

# Fostering Digital Inclusion: Inclusive Design



Jutta Treviranus  
Inclusive Design Research Centre

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**Happy Birthday,**

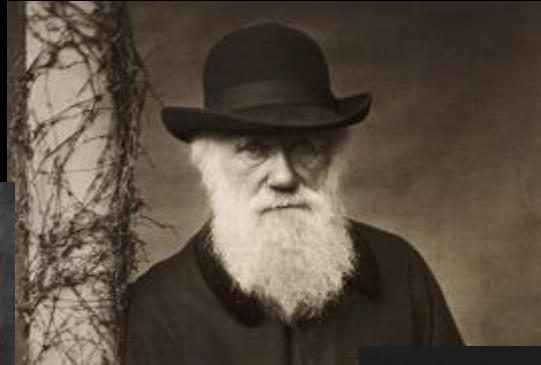
*Singapore!*

# Lead the 4<sup>th</sup> Industrial Revolution?

- Transformation
- Innovation
- Disruption
- Smart nation



# Under the influence of men from the 1800's...



# Quetelet

- Inventing the average man
- Standardization
- Valorizing conformity and demonizing deviation



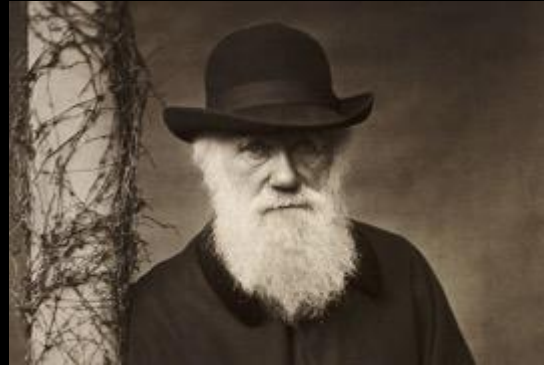
# Pareto

- The 80/20 principle
- If you want quick wins, ignore the "difficult 20%"



# “Darwinism”

- Survival of the fittest
- Life is a winner-takes-all, zero sum game



# Dewey “DUI”

- Efficiency, order, control
- Sorting, categorizing & labelling





# Ideas from the 1800's

- Quetelet – the average man, standardization, valorizing conformance and demonizing deviation
- Pareto – the 80/20 principle – if you want quick wins ignore the “difficult 20%”
- Darwinism – survival of the fittest - life is a winner-takes-all, zero sum game
- Dewey – efficiency, order, control, sorting, categorizing and labelling

# Assumed & entrenched..

- fundamental principles
- inextricably enmeshed in our world view
- forms our notions of truth & value
- shapes education, business, markets, design & public policy

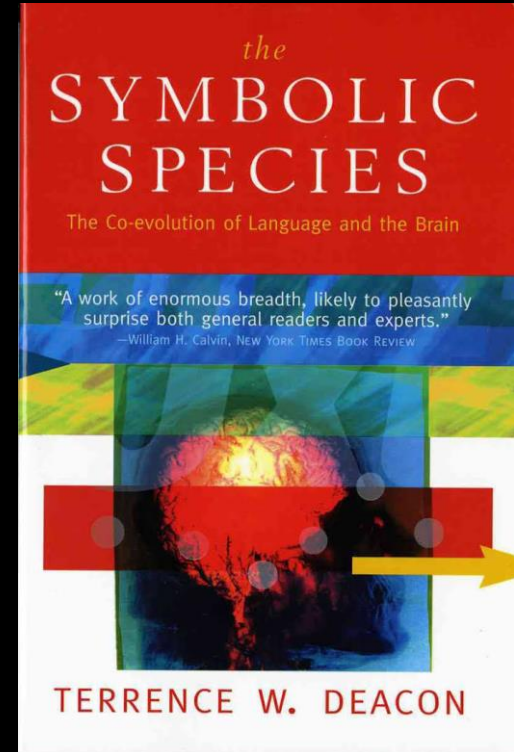


# Transformational ideas...

- Darwin – relaxed selection offers greater genetic choice and leads to human advances – predators are less adaptive
- Quetelet – there is no average man, no average us, we are all unique and variable - diversity is an asset – monocultures won't survive
- Dewey – we don't need to put people into boxes or types, all people are generative complex adaptive systems
- Pareto – we have misidentified the modern day vital few as the difficult 20%

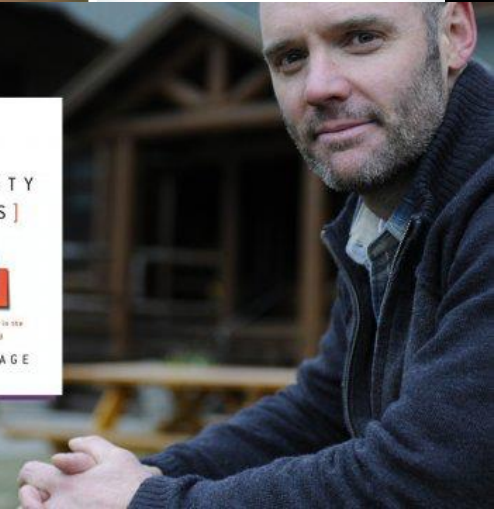
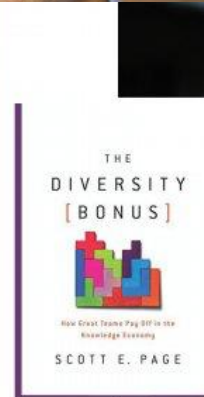
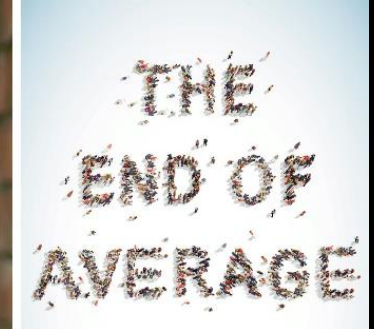
# Darwinism reconsidered...

