I-CEE INC.

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Berk Korkut
Ceren Hasançebi

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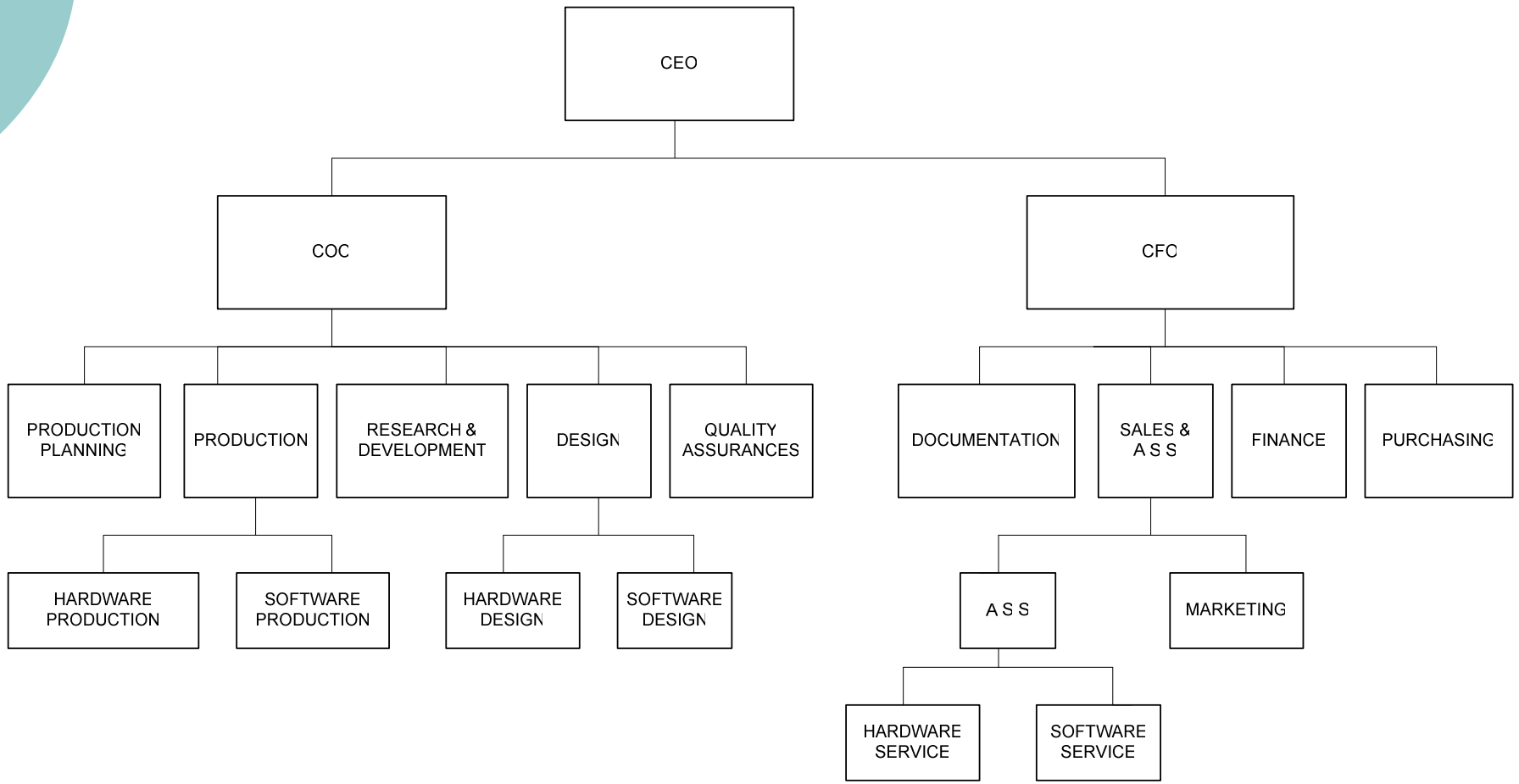
About the Company

- Founded in September 2007 with issued capital of $131,000.00
- Founders of the company:
  - İlker D. Kanatlı (CEO & head of Production Dept.)
  - Oğuzhan A. Bulut (CFO & head of Production Planning Dept.)
  - Esra Dokuzoğlu (COO & head of Quality & Assurances Dept.)
  - Berk Korkut (head of R&D Dept.)
  - Ekin Kartal (head of Finance& Accounting Dept.)
  - Ceren Hasançebi (head of Design Dept.)

