



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David



University of Wales Trinity Saint David

School of Engineering

Business Plan (Powder Hund Ltd.)

Entrepreneurs (MX600416)

Joshua Grant Brimecombe

1701440

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1 Executive summary

1.1 Business summary

“Powder Hund Ltd.” is a winter sports company that manufacture ski boots, using innovative additive manufacturing techniques to produce complete custom ski boots to each individual customer. The business will sell both a product and measuring / fitting service. The product is a Selective Laser Sintered (SLS) ski boot lower shell which will act as a base for a modular boot construction allowing for several different models of ski boots to be produced from a lower shell, both reducing design and manufacture time and giving greater customisation in terms of type of boot that the customer is getting, lending its self-better to different types of skiing. The modular system will allow for upgrades during the custom generation of an individual’s boot. Further models or adaptations of the boot will be released across a 15-year plan, including but not limited to differing upper constructions as well as touring options and liners that are compatible with snowboard bindings. The fitting service is a pre and post manufacture service, which vary in price, accuracy and comprehension. The services pre boot manufacture are a series of measurements, profiles and scans. There are several options for measurement including home and shop fittings, with several different technologies being utilised in terms of 3D scanning, haptic smart phone scanning and pressure plate data.

The Powder Hund name stems from the term ‘powder hound’ which is jargon used by skiers and snowboarders of someone who searches for powder when out skiing. The Hund is a translation of hound in German which is known for both its precision engineering and ski resorts and mountain ranges. To keep with the hound theme the different models of boots will have dog related names; such as Wolf, Hock, German Shepard and K9

1.2 Business aims

The aim of this business is to produce ski boots that are both comfortable and perform to a high level. Use a custom system that takes information in terms of scans and measurements and use it to 3D print a custom boot to specification that is also bespoke to them.

The aim of the business is to sell one-off custom ski boots in low volume and make a profit. This approach will require the use of modern manufacturing methods

1.3 Financial summary

Product price £1000, with first year sale forecast predicting 150 boots turning over gross revenue of £150,000 but making a net profit loss of £-18,000 covering fixed annual expenses of £60,000 plus the variable cost of production. The is also profit from services and additional sales (merchandise, accessories and product upgrades. By the third-year sales will be at 400 double the value needed to breakeven, with a net profit of £152,000. Payback period calculated to 3 years 4 months for the SLS printer which incurs the largest amount of initial financing.

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2 Introduction

2.1 Owner's background (Brimecombe, 2020)

Mr Joshua Grant Brimecombe (Company Director, owner, founder and CEO). I have been skiing for 12 years and it is one of my passions, I have always been interested in sports equipment and the technology used with in it. My interest started at a young age, when I was taught how to maintain my own motorcycle for trails riding.

As an eight-year-old I was introduced by my parents to skiing and developed an avid interest in sport and how the equipment made a difference to my performance. The nature of my hobbies led me to pursue a career in engineering, specifically in the sports industry. I graduated with a BEng (Hons) in Extreme Sports Engineering from the University of Wales Trinity St David (U.W.T.S.D.) in Swansea, Wales in July of 2020. (Brimecombe, 2020)

The Ski boot lower was designed during my second year at university as part of an assignment for a 'Manufacturing Design and technology' module. The assignment 'Computer Aided Manufacturing and Design for Additive Manufacturing Technologies' looked at how a product could be redesigned for additive manufacture and the improvements this would have on the product. Due to my passion in Skiing, I decided to redesign a ski boot. The ski boot idea was looked at as 3D prints can be individually adjusted in the Computer Aided Design (CAD) software, enabling each boot to custom printed. (Brimecombe, 2019)

The business idea stemmed from the Entrepreneurship module that was undertaken in the third year of my degree. We were encouraged to participate in business workshops and networking events. This resulted in ideas being developed and turned into viable business plans.

Owning my own business gives me the freedom to be creative as well as the opportunity to take risks, as my background in extreme sports have developed my ability to deal with and thrive in high pressure situations. Additionally, my study of management, design and manufacture during my degree, allows me to technically understand, enhance and make the products designed for Powder Hund.

2.2 Elevator pitch

Powder Hund, bespoke ski boots for you. The first completely custom ski boot. Not just custom fit, but custom manufacture. Manufactured for you, because everyone is different.

