INNOVATION PROJECTS:

Spinetector Safety Vest

Underground Mining & high risk construction safety apparel.

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Rio de Janeiro, Brazil
6 November 2019

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technology innovation
A G E N C Y

Problem Statement

What?
A new, novel upper body safety vest, designed to reduce force of impact caused by rock fall on the spine and rib section of underground miners & high risk construction workers.

Why?
Current personal protective clothing on the market covers most but not all of the human body parts.

- 30% spine related injuries caused by rockfalls eq to $18 000.00 (Cost of injury per person in mines.)
- Average of $425M lost per annum in a 5 shaft mine.

Advantages and Impact

- Reduces paralysis and death related to spine injuries by 30% per 100kg of object impact.
- Awareness of back injuries in mines through the use of the product.
- Breathable, lightweight and correct ergonomic design.
- Registered design protects the project from being stolen.
- Temperature regulation technology, dry, safe.

The Spinetector team and support partners

Founder & Executive Members:

Sello Malinga
Research & Business Development Officer

Tshepang Raisibe
Innovation and Product Development.

Partners:

Gordon Institute of Business Science
University of Pretoria

eGoLi BIO
LIFE SCIENCES INCUBATOR

Business Support & Incubation

technology innovation AGENCY

- Youth Technology Innovation Programme, TIA **(R1.0M)**

SAB Foundation
IT STARTS HERE.

- Development Award for Early stage business and innovation, **R550k**

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Market Validation

Market validated through research with:

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

MHSC
Mine Health and Safety Council

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

- 25 607 back injuries reported p.a
- Average direct costs of back injury estimated at $18K per occurrence.
- $460 M direct cost to the mines.

Indirect costs:

Low levels of productivity, cost of training new staff and replacement.

Market traction and Progress.

2016/17

I. Proof of concept

II. Prototype development

III. Intellectual Property Development

IV. Project Promotion on Cell C Hangman

2018

I. Presidential acknowledgement from Minister in the Presidency for SA best innovation

II. Letter of intent from Polyhammer

III. Interest to procure by Rastenrich Construction company

2019

I. Interest to procure the product after technical and practical testing from Lonmin Platinum Mine.

II. South African Breweries Social Disability Awards Winner. R400K

Objectives and Key Results.

- Test Specification Report
- Sample development (50)
- Test validation in lab
- Practical Environmental Testing**(R350k)**

- **Desired Outcomes:**
- Positive Test specification report
- Successful environmental testing

