

# INCLUSIVE DESIGN 101

Jess Mitchell

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Asked to give a sort of 101 on what Inclusive Design is —

Today I want to explain what Inclusive Design is and how it can change your mind and your business and your approach to problem solving

I want to start by talking about what Inclusive Design IS NOT

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Asked to give a sort of 101 on what Inclusive Design is —

Today I want to explain what Inclusive Design is and how I think it can change your mind and your business and your approach to problem solving

I want to start by talking about what Inclusive Design IS NOT

Some of you might be more comfortable with the word design... but the word inclusive might make you think of this

# HIPPY SPEAK



We live in a complex world that is moving very quickly — one where technology and computers and drones and robots do many of our everyday tasks — or they soon will. It's a world where our needs are more complex — we're trying to integrate all of this technology into our lives, make it work, make it make our lives better and work for us.

The Internet of Things is everywhere — our connected cars (soon to be the autonomous cars), programmable thermostats and smoke alarms, and robots to keep our pets company while we're at work — complete with treat dispensers, camera sensors to let us know when Fido is around, and an ability to speak to our pets in our voice. So, you say sit Fido, Fido sits, and you trigger the robot to dispense a treat.

This is our world — we're setting up a wireless printer at home (no big deal, right?) — but we're integrating it with our wireless network and with our IP-capable TV and with our Media Centre (little bit harder) — and you're watching the Jays game on Rogers, but at the moment Bautista hit his home-run you jumped up and spilled something on your lap and your computer so you missed his reaction. Now you want your TV and speakers to be able to detect your laptop so you can watch a clip of Bautista's home-run reaction online, streaming it from the couch.

For all of that to work we need usable, integratable systems that must be designed to work for us.



You might think this doesn't apply in my industry — I challenge you to come up with an industry that doesn't ultimately deal with people, doesn't strive for efficiency and sustainability, doesn't hope to innovate, or doesn't simply want to solve complex problems.

Not saying inclusive design is a silver bullet, but I think it will help us do all of these things better.

# NOT IMPORTANT TO ME



We should be careful about disregarding something that isn't relevant to us now — it's shortsighted. We're all aging — speaking of shortsighted — my glasses get a little bit stronger every few years...

And my parents are aging and I'm seeing what happens with the inevitable march of time. Many of us, most of us will need assistance at some point in our lives. Disability increases with age (42% between ages of 65-74, 64% at 75+) and populations are aging.

# COMPLEX PROBLEMS NEED BETTER SOLUTIONS

- that have a longer shelf life
- that work better for more people
- that reach untapped markets

I'm going to suggest that with design thinking and inclusive design thinking in particular, we're going to be better equipped to solve complex problems with better solutions

- that have a longer shelf life
- that work better for more people
- that reach untapped markets and help us innovate

# DEFINE INCLUSIVE DESIGN

Inclusive Design is design that considers the full range of human diversity with respect to ability, language, culture, gender, age and other forms of human difference.

## 3 TENANTS OF INCLUSIVE DESIGN

1. recognize diversity and uniqueness
2. use an inclusive process and tools
3. have a broader beneficial impact

### 3 tenants of ID

1. recognize diversity and uniqueness — how many of you consider yourselves average?  
so why do we design for the average?
2. use an inclusive process and tools — get experts to make the best solutions — talk to moms to find out what strollers work best for them: talk to moms who are pushing strollers through the snow banks in Toronto in January, or strolling around the broken bricks in Old San Juan, Puerto Rico in the heat and humidity of June.  
Talk to moms who are 6'5" and talk to moms who don't have the strength to lift 20 lbs, let alone a 20 lb stroller and a 20 pound kid.
3. have a broader beneficial impact — solve for everyone  
of course if you set out to solve for everyone and you're designing a stroller it's going to be quite difficult. You simply can't make everyone happy.

You can still build an amazing stroller! We'll still strive for perfection, but in our attempts we'll make better strollers for everyone.