Powder Hund the next big turn in the snow sports industry in terms of technology and manufacturing technique. Our new alpine ski boot is designed using the advanced engineering techniques and software to map-out load paths through the boot based on your foot specifically, then by using Laser 3D printing technology (SLS additive manufacturing) every pair of boots is printed in the UK fitted with you specification of linings and inner soles and ship directly to you.

2.3 Products and services proposal

The product is a premium custom manufactured ski boot. That is a Selective Laser Sintered (SLS) ski boot lower shell which will act as a base for a modular boot construction allowing for several different models of ski boots to be produced from a lower shell, both reducing design and manufacture time and giving greater customisation in terms of type of boot that the customer is getting, lending its self-better to different types of skiing. The modular system will allow for upgrades during the custom generation of an individual's boot. Further models or adaptations of the boot will be released across a 15-year plan, including but not limited to differing upper constructions as well as touring options and liners that are compatible with snowboard bindings or more suitable for walking / climbing.

The services that Powder Hund provides are both online and instore. The services are pre and post order service; pre order services being differing types of measurements and scanning types with post purchase being final fit services such as inner mouldings. The online services will be provided on the company web site and sold directly to customers through affiliated software. The service that need to be carried out in person can be booked on the company website at either one of the direct dealers (Snow and rock (UK)/ intersport (Europe)) or a convenient Powder Hund mobile workshop.

3 Research

3.1 The Market

3.1.1 Customer

The customer for the products and services that 'Powder Hund' supply, are individuals that regularly ski and require comfortable boot fit combined with high performance. The typical customer skis one or more weeks a year throughout the season and are looking for a high-performance ski boot, that is not only comfortable, but has increased lateral stiffness to increase power and edge hold. The business also targets recreational skiers who have trouble with ski boot comfort, which according to (Brimecombe, 2020) survey that was conducted is 50% of skiers found ski boots uncomfortable.

Powder Hund for the majority, sell products directly to individual customers, reducing cost. Although Powder Hund will supply training and rent/lease equipment to shops for fixed price and or sales commission and other benefits on offer to be negotiated with individual retailers.

3.1.2 Why Powder Hund

The reason customers buy from particular brands is a combination of brand fit characteristics and brand loyalty, for example; Ski boot companies have a range of different models of different applications, price ranges and styles of skiing; but across a brand they will tend to have a similar fit characteristic in terms of whether they have wide or narrow foot bed, ankle or cuff. These differing characteristics trends suit different types of people as everyone is different. People will work out what brand suits them by reading forums on the internet or asking ski boot fitters and then trying them on. People will normally end up compromising; people with less experience will pick a more comfortable boot and compromise of performance and more elite skiers choose a higher performance boot and end up with a boot that is uncomfortable.

The reasons customers should buy our products is because Powder Hund can provide them with bespoke boots that do not compromise on comfort or performance. The boots are manufactured specifically for their foot and needs, whilst giving them the best performance, this is what sets us apart from other brands and manufacturers. People will no longer need to compromise, and it is anticipated that in time, there will be consistent brand loyalty.

3.1.3 Location

The market for ski boots is worldwide and is larger in nations where snow sports are accessible.

The intended market is initially the United Kingdom, with scope to expand into Europe then into United States and Asia in the future. Powder Hund intends to initially target the UK ski market, as there is a large community of skiers. The UK is a developed first world country there is large disposable incomes to spend on premium products to partake in privileged sport. The UK market is currently unoccupied, and people have to buy predominately from European or American companies. Being a UK citizen, I have a working understand the rules, regulations and laws. As well as UK contacts and therefor can create the best environment to start a company, including no language barrier.

Social economic status is a significant factor of the target market and customer base. The key factors influencing this status are, income, education, opportunity and provision. The right combinations of these factors create an environment that makes this product appeal to this targeted customer base.

Disposable income allows for a luxury lifestyle, as well as allowing an individual the ability to invest in high quality performance sports equipment. Location also plays a part, if you live within driving distance to a local ski resort, you will have the opportunity to ski frequently. If you are not local, but have a good income, you have the provisions to create the opportunity to visit a ski resort.

3.2 Market research

3.2.1 Primary Survey

A survey was conducted in the UK, the survey was released over social media on pages and group that were based at ski resorts. This enabled Powder Hund to look at people with different skill levels and abilities. This survey gives a small but direct window into the target audience of the product. The main points to pull from the results found in the appendices, was that 50% of people found ski boots uncomfortable to some extent. This means that these people would all benefit from the Powder Hund ski boot.