- Relaxed selection offers greater genetic choice and leads to human advances
- Predators are less adaptive



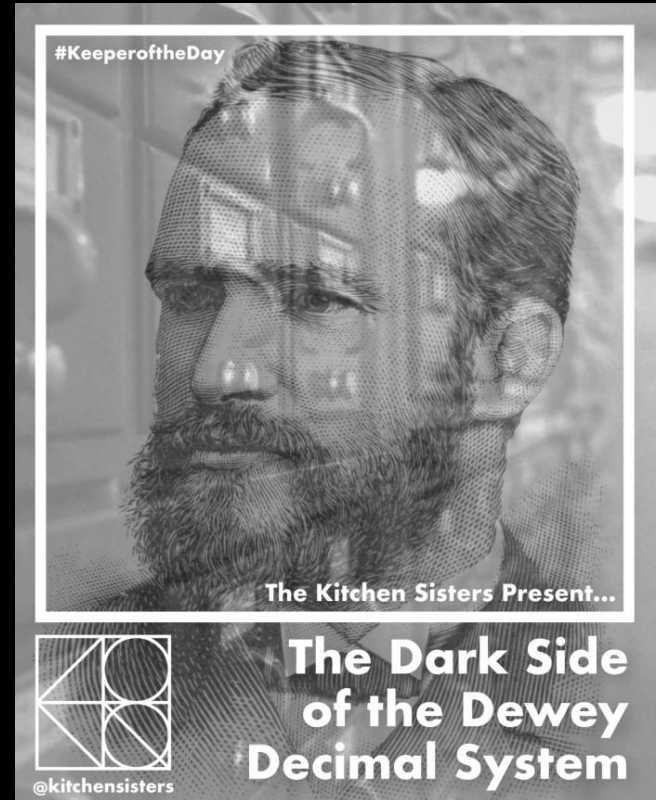
# Quetelet reconsidered...

- there is no average man, no average us, we are all unique and variable
- diversity is an asset
- monocultures won't survive



# Dewey reconsidered...

- we don't need to put people into boxes or types,
- all people are generative complex adaptive systems



# Pareto reconsidered...

- we have misidentified the modern day vital few as the difficult 20%



What about smart systems?





Alice and the unexpected...



Smarter is not always better...



...more than about automated vehicles,

....same pattern in all  
population data-based AI

# The power tools of AI..

- Unable to handle diversity & complexity
- Unprepared for the unexpected
- Replicates our own inadequacies
- Automates and amplifies them

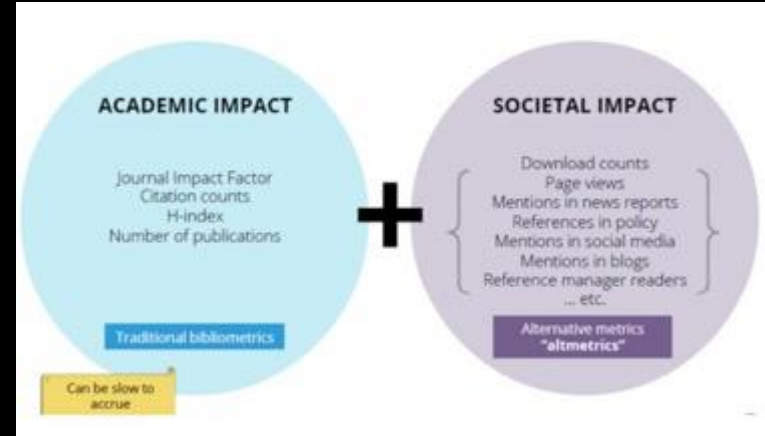
We equate evidence with majority, repeatability and probability, ...

If you are not like the average, probability is wrong



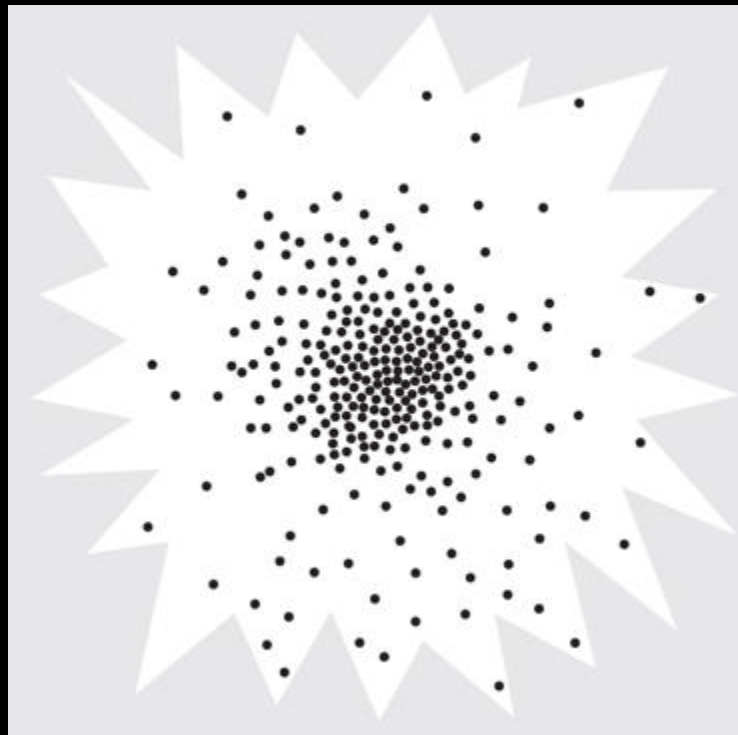
We equate impact  
with a single measure  
for a large  
homogeneous number

We are  
heterogeneous and  
need different  
measures



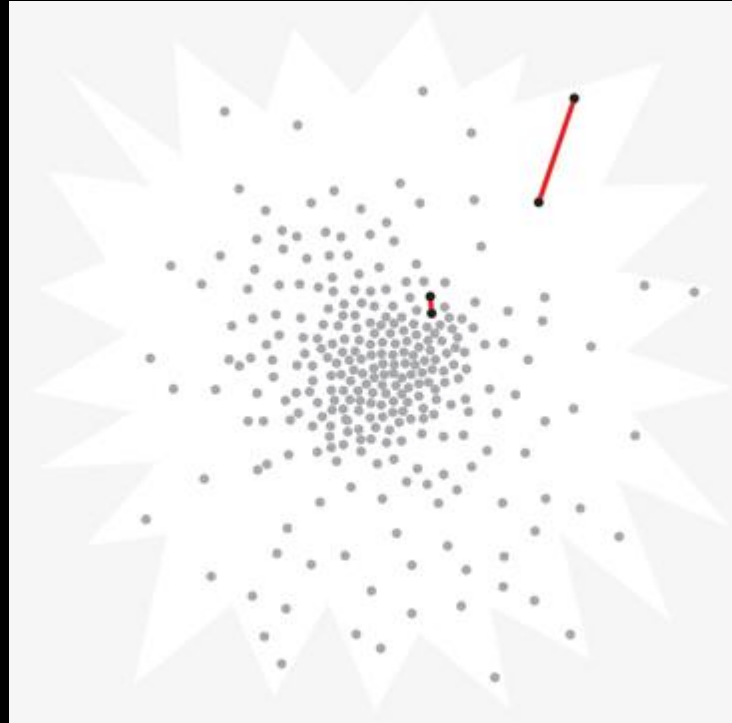
What is the impact?

