

# The Carrot and the Stick

## Accessibility the Context of Usable Design

WCAG 2.0 has been out for ten years. That was 2008 — Netflix was mailing DVDs, Apple didn't sell iPhone apps, and Google wasn't even a browser company. Technology has changed a lot since then, and the new WCAG 2.1 Success Criteria introduce needed modernizations that consider our current experiences.

In those 10 years, the field of user experience has also expanded alongside technology. Usability is becoming ever more important when building modern applications, and Jakob Nielsen's "Usability Heuristics for User Interface Design" are some of the guiding principles in interaction design. Upon inspection, these Heuristics and WCAG are surprisingly aligned since they share the goal of a better experience for the user.

## 1. Visibility of system status

The system should always **keep users informed about what is going on**, through appropriate feedback within reasonable time.

## 2. Match between system and the real world

The system should speak with concepts familiar to the user. Follow real-world conventions, **making information appear in a natural and logical order**.

## 3. User control and freedom

Users often choose functions by mistake and will need a clearly marked "emergency exit". **Support undo and redo.**

### 3.2.6 A Status Changes

In content implemented using markup languages, status messages can be programmatically determined through role or properties such that they can be presented to the user by assistive technologies without receiving focus.

Alerts can be handled well and elegantly for users, encouraging the use of aria-live regions (polite, assertive)

## 4. Consistency and standards

Users should not have to wonder whether **different words, situations, or actions mean the same thing**.

### New Criteria

#### 1.3.4 AA Identify Common Purpose

The meaning of each input field collecting information about the user can be programmatically determined when:

- The input field has a meaning that maps to the HTML 5.2 Autofill field names; and

- The content is implemented using technologies with support for identifying the expected meaning of form input data.

#### 1.3.5 AAA Identify Purpose

In content implemented using markup languages, the purpose of User Interface Components, icons, and regions can be programmatically determined.

#### 2.4.12 A Label in Name

For user interface components with labels that include text or images of text, the name contains the text presented visually.

#### 2.5.3 AAA Concurrent Input Mechanisms

Web content does not restrict the use of input modalities available on a platform except where the restriction is essential, required to ensure the security of the content, or required to respect user settings.

## 5. Recognition rather than recall

Minimize the user's memory load. **Instructions for use of the system should be easily retrievable** whenever appropriate.

## 6. Flexibility and efficiency of use

Accelerators — unseen by the novice user — may often speed up the interaction for the expert user. **Allow users to tailor frequent actions.**

### New Criteria

#### 1.4.10 AA Reflow

Content can be presented without loss of information or functionality, and without requiring scrolling in two dimensions for the following. Except for parts of the content which require two-dimensional layout for usage or meaning.

Vertical scrolling content at a width equivalent to 320 CSS pixels;

Horizontal scrolling content at a height equivalent to 256 CSS pixels;

#### 2.2.7 AAA Animation from Interactions

Motion animation triggered by interaction can be disabled unless the animation is essential to the functionality or the information being conveyed.

#### 2.4.11 A Character Key Shortcuts

If a keyboard shortcut is implemented in content using the only letter (including upper- and lower-case letters), punctuation, number, or symbol characters, then at least one of the following is true:

Turn off: A mechanism is available to turn the shortcut off;

Remap: A mechanism is available to remap the shortcut to use one or more non-printable keyboard characters (e.g. Ctrl, Alt, etc).

Active only on focus: The keyboard shortcut for a user interface component is only active when that component has focus.

#### 2.5.1 A Pointer Gestures

All functionality that uses multipoint or path-based gestures for operation can be operated with a single pointer without a path-based gesture, unless a multipoint or path-based gesture is essential.

### 2.5.2 A Pointer Cancellation

For functionality that can be operated using a single pointer, at least one of the following is true:

The down-event of the pointer is not used to execute any part of the function;

Completion of the function is on the up-event, and a mechanism is available to abort the function before completion or undo the function after completion;

The up-event reverses any outcome of the preceding down-event;

Completing the function on the down-event is essential.

### 2.6.1 A Motion Actuation

Functionality that can be operated by device motion or user motion can also be operated by user interface components and responding to the motion can be disabled to prevent accidental actuation, except when:

The motion is used to operate functionality through an accessibility supported interface;

The motion is essential for the function and doing so would invalidate the activity.

### 2.6.2 AA Orientation

Content does not restrict its view and operation to a single display orientation, such as portrait or landscape, unless a specific display orientation is essential.

## 7. Aesthetic and minimalist design

Every **extra unit of information in a dialogue competes** with the relevant units of information and diminishes their relative visibility.

## 8. Error prevention

Either eliminate error-prone conditions or **present users with a confirmation option** before they commit to the action.

## New Criteria

### 2.2.6 AAA Timeouts

Users are warned of the duration of any user inactivity that could cause data loss, unless the data is preserved for more than 20 hours when the user does not take any actions.

### 2.5.5 AAA Target Size

The size of the target for pointer inputs is at least 44 by 44 CSS pixels except in certain conditions

### 1.4.11 AA Non-text Contrast

The visual presentation of the following have a contrast ratio of at least 3:1 against adjacent color(s).

### 1.4.12 AA Text Spacing

In content implemented using markup languages that support the following text style properties, no loss of content or functionality occurs by setting all of the following and by changing no other style property:

- Line height (line spacing) to at least 1.5 times the font size;

- Spacing following paragraphs to at least 2 times the font size;

- Letter spacing (tracking) to at least 0.12 times the font size;

- Word spacing to at least 0.16 times the font size.

## 9. Help users recover from errors

Error messages should be **expressed in plain language**, precisely indicate the problem, and constructively suggest a solution.

## 10. Help and documentation

Any such information should be **easy to search, focused on the user's task**, list concrete steps to be carried out, and not be too large.

## New Criteria

### 1.4.13 AA Content on Hover or Focus

Where receiving and removing pointer hover or keyboard focus triggers additional content to become visible and hidden, respectively, the following are true:

## References

*The Carrot and the Stick: Accessibility in the Context of Usable Design*

Erin Marchak. Presentation at AccessU 2018

<https://knowbility.org/programs/accessu/2018/the-carrot-and-he-stick/>

*Web Content Accessibility Guidelines 2.1*

All summaries of the new success criteria are from the guidelines.

<https://www.w3.org/TR/WCAG21/#new-features-in-wcag-2-1>

*Nielsen's 10 Usability Heuristics*

All summaries of heuristics are the work of Jakob Nielsen.

<https://nngroup.com/articles/ten-usability-heuristics/>