ALCOMETRE

AN INNOVATIVE WAY TO PREVENT DRUNK DRIVING

EnPRO 351

The Existing Problem

▸ Totally preventable.

▸ Those who are otherwise generally law-abiding, commit this offense.

Not everyone who gets hit by a drunk driver dies.

Jacqueline Saburido was 20 years old when the car she was riding in was hit by a drunk driver. Today, at 23, she is still working to put her life back together.
Learn more at www.TexasDWI.org

DON'T DRINK & DRIVE

QUICK FACTS

- 14,000
- 160 million
- 9 billion

▸ 14,000 fatalities a year in the US from car accidents due to drunk driving

– NHTSA, 2007

‣ Over 160 million people in the United States consume alcohol.

NHTSA, 2007

- Drunk driving costs the US economy $9 billion per year.

NHTSA, 2007

Stakeholders

- The Community

- Law Enforcement Agencies

- Insurance Companies

- Non-profit Groups

Traditional Solution

▸ Breathalyzers

Shortcomings of Breathlyzers

- Recalibration needed

- Lung capacity

- Impurities in the mouth

- Hygiene

OUR SOLUTION
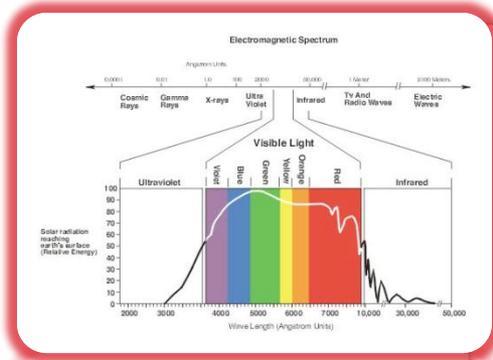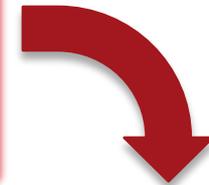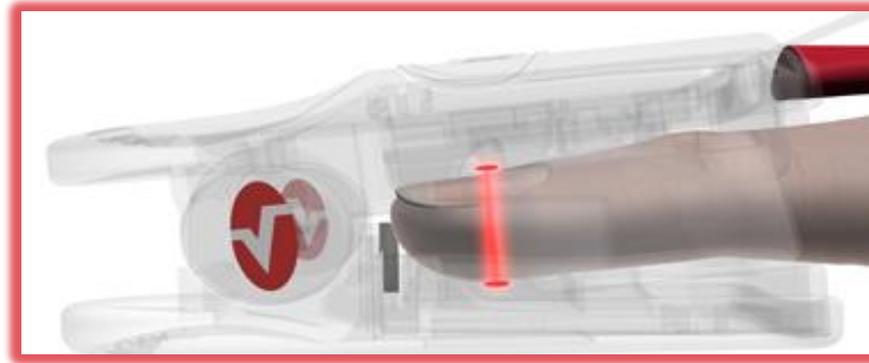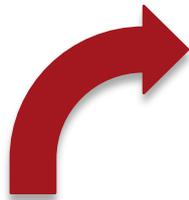
TEAM ORGANIZATION

