

# User Issue: Long Loading Times

App freezing, slow loading, no data, etc.

## Principle: Real vs Perceived Speed

**Speed is in part a perceived concept that can be impacted by emotions, circumstances and interface elements.**

User experience/interface work typically does not affect the real speed of an app, but it may affect the perceived speed.

All apps have loading times. Loading times are a constant of user interfaces, the goal should not be to eliminate them, but to address them.

## Potential Solution: Skeleton Structures

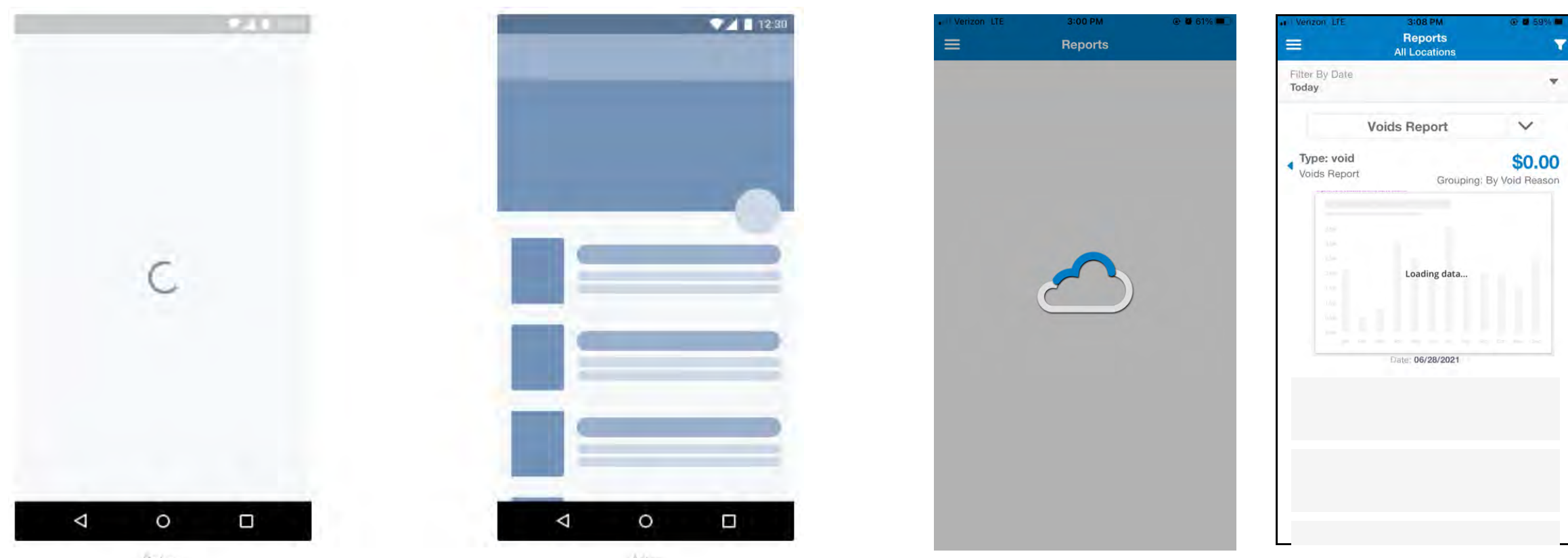
Skeleton screens shift the attention of users. It makes people focus on the progress, rather than the wait time.

Using a skeleton screen gives the following benefits:

- Helps people perceive your screen to load faster
- Eliminates surprises
- Gradual loading of UI — clear indication of progress
- Shows exactly what's loaded and what's yet to load

Examples of Skeleton interface:

Application into XMM Product:



Many apps use a combination of spinner plus skeleton screen. This gives the illusion of more progress, more change and will hold the user's attention longer and make waiting time seem smaller.

Instead of using a spinning loader, try using a skeleton loader to increase speed perception.

