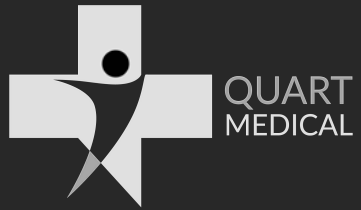
HACKING HEALTH

BRINGING INNOVATION TO HEALTHCARE

Food kindly provided by



Hacking Health True North

Hackathon Workshop

May 15th 2019

Welcome to The Pre-Hackathon Event

Today’s Overview

- 6:30 PM - Opening Remarks
- 6:40 PM - Hackathon 101
- 7:00 PM - Understanding Social Isolation
- 7:20 PM - Principled Thinking for Making Solutions
- 8:00 PM - Sparkboard & Forming Teams

Opening Remarks

John Gregory

Head of Global Growth
Hacking Health

Hacking Health - A Global Movement

HH Chapters: 142 across 62 cities in 17 countries, 18 in Canada since 2012

2019 Event Series

May 15th

Pre-Hackathon
Communitech

1. Ignite creativity
2. Understand the theme & challenge
3. Start off on a solution with a team

May 31st - June 2nd

Hackathon
Kitchener City Hall

1. Learn from users, coaches & mentors
2. Build the solution
3. Pitch to judges & audience

June 18th

Hackathon Finale
Communitech

1. Present to final judges
2. Refine the solution with experts
3. Win prizes!

Today’s Speakers

Matthew Borland

Systems Design Engineering
University of Waterloo

Josephine McMurray

Business Technology Management
Wilfrid Laurier University

Sameer Khan

Entrepreneurship
BrightGuide Inc

Technology Mediated Interactions

Matthew Borland

System Design
University of Waterloo

Hackathon 101: Rewards & Prizes

Confidence

Prizes

Exposure

Fun & Food

Networking

Recognition

Skills ++

Participation

Hackathon 101: Typical Process

3. Create

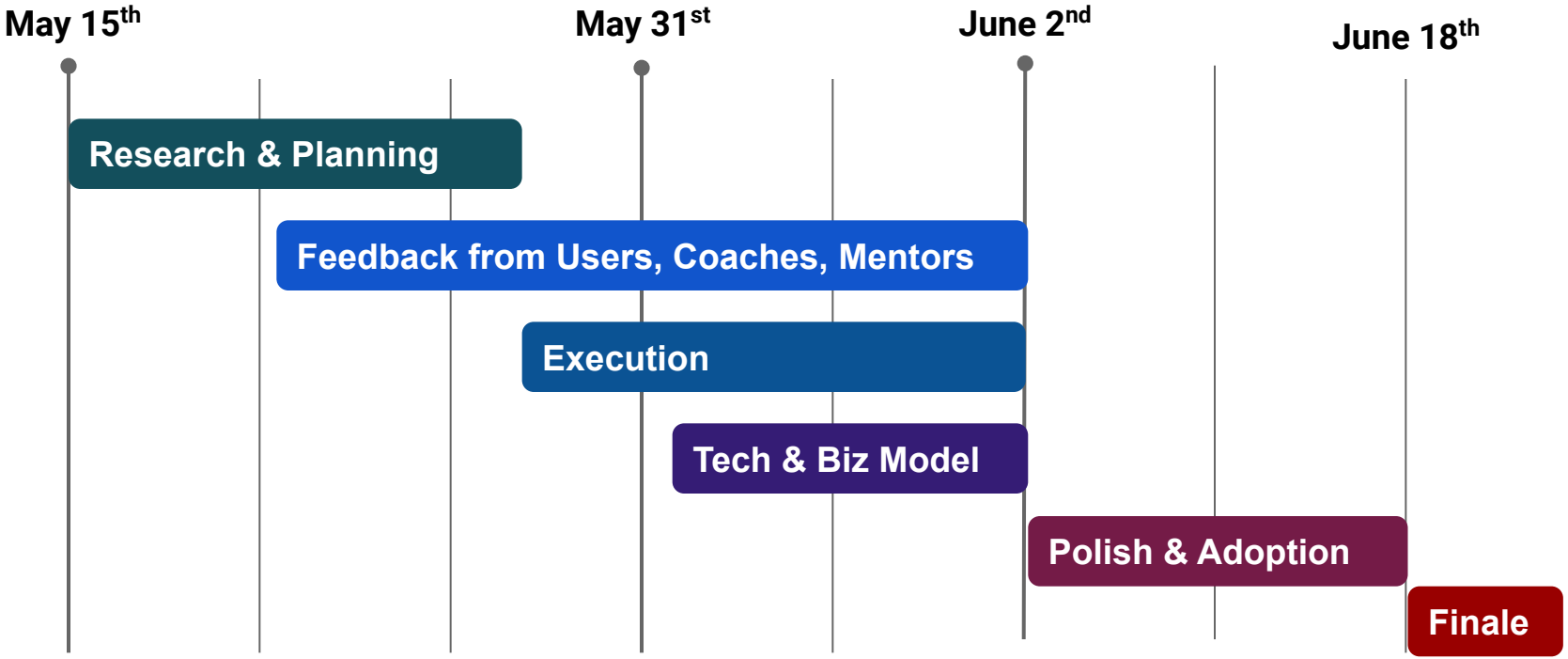
1. Research

5. Pitch

2. Plan

4. Feedback

Hackathon 101: Recommended Process



Hackathon 101: Types of Hackathons

24 - 48hrs

Hardware / Software

Start with API, SDK, hardware devkit, etc.

Demo the widget, app or gizmo

2 - 3 days

Industry Innovation

Start with business case & challenge set

Demo the tech
+ biz / implementation model

3+ weeks

Civic Innovation

Start with theme and research base

Demo the tech
+ biz model
+ cultural adoption

2019 Theme: Social Isolation, Aging & Tech

Josephine McMurray

Business Technology Management
Wilfrid Laurier University

Social Isolation & Aging

May 15, 2019 presentation to HackingHealth at Communitech

Dr. Josephine McMurray
Lazaridis School of Business & Economics

Acknowledgements

Social Sciences and Humanities Research Council of Canada

Conseil de recherches en sciences humaines du Canada

Canada

AGEWELL

drive

Developing Regional Health Innovation Ecosystems

NCE RCE

Canada's Technology & Aging Network

AGEWELL

by the Numbers*

*as of March 2018

NCE RCE

37
MEMBER UNIVERSITIES AND RESEARCH CENTRES
across Canada

500
HIGHLY QUALIFIED PERSONNEL (HQP)

250
PARTNERS

200
RESEARCHERS

4700
OLDER ADULTS AND CAREGIVERS

What you'll know

- How we think about aging?
- What is social isolation?
- How is this the same or different for older adults?
- Social isolation in the Waterloo region

old

/ōld/
adjective

1. Having lived a long time; no longer young

elderly, aged, older, senior, advanced in years, up in years; venerable; in one's dotage, long in the tooth, gray-haired, grizzled, hoary; past one's prime, not as young as one was, ancient, decrepit, doddering, doddery, not long for this world, senescent, senile, superannuated; getting on, past it, over the hill, no spring chicken

2. Belonging only or chiefly to the past

age·ism

/ˈājˌizəm/
noun

Prejudice or discrimination on the grounds of a person’s age

Ageism influences us by imposing barriers on how we think and how problems are framed.
It influences the questions you ask and the solutions you offer.
Challenge your assumptions!

