Application for a SMART Feasibility Grant

1. SMART FEASIBILITY PROJECT

1.1 Overview of Shot Scope Technology & Business

Customers collect statistical data to monitor and improve performance, however this requires significant time and effort. Current solutions in the market are outdated; record statistics using paper and pencil or constantly push buttons entering information into an electronic device. The Shot Scope technology solves this problem, it collects scoring and statistical data as a golfer plays in an innovative way.

The patent pending technology works in xxxxxxx.

The technology collects relevant data that has up to now has been manually captured, including:

xxxxxxx-A list of relevant data captured was included here-xxxxxxx

The system is described as the next generation of technology in its target area by a key expert.
Partners are in place to trial the product. Phase 1 participants include key end users. Phase 2 trials are planned with relevant institutes. A demonstration day is in place to demonstrate the Shot Scope technology.

The intellectual property has been assigned to the Shot Scope Ltd. A patent application was filed via a solicitor protecting the enabling Shot Scope technology. In June 2014 a trademark was filed to protect the Shot Scope branding and logo.

The Founder works full time for Shot Scope Technologies. A second employee is a part time unpaid non-executive of target technology development. Two engineers have been approached with regards to positions and displayed interest in working for Shot Scope.

The SMART Feasibility project will produce a working demonstrator which will prove if this technology can be further developed into a commercially viable product through further R&D.
The product will advance the end users experience through novel technology.

1.2 SMART Feasibility Project Overview

The key technology that enables all revenue streams is the xxxxxxx. In its current form the technology is in its infancy at design stage and is only fit for testing, not trials. However to be commercially successful the technology has to be integrated into xxxxxxx.

Shot Scope has identified the key needs of the customer from the target market:

- Key need 1
- Key need 2
- Key need 3
- Key need 4
- Key need 5
- Key need 6
- Key need 7

Improvements and optimisation of Shot Scope technology will require redesign of electronics and key components. A 12 month SMART Feasibility project will produce a working demonstrator. This includes investigation into xxxxxxx.

The project breakdown is briefly described below:

1. The electronic design of the technology to xxxxxxx has to be optimized. This includes the identification of alternative components to perform the same functionality as the prototype, electronic design to optimise processor performance, improve power efficiency for xxxxxxx, placement of components for best accuracy and optimal location of passives to integrated circuits therefore reducing overall footprint of electronic components.

2. An optimised component X significantly reduces the overall footprint of electronic components and therefore shrinks the overall dimensions of the Shot Scope technology. Shot Scope has the knowledge and experience to design a xxxxxxx however specialist electronic design software is required. The fabrication and assembly of component X is a specialist manufacturing process that will be performed by an external manufacturer located in Scotland. Quotes from fabricator are included in this application.

Figure 1 – Example of Shot Scope technology design

3. The patent pending system requires component X. The design, location and orientation of this is extremely important to the performance of certain aspects of the technology. Significant investigation is required to find the optimal design and location as well as refine embedded software. The embedded software monitors xxxxxxx to identify critical positions in a xxxxxxx. Then activates xxxxxxx. Embedded software to controls certain aspects necessary for functionality and is critical to the power consumption of the Shot Scope technology. Refinement of embedded software will improve both sampling xxxxxxx and xxxxxxx.

4. The current Shot Scope embedded software is capable of xxxxxxx. Within the SMART Feasibility project Shot Scope plans to refine the software to sample xxxxxxx. Improving the sampling accuracy and overall performance of the technology. Included in the embedded software work is configuration of the on-board memory to accept xxxxxxx uploaded via Bluetooth or a micro USB connector.

5. To meet CE compliance requirements and protect electronics during field trials an enclosure will be designed to hold the electronics designed during the SMART Feasibility project. A xxxxxxx will be rapidly prototyped and manufactured and minimal cost.

6. User trials are split into 2 phases, phase 1 proves the technology in the field and provides user feedback that will guide technology refinements prior to phase 2 trials. Shot Scope has engaged with the target market and established phase 1 and 2 trial partners detailed in the table below. Initial trials were planned for summer 2014, however the technology in its current form does not meet the needs of the target market therefore trials are included in the SMART Feasibility project and scheduled to start in May 2015.

Trial Phase	Trial Location	Participants	Schedule
Phase 1	Location 1	xxxxxxx	May 15
Phase 1	Location 2	xxxxxxx	May 15
Phase 1	Location 3	xxxxxxx	May 15
Phase 1	Location 4	xxxxxxx	May 15
Phase 1	Location 5	xxxxxxx	May 15
Phase 2	Location 6	xxxxxxx	June 15
Phase 2	Location 7	xxxxxxx	June 15
Phase 2	Location 8	xxxxxxx	June 15
Phase 2	Location 9	xxxxxxx	September 15
Phase 2	Location 10	xxxxxxx	September 15

Table 1 – Phase 1 & 2 Trial Schedule

The most optimal number of xxxxxxx to manufacture for low volume prototype testing is 10 to 20. This volume will be sufficient for user testing and trials.

1.2.1 Result of SMART Feasibility Summary

The combined innovative steps will produce a working demonstrator that accurately and automatically collects key data. By the end of the SMART Feasibility project the technology will have undergone trials in the field with the target market. With completion of successful trials commercial partners will be established, allowing Shot Scope to progress the business via commercial channels. The product will advance target technology for the end user. Providing Shot Scope with a platform to establish an international technology business that operates from Scotland.