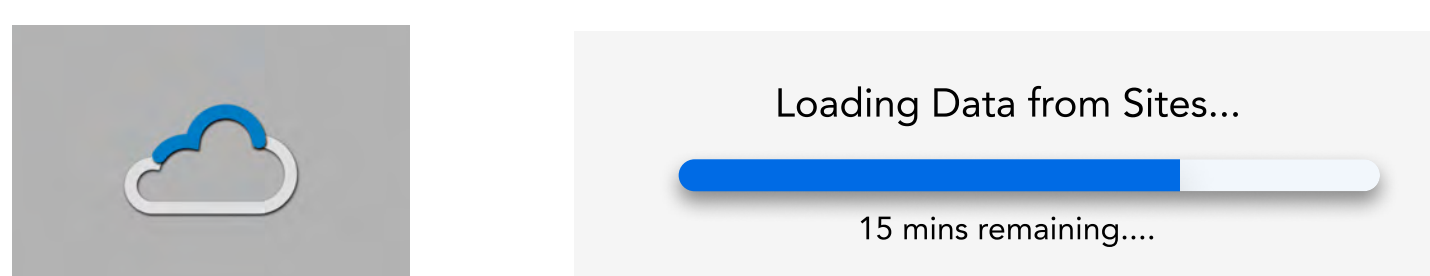
**The more the system gives information about the waiting time, the better the satisfaction of the user.**

How to improve Perceived Waiting time in HCI

## Potential Solution: Loading Bar instead of Spinner

Loading bars are a more informative type of wait-animation. Our goal is to hold user attention and decrease the perceived wait time without impacting the actual wait time.

Application into XMM Product: Instead of cloud spinner, potentially use loading bar



Using a loading bar gives the following benefits:

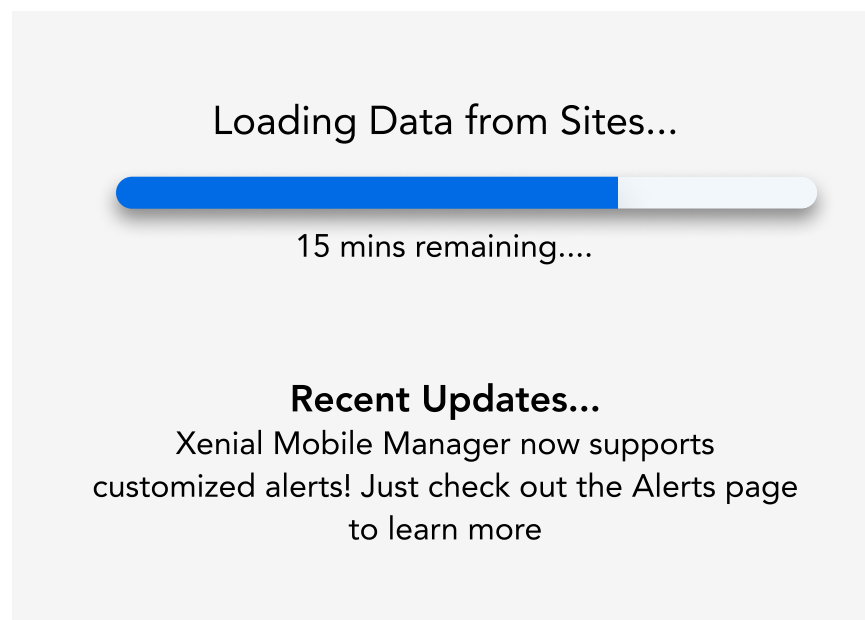
- Gives immediate feedback to what is going on in the system
- Provides the user with a sense of time (sunken cost, how much progress has been gained, how much I need to wait for)
- Removes doubt (the app is working and hasn't actually crashed or errored out)

Loading bar potential drawbacks

- It's nearly impossible to calculate loading times. These will not be accurate in most cases.

Progress Bar Best Practices

- To increase speed perception/decrease perceived waiting time use a **longer progress bar**.
- To increase speed perception in a particularly long process, multiple progress bars (one after the other) works, but not as well as a long progress bar.
- **Short progress bars** that do not show much animation can increase perceived waiting time/decrease perceived speed. Don't do this.