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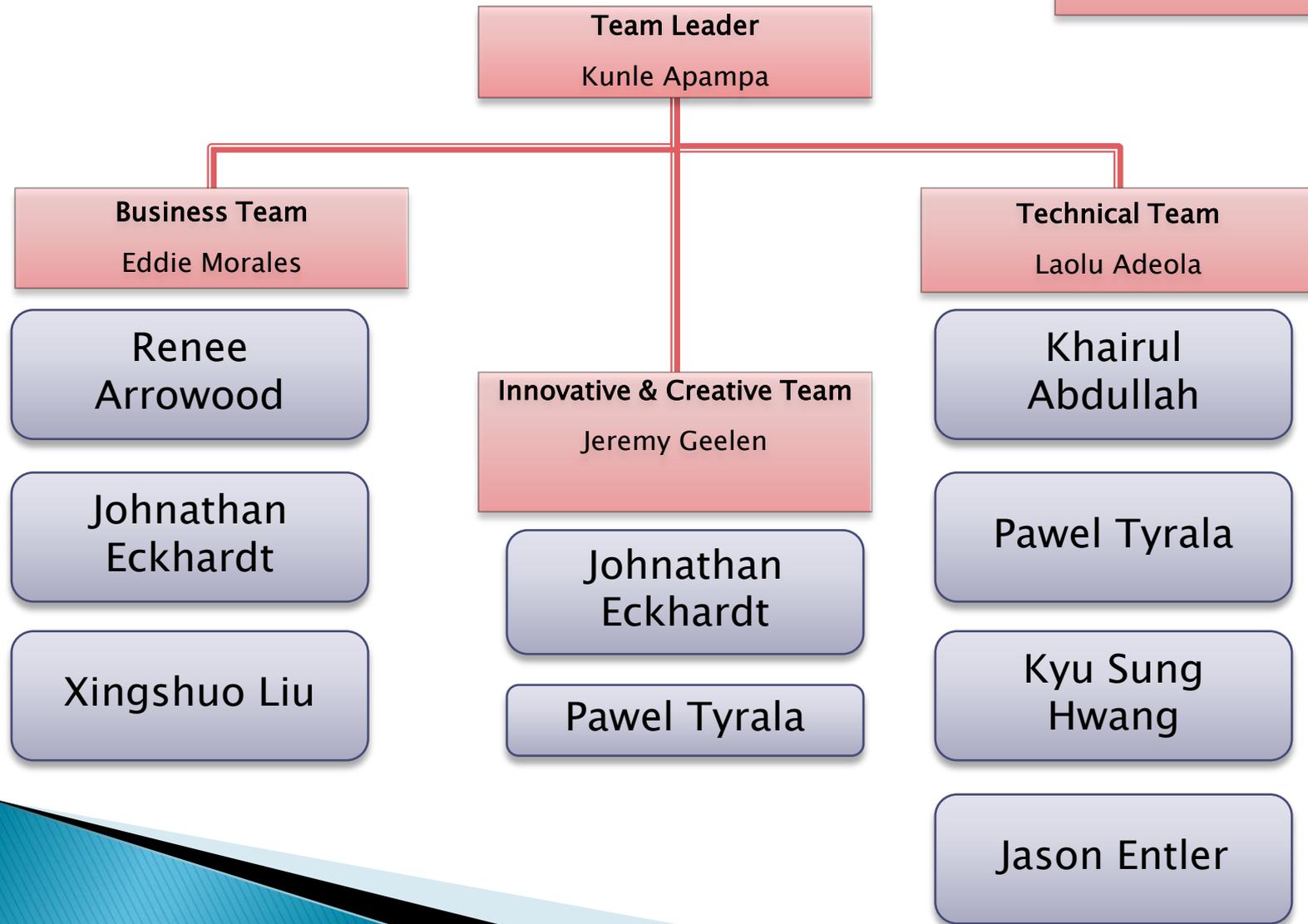
SETTING OBJECTIVES

- Research infrared, biometric scanners.

- Identify current technology.

- Identify competition .

- Engage our potential market and conduct feasibility study.

- Prepare an opportunity assessment.

- Build a prototype.