1.3 Technology Innovation

Shot Scope provides a new and innovative offering to the market. If an end user wants to accurately collect key data the only options that are currently available are:

1. Alternative option 1
2. Alternative option 2
3. Alternative option 3

The key innovative step that differentiates Shot Scope from other products is the technology. Simply use the xxxxxxx and data is automatically collected, the technology works in the background without ever having to push a button. The Shot Scope xxxxxxx technology uses the unique xxxxxx against time to identify xxxxxx. When xxxxxxx is made data is stored to memory. Electronic hardware includes xxxxxxx. The key to the functionality of the xxxxxxx is the clever embedded
software that monitors and manages the status of above detailed technologies.

Figure 2 – Details of the technology

The technology has been proven via development of 3 prototypes and initial tests with key customers. It now requires further work and optimization prior to trials with lead customers and potential commercial partners. The Shot Scope technology development requires a number of significant innovative steps performed by skilled and experienced engineers. The Scottish Enterprise SMART Feasibility funding will provide the resources to develop the technology and establish the core team of engineers. Pictures below detail the current status of the enabling technology.

Figure 3 – Pictures of current technology

The cloud based Shot Scope system processes data uploaded from the Shot Scope xxxxxxx to the Shot Scope user interface. The end users performance data is stored in their Shot Scope account that will include other relevant information:
- xxxxxxx
- xxxxxxx

Once collected, processed and stored in the Shot Scope database management system. Data is xxxxxxx.

Figure 4 – Pictures relevant to the project

The next revision of the xxxxxxx is going through subcontracted development and is scheduled for completion in September 2014. This will compare xxxxxxxx with xxxxxxxx to calculate data. Statistics will be displayed via xxxxxxx.

This work started in July and is being completed by a subcontractor.

1.4 Key Project Objectives

The aim of the SMART Feasibility project is development of the relevant technology. Providing technology to the target market that automatically and accurately collects relevant data without interruption or pushing of buttons.

1.4.1 Technical Objectives

1. Technical objective 1
2. Technical objective 2
3. Technical objective 3
4. Technical objective 4
5. Technical objective 5
6. Technical objective 6

1.4.2 Commercial Objectives

1. Increase market awareness and develop routes to market via trial participants. Participants include key end users.
2. Use feedback from trials to drive development of the commercial version of the Shot Scope product.
3. Prove Shot Scope technology and protect the intellectual property through international patents.

1.5 Technical Challenges

<u>Objective 1: Optimisation of design to improve performance and meets target market requirements.</u>

Primary research identified the key needs of the Shot Scope technology which is the primary criteria for end users. Designing and development of electronics that shrink the overall dimensions of the technology will provide many technical challenges. Key integrated electronic components have to be specified & passive components optimized to fit within the footprint:

xxxxxxx-A list of key components to achieve objective 1 was included here-xxxxxxx

The Shot Scope founder has the knowledge and experience to redesign the electronics and

xxxxxxx layout, however specialist electronics and relevant software is required to complete the work. Supplier X is the leading supplier of necessary electronic design tools:

Supplier	Product Description	Cost (£+VAT)
Supplier X	xxxxxx	£xxx
Supplier X	xxxxxx	£xxx
Supplier X	xxxxxx	£xxx

Table 2 – Supplier costs

Objective 1: Measurable Technical Objective

On completion of the SMART Feasibility project the result of objective 1 will be a xxxxxxx with optimised and miniaturised electronics. The new electronic design will allow design of a novel miniaturised component.

Objective 2: Optimal design and layout of component X

The technology is required to fit inside a footprint, providing a small solution that meets the criteria set by the target market. Designing component X to fit within the target footprint area provides significant technical challenges. Requiring significant investigation and design of optimal layout. The proposed footprint area is detailed below:

Figure 5 – Figure detailing the proposed footprint

Component X eliminates expensive parts, provides fast and reliable transfer of data between integrated components and when manufactured in volume significant reduces costs.

Fabrication of component X is a complex manufacturing process that requires specialist knowledge, skills and equipment. As an electronics design engineer with experience of designing component X, the founder has experience in the component's design and fabrication. He will follow IPC design guidelines reducing the risk of failure during manufacturing. These standards are xxxxxxx.

Specialist component fabricators have been identified, contacted and returned quotes for the fabrication of component X. The following companies based in Scotland have the skills, knowledge and manufacturing capability to fabricate the component.

- Company 1, Livingston, EHxx xxx, contact information
- Company 2, Musselburgh, EHxx xxx, contact information
- Company 3, Rothesay, PAxx xxx, contact information

Other companies within the UK capable of fabricating component X.

- Company 1, Willenhall, WVxx xxx, contact information
- Company 2, West Sussex, POxx xxx, contact information
- Company 3, Hartlepool, TSxx xxx, contact information
- Company 4, Berkshire, RGxx xxx, contact information

I have received the following quotes for fabrication of component X:

Fabricator	Volume	Lead Time	Unit Cost £	Tooling £	Total £
Fabricator 1	10	15 days	£xxx	£xxx	£xxx
Fabricator 2	10	15 days	£xxx	£xxx	£xxx
Fabricator 3	10	25 days	£xxx	£xxx	£xxx

Table 3 – xxxxxxx Fabrication Quotes

Assembly of component X requires specialist knowledge and equipment. The component assembler may also be employed to manage fabrication of the component if their preferred supplier is capable of manufacturing at competitive prices.

