Thunderbird School of Global Management
Arizona State University

The Way
Mobility Solutions:
Geo-Cane

TGM 586 Global Entrepreneurship

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Business Idea

The Geo-Cane was inspired by team member and CEO Nyasha's experience working in the field of Eye Health with the Ministry of Disability Affairs, Christian Blind Mission International and SightSavers in her home country of Zimbabwe. The Eye Health Initiative in Zimbabwe is a collaboration between the Government, and Eye Health partners to reduce avoidable visual impairment and blindness as well as ensure that people affected permanently by visual impairment have access to the support and opportunities they need. While working there, she noticed that not only were the walking canes visually impaired individuals used rudimentary, but there was a distinct lack of tactile markers throughout the city compared to the amount we see in the United States. These observations led to her brainstorming an idea for a better cane that leveraged current technological capabilities.

Why do we care?

We care about the Geo-Cane because it has a profound impact on society by enhancing the mobility and safety of people with visual impairments, who often struggle silently with their challenges. This innovative tool helps to break down barriers they face in daily life, offering them greater independence and confidence. Moreover, as it could benefit anyone, including our family members, its significance extends to providing peace of mind to those who care about the well-being of loved ones with disabilities.

About Geo-Cane

The Geo-Cane is a walking cane equipped with both motion and tactile sensors that can be connected via Bluetooth to GPS devices including smartphones. This product is a disruptor in the cane industry as no other product like this exists. Not only does the Geo-Cane help users find their way from place to place through GPS, but it interacts with the environment by providing alerts via vibration triggered by both tactile sensors and detected people and objects to assist in uninhibited motion. You can think of the Geo-Cane as a seeing-eye dog in cane form.

How does it work?

Rather than having a built-in GPS system, the cane connects to a smartphone's GPS application in order to help predict obstacles and potential barriers along the route as well as reacting in real-time to those that appear such as people and vehicles. The cameras in the Geo-Cane act very much like those on a Waymo self-driving car, constantly monitoring and assessing surroundings while the cane user is moving. The data collected by the cameras allows for vibration responses to both tactile markers as well as moving and stationary objects and people.

Value added in the Marketplace

Besides being a market disruptor--there is no other “smart cane” that combines all of the features--there is little competition with only two other technologically enhanced canes on the market: WeWalk Smart Cane and Phoenix Smart Cane attachment. The WeWalk Smart Cane retails for $650 and the Phoenix Smart Cane attachment for $165--we plan to offer our cane at the subsidized price of $65 with the sponsorship of the Zimbabwean government and international organizations such as the United Nations. This allows us to provide value to cane users with the best technology at an affordable price.

Problem that we are trying to solve

The problems that the Geo-Cane aims to solve are rooted in the daily challenges faced by visually impaired individuals. Firstly, there is a limited environmental awareness which increases the risk of injury from unnoticed obstacles. Secondly, visually impaired people often experience difficulty in navigating unfamiliar locations, making it hard to move around safely and confidently. The Geo-Cane addresses these issues by providing real-time object alerts and enhanced environmental awareness, thereby increasing safety and improving navigation and mobility for its users. This smart cane helps them navigate with more confidence, essentially serving as their eyes in motion.

Target Market & Potential Customers

Our target market is the People who are visually impaired in Zimbabwe. Zimbabwe has a population of 16.9 million people, and of these, 1.3 million people suffer from blindness and visual impairments. The most common causes of blindness in Zimbabwe are uncorrected refractive errors, cataracts, keratoconus and corneal opacity/ulceration. Zimbabwe only has 6 Eye Hospitals and 27 registered Ophthalmologists to care for the visually impaired population. There is clearly a huge demand for the product which will enable more independent mobility, especially for the children of school going age.

Marketing of the product is going to be done through various organizations that support people with disabilities. Some specific organizations include the Disability Rehabilitation Centers that are in all 10 provinces of Zimbabwe. The 2 Schools for the Blind which are in Masvingo and Harare, and the National Social Welfare Department. These organizations have direct access to the target audience in each respective area. We are also going to be marketing through the various Non Profit Organizations which focus on programs that address the challenges related to eye health such as Christian Blind Mission, SightSavers, Zimbabwe Council for the Blind, Jairos Jiri Association and HelpAge Zimbabwe. These are trusted organizations within the disability community and their endorsement will lend significant credibility to the product, reassuring potential users of its value and reliability.