TASKS & MEETINGS

- Prepared Gantt Chart

- Set milestones

- Met twice a week

- Each person had to turn in a report each week

- Sub-team leaders compiled reports

- Finding reviewed once a week

The Beginning

- Vague Idea About The Technology
- Reference To Similar Applications
  ◦ Hospitals Checking Properties With Light
- Wide And Unfocused Research
- Proved Difficult
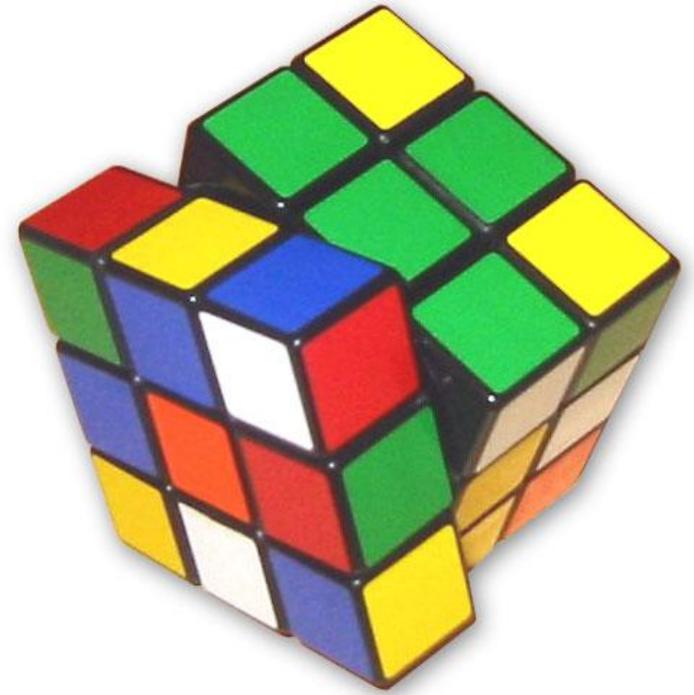
Regroup & Focus

- Inefficient Beginning

- Focus Efforts

  ◦ Alcohol in blood?

