



How do we increase software and design reusability?

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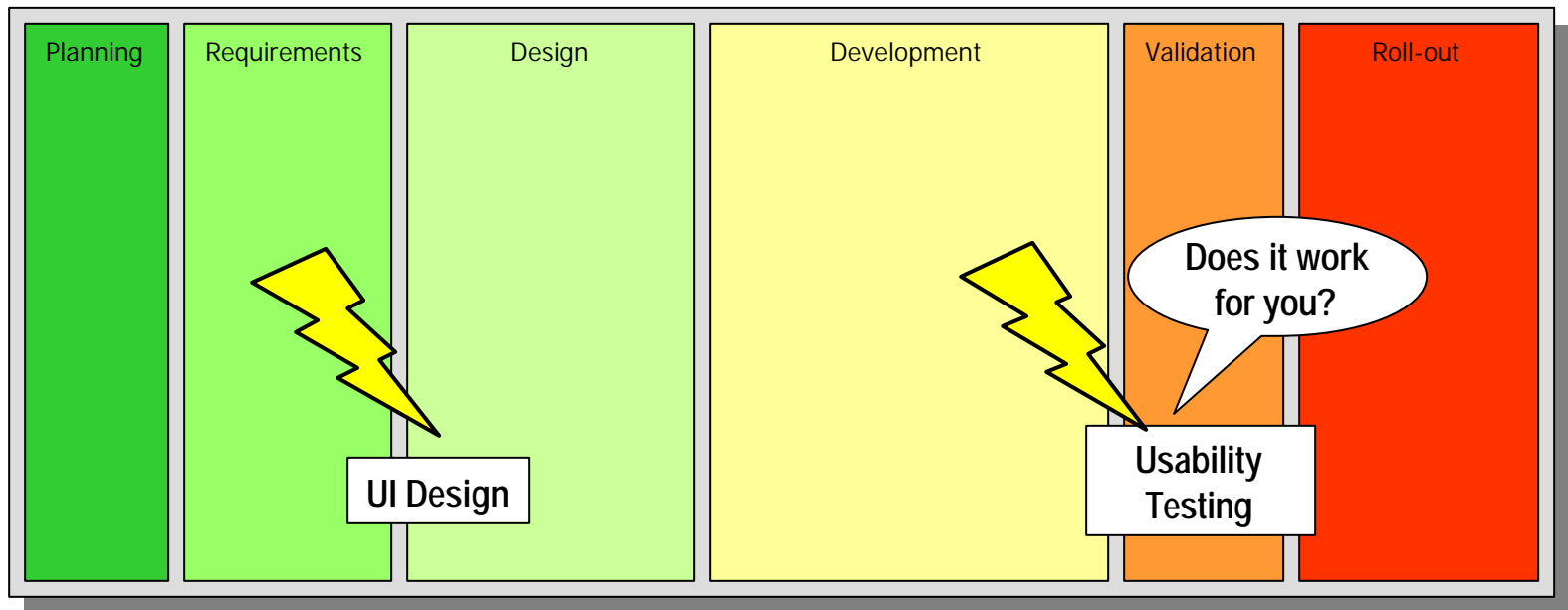




Usability Design vs. Usability Testing

When in the System Development Lifecycle (SDLC)?