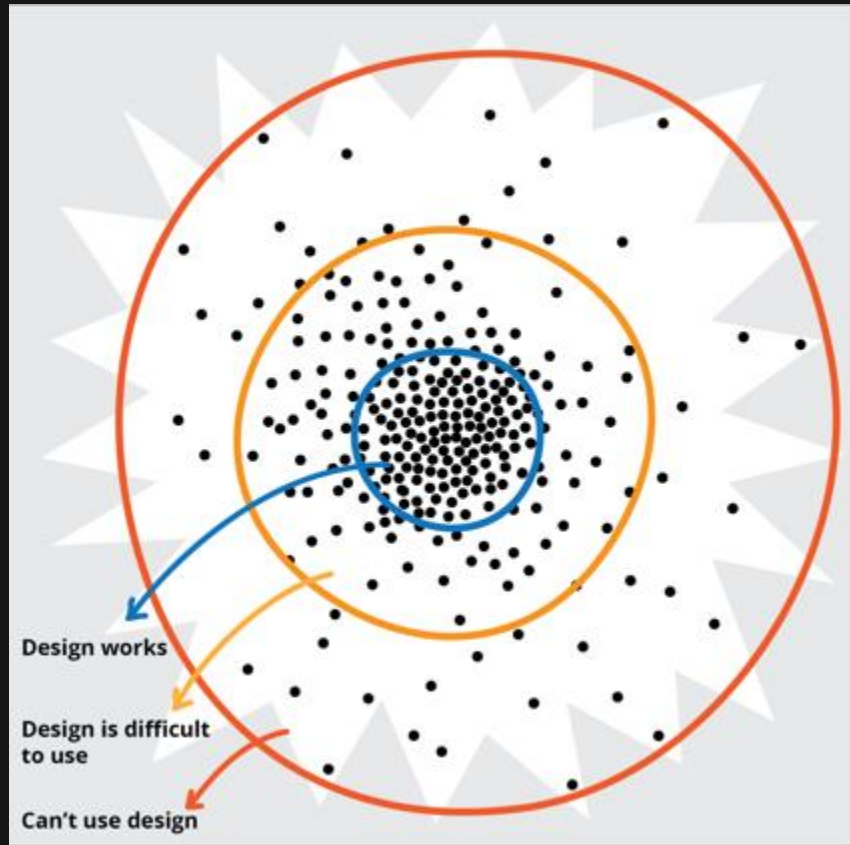
# Our human starburst...

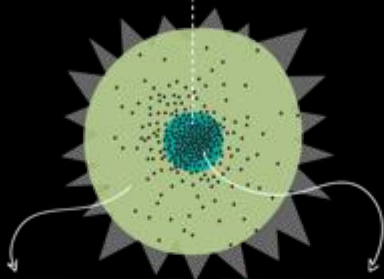
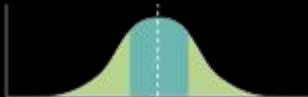