How old is old?

How we think about aging

Chronological

Biological

Psychological

Social

One person’s 65 is another person’s 85

the aging population

represents the most profound guaranteed shift for our economy

How are older adults different & why do we care?

- Demographic aging patterns
- Economic instability for older adults
- Negative impact of social isolation on health & welfare
- Susceptibility of older adults to inequalities
- Older adults experience social isolation for longer periods of their life course

https://www.youtube.com/watch?v=6j8L7ghNmiE

What is social isolation?

Two main types of social isolation

- Objective isolation: physical separation from others
- Subjective isolation: feelings of loneliness, emotional distance or lack of support from others (York & Waite, 2009)

Social isolation defined as low quantity and quality of contact with others…related constructs…

- Social exclusion, that refers to the separation of individuals and groups from mainstream society and often relates to the location of the person i.e. geography but also gender, disability, ethnicity, socio economic status
- Belonging, that is a subjective feeling of value and respect derived from a reciprocal relationship with an external referent that's built on a foundation of shared experiences, beliefs or personal characteristics
- Loneliness which is a complex and usually unpleasant emotional response to that isolation

The Canadian context

2018: 13.9% live alone (over 4M people)

1951 1.8% lived alone

2005: 12% of 65+ low income

2015: 14.5% of 65+ low income

(Statistics Canada)

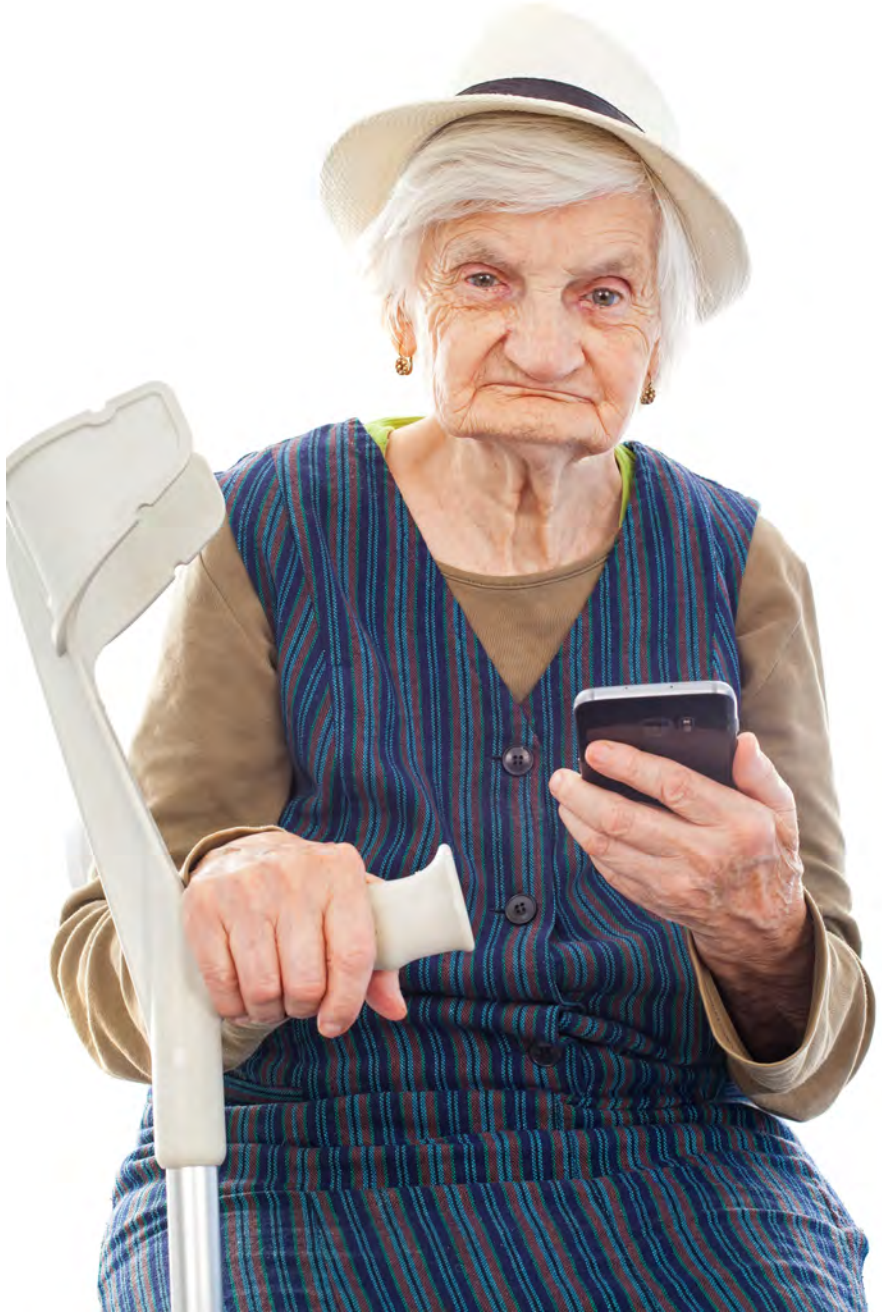
2018: 43% of community dwelling older adults report social isolation

(AGEWELL, 2018)

