



The Path To...

Better Life by Design:
Designing for persons
with disabilities in Singapore

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with disabilities in Singapore

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DISABILITY IS NOT INABILITY

We all have dreams and goals. Sometimes it is difficult to reach your destination because of obstacles along the path.

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THE PATH TO A MORE INCLUSIVE SOCIETY

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BUILDING A BETTER WORLD TOGETHER

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THE ROAD AHEAD

Join us on the path to an inclusive Singapore!

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ABOUT



DesignSingapore Council

The vision of the DesignSingapore Council is for design to differentiate Singapore from global competition. As the national agency for design, the Council's mission is to develop the design sector, and to help Singapore use design for innovation and growth, as well as to make life better. The DesignSingapore Council is part of the Ministry of Communications and Information.

The National Design Centre supports the DesignSingapore Council's efforts to enhance the vibrancy of the design ecosystem as well as catalyse industry collaborations and business opportunities for innovation and growth.

Singapore was designated a UNESCO Creative City of Design in December 2015. This designation will support the development of a creative culture and eco-system in Singapore that fully integrates design and creativity into everyday life. It also enables Singapore to collaborate internationally with the cities of the UNESCO Creative Cities Network (UCCN). The City of Design Office will be sited within the DesignSingapore Council to coordinate and implement programmes that contribute towards the UCCN mission.

Further information about the DesignSingapore Council, the National Design Centre and Singapore's designation as a UNESCO Creative City of Design is available at

www.designsingapore.org



National Council of Social Service (NCSS)

NCSS is the umbrella body for over 450 member social service organisations in Singapore. Its mission is to provide leadership and direction in enhancing the capabilities and capacity of our members, advocating for social service needs and strengthening strategic partnerships, for an effective social service ecosystem. Community Chest is the fundraising and engagement arm of NCSS and Social Service Institute (SSI) is the human capital development arm of NCSS.

For more information, please visit:
www.ncss.gov.sg

Pumpkin Lab is a team within the Advocacy & Membership Group in NCSS. It catalyses innovation in the social service sector by inspiring possibilities through design, testing, sharing and scaling best practices across the sector, with technology as an enabler. We partner with stakeholders from non-profits, social & healthcare organisations, government agencies, enterprises, designers, and individuals to turn these possibilities into reality.



Veryday

Veryday is one of the top-ranking design consultancies in the world. The company has an impressive track record for design that has helped build remarkably successful businesses for its clients, including LG, Microsoft, GE Healthcare, 3M, Spotify, BabyBjörn and IKEA. Veryday was founded in 1969 and has a strong commitment to people-driven innovation as a means to enhance quality of life.

In 2014 Veryday's 45-year success story was honored with the highest distinction in the design world the "Red Dot: Design Team of the Year". Based on deep people insights, the design specialists are creating innovative solutions through products and services in the physical and digital worlds.

The company has offices in Stockholm, New York, Dubai, Shanghai, and is represented in London.

www.veryday.com

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FOREWORD

About 110,000 Singaporeans live with some form of disability. While there are help organisations, specialised programmes, and lots of people out there doing great work in the social sector, at DesignSingapore Council, we believe that the quest for an inclusive society must always be on-going.

MS AGNES KWEK
*Executive Director,
DesignSingapore
Council*

We also believe that design is an effective approach for complex societal problems. It starts with a deep understanding of people's needs, wants and desires, in order to generate innovative people-focused solutions. Design can create or innovate systems, services and products that enhance not only the quality of life of persons with disabilities, but for everybody.

The Asian Insights and Design Innovation team embarked on a 'Better Life By Design: Designing for persons with disabilities in

Singapore' project in early 2016. It brought together designers, social service and healthcare professionals, entrepreneurs, technologists and caregivers to delve deeper into the key issues at stake for persons with disabilities. Insights uncovered through the research range from basic physical needs, to social needs to self-actualisation.

25 remarkable people are featured in this publication. I am so grateful for their openness, courage and generosity of spirit in sharing their stories. I hope that they will inspire you, as they have inspired me, and help you see the world from a different lens.



DISABILITY
IS NOT
INABILITY

LET'S FOCUS ON ABILITIES



The Path To project is about getting from point A to B - where A is your current situation, and B is somewhere you want to be. Point B can be getting a new job, being able to provide for your family, having meaningful daily activities at a sheltered workshop, buying food at a hawker centre, relaxing in a park, meeting friends or taking a trip to a place you've never been before.

We all have dreams and goals. Sometimes it is difficult to reach your destination because of obstacles on the path. Maybe your family disapproves, you do not have the necessary motor skills, you do not have the money, or you just do not know the way.

For persons with disabilities, this is the norm. Much of their time is spent solving problems and managing to get through the day. Often, society focuses on what they cannot do rather than what they can do.

The Path To project is about helping persons with disabilities not only to handle their everyday needs but also to reach their full potential and achieve their dreams.

OFTEN, SOCIETY FOCUSES ON WHAT THEY CANNOT DO RATHER THAN WHAT THEY CAN DO.

We want to level the playing field, and to allow everyone to accomplish common goals. We started this journey by working hard to understand what it is like to live with a disability in Singapore, where persons with disabilities would like to go, and why it is so difficult to get there. Through this publication, we would like to share that understanding with you, and invite you to join us on the path to a better life by design.

Be a part of making Singapore the best place on earth for persons with disabilities. Help us make the country accessible and equal for everyone – a fully inclusive society where we are not measured by our disabilities, but rather our abilities.

THE PATH TO A MORE INCLUSIVE SOCIETY



DESIGN PROCESS

Human-Centered Design, the method used in this project, approaches problem solving from the point of view of the end user and calls for developing a deep understanding of unmet needs.

A big part of Human-Centered Design involves meeting and interviewing informants to understand their real needs and values as well as thoroughly benchmark existing services, products and technologies. By understanding the past and present, it is easier to design what the future can be. The methodology is inherently optimistic, constructive, and should be experiential. This publication details the part of the design process that focuses on research, synthesis and co-creation.

RESEARCH

ANALYSIS

CO-CREATION

ETHNOGRAPHY STUDY

Shadowing & Interviews, Field reports, Download session

CO-ANALYSIS

Based on Design Ethnography Study and Global Trend Scan

INNOVATION WORKSHOPS

Multi-disciplinary groups: designers, social entrepreneurs, policy makers, social service, professionals, persons with disabilities, caregivers

DESIGN STUDIOS

Co-creation
Developed Concept briefs

PUBLICATION

Based on the project's research and outcome



GLOBAL TREND SCAN

Emerging global trends in disability in terms of technology, policy etc...

INSIGHTS

Based on Design Ethnography Study and Global Trend Scan

OPPORTUNITY AREAS & SUPPORTING INSIGHTS

Based on the co-analysis

CONCEPT BRIEFS

Based on refined opportunity areas

PROJECT BRIEFS

Based on refined concepts



AROUND THE WORLD

More than one billion people in the world live with some form of disability. This corresponds to about 15 percent of the world's population. In the years ahead, disability will be an even greater concern because its prevalence is on the rise. This is due to ageing populations and the higher risk of disability in older people as well as the global increase in chronic health conditions such as diabetes, cardiovascular disease, cancer and mental health disorders.

Across the world, persons with disabilities have poorer health outcomes, lower education achievements, less economic participation and higher rates of poverty than people without disabilities. This is partly because persons with disabilities experience barriers in accessing services that many of us have long taken for granted, including health, education, employment, and transport as well as information. These difficulties are exacerbated in less advantaged communities.

ACCESSING RESOURCES & FINANCES

Common for almost all persons with disabilities is that they have trouble finding and understanding guidelines for support and services. It is difficult for many to find information about what is provided for them and what rights they have.

MONEY CAN NOT BUY YOU HAPPINESS – BUT IT CAN MAKE LIFE EASIER

Education and income are two factors that reduce disability. People with higher socio-economic status are more efficient in their illness management, use higher quality assistive technology and are more willing and able to adjust the environment to cope with disability.

PERSONS WITH DISABILITIES ARE MORE LIKELY TO BE UNEMPLOYED

Persons with disabilities are frequently not considered potential members of the workforce. Preconceived notions, fear, misconceptions and prejudice to limit understanding and acceptance of disability in workplaces everywhere. Persons with disabilities experience increased dependency and restricted participation in their societies. Even in high-income countries, 20–40 percent of persons with disabilities lack the help they require to engage in everyday activities.¹

1. http://www.who.int/disabilities/world_report/2011

2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4459008>

INEQUALITY

Research also shows that socio-familial and community inclusion have a great impact on access to healthcare, rehabilitation services, work and income, education, culture, transportation and social participation.² However, it is a complex question: biological, psychological, social and developmental factors, as well as life experience adds up in each individual and contribute to the inequalities in access to social services.



PSYCHOLOGICAL IMPACT & SELF-ADVOCACY

DISABILITY IS A TRAGEDY, 'NORMALITY' IS THE GOAL

Several persons with disabilities are quite satisfied with who they are and are able to reach their goals despite, or even because, of their disability. However, society's picture of disability is usually that of a tragedy. Policies are often based on standards of what persons with disabilities ought to participate in. An overprotective mentality is still reflected in society's view on persons with disabilities.

MOVING FROM INSTITUTIONS TOWARD HOMES

Health and social services for persons with disabilities are increasingly shifting from traditional institutional settings to the private setting of the person's home. Recent studies show that outcomes are better in the community than in institutional care but also that there is more to it than just hospital closure. Simply moving people out of institutions into community settings does not bring automatic improvement in quality of life in terms of choice and inclusion. This is especially true for people with more severe disabilities as well as complex needs.

SELF-ADVOCACY, MOVEMENTS AND DO-IT-YOURSELF

Independent Living is a civil rights movement in the US, focusing on the right to self-determination for persons with disabilities. The focus is on removing the barriers which exclude persons with disabilities from participating in society. Social media does a tremendous job in spreading awareness and changing social perceptions. Thanks to the internet, there is a plethora of resources available that provide education for society and for inventing and developing solutions for those in need.

Accessibility has also seen a huge shift in features being introduced in devices and solutions. With technology, education, and resources becoming so easily available to everyone, people do not wait for other agencies to develop newer solutions anymore; if there is nothing available to meet a certain need, someone will develop a solution. Crowd funding is also a common technique to get a solution funded.



SHIFT FROM DISABILITIES TO ABILITIES

Focus is shifting from looking at a person's disabilities, to their health and functioning instead.

Previously, disability began where health ended; once you were disabled, you were in a separate category. Now the trend is about looking for a tool measuring functioning in society, no matter what the reason for one's impairments. This is a radical shift. From emphasising people's disabilities, we now focus on their level of health.

A WALK IN THEIR SHOES





DESIGN RESEARCH

SHADOWING & INTERVIEW METHODS

Observation and shadowing is about spending time observing a participant during their daily routine. Watching someone in context can uncover new insights, show research teams particular angles to explore, and give a better behavioural balance to interviews. Observation and shadowing is followed up by a dedicated interview, or questions about situations as they arise.

Over a period of four weeks, five hours was spent with each of the informants, covering important times in their daily activities. When possible, caregivers, teachers, friends and people in their surroundings were interviewed.

The informants were asked what they would like to do in life and if they have any goals. Then they were asked to consider their options and what might hinder them from reaching their goals. The result of qualitative research is not meant to be statistical proof, but rather a way to give the project a rich and deep spectrum of insights. These insights can then allow the team to identify patterns in behaviour and uncover latent needs, trends and tendencies, what works and does not work and the reasons behind it.

The following pages introduce the stars of this project – 25 adults (aged 18 to 63) living with disabilities (physical, intellectual, visual impairment, hearing loss, and autism spectrum disorder) in Singapore.

The participants were selected to be representative of a cross-section of Singapore's disability population demographics, including different ethnic groups and socio-economic backgrounds. Criteria such as gender, age, severity of impairment, congenital or acquired disability were also considered.

spent half a day with each person, observing them through their routines and activities, meeting their families and friends, and having heart-to-heart discussions about their goals and dreams. Everyone is different, but some common behavioural patterns were discovered that will allow us to address specific needs.