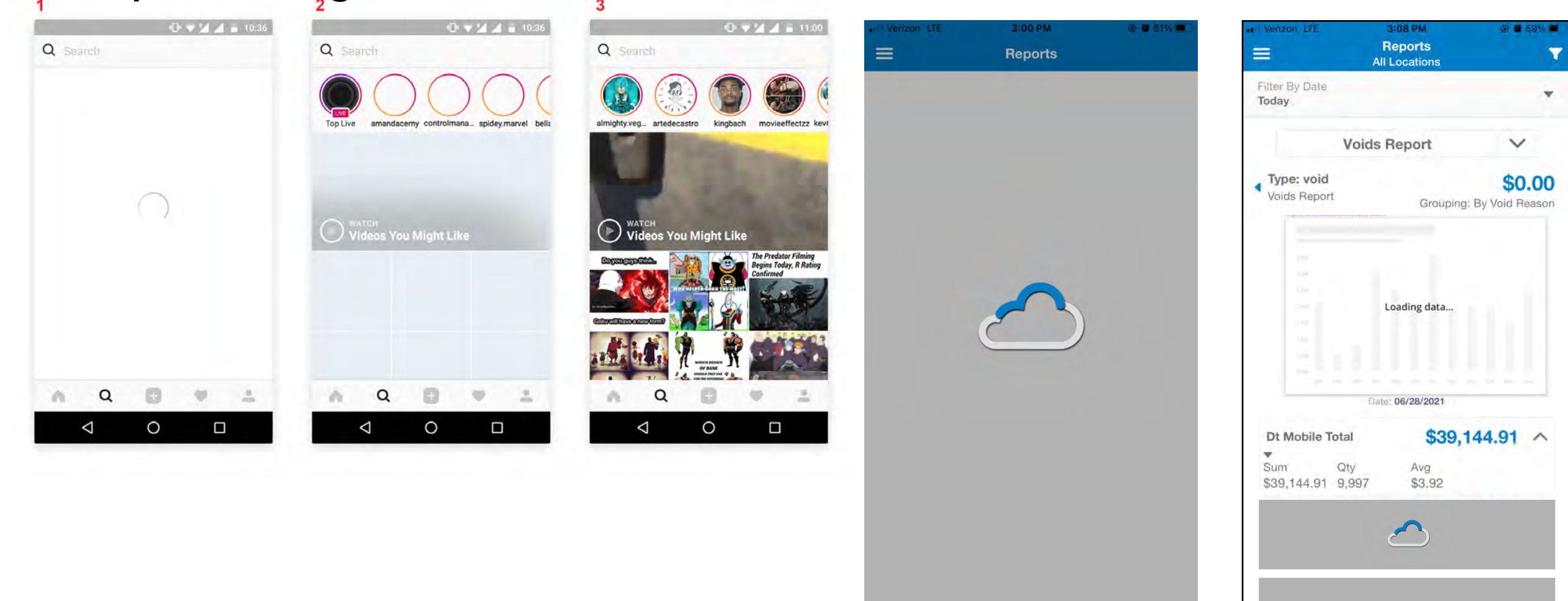
- Progress bars can increase user delight with fun animations or useful information, as long as this is subtle and controlled.
- Including games or overly interactive/overly distracting features on progress bars is discouraged as it can distract the user from their actual goals.
  - We want to limit the sensation of walking into the kitchen then immediately forgetting why you made the trip

## Potential Solution: Progressive Loading

Progressive loading is along the lines of a lazy load. Information on the page finishes loading at different times, so make information available as it loads.

Examples of Progressive Load

Applied to XMM product



Using a Progressive Loading strategy gives the following benefits:

- It communicates system status to the user, they know what has loaded, what has not
- The user is presented with actionable information sooner, perhaps the information they needed loads the quickest, and they don't have to wait for the entire page to load.
- This method is primarily used with graphics heavy environments.

## Conclusion

**Speed is a perceived concept that must be manipulated by the UI.** Relying on technical solutions only can still result in a system that may actually be faster in real time, but may still have a higher perceived slowness. Users work on perceptions and biases so our solutions must address those.

## Helpful Links

Gronier, Guillaume. Lallemand, Carine. *How to Improve Perceived Waiting Time in HCI: A Psychological Approach*. 2013. University of Luxembourg [http://www.guillaumegronier.com/cv/resources/Articles/2013\\_WorkshopHCI\\_Gronier.pdf](http://www.guillaumegronier.com/cv/resources/Articles/2013_WorkshopHCI_Gronier.pdf)

Shakir, Suleiman Ali. *Stop Using A Loading Spinner, There's Something Better*. 2017. <https://uxdesign.cc/stop-using-a-loading-spinner-theres-something-better-d186194f771e>

Sherwin, Katie. *Progress Indicators Make a Slow System Less Insufferable*. 2014. NNG Nielsen Norman Group. <https://www.nngroup.com/articles/progress-indicators/>