9 groups are particularly vulnerable

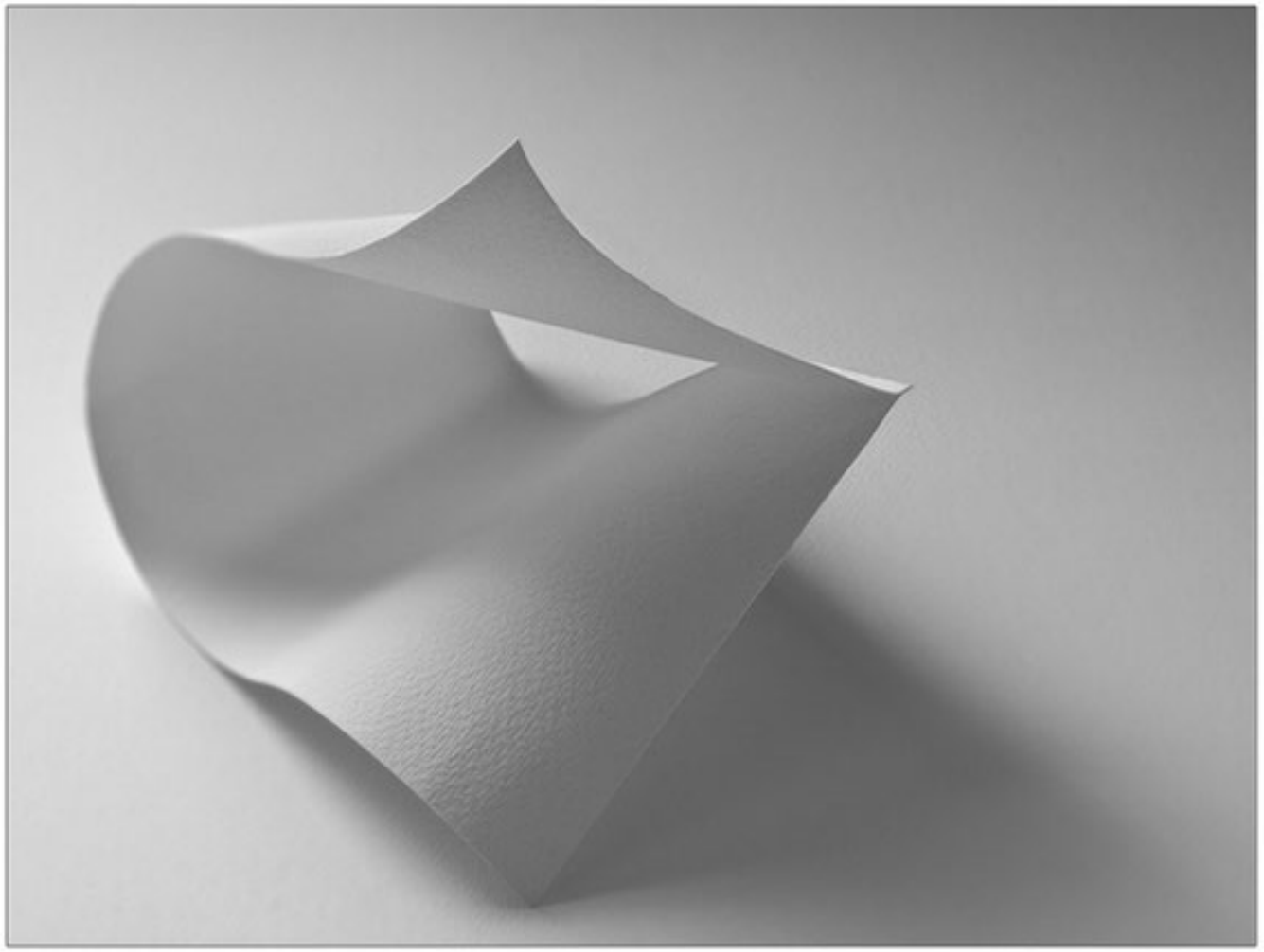
1. Aboriginal seniors
2. Seniors who are caregivers
3. Immigrant seniors
4. LGBTQ2 seniors
5. Seniors living alone
6. Seniors living in remote or rural areas
7. Low income seniors
8. Those living in poverty
9. Seniors with mental health issues (including Alzheimers and other dementias)
10. Seniors living with health challenges or disabilities

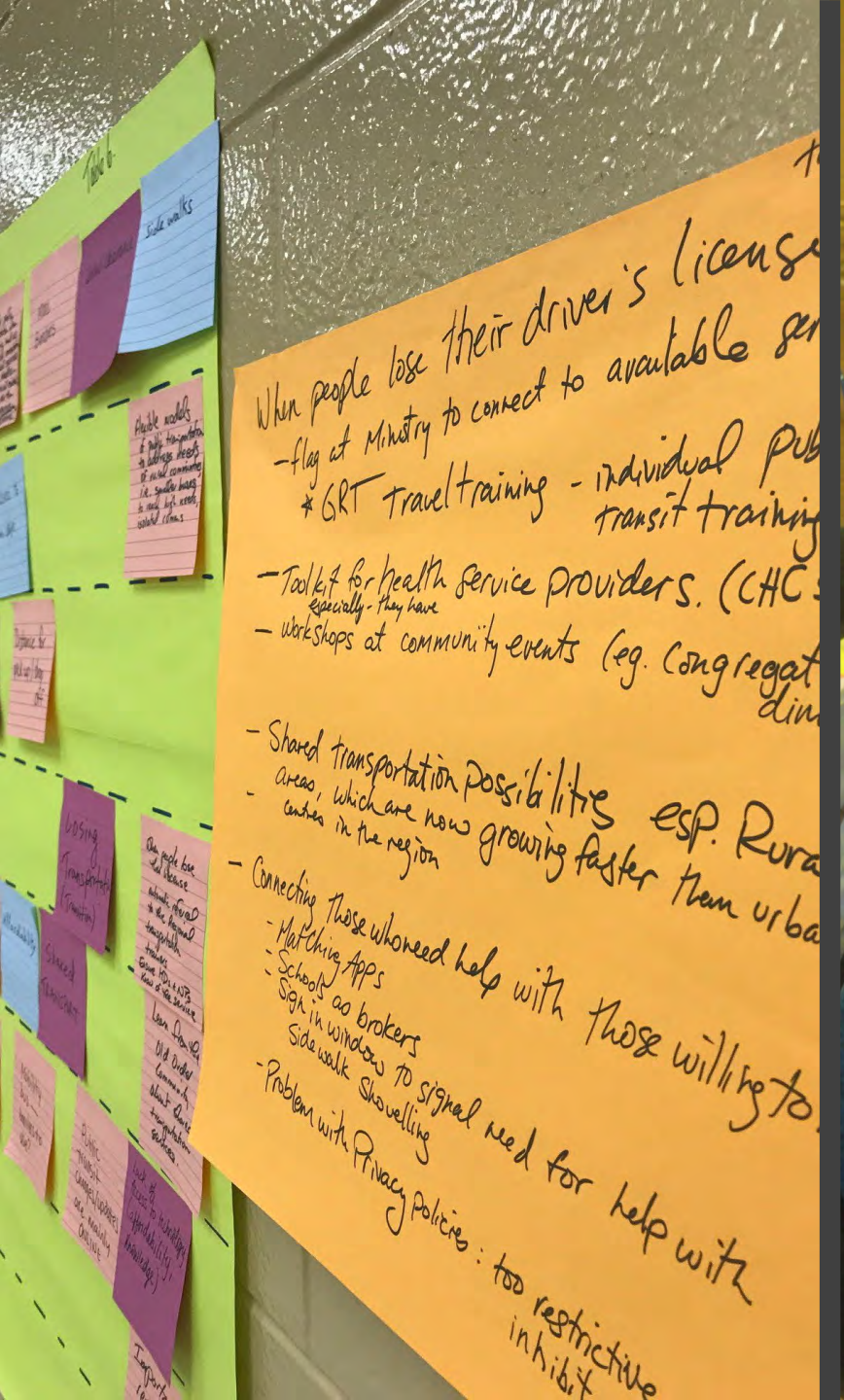
(AGEWELL, 2018)



Environmental scan identified top 9 regional priorities affecting social isolation

- Affordable/age-friendly housing
- Communication & Information
- Social participation & programming
- Community support & health services
- Respect & inclusion
- Public transportation
- Recognition of diversity
- Physical infrastructure/walkability
- Civic participation & employment





Sept 2018 workshop on social isolation of older adults in the Waterloo region – focus on technology solutions

- Systemic ageism and inequality influence the affordability, accessibility, and appropriateness of programs and services.
- Interpersonally, life changes and transitions play a major role in social connections and access to needed services.
- Individuals may experience physical or mental health challenges that impact social inclusion and isolation.

How can technology help build a more socially inclusive community for older adults in Waterloo region?