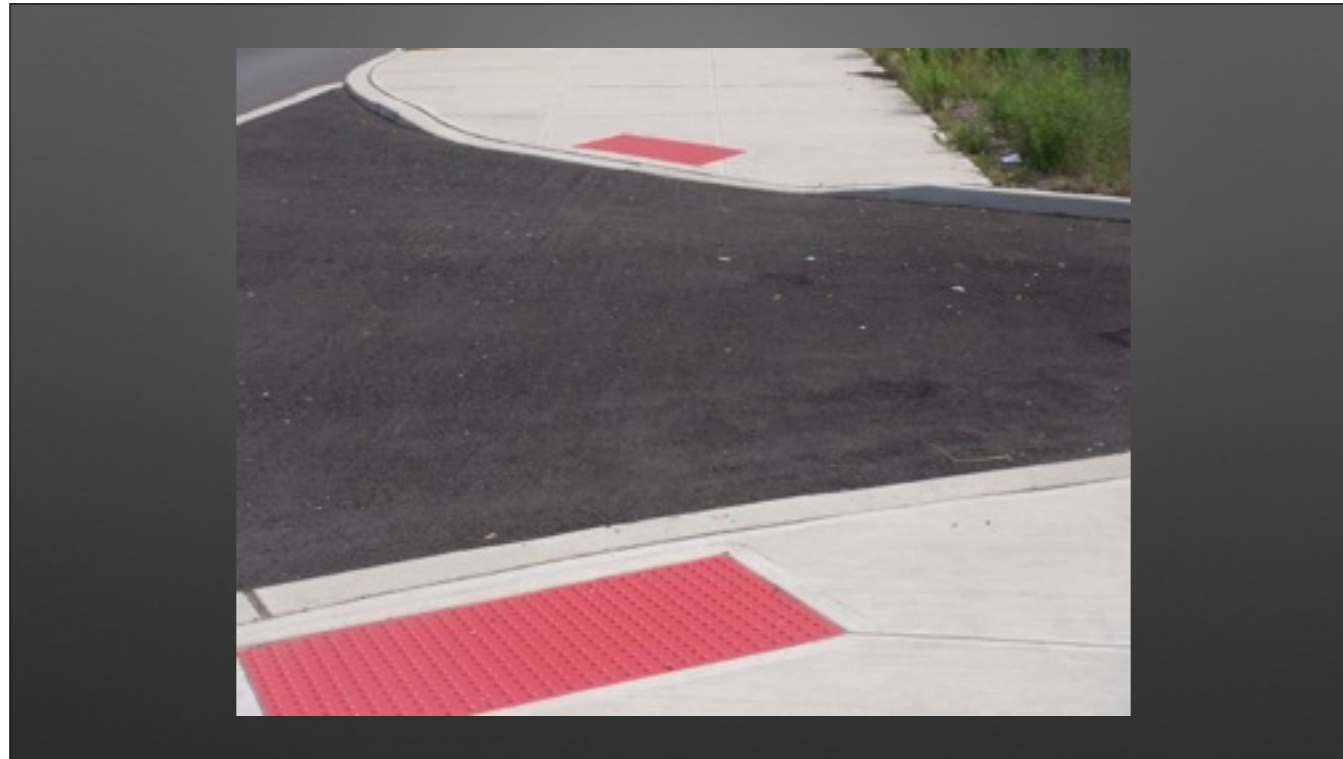


## 3 DIFFERENCES WITH UNIVERSAL DESIGN

1. the context
2. the user
3. the method

You might ask, how is this different from universal design? Well, it has a lot in common with UD, but 3 key differences...

1. Context: UD has its background in architectural and industrial design which is much more constrained than the digital
2. Users: UD solutions were supposed to work for everyone but the users that were imagined were from fairly constrained understandings of disabilities — e.g. I'm deaf but I don't use sign language, or I'm blind but don't read braille, or I'm partially blind, not profoundly and I need high contrast.
3. Method: different entrances are ok in achieving universal design — and this sometimes gives us strange solutions like switchback ramps that are retrofitted onto a building or elevators that travel up stairs — inclusive design asks, can we rethink the entrance for everyone and thereby make it better for everyone?



In Universal Design there's the curb cut — does everyone know what a curb cut is?



In Inclusive Design we aim for the digital curb cut — closed captioning is an example.

top 3 uses:

1. in a bar
2. in a gym
3. in bed with a sleeping spouse

# REPRODUCIBLE STEPS

There is a process we have developed for inclusive design — it's based on milestones, not a step by step linear process, but iterative — building on small successes.

# PRACTICE

We've found that inclusive design can be applied to everything we do and the way we think about the problems we encounter. We want to think more critically in our work and not just be satisfied with the simple, quick solution. It actually costs more to do the thinking after you've built something already. Spending the time up-front incorporating diversity and wondering about more creative solutions is much more affordable.

But what we're going to focus on today is, helping you have a >>>>

# PERSPECTIVE SHIFT

And I think this is the unique part of inclusive design — there are similarities with universal design, but inclusive design gives us this perspective shift and challenges us to solve hard problems. And it challenges us to solve them not just for persons with disabilities but for everyone. Think of the curb cut.