3.2.2 Ansoff Matrix

The Ansoff Matrix shows that Powder Hund is in both the product development area and diversification due to the customisation of the design based on additive manufacture. (Hanlon, 2019)

Table 1 Ansoff Matrix

Ansoff Matrix	Existing Product	New Product
Existing Market	Market Penetration	Product Development
New Market	Market Development	Diversification

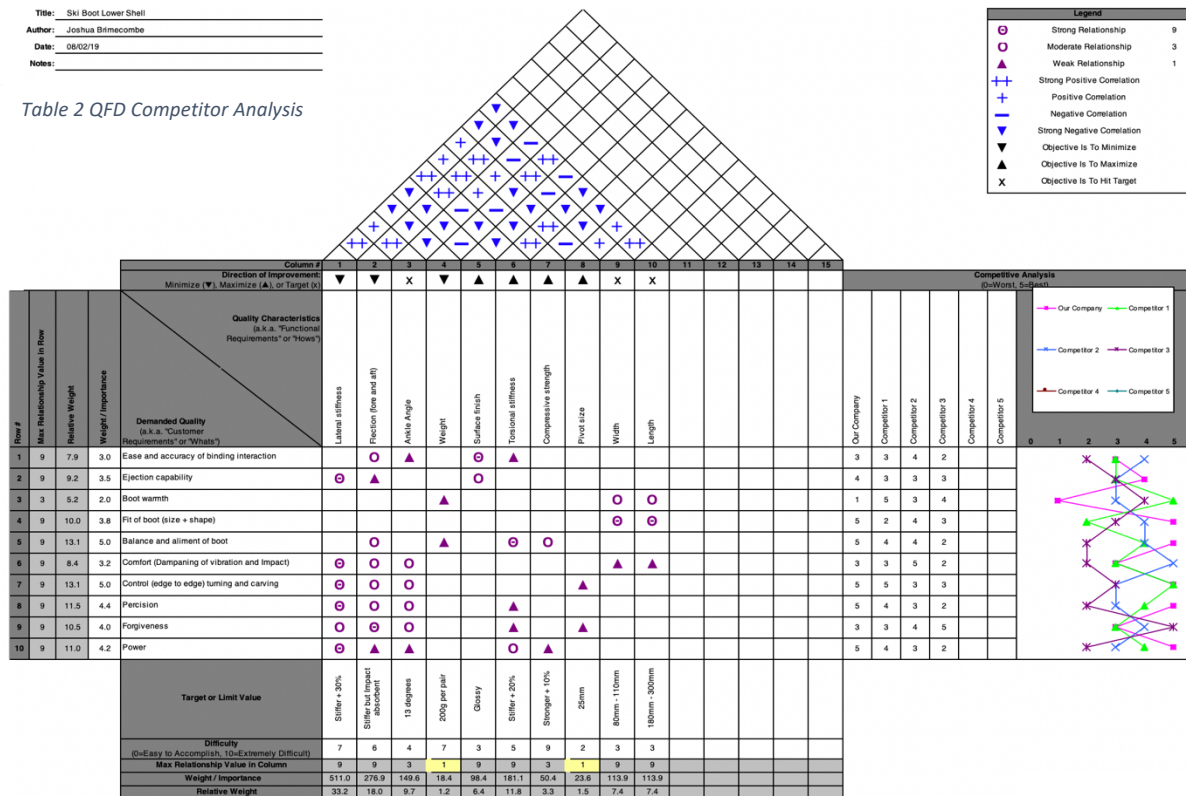
3.3 Competitor analysis

3.3.1 QFD

A QFD was conducted to analyse the demand requirements against technical characteristics, whilst comparing competitor's product against Powder Hund's. The QFD analysis the relationship between customer satisfaction based on customer requirements against technical characteristics, versus competitors' products. It also shows the relationships between the individual technical characteristics. The QFD gives many important values that can be used to determine how to improve the product. QFD's take into account the importance and the weighting of each characteristics.

Title: Ski Boot Lower Shell
 Author: Joshua Bismacombe
 Date: 08/02/19
 Notes:

Table 2 QFD Competitor Analysis



To decide on the targets for each technical characteristic, Powder Hund needed to research each technical characteristic for each of the competitor's boots. This was achieved by taking their boot and taking measurements and recording how the boot performs. The data was then collaborated into a table (QFD) to enable targets to be set for our design. QFD Table of technical characteristics.