Sales Strategy

We are going to start off by organizing educational demonstrations for both the staff and clients of these organizations to showcase the features of the product. We are also going to provide these organizations with the marketing materials to be included in their outreach programs to raise awareness of this new product. We are aiming for long term partnerships with the organizations that we are selling the product to, and we can do this by providing regular updates to the product and ongoing training for new staff or clients. We are also going to create a feedback channel where the organizations can provide regular feedback on the performance of the cane in case it needs any improvements.

The Technology Behind Geo-Cane

Our plan to carry out the research and development is divided into following 8 steps:

1. Explore camera technologies suitable to capture real-time surroundings:
Research and analyze various camera technologies, such as high-definition cameras or infrared cameras, to determine which ones are best suited for capturing real-time surroundings effectively. Consider factors like resolution, frame rate, low-light performance, and integration capabilities with other sensors.

2. Investigate tactile sensor technology:
Explore different types of tactile sensors, including pressure sensors, proximity sensors, and vibration sensors, to understand their functionality and potential applications in the context of a white cane for visually impaired individuals. Evaluate their accuracy, sensitivity, durability, and compatibility with other integrated technologies.

3. Conduct user research and usability testing:
Engage with target users, such as visually impaired individuals and mobility specialists, to gather insights into their needs, preferences, and pain points related to mobility aids. Conduct usability testing sessions to evaluate the effectiveness, ease of use, and user satisfaction with the integrated GPS, camera, and tactile sensors in the white cane.

4. Test and optimize the durability and functionality of the white cane with integrated GPS, camera, and tactile sensors:
Conduct rigorous testing to assess the durability, reliability, and performance of the white cane under various environmental conditions and usage scenarios. Optimize the integration of GPS for accurate navigation, camera for real-time visual information, and tactile sensors for obstacle detection and feedback.

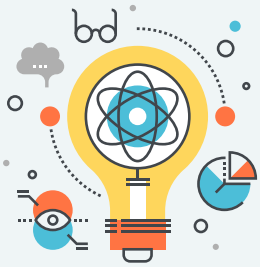
The Technology Behind Geo-Cane

5. Study the regulatory requirements and standards for assistive devices in Zimbabwe to ensure compliance and certification:
Research and understand the regulatory landscape and standards applicable to assistive devices, including white canes with advanced technologies, in Zimbabwe. Ensure that the product complies with safety, accessibility, and quality standards to obtain necessary certifications and approvals.

6. Evaluate potential partnerships with local rehabilitation centers:
Identify and assess opportunities for collaboration with local rehabilitation centers, NGOs, and organizations working with visually impaired individuals. Explore partnerships for distribution, training, and support services to enhance the accessibility and adoption of the white cane technology.

7. Assess market demand and pricing strategies:
Conduct market research to evaluate the demand for advanced white cane technology among visually impaired individuals, caregivers, and healthcare providers in Zimbabwe. Develop pricing strategies that balance affordability with the value proposition of the integrated GPS, camera, and tactile sensors.

8. Continuously innovate and iterate based on user feedback and technological advancements:
Embrace a culture of continuous improvement by gathering feedback from users, analyzing market trends, and monitoring technological advancements in the field of assistive technologies. Iterate on the design, features, and functionality of the white cane to address evolving user needs and stay competitive in the market.



Partners

The Ministry of Disability Affairs: The Ministry of Disability Affairs could be an excellent partner for The Way Mobility Solutions. By working together, the Ministry can offer detailed knowledge about the needs and problems that people with visual impairments face in Zimbabwe. They can also provide access to government funds and programs that help develop technology for disabled people. Moreover, the Ministry can offer advice on legal requirements and help in meeting standards for assistive devices. This partnership can also help promote the white cane technology to a broader audience through awareness campaigns.

Central Bank: Partnering with the Central Bank could provide significant financial support for The Way Mobility Solutions. The bank can offer funding through loans, grants, or investment programs which would be crucial for researching, developing, and marketing new products. Additionally, the bank's expertise in financial management and business planning could help ensure the project's long-term success. Collaborating on initiatives for economic inclusion of disabled individuals can also encourage the use of innovative solutions like the advanced white cane. Moreover, programs aimed at improving financial literacy among visually impaired people could be developed.

