

UX Laws



“Laws of UX is a collection of best practices that designers can consider when building user interfaces.”

What are the Laws of UX?

When creating an interface, conducting research and understanding your users is crucial. But even though each person is unique, common behaviors apply to all users. These fundamental behaviors underpin the Laws of UX, which are essential principles to consider in any interface design. Backed by psychology studies and research, these laws provide a framework to guide UX design and ensure that the user experience is effective and enjoyable. Neglecting these principles can have negative consequences for your interface and users.





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UX Laws

**"Designing
with UX laws
in mind
ensures that
user
experiences
are not just
good but
exceptional."**



1. AESTHETIC USABILITY EFFECT

Users often perceive aesthetically pleasing design as design that's more usable.



TAKEAWAYS

- An aesthetically pleasing design creates a positive response in people's brains and leads them to believe the design actually works better.
- Visually pleasing design can mask usability problems and prevent issues from being discovered during usability testing.

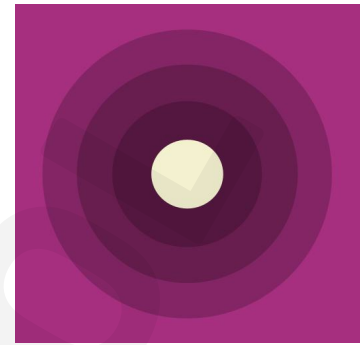
EXAMPLE

Apple products, such as iTunes, iMovie, and the iPhone, may have usability issues, but they are still widely accepted due to their attractive design. People tend to be more forgiving of their flaws compared to less aesthetically pleasing products.



2. DOHERTY THRESHOLD

Productivity soars when a computer and its users interact at a pace (<400ms) that ensures that neither has to wait on the other.

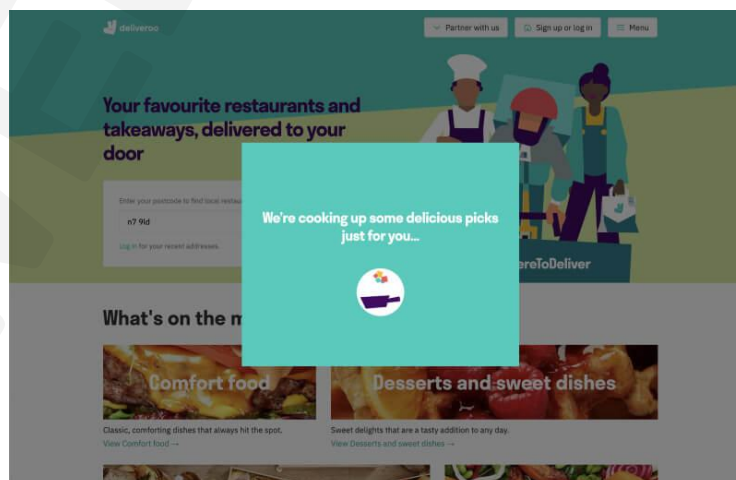


TAKEAWAYS

- Provide system feedback within 400 ms in order to keep users' attention and increase productivity.
- Progress bars help make wait times tolerable, regardless of their accuracy.

EXAMPLE

Deliveroo, a food delivery service, does a nice job of utilizing the Doherty Threshold by using an entertaining loading state when fetching results for a search. It may take longer than 400 ms for results to be found for a search query, so instead they activate a loading state within the 400ms which lets the user know that their action has been successful.



3. FITT'S LAW

The time to acquire a target is a function of the distance to and size of the target.



TAKEAWAYS

- Touch targets should be large enough for users to accurately select them.
- Touch targets should have ample spacing between them.

EXAMPLE

Spotify's desktop app allows users to access commonly used functions through the right-click menu.

This makes it so that the prime pixel can almost always be optimally utilized. A user doesn't even have to move their mouse from its starting point to access their most used actions.

Snail Mail
690,013 monthly listeners

Popular

Rank	Album Art	Song Title	Duration
1		Pristine	4:55
2		Heat Wave	5:08
3		Glory	2:20
4		Valentine	3:16
5		Deep Sea	4:42

Liked Songs
You've liked 2 songs
By Snail Mail

4. GOAL GRADIENT EFFECT

The tendency to approach a goal increases with proximity to the goal.