Table 4 QFD Competitor Analysis Table

Competitor	Lateral stiffness	Flection (fore and aft)	Ankle Angle (degrees)	Weight per pair	Surface finish	Torsional stiffness	Compressive strength	Pivot size (mm)	Width (mm)	Length (mm)	Type of boot
Our target	+30%	Stiff but impact absorbent	13	200g	Hard + silky	+20%	+10%	25	Customable		Freestyle racing boot
1	+50%	Stiff	14	400g	Hard	+17%	+5%	22.5	75 - 95	190-280	Race boot
2	+20%	Progressive Flection	13	475g	Silky	+15%	+10%	30	70-110	180-300	Freestyle (mogul) boot
3	Base line	Soft and smooth	12	450g	Soft	Base line	Base line	20	60-110	150	Beginner / Novice boot

3.3.2 SWOT

SWOT Analysis was done on the business and the product to evaluate the strengths, weakness, opportunities and treats. Helping marketing advertise what is the benefits of the product and also allow powder Hund to know what to work on the improve the product and business.

Table 5 SWOT Analysis

Strength	Weakness
Exclusive USP (Unique Selling Point) Custom manufactured ski boot (bespoke to you) Great fit and perfect balancing High performance / lateral stiffness Light weight Increased strength to weight ratio Adaptable for different markets / disciplines with Touring, snowboarding inner options available in the near future.	High cost (£1000) Long lead time due to lean manufacturing. Complex manufacturing Testing as each boot is different Too many options
Opportunities	Threats
Reduction in Post fitting adjustments High quality, high price, larger profit	Apex and DAHU similar looking boots But they are using old technology

POWDER HUND

4 Methodology

4.1 Operations and logistics (Product and Service)

4.1.1 Production/manufacture

4.1.1.1 Premises

A certain amount of space is required for the premises; there needs to be a manufacturing area, office space, conference space and marketing area. The manufacturing area needs space for the SLS printer including an area to prepare the materials and remove parts from machine, as well as space for product assemble, post processing and finishing (a minimum of 25m²).

The plan is to start the business from home. This will enable Powder Hund to keep outgoings to a minimum. This home office base will be stage one and stage two, renting/purchasing premises, will be undertaken when Powder Hund is able to confidently prove financial viability and proof of concept. Ideally the company will buy premises, as it can then rent it out if the company moves or can sell it to put towards the cost of the new premises. This is dependent on the cost and duration of the mortgage in comparison to the cost of renting.

The company's U.K. location is not seen as a problem, as it is not open to customers like a shop.

However, it is important that there is strong supply route, such as being close to a motorway, airport or dockyard / port; as well as being close to the owner's home.

4.1.1.2 Equipment

ProX SLS 6100 by 3DSystems has a large enough bed to produce 4 boots at a time.

This printer was chosen for its bed size and quality; with a maximum build envelope is 381 x 330 x 460mm (57.5L), a layer thickness range of between 0.08 – 0.15mm. It yields a 100W CO₂ laser that scans at a speed of 12.7 m/s. This all adds up to a highly accurate printer that turns out finished parts with little requirement for post processing.

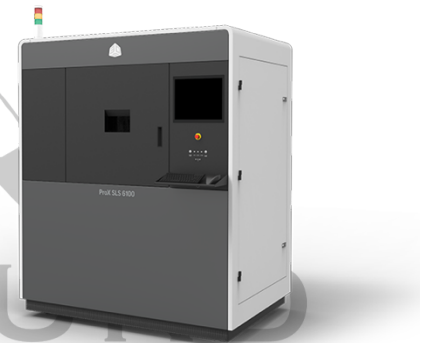


Figure 1 ProX SLS 6100 (3DSystems, n.d.)

4.1.1.3 Materials

Nylon 12 supplied by 3DSystems on a lean on-demand industry manufacturing plan. This nylon requires little surface finishing, a light sanding and polish is added once removed from the powder. The product is dried to reach an aesthetic quality.

Ski Equipment UK is the supplier of third-party boot componentry and hardware, an arrangement was set up for purchases of buckles and straps from third part ski companies using their trade accounts at cost price.