Non-Profit Organizations: Non-Profit Organizations specializing in disability rights and accessibility could be valuable partners for The Way Mobility Solutions. These organizations can provide access to networks that are beneficial for promoting and distributing the white cane. They also offer expertise in engaging with the community and educating them about the new technology. Non-profits can assist in raising funds through various means like grants, crowdfunding, and partnerships with corporations. Collaborating with these organizations could also help in evaluating the social impact of the white cane, ensuring it effectively enhances mobility and quality of life for visually impaired individuals.

Resources

Cane Producer Companies in Zimbabwe for Individual Use: Partnering with local cane producer companies in Zimbabwe could be very beneficial for The Way Mobility Solutions. These companies can supply high-quality canes that are sturdy and reliable, which are essential for integrating technologies such as GPS, cameras, and tactile sensors. Working with these companies ensures that the canes meet the particular needs of visually impaired individuals. Moreover, this collaboration would guarantee a consistent supply of the base product necessary for technological enhancements, tailored specifically for individual use.

Canes Provided by Ministry of Disability Affairs for Advocacy and Awareness Campaigns: Using canes provided by the Ministry of Disability Affairs for advocacy and awareness campaigns can significantly enhance the visibility and perceived value of advanced white canes. These campaigns can demonstrate the practical benefits of integrating modern technologies into traditional canes. Such enhanced canes can serve as powerful examples, promoting their adoption among visually impaired people and increasing general awareness in the broader community. This partnership also provides an official endorsement, which can boost trust and acceptance of the product.

Canes Provided by Non-Profit Organizations for Community Awareness of Cane Benefits: Collaborating with non-profit organizations to use canes in community awareness campaigns is another strategy that can help educate the public about the importance of white canes. These campaigns can emphasize how advanced features like new technologies enable greater independence and inclusion for visually impaired people. By showcasing innovative enhancements, these efforts also foster a broader understanding and support for assistive technologies. Non-profits can help highlight the cane's benefits and innovations, promoting a supportive environment for adopting such technologies.

Pricing Strategy

Our pricing strategy for the Geo-Cane is highly competitive and aimed at making cutting-edge technology accessible to a broader audience. By setting the price at $65, subsidized through partnerships with the Zimbabwean government and international organizations like the United Nations, we significantly undercut the costs of existing smart canes such as the WeWalk Smart Cane and the Phoenix Smart Cane attachment. This approach not only positions the Geo-Cane as a market disruptor by offering superior features at a fraction of the cost of competitors but also aligns with a social mission to enhance mobility and safety for visually impaired individuals affordably.

Please note that the product will also be manufactured in Zimbabwe, which is a country that has a different economy than the US, both in regards to raw materials and labor cost. The local currency is also very weak compared to the US Dollar: 100 US dollar is equal to 36,190 ZWD; therefore it will be easier for us to manufacture the product there at low cost.

The WeWalk Smart Cane retails for $650 and the Phoenix Smart Cane attachment for $165, are the only competitors we have, however they are based in the US. Therefore our product will be disruptive in the zimbabwean market.