# Difference...

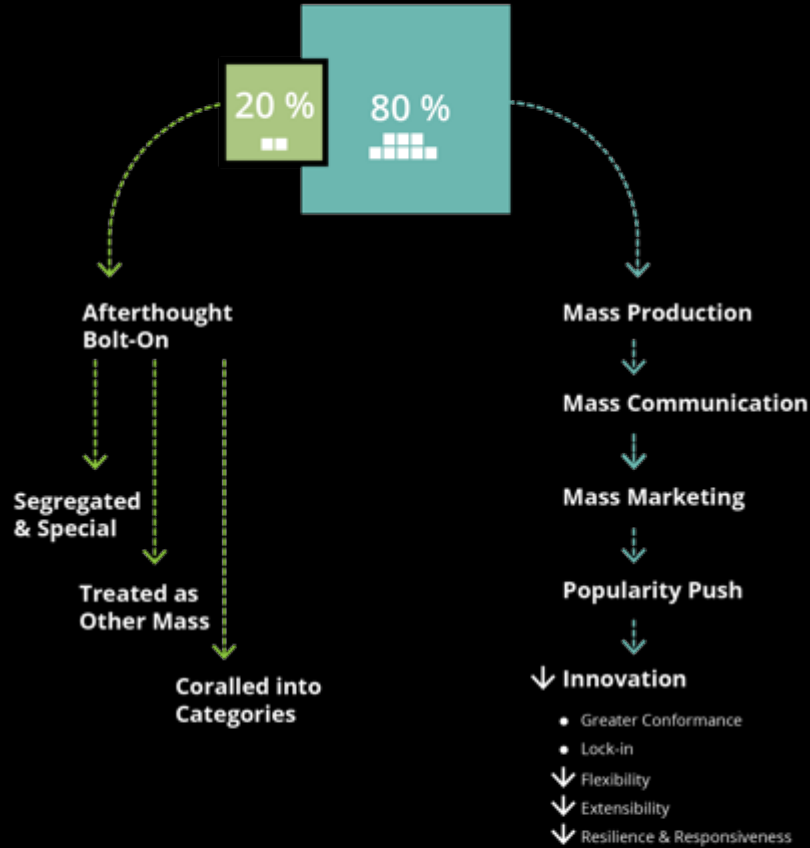






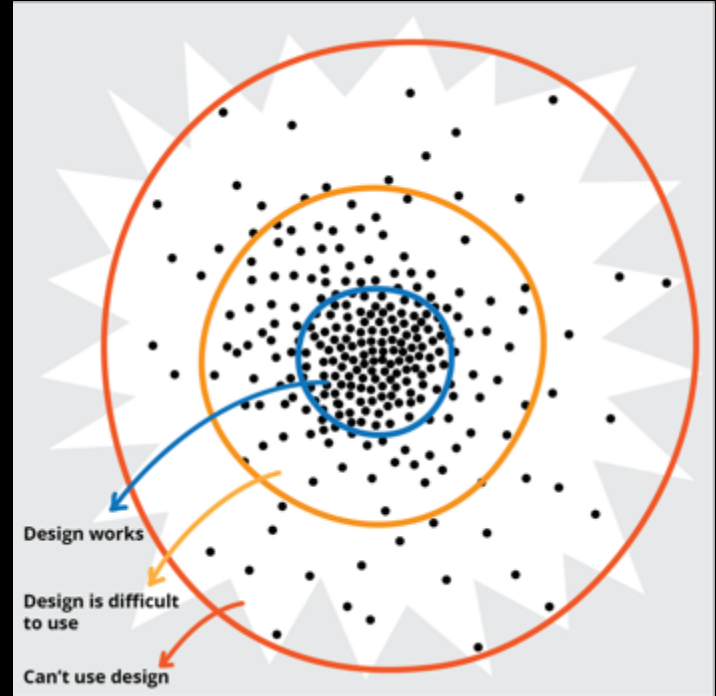
- **DESIGN**  
Misfit
- **PRODUCTS**
  - ↓ Availability
  - ↓ Reliability
  - ↓ Functionality
  - ↑ Cost
- **KNOWLEDGE TRUTH: EVIDENCE**  
Ignored  
Not Recognized  
Not Understood
- **EDUCATION**  
Exclusion  
Mismatch & Failure
- **WORK**  
Exclusion & Barriers
- **DEMOCRACY**  
Charity & Pity  
Protest & Transgression

- **DESIGN**  
Fit
- **PRODUCTS**
  - ↑ Availability
  - ↑ Reliability
  - ↑ Functionality
  - ↓ Cost
- **KNOWLEDGE TRUTH: EVIDENCE**  
Regression to the mean  
Normalization & Homogeneity  
Statistical Significance & Power  
The Standard
- **EDUCATION**  
Competition  
Ranking & Conformance
- **WORK**  
Replaceable Workers
- **DEMOCRACY**  
Majority Rules



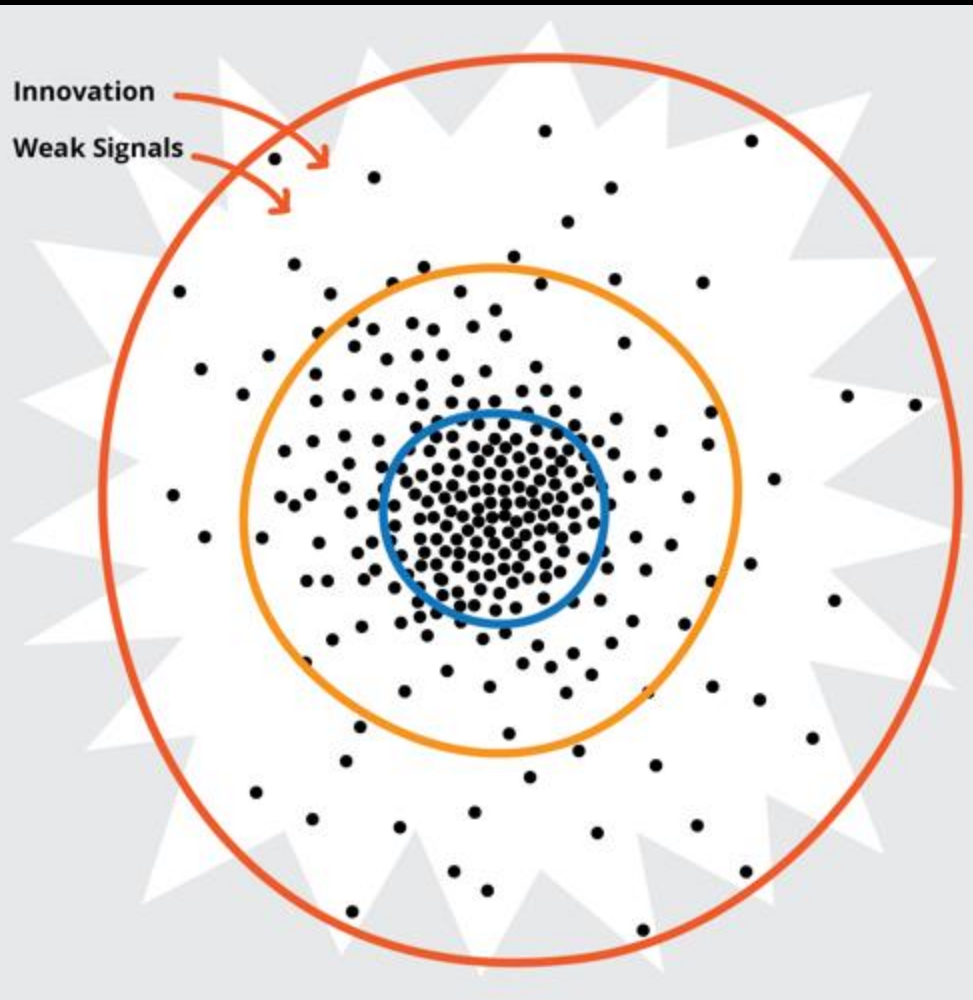
# Who are the real vital few?