- xxxxxx, Livingston, EHxx xxx, contact information
- xxxxxx, Livingston, EHxx xxx, contact information
- xxxxxx, Glasgow, Gxx xxx, contact information

Quotes received for assembly:

Fabricator	Volume	Lead Time	Unit Cost £	Tooling & Setup £	Total £
Fabricator 1	10	15 days	£xxx	£xxx	£xxx

Table 4 – Assembly Quotes

Planned within the 12 months SMART Feasibility project is two manufacturing cycles. First is to optimise and miniaturise the electronics that will then be tested during phase 1 trials. The second manufacturing cycle will be used to refine the electronics design based on feedback from phase 1 trials and manufacturing issues identified during the first manufacturing cycle. This process is good practise when designing electronics.

Objective 2: Measurable Technical Objective

On completion of the SMART Feasibility project the result of objective 2 will produce component X that fits within the required footprint for the Shot Scope technology that meets the electronics performance requirements. Through development of the optimised and miniaturised technology, Shot Scope will establish relationships with fabricators and assemblers who could manufacture future revisions of the product.

Objective 3: Optimal design, location and orientation of component Y

The objective is to design a solution capable of reading data from xxxxxxx that is also power efficient. The identification technology is new and unique therefore included as a claim in the patent application. The technology uses xxxxxxx identification to read xxxxxxx.

Within the SMART Feasibility project Shot Scope aims to optimize component Y to fit within the footprint. Requiring research and investigation of dimensions, optimal location and layout of electronics components. An optimal design will be capable of reading xxxxxxx at a maximum distance and be power efficient for maximum battery life. The founder has experience of designing the required technology applications therefore research and design of this technology will be undertaken by Shot Scope. Evaluation boards will be tested to identify the optimal electronics components and layout prior to design and integration with technology.

The cost of identification technology development is approximately £xxxx to £xxxx. This is broken down to £xxxx for development component Y to test performance and £xxxx for fabrication and assembly of component X. Component X allows Shot Scope to test the performance before integration into the technology.

Figure 6- Schematic of technology developed in objective 3

Objective 3: Measurable Technical Objective

On completion of the SMART Feasibility project the result of objective 3 is to produce component Y. The design and position of component Y in the technology refined for optimal performance and identification technology proven in the field with target market.

Objective 4: Refinement of embedded software settings to identify xxxxxxx.

The Shot Scope technology uses xxxxxxx. The hardware includes xxxxxxx. The embedded software controls the operation of each hardware block.

Within the SMART Feasibility project Shot Scope plans to refine the embedded software to sample xxxxxxx. Development of embedded software requires investigation to select a processor capable of efficiently sampling data points. Included in the embedded software work is xxxxxxx.
Development of embedded software requires an embedded software engineer with experience developing portable devices. Shot Scope does not have these skills within the team and therefore will employ an embedded software engineer.

I have identified and approached 2 engineers with regard the embedded software position and both are interested in working for Shot Scope Technologies. In order to attract a good embedded software to work for Shot Scope an annual salary of £xxxxx will be offered.

Objective 4: Measurable Technical Objective

On completion of the SMART Feasibility project the result of objective 4 is a working demonstrator that samples xxxxxxx therefore improving sampling accuracy. The technology will significantly improve the performance of the technology and therefore the accuracy of data collected.

Objective 5: Development of an enclosure to protect electronics from harsh weather conditions during field trials

Prior to trials an enclosure will be designed and rapidly prototyped that holds the optimized electronics. Providing protection from weather during field trials, and meeting basic CE compliance regulations therefore allowing the technology to be trialled without constantly monitoring the user. I have identified and met with an independent product designer, who has quoted £xxxx for design of the Shot Scope enclosure and management of the rapid prototype process to manufacture enclosures for trials. The risk associated with this objective is low and will be reduced further by delivering a DXF file to the product designer. The DXF file details component X. Due to the small electronics footprint and primary customer requirement of the technology. An innovative design will be required to hold the technology.

Objective 5: Measurable Technical Objective

On completion of the SMART Feasibility project the result of objective 5 is to produce an enclosure that can be quickly manufactured at little cost and protect the electronics from harsh weather conditions. It will securely hold and protect component X and component Y.

Objective 6: Field user testing and trials in parallel with final refinements of technology

On completion of phase 1 design and manufacture the optimized Shot Scope technology will be tested and trialled with lead customers from the target market. The phase 1 trials will prove the technology works with multiple target customers and provide valuable feedback that will guide refinement of the technology. Phase 1 trials are setup target customers. The aim is trial initial prototypes in April 2015. Phase 2 trials are setup with end users. The trials will commence in the summer of 2015 and provide feedback that guides the development of the commercial version of Shot Scope. The cost of trialling the technology with key participants detailed above is £xxxx. This is split into £xxxx for phase 1 and £xxxx for phase 2.

Objective 6: Measurable Technical Objective

On completion of the SMART Feasibility project the result of objective 6 is to test and prove the Shot Scope technology with the target market. Proving the technology in the field and gathering valuable feedback that to drive the refinement of technology prior to commercial release.

1.6 Project Risk Assessment

The risks associate with the SMART Feasibility study are a mix of low to high. An optimised and miniaturised electronic design will require innovative design steps to fit component X within the technology. Shot Scope has the knowledge, skills and experience to optimise the electronics design and miniaturise the technology. The company also has experience of managing the manufacturing of xxxxxxx, fabricators and assemblers capable of manufacturing the electronics have been identified and contacted. The embedded software has been proven, sampling xxxxxxx and using the data to log information. Increasing xxxxxxx is technically challenging. With guidance an experienced embedded software engineer should be capable of implementing a software design that samples xxxxxx.

