Developing a Usability Ranking System for Findings in Health Information Technology Products

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Abstract

Resources for addressing usability issues identified by practitioners are often limited and teams look to usability professionals for help in prioritizing the issues. Health Information Technology (HIT) products face an additional level of complexity due to the intertwined relationship between usability issues and potential patient safety issues. Human Factors Engineering (HFE) within the Office of Informatics and Analytics of the Veterans Health Administration (VHA OIA) developed a usability ranking system, sensitive to the specific challenges of HIT products, to help teams prioritize resolution of usability findings. The system considers factors concerned with the findings themselves, including user experience impact, organizational impact, and frequency of the problem. Constructed with “checklist style” definitions for each level, the system helps practitioners more consistently select the appropriate initial ranking.

How the System Was Developed

In the creation of this ranking system, VHA HFE drew upon published material and explored the unique challenges in prioritizing usability issues in HIT products. The system considers factors concerned with the findings themselves, including user experience impact, organizational impact, and frequency of the problem. The system helps practitioners more consistently select the appropriate initial ranking.

The Ranking System

VHA HFE evaluates HIT products’ strengths and weaknesses to assist development teams with improving their usability. We call these strengths and weaknesses usability findings. HFE has developed a ranking system to help business owners prioritize the resolution of the findings. The system considers factors concerned with the findings themselves, including user experience impact, organizational impact, and frequency of the problem. The system helps practitioners more consistently select the appropriate initial ranking.

Employing the System

To maintain consistency in communicating usability issues within VHA, regardless of the usability evaluation method employed, HFE categorizes all findings using the ranking system. The system relies on observed user behavior and frequency. This gives practitioners the ability to rank usability issues in HIT products.

Conclusions

Ranking the severity of usability issues is not a new concept. Usability practitioners have likely been providing severity ratings to development teams as long as they have been providing feedback on product usability. Severity feedback is often used to prioritize resources to fix the most serious problems and to roughly estimate the need for future usability study. VHA HFE incorporates changes to this system by employing the system to prioritize usability findings in HIT products. The system is designed to aid practitioners in identifying the most serious usability issues and in communicating the general usability impact of the findings. This system is designed to aid practitioners in identifying the most serious usability issues and in communicating the general usability impact of the findings.

References


Example of a Serious Finding

From (BaseLine Usability Testing of VA’s My Healthvert Web Portal)

Participants believed “Learn More” link would lead to appointments function. This issue was rated “Serious” due to the frequency in which it caused errors. In addition, this issue directly impacted three (3) of the other six (6) serious issues. The “Learn More” section contains information regarding common areas of MyHealthvert; three of the four sections are Appointments, Pa Refills, and Secure Messaging. Participants did not know which one to choose if one takes precedence.

Recommendation(s): The “Learn More” section should be removed from the homepage. While it’s important to have the resources available to the user to inform them of the function of these areas, the current placement results in frequent navigation failure. HFE also recommends that each “Learn More” widget have a link to the specified area of interest so that the user can complete their desired action.

Example of a Minor Finding

From (Heuristic Evaluation of Veteran’s Choice

The “Learn More” section should be removed from the home page. The loading splash screen does not fit the tablet device.

Recommendation(s): Apply proper size scaling to the splash screen to enable all sizes of device to view a correctly sized screen.

Example of a Moderate Finding

From (Heuristic Evaluation of Veteran’s Choice

Two eligibility types may not be mutually exclusive. If a Veteran qualifies for both, the provider may not know which to select.

Recommendation(s): If Veterans can be both types, consider making the selections checkboxes, or writing short guidance on which one to choose if one takes precedence.

Example of Findings Breakdown

With each usability evaluation report, VHA HFE provides program offices and development teams with a breakdown of the ranking of the usability issues identified. This serves a dual purpose of communicating the general usability of the current build as well as providing a basis for comparison as usability issues are addressed and/or resolved.

Example of Usability Findings

Usability Findings

Frequency with which the problem occurs

•••

Serious

May diminish the credibility and/or reputation of the VA HIT product.

•

Causes frequent task failure or occasional task failure from which users are able to recover in order to complete the task.

•

Causes user hesitation, confusion, or slight irritation. May diminish the credibility and/or reputation of the VA HIT product.

Market impact of the problem

•••

Serious

Expected to negatively impact use, possibly leading to decreased usability.

•

Causes occasional task failure after which recovery is possible.

•

Causes extreme user irritation and/or task abandonment.

Severity feedback is often used to prioritize resources to fix the most serious problems and to roughly estimate the need for future usability study. VHA HFE incorporates changes to this system by employing the system to prioritize usability findings in HIT products.

Employing the System

To maintain consistency in communicating usability issues within VHA, regardless of the usability evaluation method employed, HFE categorizes all findings using the ranking system. The system relies on observed user behavior and frequency. This gives practitioners the ability to rank usability issues in HIT products.

Conclusions

Ranking the severity of usability issues is not a new concept. Usability practitioners have likely been providing severity ratings to development teams as long as they have been providing feedback on product usability. Severity feedback is often used to prioritize resources to fix the most serious problems and to roughly estimate the need for future usability study. VHA HFE incorporates changes to this system by employing the system to prioritize usability findings in HIT products.

References