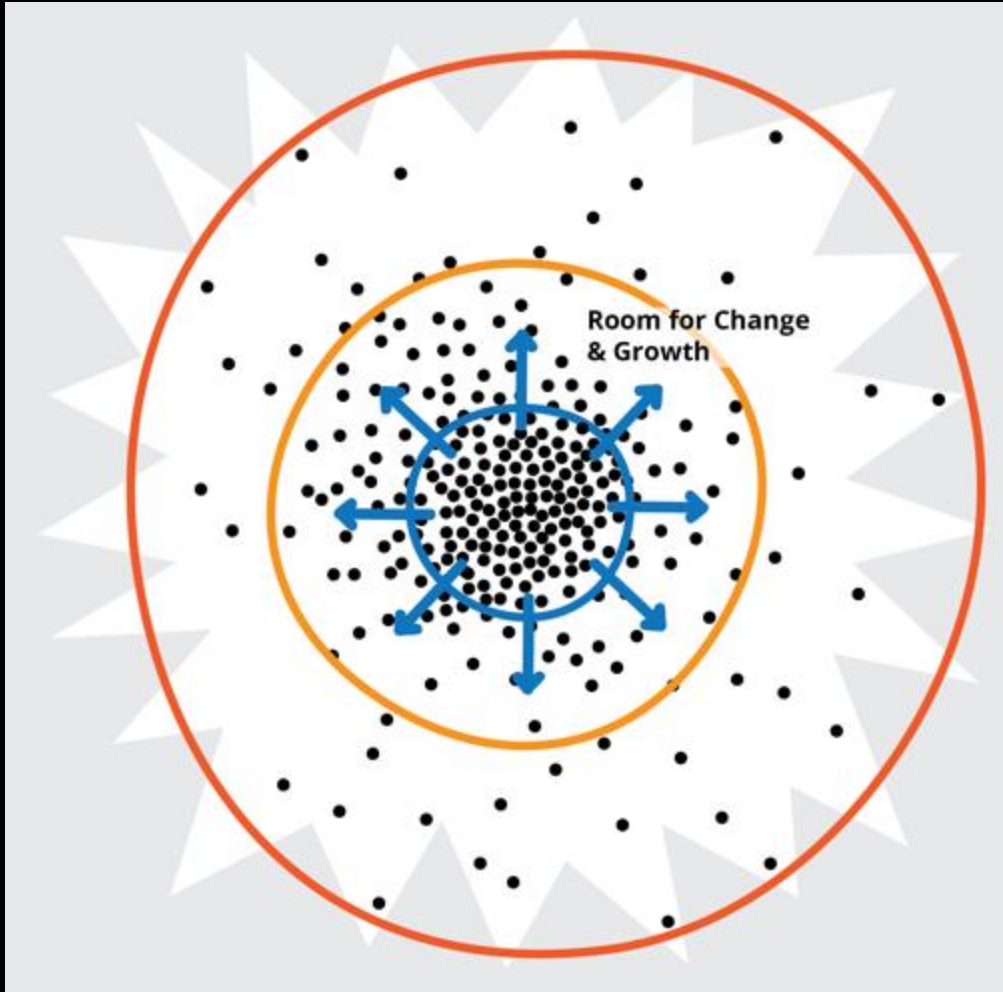
- If our goal is not greed, quick wins or gaming the system, but..
- Innovation
- Diverse perspectives
- Detecting weak signals
- The “difficult 20%” that occupy 80% of the unexplored terrain



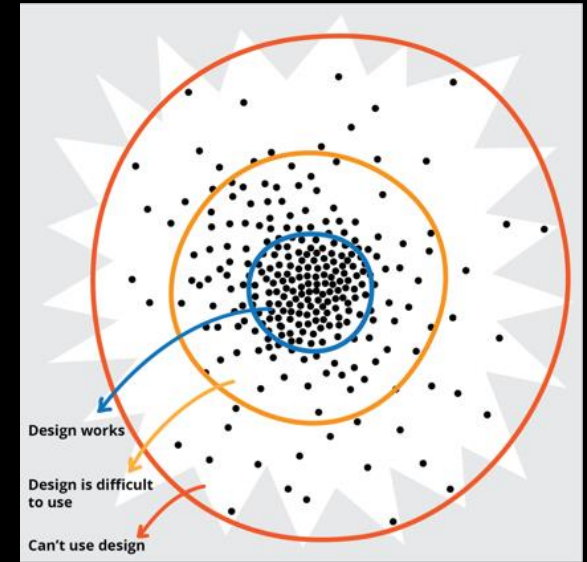
Innovation

Weak Signals





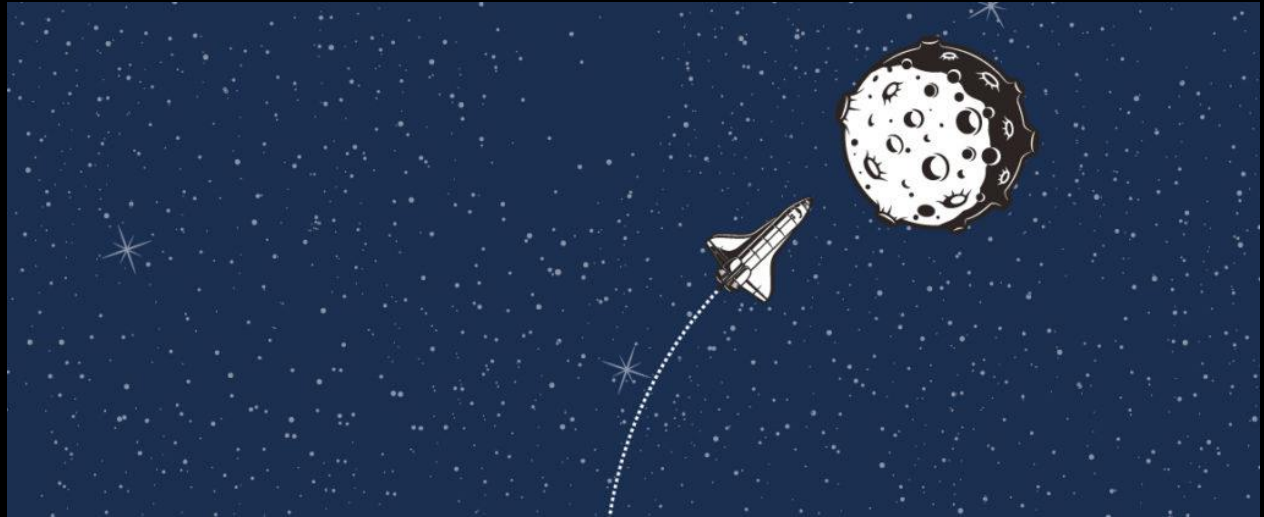
# The next frontier...