Objective	Details	Risk
1	xxxxxx	High
2	xxxxxx	High
3	xxxxxx	High
4	xxxxxx	Medium
5	xxxxxx	Medium
6	xxxxxx	Low

Table 5- Detailing objective risks

1.7 Project Timetable

The schedule associated with each objective is detailed in the Gantt chart below:

Figure 7 – Project Timeline Detailing Key Objectives & Milestones

The table below provides a summary of the start and end point of each objective in relation to the project 12 month time schedule.

1.8 Summary of Project Timetable

Objective	Start	End	Carried out by
1. xxxxxx	Week 1	Week 45	Shot Scope
2. xxxxxx	Week 8	Week 27	Shot Scope
3. xxxxxx	Week 17	Week 31	Shot Scope
4. xxxxxx	Week 1	Week 52	Shot Scope or Subcontractor
5. xxxxxx	Week 28	Week 33	Subcontractor
6. xxxxxx	Week 28	Week 52	Shot Scope

Table 6 – Project Summary Timetable

1.9 Business Background & Project Management

The Shot Scope team is a mix of inventiveness and engineering knowledge with experience of target technology product development and fundraising. I include in the team a number of external business and end user advisors that have added value through transfer of knowledge and experience.

xxxxxxx-2 pages of key information about personnel was included here-xxxxxxx

1.10 Wider Impact

A successful SMART Feasibility project will significantly progress the Shot Scope technology providing solid foundations to progress the commercial offering and Shot Scope business. The innovative Shot Scope product will raise the standard in the target market. The wider impact includes:

- An accurate, automated and easy method to collect large volumes of target data without interruption, allowing the end user to focus their efforts for a maximum performance.
- The potential for a Scottish company to influence sell a product that will be used internationally by end users in multiple markets.
- The potential to build on Scotland's rich history as the founders of numerous technologies.
- The potential to grow a business in Scotland that employees 20 to 30 people in technology, engineering, software, product design, marketing and sales jobs.
- The potential to grow Scottish company that annually turns over £20 million that subcontracts work to local Scottish companies.
- Establish a company that want to re-invest profits locally, particularly within the target area and enterprise.

Shot Scope has already established links to companies within central Scotland and this is a theme that the business aims to pursue, therefore as much fabrication and assembly work as economically possible will be subcontracted to Scottish companies.

2. INTELLECTUAL ASSETS

In xxxxxxx a patent was filed via xxxxxxx to protect the key technology integrated into the xxxxxxx. This technology provides a key competitive advantage over other products on the market.

2.1 Background Intellectual Property

xxxxxx-half a page of background IP was included here-xxxxxx

2.2 Foreground Intellectual Property

The SMART Feasibility grant will allow Shot Scope Technologies to produce a refined and optimised version of the initial prototype that can be used within a commercial application and meet the requirements of the patent application. At the stage of filing, the patent will be converted into a European PCT patent and applications made in the USA, Japan and Australia which all have a large target markets. Solicitor x have quoted approximately £xxxx for this work.
Initially the intellectual property will be used specifically in the target market, however the long term business model is to implement the same technology in other markets internationally.

3. MARKET AND COMMERCIAL EXPLOITATION

The global target market is estimated at £8.6 billion worldwide. The industry is notorious for developing annual products with small incremental improvements. Leaving an opportunity for a new revolutionary product to enter the market and quickly win a significant share. Target statistics big data collection and analytics is a rapidly growing market. Companies operating within the market turnover revenue above £10 million per annum though collection and distribution of data relating to target statistics.

Figure 8 – Breakdown of Market Opportunities

3.1.1 Product Market Opportunity

Primary research identified a need in the target market for a system to collect statistical data. End users currently collect statistical data using paper and pencil or push buttons on an electronics device, both are tedious and time consuming. Primary research identified the profile of a Shot Scope lead customers.

xxxxxxx- List identifying target customers was here-xxxxxxx

Electronic GPS distance and mobile app development companies attempted to solve the problem by providing xxxxxxx. Market research indicates end users purchase the product with the intention to use the xxxxxxx but the task of constantly entering data into the device requires too much time and effort. End users forget to enter the data and give up. Sales of competitor products reached 850,000 units worldwide in 2013, top selling products available on the market:

Brand	Model	Retail Price
Brand 1	xxxxxxx	£xxx
Brand 2	xxxxxxx	£xxx
Brand 3	xxxxxxx	£xxx
Brand 4	xxxxxxx	£xxx

Table 7 – Brand & Model of competitor products

A notable trend is the volume of mobile app downloads enabling manual collection of data.

App	Download	Cost
App 1	50,000 pa	£xxx
App 2	50,000 pa	£xxx
App 3	250,000 total	£xxx
App 4	400,000 total	£xxx
App 5	1 million total	£xxx

Table 8 – Mobile App downloads to track statistics

The problem of statistics collection has not been addressed in relevant situations. Key end users still manually collect statistical data using paper and pencil. Shot Scope spent considerable time interviewing key end users. Companies providing an online scoring system include:

Statistics tool	Location	Sold in	Users	Yearly cost
Product 1	USA	USA	140	$xxx
Product 2	USA	USA	75,000	$xxx
Product 3	Australia	USA, Australia, Indonesia	50,000	$xxx
Product 4	UK	USA & Europe	40,000	£xxx

Table 9 – Online statistics tracking software

3.1.2 Product Market Size UK

Shot Scope is new product in the target market therefore a bottom up approach is employed to calculate market size. Data sourced from a reliable source and 200 questionnaires released into 4 key establishments in central Scotland. Conversations with target market indicate a product retail price of £xxx and 45% of Shot Scope customers will purchase a subscription to the data at a price of £xxx per annum.