Their knowledge and needs form the basis of our work to make Singapore a more inclusive place. Design researchers



DESIGN RESEARCH



THE PEOPLE WE MET



**25 informants
18-63 years old**

16 Chinese
7 Malay
2 Indian

They live in places ranging from 1-room HDB flats to private houses

Range of disabilities

5 with Cerebral Palsy
5 with Cognitive Disability
2 with Muscular Dystrophy
2 with Visual Impairment

2 with Hearing Impairment
6 with Autism Spectrum Disorder
3 with Acquired Physical and Cognitive Disabilities



"I want to share my story with the world. My best friend lives in the USA, so I feel lonely sometimes."

Bobby



BOBBY



Bobby would like to socialise and meet more people.

How might we help him find opportunities to socialise with his peers and the wider community?

Bobby is a 49-year-old Chinese man who has cerebral palsy. He lives alone, and runs one of the pushcarts at Changi General Hospital. Bobby likes his routines and finds comfort in them.

He does not see himself as disabled. He believes that we come into this world to learn.





AUDREY



It is difficult for her family to travel with her. They need a lot of support to make it possible. Whenever they do manage, her family feels proud and Audrey is delighted.

How might we create more opportunities for her to discover new things?

Audrey is a 22-year-old Chinese woman. She has acquired severe physical and intellectual disabilities. She lives with her parents and younger sister.

Audrey loves outings and travelling. She enjoys watching people and going out to see new places and things.



Azizah is a 42-year-old Malay woman who has a moderate intellectual disability. She works in the canteen at a sheltered workshop in Woodlands. She lives in a hostel for persons with intellectual disabilities.

Azizah is an athlete who competed in the Special Olympics in Athens. Her medals make her proud and happy.



Azizah would like to work in the open community where she can earn more money.

How might we enable her to find open employment opportunities that fit her abilities?



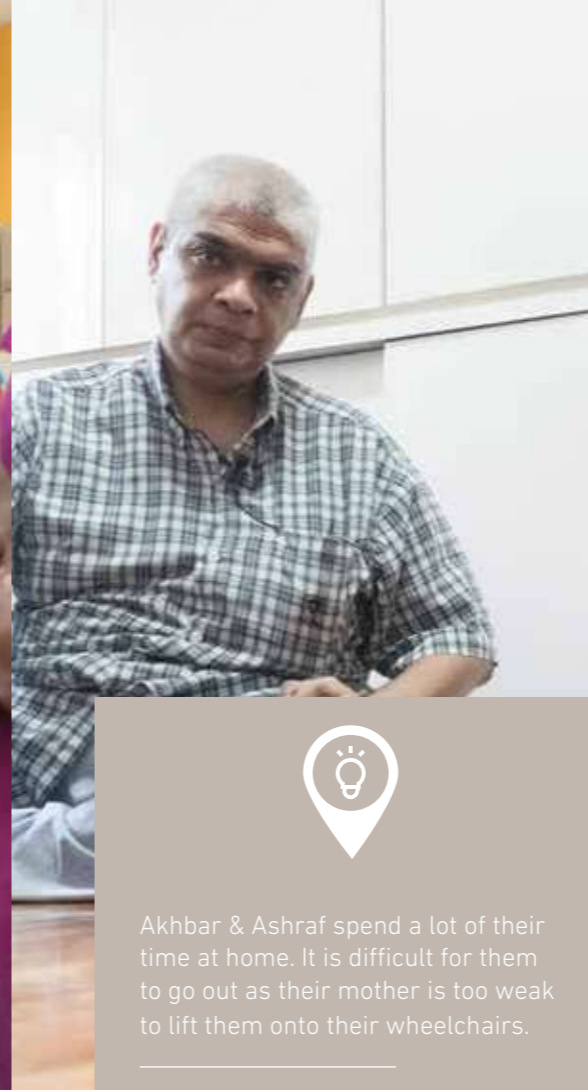
AZIZAH



JEREMY

Jeremy is a 25-year-old Chinese man with mild autism spectrum disorder. He lives with his parents and two sisters and works at a sheltered workshop.

Jeremy loves travelling. His father hopes that he will be able to teach Jeremy to travel by himself so that he will not be confined in his home.



Akhbar & Ashraf spend a lot of their time at home. It is difficult for them to go out as their mother is too weak to lift them onto their wheelchairs.

How might we create more opportunities for them to take part in meaningful activities?



AKHBAR & ASHRAF

Akhbar (46) and Ashraf (43) are two Malay brothers with muscular dystrophy. They live with their parents. Their two teenage nephews visit daily after school. They spend most of their time at home.

They feel that, as grown men, they are supposed to take care of their ageing mother. Instead of the other way around.





Priscilla's mother does not want to let her out on her own. She is afraid that she might be taken advantage of or get lost in the city.

How might we help her parents feel more secure about her leaving the house on her own?

Priscilla is an 18-year-old Chinese woman with autism spectrum disorder. She lives with her parents, two brothers, and maternal grandmother.

Priscilla finds a lot of joy in singing and dancing wherever she goes.



TOMI

Tomi is a 27-year-old Chinese man with an acquired hearing impairment. He works as a civil servant and lives with his parents, his brother, who has mild autism spectrum disorder, and his girlfriend. He is also pursuing a Business and Banking degree at a university.

He wants to earn enough to take care of his (future) family and parents. He is worried about what might happen in the future when he loses his hearing totally.



Tomi is not aware of his rights to subsidies and other forms of assistance. He feels that more awareness is needed on the subject to help persons with disabilities.

How might we inform him about his rights in a better way?



PRISCILLA



"I want to open a second hand shop where I would sell jewellery and pins. I would like to employ my friends from the workshop."

Yee Kwoon



Yee Kwoon has a dream to open a shop. She had not expressed this wish before, so everyone around her was surprised.

How might we help make her dream a reality?

YEE KWON

Yee Kwoon is a 24-year-old Chinese woman with cerebral palsy. She lives with her parents and a younger brother. She works at a sheltered workshop.

Yee Kwoon is extremely caring and helpful to her friends and colleagues at the sheltered workshop.





During outings, a lot of people stare at Willis' group, wondering about their behaviour.

How might we teach society how to better interact with persons with autism spectrum disorder?

Willis is a 20-year-old Chinese man with severe autism spectrum disorder. Willis is non-verbal and needs to be supported in communications. He lives with his parents and an older brother. He attends a Day Activity Centre for persons with autism.

Willis cares for the group he is a part of. He seems happy when the group is gathered together and makes sure that no one is left behind.



ROCKY

Rocky is a 20-year-old Chinese man with mild autism spectrum disorder. He is studying at a polytechnic. He lives with his parents and a brother who has an acquired hearing impairment.

Rocky is eager to learn and wants to participate in a meaningful activity, studying or working.



Rocky was on academic notice from his school partly because of low attendance and requires help to cope in school.

How might we help his school support him in a better way?



WILLIS



MINAH

Minah is a 48-year-old Malay woman with cerebral palsy. She can walk a bit, but not for long distances. She lives with her husband and works at a sheltered workshop.

When Minah met her husband, she decided to open up her heart and fell in love with him.



Minah had a baby that was taken away from her and adopted by another couple. She becomes very sad when talking about this story.

How might we help her find closure from this traumatic experience?



Jason's family rarely goes on outings in the evenings or on weekends. It is very difficult for them to get around.

How might we give him opportunities to leave his house during the weekend?

Jason is a 37-year-old Chinese man who has severe cerebral palsy. At home, he is on the floor most of the time and is able to move around on his own. He lives with his parents and attends a Day Activity Centre for persons with severe physical disabilities.

Jason loves meeting people and is very talkative. Whenever he sees someone looking at him he cracks a smile.



JASON



NAZAR



Nazar was relocated to work outside the supermarket, hidden from the customers, because children were scared of him and their parents complained.

How might we help him feel less stigmatised outside his home?

Nazar is a 48-year-old Malay man. He has a syndrome that has affected his gums, hands and feet. He shares a flat with a friend he has met at work and works in a supermarket.

Nazar is happiest when working in the community and it makes him proud.



"I do not go out a lot because people talk about my looks and even call me a 'monster' sometimes. I usually keep quiet, but I would like to tell them that they shouldn't say such things."


Nazar



ENG CHWEE

Eng Chwee is a 43-year-old Chinese man who has moderate intellectual disability. He lives with his parents and three siblings. His three siblings all have intellectual disabilities. He works in a sheltered workshop.

Eng Chwee is a fast learner. He is energetic, hard-working and takes initiative.



Eng Chwee needs more challenges. He learns new tasks very quickly.

How might we ensure he is given more opportunities for life long learning and improving his skills?



SARAVANAN

Saravanan's mother has set up a complex system for him to manage his money for lunch. She would like him to be more independent.

How might we teach him the concept of money?

Saravanan is a 31-year-old Indian man who has moderate intellectual disability. He lives with his parents and sister. He works in a sheltered workshop.

Saravanan picks out his outfits for the whole week every Sunday. According to his training officer, Saravanan is always the best dressed at parties.





MEE LIAN

Mee Lian is a 59-year-old Chinese woman with moderate intellectual disability. She lives with her brother and sister-in-law, who is her main caregiver. Mee Lian is unable to read or write. She works in a sheltered workshop.

Mee Lian is very kind. If she is finished with her own task, she walks around, offering to help her co-workers.



Mee Lian is non verbal which makes it difficult for her to express her wants and needs.

How might we help her communicate her wishes?

A'zimiee is a 26-year-old Malay woman who has moderate intellectual disability. She lives with her mother, step-father and brother. She works in open employment supported by a job support officer.

A'zimiee likes to cook and cuddle her cats. She is smart and helps out a great deal at home.



A'zimiee's mother is very protective and she is not allowed to go out on her own. She only sees her friends at work.

How might we enable her to spend more time with her friends?

A'ZIMIEE



Swee Leng is a 57-year-old Chinese woman who has been deaf since birth. She lives with her husband, who is also deaf. Her husband is the sole breadwinner. She has stopped work since 2014 due to the toll it takes on her body.

Swee Leng knocks on doors trying to find people who are deaf so she can evangelise them.



SWEE LENG



Swee Leng explained that she has trouble understanding her doctor at the hospital because there is no interpreter.

How might we help her get easy access to an interpreter when she needs one?



Since he lost his eyesight, Alex feels that he has lost connection with his family. Despite facing challenges, he strives to do his best to provide for his family financially.

How might we support him and help his family accept and adjust to his acquired disability?



ALEX

Alex is a 50-year-old Chinese man who has been visually impaired for the past 10 years. He currently has 5% of his vision left. He lives with his wife and his two teenage sons who are 13 and 16.

Alex hopes to rent a bigger shop space so that he can provide employment to other persons with disabilities.



Yazid is a 46-year-old Malay man with cerebral palsy. He can walk, but not for long distances. He lives with his mother and brother. His mother is ageing and is getting very weak. He works at a sheltered workshop and values being able to contribute to the family.

Yazid dreams of becoming a stylist. He enjoys styling and wants to earn a higher income so that he can take care of his mother and brother.



Yazid is sometimes overwhelmed by sadness. He would like to be in a relationship.

How might we help him find a partner to build his life with?



"Someday, I want to get married."
Yazid



YAZID



KAH YONG



Kah Yong is very comfortable with his disability and has managed to build a life that makes him happy.

How might we use him as an example to inspire others?

Kah Yong is a 52-year-old Chinese man who was born with visual impairment in both eyes. He is a guide and coordinator at Dialogue in the Dark. He lives with his wife and two sons who are 21 and 23.

When Kah Yong and his wife retire, they want to support elderly people by encouraging them and singing hymns with them.



RYAN



Ryan loses the skills he has learnt if he does not practice them regularly.

How might we help him continue to progress after school has ended?

Ryan is a 20-year-old Chinese man with moderate autism spectrum disorder. Since he graduated from special education school at 18 he has remained at home. He lives with his parents, three siblings, and a helper.

During the day Ryan spends his time writing and craft-making. His mother sells his creations online.





MELVIN

Kamala is a 63-year-old Indian woman who had her hands and legs amputated because of gangrene. She is single and lives with her helper. She spends most of her time at home.

Kamala wants to visit Tamil Nadu, where her ancestors came from, to see what the place is like.



Ever since Kamala's mother passed away, she has been feeling lonely. She wants to start a new life and go outside more often.

How might we give her the opportunity to go out more spontaneously?



Melvin has a strong desire to make new friends but does not know how to do so.