Investment, Break Even / Unit Economics

Monthly Break Even Analysis

Selling Price per unit after being subsidized by the government: $65

Variable Costs : $15 per unit

Labor

Materials for production

Rent of the facility

Other Production Cost

Contribution Margin: $50 per unit

Fixed costs: $50,000

Equipment Depreciation: $10,000

Marketing: $ 7,000

Legal fees & Patent: $5,000

Salaries: $12,000

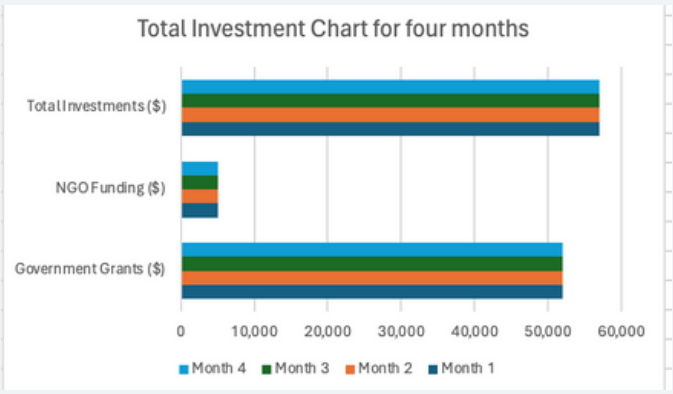
R&D: $13,000 after being subsidized

Rental : $3,000

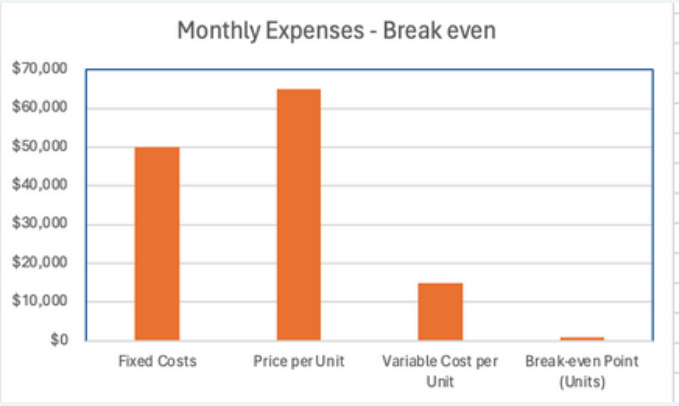
Break-even Point Units per month: 1,000 units

Burn rate with these fixed costs and no sell: $50,000

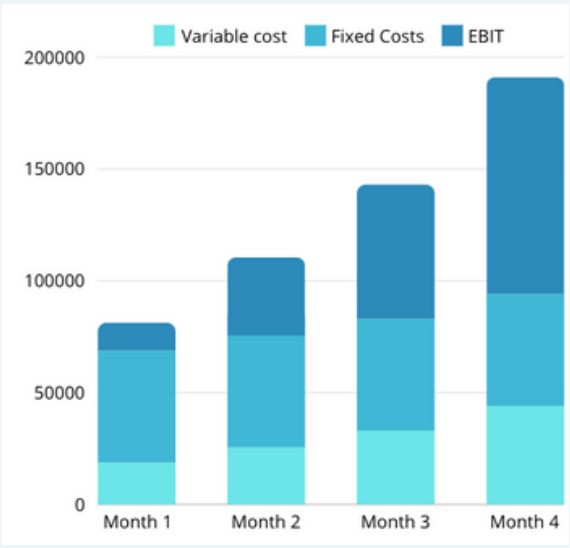
Customer Acquisition cost: $7



These investments stated above, are tractions that we secured. They will provide a steady stream of financial support from both governmental and non-governmental organizations, ensuring our project has the funding necessary to develop and expand over the initial critical months. This support will not only help cover the R&D and operational costs but also ensure that the product remains affordable for the target market.



Financials Projections for First Four (4) Months



	Month 1	Month 2	Month 3	Month 4
Unit Sales	1,250.00	1,700.00	2,200.00	2,940.00
Sales	$ 81,250.00	$ 110,500.00	$ 143,000.00	$ 191,100.00
Variable costs	$ 18,750.00	$ 25,500.00	$ 33,000.00	$ 44,100.00
Contribution Margin	$ 62,500.00	$ 85,000.00	$ 110,000.00	$ 147,000.00
Fixed Cost	$ 50,000.00	$ 50,000.00	$ 50,000.00	$ 50,000.00
EBIT	$ 12,500.00	$ 35,000.00	$ 60,000.00	$ 97,000.00
EBIT Growth rate	0%	180%	71%	62%

Every month, our startup has big costs, about $87,000, but with help from the government for our research and development (R&D) work, these costs go down to $50,000. This government help gives us $37,000 each month, making it possible for us to sell our product, the Geo-Cane, at a lower price that people in Zimbabwe can afford. Our plan isn't really about making a profit; it's more about helping as many people as possible.

The $50,000 we now spend each month includes $13,000 for research and development to keep making our technology better. Other costs are $10,000 for equipment, $7,000 for marketing, $5,000 for legal stuff and patents, $12,000 for salaries, and $3,000 for renting our space. To make sure we can cover all these costs every month, we need to sell at least 1,000 canes.

With the government's help, we can sell each Geo-Cane for just $65. This price is low enough for our customers and covers our costs of making and selling the canes. We're expecting to sell more and more canes starting with 1,250 in the first month and maybe up to 2,940 by the fourth month. If things keep going well, we might sell 20-30% more canes in the second year. This growth is because our canes are new and different, we've done our homework on the market, and we use government money smartly to keep the price low.