4.1.2 Delivery/transportation

4.1.2.1 Service delivery

Powder Hund will have a presence in sixteen of the twenty 'Snow + Rock' U.K. stores. All boot fitters will undergo Powder Hund service and technical training. It is anticipated that by increasing staff knowledge and product understanding a consistent product and service will be achieved.

This initial presence in the U.K. will allow form the basis of a confident expansion into one hundred of 'Inter sports' six hundred plus stores; mainly in their Western French branches in the Alpine region on Europe.

4.1.2.2 *Product delivery*

A small business contract is set up with DHL, who deal with all export and postproduction logistics. The agreement is a fixed rate per product shipment for UK increased charge for Europe and then increased charge for global shipping. DHL was the chosen supplier due to offering a local pick-up rout and low fixed rates.

4.1.3 *Payment*

Online payments on the website will be PayPal or Debit / Credit card through Wix payment and PayPal Business account; Wix payments taking 1.90% +20p per transaction, PayPal business account fees are 2.90% +30p per transaction.

Portable POS (Point of Sales) is provided by iZettle; 1.75% on card payments on portable card reader and 2.50% on invoice transactions. iPad is used as POS as well as used for accounting purposes.

4.1.4 *Insurance*

Powder Hund is a manufacture company that produces performance ski boots, the business could be liable for damage or injury caused by the product or at the site of manufacture (premises). The cover needed is comprehensive Insurance which covers any legal cost in cases against the company.

Business liability cover and property protection covering manufacturing facility/equipment/accident.

Life insurance covers personal and business costs, that had been agree for the set period with a large initial pay out.

4.1.5 *Staff structure*

Joshua Brimecombe acting as the Director, Owner, Founder and CEO.

Consultants include one off contract such as logo (graphic) design with Garrett Talbot and the systems developer will be used as well as annual contractors. Quarterly marketing (strategy, scheduling and planning) meetings with Amy form Social Butterfly and annual accountancy meetings with Beverly the accountant from BA Brown accounting who will provide guidance on TAX, VAT, wages and official documentation.

4.2 Marketing strategy

4.2.1 The brand

The company brand is the underlying valuables and principles of Powder Hund. The company is modern in its way in thinking, this is shown in the fundamentals of additive manufacturing custom performance ski boots. The boot and its manufacture are designed specifically to improve the fit, comfort and performance of the customer as a skier, this should be reflected by the brand. The logo should be modern, minimalistic and recognisable. Garrett Talbot was commissioned to design the logo.

4.2.2 Social media

The social butterfly will be brought onboard to consult with marketing specifically on the social media side. Social Media will be a large part of the marketing that Powder Hund undertakes as it is free. This mirrors a similar approach to Jason Levinthal, whilst at line and furthered with J skis, the advantage of this marketing strategy is how significantly cheaper it is than that of sponsoring professional athletes (Brimecombe, 2020). Instagram, Facebook, YouTube and LinkedIn accounts will be managed and linked with a third-party software used to manage the content and analysis trends.

YouTube channel with content on products, services (including how to measure your feet), how to choose the right components during the build as well as behind the scenes.

4.2.3 Website

Wix.com was used to create a website, including a home, product, services, an about us / our story and contact us pages. The website was linked to the domain name of “powderhund.co.uk” which is leased at £5 per year.