How might we teach him the soft skills needed to find new friends?

Melvin is a 26-year-old Chinese man who has mild autism spectrum disorder. He has gone through mainstream schooling in digital media and is very smart. He lives with his parents and is an only child.

Melvin wants his life to change. He really wants to make friends.



KAMALA

CONNECTING THE DOTS



DESIGN SYNTHESIS



ANALYSIS, INSIGHTS & OPPORTUNITY AREAS

Immediately after each observation, the insights were captured in a download session. The design researchers went through the interview, made sure that all the details were captured, agreed on what were the most important and interesting insights and did a first initial brief analysis. This to ensure that no data had been lost and that the design researchers would be aligned and stay focused on the same thing. A secondary download session was done after each week.

areas where many persons with disabilities felt resistance on their journey towards their goals. The map helped the team identify current problem areas as well as future opportunity areas and provides a better understanding of how solutions should be designed in order to work out.

At the end of the synthesis period, we had a collection of insights that were boiled down into Opportunity Areas.

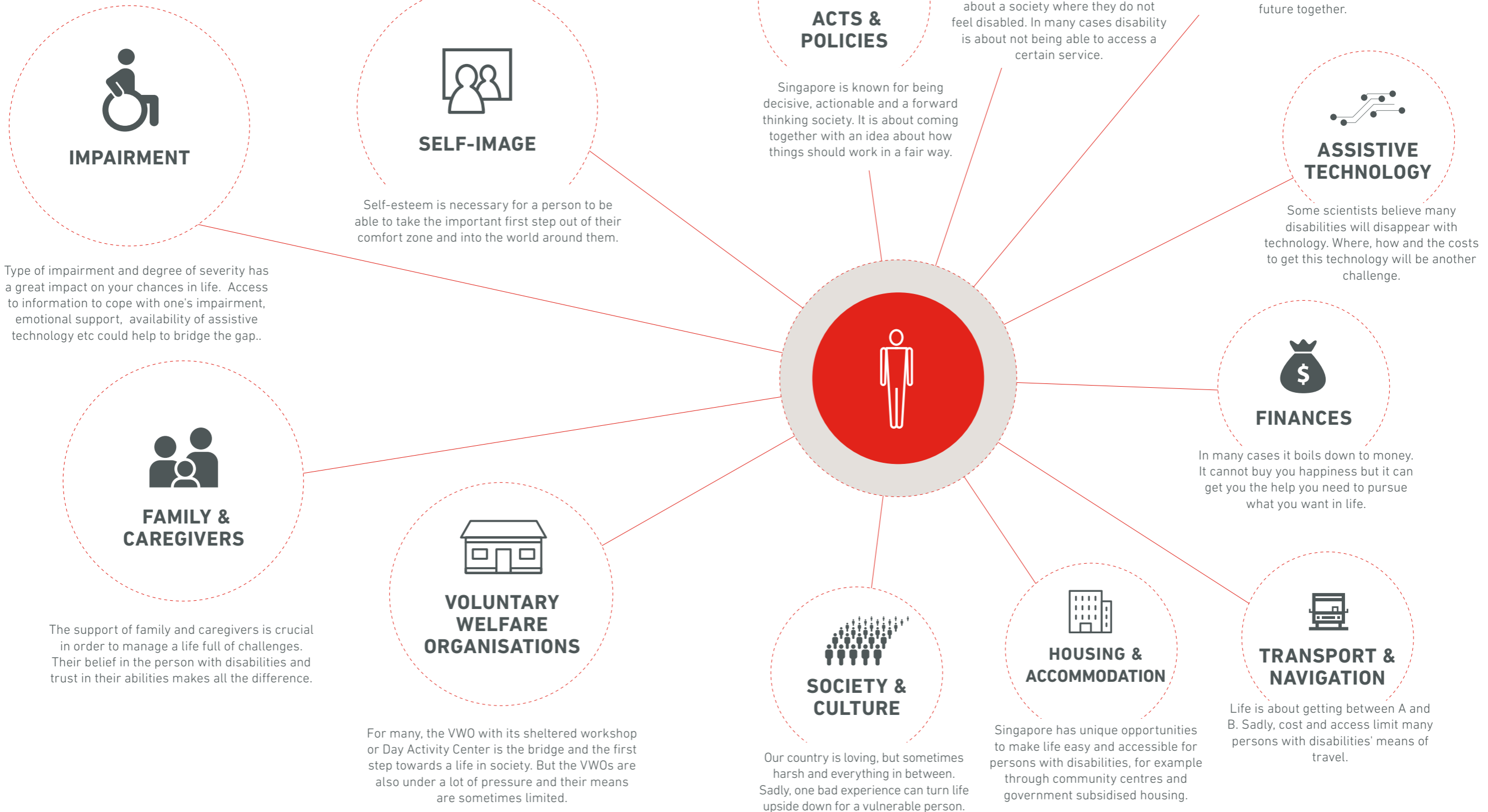
In these sessions "The Path To..." map came alive when the project identified some general



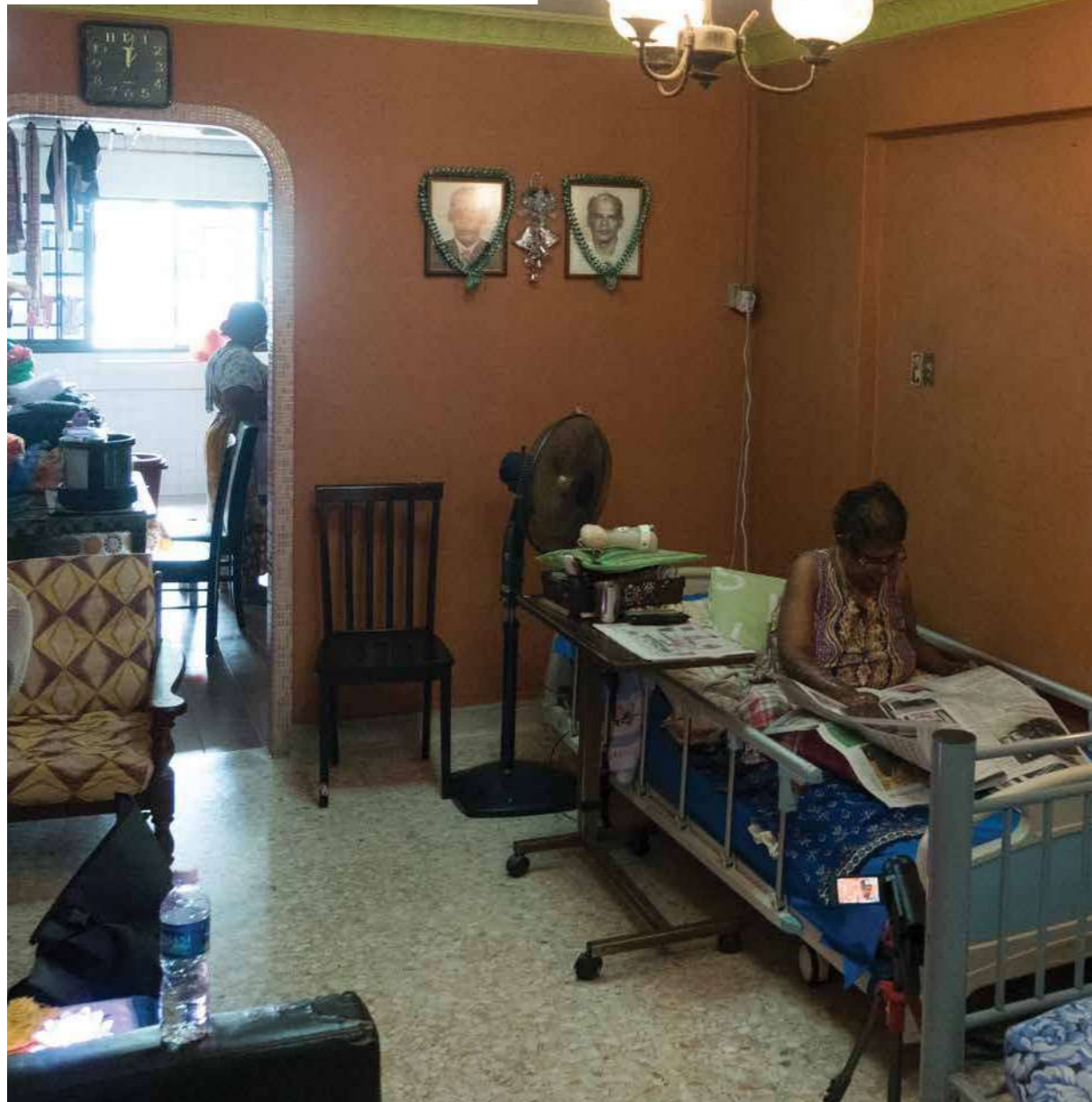
KEY THEMES

In order to perform a simple task or to fulfill a dream, persons with disabilities need to be able to navigate smoothly through certain areas with their specific challenges.

This fact became clearer after shadowing and interviewing the persons with disabilities and people in their proximity.



OPPORTUNITY AREAS



Based on the conducted research, opportunity areas were defined to guide future concept development.

The opportunities come from an analysis of the research insights and trend scan, and identify areas where needs are unmet or services are lacking. Using the opportunity areas as a guide, we can be sure that the concepts we develop have the potential to make a great impact on the lives of persons with disabilities.



IMPAIRMENT

1

How shall I manage my disability?

About where to start, where to look, what to get, where to go and how to understand my rights

BACKGROUND

It is difficult to understand, find and gain an overview of information regarding how it is to be a person with disabilities in Singapore. Some persons with disabilities do not know what they are entitled to and find the application process complicated and time

consuming. This is with regard to assistive technology, monetary compensation or services. There are many 'where' and 'how' questions from persons with disabilities and their caregivers that need to be answered in a comprehensive and accessible way.



SOCIETY

2

It is not only up to me

About feeling powerless

BACKGROUND

Many persons with disabilities just go along with what other people decide for them. They feel like they are in the hands of God, destiny, their families, the social worker or the voluntary welfare organisations. They do not express any certain demands or any higher expectations of life. Everything is

chosen for them; where to sleep, what to eat, what chores to do etc. They do not really think they have any rights and are in general grateful for what's provided for them. This feeling is based on the belief that they are third class citizens. They do not understand or know how to claim their rights.

3

No one understands me or my potential

About growing as human beings and reaching goals

BACKGROUND

Many persons with disabilities do not consider their full potential and do not think about the future in terms of possibilities. In many cases this notion is based on the frequent allegations about their limitations from people around them. Some persons

with disabilities carry unspoken suppressed dreams. Once expressed, these dreams take the people close to them by surprise. The goals are generally quite humble and address the wish to be financially independent and to get a different kind of job.



VWO

4

I want to manage myself and, be independent

About pride, surviving the future, and money

BACKGROUND

To earn money and to be able to contribute financially is probably the main ingredient to self-worth in Singapore. Being provided for instead of being able to provide is an issue for many persons with disabilities - even to the extent that some persons with disabilities express they would prefer to leave

a relationship in order to open up for a better life for their partner. They do their best to conceal their impairments and are reluctant to ask for help since that would expose a weakness. The stigmatisation is created by themselves and their close environment. Everybody wants to feel needed and appreciated.



SELF-IMAGE

5

I'm turning 18, but I'm not ready

About the stressful situation of not knowing what is going to happen to the family

BACKGROUND

Turning eighteen is supposed to be when a person becomes independent. For many persons with disabilities this is not the case. Many years are needed to become fully able, socially included and to lead an independent life. This takes constant practice

for a person with disabilities. A continuous development plan is needed. The caregivers have to consider the future on behalf of the persons with disabilities and decide to apply for Day Activity Centre, Sheltered Workshop, Open Employment or remain at home.

6

Please help me go out

About how 50 metres can change a whole life

BACKGROUND

If persons with disabilities can not manage the journey, they are not able to get to the voluntary welfare organisations. Instead, they may have to stay at home. Organised transport to and from the Day

Activity Centres and Sheltered Workshops are not always fully adapted to persons with disabilities and is therefore uncomfortable.