INITIAL BUSINESS MODEL CANVAS

Key Partners

- The Ministry of Disability Affairs
- Central Bank
- Non-Profit Organizations

Key Activities

- Object detection and alerts
- Vibration response to tactile sensors
- GPS directions through a Bluetooth connection

Key Resources

The Ministry of Disability Affairs

Value Propositions

- Object detection and alerts
- Vibration response to tactile sensors
- GPS directions through Bluetooth connection

Customer Relationships

Visually impaired people

Channels

- NGOs
- Government agencies
- Non-profits
- Shelters

Customer Segments

Visually Impaired people

Cost Structure

- Research & Development
- Production Costs (materials, labor)
- Marketing & Sales
- Legal & Patent Fees
- Equipment & Facility Costs

Revenue Streams

- Product Sales (Geo-Canes)
- Government Subsidies/Grants
- Non-Profit Partnerships

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POST BUSINESS MODEL CANVAS

Key Partners

- The Ministry of Disability Affairs
- Central Bank
- Non-Profit Organizations

Key Activities

- Object detection and alerts
- Vibration response to tactile sensors
- GPS directions through a Bluetooth connection
- Cane Production / Enhancement

Key Resources

- Cane Producing Companies
- The Ministry of Disability Affairs
- Non-Profit Organizations
- Expertise in enhancing canes

Value Propositions

- Object detection and alerts
- Vibration response to tactile sensors
- GPS directions through a Bluetooth connection
- Enhanced mobility and navigation

Customer Relationships

- Visually impaired people
- Disability rehabilitation centers
- Schools for the blind

Channels

- Direct Sales (Online/Retail)
- Partnerships with Rehab Centers
- Government Distribution Programs
- Non-Profit Organization Networks

Customer Segments

- Visually Impaired people
- Institutions serving the visually impaired

Cost Structure

- Research & Development
- Production Costs (materials, labor)
- Marketing & Sales
- Legal & Patent Fees
- Equipment & Facility Costs

Revenue Streams

- Product Sales (Geo-Canes)
- Government Subsidies/Grants
- Non-Profit Partnerships
- Institutional Bulk Orders

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Interviews

This is an interview with Tendai from Zimbabwe regarding the Geo-Cane product:

Interview 1:

Simran: Good morning, could you please introduce yourself?

Tendai: My name is Tendai Moyo. I'm 29 years old and live in Harare, Zimbabwe. I have been blind since birth due to congenital glaucoma.

Simran: Thank you Tendai. Can you describe your experience using a traditional white cane for mobility?

Tendai: While the white cane has been my constant companion, it has limitations. It only detects obstacles at ground level, so I've had many instances of bumping into protruding objects or overhangs. Navigating unfamiliar areas is also extremely daunting.

Simran: I see. Let me tell you about the Geo-Cane, which combines a white cane with object detection sensors, vibration feedback, and GPS navigation....

Tendai: That's very fascinating! The object detection capability could drastically reduce injuries for me. And the GPS would make it so much easier to find my way around the city independently.

Simran: What other impacts could a product like this have on your daily life?

Tendai: It could open up more employment opportunities if I can navigate to and from workplaces more easily. The independence and confidence it provides would be invaluable. I really hope affordable solutions like this become available in Zimbabwe soon.

Simran: On another note, what is the price range that you would be able to afford for such a cane?

Interviewee: Around $50 - $60

Simran: Thank you, that pricing feedback is very helpful. I appreciate you taking the time to share your perspectives. This kind of input is invaluable for developing assistive technologies that truly meet the needs of the visually impaired community.

Interviews

This is an interview conversation with Rumbidzai from Zimbabwe regarding the Geo-Cane product:

Interview 2:

Simran: Hello, can you please introduce yourself?

Rumbidzai: Hi, my name is Rumbidzai Chihuri. I'm 42 years old living in Bulawayo, Zimbabwe. I started losing my vision gradually due to a degenerative eye condition about 10 years ago.

Simran: I'm sure adjusting to visual impairment has been difficult. How has it impacted your mobility?

Rumbidzai: It has definitely been challenging. Using a plain white cane, I often feel disoriented and fearful, especially in crowded areas. I've had too many close calls with traffic and obstacles that I couldn't detect in time.