1. No Issue Stands Alone
2. Empathy and Understanding
3. Building on Existing Resources
4. Overcoming Funding Structures
5. Developing & Using Innovative Technologies
6. Breaking Down Barriers
7. Looking Elsewhere for Success Stories
8. Focussing on Prevention
9. Accessibility, Affordability and Appropriateness
10. Addressing Privacy and Confidentiality
11. Creating Adaptive Technologies

No Issue Stands Alone

It is important to consider the interconnectivity between all of the major priorities and issues that contribute to social isolation. Social isolation is one response to complex community environments where very little is predictable, constant or independent. Need to understanding issues and how they intersect with other issues and system components, and the variables which exert the most control. Structural and systemic problems such as the affordability of internet access and institutionalized ‘-isms’ exacerbate social isolation, and create an additional layer of complexity.

Empathy & Understanding

It is important to learn from and with those with direct and lived experience. Older adults should be a part of developing any solutions or technologies, to ensure it meet addresses their actual rather than assumed needs. Many of the solutions or big ideas participants had involved building empathy for older adults (i.e. simulation, training, and applications).

Building on Existing Resources

There is no doubt that some technologies, such as smartphones have changed the world, however our obsession with developing the latest ‘gadget’ causes us to overlook novel uses or repurposing of older technologies. Taking a strengths-based approach can build on what already works, and in collaboration with users communities take it further to address important gaps and needs. For example, some tables discussed adapting existing platforms like LinkedIn or Airbnb, or repurposing old technologies to meet specific needs of older adults. Others discussed leveraging existing relationships to support older adults in new ways.

Overcoming Funding Structures

Overcoming Funding Structures =The challenges around securing funding present a barrier for many innovations. Participants noted from experience that funding often will take the form of grants, which do not always support sustainability and long-term impact. Available funding can also have narrow goals and objectives, and limit proposed projects. Seeking unique partnerships with community members, and building at scale through regional cooperation may be unexplored avenues for building both consumer and institutional products.

Developing & Using Innovative Technologies

When developing innovative technologies or programming, it is important to keep the end user at the front of mind. For older adults, supports may be needed to introduce new technologies or enable access to programming. The adult population over 65 is not a homogenous group - they have varying familiarity, interests and abilities when it comes to manipulating technology, so it is important to have appropriate supports available. Too often, their ability to access programs or supports depends upon their, their family, or friends' ability to access and navigate online resources. Some tables suggested that without enshrining the right to accessible and affordable internet access, we risk creating a systemic digital barrier that excludes our most vulnerable.

Breaking Down Barriers

A number of the solutions generated from table discussions sought to break through systemic barriers and cultural norms. Systemic ageism and cultural norms that promote individuality were noted as opportunities for targeted innovation, but also as obstacles for the success of other proposed innovations. As many of the technological solutions to the prevention and mitigation of social isolation rely on access to affordable and robust internet and wireless infrastructure, some tables discussed the need for access to free or subsidized communal digital connections.

Looking Elsewhere for Success Stories

Many table discussions looked to precedents in other cities, or other countries, where innovative approaches to address social isolation have been successful. When looking elsewhere, it is important to acknowledge the unique characteristics, history and context of the local region, and to assess how an approach would have to be adapted to meet local needs and priorities.

Focussing on Prevention

Improving engagement and research with those who are socially isolated can promote better understanding of their needs, but it is hard to locate and reach out to people who are experiencing social isolation. Preventing social isolation through appropriate health care i.e. for those with chronic diseases or other isolating conditions such as chronic ulcers, and knowing the triggers and signs was a major focus in some brainstorming sessions. Many innovative ideas revolved around using technologies to recognize the signs of or triggers for social isolation, and ways to prevent it.

Accessibility, Affordability & Appropriateness

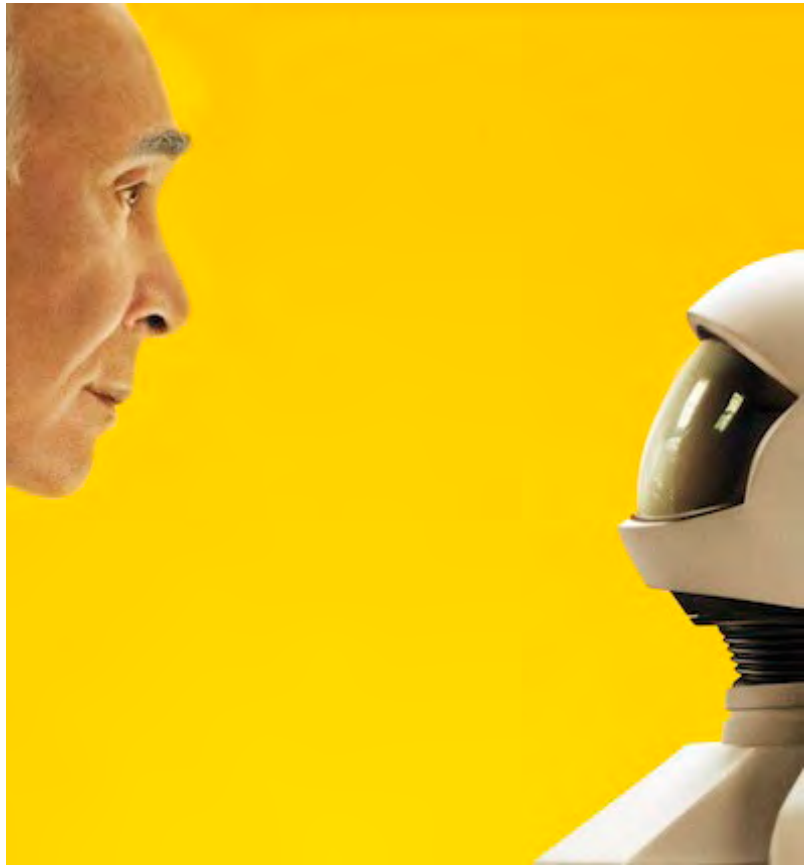
Many of the technology solutions and ideas generated, were either impacted by or revolved around ensuring that the interventions were not only effective, but accessible, affordable, and appropriate.

Addressing Privacy and Confidentiality

Certain innovative ideas raised group concerns over confidentiality and privacy. It is important to ensure that the ‘right’ people have access to the ‘right’ data, while respecting privacy and confidentiality. Older adults who have experienced marginalization in the past may find themselves in residential or long term care facilities where their privacy is not guaranteed and where they may be re-victimized by the entrenched biases of other residents or staff.