ACTS AND POLICIES



TRANSPORT

7

365 days 24/7 of my life

About the ones who travel in their mind

BACKGROUND

The life for many persons with disabilities is spent in their homes. Often isolated for many hours per day. Without stimulation they regress mentally and physically. It is possible for them

to go out, but the energy spent does not make it worthwhile. They perceive their life as lonely, monotonous, boring and without meaning.



ASSISTIVE TECHNOLOGY

8

It is hard to go out

About how persons with disabilities are accepted in society, and how not to be scared

BACKGROUND

Persons with disabilities are particularly prone to harassment or scams thus caregivers prevent them from leaving home unsupervised. They fear for their security and safety, especially if the person with disabilities is a woman. Some persons with disabilities are prevented

from going out because of their behavioral issues. People with autism spectrum disorder and intellectual disabilities sometimes get into trouble with the police. Navigation is also difficult and hinders some persons with disabilities from looking around the corner in life.



SOCIETY



INFRASTRUCTURE

9

Digital as a medium

About the importance of being online

BACKGROUND

Technology has made the world smaller, but many persons with disabilities in Singapore do not have access to computers, smartphones or the Internet. Since mobility is an issue for many persons with disabilities, these tools could provide a new

dimension of social inclusion by talking to friends, relatives and support groups online.



SOCIETY

10

I am in love

About a feeling no one can run away from

BACKGROUND

Besides it being difficult to find a partner and start a family, relationships are not encouraged or supported by family members and voluntary welfare organisation (VWO) employees. Relationships are sometimes suppressed or ridiculed by VWO employees and

family members. In addition, persons with disabilities do not get help understanding their own sexual feelings and urges. This has the effect that some persons with disabilities use the Internet to find sex and love and could end up being abused.

BUILDING A BETTER WORLD TOGETHER



CO-CREATION



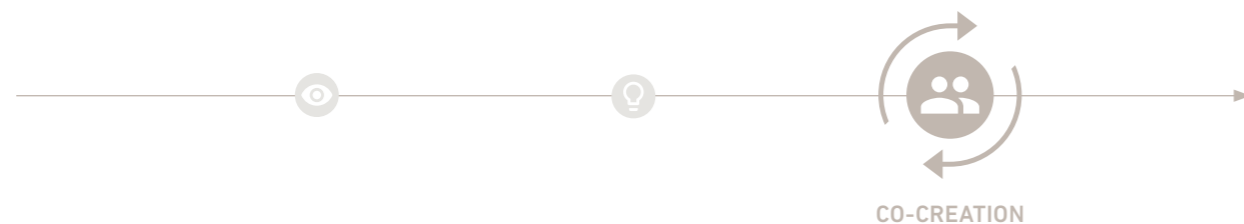
EXPLORE, IDEATE & ITERATE

Over 140 public servants, social service and healthcare professionals, persons with disabilities, caregivers, and designers working in experience, interaction, product, communications and spatial design were gathered together at two 3-day co-creation workshops to explore, co-create and ideate on a topic from the ethnographic design research and global trend scan. The research was presented through short 5-minute documentaries and posters summing up the uncovered needs and abilities of our informants.

Using a multi-disciplinary, design-driven method, the teams were then asked to devise as many concepts as possible in areas of opportunity. There were eight opportunity areas selected for the participants to team up around and in the end the two best ideas per area were developed. Persons with disabilities, their caregivers, and social service professionals working directly with persons with disabilities formed integral parts of the teams that worked closely to develop the concepts. At the end, one concept per team was made into a prototype and displayed in a final presentation.

MAKING IT HAPPEN
When multi-disciplinary teams are created, given a space to work in and a few days to focus, magic happens.

Improving the lives of persons with disabilities is not a job for a single person. We all need to work together to make the ideas on the following pages a reality. That's right - we need **you!**



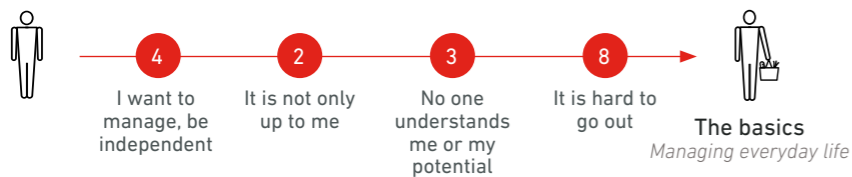


#1 The path to independence

To not depend on their caregivers is one of the biggest dreams for many persons with disabilities. The desired independence ranges from being able to spend a few hours alone in the city to starting their own family. However, it is hard for them to know how to get there. Many of them do not trust their own capabilities or do not even know they have any. They have dreams, but often face scepticism and disbelief from the rest of the community. Where will they find support?

Basic needs

THE UNDERLYING OPPORTUNITY AREAS



"We want him to be able to live independently, to learn basic skills and hygiene."

Parents of a person with cognitive disabilities

"Sometimes we go out and people stare. In the beginning I felt very uncomfortable but then slowly we started to ignore them. What I want is for her to be treated like a normal person."

Mother of a person with severe physical disabilities.

CONCEPTS



SWIFTY WHEELS

Hop on a motorbike and enjoy the ride around town



Users
Persons with physical disabilities and their caregivers

THE PROJECT

Swiftly Wheels provides a flexible and exciting means of transportation for persons with physical disabilities and their caregivers by retrofitting sidecars to motorbikes and adapting them to the transport of wheelchairs.

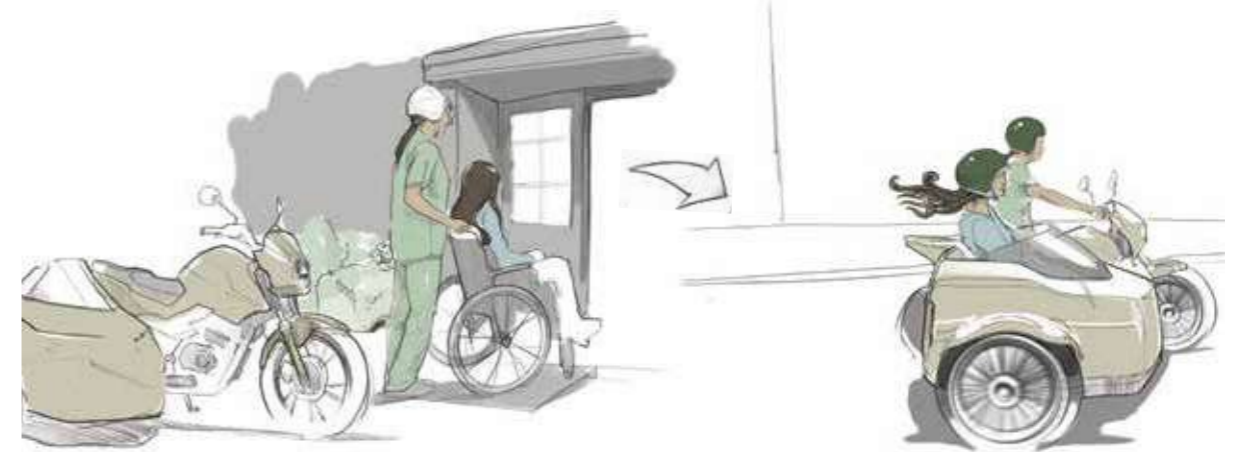
The service can be booked on the website, the app or by telephone. Whether it is a spontaneous trip or a planned excursion, Swiftly Wheels allows for increased independence and a fantastic feeling of freedom.



Jenny receives a text from a friend saying that they should meet soon at Gardens by the Bay.

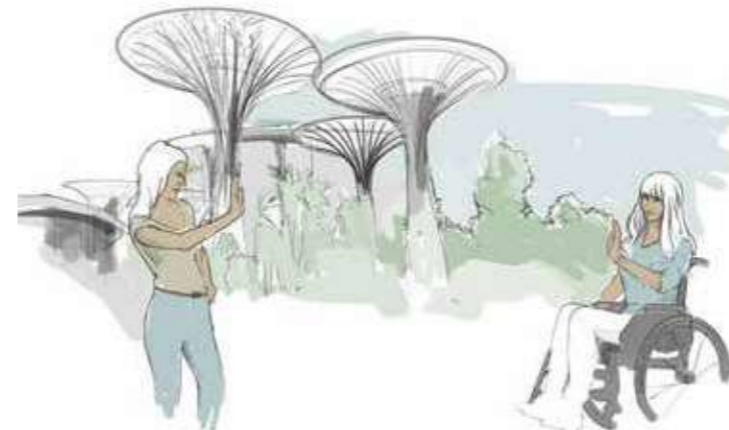
Jenny then calls Swiftly Wheels and asks for an immediate pick up.

They arrive at her house in no time.



The driver of Swiftly Wheels picks Jenny up at her house, pushing her wheelchair directly into the sidecar and securing it.

They ride around town, Jenny loves the feeling of freedom and the wind in her hair.



Jenny arrives on time and happy. The girls spend a very nice afternoon together.

WHAT CAN YOU DO?



When you come across an obstacle in the city that could make the area inaccessible to persons with disabilities, be sure to notify your local Municipal Services Office (www.oneservice.sg) if you cannot fix it yourself.

CONCEPTS



EZ BOARD

An interactive board and priority space to ease bus-boarding



Users
Persons with disabilities.
Especially visually and
physically impaired.
Elderly would also benefit.

THE PROJECT

For many persons with disabilities, taking the bus is a big obstacle. For example, persons with visual impairment have a difficult time identifying the bus from a distance through the buzz and movement around the bus stop. Scanning their Developmental Disability Registry Identity card at the EZ Board will help persons with disabilities board the bus by connecting them to the right bus and giving the driver an opportunity to prepare relevant assistance. This service will provide persons with disabilities a discreet and efficient way to ask for help.



Luke is reaching the bus stop. He is on his way to work.

He scans his Developmental Disability Registry Identity Card (DDR ID)...

... and presses the button for the bus number 10 to know how long he will have to wait.



The driver of the bus will receive a notification that Luke is waiting for his bus. This will allow him to prepare for relevant assistance.



Once Luke boards the bus and taps the DDR ID card for fare payment, the request panel at the bus stop will reset itself.



Luke can then sit down and enjoy the ride.

WHAT CAN YOU DO?



If you notice a person with disabilities struggling to board a bus, be empathetic and ask them directly if you can be of any assistance.



#2 The path to going out

Basic needs

How can you feel part of life and society if you cannot get out and about? There are so many obstacles in the way. Some of these obstacles are physical, but many of them are also in the minds of persons with disabilities and their caregivers. What to do, where to go, how to find their way, how to manage society's views and the stress of leaving the safety of the house are issues many of them mentioned.

THE UNDERLYING OPPORTUNITY AREAS



"What is most important is to dare to get out of the house"

Man with visual impairment

"She is a woman, therefore she needs to be carefully protected. I do not want her to go out on her own or work in the community. The society is not kind enough."