Size of Shot Scope Product Market UK

- No of UK target customers: xxxxxxx
- Primary demographic: xxxxxxx
- Secondary demographic: xxxxxxx
- Combined demographics: xxxxxxxxx
- Purchase of device: xxxxxxxx
- Handicap range: xxxxxxx
- UK size of target market: xxxxxx
- Retail price: £xxx
- **UK target market value: £ xxx Million**

Size Subscription to Analytics Data Market UK

- UK size of target market: xxxxxx
- % interested in analytical data: xx%
- Size of analytical data market: xxxxxx
- Cost of annual subscription: £xx per annum

- **UK target market value: £ xxx Million** (per annum)

3.1.3 Product Market Size USA

The USA market has been calculated using UK demographic figures, refer to appendix 4 for calculation.

- USA size of target market: xxxxxx
- USA target market value: **£xxx Million**
- USA subscription market value: **£xxxMillion** (per annum)

3.1.4 Product Market Size International

There are 40 million potential target customers worldwide. Shot Scope applied the UK demographic data to the total number of worldwide customers equating to a potential international market worth over £2 Billion. Due to the different demographic makeup the figure is an estimation of the international market size.

3.2 Big Data Market Opportunity

Shot Scope identified 4 different revenue streams. Three companies operating in big data collection and distribution market contacted Shot Scope. Xxxxxx (UK), xxxxxxx (UK) and xxxxxxx (USA) have indicated a desire to purchase big data generated from Shot Scope. Xxxxxxx have requested to be contacted during the seed funding round with an intent to invest in Shot Scope.

3.2.1 Big Data Market Size

Potential customers have refrained from discussing the exact value of key big data.
Shot Scope has commissioned a market research with an aim of identifying the key markets and value of Shot Scope big data. I researched companies operating a business model to collect and resell key data with a goal of identifying the value of big data statistics.

Company	Market	Turnover 2013-2014	Location of sales
xxxxxxx	Market 1	£xxx	UK
xxxxxxx	Market 1 & Market 2	£xxx	UK & Europe
xxxxxxx	Market 1, Market 3 & Market 4	£xxx	International

Table 10 –Data Companies

xxxxxxx-Half a page detailing possible customers was included here-xxxxxxx

Target customers have stated the Shot Scope data has a value to OEMs and xxxxxxx has offered to make introductions to relevant buyers. An estimation of revenue from target data sold to manufacturers is calculated using the percentage breakdown of equipment at a relevant event. Then applying percentages to 40 million target customers worldwide and UK Shot Scope user uptake of xx%.

Manufacturer	Users Worldwide	Shotscope (xx%)	Charge per user	Total Revenue
xxxxxxx	13.2 million	xxx	£xxx	£xxx
xxxxxxx	11.4 million	xxx	£xxx	£xxx
xxxxxxx	6.6 million	xxx	£xxx	£xxx
xxxxxxx	4.8 million	xxx	£xxx	£xxx
xxxxxxx	4.8 million	xxx	£xxx	£xxx
xxxxxxx	4.2 million	xxx	£xxx	£xxx
xxxxxxx	1.2 million	xxx	£xxx	£xxx
xxxxxxx	1.2 million	xxx	£xxx	£xxx
xxxxxxx	4.2 million	xxx	£xxx	£xxx
			Total	£xxx

Table 11 – Potential Revenue from Big Data Sales to Equipment Manufacturers

3.3 Secondary Market Opportunities

xxxxxxxx-Paragraph detailing other possible customers was included here-xxxxxxx

3.4 Direct Competitors

The primary competitor is xxxxxxx, located in the USA. The competitors developed a system that tracks relevant statistics. The system requires user more input than Shot Scope technology and the technology is not as smart. End users also complain that data collected by the competitors technology is not accurate. The competitor company raised $300k via xxxxxxx, $1 million in investment and in first month of trading shipped 1000 units in the USA at $250 per unit.
Primary market research indicates that 70% of target customers would consider the product. The customer desires statistical data however is put off by the manual process to collect data. There is a desire for a product that delivers statistical data without need for pushing button.

3.5 Market Entry & Sales Strategy

Key to the success of Shot Scope is adoption of the enabling Shot Scope technology by the target market. Shot Scope has identified the key performance requirements for the Shot Scope technology directly from lead customers and the target market. Shot Scope is working towards a commercial solution that meets the customer's needs:

xxxxxx-A list of identified customer needs was included here-xxxxxx

Sales of the Shot Scope product will quickly be followed by subscriptions to performance analytics data and sales of big data statistics opening multiple revenue opportunities.

3.5.1 Marketing Strategy

Shot Scope has engaged with the target market establishing partners who want to participate in phase 1 and 2 trials. The trials will generate a market awareness of Shot Scope and identify relevant shops willing to initially retail the Shot Scope product.

