INCLUSIVE

A Microsoft Design Toolkit

This toolkit is the start of a journey to shift our mindset about inclusive practices. It offers simple starting points for meaningful change.

It’s for designers who want to make great products for the greatest number of people.

We met many remarkable people while making this toolkit. We have a lot of work to do before these practices are our everyday routine. Until then, we’re inspired to share and improve in partnership with each other.

ACKNOWLEDGEMENTS

We wish to thank the many people who contributed to this toolkit. By design, it's a living collection of ideas and practices. It reflects a wide community of people across Microsoft and beyond. We'd like to give a special thanks to a few key people. First, Jutta Treviranus, head of Inclusive Design at OCAD University, director and founder of the Inclusive Design Research Centre and the Inclusive Design Institute. Next, Graham Pullin, Professor of Digital Interaction Design and Product Design at the University of Dundee and author of Design Meets Disability. And finally, Allen Sayegh, Associate Professor in Practice of Architectural Technology, Harvard Graduate School of Design and Principal at INVIVIA design firm. Thank you for your leadership in inclusive design and mindful design practices.

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DEFINITION

Inclusive design has a strong heritage in accessibility. There are great examples of inclusive practices from architecture, physical product, and public spaces. Yet, digital technology presents new opportunities to expand this expertise in new ways.

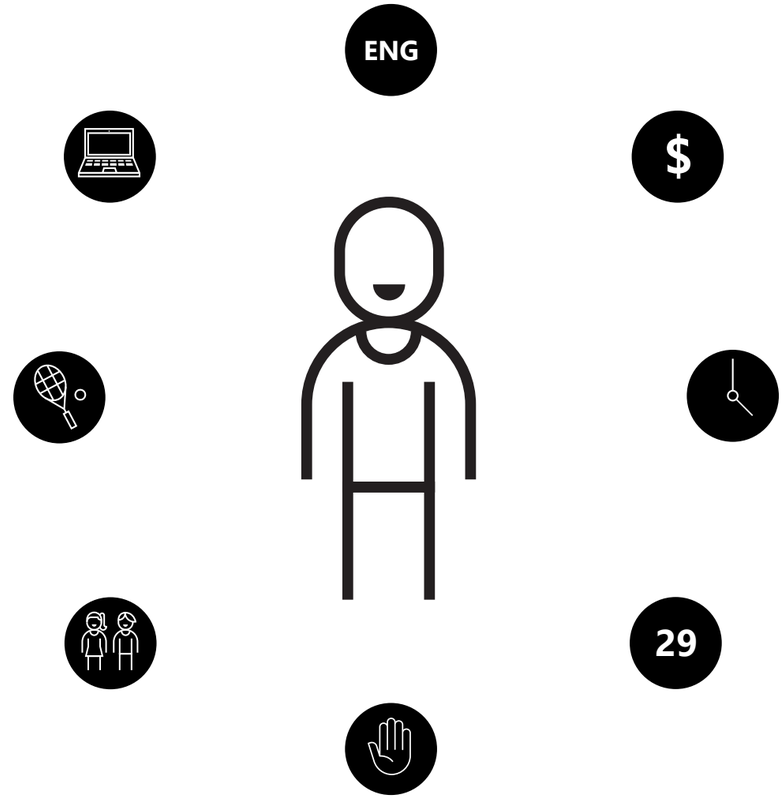
In this toolkit, we define inclusive design as a set of practices that can be applied to any existing design process. Inclusive is how we design. It's our tools and methods. In comparison, accessibility offer ways to improve access to what is already designed.

A curb cut is still a curb. The cut makes the curb more accessible. Inclusive design gives us ways to design for ever-changing human motivations and needs. And design systems that can adapt to fit those diverse needs.