Mother of a person with autism spectrum disorder



CARE PODS

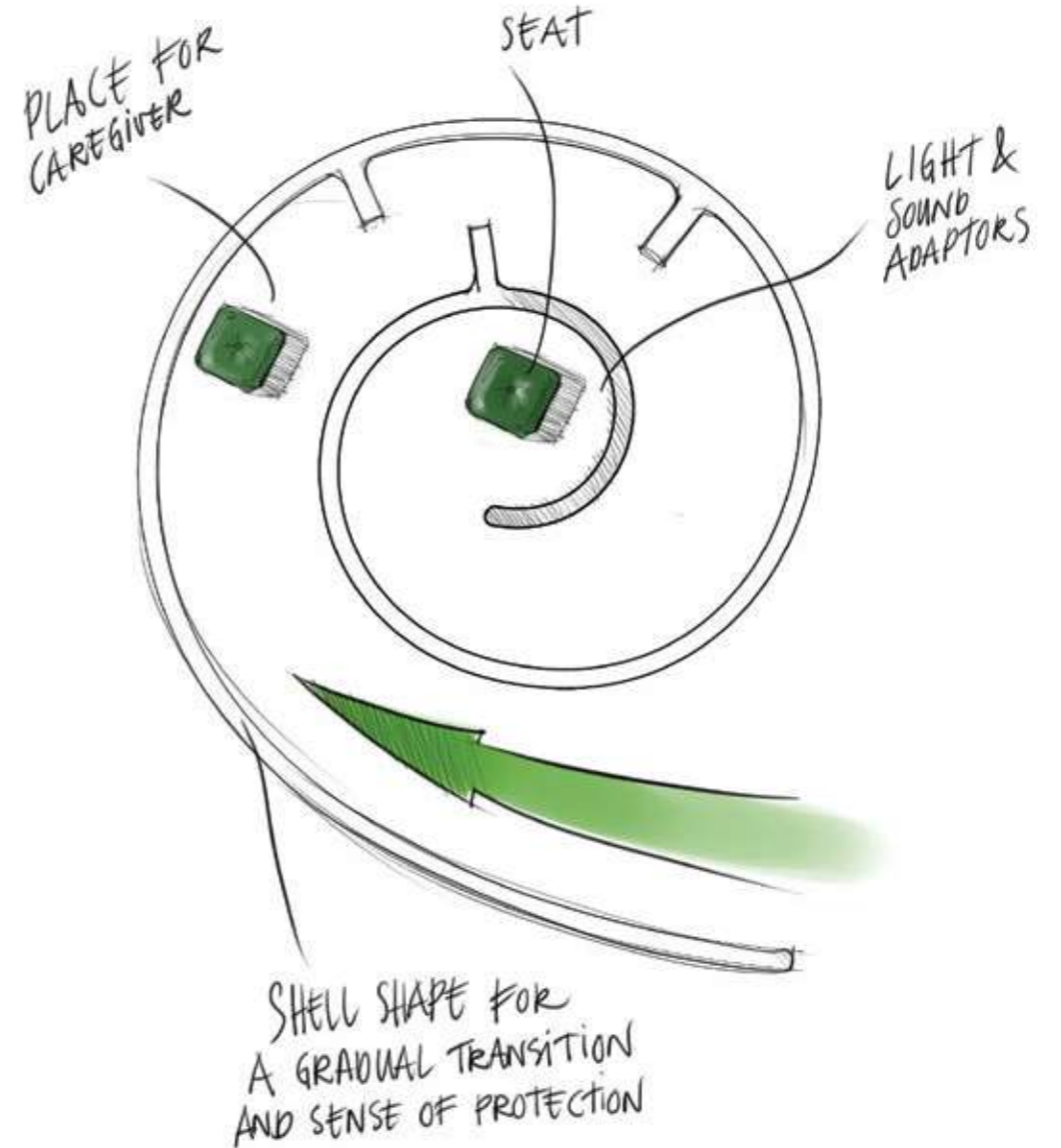
A quieter place where meltdowns are allowed



Users
Persons with autism spectrum disorder and their caregivers

THE PROJECT

Sometimes, persons with autism spectrum disorder need a place to rest from all the stimuli in society. Care Pods provide a safe and secure refuge in public spaces such as parks and shopping malls, making it easier for people with autism spectrum disorder to move around outside their homes. The Care Pods give caregivers the support and courage they need to bring their loved one on more outings, setting the stage for integration and acceptance.



The care pods provide a quiet space away from any stimulus. The room in the Care Pod is padded and made to be safe and prevent physical harm. The caregiver can rest as well and wait while the individual recovers from physical and emotional stress.

The structure of the Care Pods gives opportunities for public education and increased awareness. The pod will be a symbol that encourages integration and acceptance from society.

WHAT CAN YOU DO?



If you see a person acting in a way that you do not understand, do not stare at them. Instead, be friendly and ask their caregivers if you could be of any help. Some disabilities are invisible.



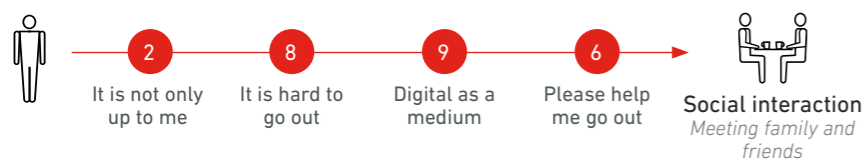
#3 The path to meeting and making friends

Some persons with disabilities spend their days or lives alone, except for limited unsupervised time with friends at the voluntary welfare organisations. Like everyone else, they would like to get to know more people and spend more time with them. The chances are limited due to lack of access to transport, time and energy needed by the caregiver. Many of them lack the social skills and proper tools to handle new acquaintances.

Social Interaction

“ I want my life to change. I want to meet others to make friends with.”

THE UNDERLYING OPPORTUNITY AREAS



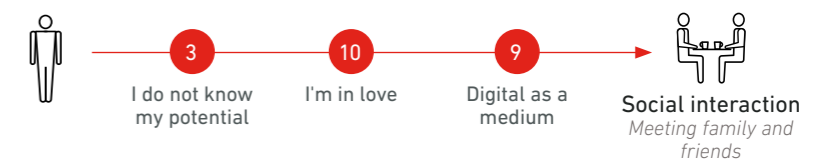
#4 The path to a relationship

Everybody has feelings. Eventually some of them will turn into love. This is a sensitive subject for any human being. How can we help persons with disabilities manoeuvre through this minefield of emotions and prejudice? How might we support, teach and create an environment of acceptance?

Social Interaction

“ How can we live together when we cannot take care of each other?”

THE UNDERLYING OPPORTUNITY AREAS





I BELONG

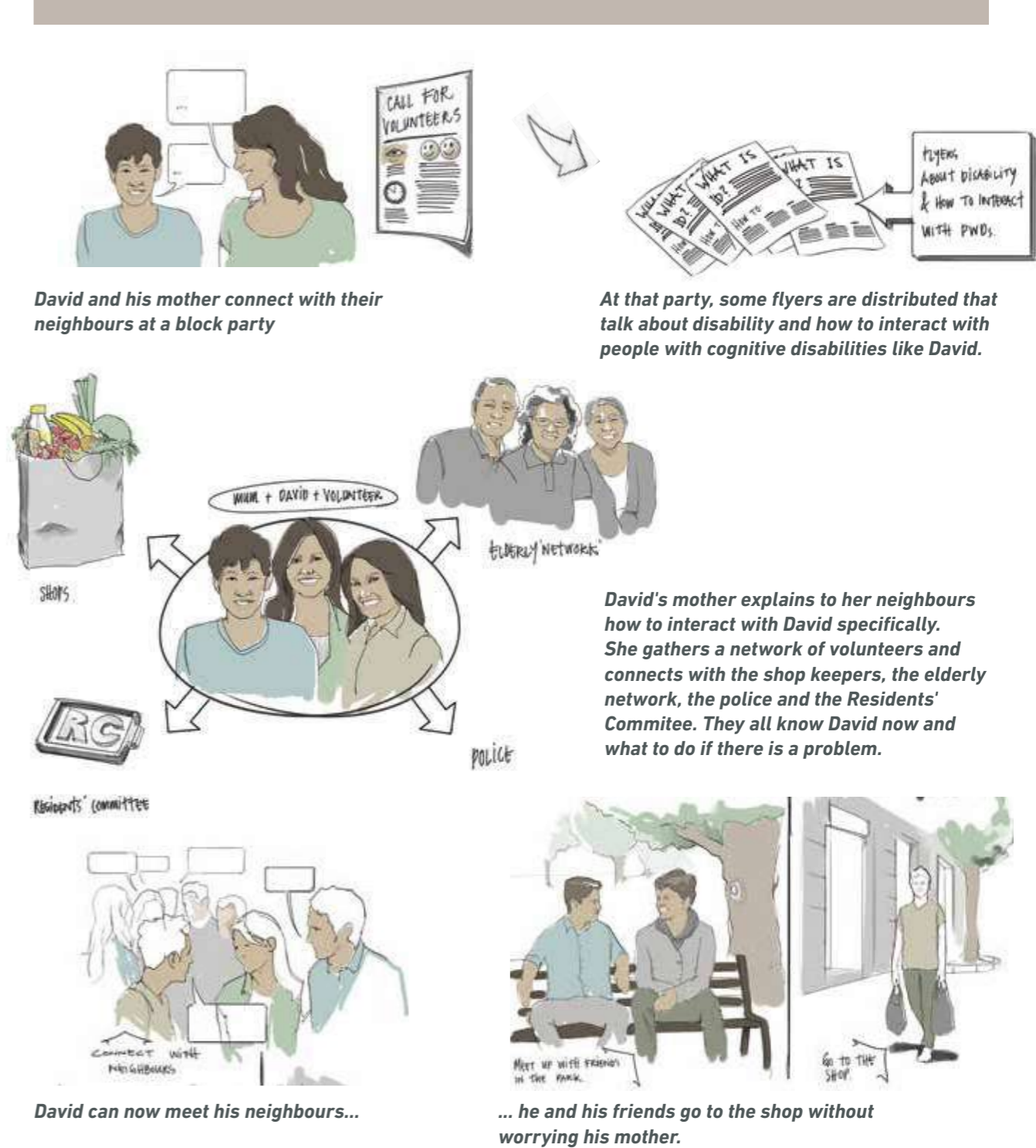
The caregivers educate their neighbours



Users
Persons with autism spectrum disorder and intellectual disabilities

THE PROJECT

Often, people feel uncomfortable around persons with disabilities because they are afraid of the unknown. I Belong is an initiative that aims to create a safe and friendly neighbourhood for people with autism spectrum disorder or intellectual disabilities. With support, caregivers can act as educators of the neighbours and businesses close to their homes. Once the community is properly educated and introduced to a person with disabilities near them, it will be easier to interact with and assist that person.



David can now meet his neighbours...

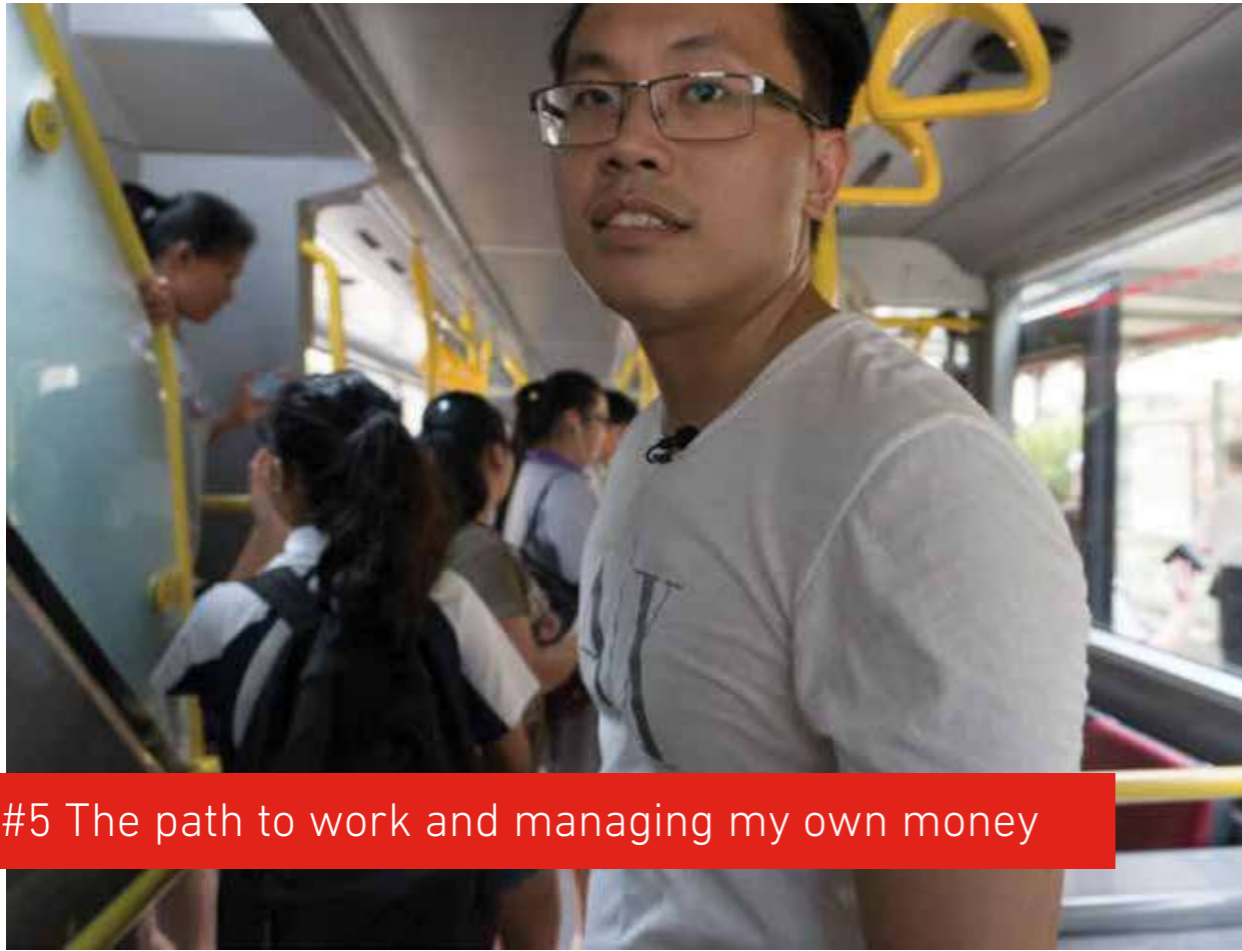
... he and his friends go to the shop without worrying his mother.