  ◦ Physical effects

 ◦ Other body functions

Report & Re-evaluation

▶ What Do The Findings Tell Us

▶ **Alcohol In Blood**

 ◦ **Alkanols – Ethanol**

▶ Physical Effects

 ◦ Drowsy, Slurred Speech, Breath

▶ Other Body Functions

 ◦ Kidney Function

 ◦ Heart Rate
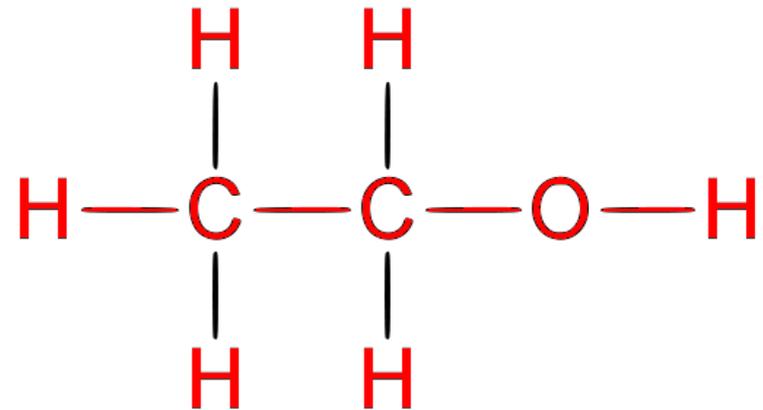
Content Detection

- Infrared: The Focus
  - ◦ Non Destructive
  - ◦ Low Energy

- Producing A Spectrum

- Interpreting The Spectrum
 - ◦ Sorting Impurities
  - ◦ Accuracy
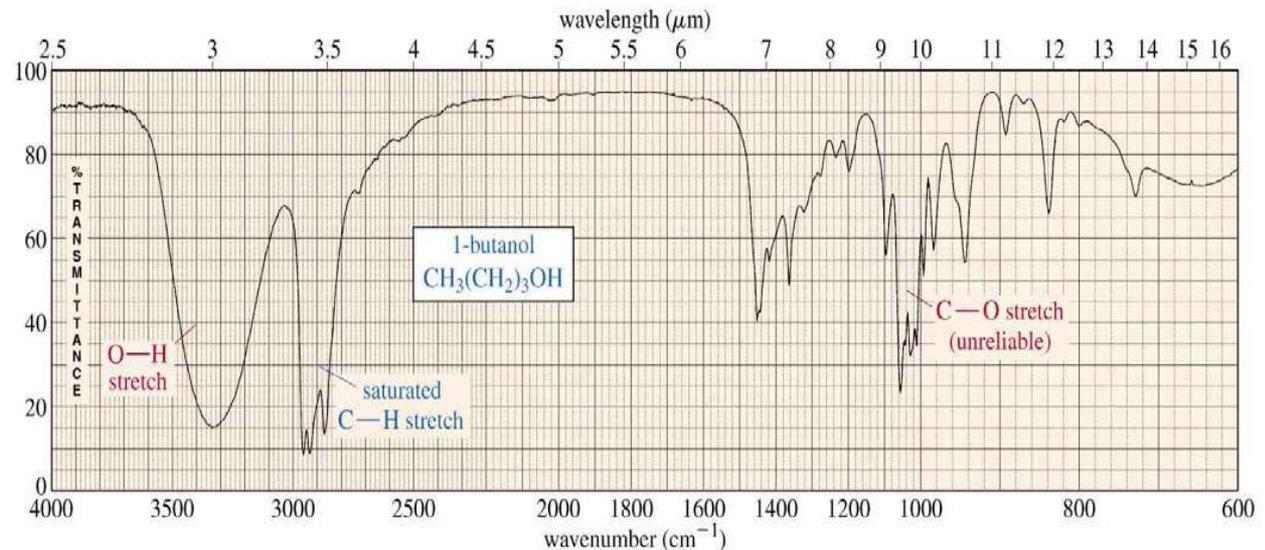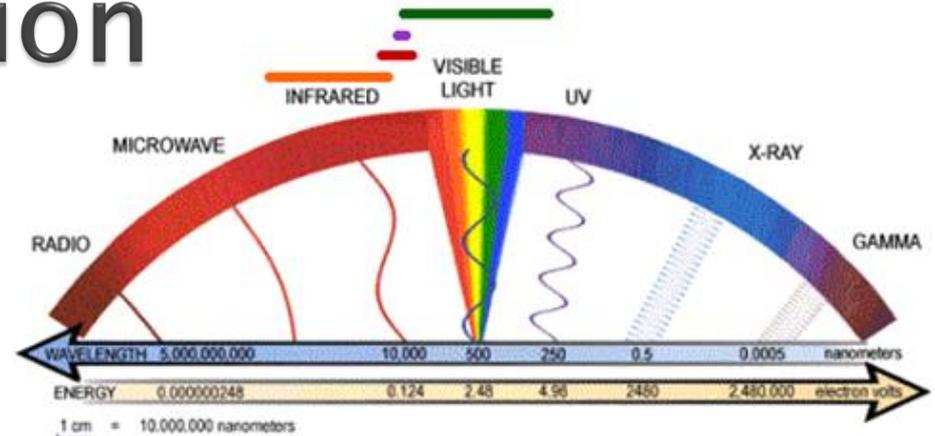
Patents