ORGANIZATION OF THE COMPANY

I – CEE
ORGANIZATION CHART



About the Company

Vision:

- I-CEE primarily aims to help the blind to move about independently,
- I-CEE values human psychology: VIBRO-I is specially designed to provide a new vision experience without the cane for the blind.

Mission:

- I-CEE aims to maximize the costumer satisfaction by providing high quality and low prices,
- aims to fulfil responsibilities to humanity and environment.

About the Product

VIBRO-I:

Seeing with vibration:

- VIBRO-I increases travel safety and reduces stress, which instills confidence.
- VIBRO-I gives the recognition, distance and direction. It gives to visually impaired independence!

About the Product

- VIBRO-I aims to rehabilitate the psychology of the visually impaired by eliminating the need for the cane.
- Instead, VIBRO-I only provides a portable accessory to be attached over clothes (which includes the heart of the product: the camera or the sensors serving as an eye) and wrist bands.

Before VIBRO-I

With VIBRO-I

About the Product

Ergonomics and user comfort has major importance for VIBRO-I:

- major component of the product (except the vibration devices to be worn around wrists) is encapsulated in a special coverage:
  - including a generic attachment unit allowing attachment over any part of the clothing
  - including also an attachment unit allowing attachment over the cane for the ones feeling uncomfortable with absence of the cane