# How?

- you can't given instructions for a “moonshot” in 15 minutes



# The Inclusive Design Research Centre



- Toronto, Canada
- inclusive design of emerging sociotechnical systems, policies and practices
- or... **digital inclusion and designing for diversity**
- since 1993, 25<sup>th</sup> Anniversary
- **open source, open access, open standards, open data**
- over 100 research partner organizations globally
- Inclusive Design Institute - 8 universities



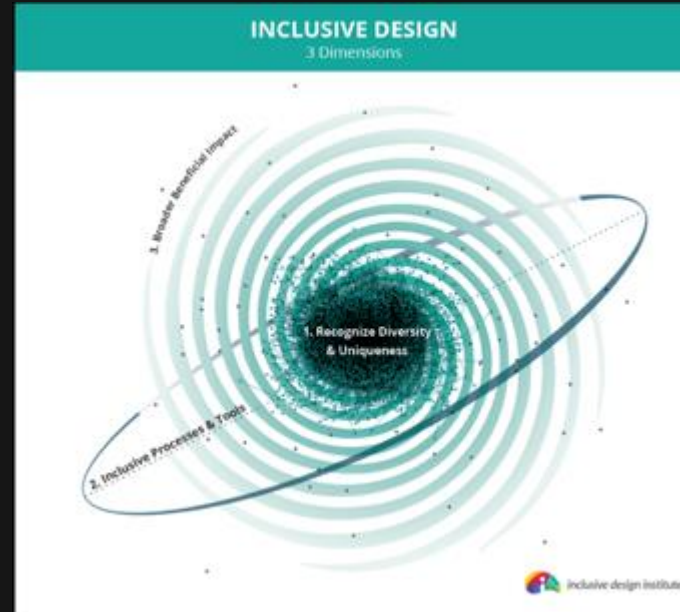
*inclusive design*  
INSTITUTE

# Three Dimensions of Inclusive Design..

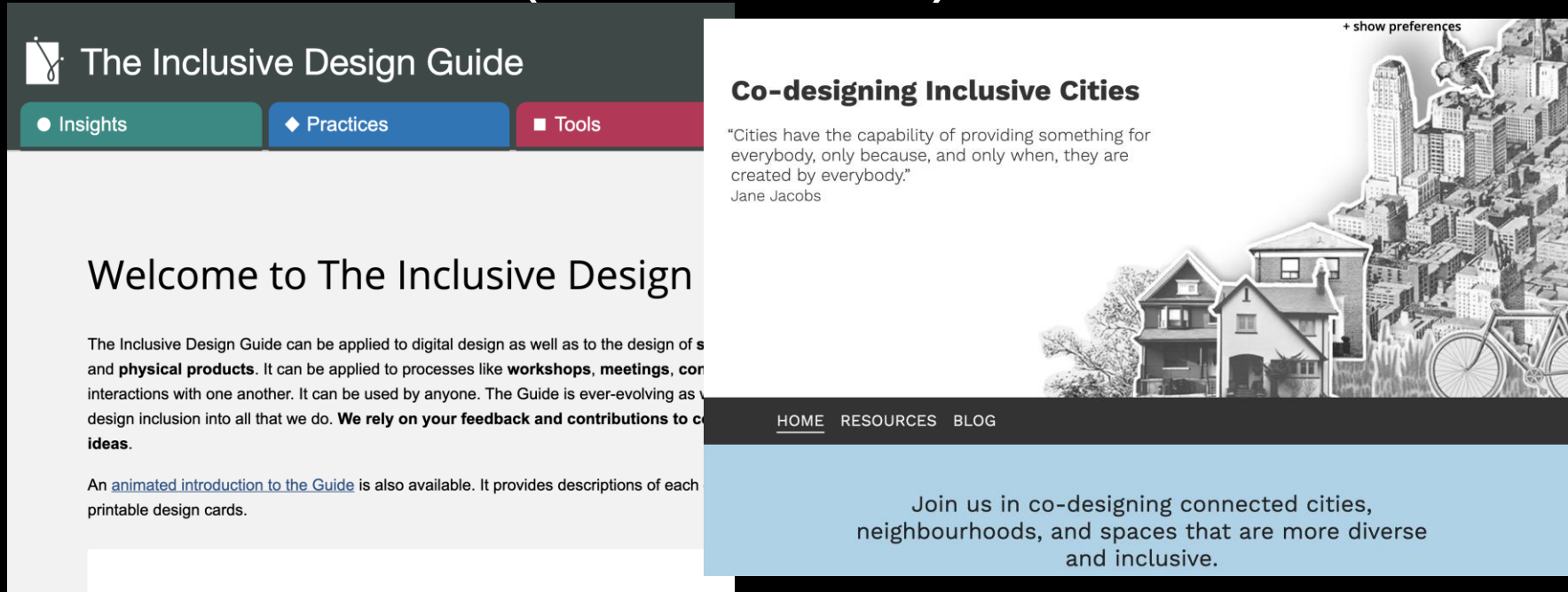
One-size-fits-one - recognizing diversity, integrated, self-knowledge

Inclusive process – co-design – diverse team- “who is missing?”

Benefit-for-all - intervention in complex adaptive system



# Instructions for Smart Communities ( & Nations)



The screenshot shows the 'The Inclusive Design Guide' website. At the top left is a logo with a stylized 'i' and 'd'. Below it are three navigation tabs: 'Insights' (green), 'Practices' (blue), and 'Tools' (red). The main content area features a large heading 'Welcome to The Inclusive Design' followed by a paragraph explaining the guide's application to digital and physical products. A secondary article titled 'Co-designing Inclusive Cities' is featured, including a quote by Jane Jacobs and an illustration of a cityscape with houses and a bicycle. A dark navigation bar at the bottom contains links for 'HOME', 'RESOURCES', and 'BLOG'. A light blue footer contains a call to action to join in co-designing connected cities.

The Inclusive Design Guide

● Insights ◆ Practices ■ Tools

## Welcome to The Inclusive Design

The Inclusive Design Guide can be applied to digital design as well as to the design of **s** and **physical products**. It can be applied to processes like **workshops, meetings, con** interactions with one another. It can be used by anyone. The Guide is ever-evolving as v design inclusion into all that we do. **We rely on your feedback and contributions to c ideas.**

An [animated introduction to the Guide](#) is also available. It provides descriptions of each printable design cards.

### Co-designing Inclusive Cities

"Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody."  
Jane Jacobs

+ show preferences

HOME RESOURCES BLOG

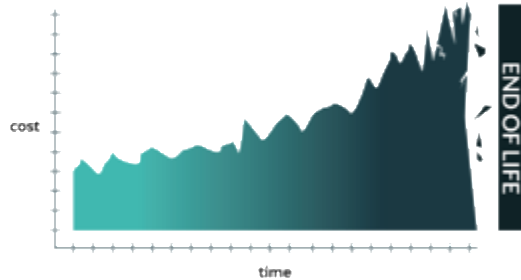
Join us in co-designing connected cities, neighbourhoods, and spaces that are more diverse and inclusive.