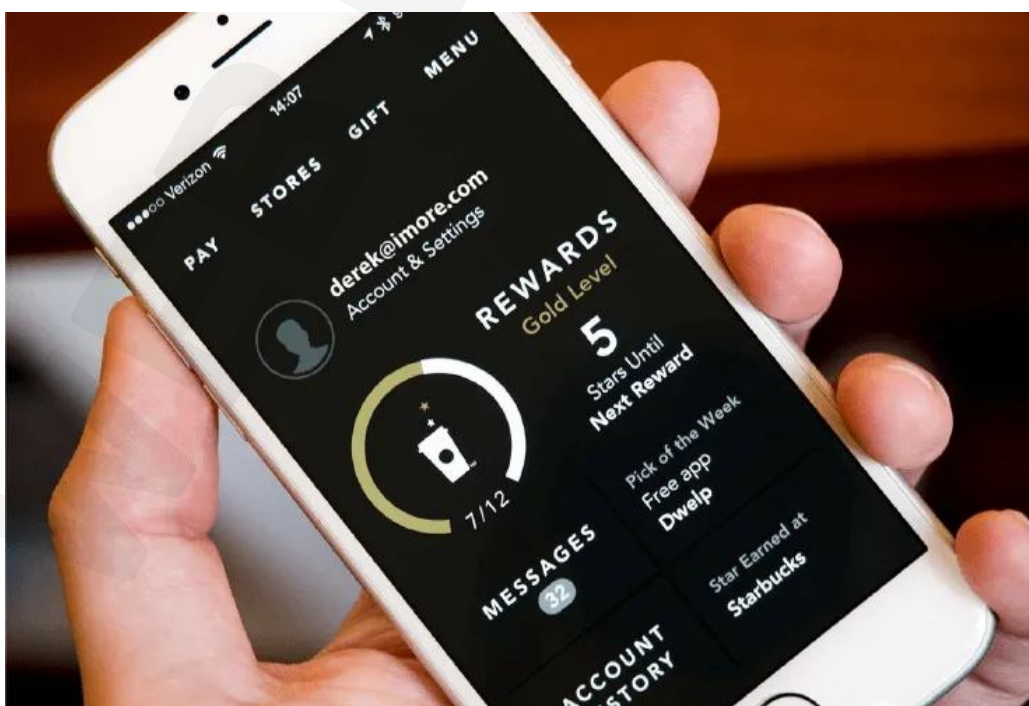
TAKEAWAYS

- The closer users are to completing a task, the faster they work towards reaching it.
- Providing artificial progress towards a goal will help to ensure users are more likely to have the motivation to complete that task.

EXAMPLE

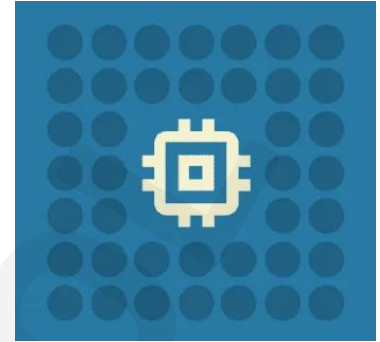
Starbucks: Using using loyalty cards to drive purchase

The Starbucks app drives customers to buy more coffee with Goal Gradient language such as “16 stars until next reward”. Everything in the experience pushes customers to keep buying until they achieve their goal.



5. HICK'S LAW

The time it takes to make a decision increases with the number and complexity of choices.



TAKEAWAYS

- Minimize choices when response times are critical to decrease decision time.
- Break complex tasks into smaller steps in order to decrease cognitive load.

EXAMPLE

Apple TV remotes don't require a substantial amount of working memory and therefore incurs much less cognitive load. By transferring complexity to the TV interface itself, information can be effectively organized and progressively disclosed within menus.



6. JAKOB'S LAW

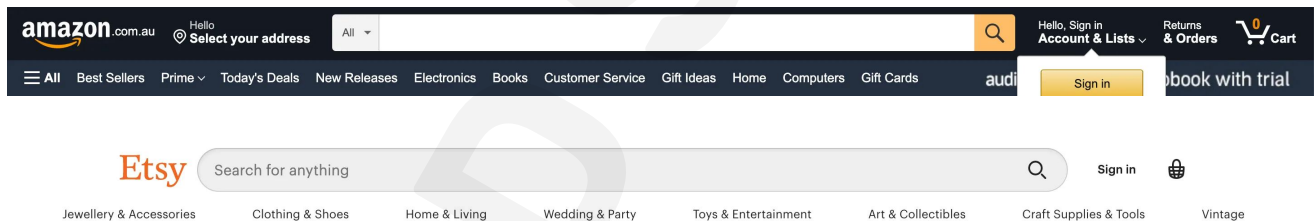
Users spend most of their time on other sites. This means that users prefer your site to work the same way as all the other sites they already know.



TAKEAWAYS

- Users will transfer expectations they have built around one familiar product to another that appears similar.
- By leveraging existing mental models, we can create superior user experiences in which the users can focus on their tasks rather than on learning new models.

EXAMPLE



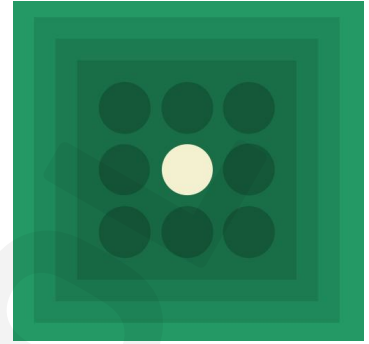
Making use of familiar patterns and conventions, e-commerce sites and apps can effectively keep customers focused on the important stuff – finding and purchasing products. By conforming to users' expectations about the process, their experience will be more enjoyable.

When shopping online, users expect the following:

- Logo is placed on the left ("I know I'm at the right store.")
- Search bar is in the middle ("The easiest way to find what I'm looking for.")

7. LAW OF COMMON REGION

Elements tend to be perceived into groups if they are sharing an area with a clearly defined boundary.