WHAT CAN YOU DO?



Understand* more about different disabilities and be active in educating your friends and family on it.

Learn more about persons with disabilities at seethetrue.me.sg



#5 The path to work and managing my own money

Persons with disabilities have dreams of working and making their own money. This is a fundamental part of feeling independent. In general, they face a lot of scepticism about how they would manage. A possible employer might calculate the risk and not find it worthwhile to train a person with disabilities. They may also have trouble understanding their financial situation; how much they should earn and how the money should be spent.

Daily Activity

THE UNDERLYING OPPORTUNITY AREAS



"I wish I could work outside to help my family financially because my mum is working very hard."

Woman with cerebral palsy

"I want to work outside to earn more money for my parents"

Woman with cognitive disability



D SCHOOLING

Employing persons with disabilities in mainstream schools



Users
Persons with disabilities

THE PROJECT

Persons with disabilities have the right to be able to support their families, feel useful and be contributing members of society. D Schooling is a program to encourage the employment of persons with disabilities in mainstream schools in a protected environment as a start, with the goal of teaching them the skills and self confidence to attain financial independence. D Schooling matches the users' abilities and interests to different jobs, from librarian to sign language teacher.



There are many different jobs that persons with disabilities could fulfill in mainstream schools:

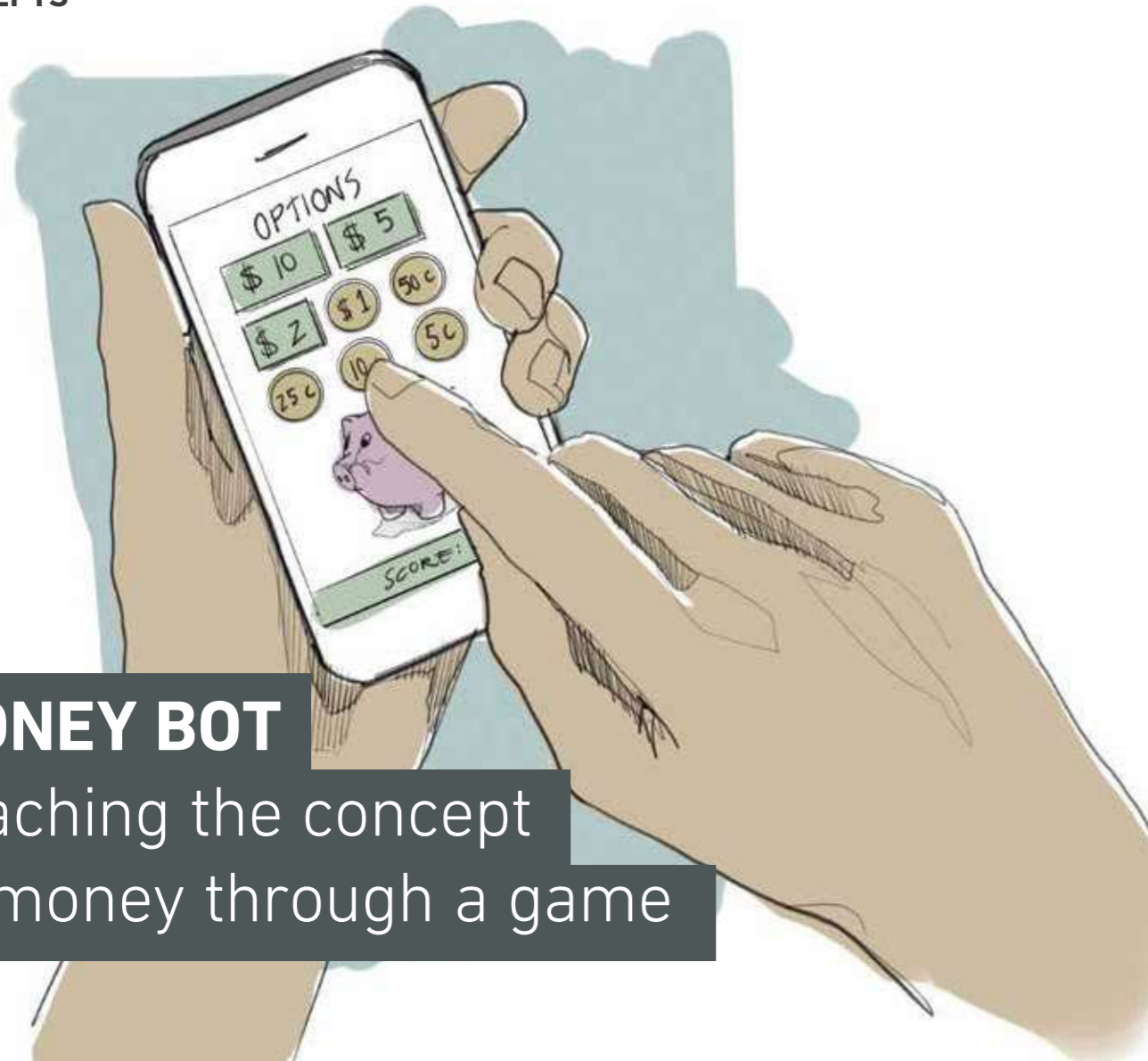
- A person with physical disability could be a secretary*
- A person with hearing loss could teach sign language*
- A person with autism spectrum disorder could be a librarian*
- A person with intellectual disabilities could be a gardener etc.*

We hope that in the long run, this programme can contribute to create a society that is more inclusive and a generation that is more ready, acceptable and safe for persons with disabilities.

WHAT CAN YOU DO?

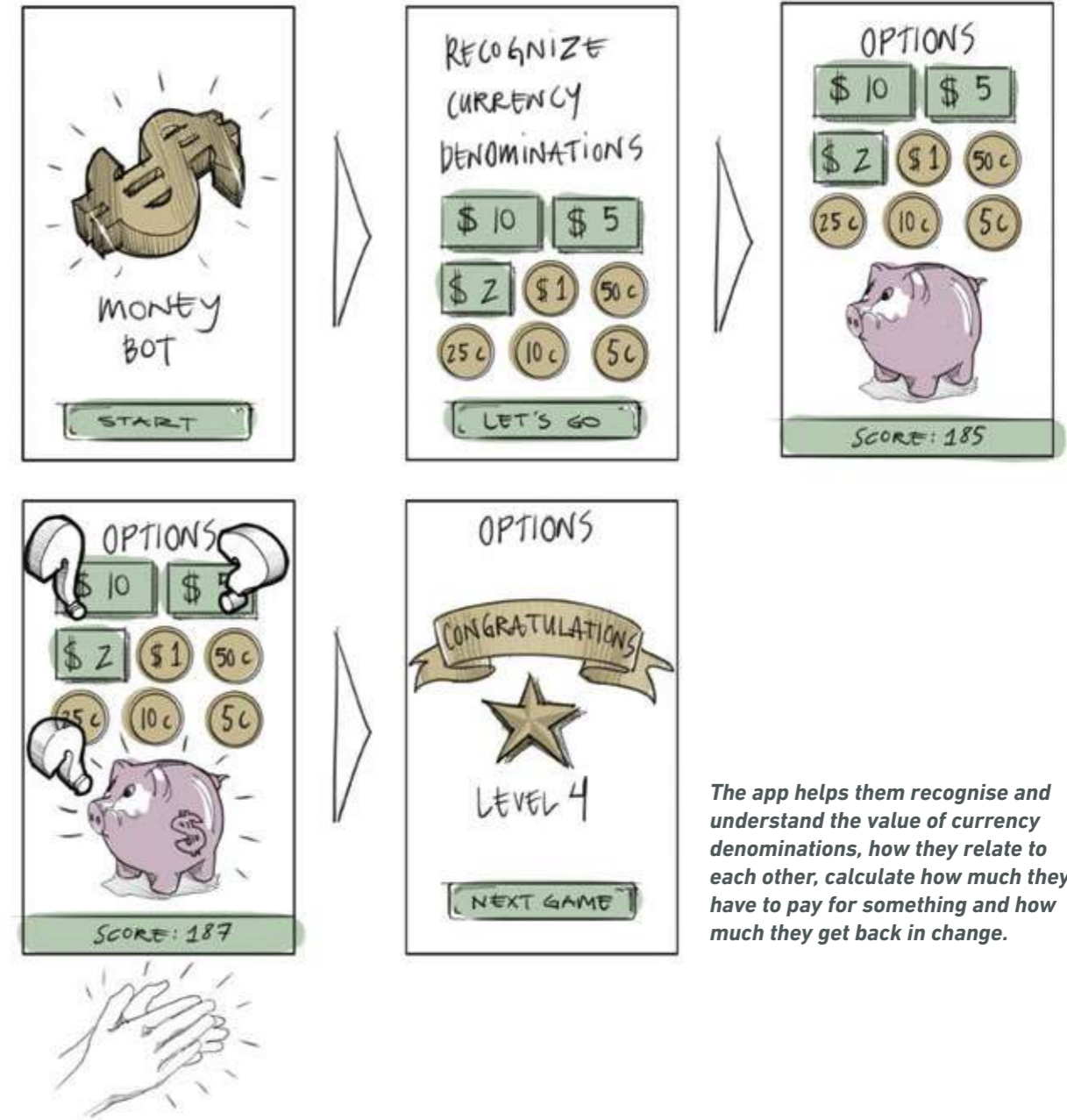


At your workplace, think about how you can better include or involve persons with disabilities.



MONEY BOT

Teaching the concept of money through a game



The app helps them recognise and understand the value of currency denominations, how they relate to each other, calculate how much they have to pay for something and how much they get back in change.



Users
Persons with moderate intellectual disability and autism spectrum disorder

THE PROJECT

Money Bot is a teaching tool that uses games, step by step guides and daily activity simulations to teach persons with disabilities the concept and value of money. An understanding of personal finance is crucial to becoming an independent and functioning member of society.

WHAT CAN YOU DO?



When serving or selling to persons with disabilities, be sure to treat them with care and respect.

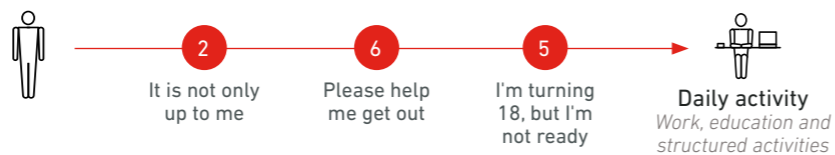


#6 The path to a voluntary welfare organisation

Daily Activity

A place in a voluntary welfare organisation (VWO) is not to be taken for granted. There are limited options and many considerations. But for many persons with disabilities and their families a place at a Day Activity Centre or Sheltered Workshop can make a tremendous difference. Some parents volunteer in order to increase their chances to get a spot. Money, distance, the child's behaviour and the VWOs' ability to address specific needs are some constraints.

THE UNDERLYING OPPORTUNITY AREAS



"He really wants to go to school. Our other children ask: "Mum, can I skip school today?" But not him. He really wants to go."

Mother of a person with autism spectrum disorder

CONCEPTS



M.A.C.