# SW / HW



In our work in Software and Hardware we employed a process that helped us think about making interfaces accessible — accessible to people with disabilities. And when we stumbled upon the utility of this process in basically everything we do we found it changed the way we thought about the problems changed the way we solved the problems we were able to solve the problems better and for more users

You might say to us now Inclusive Design is just good design

If you're doing good product design, then you're doing Inclusive Design — but what we've found is that people aren't doing it. And yet what we do at the IDRC is something any of us in this room can do. >>>

we're also  
consumers, neighbours, citizens  
people

The folks at the IDRC are developers and designer and researchers, but we're also consumers, neighbours, citizens, and people.

>>>



## WHY INCLUSION?

- do the right thing
- reach a new market
- solve really hard problems that others aren't solving
- don't get sued

do the right thing — good person (philanthropist),  
make a profit — good businessperson (successful),  
solve hard problems — entrepreneur & innovator  
don't get sued — good citizen and keeps you in the market

# DISABILITY



How many of you when you think about disability think about someone's medical condition?

They have an affliction, they can't do something — they lack an ability.

# DISABILITY



And maybe you know about the 4 main categories of disabilities:

mobility impaired

cognitively impaired

hearing impaired

seeing impaired

But at the IDRC we completely redefine disability. It isn't a medical condition to us...>>>

# MISMATCH



Disability is a mismatch between the individual and their goals — the tools they have available to them in the environment where they are — their context

Disability is not a personal trait and because it's so context dependent, it is a relative condition. >>>>>

ALL EXPERIENCE MISMATCH  
DISABILITY IS MISMATCH  
MISMATCH IS SOLVABLE  
DESIGN CAN SOLVE MISMATCH

I went grocery shopping the other day and my arms were full as I was trying to get in the car — my car has a button that makes it easy to open.

Someone with a motor impairment can also benefit from simple buttons to open doors.

Making content available to those with cognitive disabilities often means simplifying the content — you know who else benefits from that? What about the executive 2-pager? In some cases it's become a 1-pager — they're busy, they don't have time or energy to focus. They are cognitively impaired at that moment.

At the dog park the other night and I needed to know the score in the Jay's game. I used an app on my cell phone that showed me all the action in the game in text only so I could easily keep up. The deaf person who wants to know what's going on in the game and is watching on TV gets captions that allow them to follow along in text.

It's Fall now and the sun is blazing. In the afternoon the sun shines in the window in my office and onto my screen and makes it impossible for me to read my monitor. I can change the brightness and contrast though — this simple solution also helps the sight impaired user who has partial sight but needs slight modifications.

So now what — how can we do this Inclusive Design thing?? >>>>

# CHANGE OF APPROACH

- Environmental Scan
- Solve for mismatch - edge case
- Scenarios
- Gentle prototyping

I don't have time to lead you through a full cycle of an inclusive design process, but I will give you a sense of what some of the steps are.

First we try to understand the environment of what we're working in. If we're trying to solve a problem in a particular context we'd better understand that context really well and understand what solutions exist in that space — what their limitations are — what their successes are.

Use cases — can't enumerate people, they're too unique and diverse

if you begin to think of people as disabilities again here, you're following a mental rut

Scenarios will help you think through what someone does — they are a person with likes, dislikes, pressures, etc.

Gentle prototyping because of the risk of going to a visual design too quickly.

# EDGE CASES

*"We have clients come to us and say, "Here's our average customer:", for instance, "She's female, she's 34 years old, she has 2.3 kids..." And we listen politely and say: "Well, that's great but we don't care about that person". What we really need to do to design, is look at the extremes, the weakest, or the person with arthritis, or the athlete, or the strongest or the fastest person. Because if we understand what the extremes are, the middle will take care of itself".*  
– Dan Formosa, Smart Design, "[Objectified](#)"

<http://sugoru.com/2013/07/14/designing-for-the-extremes/>

They aren't describing a person. It's so abstracted and so removed from what a person does, it's not that functionally useful. In other words, it's useless.

How about instead this is Molly, she's 34 years old and struggling to find her footing in her field — she's a lawyer. She works really long hours trying to make her mark on the cases she's taking on. She has a 2 year old who is very picky about what he eats and a 4 year old who is even pickier. Her husband works on the opposite end of town. They have two cars and a goldfish.

# SCENARIO

Molly is working on a big case — this might be the one where she proves herself and gets the attention that will help her move to the next level...

This morning she's juggling a lot. She has to get the kids to daycare (her husband usually takes them but he had a special event at work so he fed the kids breakfast and left early). So as she's driving she's thinking of what to make for dinner — TACOS are easy and everyone will eat them — she can do tacos. But does she have an avocado? is the cilantro in the fridge still good or has it gone bad? and what about the sour cream from Thanksgiving — is it fuzzy yet??