Trial Phase	Trial Location	Participants	Schedule
Phase 1	xxxxxxx	Target customer 1	May 15
Phase 1	xxxxxxx	Target customer 1	May 15
Phase 1	xxxxxxx	Target customer 1	May 15
Phase 1	xxxxxxx	Target customer 1	May 15
Phase 1	xxxxxxx	Target customer 1	May 15
Phase 2	xxxxxxx	Target customer 2 & 3	June 15
Phase 2	xxxxxxx	Target customer 2	June 15
Phase 2	xxxxxxx	Target customer 2	June 15
Phase 2	xxxxxxx	Target customer 2 & 3	September 15
Phase 2	xxxxxxx	Target customer 3	September 15

Table 12 – Phase 1 & 2 Trial Schedule

Key to the marketing of Shot Scope is endorsement of target customers. A long term trend in relevant equipment is customers purchase the same equipment that professionals use.
Therefore any marketing strategy will require target professional involvement. Shot Scope has been introduced to a key professional. A meeting to demonstrate Shot Scope has been setup at xxxxxxx. This is an opportunity to market Shot Scope to tour players at the pinnacle of the sport. European and PGA tour player xxxxxxx has stated that he is willing to facilitate introduction to equipment manufacturers xxxxxxx and xxxxxxx once the product is developed.

The xxxxxxx is a key partner and has offered to support Shot Scope in the future. xxxxxxx, director of the institute has suggested that he can facilitate introduction to the following OEMs;

1. Potential OEM 1
2. Potential OEM 2
3. Potential OEM 3
4. Potential OEM 4
5. Potential OEM 5

Relevant professionals provided Shot Scope with an opportunity to hold demo days and workshops at 12 relevant facilities throughout the UK. A relevant public speaker at corporate target events suggested the use of Shot Scope technology to track performance during corporate days. The cost of the day would be covered by the corporate company, end users would experience the benefits of Shot Scope for free for 1 day. This marketing strategy was previously implemented when competitive products were introduced to the market.

A relevant media source has stated he would facilitate an introduction to the target divisions. Shot Scope has been offered a free presentation table to demonstrate their technology. This brings in a number of target users. Shot Scope will be marketed at relevant events throughout the UK via demo days, Saturdays and Sundays between April and September are particularly busy with on average 300 customers on each day. Shot Scope offers relevant businesses a small share of profits from sales in return for full access to customers. Three businesses have displayed an interest in demo days.

Investigate opportunities to advertise Shot Scope through newspaper articles. Advertise Shot Scope in target magazines and other relevant media outlets. Shot Scope met with a representatives from the xxxxxxx to discuss the use of Shot Scope in all competitions. The Assistant Director of equipment standards at xxxxxxx suggested Shot Scope would be legal in all competitions. However an official application would be required on completion of product development. If approved by the relevant

body for use in all competitions this information would be used to promote Shot Scope via newspaper articles, website and social media.

Attend trade market shows to learn about the golf market, grow network and identify potential future OEMs, 6 have been identified as key shows to attend.

-OEM 1
-OEM 2
-OEM 3
-OEM4
-OEM5
-OEM6

Social media and video clips on the Shot Scope website to promote the benefits of owning Shot Scope technology. This will include media from trials, demo days with professional customers and user feedback. A statistics market research survey has been distributed via the monthly email of 15 target businesses. Users leave email details if interested in trials or entering competition to win vouchers providing a list of contact details for users within central Scotland.

3.5.2 Sales Strategy

Initial Shot Scope sales strategy focuses on the volume sales of the Shot Scope technology, with an aim of partnering with OEMs of target equipment or technology. This enables subscription and big data revenues. In parallel Shot Scope will establish sales channels for big data. Initial sales strategy from 2015 to 2017 is to maximize product sales via relevant shops and localised professional shop purchasing groups. 20 relevant shops in Scotland have displayed an interest in the following business model.

- Purchase from Shot Scope: £xxx to £xxx
- Retail price to user: £xxx
- Shot Scope cost to manufacture £xxx to xxx per unit (1K volume)

Shot Scope has set targets of 5K product sales in year 1 equating to product sales of £xxx.
xxxxxxx-A paragraph detailing a key marketing strategy was included here-xxxxxxx

Relevant purchasing groups purchase large product volumes at reduced prices. Then distribute the product via localised professional shops throughout the UK.

Company	Name	Position	Details
Company 1	xxxxxx	Marketing Manager	xxxxxxx
Company 2	xxxxxx	Director & Supplier relations	xxxxxxx

Table 13 – Localised Target Purchasing Groups

The figure below details the multiple sales routes for the product from manufacture to end customer:

Figure 9 – Product Sales Route

Revenue from year 1 provides Shot Scope with resources to grow the marketing and sales team. Shot Scope plans to continue to sell greater volume in professional shops in the UK and sales of product via the Shot Scope website. Whilst identifying and establishing OEM partners that will

enable international sales channels and increase revenue. Shot Scope plans to target the USA target market as 50% of customers worldwide live in America.

In recent years the major OEM companies have added digital products to their traditional product offerings. This includes mobile application, digital online solutions and electronics target products.

xxxxxxx-A list of competitors and their relevant products was included here-xxxxxxx

There is a high probability that one of the partnering OEMs would be interested in purchasing Shot Scope Technologies intellectual property. Shot Scope identified two different types of OEM that may partner with Shot Scope Technologies; established manufacturers and distributors of golf equipment or golf technology distributors. Potentials partner OEM companies are detailed below.