- Look At Patents For More Ideas

- 2 Of Particular Reference
  - One Was Vague & Abstract
  - Other Referenced Pulse Oximeters
    - Let's Try This Out
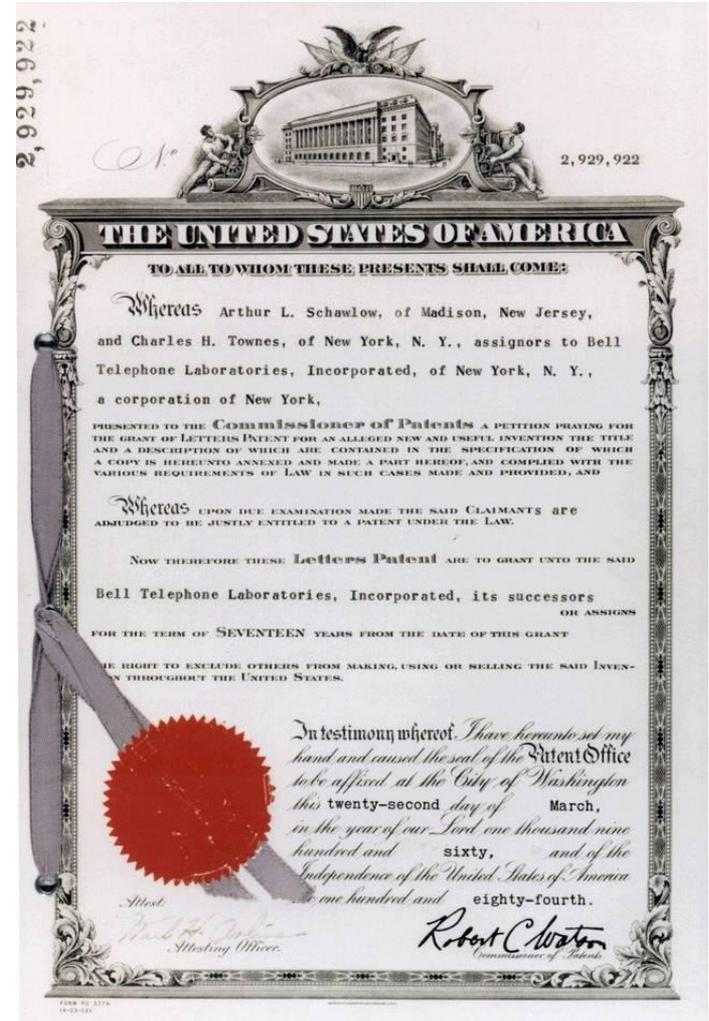
Pulse Oximeter

- Try the same method

- Research into workings

  ◦ Readings based off comparisons

  ◦ Extensive testing for alcohol

  ◦ Many assumptions

  ◦ University of Łódź study
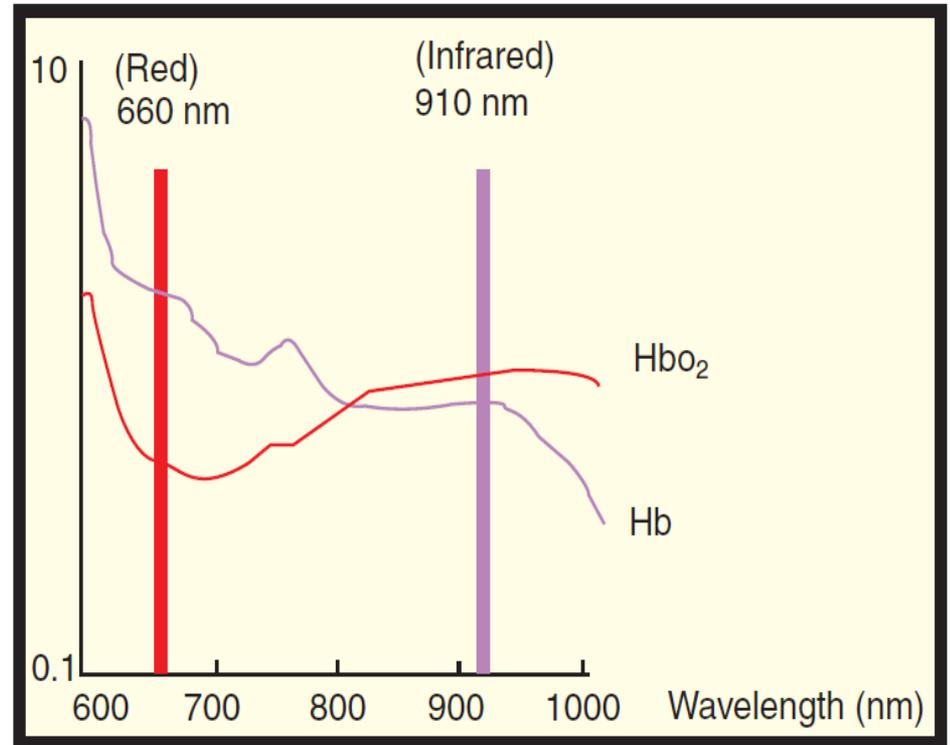
Prototype

- **Proof Of Concept**
  - Simple prototype
  - Modify working oximeter
  - Car Ignition