Simran: That must be very difficult. Let me tell you about the Geo-Cane, which combines a white cane with embedded technology...(explains object detection, vibration feedback, GPS)

Rumbidzai: My goodness, that's an amazing idea! The object detection could truly be life-saving in alerting me to dangers. And the GPS would prevent me from getting lost so easily. I currently rely heavily on family members to guide me.

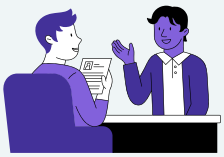
Simran: How else could a product like this improve your daily experiences?

Rumbidzai: With that enhanced awareness and navigation ability, I could be much more independent and confident. I might even be able to keep working, which was becoming difficult. This gives me hope for better mobility in the future.

Simran: Thank you for sharing your perspectives. This feedback will definitely help refine the Geo-Cane.

Interviews

This is an interview conversation with Amelia and Jamal from Massachusetts regarding the Geo-Cane product:



Simran: Thank you for joining us today. Could you please state your name and tell us a bit about your experience as a visually impaired individual?

Amelia: My name is Amelia Johnson. I lost my sight due to an accident a few years ago. Getting around with just a basic white cane has been quite challenging, especially in unfamiliar environments.

Jamal: I'm Jamal Ahmed. I was born with severe visual impairment. While the white cane helps, I often feel unsafe due to limited awareness of my surroundings beyond the cane's reach.

Simran: I understand. Now, let me tell you about a new product called the Geo-Cane that aims to provide enhanced mobility for the visually impaired....(describes key features like object detection, vibration feedback, GPS navigation)

Amelia: That sounds really promising! The object detection could prevent me from bumping into obstacles, and the GPS would be so helpful when I'm trying to get around new places.

Jamal: I like the vibration feedback idea. Subtle cues about my environment would make me feel much more confident and safe while walking with the cane.

Simran: What are your thoughts on the potential impact of such a product on your daily mobility and independence?

Amelia: A cane with these smart features could be life-changing. I currently depend a lot on family members when going somewhere new. This would allow me to regain some independence.

Jamal: Absolutely. I'm always worried about safety, so having that extra awareness would put my mind at ease. I could see the Geo-Cane really improving my quality of life.

Simran: Are there any other features or improvements you'd suggest for a product like this?

Jamal: Maybe voice guidance in addition to vibrations? That could make it even more user-friendly.

Amelia: Some way to detect elevated surfaces would be helpful too. But overall, I think this is an excellent concept.

Simran: Thank you both for your valuable feedback. It will really help in further developing and improving the Geo-Cane.

Interviews

This is an interview conversation with Dr Christine Peta- Deputy Director of Disability Affairs- Zimbabwe:

Nyasha: How long have you been using a cane?

Dr. Peta: I started using a cane when I was 22 years Old, in my second year of university.

Nyasha: Are you completely independent with your cane?

Dr. Peta: No, I have an aide who assists me especially when I am going to public gatherings or attending offsite meetings. But at home and in the office, I move around independently with my cane because I am familiar with the surroundings.

Nyasha: What do you think of the idea of a cane that is fitted with GPS to provide directions, and has sensors to detect nearby objects?

Dr. Peta: That would be a good idea, not just for me, but for other visually impaired people especially those who do not have vehicles, and rely on public transport, and walking within the CDB. There are so many street vendors selling wares on the pavements, and having a camera that detects these objects will make their mobility much smoother. What would be even more helpful is if there was a way the sensors could notify the user when the traffic light is red or green, so that they know whether it is safe to move or not, because without this, they will still need an aide when moving in public.

Nyasha: What other features do you think would be important on the cane to provide more independent mobility?

Dr. Peta: The directions from the GPS would have to be in available in the local languages as well, especially if the cane is being used by the more elderly people.

Nyasha: Do you think the cane will be well received within the visually impaired community?

An. It will be, but it will take a lot of training for the users to be completely comfortable to move without an aide, relying on the cane alone. The older generation might be a bit hesitant, especially because of the language of the GPS, Also the younger age group, especially school going age, I would recommend they use this only within their schools and homes and continue to have an aide if they are moving in public. This is for their own safety since we have a high rate of child abductions. It also all depends on the affordability of the product. If it is within a favorable price range, it will be well received.

Nyasha: What price range do you think will be affordable?