THE CASE FOR INCLUSIVE DESIGN

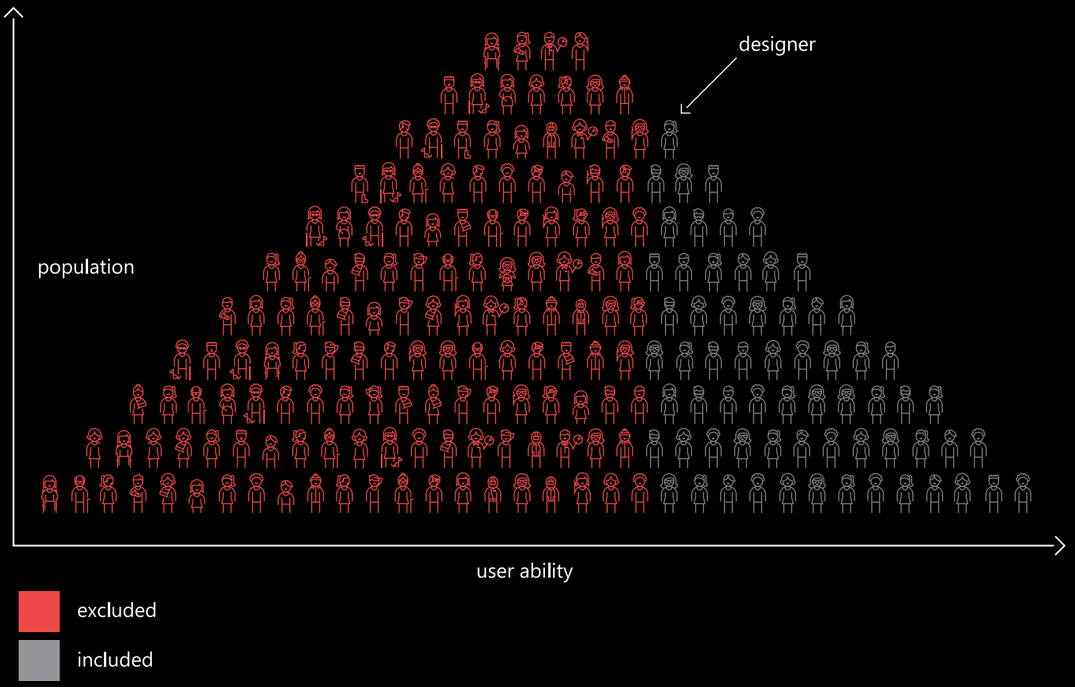
WHO WE DESIGN FOR

If we use our own abilities and biases as a starting point, we end up with products designed for people of a specific age, language ability, tech literacy, and physical ability. Plus those with specific access to money, time and a social network.



WHO GETS EXCLUDED

When it comes to people, there's no such thing as "normal". For example, the interactions we design with technology depend heavily on what we can see, hear, say, and touch. If we're designing with ourselves as a baseline, we can overlook people with circumstances different from ours.



WHY IT MATTERS

Designing for inclusivity not only opens up our products and experiences to more people with a wider range of abilities. It also reflects how people really are. All humans are growing, changing, and adapting to the world around them every day. We want our designs to reflect that diversity.

So where do we start?

PART ONE

SEEING DISABILITY DIFFERENTLY

We can start with a fresh view of what disability really is. It was 1980 when the World Health Organization first published its formal definitions of disabilities. The world has changed since then, and so has the way the world looks at disabilities. It’s time to reexamine our approach.

1

DISABILITY IS DESIGNED

The first thing we learned is that defining disability as a health condition is a thing of the past.

Today disability is a multi-faceted term. It covers situational impairments, activity limitations, and participation restrictions.

All this means that disability is not a personal attribute.

It reflects the complex way people interact with society.

1980

Disability as a personal attribute

"In the context of health experience, a disability is any restriction or lack of ability (resulting from an impairment) to perform an activity in the manner or within the range considered normal for a human being."