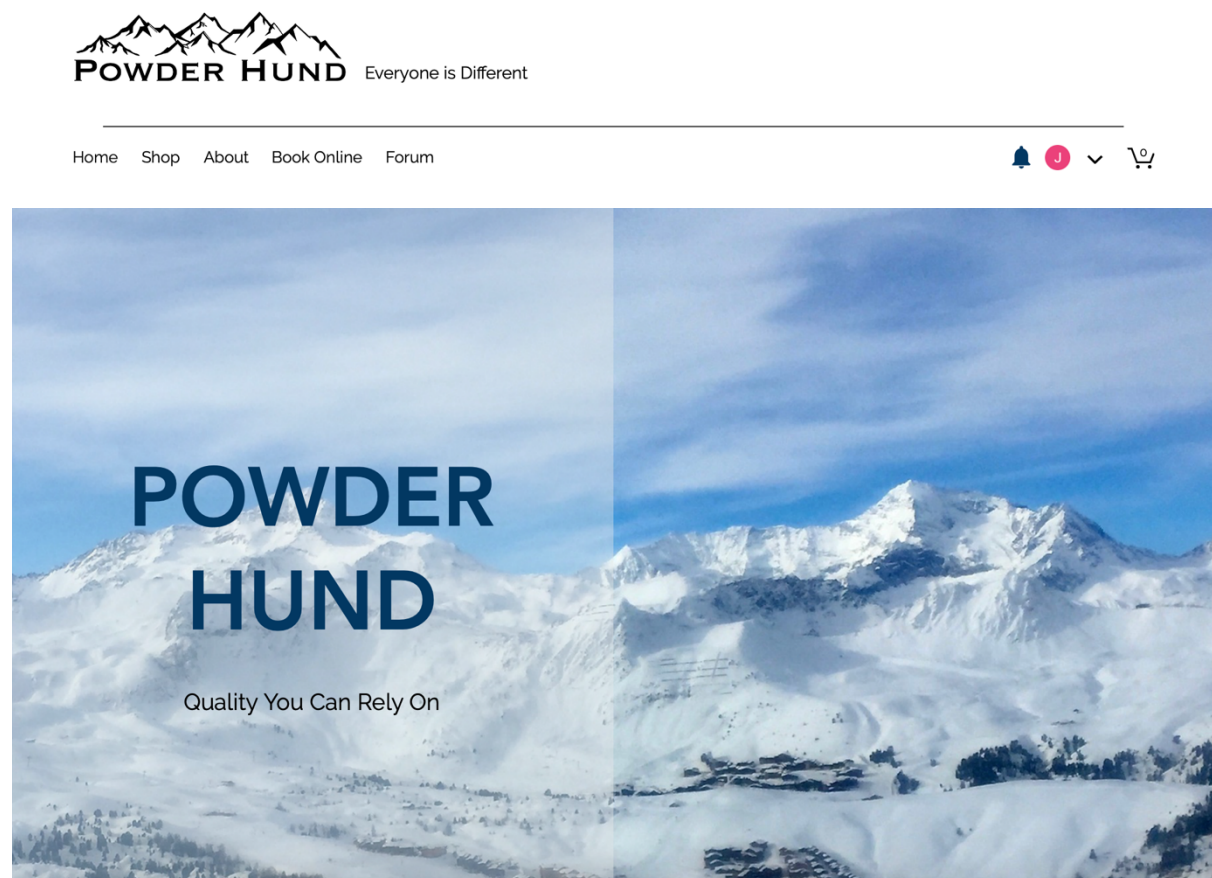


Figure 2 Website Wix.com

4.2.4 Email

Subscription on the website and social media allows for members to receive exclusive offers and monthly and seasonally newsletters. As well as Order reference emails (confirmation, dispatch, delivery, review), survey emails, customer retention offers, and birthday offers. Email addresses use the domain “@powderhund.co.uk”. several accounts will be setup to deal with different applications (info@powderhund.co.uk, sales@powderhund.co.uk, j.brimecombe@powderhund.co.uk)

4.2.5 5-year product plan

The product production plan is a plan of what products will be released over the next couple of years. the boot works as a modular system, around a signal lower shell initially that has a thin semi structural wall with a structural load pattern built on the outside. This boot design looks stylish and features of the wall allow it to be waterproof and warm.

In the near future is a double skinned lower shell option which then the gaps between the skins and the load paths will be filled with insulation to optimise for warmth. The double skin will also be more aerodynamic and drag less through deep powder.

After which an exoskeleton lower shell will become available with no wall or skin features which will become the lightest boot on the market. It will be a demonstration of what is inside the other boots. This shell will not be warm or aerodynamic or waterproof so this will be the introduction of the Powder Hund’s own inner boots, which will be a benefit when the exoskeleton design is adjusted and opened up more like a snowboard binding design, several options available hear such as a rear entry option (Speed-Flow style) as well as racket straps instead of ski buckles or even BOA systems. These snowboard binding design that clips in the ski bindings will allow quick changes between board and skis. With the mention of ski bindings after the release of the exoskeleton design all boots will have the option to be used with touring pinned bindings as well as alpine systems or product such as shift bindings. The inner boots will be available in four options; Pro/Amateur (a small amount of grip standard fasteners) great for walking to the lift or in the bar, Climber (greatest grip, and supportive boot) great for climbing up perfect with the touring option, Boarder (fits the exoskeleton binding option as well as a snow board binding) BOA or Lace up options.

