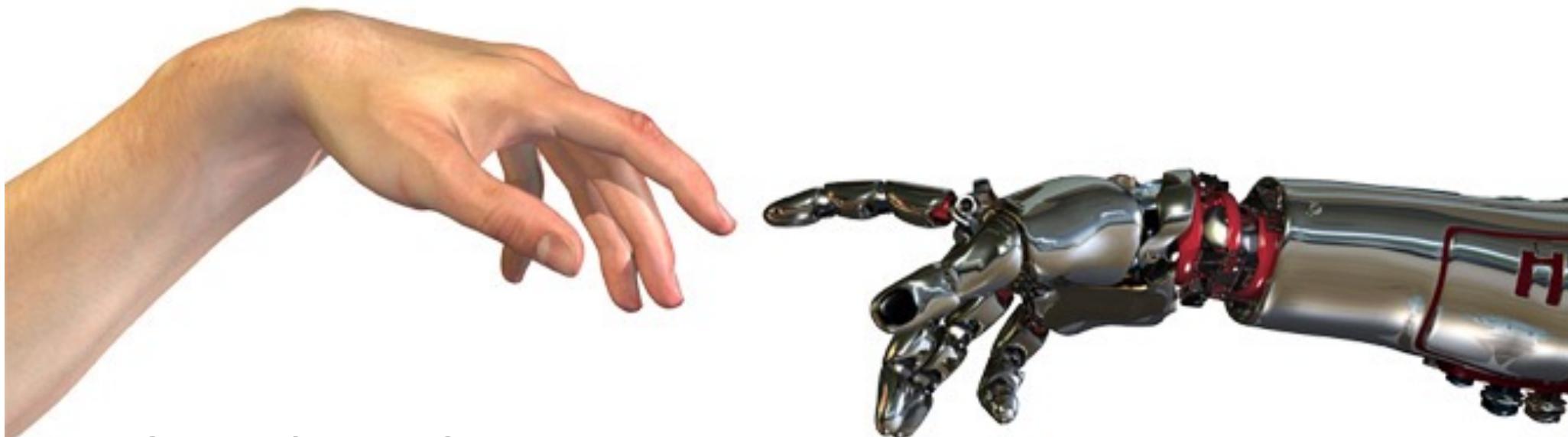


HUMAN-COMPUTER INTERACTION

UNIVERSAL PRINCIPLES OF HUMAN-COMPUTER INTERACTION DESIGN

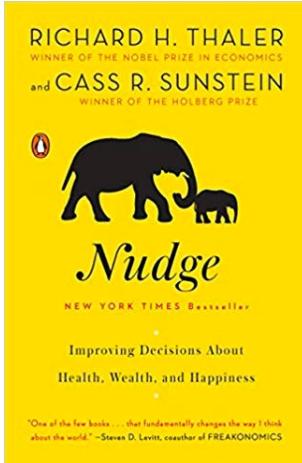


OBJECTIVES

- 1.) Universal Principles of Design – *Nudge, Ockham's Razor/KISS, Performance vs Preference, Rule of Thirds*



NUDGE



A method of modifying behavior without restricting options or changing incentives.