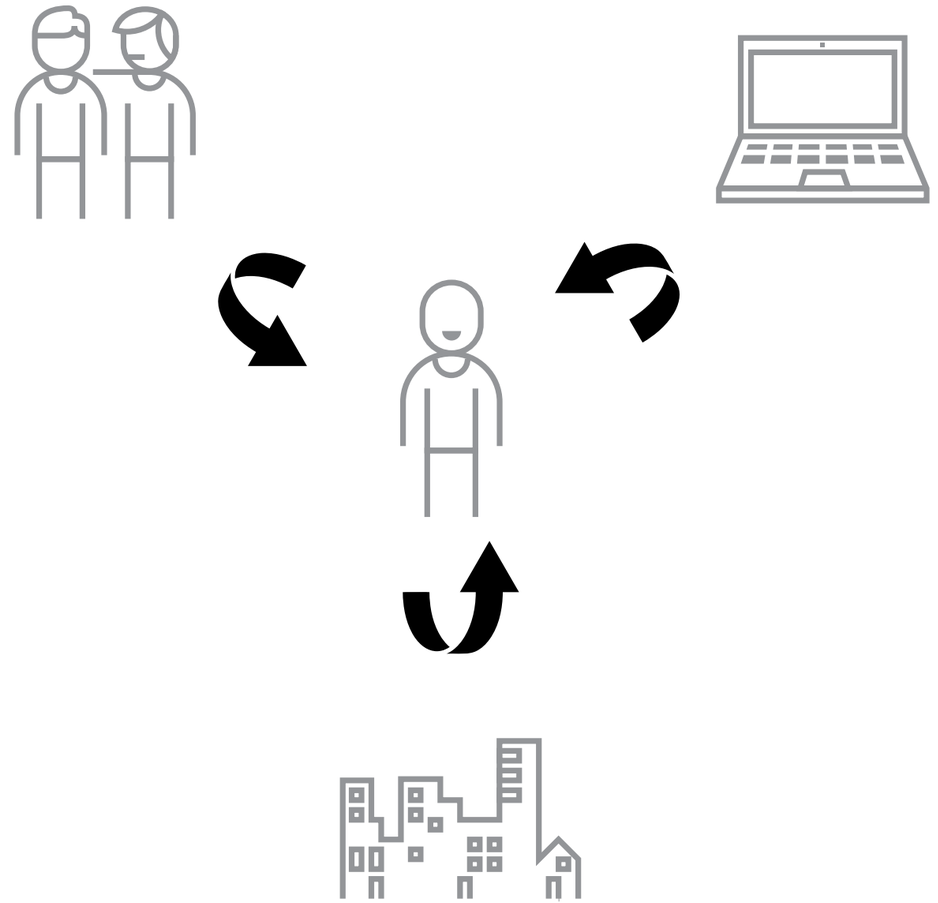
–World Health Organization

TODAY

Disability as context dependent

"Disability is not just a health problem. It is a complex phenomenon, reflecting the interaction between features of a person's body and features of the society in which he or she lives."

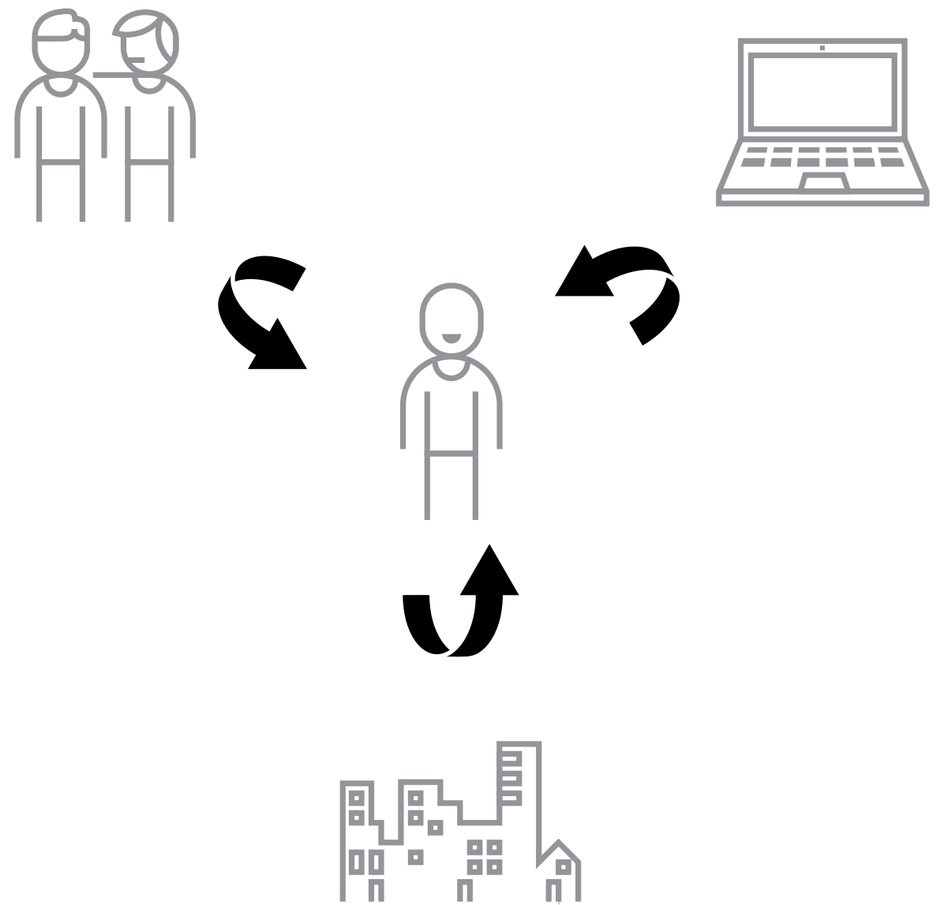
–World Health Organization



These points of interaction between a person and society are where disability happens.

As designers, it's our responsibility to know how our designs affect these interactions.

We have an opportunity to create solutions with utility and elegance for many people.



DISABILITY

≠

PERSONAL HEALTH CONDITION

DISABILITY

=

MISMATCHED HUMAN INTERACTIONS

2

DISABILITY IS UNIVERSAL & DYNAMIC

The second thing we learned is that disability is universal and dynamic. This is a shift from thinking about disability as something that only affects a small percentage of the population.