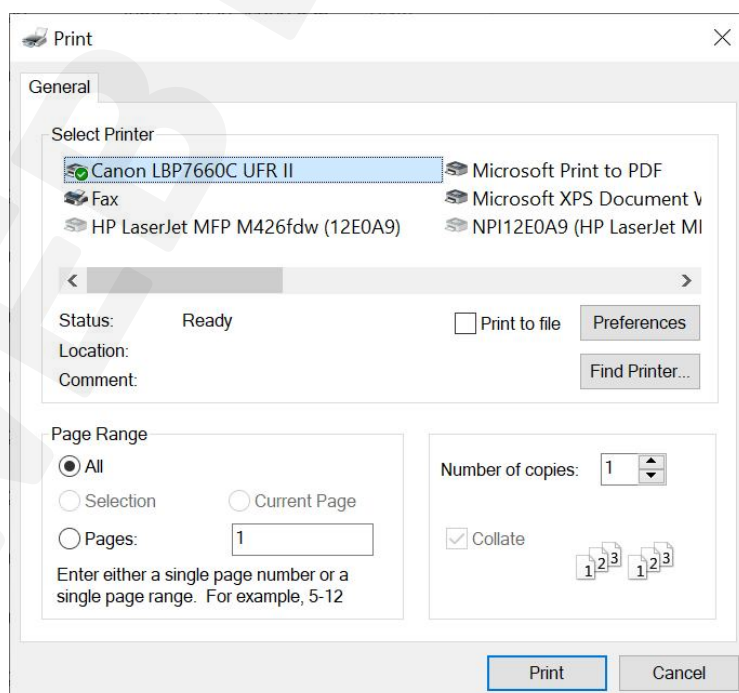


TAKEAWAYS

- Common regions create a clear structure and help users quickly and effectively understand the relationship between elements and sections.

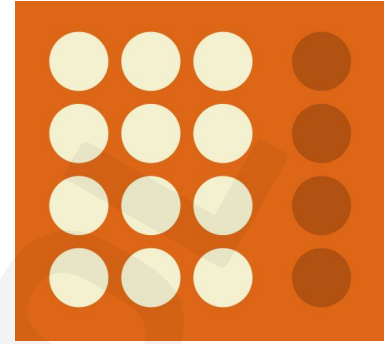
EXAMPLE

In the traditional Print dialog below, borders are used to organize the many detailed options into three groups: where to print (Select Printer), what to print (Page Range), and how many to print (Number of copies). The grouping makes it clear that the numeral “1” in the lower left is a page number, whereas the same character in the lower right specifies the number of copies to be printed.



8. LAW OF PROXIMITY

Objects that are near, or proximate to each other, tend to be grouped together.

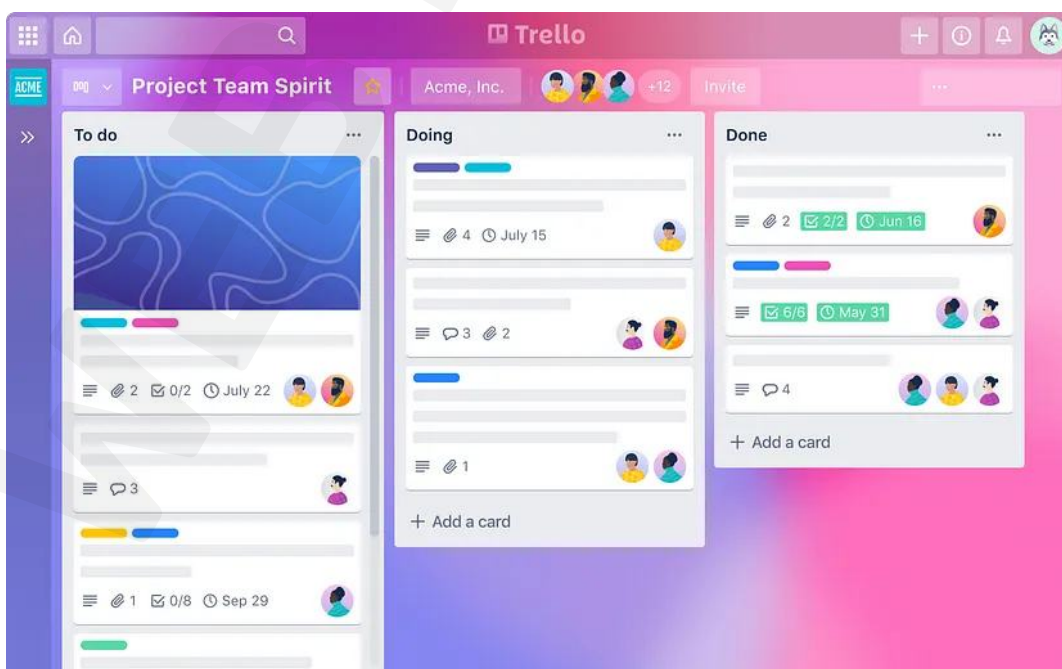


TAKEAWAYS

- Proximity helps to establish a relationship with nearby objects.
- Elements in close proximity are perceived to share similar functionality or traits.