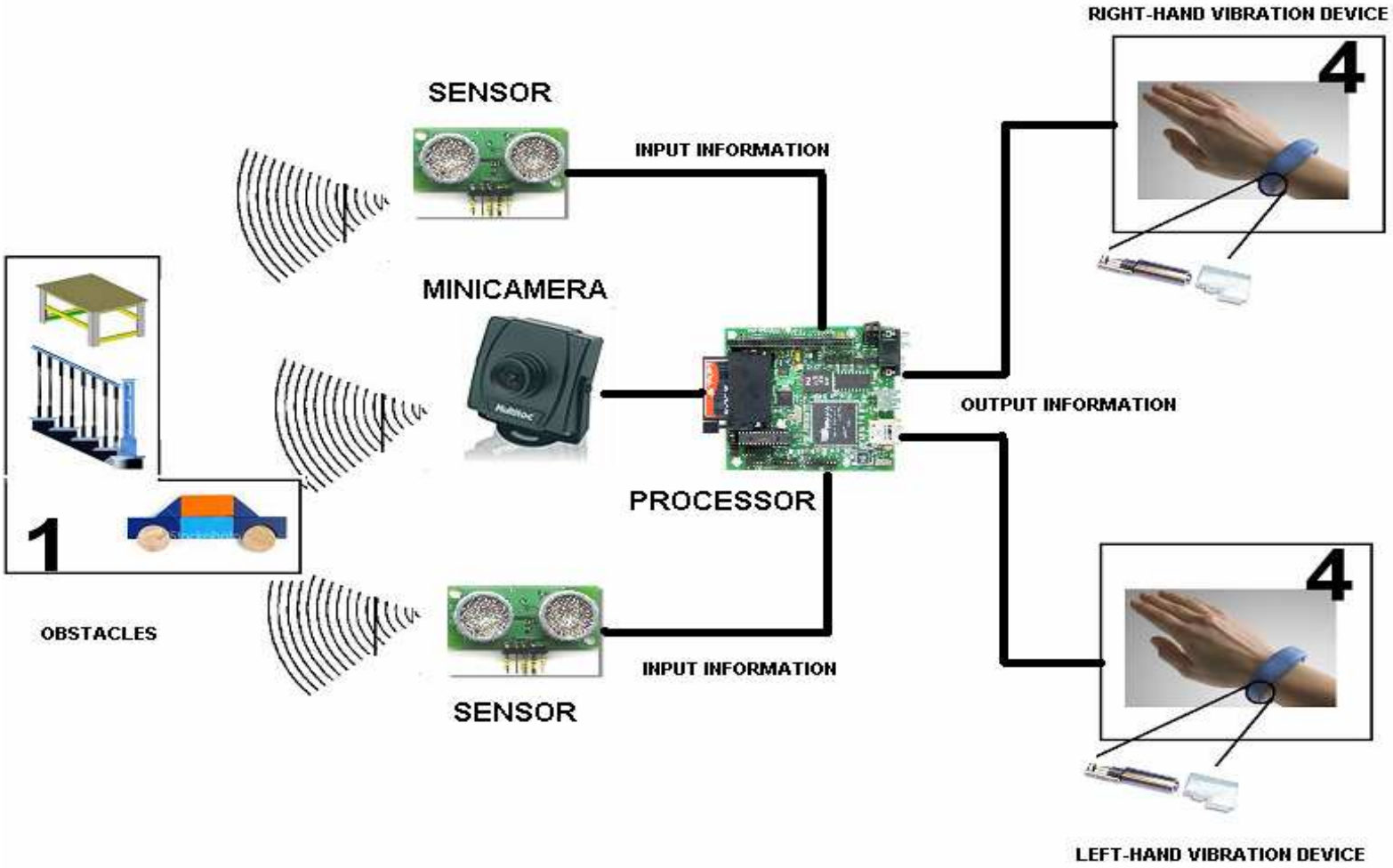
About the Product

Improvement is possible:

- In case of an implementation using cameras instead of sensors, two cameras will detect certain objects by object detection
- and instead of vibration devices, there will be miniature earphones which will tell the user which type of object is detected and how far

About the Product

How does VIBRO-I work?



PRODUCT DESCRIPTION

Hardware of the System:

- Process of Camera:
  - will be used for identifying the surrounding objects using object detection,
  - will capture the frames and send them to the processor board.

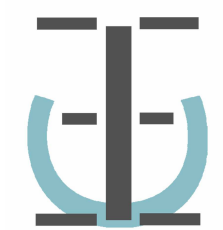
- Process of Sensor:
  - will detect objects in a specific range, which are undetectable by the image processing capability of the camera,
  - will inform the user from the distances of the objects by sending denser signals to vibrator devices when closer to the object.

PRODUCT DESCRIPTION

- Process of Processor Board:
  - a Linux board in order to process the image data received from the camera,
  - image processing code will be saved on SD card that can be plugged into the Linux board,
  - processed information on the board will be sent to correct vibration device.

PRODUCT DESCRIPTION

- Process of Vibration Device:
  - Left-Hand Wrist-Band:
    - 3 vibration devices will be located:
    - One at the front
    - One at the right
    - One at the left
    - Each vibration device will vibrate according to the direction of the obstacle.



PRODUCT DESCRIPTION

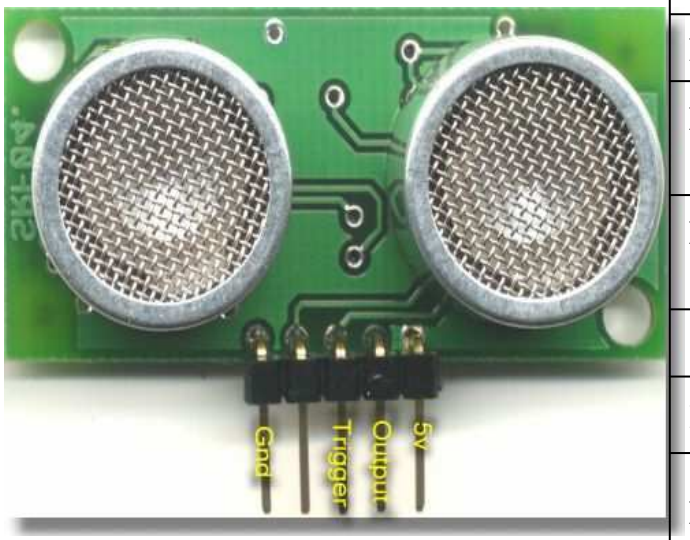
- Process of Vibration Device:
  - Right-Hand Wrist-Band:
    - 4 vibration devices will be located:
    - One at the front
    - One at the back
    - One at the left
    - One at the right
    - Each vibration device will be objected to vibrate for each pre-defined different object.
    - Those pre-defined objects planned to be implemented in object detection software are: door, human body, stairs and car. (in future development more to be defined)