In fact, most of us experience disabilities that are temporary and situational on a daily basis

For example, mobile technolgies make disability highly relevant to a huge number of people.

SOMETIMES DISABILITY IS TEMPORARY

Even short-term injury and illness affect the way people interact with the world around them. Looking into bright light can cause brief visual impairment. Being sick with a cough makes it hard to speak. Wearing a cast can severely limit a person's ability to lift an everyday object.

SOMETIMES DISABILITY IS SITUATIONAL

As people move through multiple environments, their abilities can also change dramatically. In a loud crowd, they can't hear well. In a car, they're visually impaired. A new parent spends much of their day doing tasks one-handed. What's possible, safe, and appropriate is constantly changing.

Because physical interactions with technology depend heavily on what we see, hear, say, and touch, the use of mobile technologies can make situational disabilities highly relevant to many people today.

INCREASED
MOBILITY OF TECHNOLOGY

=

INCREASED
MOMENTS OF DISABILITY

3

DISABILITY INSPIRES BETTER SOLUTIONS

The third thing we learned is that seeing disability differently can inspire better designs that benefit more people.

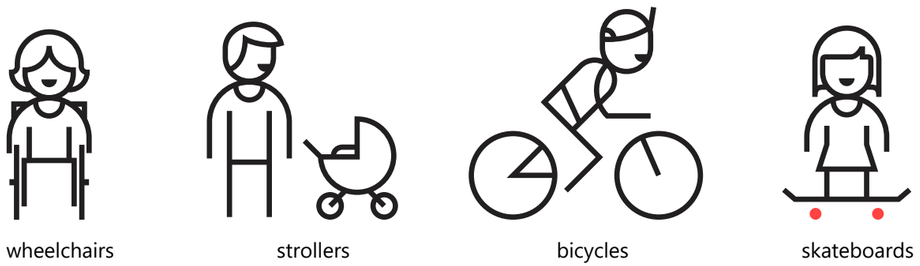
When we understand that disability is a universal and dynamic way of interacting with the world, it can become something else as well: a new source for creativity.

Our impact can also expand, as our inclusive designs reach a greater number of people.

THE BEAUTY OF CONSTRAINTS

Designing for people with permanent disabilities can seem like a significant constraint, but the resulting designs can actually benefit a much larger number of people. For example, curb cuts in sidewalks were first created to make it safer and easier for people in wheelchairs to cross the street. But curb cuts also help people with a wide range of circumstances, from kids riding bicycles, to parents pushing strollers, to workers hauling heavy equipment.

Similarly, high-contrast screen settings were initially made to benefit people with vision impairments. But today, many people benefit from high-contrast settings when they use a device in bright sunlight. The same is true for remote controls, automatic door openers, voice controls, and much more. Designing with constraints in mind is simply designing well.



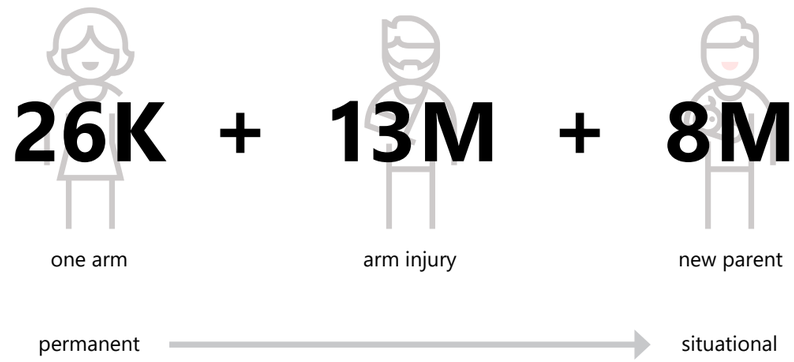
everybody benefits from curb cuts

DIFFERENT PEOPLE BENEFIT

By designing for someone with a permanent disability, someone with a situational disability can also benefit. For example, a device designed for a person who has one arm could be used just as effectively by a person with a temporary wrist injury or a new parent holding an infant.

MORE PEOPLE BENEFIT

Being mindful of the continuum from permanent to situational disabilities helps us rethink how our designs can scale to more people in new ways. In the United States, 26,000 people a year suffer from loss of upper extremities. But when we include people with temporary and situational disabilities, the number is greater than 20M.



TOTAL: 21M+

Source: United States Census Bureau, Limbs for Life Foundation, Amputee Coalition, MedicineHealth.com, CDC.gov, Disability Statistics Center at the UCSF

THE PERSONA SPECTRUM

We use a persona spectrum to understand related limitations across a spectrum of permanent, temporary, and situational disabilities. It is a quick tool to help foster empathy and to show how a solution scales to a broader audience.