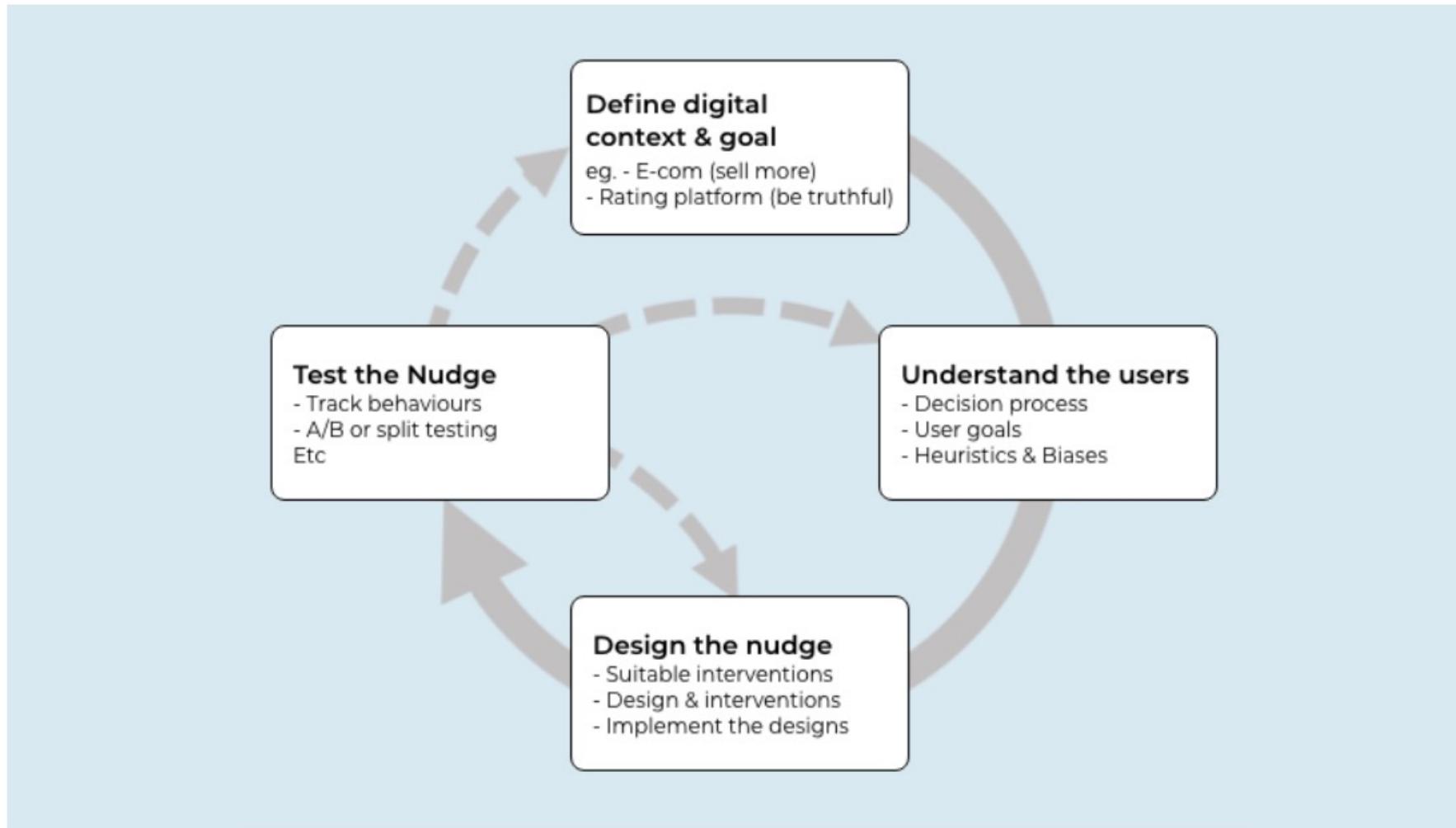
- Nudges use the following methods to modify behavior: smart defaults, clear feedback, aligned incentives, structured choices, and visible goals.
- Smart Defaults: Select defaults that do the least harm and most good versus the most conservative defaults.
- Clear Feedback: Provide clear, visible, and immediate feedback for actions.
- Aligned Incentives: Align incentives to preferred behaviors, avoiding incentive conflicts.
- Structured Choices: Provide the means to simplify and filter complexity to facilitate decision

The screenshot shows the homepage of the Urinalfly website. At the top, there's a logo featuring a fly inside a circle with the URL 'www.urinalfly.com'. To the right of the logo, the tagline '...Give them something to aim for' is displayed in a stylized font. Below the tagline is a navigation bar with links: Home, Products, Customize, FAQ, Contact, Blog, and View Cart. The main headline reads 'Keeps Bathrooms up to 85% cleaner' in bold black and red text. To the left of the headline is a small image of a fly. To the right is a list of bullet points detailing the product's benefits. Below the list is a large red call-to-action button that says 'NOW AVAILABLE FOR FREE! See product page for details!'.

- Reduces spillage in Men's restrooms
- Made famous in the Amsterdam International Airport
- Cleaner, Safer restrooms in minutes
- Includes specific location information for maximum effectiveness
- Long-Life, fully tested materials used
- Easy to Install



DESIGNING DIGITAL NUDGES



The Digital Nudge Cycle

1. Define Digital Context and Goal

- What is the digital context?
- What are the overall goals?
- What specific goals are to be achieved in this situation?
- What are the ethical implications of nudging people into making certain decision?

2. Understand the Users

- What are the user goals?
- What is their decision-making process?
- What heuristics might influence their choices?