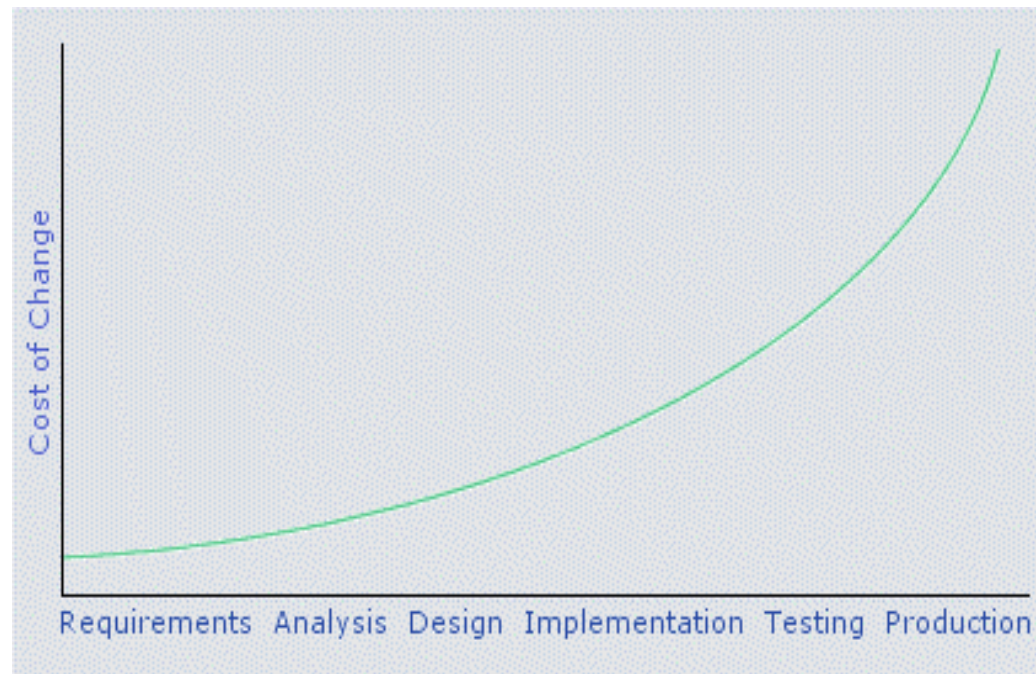
When UI design is not user-centered and usability is relegated to end of lifecycle usability testing, usability tests often identify major problems too late to fix them.





Cost of Change Throughout the SDLC

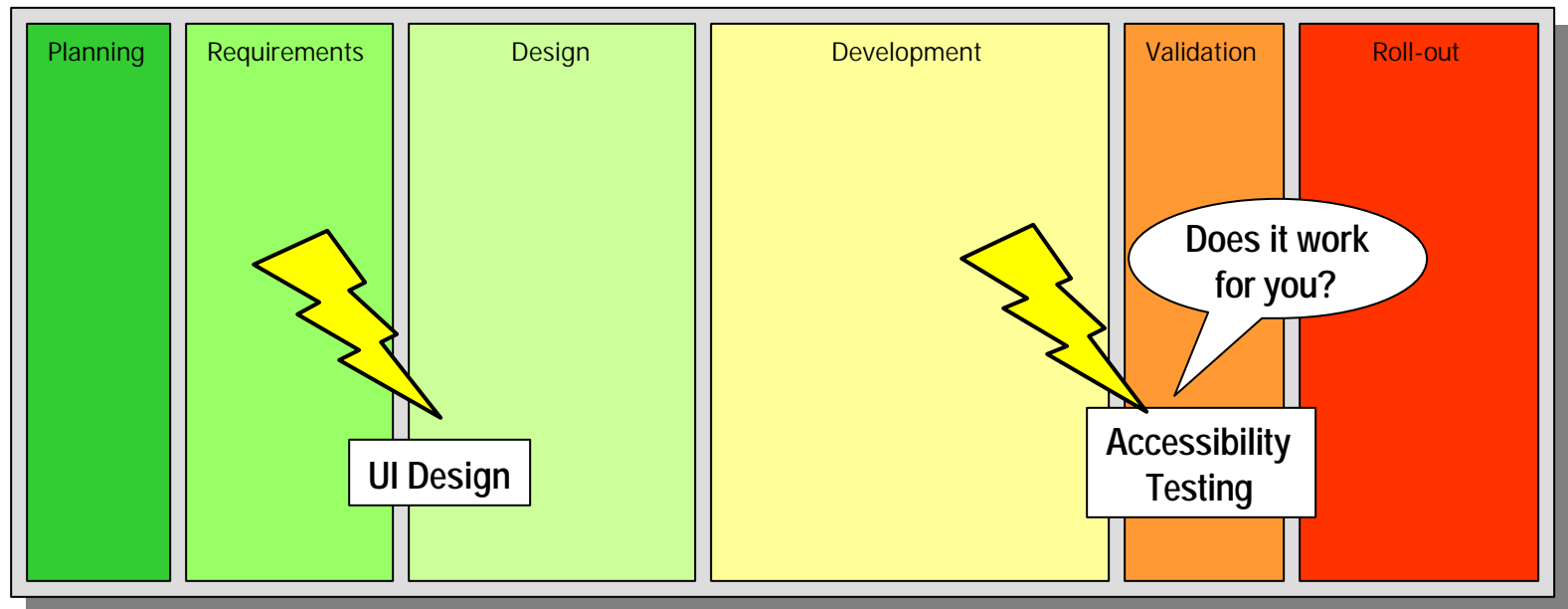
Even if the problems identified during testing can still be fixed, the cost of those modifications is much more significant than modifications during system design.