Touch

one arm

arm injury

new parent

See

blind

cataracts

distracted driver

Hear

deaf

ear infection

bartender

Speak

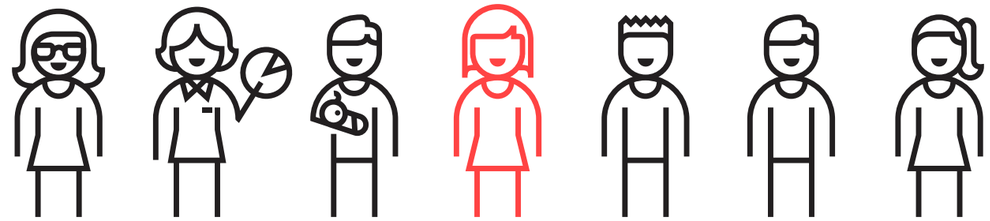
non-verbal

laryngitis

heavy accent

PERSONA NETWORK

Just as no person exists in isolation, neither does the persona spectrum. It’s important to be aware of how people interact with each other. The persona network includes friends, family members or even strangers.



PART TWO

FROM SEEING TO MAKING

We've come to see inclusive design as a set of perspectives and practices that champion human diversity. Take a moment to consider how you have benefited from solutions that were originally designed for someone with different abilities. Take note of your own permanent, temporary, or situational disabilities that prevent you from interacting with society. Observe how people with different circumstances are excluded from participating in something you can do without barriers.

Being inclusive starts with changing our perception.

Now it's time to put this mindset into action. It's time to create new ways of making. Let's get started.

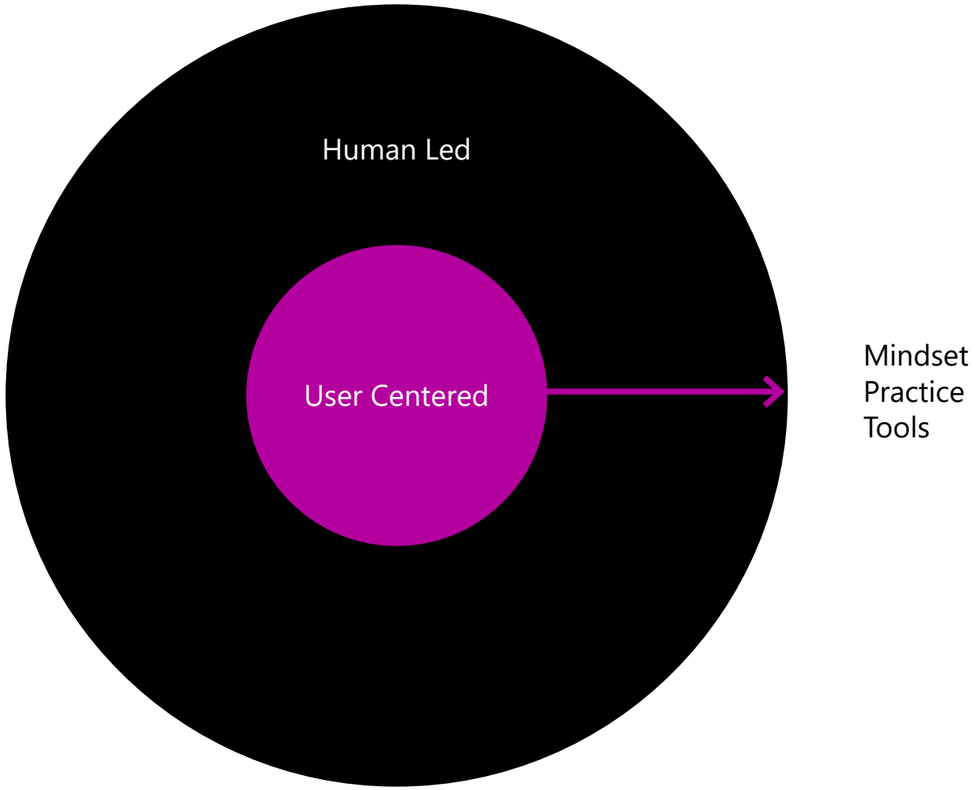
DESIGNING FOR HUMAN DIVERSITY

Humans have been at the center of design practices for a long time. As designers, we strive to make products that solve users' needs, work well with the human body, and improve people's lives. We focus on making products useful and usable. Human-led design builds on this thinking.

Human-led design presumes a diversity of people and their capabilities.