The Mobile Activity Cafe brings the community to your doorstep



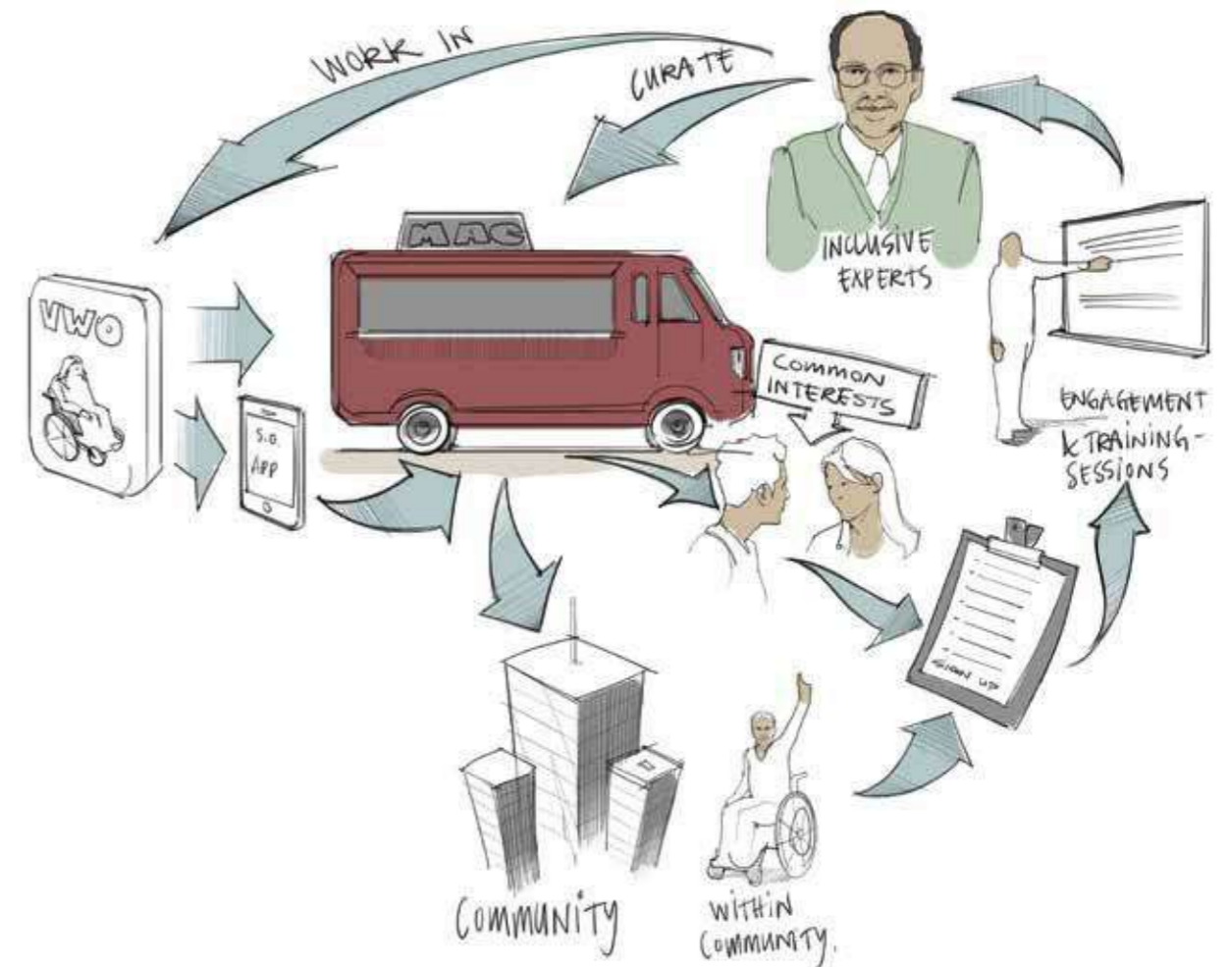
Users
Persons with disabilities who have limited mobility, as well as their neighbours and local community.

THE PROJECT

Many persons with disabilities have a difficult time accessing social experiences and interacting with other members of their local community, which leaves them with limited opportunities to articulate their dreams. The Mobile Activity Cafe brings activities close to home for persons with disabilities so they can connect with others through common interests and find inspiration from peers.



The cafe can provide activities such as photography, leather craft or cooking. By visiting the M.A.C. website, anyone can find out all they need to know about the scheduled activities or volunteer to run an activity.



WHAT CAN YOU DO?



Organise activities in your community that can include persons with disabilities.



#7 The path to joy

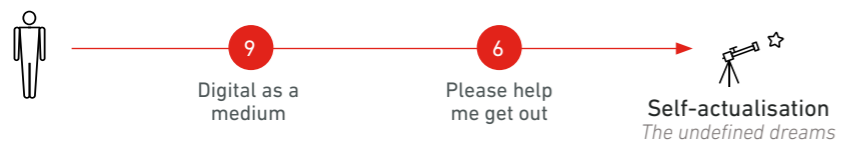
It takes so little but is still so difficult. How can we help persons with disabilities to feel they lead a purposeful and happy life? So much time is wasted on simply waiting for life to pass.

Self-Actualization



"Staying at home in this room is very boring"
Brothers with muscular dystrophy

THE UNDERLYING OPPORTUNITY AREAS



CONCEPTS



BOX OF JOY

Order a box and receive a personal package of surprises



Users
Isolated persons with disabilities who do not go out often

THE PROJECT

Many persons with disabilities do not have many opportunities to get out of their homes and experience the world. This concept delivers boxes of joy to these individuals and their families, allowing them to discover new things. This simple box can prevent mental and physical deterioration by exposing persons with disabilities to learning, fun, surprises and anticipation in a safe space. It also provides continuous stream of fresh ideas for the person with disabilities to do at home on their own, with their family members or with volunteers.



Vincent orders a Box of Joy on the website. It is filled with a wide variety of items and kits that are meaningful, useful, educational or interesting.

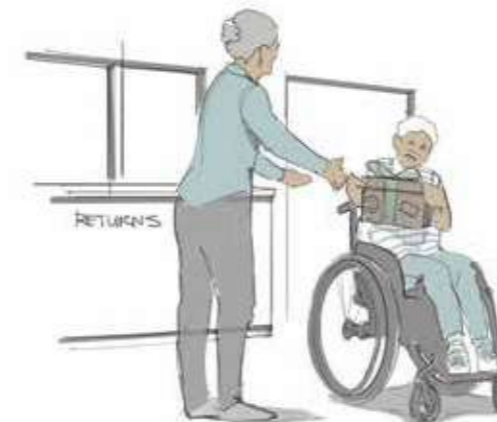


At a VWO, persons with disabilities are filling up the boxes with the content.



The box is delivered to Vincent at his home.

He enjoys the box very much and this changes his routine. He is able to try and discover new things on his own, with his family members or with volunteers.



Vincent then returns the box to the VWO for someone else to use it or to recycle it.

WHAT CAN YOU DO?



Thoughtful gestures make life easier and more fun for the whole community. Think about how you can contribute to making someone's day better.



#8 The path to fulfilling a dream

Self-Actualization

Everybody has dreams. For many persons with disabilities these dreams stay concealed. They have difficulties verbalising them. Dreams are the things on top of just managing life and sometimes the obstacles seem too huge to overcome. How can we help persons with disabilities reach their goals?

THE UNDERLYING OPPORTUNITY AREAS



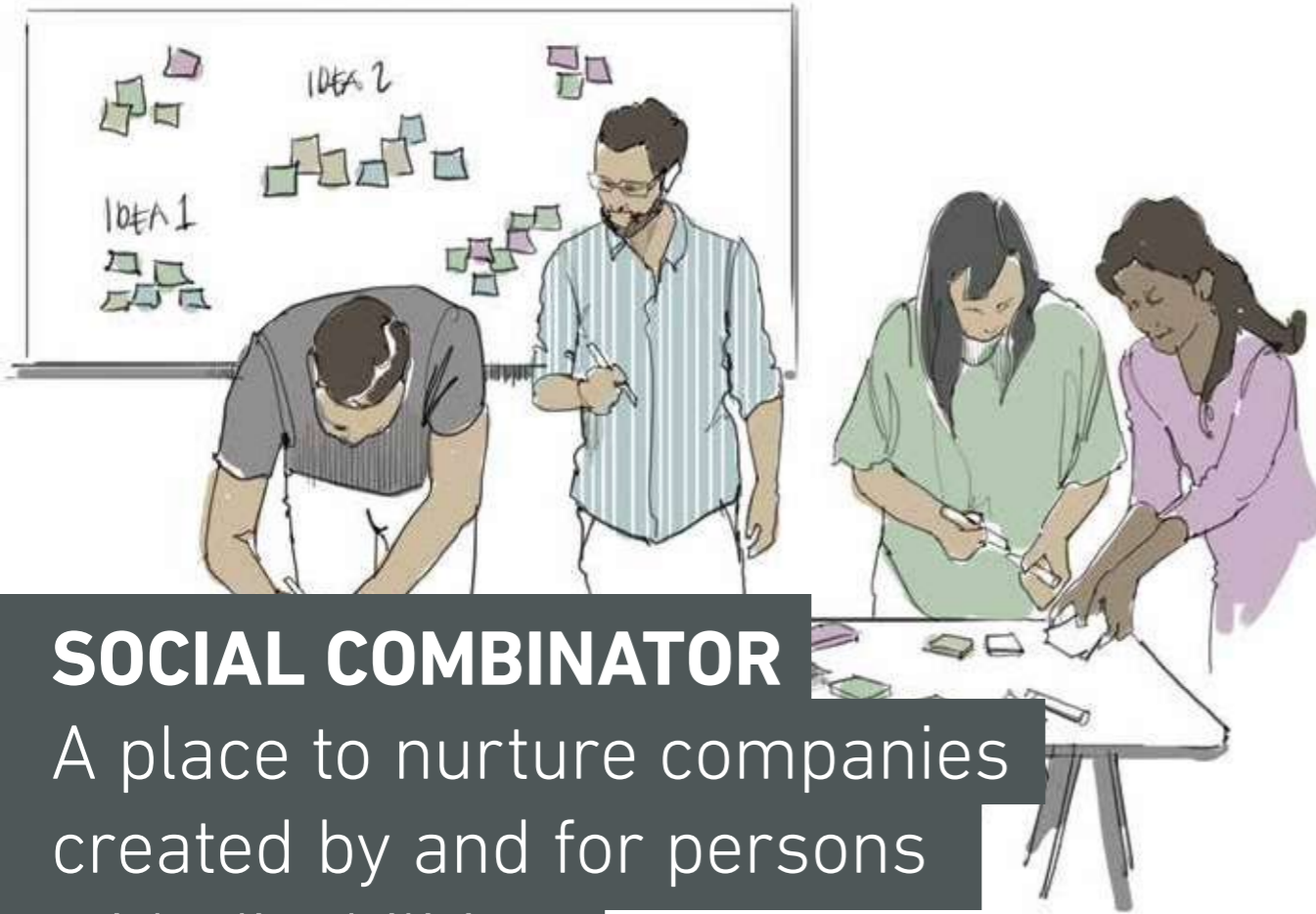
"I want to be a star so that I can support my family."

Woman with cerebral palsy

"I would like to open a bigger massage parlour and employ other persons with disabilities so that they can have a better life."