Accessibility / Section 508 Testing

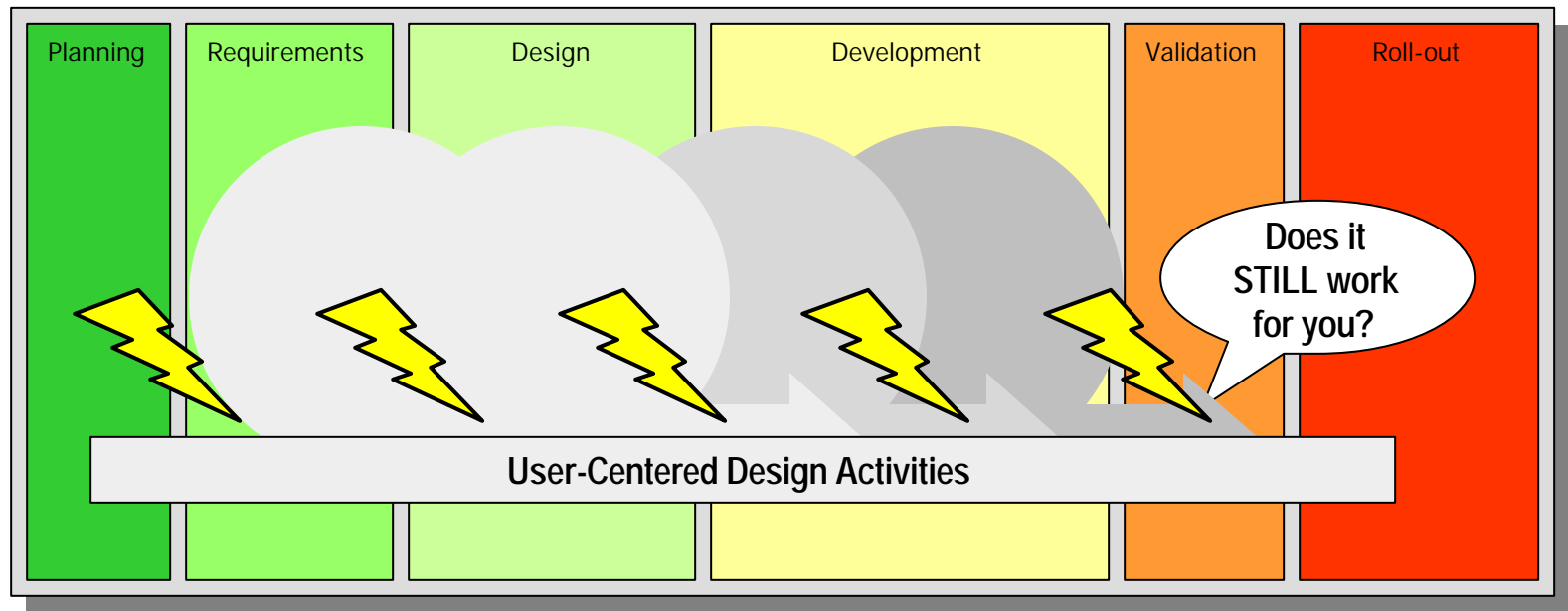
In practice, accessibility is almost universally addressed during testing. Relegating accessibility to end of lifecycle accessibility testing, has the same negative impact as doing so with usability. In addition, it has lead to high levels of software Section 508 failure.





User Centered Design

UCD occurs iteratively throughout the lifecycle. Both usability and accessibility can benefit from UCD. The final usability and accessibility testing is primarily for verification purposes.