It starts with three pillars that are universal to all people as they interact with the world: human beings have motivations that drive behavior, they build relationships, and they have a keen sense of what's appropriate.

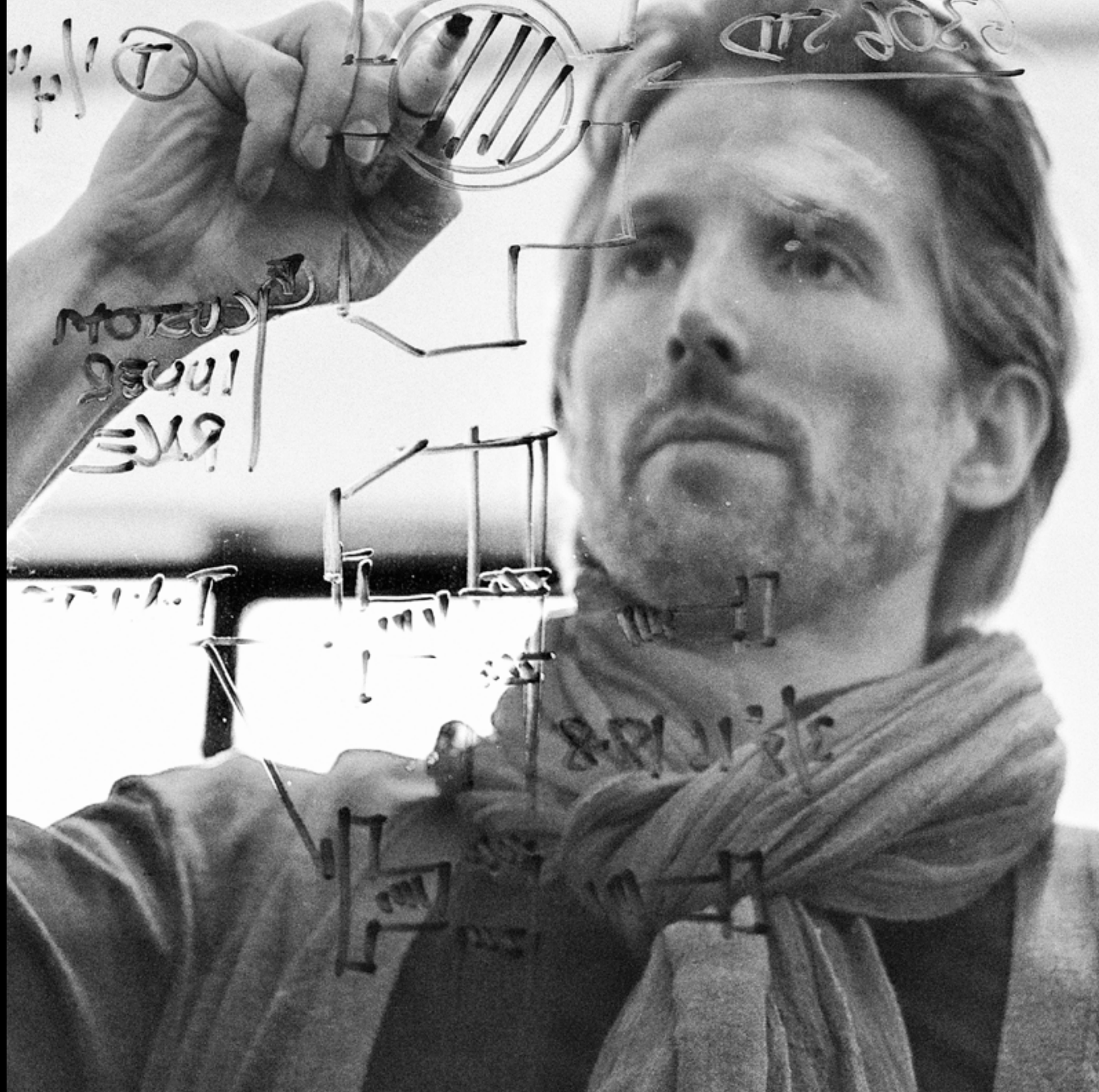
In practice, human-led design leads to solutions that are universally relevant, but also adapt to individual limitations and situations.



VALIDATING OUR DESIGNS

Traditional user-centered design has many techniques to clarify human needs, from personas to scenarios to usability testing. But we also need tools that reintroduce diversity back into our design process.

We need ways to check, balance, and measure the inclusivity of our designs.