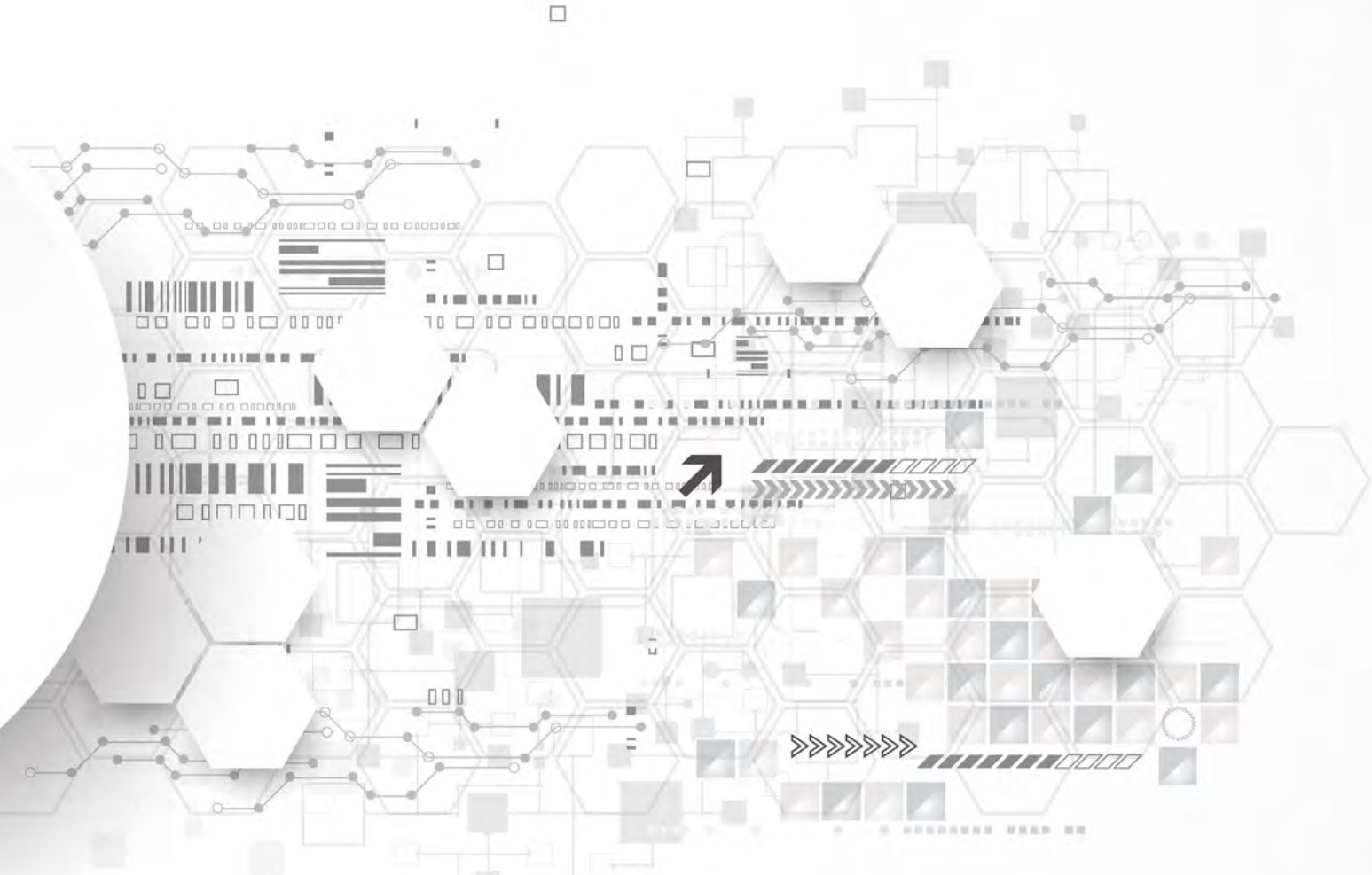
Creating Adaptive Technologies

It is important to avoid creating static solutions. Older adults experience change throughout their lives, and technologies, programs, and policies, should be able to meet them ‘where they are’. Additionally, older adults are not a homogenous group, and innovations needs to recognize this by embedding mechanisms for individual and ongoing customization.



Technology solutions must address a real need/gap.
Build an understanding of the user & their context

Questions?



Dr. Josephine McMurray, Lazaridis School of Business & Economics

jmcmurray@wlu.ca | 011 1 519 242 7477 | @AgeWell_DRiVE

Let’s Take a Break

When we return:

- 7:20 PM - Principled Thinking for Making Solutions
- 7:40 PM - User Centric Design Worksheet
- 8:00 PM - Sparkboard & Forming Teams
- 8:20 PM - Closing Remarks