Man with visual impairment

CONCEPTS

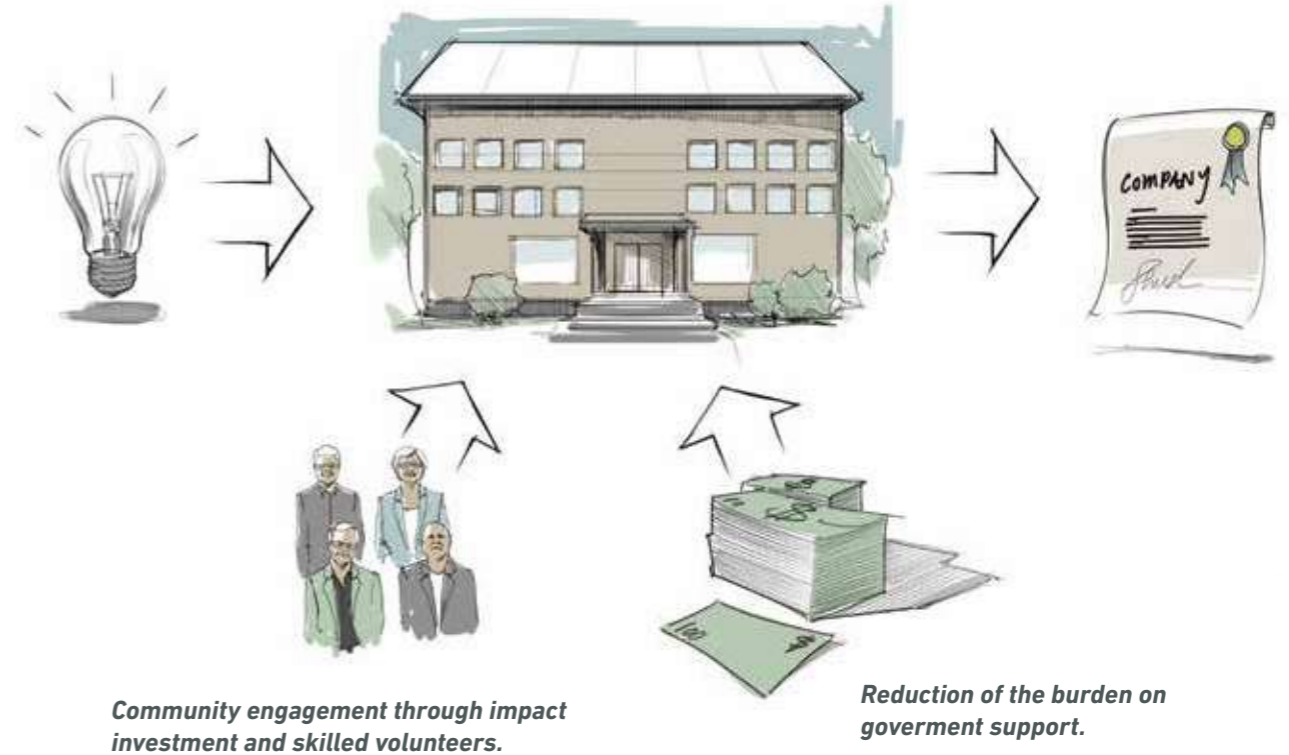


SOCIAL COMBINATOR

A place to nurture companies created by and for persons with disabilities

This project aims to create sustainable employment choices and opportunities for persons with disabilities. The many benefits for persons with disabilities include employment, choices for progression, fulfilling dreams, independence, and focus on abilities.

For entrepreneurs this project provides social enterprise funding, expertise and support while it also helps VWOs to find and create meaningful engagement and development for their clients.



Users
Social entrepreneurs
Persons with disabilities

THE PROJECT

The greatest wish of many persons with disabilities is to be able to work on something meaningful in the community. The Social Combinator is an incubator and accelerator programme to encourage and develop business ideas imagined by social entrepreneurs or persons with disabilities. They will be partnered with sheltered workshops who will provide the manpower and space for them to pilot their business ideas and in return provide employment to persons with disabilities and help them fulfill their dreams.

WHAT CAN YOU DO?



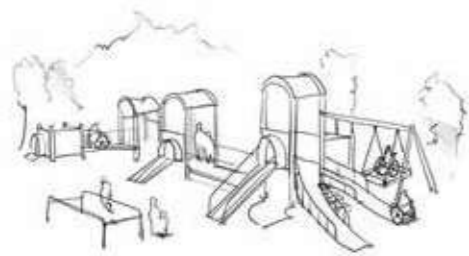
Take the dreams and wishes of persons with disabilities seriously.
Help them articulate their ideas and plan for implementation.

OTHER IDEAS



EXPLORUS

EXPLORUS is a mobile fun fair for everyone, where persons with disabilities can be exposed to new experiences, and persons without disabilities can build empathy through fun interactions. The space has different themes, such as a therapy cocoon where persons with autism spectrum disorder can feel comfortable and quiet, and a crafts zone for anyone to try new activities taught by persons with disabilities. In EXPLORUS, there is something for everyone.



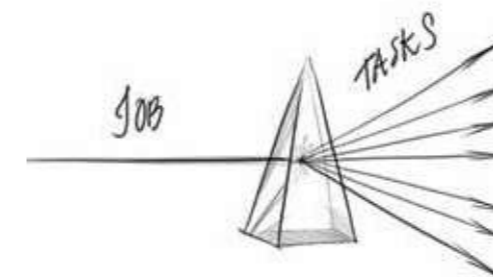
TAKE UP THE CHALLENGE

Changing the mindset of the general public on persons with disabilities by organising a series of events showcasing their abilities. People can take part in training courses led by paralympic athletes or compete against persons with disabilities in inclusive games, showing that it is about abilities and not disabilities.



LET'S JALAN JALAN

Going outside of one's home and having experiences in the community is a basic human need. Let's Jalan Jalan is a service that matches outing requests from persons with disabilities with pledges of time, money and in-kind services by corporations and the general public. Because of the personalised matching system, Let's Jalan Jalan makes sure that every user - from persons with disabilities to corporations - is provided with a valuable experience.



PRISM

Many persons with disabilities are capable of accomplishing jobs well and efficiently, they just need a little help along the way. PRISM breaks down volume-based jobs into smaller tasks so that persons with disabilities can focus on mastering one thing at a time. Because the tasks are matched to the capacity and capability of the employee, working will build not only financial stability but also self-esteem. With more persons with disabilities in the workforce, everyone from the employer to the caregiver and the community will benefit.

CONNECT ME

The understanding between persons with disabilities and wider society is lacking. Connect Me is an online enabler that brings persons with disabilities and the wider population together, creating a strong support group that is open to the whole community. The service provides a venue for people to pursue their interests and make new friends from the safety and comfort of home.



FUN IS NEAR YOU

There are a lot of activities available to the public in Singapore, but many persons with disabilities lack access to these resources. Fun is Near You! aims to bring exciting and educational activities closer to persons with disabilities by creating inclusive options in existing activities and programmes at community centres. It also creates opportunities for persons with disabilities to interact with people in their community by attending classes with them.





THE ROAD AHEAD

NEXT STEPS



The path to a more inclusive Singapore starts by better understanding the lives and daily challenges of persons with different disabilities. This project has taken a 360 degree perspective – considering a wide spectrum of factors from policies, ecosystems, infrastructures, volunteering in communities, existing programmes and activities – to develop relevant concepts and recommendations.

The result includes many great ideas and concepts that, if implemented, can improve quality of life for persons with disabilities. We have applied the human-centred design methodology in every phase of the project, from research to collaborative workshop sessions with over 140 participants.

We hope that, through this journey, we have increased awareness of the benefits of the human-centred design process among the multitude of stakeholders who can make a difference to the lives of persons with disabilities. We believe that consideration for the comfort and convenience of persons with disabilities should never be an afterthought and, through the human-centred design process, we can work together to develop a deeper understanding of the challenges faced by persons with disabilities and develop more inclusive services and experiences in Singapore.

At the same time, we believe that our project has shown how an inclusive approach to design can generate ideas that will enhance the quality of life for the general population. By creating designs that work for the full spectrum of human abilities,

we have developed new avenues for making life in Singapore better as a whole. Issues of isolation and loneliness affect all types of people. The Box of Joy concept is an innovative way to connect anyone who may be disconnected from society. The EZ Board was developed to help people with visual impairment connect with bus drivers, but the idea could easily apply to people who ride the bus at night and are not easily visible to drivers.

Many of the ideas developed through an inclusive approach could make Singapore a better place to live for everyone. We hope, therefore, that others will see inclusive design as more than an extra 'add-on' that only serves persons with disabilities. Instead, we believe that fostering an inclusive mindset among designers, public servants, and others who help shape the future of the city, can positively impact the lives of all Singaporeans.

Thank you to the 25 brave individuals, their caregivers and the hardworking people at VWOs who let us into their lives during our research. We also hope that the stories, insights and concepts we have shared in this publication have inspired you to be part of this great journey towards a more inclusive Singapore.

JOIN US ON THE PATH TO A MORE INCLUSIVE SINGAPORE!

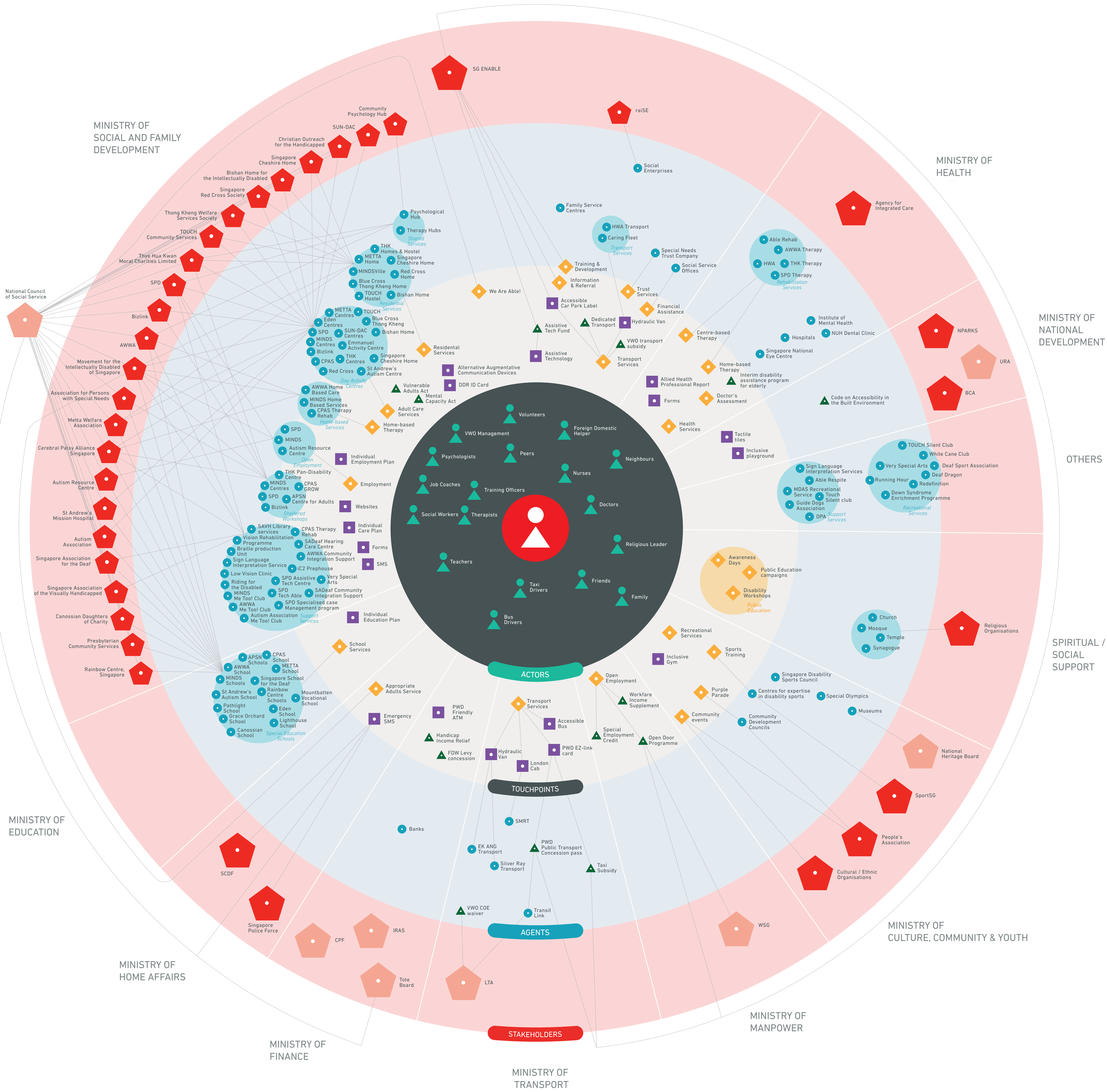


Social Services service ecology in Singapore

The service ecology map shows a holistic view of the environment we've researched and would like to innovate in.

By visualising the different stakeholders, agents, and touchpoints that affect a person with disability, we are able to see how each could potentially be related.

The service ecology map lets us investigate relationships that affect all or part of the service and helps people understand the personal relevance of services.



KEY

STAKEHOLDERS Create the promise or the service.

- Active stakeholders
- Non-active stakeholders

AGENTS Deliver the offering to users.

- Agents
- Schemes & Policies

TOUCHPOINTS & SERVICES Final touchpoints to grow engagement.

- Services
- Touchpoints

ACTORS Support users in internalising the value offering.

- Actors