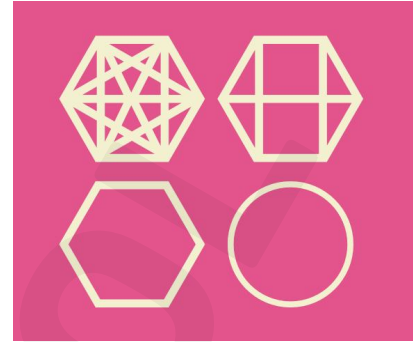
EXAMPLE

Trello's project management platform uses the law of proximity and hierarchy to create a visual interface that is easy to use. The most important information, such as the name of the board and the lists of cards, is displayed prominently on the screen, while less important information, such as the settings and the team members, are arranged in logical groupings underneath.



9. LAW OF PRAGNANZ

People will perceive and interpret ambiguous or complex images as the simplest form possible, because it is the interpretation that requires the least cognitive effort of us.

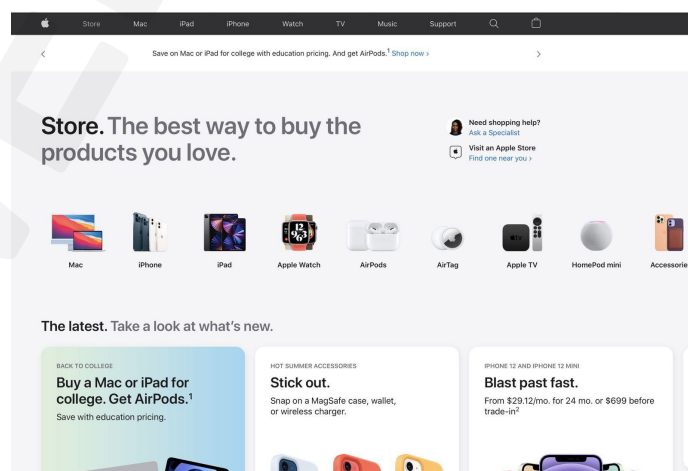


TAKEAWAYS

- The human eye likes to find simplicity and order in complex shapes because it prevents us from becoming overwhelmed with information.
- The human eye simplifies complex shapes by transforming them into a single, unified shape.

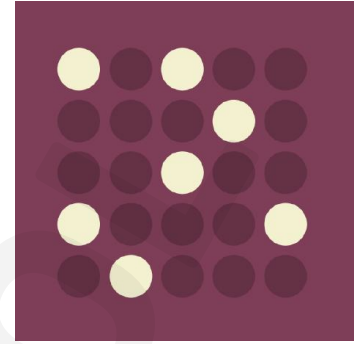
EXAMPLE

Apple is renowned for its minimalist and user-friendly interfaces. The design of their products, such as the iPhone and MacBook, follows the principles of simplicity and clarity. The use of clean lines, intuitive gestures, and straightforward icons lets users easily navigate and interact with the interfaces. Because Apple follows the law of Pragnanz, it means that their products are visually appealing and user-friendly.



10. LAW OF SIMILARITY

The human eye tends to perceive similar elements in a design as a complete picture, shape, or group, even if those elements are separated.



TAKEAWAYS

- Elements that are visually similar will be perceived as related.
- Color, shape, size, orientation and movement can signal that elements belong to the same group and likely share a common meaning or functionality.

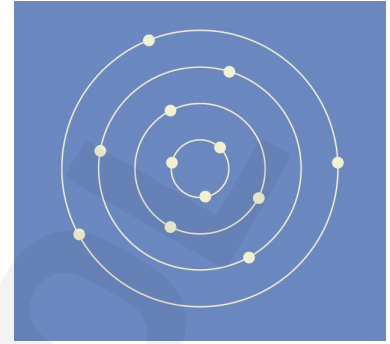
EXAMPLE

On Instagram's mobile app, the icons for home, search, post creation, notifications, and profile are all displayed in a similar style at the bottom of the screen. The consistency in the design of these icons helps users quickly identify and navigate through the different sections of the app.



11. LAW OF UNIFORM CONNECTEDNESS

Elements that are visually connected are perceived as more related than elements with no connection.