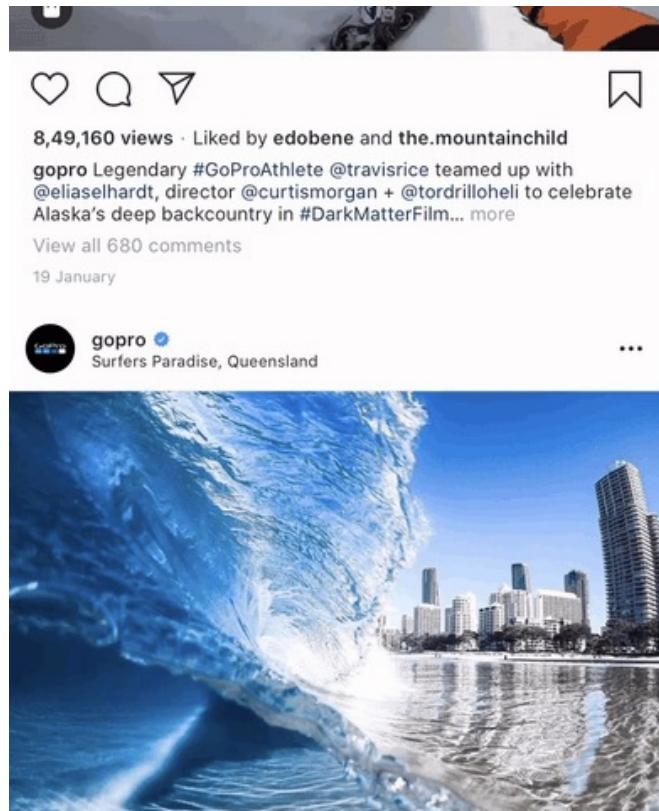
3. Design the Nudge

- What types of nudges would counter or increase the influence of biases?
- What nudges could influence users' choices?
- How can the design of the interface be modified to include the preferred nudges?
- How can we analyse the behaviour to adapt the choice environment dynamically?

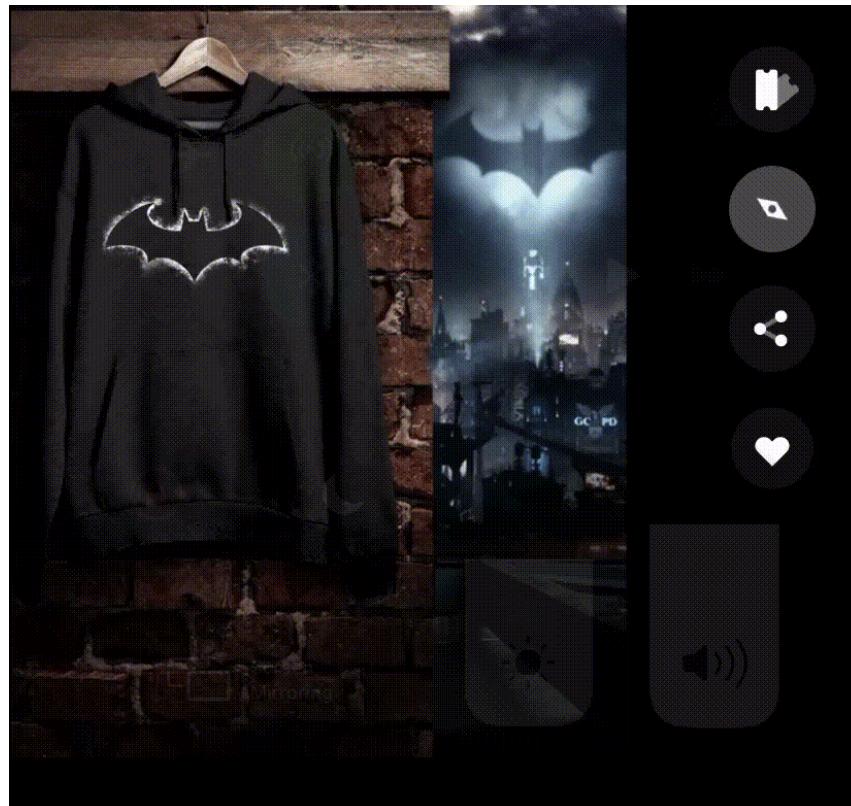
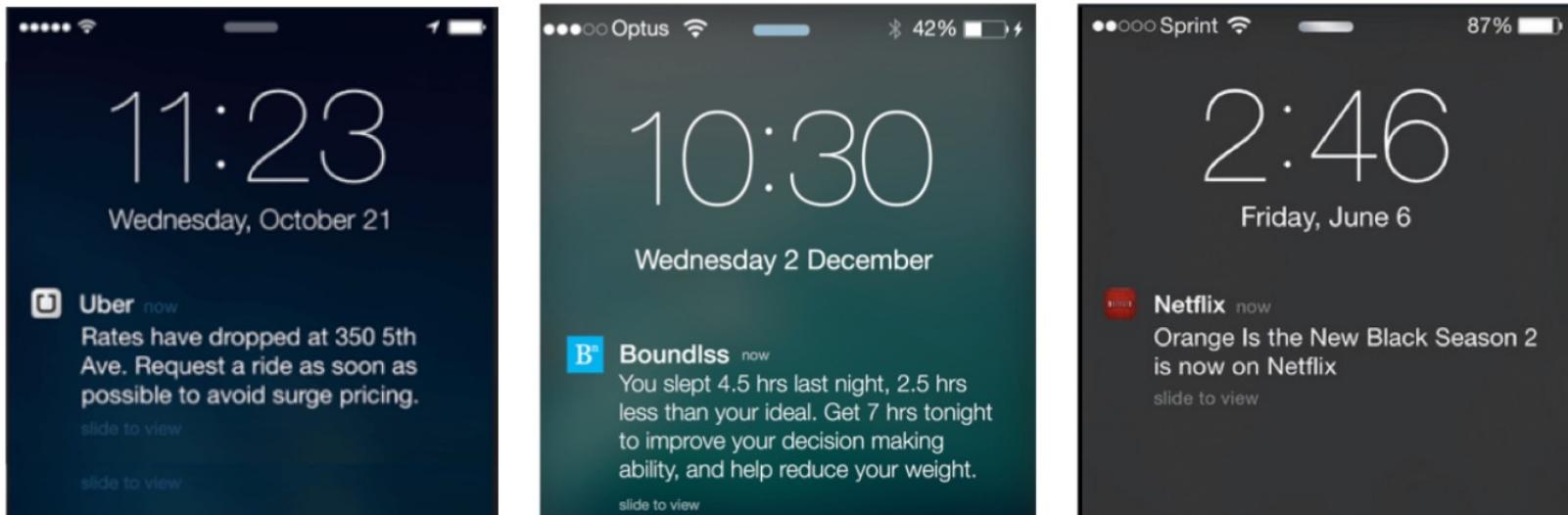
4. Test the Nudge

