RESPECTING FOCUS:

A Behavior Guide for Intelligent Systems

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"The *scarce* resource of the 21st century will not be technology; it will be *attention*."

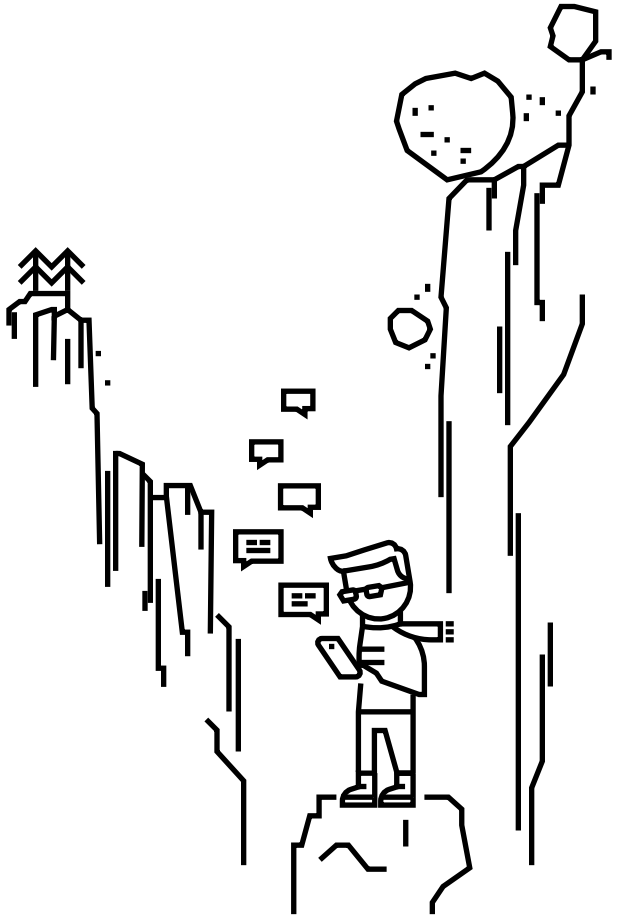
- *Mark Weiser*

Achieving focus

When technology communicates and behaves well, it enables you to do what you want to, on your terms. It communicates in ways that allow you to focus, and achieve the level of concentration you need to accomplish a task.

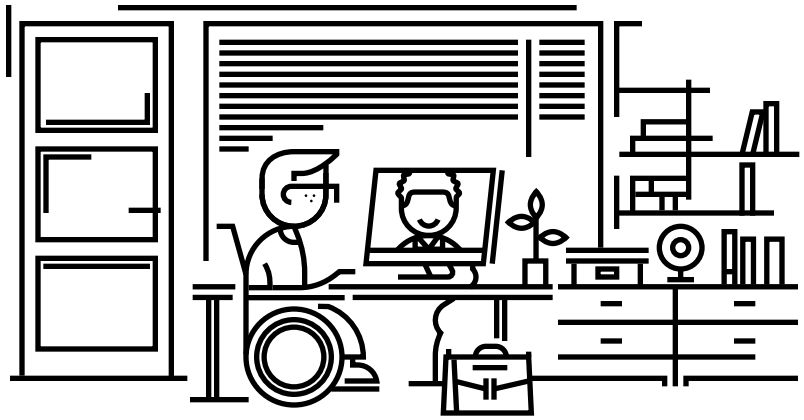
Interruptions in our lives

We're alerted hundreds of times per day. Some are useful and non-invasive, like an oven burner turning orange when it's hot. Some are needed, like a critical security update, while others are just generally helpful, like a feature suggesting something new. But when they appear at inopportune moments, even the most useful notifications often have detrimental results like anxiety, frustration, and reduced productivity. While a pop-up might be nearly invisible to one person, to another it might stop a critical task completely for hours. We must examine when our communications are helpful vs. harmful.



