

Accessible and Personalized Functionality and Interaction during the Booking

Process for Hosts for Humanity

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Accessible Booking for Hosts for Humanity

Abstract

Hosts for Humanity is a platform that connects guests who are undergoing a medical procedure at a hospital away from their hometown. Hosts for Humanity (H4H) aims to close not only the affordability gap for medical travel, but also to provide a sense of community for individuals traveling from far away (Owens 2018). During the booking process, what can interaction do to provide communication opportunities that build a personal connection between the guest and host? Mapping Baltimore, or any locality, and giving it a sense of place is vital to connect the guest with the host. Communication functionality can increase personalization and provide guests and hosts with an opportunity to connect during the booking process and even travel.

Traditional usability heuristics factor into analyzing what features best facilitate communication. Also, a heuristic analysis reveals insights about interface issues that could cause real-world anxiety for users who are already dealing with the stress of a medical procedure.

Keywords: mobile, travel, stress, gestural, communication, traditional heuristic review

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Booking a room for travelers undergoing surgery might seem as simple as going to a travel website, and then have a host or hotel confirm the booking automatically. While that may be the case for someone who is traveling for pleasure, the users coming to Hosts for Humanity (H4H) are booking a room under stress and, at times, require out of town accommodations within a specific time frame. The cost to travel can be prohibitive to those on a limited budget. Hotel rooms in Baltimore cost on average \$138 a night, and stay for medical travel is 4.6 nights (Owens 2018). People traveling for medical care are looking at additional costs including transportation, food, and other incidentals.

National healthcare costs rose to \$10,348 per person and accounted for 17.9% of the gross domestic product ("NHE Fact Sheet," 2018). Three in five bankruptcies result from medical debt, and two-thirds of people lose their home within five years of declaring medical bankruptcy. Even with the Affordable Healthcare Act, one in three people in the USA still experiences hardship with medical debt and bills. (Frakt 2015). Booking a room via H4H can decrease the stress people encounter with unexpected medical expenses, and even possibly provide a model of safe and affordable care for other metropolitan areas.

Hosts for Humanity Users

Given the average age of a medical patient is 44-45 years old (Himmelstein, Thorne, Warren, and Woolhandler 2009), it is important to consider guests at all spectrums of the life cycle as

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well as physical abilities. Designing for the user with the least knowledge of booking properties online while looking at competitors with high user engagement can inform how to design for populations who continue to increase mobile device use. Understanding place and multiple sensory orientations can help ensure that all guests can successfully book a room.

The primary users of the H4H application are the guests who require out of town medical care and the hosts who have a place to provide. A global profile for a guest is one who travels for surgery at a Baltimore hospital and who do not have family or friends in the area. Guests might not be traveling with a laptop; instead, they may rely on their mobile device or tablet while in an unfamiliar area (Anderson and Smith, 2015).

Hosts are local to Baltimore and know the area well. There is potential for anyone to become a host in Baltimore with extra space that provides privacy for patients after medical treatment. Hosts who have medical training can serve as patient escorts for users who do not have family members who can travel. The increase in social isolation for elderly populations in addition to the cost of medical care could be worth framing the H4H application in a direction that lets hosts provide services beyond a private room (Medvene et al., 2015).

Guests and hosts might have a variety of visual or auditory needs that extend beyond a mouse. Making sure interactions provide the appropriate feedback that takes WAI-ARIA and other assistive technology content standards into account for gestural and keyboard navigation (Horton and Quesenbery, 2013). Guests will be at airports, unfamiliar cars and transportation

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systems, and potentially a new temporary home. Hosts might rely more on tablets and mobile phones to manage bookings.

While the goal of H4H is to connect out of town medical patients and their families with local hosts, secondary users could interact with the platform. Local and remote hospital social workers work with doctors to release patients from the hospital. There is a potential referral network for social workers who are tasked with making sure the patient has someone to care for them after a hospital visit. Keeping their potential interactions on behalf of a guest could bolster referral opportunities to H4H. Another potential secondary user is the family of a guest or host acting on their behalf to book a space. The administrators at H4H are also essential to consider. They need to facilitate communication between the guest and the host during times of potential conflict, or if someone wants to talk to a human at the organization.