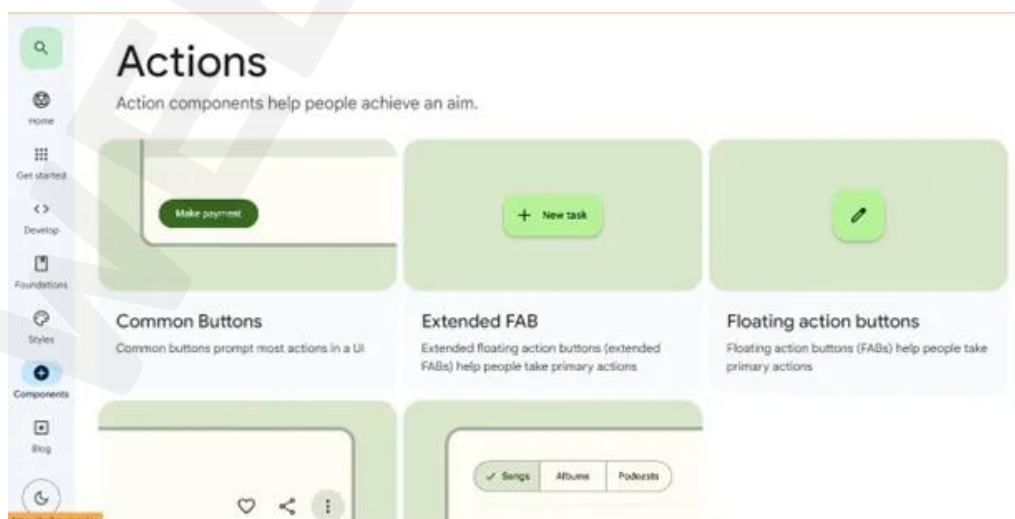


TAKEAWAYS

- Group functions of a similar nature so they are visually connected via colors, lines, frames, or other shapes.
- Use uniform connectedness to show context or to emphasize the relationship between similar items.

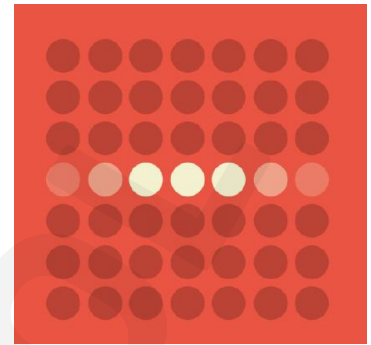
EXAMPLE

Google's Material Design follows the principle of uniform connectedness. It utilizes consistent visual cues and styling throughout its design system. As it uses common color schemes, typography and iconography, Google creates a cohesive and visually connected user interface across its products. This makes it easier for users to navigate and interact with different apps and services.



12. MILLER'S LAW

The average person can only keep 7 (plus or minus 2) items in their working memory.



TAKEAWAYS

- Don't use the "magical number seven" to justify unnecessary design limitations.
- Organize content into smaller chunks to help users process, understand, and memorize easily.

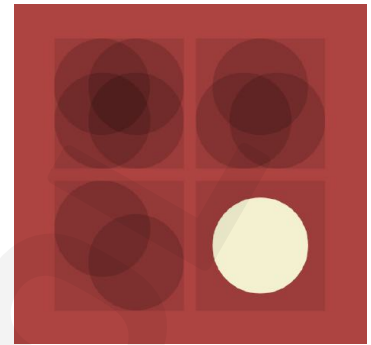
EXAMPLE

Mobile app designers are acutely aware of Miller's Law. App interfaces are typically streamlined to showcase core functions. Take Instagram, for example. Its bottom navigation bar features five primary icons: home, search, add content, notifications, and user profile. These options align with users' cognitive capacity, ensuring that they can navigate the app effortlessly.



13. OCCAM'S RAZOR

Among competing hypotheses that predict equally well, the one with the fewest assumptions should be selected.



TAKEAWAYS

- The best method for reducing complexity is to avoid it in the first place.
- Analyze each element and remove as many as possible, without compromising the overall function.

EXAMPLE

Compared to most online stores of fashion retailers, Zara plays it simple with one photo on a white background and texts and icons in black.



ZARA

SEARCH

LOG IN HELP CART (0)

< MAN



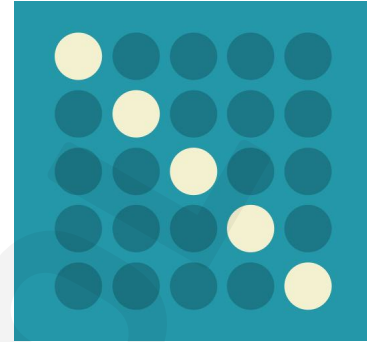
KIDS >



INTRODUCING THE FALL WINTER 2021 COLLECTION

14. PARETO PRINCIPLE

The Pareto principle states that, for many events, roughly 80% of the effects come from 20% of the causes.



TAKEAWAYS

- Inputs and outputs are often not evenly distributed.
- Focus the majority of effort on the areas that will bring the largest benefits to the most users.

EXAMPLE

Dr Joseph Juran (who proposed the principle) applied Pareto's observations in his specialty of operations management. He noticed that 80% of production problems were caused by 20% of production methods.



So by addressing these methods he could help businesses improve production and quality.

15. PARKINSON'S LAW

Any task will inflate until all of the available time is spent.