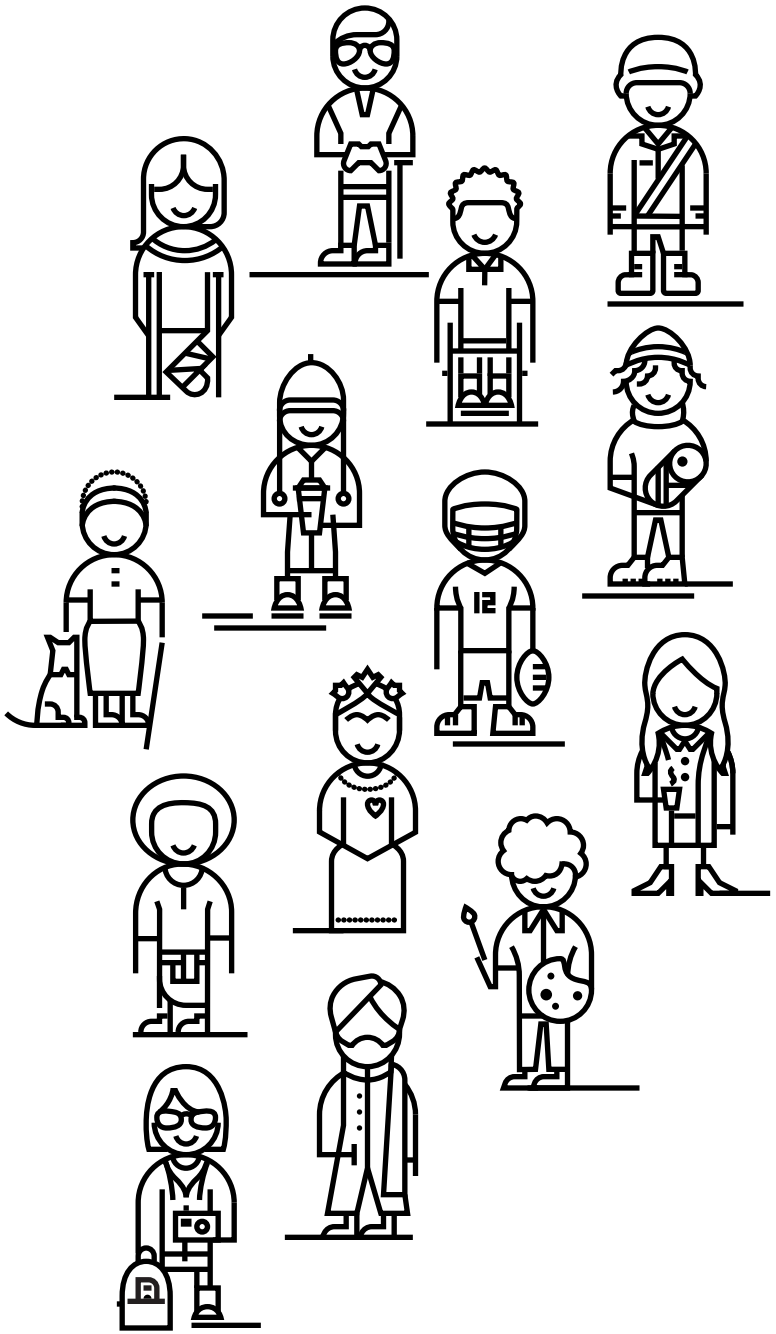
The cost of interruption

Harmful interruptions take a large toll. An average person gets interrupted many times an hour, has multiple windows open on their computer, checks their email repeatedly, feels that half of their time in meetings is unproductive, and spends a large part of their working time simply looking for the information they need to do their job.



A changing landscape

Sounds simple, but enabling focus is an increasingly difficult challenge. The points of contact between people and products are undergoing massive evolution. Experiences have moved beyond screens to engage and immerse multiple senses. Each of these new interactions presents new potential points of friction and interruption. Inclusive design is about reducing errors and creating seamless transitions as people move from one moment to the next.



Learning from People

During many discussions with people who have ADHD or sensory sensitivity, deep dives with thought leaders and researchers both inside and outside of Microsoft, we've landed on a framework of Design Considerations to keep in mind.

The framework will help you start addressing questions like:

- How can technology serve the right information at the right time, while cutting back unwanted information, distractions, and extra steps?
- How can we identify when, where, and how it's appropriate for a system to communicate with people?
- How can information blend in the background so people can focus on their task, not the tool?
- How can experience creators balance the mental cost of interruption against the importance of key information?
- How can technology better understand how to match people with the right environment to aid in sustained concentration?