The Guest, Host, and Guest to Host Connection in the Booking Process

Onboarding Informs Booking

The booking process assumes onboarding is either a) complete or b) require the user to complete a background check and guest profile. Login screens that facilitate both cases can help to streamline the booking process. Focusing on a mobile-first approach can help designers focus on the most critical interactions first, and this also supports users who are on the road and need quick communication with the host.

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Trust remains tantamount during the booking process and reducing stress (Wozniak 2018).

Building trust between hosts and guests means making sure the platform communicates the H4H service is only available for the short term via house guidelines. The process of communicating length of stay remains constant for hosts and one that should change dynamically for any front-end guest communication.

Framing Communication to Strengthen Branding and the Guest and Host Experience

What facilitates a smooth booking process is not just the actual interface itself, but also the communication between the guest and host. Facilitating the communication between the host and the guest is tantamount for both admin areas to get necessary feedback for next steps. Using mental models that guests experience with booking hotel rooms and social media can help inform the communication process. The chat communication on the H4H platform could also copy to email, and vice versa.

Feedforward comes from providing steps early in the design process so the guest can reach their goal of booking a room (Saffer 2010). Part of the chat experience provides feedforward so guests can start establishing more than a transactional relationship. This is the case for guests who may not have available family members to travel with them. Chat also helps if someone has specific questions about curbs or other accessibility considerations. Reviewing filters, mapping, and chat experiences through a heuristic analysis can inform the prototyping process to help the guest trust the host match on the screen.

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Heuristics for Building the Booking Experience

The Nielsen Norman Group published 10 Design Heuristics for User Interfaces (Nielsen 1995). It is important to revisit classic heuristics to see how they hold up with new interface options that mobile, gestural, and other non-mouse based device interactions.

Keeping Users Informed: Visibility of the System Status

Keeping users informed about where they are in a process with appropriate feedback comes to mind (Harley 2018; Nielsen 1995, January 1). After undergoing the onboarding process, users may want the booking to involve fewer steps. It is worth considering inclusion of a prominently displayed progress indicator the location of the user in the booking process. Also, check marks and color changes for filters as well as adding places to a favorites list are additional micro-interactions that could help users feel their search results truly consider data inputs (Rosenfeld, Morville and Arango 2015).

Match the Interactions with the Physical (Real) World

Systems should display in a clear and logical order and should speak user language rather than system language (Nielsen 1995). Given that hospital names sound somewhat systematic or generic - Medstar, Johns Hopkins University Hospital, for example - it is important to connect those systematic names in terms that connect hosts with homes near the hospital. Again, mental models early on in the booking process with affordances, feedback, and feedforward (Saffer 2010) can help build trust. Mapping is one of the most recognized mental models for users. A map could have pins of where the general location of the host's home is, and users can

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then determine if it is in a desirable location to the hospital. The hospital could have a different color and shape indicator on the map so users can see the relationship.

Consider the manners in which people interact with new connections. More than 2.5 billion people use applications under the Facebook umbrella (Constine 2018). What that means is users are used to quick and easy access to new connections. Setting expectations that hosts are not always available are key, and H4H should provide guidelines about how soon a host should get back to a guest's questions. Ensuring that guests know when hosts are not available can also help to alleviate stress and set expectations. Providing host controls for messaging, including an away message option or auto-responder, helps communicate to guests that hosts are there, but not immediately free to interact.

Exit a Process or State at Anytime

Giving users a sense of control and freedom is key to a good experience (Nielsen 1995). Someone should be able to exit the process if a step isn't working out. Wozniak provides a cancel button for a guest in her wireframes (Wozniak 2018). If a user wants to go back on a mobile device to a listing before logging into an admin area, then clicking outside the state can help a user leave at any time.

Beyond the device itself, there are consequences in the real world for exiting a state, and that includes cancellation. Hosts need stricter guidelines for cancelling. If a host cancels on a guest, say, 48 hours before travel, then this puts an undue burden on the guest and H4H to find last

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minute accommodations. To protect the reliability of the H4H brand, hosts need clear guidelines during and after the onboarding process about the hardship cancellation poses on a traveling guest and H4H. A clear email message could relay to an H4H leader if a host attempts to cancel a stay at any time.