PRODUCT DESCRIPTION

System Subcomponents Specifications

PRODUCT DESCRIPTION

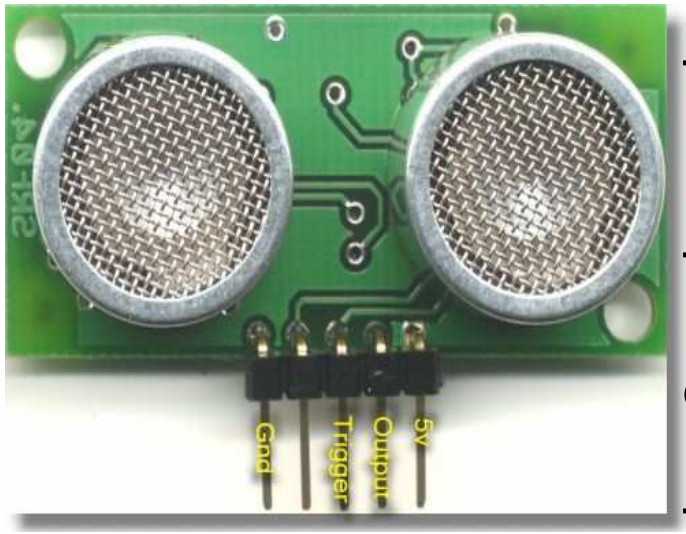
- Sensor: SRF04 Interface



Beam Pattern	**see graph**
Voltage	**5v**
Current	**30mA Typ. 50mA Max**
Frequency	**40KHz**
Maximum Range	**3 m**
Minimum Range	**3 cm**
Sensitivity	**Detect a 3cm diameter stick at > 2 m**
Input Trigger	**10uS Min. TTL level pulse**
Echo Pulse	**Positive TTL level signal, width proportional to range.**
Weight	**0.4 oz.**
Size	**1.75" w x 0.625" h x 0.5" d**