Internet Application Standards

The Workgroup:

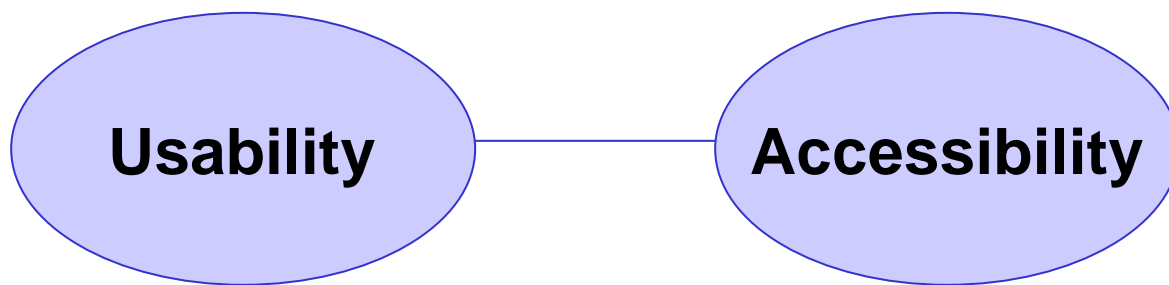
- Established collaborative group of experts in usability, accessibility, and technical implementation
- Created the first set of Internet application standards
 - Featuring the first set of 17 frequently used controls
- Produced an intranet web site to make the standards available to all developers





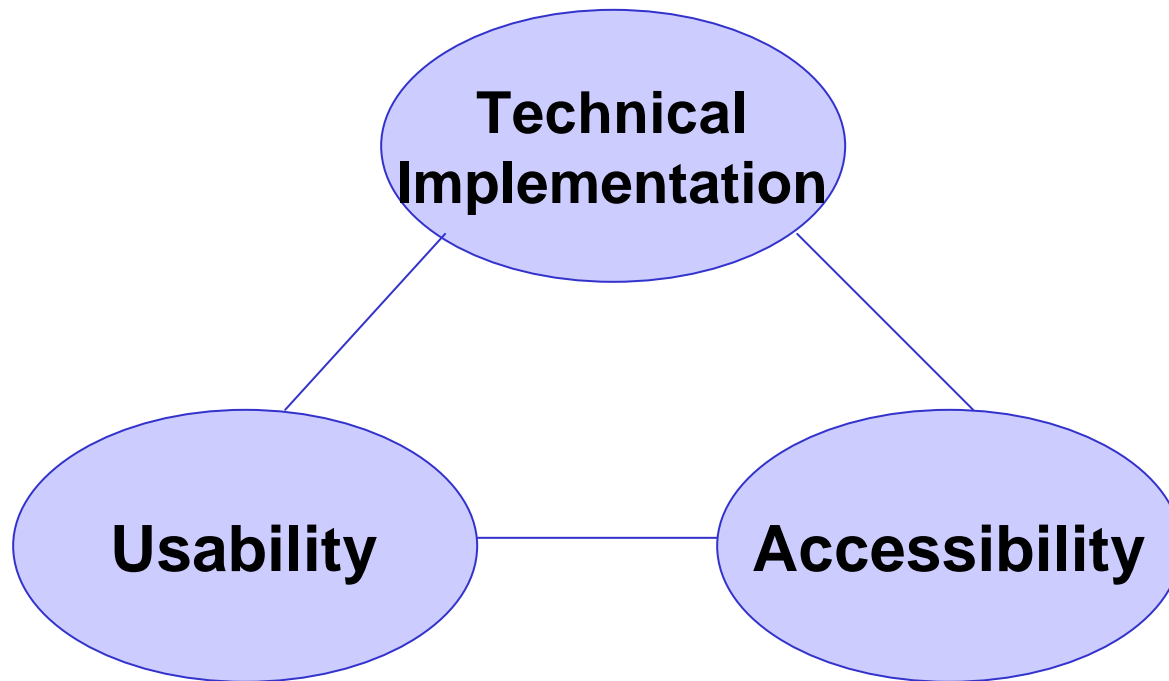
Addressing Usability & Accessibility

- Usability specialists prepare written user experience requirements for each control. The requirements articulate patterns of best practices, as determined by research and experience.
- Accessibility specialists review the requirements, recommend modifications and enhancements, and prepare additional detailed accessibility requirements.