Company	OEM or Technology	Current Product Offering	Turnover
Company 1	OEM	xxxxxxx	£xxx
Company 2	OEM	xxxxxxx	£xxx
Company 3	OEM	xxxxxxx	£xxx
Company 4	OEM	xxxxxxx	£xxx
Company 5	OEM	xxxxxxx	£xxx
Company 6	Technology	xxxxxxx	£xxx
Company 7	Technology	xxxxxxx	£xxx
Company 8	Technology	xxxxxxx	£xxx
Company 9	Technology	xxxxxxx	£xxx

Table 15 – Potential Partners with Established Routes to Market

Contact details of prospective OEM partners:

Company	Name	Position	Details
Company 1	xxxxxxx	CEO	xxxxxxx
	xxxxxxx	European VP Sales	xxxxxxx
	xxxxxxx	USA Accounts Executive	xxxxxxx
Company 2	xxxxxxx	General Director	xxxxxxx
	xxxxxxx	PR & Sales	xxxxxxx
Company 3	xxxxxxx	Managing Director	xxxxxxx
Company 4	xxxxxxx	Managing Director	xxxxxxx

Table 16 – Potential Partners with Established Routes to Market

OEM companies and golf technology companies have established brands and international sales channels. A partnership with a key technology company could prove a more suitable option. They are experienced distributors of electronics products and have infrastructure, technical knowledge, technical helpdesk, and returns systems in place to retail Shot Scope.

Company	Location	No. Of Employees	Revenue or Sales Volumes
Company 1	USA	275 in key area	£xxx and xxx sales
Company 2	USA	8k all markets	£xxx and xxx sales
Company 3	Switzerland	500 all markets	£xxx and xxx sales
Company 4	USA	250 in key area	£xxx and xxx sales

Table 17 – Analysis of Competitor Technology Companies

Shot Scope will collect, process and categorize big data during year 1 in preparation of ramping up sales of data in year 2, in parallel Shot Scope will establish big data sales channels. Shot Scope has been approached by three companies interested in purchasing relevant big data.

Company	Name	Position	Details
Company 1	xxxxxxx	Business Executive	xxxxxxx
Company 2	xxxxxxx	General Manager	xxxxxxx
Company 3	xxxxxxx	Company Director	xxxxxxx

Table 18 – Analysis of Key Technology Companies

Key to the revenue from big data is the volume of Shot Scope products sold within the target market. As sales of the technology increase revenue from big data statistics accumulatively increase. The figure below details the multiple revenue channels where Shot Scope big data can be sold. The data Shot Scope can collect is completely new therefore difficult to place exact figure on its value. A market research study by xxxxxxx has been commissioned to investigate the markets and value of Shot Scope big data.

Figure 10 – Big Data Sales Channels

The enabling technology is t Shot Scope's end product, customers have to purchase the end product to enable sales of analytics subscriptions and big data. Therefore initial product margins directly related to sales price, manufacturing costs, and sales costs of the Shot Scope technology.

Units Sold	Sale Price	Cost to Make	Sales Cost per Unit	Product Margins
5k	£xxx	£xxx	£xxx	xx%
20k	£xxx	£xxx	£xxx	xx%
50k	£xxx	£xxx	£xxx	xx%
100k	£xxx	£xxx	£xxx	xx%

Table 19 – Shot Scope Product Margins

The above profit margins do not take into account the cost of selling the product via an OEM. This will significantly reduce profit margins, most likely to a profit margin of xx% to xx%. However larger product sales numbers will accumulatively grow the annual value of subscriptions and big data revenue. It is important to note the relationship between the Shot Scope enabling technology, annual subscriptions to relevant analytics and annual sales of big data. Product sales generate the largest yearly revenue, annual subscriptions to performance analytics and annual sales of big data grow accumulatively as new users are continually added.

The graph and table below detail 5 year post SMART Feasibility Shot Scope turnover separated into revenue from product sales, annual subscription to performance analytics and sales of big data via multiple revenue channels.

Graph 1 –5 Year Sales Revenue for Product, Subscription & Big Data

Year	Product Sales		Analytics subscription (45%)		Big Data	Total Revenue
	No. of Sales	Revenue	No. Of sales	Revenue		
2016-2017 (1)	xxxxxxx	£xxx	xxxxxxx	£xxx	£xxx	£xxx
2017-2018 (2)	xxxxxxx	£xxx	xxxxxxx	£xxx	£xxx	£xxx
2018-2019 (3)	xxxxxxx	£xxx	xxxxxxx	£xxx	£xxx	£xxx
2019-2020 (4)	xxxxxxx	£xxx	xxxxxxx	£xxx	£xxx	£xxx
2020-2021 (5)	xxxxxxx	£xxx	xxxxxxx	£xxx	£xxx	£xxx

Table 20 – Breakdown of Shot Scope 5 Year Revenue

3.5.3 Sales & Marketing Expertise

The Founder and CEO has experience of sales through a number of different businesses and positions.

xxxxxxxx- List of previous sales experience was included here –xxxxxxx

3.6 Value Proposition

The primary value proposition for end user is the collection of relevant data. The key innovative step that differentiates Shot Scope from other products on the market is the patent pending technology that xxxxxxx. Current solutions in the market are outdated; record statistics using paper and pencil or constantly push buttons to enter information. The Shot Scope technology solves this problem. The patent pending technology works in xxxxxxx. The data gathered by Shot Scope provides value to xxxxxxx. At present these companies have to employ a team of people to manually collect data via monitoring performance of demo days at relevant events. Shot Scope can provide these companies with a larger and more accurate bank of data for end users.

xxxxxxx- Detailed plan of product development over the next 4 years was included here-xxxxxxx

3.7 Product & Services Development

The primary objective of the business is to provide a smart electronics solution to collect target data. Sales of the Shot Scope product combined with subscriptions is the primary revenue stream. As product sales increase the volume of data uploaded to the Shot Scope database accumulatively increases. The secondary revenue stream is sales to key suppliers. The key to both the primary and secondary revenue streams is the number of end users purchasing and using the technology. Once established in the market the key to continual growth is new and improved revisions of the technology. Therefore attracting new users and providing new offerings for the current customer base.