Principled Thinking for Making Solutions

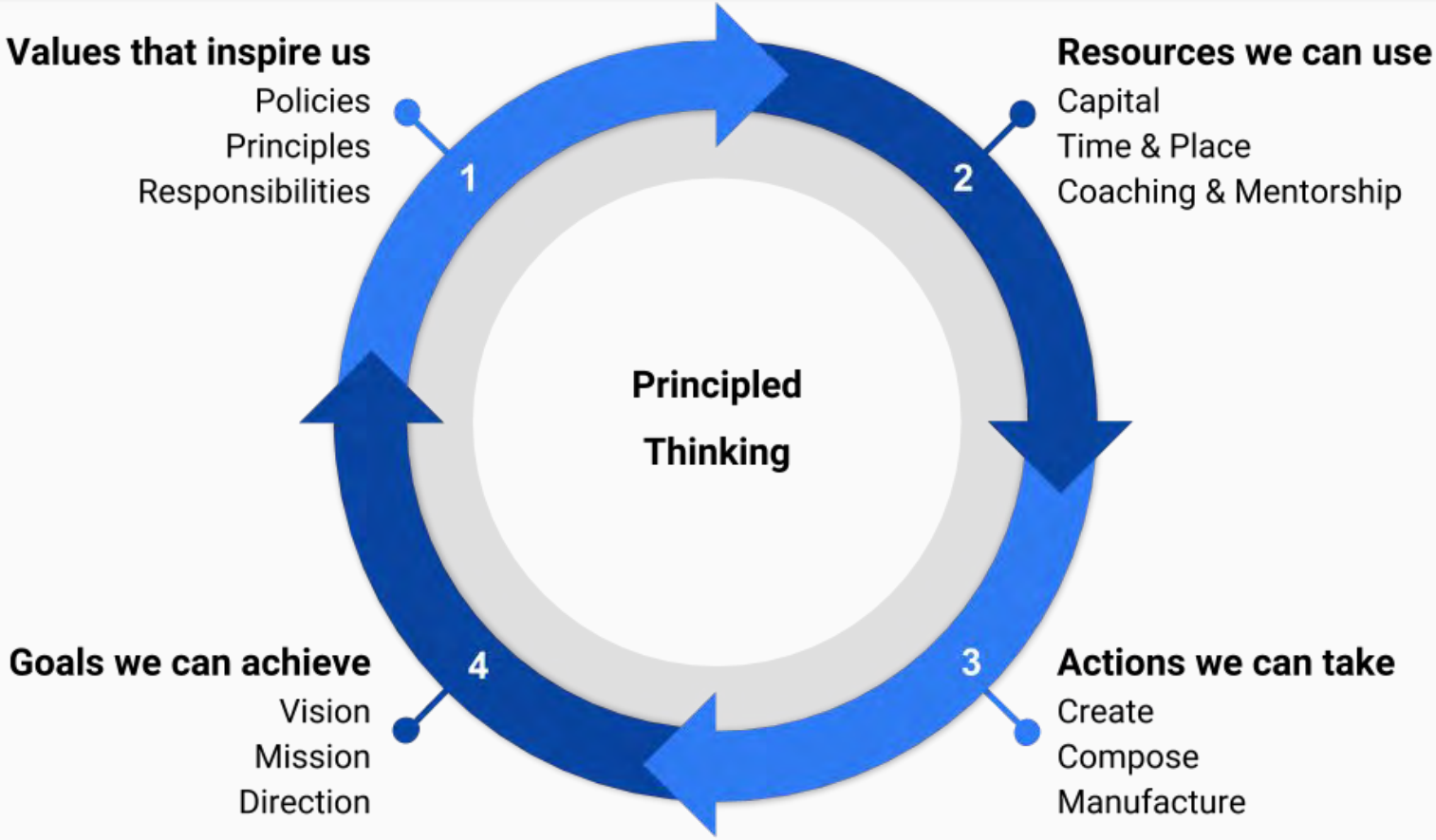
Sameer Khan

Entrepreneurship
BrightGuide Inc

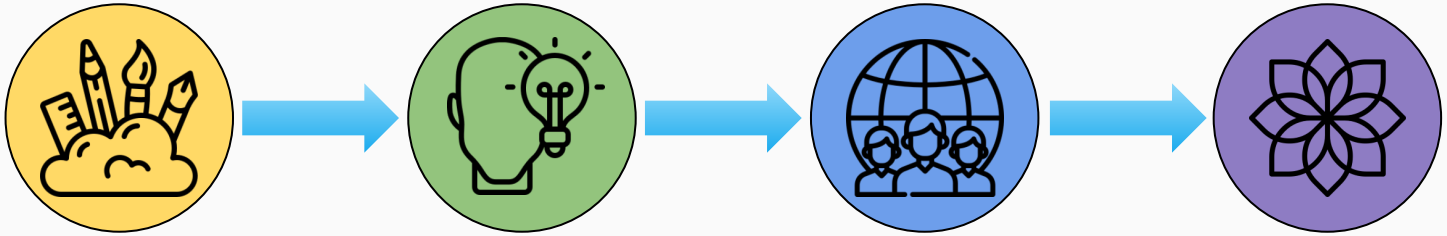
When we sympathize with someone and take a responsibility on their behalf we gain **solidarity** with them.

Belong
Support
Partner
Connect
Nurture
Group
Friend
Hope
Collaborate
Human
Care
Trust
Solidarity
Share
Success
Ecology
Team
Agree
Unity
Relationship
Community
People
Health
Love
Freedom
Good
Passion

Research & Development Cycle



The Value Chain



Technical Value

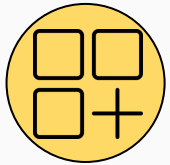
Emotional Value

Cultural Value

Human Right

Features Embody Technical Values

Beautifies



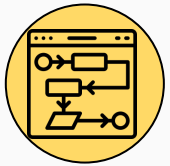
Simplifies

Connects

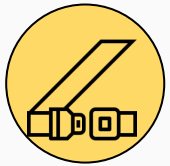
Increases Revenue

Saves Time / Effort

Heals



Automates



Reduces Risk

Novelty / Variety

Cross Platform

As producers we have control over product or service *features*

Benefits Embody Emotional Values

Informed

Pleased

Productive

Recovered

Cost Effective

Relaxed

Rewarded

Comfortable

Guilt Free

Mobile

As consumers we seek *benefits* from products and services for emotional satisfaction

Social Exchanges Embody Cultural Values

Affiliation / Belonging

Security

Hope / Relief

Health

Freedom

Work / Employment

Inclusion / Tolerance

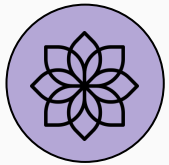
Trust / Loyalty

Wealth / Capital

Access / Exposure

As community members we conduct *social exchanges* to build a culture

Cultural Movements Become Human Rights

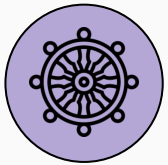


Liberty / Capacity

Dignity

Faith

Life



Love / Selfless

Personhood / Equality

Education

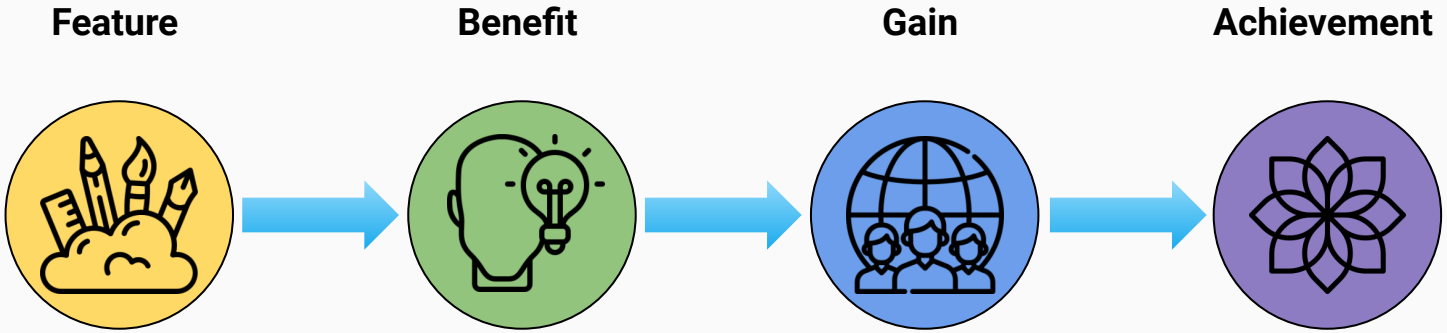
Tradition / Heritage

Happiness

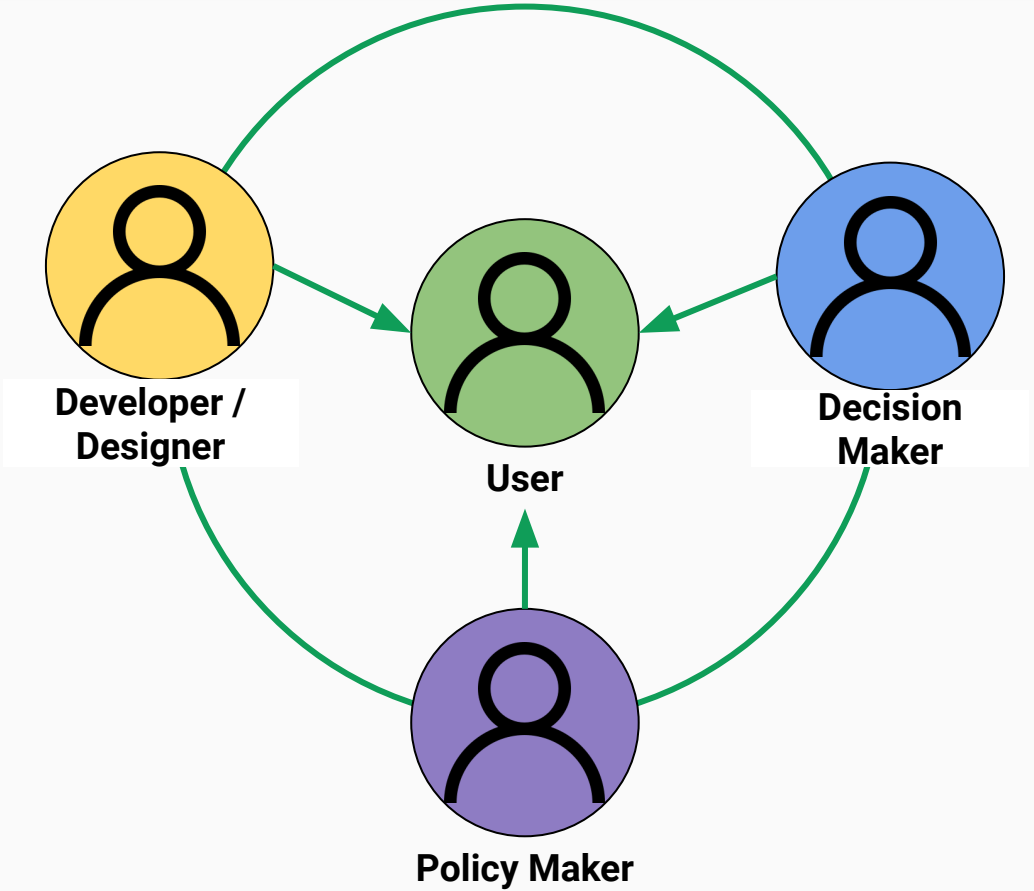
Expression

As conscientious beings we achieve and promote *human rights* to sustain world ecology