- How effective are the nudges?
- Does the effectiveness differ across users?
- Do the nudges fit the context and the goals?
- Do we have a thorough understanding of the users' decision-making process?

EXAMPLES OF NUDGING IN PRODUCTS WE INTERACT WITH FREQUENTLY

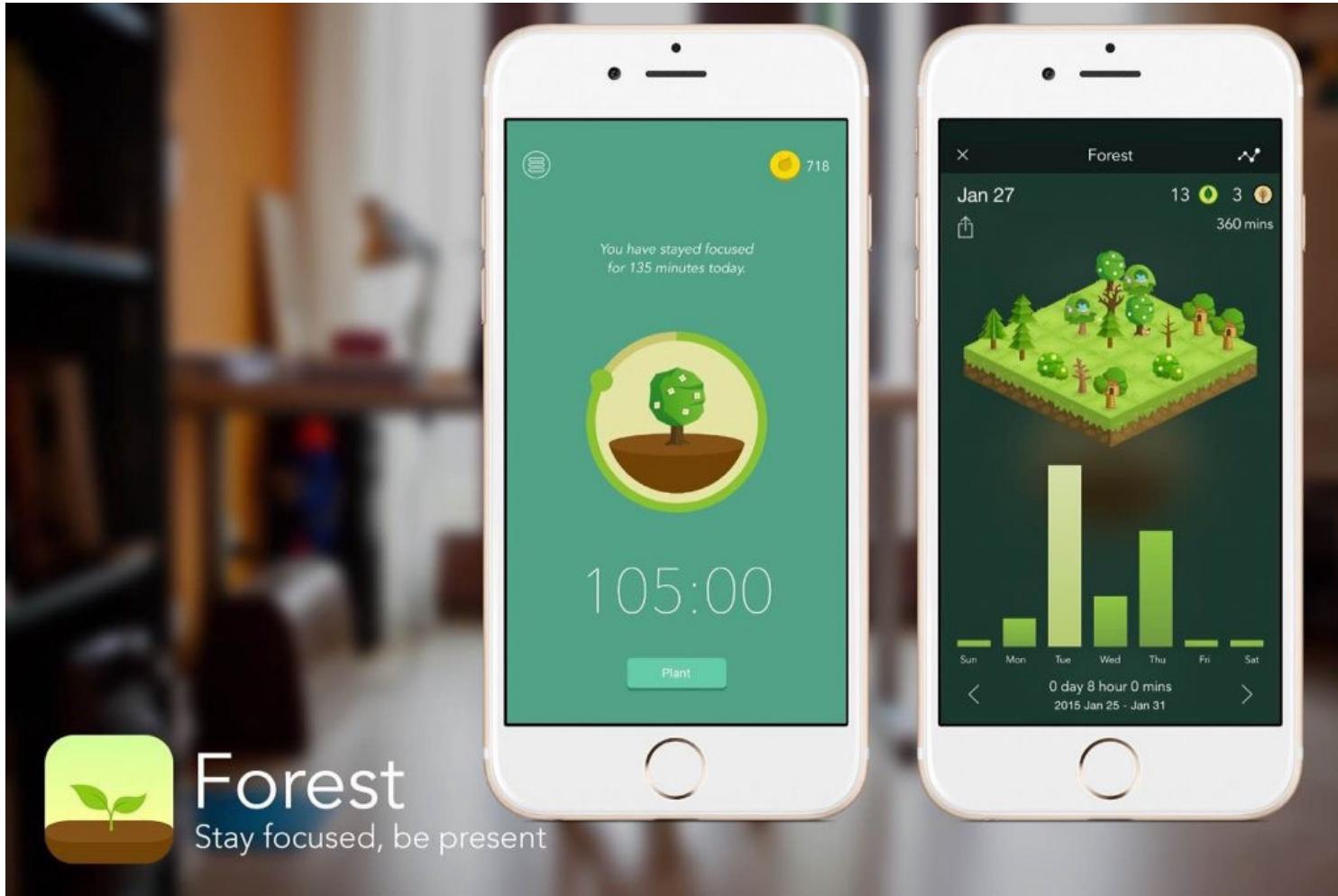


Instagram — uses timed nudges for view products & add comments if the user shows interest in the post