Dr. Peta: Not more than $70.

Interviews

This is an interview conversation with Rudo Tomu- .Partially Blind from Zimbabwe:

Interview 5:

Nyasha: Do you use a white cane ?

Rudo: No, I am partially blind, so I do not use a cane. I have an aide when I go into public spaces.

Nyasha: If you had to use a White cane, do you think having it fitted with GPS and sensors will allow you to move more independently.

Rudo: Yes, in some areas, I would be able to move more independently, but definitely not in the CDB, its too loud and crowded.

Nyasha: What other special features do you think would be important to include on the cane to make mobility more easier.

Rudo: If there was a way the GPS could direct me through less crowded areas, because even if It has a camera and sensors, I may still have some difficulty moving totally independent in crowded areas because there are some people who still do not respect white cane users, causing movement difficulties for them. There also has to be some sort of back up in case there is a network problem, and the GPS suddenly loses signal leaving me unaided. Eg, it should be linked to another device with a trusted person to let thee know if the signal on the cane has dropped, so they know to contact me.

Nyasha: What is the price range that you are able to afford for the cane,?

Rudo: Between $50 - $60

Interviews

This is an interview conversation with Natasha Washaya – Partially Blind.
(consent was given by parent to conduct interview)

Interview 6:

Nyasha: How old are you, and what level of school?

Natasha: I am 15 years old and I am in Form 3. (grade 11)

Nyasha: How long have you been using a cane?

Natasha: Since I was 10 years old.

Nyasha: What are some of the challenges you face when moving around?

Natasha: I have an aide who comes with me to school, and she helps me move between classes. Only when I am at home, that's when I move without my aide. Its only challenging when my younger brothers leave things on the floor and do not pick up after themselves , sometimes I trip or step on their toys.

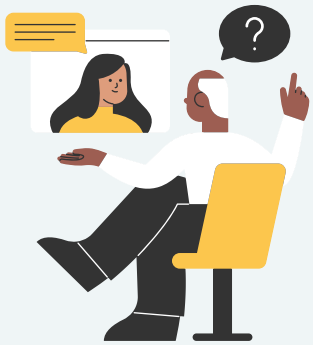
Nyasha: Do you think a cane fitted with GPS and object detection will help you move more independently.

Natasha: I would like to learn how to use it, although I would not be allowed to move alone in public with it. At school it will help defintly with the nearby object detection.

Nyasha: What support would you need with this type of cane?

Natasha: Just to be taught how to use the navigation system, since I have never used it before.

Interviews



This interview involves a discussion with Ngoni Motwani, a Zimbabwean woman whose father is visually impaired and uses a cane. Ngoni expresses a keen interest in advanced cane technologies that could enhance her father's mobility and safety.

Interview 7:

Jose: What features of a cane are or would be important to you or your father?

Ngoni Motwani: Durability and ease of use are crucial. It needs to be lightweight yet sturdy enough to withstand daily use. A comfortable handle is also important, and it should be able to provide accurate feedback about the environment.

Jose: Would you like a cane that vibrated in response to tactile sensors, like when the cane touches something?

Ngoni Motwani: Yes, that would be very useful. It would help my father detect obstacles directly in his path and navigate around them more safely.

Jose: Would you like a cane that connected to your phone's GPS via Bluetooth to give directions through headphones?

Ngoni Motwani: Yes, that sounds excellent. It would help him navigate to different places independently without having to rely too much on others or struggle with directions.

Jose: How much would you be willing to pay for a product like the one described?

Ngoni Motwani: Considering the benefits it would provide, I think a price around $50 to $60 would be reasonable. It's important that it's affordable, so it's accessible to many.

Jose: Do you have any other thoughts or suggestions about the proposed product?

Ngoni Motwani: Sure. My main concern is my father's safety and independence. Each feature I endorsed adds layers of safety and usability, helping him navigate his environment more effectively. The price point is based on what I believe is fair while still reflecting the value of the technology.

Interviews

This interview is with Farai Moyo, a government official in Zimbabwe who supports the adoption of the Geo-Cane project for its potential to enhance mobility and safety for visually impaired citizens through government funding and distribution.

Jose: Hello Farai, thank you for joining me today. To start, do you see value in advanced cane technologies for visually impaired citizens?