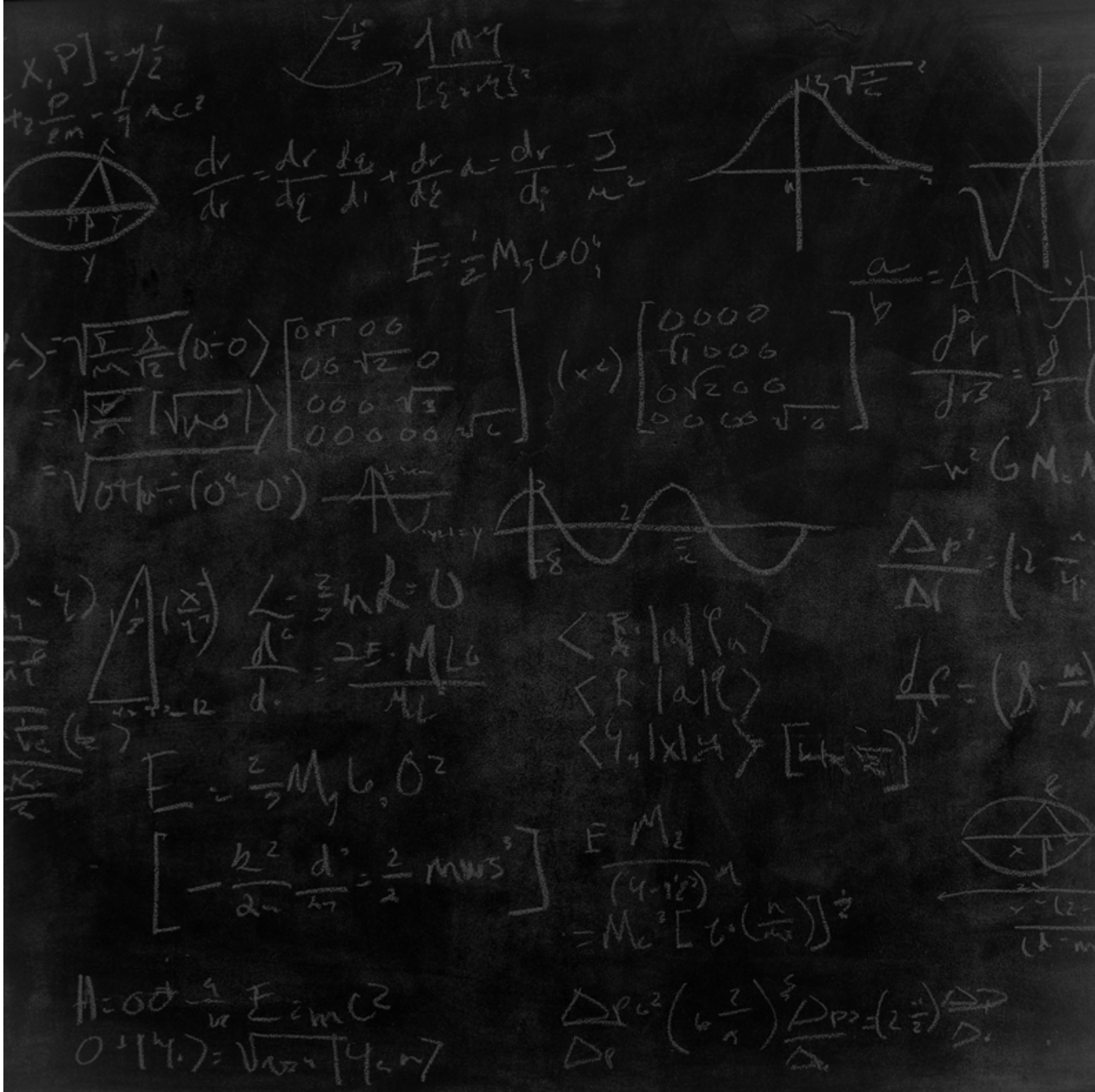


THE TOOLKIT

Inclusive: A Microsoft Design Toolkit is made to work within an existing design process. It's based on three insights:

- Disability is designed
- Disability is universal and dynamic
- Disability inspires better solutions

We can use this toolkit to evaluate our existing processes, develop new practices, and pilot the practices we want to use.



BENEFITS OF INCLUSIVE DESIGN

A solution that's designed through inclusive practices has four distinct benefits:

1. Increased access
2. Reduced friction
3. Improved emotional cues
4. Be net-positive for people (value exchange)

PART THREE

TOOLKIT IN PRACTICE

Most design processes are iterative and heuristic. This toolkit aims to complement, not replace, the many existing types of design process. There are great human-centered design methods available from multiple sources.

Like a chef's recipe, your own design process should be the primary direction for your design. The elements of this toolkit can be added, like ingredients, to improve the inclusivity of your process. How and when you integrate them is up to you.