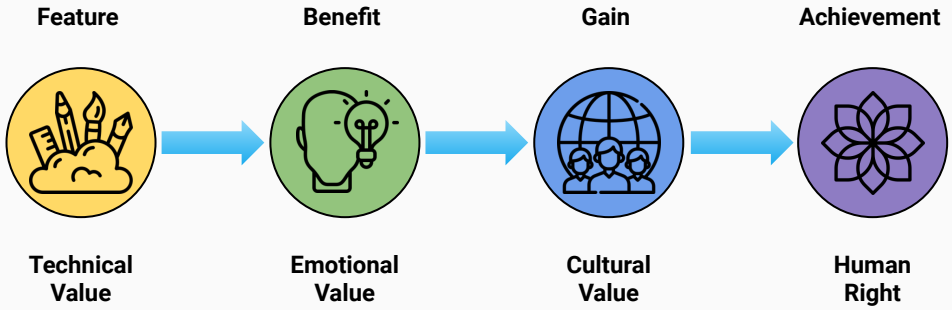
The Value Chain

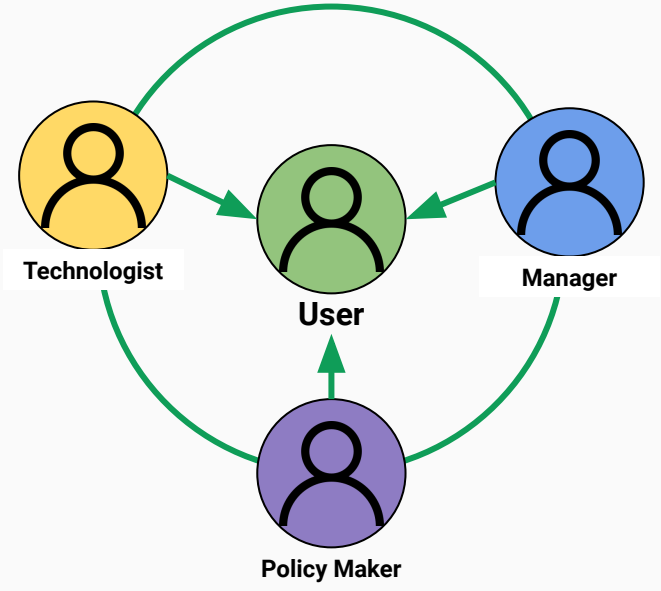


User Centric Design

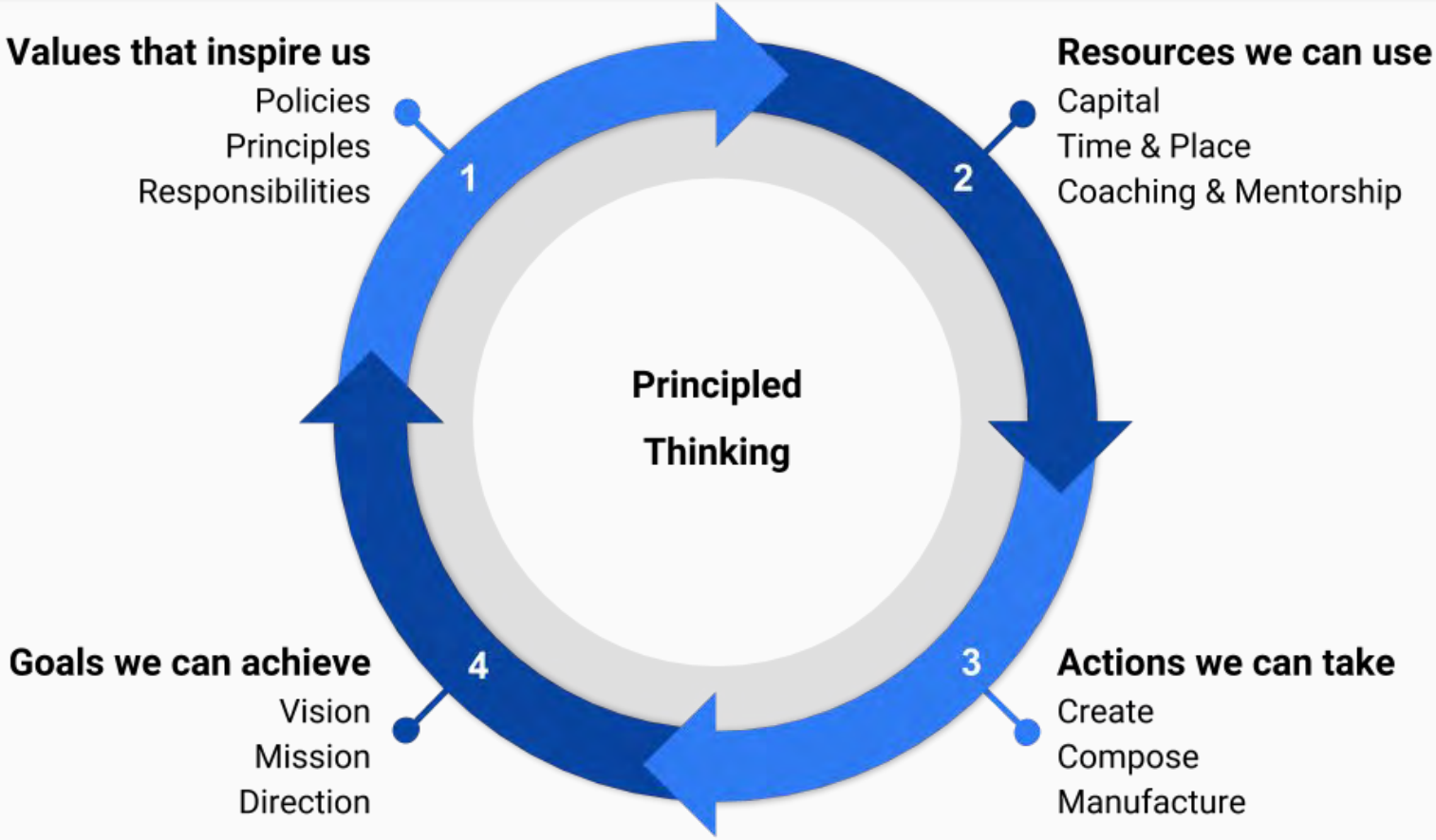


User Centric Design





Research & Development Cycle



Resources we can use

- You and your team’s creativity in
  - TechDev, BizDev and Cultural Change
- Start fresh or improve an existing idea / solution
- Food and refreshments
- Participant package for research and planning
- Users, coaches and mentors