<https://cities.inclusivedesign.ca/>  
<https://guide.inclusivedesign.ca/>

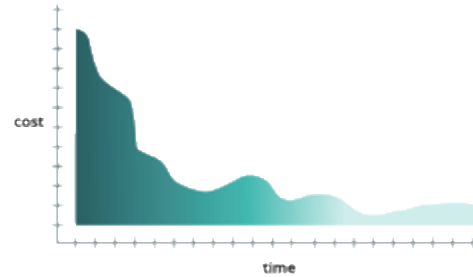
More costly??

# Cost over time and longevity of system..

Plan for the Centre



Plan with the Edge



# Cliff Notes ...

- don't ignore the "difficult" 20%
- don't design for the average, design **with** the edge
- don't just design for your customer/client base, design with people that have difficulty with or can't use your system
- don't do it as an afterthought, do it from the start

# View Disability as Mismatch

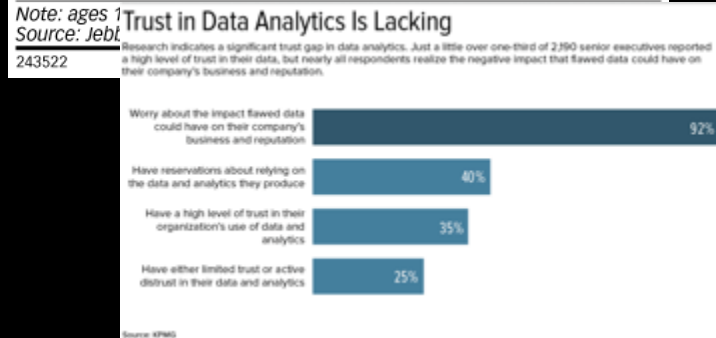
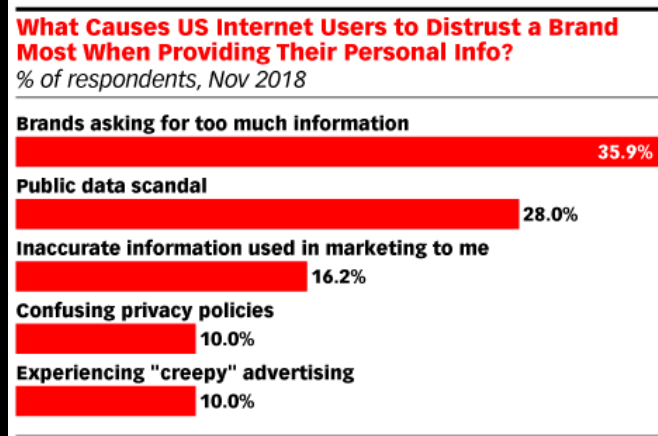
- Disability = a mismatch between the needs of the individual and the product, service, experience or environment offered
- ...including the mismatch of poverty





# Data Impasse..

- Distrust data
- Blocks our hopes for data intelligence



# Alternatives to binary terms of service agreements..

- Explore, discover personal data preferences
- Service - transparent, auditable statements
- Negotiate a match