4.3 Management

The management of Powder Hund is relatively simple as predominately its run and managed by Joshua. The day to day operations of the company are laid out above, which will be run by Joshua although most of the manufacturing is automated in terms of the additive manufacturing, there is a small amount of initial set up and post processing required.

Four contractors will be used an accountant and marketing manager will be used annual and the graphic designer and systems (app) developed will just be used during initial start-up.

4.4 Risk

Starting a business involves some risks these risks can be split into business risks and product risks.

4.4.1 Business risk

Business risk almost always entail financial risk or costs. One of those risks is not selling products this can be caused by incorrect market research and a lack of needed or want for the product. Due to the lean nature of the business a lack of sales does not result in a build-up of stock but reduces income. Another potential problem is IP (Intellectual Property) implication which could consist of copyright or pattern infringements by competitors, the cost comes in enforcing the IP. The business brand is trademarked and partially copyrighted with the product covered by design and manufacturing patterns, which is expanded on in the product risk (4.4.2).

The business relies on the use of equipment, which if it breaks prohibit manufacture of products and prevents the completion of sales. To plan for this the SLS 3D printer is purchased new with 5 years warranty as well as a yearly service plan that includes software updates, calibration and annual maintenance.

4.4.2 Product Risk

The product is essentially an extremely important piece of safety equipment but a part of a chain of safety devices used whilst skiing, which is used all the time and needs to be durable as well as effective. Failure of the product would cause implications that are potentially fatal in the worst case or on a basic level deeming the product unusable. If the product is not durable enough, strong enough, stiff enough, or even to stiff it would mean re-calling products, which is both costly and bad for the brand image.

4.4.2.1 FMEA

To evaluate the potential risks with this product a FMEA (Failure Mode Effect Analysis) was carried out to look at the effects and root causes of potential failure modes. The RPN (Risk Priority Number) is a kept below 200 out of 1000 which was important during the design. With a close watch on part orientation the product is largely reduced from failure.

Table 6 FMEA Ski Boot

Potential Failure Mode	Potential Effect(s) of Failure	sev	Potential Cause(s)/ Mechanism(s) of Failure	Occur	Current Process Controls	Detec	RPN
Lateral flection	Loss of power transfer	8	Beam thickness	4	Topology + FEA	4	128
Pivot failure	Loss in lateral and fore + aft stiffness	7	Pivot collapses	4	Part of service, use hard material	4	112
Fracture along the gain of the polymer	Cut foot	4	Orientation of part in printer	3	FEA analysis, ultra sound	8	96
	Loss of power transfer	8		3		8	192
	Broken foot or leg	10		3		8	240
honey comb structure crushed	lack of support under foot	9	Over sintering	4	Manufacture tolerance of laser + design in mind of	5	180
	Loss of power transfer	8		4		5	160
Weld line fault	Cut foot	4	Material not binding together due to under-sintering	2	Manufacture tolerance of laser	4	32
	Loss of power transfer	8		2		4	64
	Broken foot or leg	10		2		4	80
Base plate mounts fail	Boot does not engage binding	5	Incorrect mount manufacture	6	Manufacture tolerance	5	150
	Lost ski	8		4		5	160
	Broken foot or leg	10		4		5	200
Fastener failure	Unable to tighten	6	due to inaccuracies in print	3	Laser misalignment or over sintering	3	54

5 Financial information

5.1 Costs and pricing strategy

5.1.1 Product

Annual expenses of the business were laid out; payment calculated annually and then divided by the predicted amount of sale for each year laid out below (CR). The mortgage is £12,000 a year to pay off the £175,000 in 15 years plus fixed rate business interest. Most rates are variable in they have change with the number of products that are produced, an average has been considered for these financials.