PRODUCT DESCRIPTION

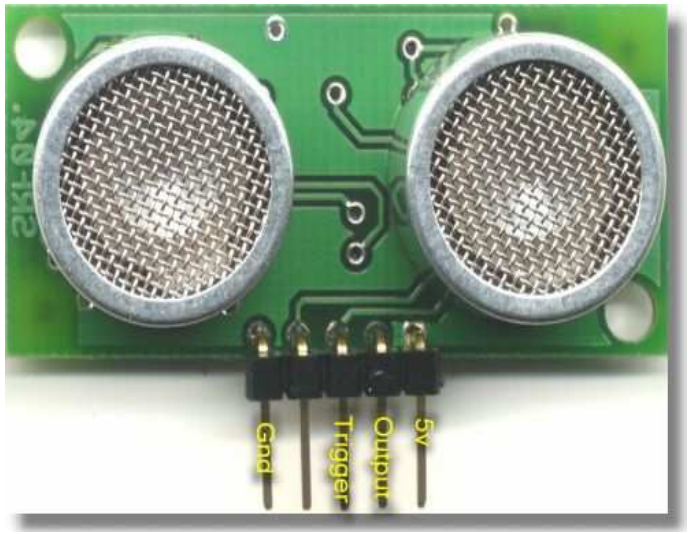
- Sensor: SRF04 Interface



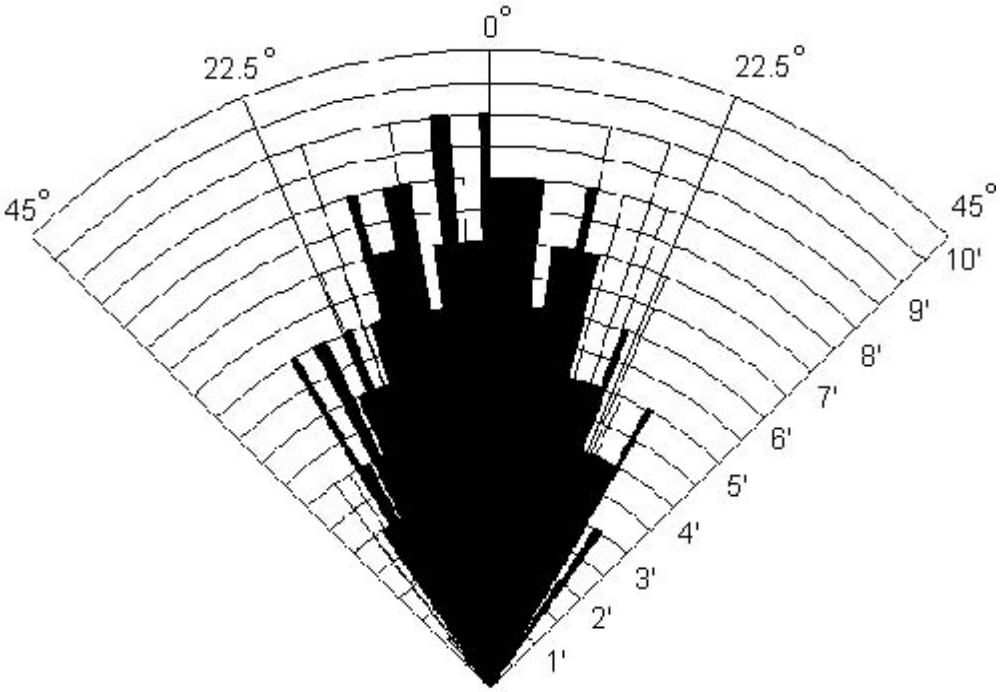
- **You supply a pulse from low to high and back low again on the trigger lead to start the SRF04.**
- **This sends out a pulse.**
- **The SRF04 will then pause for a few ms then deliver a pulse on the output line.**
- **To read the range we measure the length of this pulse.**
- **We will use the pulseout command to trigger the sensor and the pulsein command to read the echo time.**

PRODUCT DESCRIPTION

- Sensor: SRF04 Interface



- Graph:



PRODUCT DESCRIPTION

- Vibration Motor: Micro Pager Motor G12809

- Its size is only 4mm (.16”) Dia.x 12.5mm (.49”) long (excluding shaft and weight).
- Has 2 tiny terminals for hookup and is mounted in a slip-off rubber shock sleeve.
- Operates from 1VDC up to 5VDC.
- Motor resistance is about 11W.
- Great for thousands of micro projects, robots, etc.

PRODUCT DESCRIPTION

Software of The System

- Image processing needed for detecting objects is implemented with Matlab
- Linux board, which will include the necessary electronic circuitry and microprocessor, will be coded with embedded C

About Business Plan

Market Segmentation:

- 412,312 visually impaired
- 80,813 including retired, have income, expected to work
- 241,738 registered to Social Security Foundation [1]

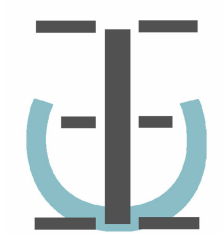
About Business Plan

Promotion:

- Altı Nokta Körler Derneği and

Ophthalmology Association

- Industry Participants
  - Medical Shops
  - Hypermarkets
  - Drug stores



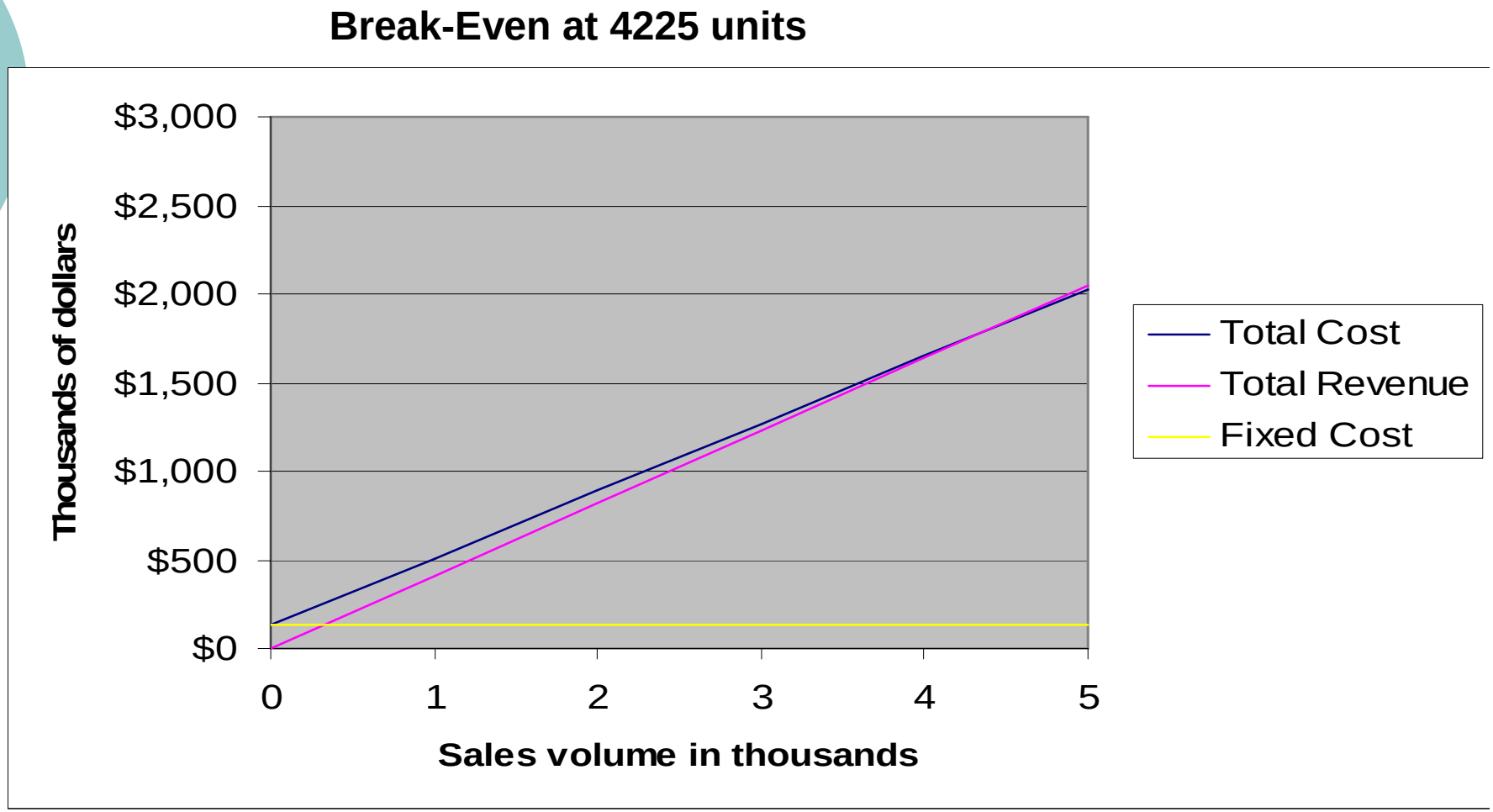
About Business Plan

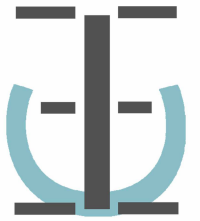
- %16.9 retired
- %2.5 have regular income
- %0.2 expected to work
- %63.7 registered to Social Security System
- with above items: totally %19.6 of visually impaired - our range (approximately equal to 80000 per year)
- population increase = ~ %2.26 per year
- 2 years after first market sales, agreement with Social Security Foundation

About Business Plan

Year	Number of visually impaired people	Quantity (item)
2007	80,000	4000
2008	82,000	4100
2009	84,000	4200
2010	340,000	17000
2011	348,000	17400

About Business Plan





About Business Plan

Strengths	Weaknesses
○ location of the offices ○ unique in the market	○ forecast of the visually impaired may be erroneous
Opportunities	**Threats**
○ arrival of GPS navigation maps for whole country	○ high probability of reverse engineering

REFERENCES

1. http://www.ozurluler.gov.tr/arastirma/troailerianaliz.htm
2. http://www.nanopac.com/GPS%20Trekker.htm
3. http://www.batforblind.co.nz/index.php

THANKS FOR LISTENING

QUESTIONS & COMMENTS