Introducing Technical Feasibility



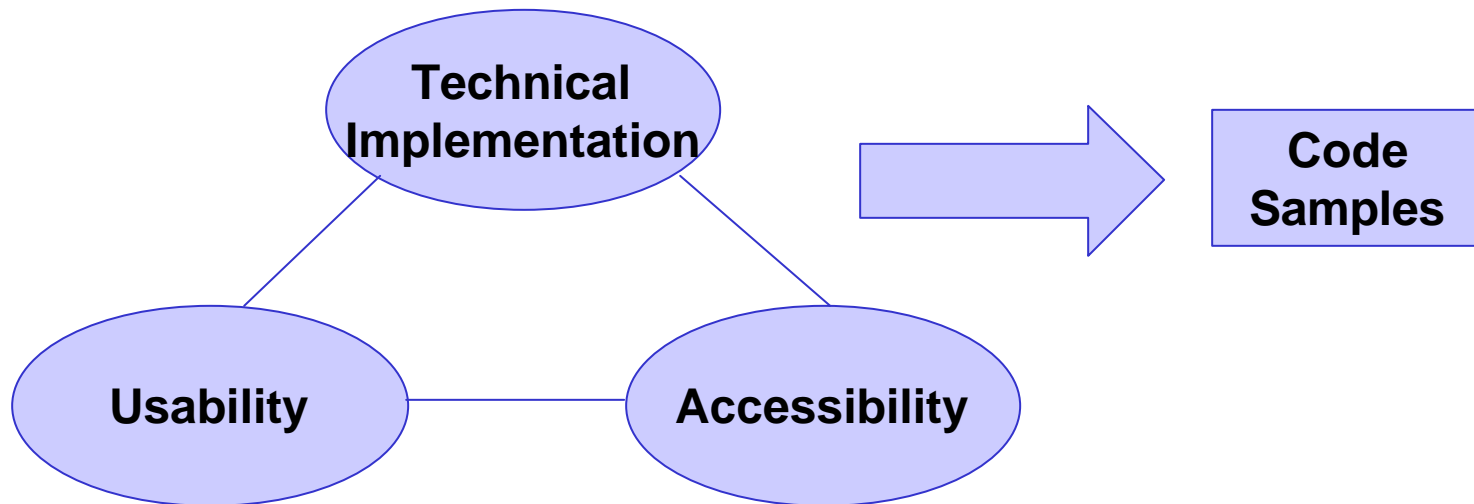
- Technical experts ensure that the usability and accessibility requirements remain within the technical limitations of the applicable technologies.





Enabling Reuse

- Coded examples provide a library of reusable components, which
 - Save development time and costs
 - Promote the reuse of technical excellence
 - Result in software that is usable and accessible
 - Improve the level of Section 508 compliance





Example - SSN Control Description

- The description explains the goals:
 - The SSN control allows the user to enter a Social Security Number into an application. To ensure that the user can complete this task successfully, the SSN control should meet user expectations for the format of the Social Security Number and reduce the potential for errors in entering the number. The user should be able to quickly see what is expected, and visual formatting can help to set that expectation. Some users may type the dashes in the number, while others may not, so the control has to allow for both possibilities. This should eliminate errors and frustration for most users.





Example – SSN Control Outline (1 of 2)

- Description
- Guidelines for Use
 - Prompting the User for the Correct SSN
 - Validating the SSN
 - Displaying the SSN
- Interaction Requirements
 - When the field is blank, the dashes are not visible. (Client-Side and Server-Side)
 - After the first three digits are typed, the first dash appears automatically and the cursor moves to the other side of the first dash. (Client-Side)
 - If the user types a dash, it is ignored (the dashes are inserted automatically in the right place). (Client-Side)





Example – SSN Control Outline (2 of 2)

- Interaction Requirements (Continued)
 - If the user types any non-numeric characters, they are ignored. (Client-Side)
 - Only the nine digits of numeric data are stored when the user submits the page. (Client-Side and Server-Side)
 - The field accepts N characters (Client-Side: 9; Server-Side: 11)
 - The field accepts both numbers and dashes. (Server-Side)
- Accessibility Requirements
 - Placement of Labels
 - Speaking of the Label Text During Data Entry
 - Keyboard Access





Example – SSN Control Accessibility

- Speaking of the Label Text During Data Entry:
 - For blind users, it is important that the SSN label is associated with the SSN control so that the text of the label will be read when the user tabs to the field. While this can often be accomplished by locating the label immediately prior to the control in the HTML, it is preferable and recommended to use the more reliable technique of explicitly identifying the label with a label tag. The label must be meaningful and include all information necessary for the user to provide the desired input. This will ensure the screen reader will be able to provide this information to the users when they are completing the data entry. If it is necessary to provide the screen reader with additional information beyond the visual screen text, use a title attribute in the control itself, to supercede the label tag.