Cred- uses subtle animation to nudge the user to tap on the discover icon.

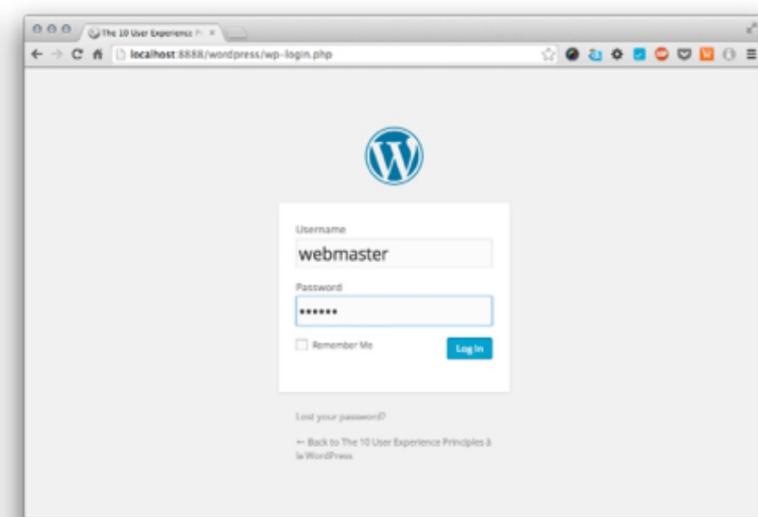
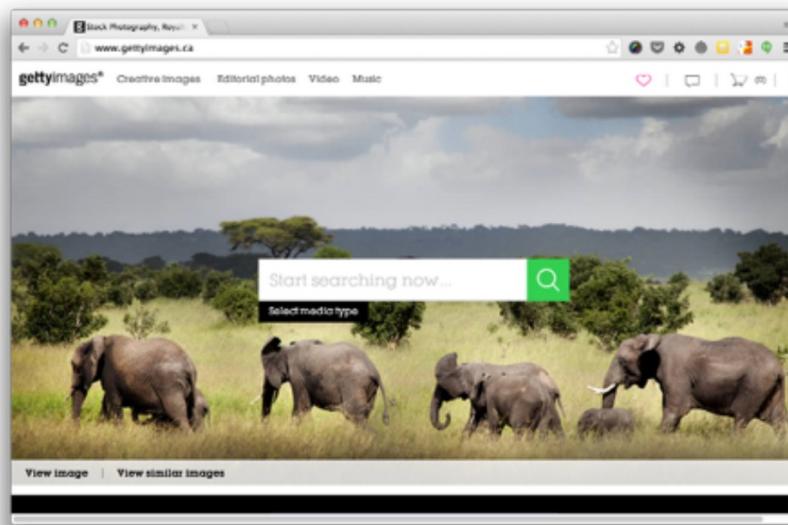
AND OF COURSE, GAMIFICATION



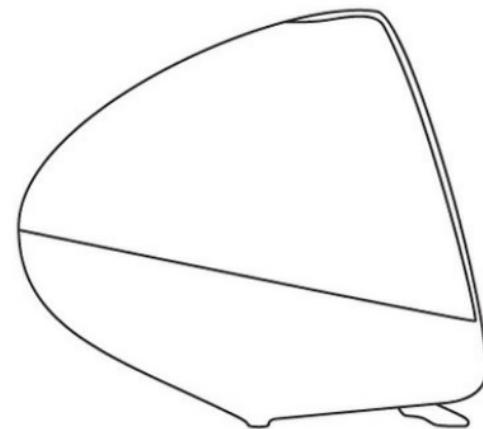
<https://uxplanet.org/gamification-in-2017-top-5-key-principles-cef948254dad>