Nov. 2019 – Feb. 2020

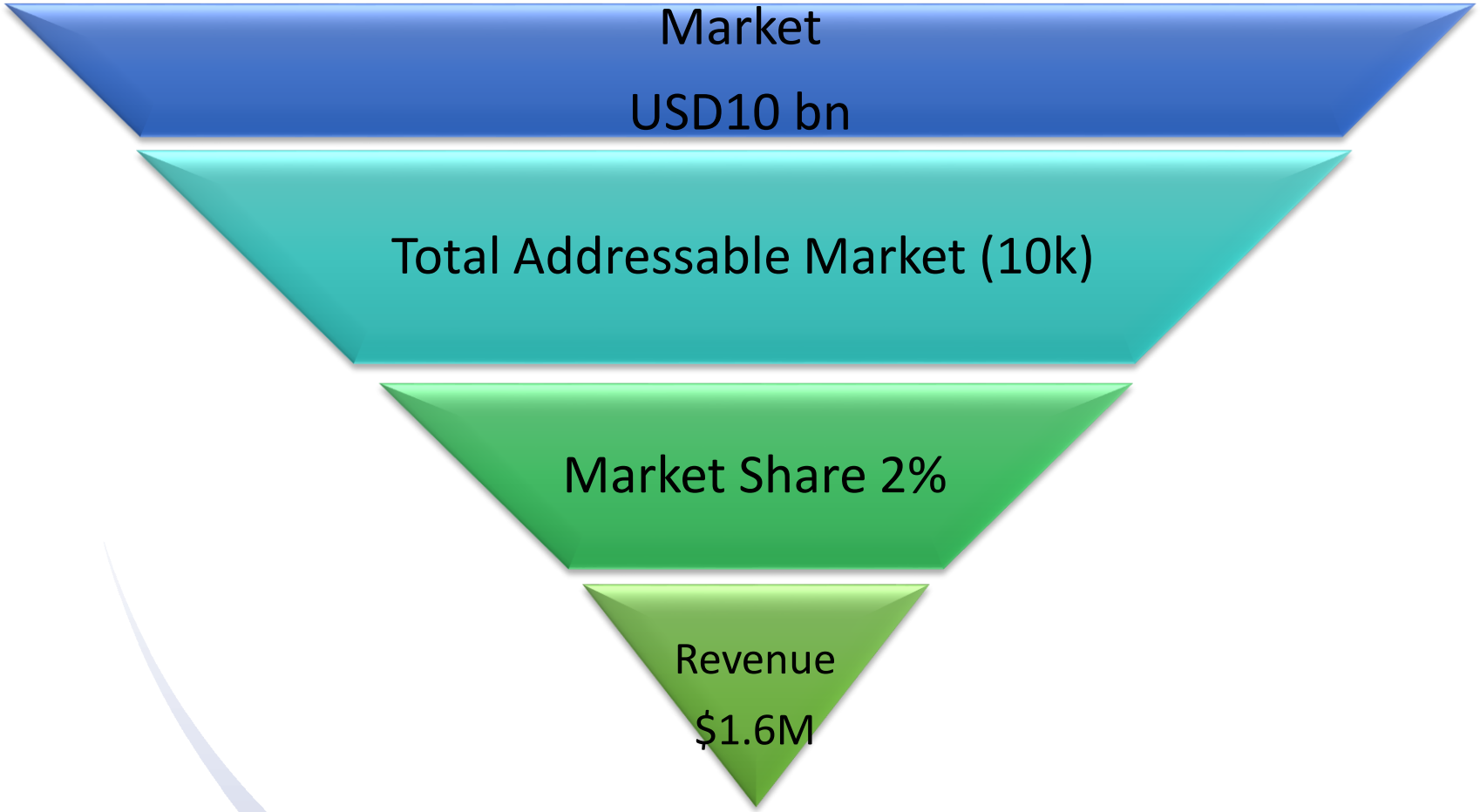
March- May.2020

- Establishment of manufacturing facility **(R1.2M p.a)**
- Develop and implement Marketing strategy **(R200K)**
- Offtake agreements with mines

- Outsourcing of Raw materials and labour to produce 10k units **(R2.5M)**

June 2020

Market


Market
USD10 bn
Total Addressable Market (10k)
Market Share 2%
Revenue
$1.6M

Competition

Indirect competitors in the South African and European market each focussing on one or more specific product categories.

knee pads, safety boots

helmets,goggles. Etc

- Our business model focuses on direct selling to the mines as well as distributions through PPE suppliers.

Financials

- Gross profit of 23% based on the Bill of Materials (BOM).

- Turnover is expected to reach R25 million in year one based on manufacturing and selling 10,000 units.

- Sales are projected to increase to R30,234,375 in year two and to R35,273,438 in year three. Based on the overhead structure.

- The enterprise will generate an after tax profit of R1,570,259 in year one of operation increasing to R5,709,034 in year five.

Financials

	Year 1	Year 2	Year 3	Year 4	Year 5
Sales	R 25 000 000	R 30 234 375	R 35 273 438	R 40 740 820	R 64 666 758
Less COS @ 77%	R 19 250 000	R 23 280 469	R 27 160 547	R 31 370 431	R 49 793 404
Gross profit	R 5 750 000	R 6 953 906	R 8 112 891	R 9 370 389	R 14 873 354
Less expenses	R 2 985 000	R 3 974 775	R 5 804 683	R 6 322 834	R 6 888 127
EBITD	R 2 765 000	R 2 979 131	R 2 308 208	R 3 047 554	R 7 985 227
Depreciation	R 30 000	R 30 000	R 30 000	R 30 000	R 30 000
EBIT	R 2 735 000	R 2 949 131	R 2 278 208	R 3 017 554	R 7 955 227
Interest	R 554 085	R 503 075	R 344 033	R 185 012	R 26 013
Profit before tax	R 2 180 915	R 2 446 056	R 1 934 174	R 2 832 542	R 7 929 215
Tax at 28%	R 610 656	R 684 896	R 541 569	R 793 112	R 2 220 180
Net profit	**R 1 570 259**	**R 1 761 160**	**R 1 392 606**	**R 2 039 430**	**R 5 709 035**

THANK YOU

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