# Platform Co-ops

- Cooperatively governed data trusts

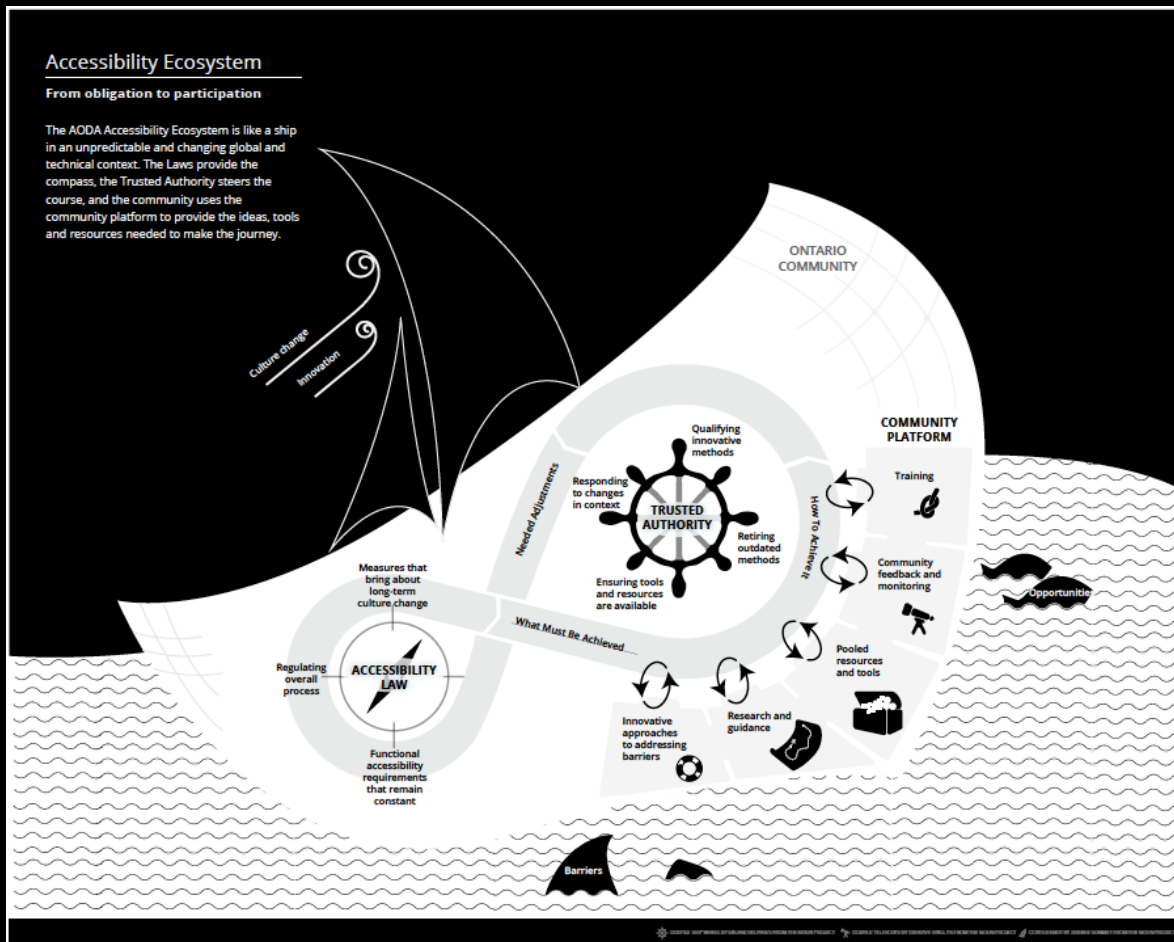


# Legislation for a changing domain

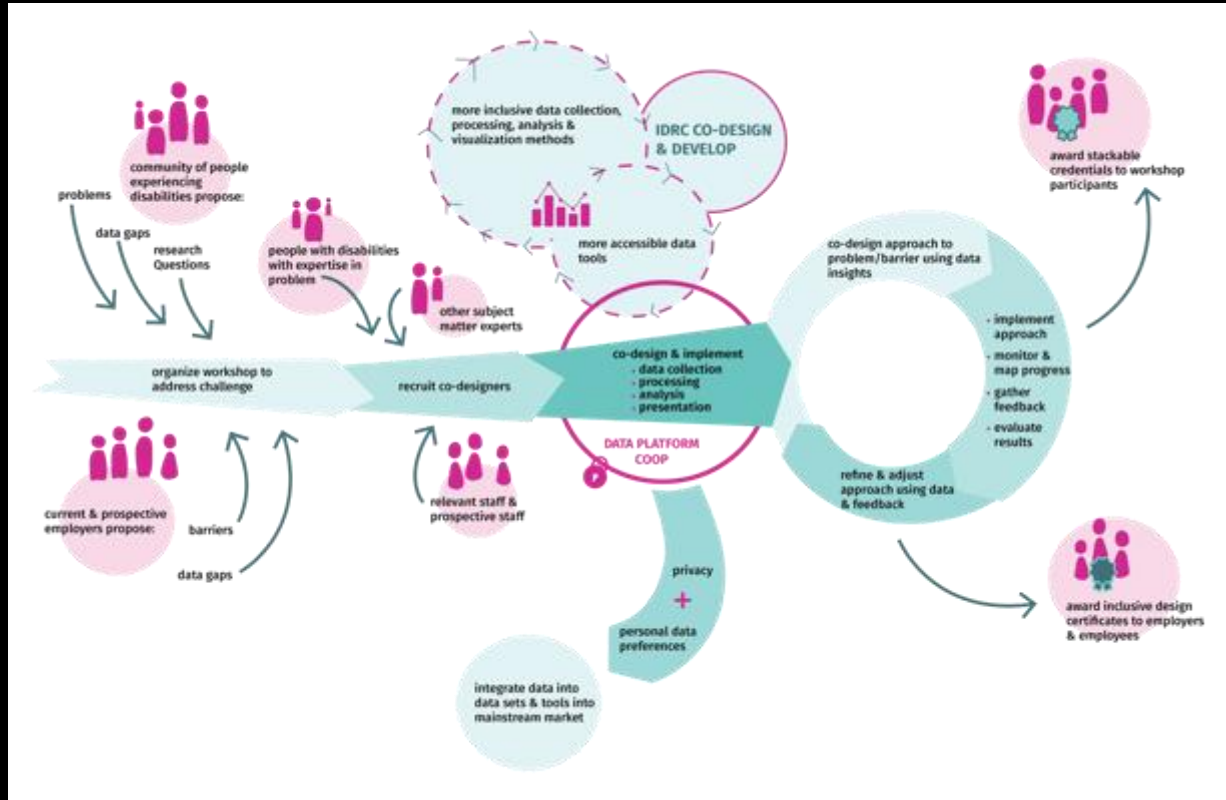
## Accessibility Ecosystem

From obligation to participation

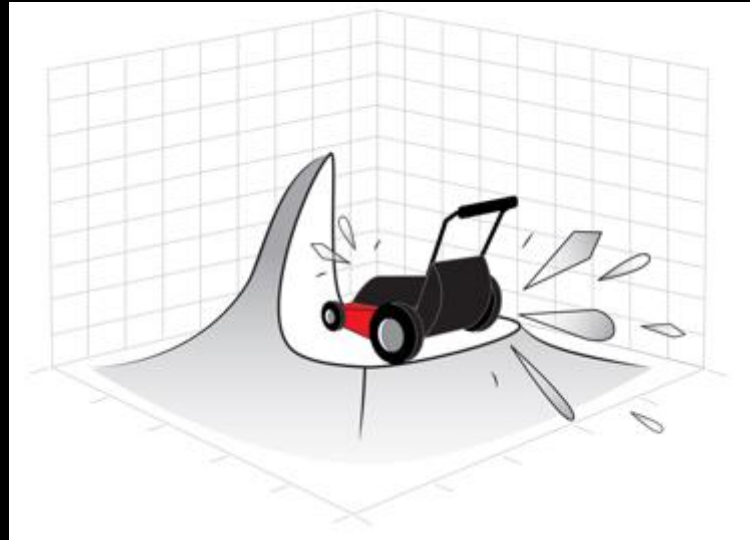
The AODA Accessibility Ecosystem is like a ship in an unpredictable and changing global and technical context. The Laws provide the compass, the Trusted Authority steers the course, and the community uses the community platform to provide the ideas, tools and resources needed to make the journey.



# Project “We Count”



“lawnmower of justice”



# Intelligence that understands, recognizes and serves diversity....

- Better able to
  - respond to unexpected
  - detect risk
  - adapt to change
  - transfer to new contexts
- Greater longevity
- May reduce disparity...
- May lift us out of our current ruts...



# Some books.....

- ***Thinking in Systems: A Primer***, Donella Meadows
- ***Spirit Level***, Wilkinson & Pickett
- ***The Real World of Technology***, Ursula Franklin
- ***The Difference***, Scott Page
- ***The End of Average***, Todd Rose
- ***Unleash Difference***, Rich Donovan
- ***Mismatch***, Kat Holmes





# Continuing the conversation:

- <https://idrc.ocadu.ca>
- <https://inclusivedesign.ca>
- <https://deep.idrc.ocadu.ca>
- @juttatrevira
- <https://medium.com/@jutta.trevira>