Learn from Diversity

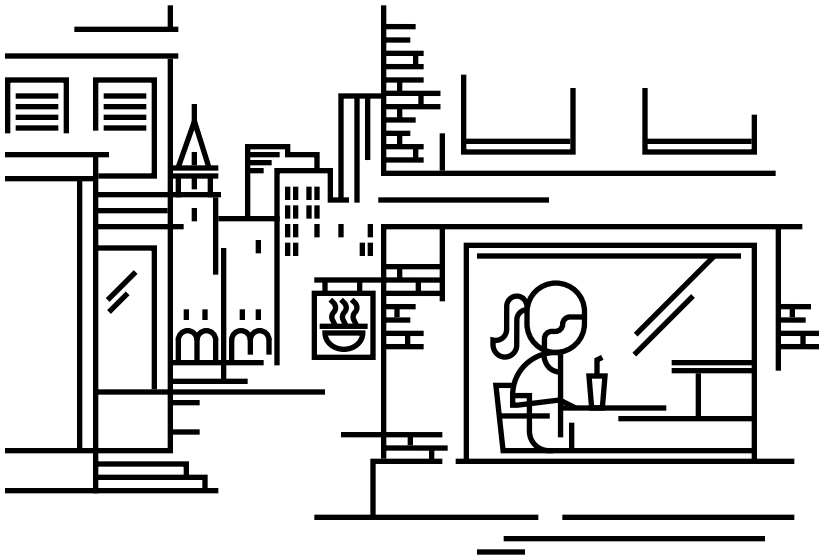
Careful observation and empathetic conversations with individuals and groups are key to understanding how alerts work for and against them.

There are a spectrum of needs that may change with context. For example:

Isolated: Needs isolated environments to work in. That could mean working in a quiet, private space, or having a computer desktop that's free of clutter.

Informed but in control: Comfortable with alerts, but wants control over their form and timing.

Neutral: No preference for alert timing, style, or mode.



Different levels of focus

Whether you're at a restaurant or driving, everyone has different focus needs in different situations.

Let's say you're at a restaurant. Depending on who you're with, the type of restaurant, or your mood, you may desire a different level of attentiveness from your server. There are several ways this interaction happens:

Frequent, real-time communication (extreme attentiveness): refreshing your beverage every time it goes below half-full, and checking in every few minutes to see how the food tastes

Occasional interaction (some attention): refreshing drinks when they're empty, stopping by when plates are empty

Self-inquiry (leave you alone): only comes to the table when you reach out to them

Have you ever had a waiter/waitress who stopped by constantly, interrupting an intimate conversation? Or conversely, had someone you couldn't find when you needed service? These mismatches greatly affect your dining experience.

Learning from that analogy, a person may desire real-time pop-ups or in-text communications when we share tips, updates, or alerts. Or, those may be distracting, and actually take them away from their productivity.

Design Considerations

1. Understand urgency and medium

There are many ways technology communicates: a visual pop up, orange blinking light, a sound, a vibration. Are all modes needed, capturing full attention for one low-urgency communication?

Consider:
When designing any form of communication, determine how much attention it needs and when: Full attention, partial attention, little attention. Determine ways to align the delivery form with the urgency of the message. An important message may warrant taking full attention from the person. A non-urgent software update may not. Think about how to balance the benefit of the interruption with the cost of interrupting the task, to help make better decisions about timing and delivery.