3.8 Timescale & Investment

Shot Scope has entered discussions with a number of individual investors and angel investment groups over the past year. On approval of a Scottish Enterprise SMART Feasibility project Shot Scope will contact investors to discuss potential investments in return for equity. In May 14 Shot Scope was approached by a target investor with an interest in investing during a seed round.

Investor or Investment Group	Contact	Location
xxxxxxx	xxxxxxx	Edinburgh
xxxxxxx	xxxxxxx	Edinburgh
xxxxxxx	xxxxxxx	Glasgow
xxxxxxx	xxxxxxx	St Andrews
xxxxxxx	xxxxxxx	Glasgow
xxxxxxx	xxxxxxx	London
xxxxxxx	xxxxxxx	Glasgow
xxxxxxx	xxxxxxx	London
xxxxxxx	xxxxxxx	Leeds

Table 21 – Investors or Investment Group Contacts

On completion of the SMART Feasibility project Shot Scope will aim to raise investment to Commercialise the technology. Once optimised, the technology needs to be packaged, branded and prepared for commercial release. To grow the business and deliver a commercial ready version of Shot Scope requires £xxx post SMART, this will be raised via a combination of grant and investment:

Investment in return for equity - £xxx
SE or TSB, R&D or commercialization grant - £xxx

Shot Scope will aim to raise this finance through the same investor or investment group that provided the private matched funding for the SMART Feasibility project.

Details of Spending	Employment Status	Salary Cost + NI	Expenses	Total Costs
Embedded Software	Employee 2	£xxx	N/A	£xxx
User Interface & Database	Employee 3	£xxx	N/A	£xxx
Sales & Marketing	Employee 4	£xxx	N/A	£xxx
Business Director	Employee 5	£xxx	N/A	£xxx
Design & Tooling	Sub-contracted	N/A	£xxx	£xxx
Branding & Marketing Materials	Sub-contracted	N/A	£xxx	£xxx
Office Equipment & Software Licenses	N/A	N/A	£xxx	£xxx
IP Assets – Patent & Trademark	N/A	N/A	£xxx	£xxx
			Total	£xxx

Table 22 – Commercialization of Technology Costs

With an investor in place and successful completion of a SMART Feasibility project Shot Scope targets a market release date of xxxxxxx. Reaching a level of self-sustainability in xxxxxxx.

3.9 Exit Strategy

Shot Scope has no plans in place to exit the business within the next 10 years. The focus is on growing a Scottish business that xxxxxxx staff and turnovers £xxx. Growing to a company in year 5 that sells products worldwide, employs xxxxxxx staff and has a turnover of £xxx.

As good business practise exit strategies will be considered when partnering with OEMs of target

equipment or target technology. However the primary focus is on growing the business. There is a number of potential future exit routes that will be investigated as the business grows and progresses. Many potential exit rotes include companies that operate in multiple sports markets.

Figure 11 – Potential Future Exit Routes

4. NEED FOR SUPPORT AND PROJECT COSTS

4.1 Need for Smart Scotland Support

Scottish Enterprise SMART support is essential to development of the Shot Scope xxxxxxx technology and therefore overall business. Given the pace of technology advancement and the market pull for a relevant product to xxxxxxx. First to market with a novel product and meets key customer performance criteria will hold a significant competitive advantage. The SMART Feasibility project will advance the Shot Scope technology to a point where the next step natural step is commercialisation and release to market. Without a SMART Feasibility study the time to market will be significantly increased, Shot Scope would have to spend significant time looking for alternative funding to optimisation of the technology. Without a SMART Feasibility project or other funding development of the optimised technology will not progress, leaving a significant market opportunity open for others to exploit.

In the past 9 months the company has invested £xxx in the development of the technology. This does not include the Founder's time to design specific components.

Details of Task	Timescale	Cost
xxxxxxx	xxxxxxx	£xxx
xxxxxxx	xxxxxxx	£xxx
xxxxxxx	xxxxxxx	£xxx
xxxxxxx	xxxxxxx	£xxx
xxxxxxx	xxxxxxx	£xxx
xxxxxxx	xxxxxxx	£xxx
xxxxxxx	xxxxxxx	£xxx
xxxxxxx	xxxxxxx	£xxx
xxxxxxx	xxxxxxx	£xxx

Table 23 – Current Project Spend from Sep 13 to Jul 14

Shot Scope is currently financed through a xxxxxxx that pays the founders salary to work full time in the business. This will end in xxxxxxx leaving the business with no funding. Without a SMART Feasibility project the Shot Scope will require private funding to continue.

4.2 Detailed Breakdown of Project Costs

xxxxxxx- 2 pages of detailed project cost breakdown was included here -xxxxxxx

5. APPENDICES

xxxxxxx- 4 pages of relevant appendices were included here -xxxxxxx