She gets a call at noon that her 2 year old has pink eye and she needs to come get him from daycare...

Her husband is in an all-day launch event at the BMO Institute for Learning. He can't help out today...

Now we have someone with real pressures, a real life, real needs. When Molly gets out of the car with her work computer slung over one shoulder, her groceries in one hand, and sick little Miles in the other, what does she need in a stroller? How might we design a stroller for her?



# DO THIS

some simple rules:

every time you make a design decision you're saying as much (NOT ANY OF THIS) as you're saying (THAT). In other words, if you put a quick release tab on the handle of Molly's stroller, you're saying NO to a foot-activated quick release. Just one example.

So, whatever your design decision is, think about what it isn't.

AND WHEREVER POSSIBLE LET THE END USER DECIDE... we see innovative uses of tools all the time — unintended ones.

Silly Putty — meant to be a synthetic rubber for WWII — there was a rubber shortage because of the war

Text Messages — cell phone carriers letting customers know about problems with their network

a precursor to Email — created to let hearing impaired computer engineer communicate with his wife

WD-40 meant to displace and repeal standing water to prevent corrosion in nuclear missiles. how many of you use it on your nuclear missiles??

Rogaine was used to treat high blood pressure — hair growth was an unintended side effect

Play-Doh was a wallpaper cleaner in the 1930s

Microplanes were for wood or metal — I use them on orange rinds or horseradish when I cook!

One way we do this in the digital world is to  
make it multi-modal

- text
- audio
- video

# CHANGE OF OUTCOMES

Better solutions  
Longer shelf life  
Better usability  
Innovation

This isn't a silver bullet process to everything we do. In fact, much of this is just a shift of the way we think about things we're already thinking about.

Think of this from the perspective of wabi-sabi — it's a Japanese worldview based on transience and imperfection — we aren't making perfection — letting that go — what we're making is a foundation and a way of thinking that empowers us to make better solutions that work for more people and last longer as a result

power of the digital — inherent plasticity — multi-modal

# NIKE FLYEASE



Inspired by a letter to Nike by a basketball loving teenager with Cerebral Palsy — what resulted is a sexy shoe with an innovative entry that is usable and attractive to everyone.

# TRAMPOLINE



BLOORVIEW rehab hospital has one of these and what's so cool about it is that you have kids in their integrated school program playing together without barriers and kids in wheelchairs who have never had the sensation of jumping can feel what it feels like to jump.

# STOPGAP



Stopgap created these little wedges to help folks in wheelchairs get into businesses in the GTA. Folks with strollers also use them — no one is inconvenienced by them and they help.

Luke Anderson an avid mountain biker had an accident and became paralyzed. He started stopgap.



OXO good grips was created when the owner's wife had trouble gripping tools because of some mild arthritis.

These tools for kitchen and gardening became the go-tos in rehabilitation centers working with people on activities of daily living...

Who else has trouble gripping things?

OXO



this population.

OXO saw a market and broadened their products.

# THE MAGIC AT THE MARGINS

benefits the majority  
supports the spectrum

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instead of 80/20, solve for the hard ones, the 20% and your solution will cover the 80%



# ONE-SIZE-FITS-ONE



[https://www.mavenlink.com/images/blog/mobile\\_home\\_screen/04-iphone.png](https://www.mavenlink.com/images/blog/mobile_home_screen/04-iphone.png) | <http://www.flickr.com/photos/scobleizer/4779911251/>

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- can't take a one-size-fits-all approach (traditionally "universal" design)

when you can offer flexibility and customizability or personalization do it!

examples:

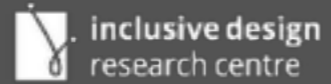
car dashboard

same phone, different organization screen

sit down at someone else's computer and everything is different: the mouse scrolls the other way, the dock is somewhere else, the hot corners keep making your screen fly away.

THANK YOU

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Oxo: [http://images.bloomingdales.com/is/image/BLM/products/7/optimized/8017617\\_fpx.tif?wid=1200&qlt=90,0&layer=comp&op\\_sharpen=0&resMode=sharp2&op\\_usm=0.7,1.0,0.5,0&fmt=jpeg](http://images.bloomingdales.com/is/image/BLM/products/7/optimized/8017617_fpx.tif?wid=1200&qlt=90,0&layer=comp&op_sharpen=0&resMode=sharp2&op_usm=0.7,1.0,0.5,0&fmt=jpeg)  
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