Industry analysis: OVERVIEW
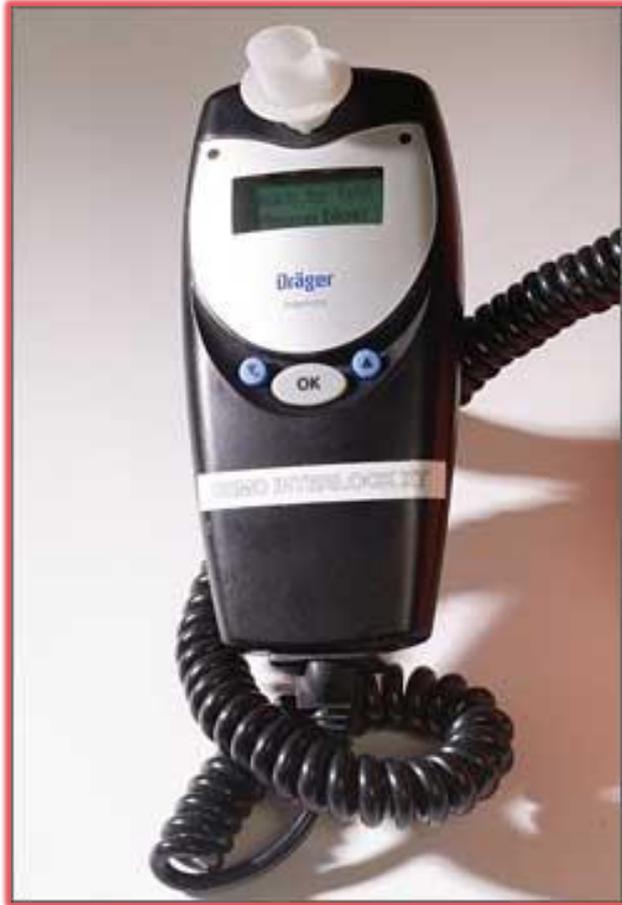
- Approximately 180,000 interlocks nationwide (BAIID system)