Action we can take

- Be a maker of:
  - Tech
  - Program
  - Activity
  - Policy

Goal

- Be values driven and purposeful
- Get the most out of the hackathon
- Be a part of the Hacking Health Movement:
  - Improve healthcare for community members through collaborative innovations

Let’s Take a Break

When we return:

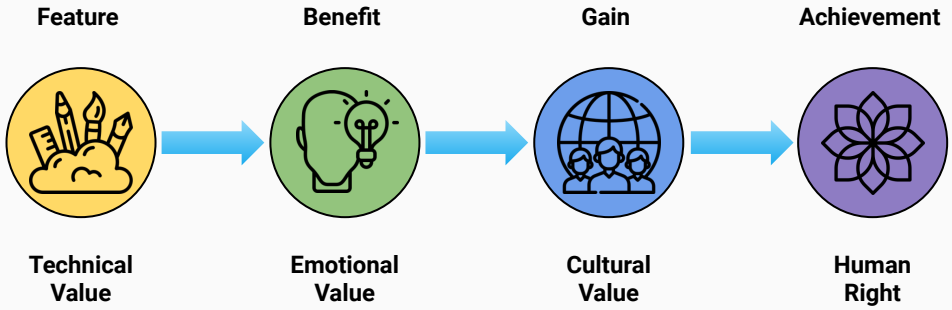
- 7:40 PM - User Centric Design Worksheet
- 8:00 PM - Sparkboard & Forming Teams
- 8:20 PM - Closing Remarks

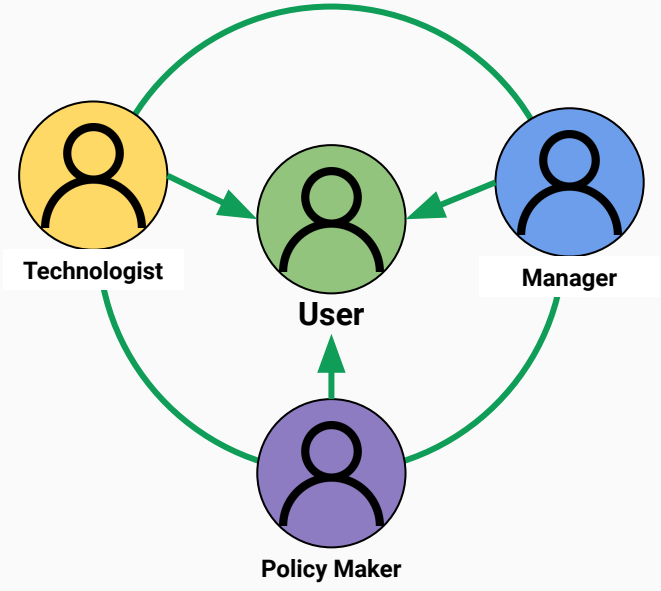
User Centric Design Worksheet

Example:

- I can sympathize with caregivers of chronically ill persons and can take responsibility for addressing their needs because of my personal experience as a caregiver and professional capability as a systems engineer

User Centric Design





MAY
31

Hacking Health Waterloo | True North | Hackathon

by Hacking Health Waterloo

$0 - $25

Tickets

Register at https://true-north-hackathon.eventbrite.ca

We invite healthcare professionals, designers, patients, developers, innovators, students and entrepreneurs to take part in building useable solutions to frontline healthcare problems. Join us Friday, May 31 to Sunday, June 02 for Hacking Health Waterloo's Hackathon in conjunction with True North taking place at Kitchener City Hall.

Fri, 31 May 2019, 5:00 PM –
Sun, 2 Jun 2019, 4:00 PM EDT
Add to Calendar

https://dual-city-hackathon.sparkboard.com

Welcome to Sparkboard - a tool for organizing interdisciplinary hackathons.
What problem would you like to solve? See what other people are working on, join a project, or create your own. Sign up for the hackathon in Ottawa or Kitchener-Waterloo.

Join Sparkboard today https://dual-city-hackathon.sparkboard.com

Get Moving! #10

Fractures are a devastating occurrence in a older adult's life. Social isolation often follows if they fail to recover completely and cannot return to their previous activities. Increasing activity wo...

LOOKING FOR

- Engineers
- People with lived experience (hip/leg/pelvic fracture)
- Designers
- Developers
- Physiotherapists

Sample Project - SocialCycle #3

Pain Explanation and Treatment App #9

People suffer from chronic pain all over the world. Doctors and therapists are overwhelmed. An organized method of treatment for patients experiencing chronic painful conditions e.g. neck and back pai...

LOOKING FOR

- Engineers
- Technologists

Dual city Hacking Health hackathon

Hacking Health

Projects | People | Settings

Filters: My projects | Looking for Help | Archived

City: Kitchener-Waterloo | Ottawa

Sort: Random

Search

NEW

Sample Project - SocialCycle #3

LOOKI

- Just
- UI-U
- Developer
- Game Design Specialist

Connecting Physicians and Medical Scribes #14

Medical scribes increase productivity and improve clinical satisfaction and patient-clinical interactions.

Wound care database #15

Database kept offline with easily updated wound measurements to monitor healing.

LOOKING FOR

- Designers
- Developers
- Clinicians

Drawing a clock & diagnosing cognitive impairment #8

A large circle is presented on a white touchscreen. A voice tells the person to draw the numbers of the clockface on the circle. The person uses their finger to draw the numbers. A voice tells the p...

LOOKING FOR

- Technologists

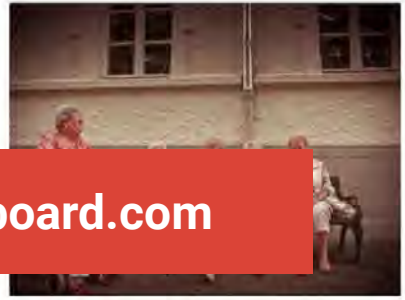
Fantastic sample project illustration #1

This service delivery model will make technology seamless for users to make them feel more socially included, less isolated and require fewer healthcare services.

social isolation, social inclusion,

'Dating' App for Older Adults #13

Location-based social application to help connect nearby individuals in groups or one-on-one for shared interests.



LOOKING FOR

- Designers
- Developers

Screening for Adverse Childhood Experiences in #4

Join Sparkboard today https://dual-city-hackathon.sparkboard.com

National sponsors

National sponsors and partner

PLATINUM

BRONZE

FASKEN

Hackathon finale showcase partner on June 18

AGEWELL

Canada's technology and aging network

Dual-city hackathon sponsors and partners

Dual-city hackathon sponsors

macadamian

CREATE-BEST

uOttawa Carleton University McGill NSERC CRSNG

Bruyère

CHEO

THE CITY OF Waterloo

Venue hosts

COMMUNITECH

KITCHENER

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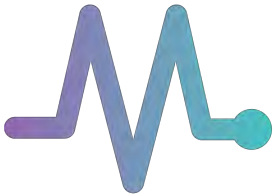
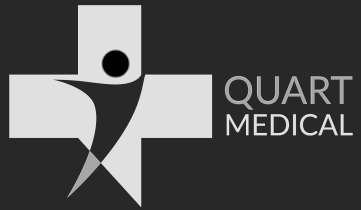
YMCAs of Cambridge & Kitchener-Waterloo



Waterloo MedTech

HACKING HEALTH

BRINGING INNOVATION TO HEALTHCARE

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