OCKHAM'S RAZOR OR KISS (KEEP IT SIMPLE STUPID/KISS)

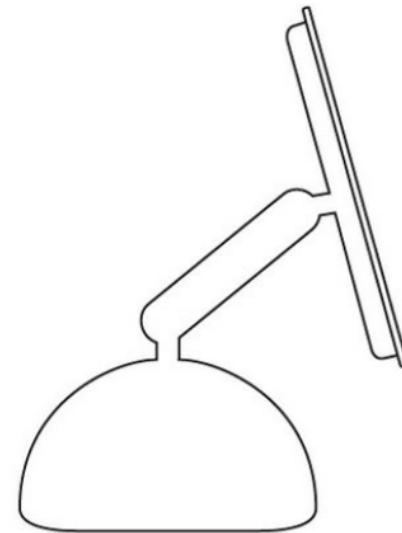
- Given a choice between functionally equivalent designs, the simplest design should be selected.
- If all other things are being equal, the simplest solution is the best.
- Ockham's razor asserts that simplicity is preferred to complexity in design.**
 - It's the idea that unnecessary elements decrease a design's efficiency and increase the probability of unanticipated consequence.



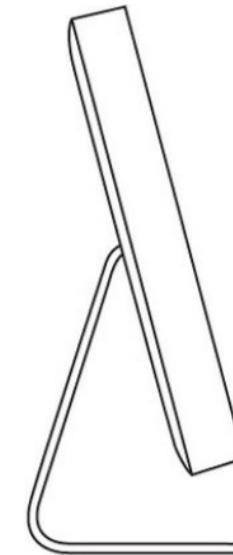
Reduce unnecessary elements.



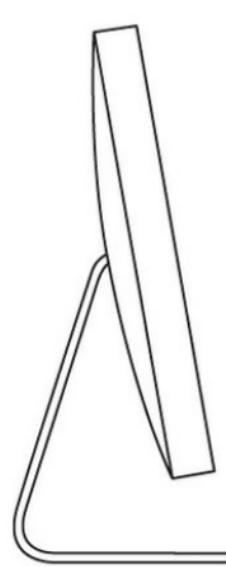
2000



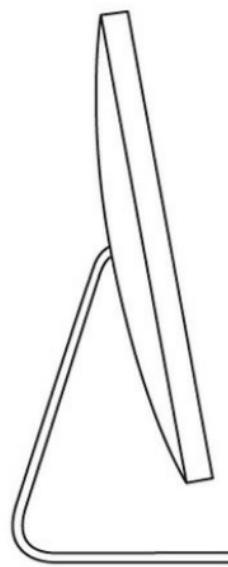
2002



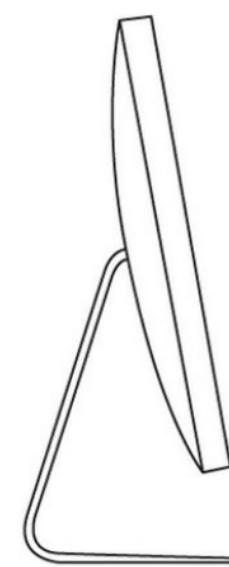
2004



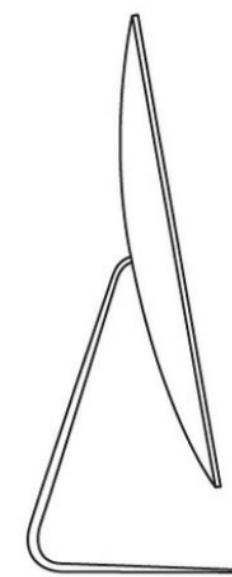
2005



2007



2009



2013

The evolution of the iMac proves that no company wields Ockham's razor with the skill and aggression of Apple.