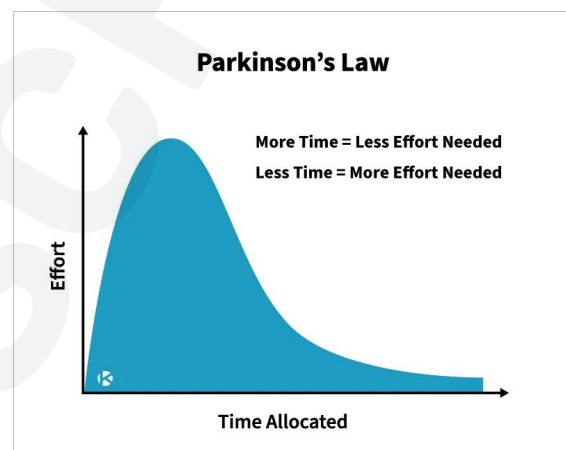


TAKEAWAYS

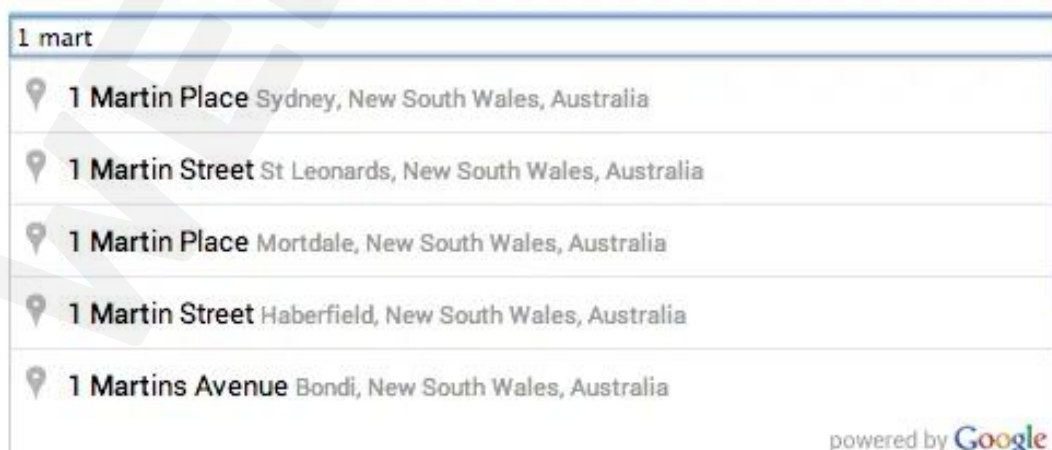
- Limit the time it takes to complete a task to what users expect it'll take.
- Reducing the actual duration to complete a task from the expected duration will improve the overall user experience.

EXAMPLE

People will keep working on a task until their allotted time is reached.

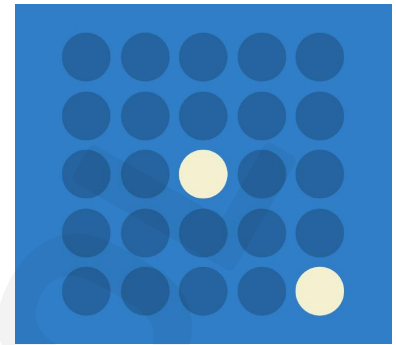


A UX designer can apply this to creating more efficient interfaces that help users complete a task in a timely manner. For example, if you design an eCommerce website you can autofill some data for customers during checkout. By doing that you will save time.



16. PEAK-END RULE

People judge an experience largely based on how they felt at its peak and at its end, rather than the total sum or average of every moment of the experience.

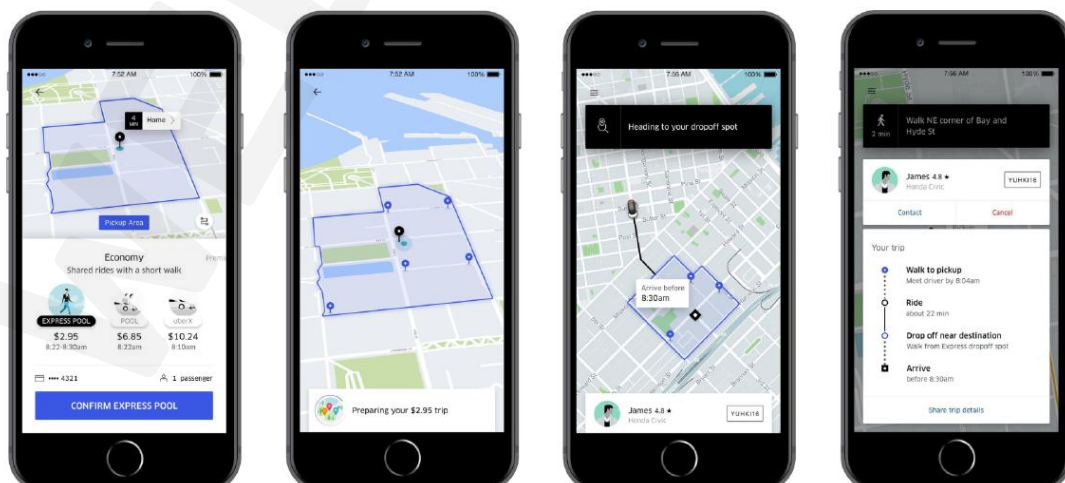


TAKEAWAYS

- Pay close attention to the most intense points and the final moments (the “end”) of the user journey.
- Remember that people recall negative experiences more vividly than positive ones.

EXAMPLE

Negative events also provide emotional peaks and can contribute to a user’s lasting impression of an experience. By focusing on people’s perceptions of time and waiting, Uber was able to reduce its post-request cancellation rate and avoid what could easily become a negative emotional peak while using their service.



17. POSTEL'S LAW

Be liberal in what you accept, and conservative in what you send.