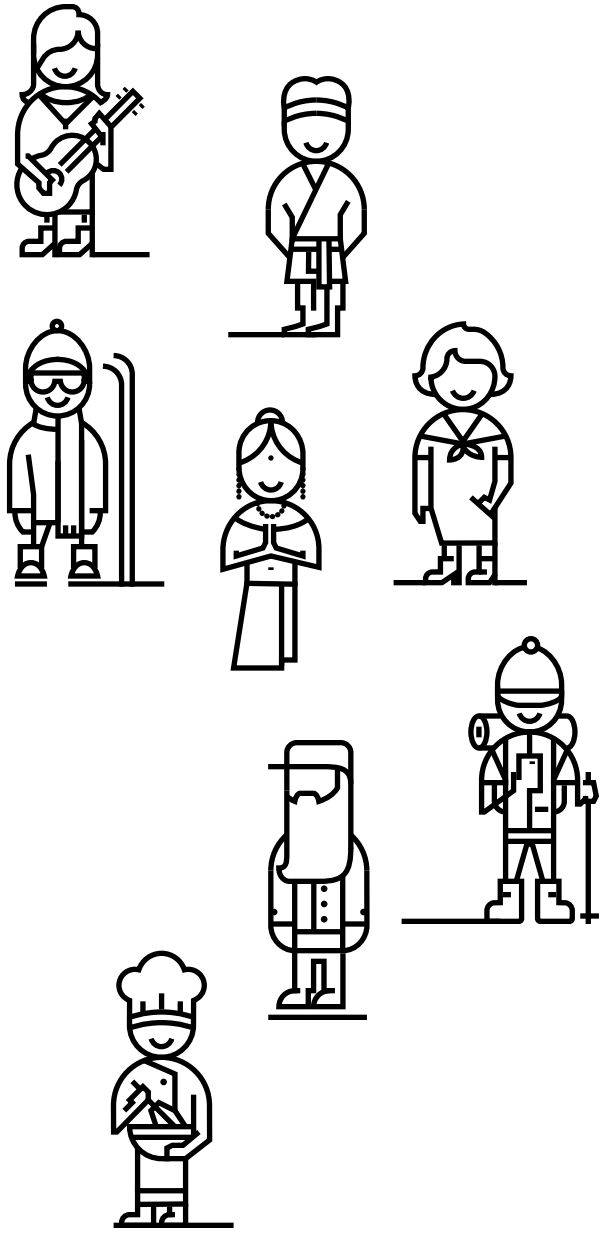
Ask yourself:

- Do you have a range of alert types that convey various levels of importance?
- How do you use visual, aural, and haptic modes of communication today in your experience?
- What's the cost to the customer if they miss your interruption?
- How can you be more respectful?
- How can you make use of the periphery to keep the person focused on their primary task?

2. Adapt to the customer's behavior

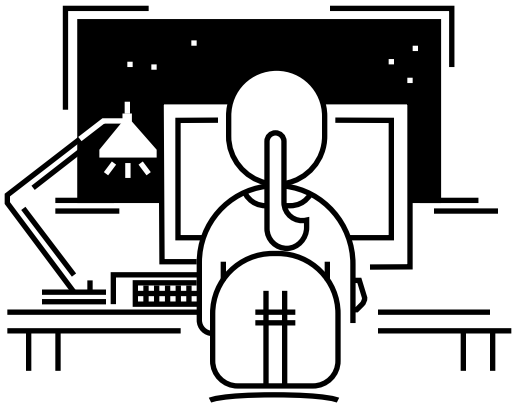
How a customer interacts with each feature or part of your experience will change over time.

Consider:
Think of every experience we build as a conversation between customer and technology. How good or helpful is a conversation when only one side is listening, and the other side just speaks whenever it wants to? What does it take for technology to understand when it's appropriate to communicate? Humans have the capability to understand that what's appropriate in one context might not be appropriate in another. Let's learn from human-to-human interaction to create experiences with the lowest mental cost.



Ask yourself:

- What are all the alert types that your customer could encounter while in your experience?
- When can you speak with a diverse range of people to learn about how they experience your systems' communications?
- How can you learn from human interactions in the physical world to judge how and when it is most appropriate to interrupt someone?
- Are you listening to your customer behavior?
- Can your system learn from how customers interact and modify behavior?



3. Adapt to context

We all focus, filter, and, consume information in unique ways. We have capabilities and limitations for tuning in and out information. These preferences and capabilities can rapidly change based on context. Because of that, how a person interacts with each feature or part of an experience will change. Can your system learn from how people interact to modify the way it communicates?

Consider:
Alone or in a crowded room. No wifi or full speed internet. On the go or in a conference room. Limited use of sight due to a permanent disability. Glare on a sunny day. There are many contexts to consider when designing communications systems: cognitive, environmental, social, physical, cultural. Understanding your customers' primary motivation can help you design an experience that contributes to vs. takes away from their goal. Build experiences that respect and adapt to context.