- The public has not been introduced to the concept of voluntary alcohol testing

Industry analysis: COMPETITIONS

- TruTouch
  Technologies

- Smart Start

Industry analysis: BARRIERS TO ENTRY

- Advertising

- Production Cost

- Research & Development

- Overall Barriers to Entry

PRODUCT POSITIONING
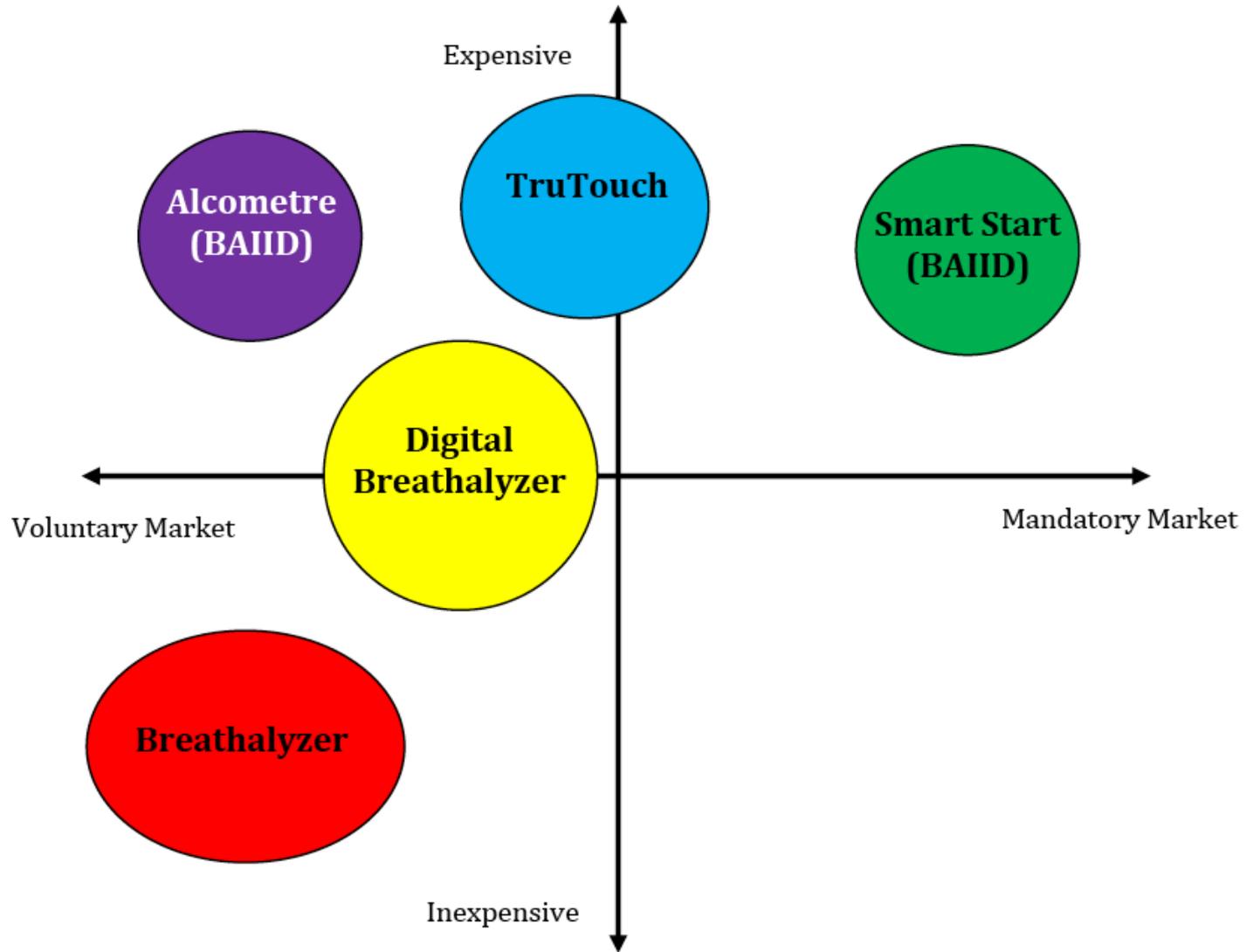
S.W.O.T Analysis: Strengths & Weaknesses

▸ Strengths:
  ◦ No need for calibration
  ◦ Non-invasive
  ◦ Accurate measure

▸ Weaknesses:
  ◦ Device not transferable
  ◦ Function of the device depends on the cars
  ◦ Relatively expensive

S.W.O.T Analysis: Opportunities & Threats

- Opportunities:
  - The Public concern of drunk driving (organizations such as MADD)
  - Product Development – not only detecting alcohol

- Threats:
  - Strong competitors
  - Patent

Business Model: Alcometre for Parents

Check Alcohol Levels	Contact Parents with Status	Control Ignition Based on Readings

- Customized Setups
- Parents have control over their children's vehicle
- Real-time communication service

Business Model: Parents Pricing

- Initial Installation Fee
- Monthly service fee
- Optional upgrade for more functions

DISTRIBUTION CHANNEL

- Business to Business sale to auto shops
- Internet sales

Business Model: Parents Promotions

- Publications

- Internet promotions

- Events at auto shops

- Discounts

CONCLUSION

▸ With the problem identified, Alcometre would be entering an untapped market.

▸ The product with the service provides a unique package for the costumer.

▸ The problem of drunk driving needs to be solved, fast!

FUTURE WORKS

▸ Develop a business model for the private and public sector market.

▸ Build a working prototype to back-up research.

▸ Estimate and calculate the manufacturing costs of the device.

▸ Create a well-structured costumer acquisition model.

▸ Save lives.