Giving the guest easy controls to cancel a booking or change dates is critical. Surgeries can change, and the consequences should be minimal for guests who cancel a booking.

Maintain and Update Consistency and Standards

Booking a room in a new city means entering the unknown. Users need admin areas to be fully responsive, especially for traveling guests who may only access their mobile device or tablet (Pierce 2015). When a guest is in transit, chances are they are using gestural movements, text, and chat to communicate with hosts rather than relying on phone calls and a keyboard.

Designing for maximum ease of use gesturally can be translated to keyboard and mouse movements. The mobile design can then scale up to a desktop device and factor in keyboard and mouse interactions.

The booking experience needs to remain consistent in content across devices. Prototyping a mobile interface with navigation items in a single vertical column could scale to a tablet and desktop devices that maintain visual consistency through color, placement, and other style elements (Pickering 2016). Additional visual elements can support larger screens, including more negative space, without disrupting consistency across devices.

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Provide Fail Safes for the Users

Letting guests down gently if any space does not meet date requirements is essential. The calendar in the booking process is a crucial communication tool, one where the host admin area controls dates and the display on the front end and guest admin area. Implementing a clear calendar that provides minimal to no ambiguity about availability on the hosts' end helps users book quickly and with minimal errors. Blanking out dates of availability, and even making options that are not matching a guest's need disappear, can help narrow down the browsing for places unavailable spaces.

If a user is unverified, and attempting to book a room, another fail-safe is clear instructions and feedforward about how to become a verified user and onboard with Hosts for Humanity. Another recognition tool is letting users leave voice generated messages via the platform. What this can do is help users who have dyslexia or other language barriers to utilize H4H without relying on text to communicate messages.

Design for Recognition Rather Than Recall

A verified badge can show in the profile and provide a visual cue for guests who pass a background check. To increase security with messaging functionality, only verified users could access a host. Then, hosts know they are only having the more intimate nature of messaging with users that have background checks.

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Maps and listings can also include a favorite icon that allows verified guests to come back later and potentially message the hosts of their top three picks. A clear location indicator saves a guest from having to browse options again to locate those three favorite places and also helps to ignite a connection with the host. It also encourages the guest to build a profile and start the background check process before booking.

Flexibility and Efficiency of Use/Minimal Aesthetic Design

While it is likely that a guest will interact H4H within a very tight timeframe, eliminating unnecessary flows can help users achieve booking a room. Prioritizing the booking process and adding clear call-to-action via labeling helps users move through the booking process.

Prioritizing booking via the controls on mobile can help H4H achieve the primary goal of matching guests and hosts. Secondary pages like About Us and House Guidelines can be implemented in the global menu and added on screens to support the booking process.

Maps should put someone in the sense of place and locate the user to tools that provide easy access to feeling a sense of place with their temporary visit. A guest's family member in the Midwest might want to study the map and browse options based on the location of their hospital, which they can pinpoint and set on a map.

Help Users Recognize, Diagnose and Recover From Errors

When people are scared, sad, or worried, they seek familiarity and what they know (Weinschenk 2011). Weinschenk later recounts an experience when she had to get her

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daughter to an out-of-network doctor while traveling. Her experience documents a healthcare provider interface that provided error feedback without clear next steps to secure a doctor. What this resulted in were additional stressors. A few days later, she encountered the page and decided it was not as challenging to complete as it was under intense arousal. She then cites Yerkes–Dodson Law, which states that levels of arousal that are too high can decrease the cognitive performance of simple tasks. What mainly caused stress was error messages that did not provide a chance to recover from an error easily. Under stress, tolerance for errors lowers.

Dan Saffer states, “In an ideal situation, no system should ever present an error message to a user unless the user has done everything *right* but the system itself cannot respond correctly” (Saffer, 2010, p. 138). For accessibility purposes, forms should include text assistance below the field, and error messages should refrain from displaying on the top of the page so screen readers and other auditory technologies can help users complete the form (Horton and Quesenbery, 2013). Within the booking process, this could happen via any payment forms or any other data submitted to complete the booking process.