We measure the success of Inclusive Design by evaluating if there is increased access, reduced friction, improved emotional cues, and a net-positive value exchange for people. These are the beneficial results of designing inclusively.

AT A GLANCE

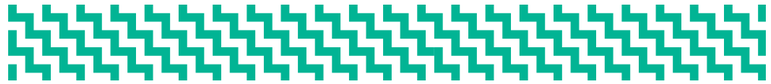
SAMPLE DESIGN PROCESS

As we learn different perspectives, we need to apply them to the bigger picture that informs our designs. It can be helpful to reframe our thinking to see human limitations as possibilities.

Here is a sample of how we put Inclusive Design into practice at Microsoft. We design for a broad range of customers and these methods will evolve as we apply this toolkit across our products.

GET ORIENTED

FRAME



IDEATE

ITERATE

OPTIMIZE

GET ORIENTED

Familiarize yourself with the basics of inclusive design.

Review accessibility criteria and create a list of criteria that relate to your design. Interview stakeholders about customer, technical and business criteria.

Research and try existing assistive tools that customers use to interact with technology: Screen readers, motorized wheelchairs, community resources, etc.

GETTING IT RIGHT

Have more questions than answers

Start with HOW before figuring out WHAT you want to make

Set aside any existing solutions for this stage and Frame stage

Be familiar with Inclusive Design terminology and any accessibility requirements

FRAME

Conduct research methods. Interview and observe people along this spectrum to understand how they interact with the world. Interview people in the persona network and understand how they interact with people on the persona spectrum.

Draw a persona spectrum. Identify who's permanently excluded from using existing solutions, based on ability, age, geography, etc.

Start with a universal human theme, without a specific solution in mind.

Build an interaction map of existing solutions and identify points of friction that people encounter.

Identify primary motivations and individual needs that connect the people on the persona spectrum.

Capture and summarize what you've learned.

GETTING IT RIGHT

Step outside of what you think you know

Gain insight from studies and people with a wide range of abilities and experiences

Focus by selecting a human unifier to address

Identify principles or constraints you want to use

Outline behaviors that the technology should imbue

Frame the design challenge with a mismatch in technology in mind

Understand the role of technology with the human interactions

IDEATE

Generate ideas related to your interviews and observations. Use benefits of inclusive design to stretch your ideas: Increase access, reduce friction, improve emotional cues, be net-positive for people.

If you need ideas, think about your observations from the persona spectrum and network. Identify specific mismatches between human-to-human interactions and human-to-technology interactions. Even act out the interactions to help clarify the gaps. What differences were most noticeable?

Use human motivations to look for common themes. Cluster and group similar ideas into cohesive concepts. Select the concepts that best address the primary motivation for everyone on the persona spectrum.

GETTING IT RIGHT

Generate ideas and develop concepts rooted in human insight and a latent need

Define the human-to-human and human-to-technology mismatch

Put people in the lead

Generate ideas inspired by human interaction

Create experiences with purposeful behaviors

Clearly define at least one inclusive design benefit for a concept

Evaluate if concepts are a benefit to all

ITERATE

Identify what type of role your product plays in someone's life. Is there a human metaphor for this role? Use this to research the responsibilities and boundaries of the role.

Identify the stages of relationship that people will have with your product over time. Identify hero tasks and key interactions, big and small.

Build a new interaction map and key scenarios to illustrate the design in context.

Create a low fidelity prototype of your concept. Simulate the persona spectrum and use the prototype.

Conduct usability tests of prototype with people along the persona spectrum.

Check accessibility criteria and refine.

GETTING IT RIGHT

Refine the balance of creating "for one" and universal

Define a human analogy for your concept

Create lo-fi prototypes

Document what parts of your accessibility checklist are addressed

Map the interaction journey with considerations for the stages of relationship, context

Evaluate across the full persona spectrum and iterate with different temporary and situational limitations

OPTIMIZE

Build a high fidelity prototype of your concept. Simulate the persona spectrum and use the prototype.

Conduct usability tests of your prototype with people along the persona spectrum.

Use benefits of Inclusive Design to assess and measure improvements: increase access, reduce friction, improve emotional cues, be net-positive for people.

Reflect on why your design matters and build a story for how it benefits everyone along your persona spectrum.

GETTING IT RIGHT

Clearly articulate the why for your solution

Evaluate using the benefits of inclusive design as a checklist

Be brave and go back to iterate, if needed

As designers, it’s our responsibility to understand the power of the interactions we design for people. We design to embrace the things that make us human. It’s what drives us to create a world that makes lives better. The result is technology that’s inclusive.

For more information, contact inclusivedesign@microsoft.com

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