TAKEAWAYS

- Be empathetic to, flexible about, and tolerant of any of the various actions the user could take or any input they might provide.
- Accept variable input from users, translating that input to meet your requirements, defining boundaries for input, and providing clear feedback to the user.

EXAMPLE

Email services like Gmail follow Postel's Law by accepting a wide range of email address variations. For example, they treat "example.email@gmail.com," "exampleemail@gmail.com," and "ex.ample.email@gmail.com" as the same address. This is true for any variations of your email with periods throughout. This leniency in accepting different variations reduces user frustration and allows for greater flexibility in how users can format their email addresses while ensuring successful message delivery.

Getting messages sent to a dotted version of my address

If the sender added dots to your address, you'll still get that email. No one else sees your emails, and no one can take your account. For example, if your email is **johnsmith@gmail.com**, you own all dotted versions of your address:

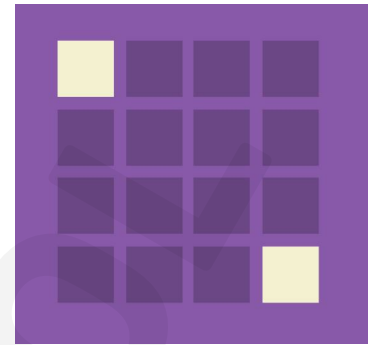
- **john.smith@gmail.com**
- **jo.hn.sm.ith@gmail.com**
- **j.o.h.n.s.m.i.t.h@gmail.com**

If you still think the message was meant for someone else, contact the sender to let them know they mistyped the email address.

Learn more about [dots in Gmail addresses](#).

18. SERIAL POSITION EFFECT

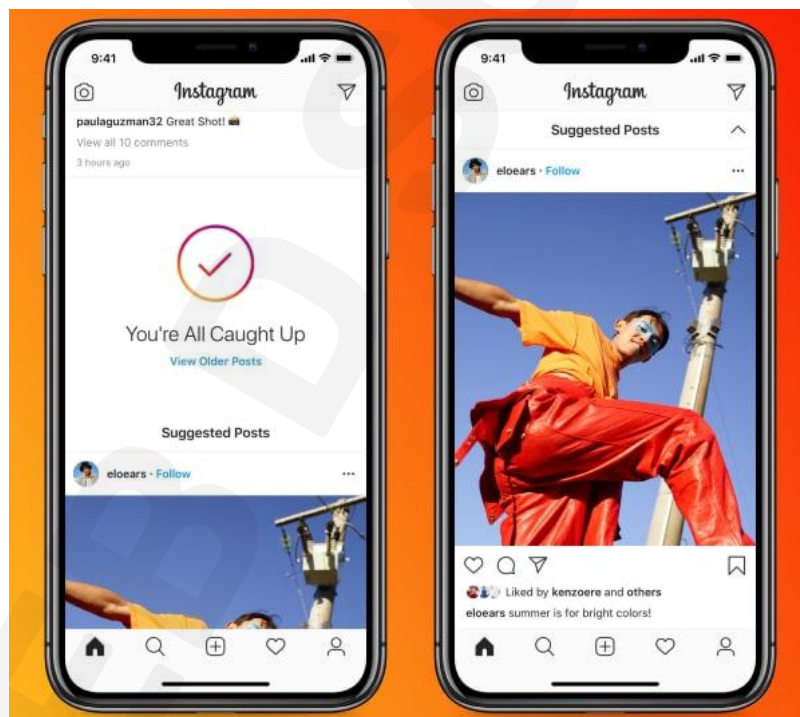
Users have a propensity to best remember the first and last items in a series.



TAKEAWAYS

- Placing the least important items in the middle of lists can be helpful because these items tend to be stored less frequently in long-term and working memory.
- Positioning key actions on the far left and right within elements such as navigation can increase memorization.

EXAMPLE



Instagram places heavily-trafficked task buttons on the far left and far right. They got creative and placed the “direct message” button in the upper right hand corner to save room in the lower task bar which is already full.

19. TESLER'S LAW

Tesler's Law, also known as The Law of Conservation of Complexity, states that for any system there is a certain amount of complexity which cannot be reduced.



TAKEAWAYS

- All processes have a core of complexity that cannot be designed away and therefore must be assumed by either the system or the user.
- Remember to not build products and services for an idealized, rational user, because people don't always behave rationally in real life.
- Make guidance accessible and fit within the context of use so that it can help these active new users, no matter what path they choose to take (e.g., tooltips with helpful information).

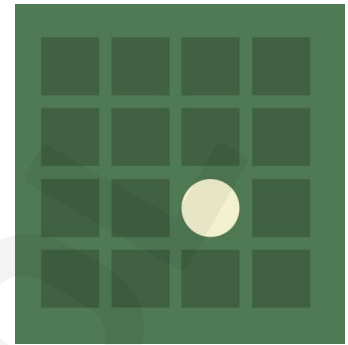
EXAMPLE

A screenshot of a travel booking website interface. The top section is titled "Booking flights & hotels" and features a search bar with fields for "From", "To", "Departure", "Return", and "Travelers / Class". Below this is a section for hotel bookings titled "Find deals on hotels, homes, and much more..." with a search bar for "Where are you going?", "Check-in - Check-out", and "2 adults - 0 children - 1 room". The interface is overlaid on a red background.