Help and Documentation

In this context, documentation can also serve as a branding and marketing tool. One of Wozniak’s interviews with a guest revealed their discomfort with not knowing what to expect at a host’s home (Wozniak 2018). Once guests book, a guest can access a ‘What to Expect’ notice via email and in the admin area.

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When a user lets the system know what hospital they are staying in, the content for tips to display can be relevant to the hospital nearby. A tool like 'trip tips notes' could become available at the end of the booking process, one where a user can access customized content that is near the hospital and the household. Guests and hosts can be encouraged via their own admin area documentation to engage early via the messaging functionality with a call to action.

What next?

What Nielsen's heuristics reveal is desktop web-based design had good underlying motives for increasing interaction between guests and hosts. What needs to continue happening with interaction design of H4H is easy messaging functionality that continues to allow gestural interaction while allowing for deeper connections between the guest and the host. Intuitive interactions can happen by providing feedforward in the mapping, filtering, and messaging process in the early stages of the booking process. The admin area of both the guest and host areas can encourage messaging during the booking process to bolster chances for deeper connections once the guest, host, and other stakeholders meet in person.

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Bibliography

- Anderson, M. and Smith, A. (2015 April 14) The Smartphone: An Essential Travel Guide. Retrieved from <http://www.pewresearch.org/fact-tank/2015/04/14/smartphone-essential-travel-guide>
- Constine, J. (2018 July 25) 2.5 Billion People Use at Least One of Facebook's Apps Retrieved from <https://techcrunch.com/2018/07/25/facebook-2-5-billion-people/>
- Egger, F. N. (2001) Affective Design of E-Commerce User Interfaces.
- Frakt, A. (2015) Retrieved from <https://www.nytimes.com/2015/06/23/upshot/medical-insurance-is-good-for-financial-health-too.html?module=inline>
- Harley, A. (2018, June 3) *Visibility of System Status*. Retrieved at <https://www.nngroup.com/articles/visibility-system-status/>
- Hassenzahl, M., Diefenbach, S., Göritz A. (2010) Needs, Affect, and Interactive Products – Facets of User Experience *Interacting with Computers*
- Horton, S., & Quesenbery, W. (2013). A Web for Everyone: Designing Accessible User Experiences. Brooklyn, NY, USA: Rosenfeld Press
- Klemmer, S. R., Hartmann, B., & Takayama, L. (2006). How bodies matter: five themes for interaction design. In *Proceedings of the 6th ACM conference on Designing Interactive systems - DIS '06* (p. 140). University Park, PA, USA: ACM Press. <https://doi.org/10.1145/1142405.1142429>
- Medvene, L. J., Nilsen, K. M., Smith, R., Ofei-Dodoo, S., DiLollo, A., Webster, N., ... Nance, A. (2016). Social networks and links to isolation and loneliness among elderly HCBS clients. *Aging & Mental Health*, 20(5), 485–493. <https://doi-org.proxy-ub.researchport.umd.edu/10.1080/13607863.2015.1021751>

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NHE Fact Sheet. (2018, April 07). Retrieved from <https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet.html>

Nielsen, N. (1995, January 1) *10 Usability Heuristics for User Interface Design*. Retrieved from <https://www.nngroup.com/articles/ten-usability-heuristics/>

Owens, J. (2018, September 10) [*Presentation at IDIA 612*]

Pickering, H. (2016) *Inclusive Design Patterns: Coding Accessibility Into Web Design*. Frieberg, Germany: Smashing Magazine GmbH

Rosenfeld, L., Morville, P., Rango, J. (2015). *Information Architecture: For the Web and Beyond*. Sebastopol, CA: O'Reilly Press.

Saffer, D. (2010) *Designing for Interaction: Creating Innovative Applications and Devices*, Second Edition. Berkeley, CA: New Riders.

Weinshenck, S. (2011) *100 Things Every Designer Needs to Know About People*. Berkeley, CA: New Riders. 190-191.

Wozniak, A. L. (2018). *The Sharing Economy with Heart: Developing a Peer-to-Peer Marketplace for Patients and Their Families Traveling for Medical Care*, 86.