions, though, were only given to volunteers, and many guests would place a bid and walk away, remaining logged in as the guest behind them approached the tablet. The guests were dependent on the volunteers to ensure they were properly logged out and no one using the tablet immediately after them would continue to bid using the previous bidder's credentials.

Additionally, the software did not attempt to prevent the error of entering the wrong bid amount. To place a bid, a user would tap "Enter Bid," enter his bid number or swipe his bid card, enter the desired amount and tap "Place Bid." No confirmation screen appeared that allowed the user to double-check his bid number and the amount. As a result, a volunteer assisting one couple entered a bid of $1300 instead of $300 and had to contact the software support staff to correct the mistake.

A poll conducted in 2008 indicated that 39% of donors to charity gave as a result of a fundraising event ("2008 DonorPulse Summary Report" 5). The evening was, therefore, probably a significant source of donations for the charity, and its main purpose was to encourage guests to donate money to the charity's cause. The goal should have been to make it as easy as possible for the donors to give and not raise any barriers that may cause a donor to abandon the process or lose the intention of giving. By not incorporating the usability principles of creating a match between the system and the real world, being consistent, and preventing errors undeniably caused a loss of donations. How can we measure how much was lost due to bids never being confirmed or users becoming frustrated or intimidated by the system and as a result, not bidding? We probably cannot. However, the goal should be to design the software and test it until a usable interface is developed, not leaving charities with the unanswerable question in the first place.

If you are concerned users are not completing revenue-generating workflows using your website or software, contact Normal Modes today about a user experience heuristic evaluation at info@normalmodes.com

About Normal Modes

We could tell you that a "Normal Mode" is the pattern of motion in which all parts of the system move sinusoidally with the same frequency, but that might just bore you.

What you should know about Normal Modes is that it is a group of people who collectively bring great experience and education to a common goal – creating usable design. We believe that the greatest compliment a company can give its customer, apart from a great product, is a memorable, useful experience. We may be based in the Lone Star State, but our home is at the intersection of business and art. There are many design firms, but few that design with the end user's experience in mind. Normal Modes creates value for large organizations by helping them create products that base form on function.

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