Ask yourself:

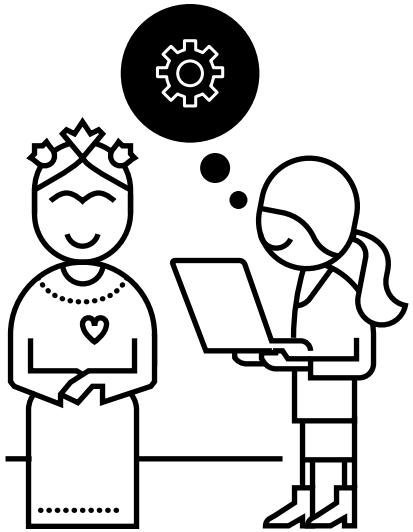
- Can your system learn from how people interact and shift contexts to modify the way it communicates?
- What experiences could be competing for your customer's attention?
- What contexts have you currently built for and which should you take into consideration moving forward?
- What is your customers' main goal? What could interrupt that goal?
- Can your system learn from customer behavior? How could it improve?

4. Enable the customer to adapt

Personal experiences are tailored to an individual. Customizable features help customers feel empowered and in control of their devices.

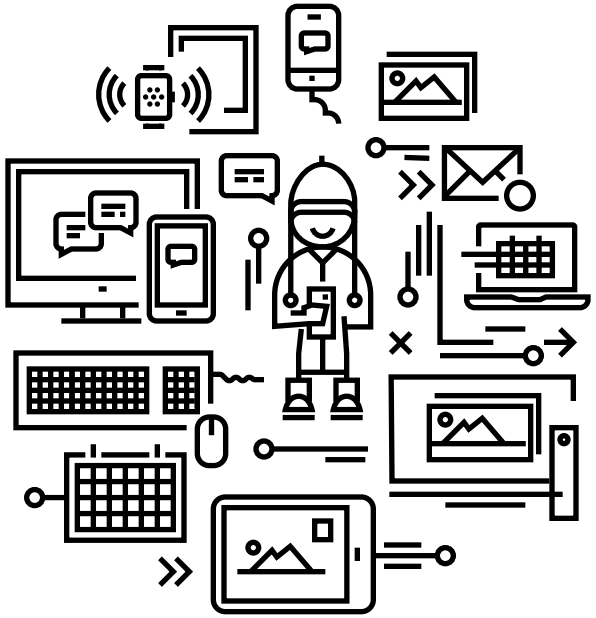
Many alerts on computers today are difficult to tune out or turn off. With multiple applications running at once, we can be inundated with communications. Better systems have ways for users to control the type and timing of notifications.

Consider:
Allow personalization of the type, time, and mode of communication. Design an entire experience mindful of feedback, triggers, and alerts from the system and how a person can make the experience their own.



Ask yourself:

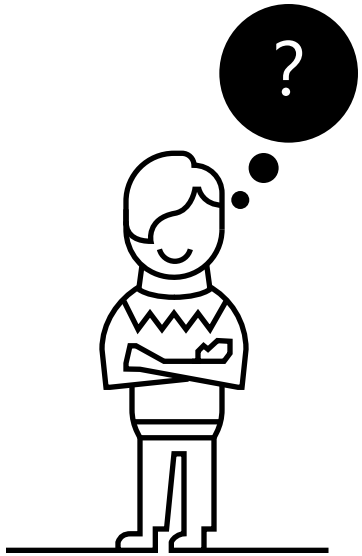
- When and where can you allow deep personalization of the type, time, and mode of communication?
- What control does the customer have over alerts in your experience?
- Does your customer know if they have control over their alerts?
- Do your systems' communications take your customer's current task into account?
- When do you and when could you allow deep personalization in communication type and frequency?



5. Reduce mental cost

Experiences are moving beyond screens to engage and immerse simultaneous human senses. Each of these new interactions presents new potential points of friction.

Consider:
There's plenty of evidence that people are overwhelmed by the sheer amounts of information that they receive through technology. But this is also a function of how many steps people need to take to interact with technology. And how many distractions they encounter along the way, visual, audio, organizational, etc. What is nearly invisible or even helpful to one person may be disruptive to another.



Ask yourself:

- How can you better understand the mental cost of customers within each step of their journey?
- How can you build intelligence to know when a customer is the most interruptible?
- How can you identify what's worth interrupting a person for and what isn't?
- How can you better understand what's important to the customer and not make assumptions on their behalf?

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aka.ms/inclusivedesign