PERFORMANCE VERSUS PREFERENCE

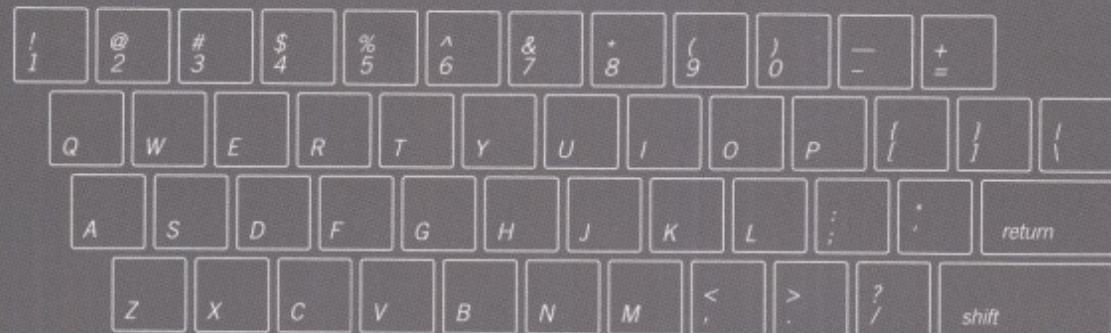
- The designs that help people perform optimally are often not the same as the designs people find most desirable.
- The reasons people prefer one design to another is a combination of factors, and may have nothing to do with performance:
 1. Is the design pleasing to look at?
 2. Does it compete with long standing designs or standards of use?
 3. Does it contribute to the well being or self-esteem of the user?

The QWERTY layout was designed to prevent the jamming of mechanical arms on early typewriters. The Dvorak layout, by contrast, was designed to maximize typing efficiency: it grouped keys based on frequency of use, and positioned keys to promote alternating

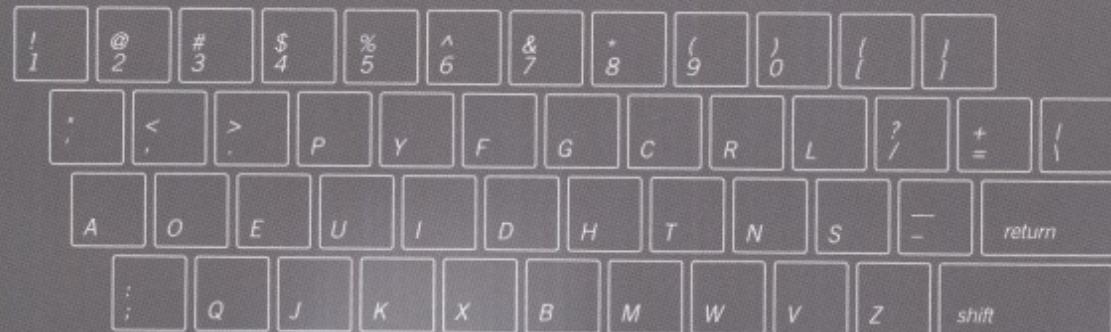
keystrokes between hands, among other refinements. The result is a 30 percent improvement in typing efficiency, and claim to most of the world records for speed typing. Despite the clear advantages of the Dvorak design, QWERTY enjoys the following of genera-

tions of people trained on the layout, which in turn drives manufacturers to continue perpetuating the standard. Dvorak wins on performance, but QWERTY wins on preference.

QWERTY Keyboard



Dvorak Keyboard

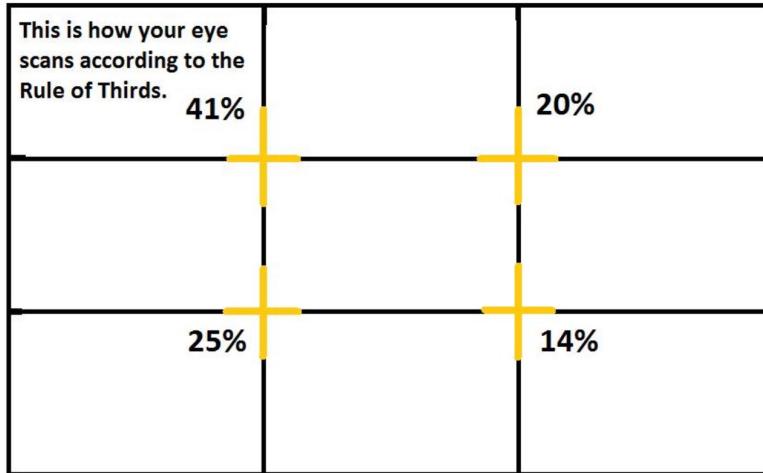


Dvorak keyboard = estimated to improve typing efficiency by more than 30%.