While booking flights or hotels we have to give certain details which cannot be reduced further. These are perfect examples of Tesler's law.

20. VON RESTORFF EFFECT

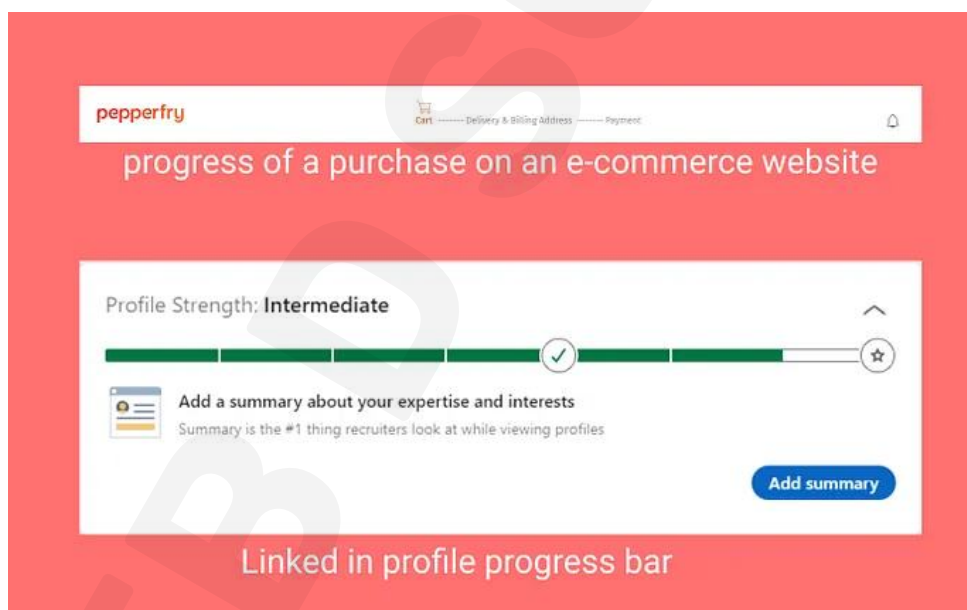
The Von Restorff effect, also known as The Isolation Effect, predicts that when multiple similar objects are present, the one that differs from the rest is most likely to be remembered.



TAKEAWAYS

- Make important information or key actions visually distinctive..
- Don't exclude those with a color vision deficiency or low vision by relying exclusively on color to communicate contrast.

EXAMPLE



Mostly the progress bars comes under the usability of this law while designing an UI. Here we have two progress bars which is of a purchase of a product from an e-commerce website. The second one is the most famous LinkedIn progress bar which remind you to complete your profile or shows you the profile strength.

21. ZEIGARNIK EFFECT

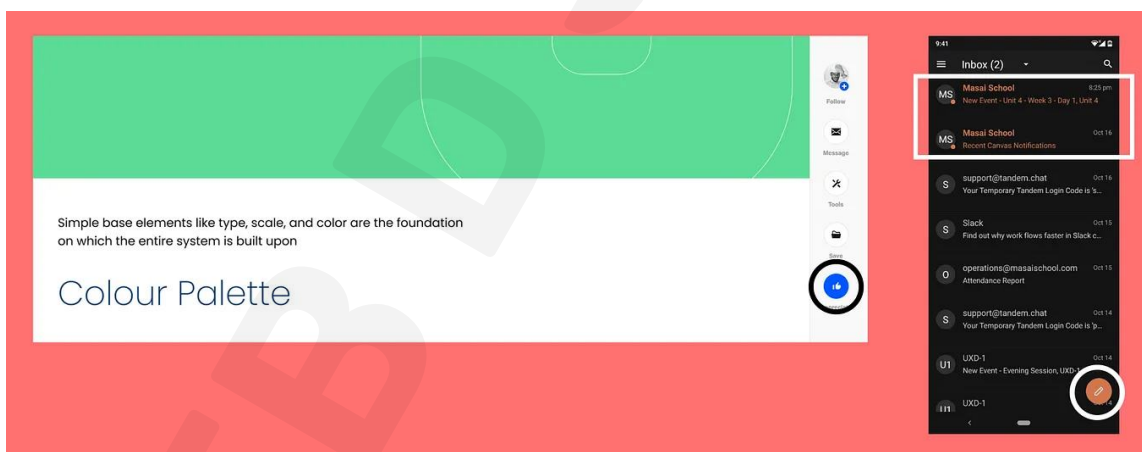
People remember uncompleted or interrupted tasks better than completed tasks



TAKEAWAYS

- Invite content discovery by providing clear signifiers of additional content.
- Providing artificial progress towards a goal will help to ensure users are more likely to have the motivation to complete that task.
- Provide a clear indication of progress in order to motivate users to complete tasks.

EXAMPLE



We all as designers use behavior, have you noticed that whenever we open someone's project the appreciation icon is different from others and highlighted in a blue colour, this is an example of Von Restorff Effect. The second example is of unread emails in different colour and the compose new mail option highlighted with a different colour.