Farai Moyo: Hello Jose. Absolutely, I see significant value in integrating advanced technologies into mobility aids. These tools can drastically improve the quality of life for our visually impaired citizens by enhancing their independence and safety.

Jose: What price point would be feasible for government procurement of such a device?

Farai Moyo: For government procurement, we need to balance cost with functionality. A price point that allows mass distribution without compromising quality would be ideal, perhaps through subsidies to keep it under $70.

Jose: Can you elaborate on why the government should invest in this technology?

Farai Moyo: Investing in such technology promotes inclusivity and independence among visually impaired citizens. It's not only a health benefit but also a move towards greater societal integration. By providing such tools, we also encourage local innovation and technology development.

Jose: Do you have any suggestions for improving the proposed product before government implementation?

Farai Moyo: One suggestion would be to ensure the product's robustness through environmental testing to handle our diverse climates. Also, incorporating feedback mechanisms for users to suggest improvements would be beneficial.

Jose: Any reservations or concerns about the project?

Farai Moyo: My main concern would be ensuring the device's long-term durability and the availability of local technical support for maintenance. Ensuring these can help in the project's longevity and success.

Jose: Thank you, Farai, for your insights and support for the project.

Interviews

In this interview, I speak with a person who, despite having no personal interest or stake in the Geo-Cane project, acknowledges that the concept of the technologically advanced cane is nice and potentially beneficial for others.

Interview 9:

Kudzai Chirwa: Hello Jose. No, I'm not a cane user and I don't directly need one, but I understand why such a device could be important for others.

Jose: What features of a cane do you think are or would be important?

Kudzai Chirwa: Well, even though I'm not a user, I'd say durability, ease of use, and reliability seem essential. These features would be important for someone who relies on a cane for daily mobility.

Jose: Would you see the value in a cane that vibrated in response to tactile sensors, where the cane touches something?

Kudzai Chirwa: It sounds like a practical feature for users who need to navigate more safely. It could help them avoid obstacles more effectively.

Jose: What about a cane that connected to a smartphone's GPS via Bluetooth to provide navigation directions through headphones?

Kudzai Chirwa: That's quite innovative. It would probably help users feel more confident moving around unfamiliar areas.

Kudzai Chirwa: Though I'm not the market for it, I think keeping it affordable is key. Maybe around $60? It should be accessible to those who really need it.

Jose: Any other thoughts or suggestions about the proposed product?

Kudzai Chirwa: Maybe ensure that it's also aesthetically pleasing. Just because it's functional doesn't mean it can't be stylish.

Jose: Any doubts or questions about it?

Kudzai Chirwa: How secure would the connection be between the cane and a smartphone? It's important to ensure that users' data is safe.

Jose: Thank you very much, Kudzai, for your perspectives.

Interviews

This interview features Tafadzwa Marenga, a father discussing the potential benefits of an advanced, technology-enhanced cane that could significantly improve his visually impaired child's mobility and independence.

Interview 10:

Jose: What features of a cane are most important to you and your child?

Tafadzwa Marenga: The cane needs to be lightweight, easy to handle, and durable. For my child's safety, features that enhance sensory feedback about the environment are crucial.

Jose: Would you appreciate a cane that vibrated in response to tactile sensors, activating when the cane touches something?

Tafadzwa Marenga: Absolutely, tactile feedback would be invaluable. It would give my child more confidence by alerting them to immediate obstacles.

Jose: How about a cane that also vibrated in response to detecting objects that are not in direct contact?

Tafadzwa Marenga: That would be a significant enhancement. It could prevent accidents by alerting my child to obstacles before they even come into contact with them.

Jose: What do you think about a cane that connects to a smartphone's GPS via Bluetooth to give auditory directions through headphones?

Tafadzwa Marenga: That sounds fantastic. It would help my child navigate more independently and me have control on it as well without being next to him, especially in unfamiliar areas.

Jose: Any additional thoughts or suggestions about the proposed cane?

Tafadzwa Marenga: It would be great if it were customizable in terms of size and grip to accommodate children as they grow. Also, making sure it's robust enough to handle the wear and tear from a child's usage would be crucial.

Jose: Do you have any doubts or questions about this product?

Tafadzwa Marenga: I'd like to know more about the battery life and how the cane will be serviced or repaired if needed. Reliability is key for us.

Jose: Thank you very much, Tafadzwa, for sharing your thoughts and insights.

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