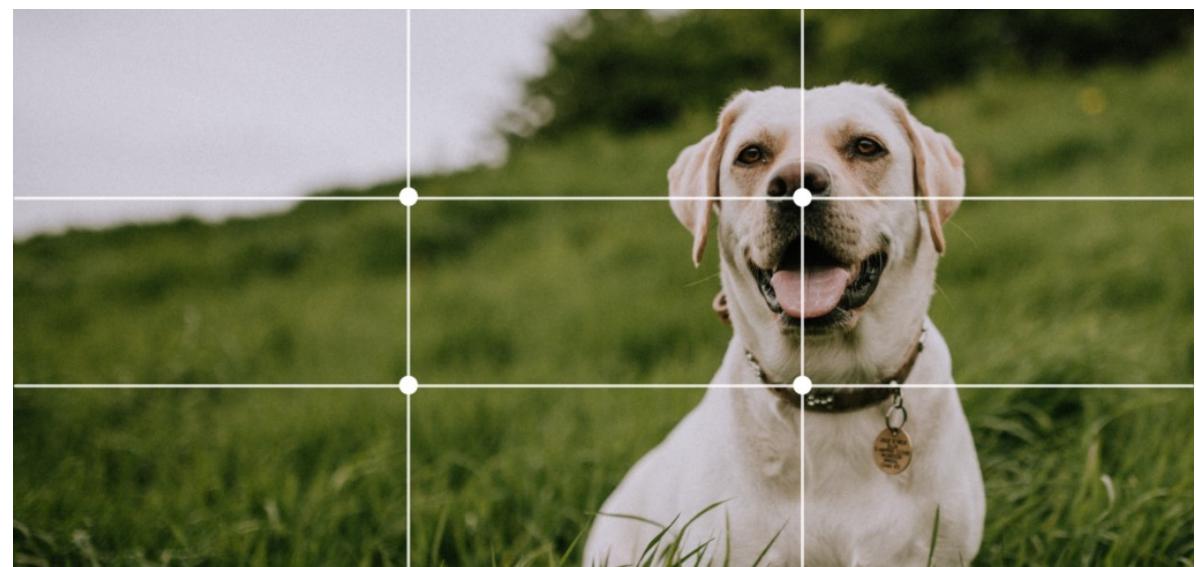
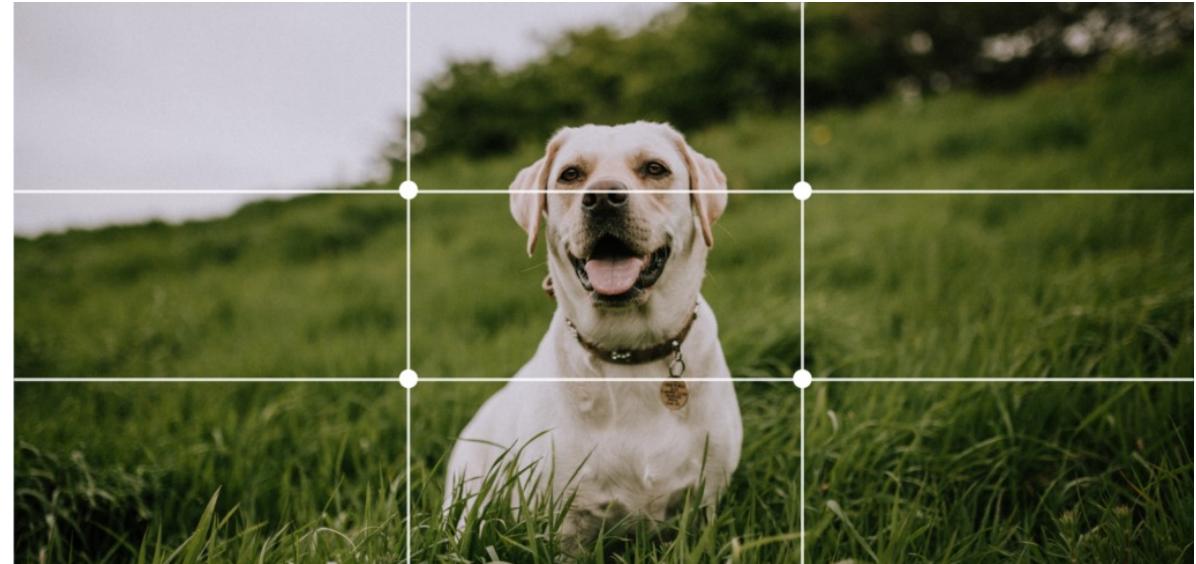
RULE OF THUMB

- The best way to balance performance and preference correctly in design is to by observing people interact with the design in real contexts rather than solely giving surveys, interviews, or focus groups.
- Do not rely on reports of what people say they have done, will do, or are planning to do in the future regarding the use of a design, such reports are unreliable.

RULE OF THIRDS



Original image by [The Interaction Design Foundation](#). How our eyes scan an image.



Original photo by [Mitchell Orr](#) on [Unsplash](#). Using the rule of thirds to make a centered portrait more interesting.