Table 7 Annual Expenses

Annual Expenses (Costs)									
			Fixed / Variable	Payments	Payment / Year	Total Year	Cost / Boot in Year 1	Cost / Boot in Year 2	Cost / Boot in Year 3
Overheads	Rent/Mortgage	Office	F	£ 1,000.00	12	£ 12,000.00	£ 80.00	£ 40.00	£ 30.00
		Manufacturing / Workshop	F						
	Rates	Water	V	£ 350.00	1	£ 350.00	£ 2.33	£ 1.17	£ 0.88
		Electric	V	£ 700.00	1	£ 700.00	£ 4.67	£ 2.33	£ 1.75
		Gas	V	£ 600.00	1	£ 600.00	£ 4.00	£ 2.00	£ 1.50
		Business rates	F	£ 500.00	1	£ 500.00	£ 3.33	£ 1.67	£ 1.25
	Insurance	Buisness / liability	F	£ 600.00	1	£ 600.00	£ 4.00	£ 2.00	£ 1.50
		Service plan	F	£ 20.00	12	£ 240.00	£ 1.60	£ 0.80	£ 0.60
		Life	F	£ 5.00	12	£ 60.00	£ 0.40	£ 0.20	£ 0.15
	Telephone	Mobile	F	£ 18.00	12	£ 216.00	£ 1.44	£ 0.72	£ 0.54
Land line		F	£ 40.00	12	£ 480.00	£ 3.20	£ 1.60	£ 1.20	
Broadband		F							
Consumables	Workshop supplies	Sand paper	V	£ 200.00	1	£ 200.00	£ 1.33	£ 0.67	£ 0.50
	Office supplies	Paper	V	£ 300.00	1	£ 300.00	£ 2.00	£ 1.00	£ 0.75
Motor	Van	Tax	F	£ 120.00	1	£ 120.00	£ 0.80	£ 0.40	£ 0.30
		MOT	F	£ 45.00	1	£ 45.00	£ 0.30	£ 0.15	£ 0.11
		Service	V	£ 200.00	1	£ 200.00	£ 1.33	£ 0.67	£ 0.50
		Insurance	F	£ 1,000.00	1	£ 1,000.00	£ 6.67	£ 3.33	£ 2.50
		Fuel	V	£ 80.00	52	£ 4,160.00	£ 27.73	£ 13.87	£ 10.40
Wages	Consultants	Account	F	£ 300.00	1	£ 300.00	£ 2.00	£ 1.00	£ 0.75
		Marketing	F	£ 200.00	1	£ 200.00	£ 1.33	£ 0.67	£ 0.50
		3DSystems	F	£ 20.00	12	£ 240.00	£ 1.60	£ 0.80	£ 0.60
	Director	Engineer	F	£ 3,000.00	12	£ 36,000.00	£ 240.00	£ 120.00	£ 90.00
Marketing	Social Media	Instagram	F	Free	0	£ -	£ -	£ -	£ -
		Indeed	F	Free	0	£ -	£ -	£ -	£ -
		Twitter	F	Free	0	£ -	£ -	£ -	£ -
		Facebook	F	Free	0	£ -	£ -	£ -	£ -
		hootsuit	F	£ 25.00	12	£ 37.00	£ 0.25	£ 0.12	£ 0.09
	Email	Newsletter	F	Free	0	£ -	£ -	£ -	£ -
		Promotional Email	F	Free	0	£ -	£ -	£ -	£ -
	Web	Website	F	£ 10.00	12	£ 120.00	£ 0.80	£ 0.40	£ 0.30
		Website ads	F	£ 100.00	1	£ 100.00	£ 0.67	£ 0.33	£ 0.25
Total						£ 58,768.00	£ 391.79	£ 195.89	£ 146.92

The price of the product has been set at £1,000; which was chosen as price based on prices of competition price at around £700 - £800 with a premium paid for comfort, customable and performance. The cost of boot production was also taken into consideration, including business

Price of Boot							
Table 8 Price of Boots				Price	Cost / Boot in Year 1	Cost / Boot in Year 2	Cost / Boot in Year 3
Annual Expenses					£ 391.79	£ 195.89	£ 146.92
Materials	Raw	Plastic granuals (Kg)	250	£ 100.00	£ 100.00	£ 100.00	
	Components	Buckles x 4	£5	£ 20.00	£ 20.00	£ 20.00	
		Inners		£ 150.00	£ 150.00	£ 150.00	
		Soles		£ 50.00	£ 50.00	£ 50.00	
Sub total				£ 711.79	£ 515.89	£ 466.92	
Built in Profit Margin				£ 200.00	£ 200.00	£ 200.00	
Sub total				£ 911.79	£ 715.89	£ 666.92	
Logistics	Tax	20.0%		£ 182.36	£ 143.18	£ 133.38	
	Payment	2.5%		£ 27.35	£ 21.48	£ 20.01	
Total				£ 1,121.50	£ 880.55	£ 820.31	
Total yearly cost of manufacture				£168,224.64	£264,164.64	£328,124.64	

costs both fixed and variable. Including but not limited to materials, marketing, rates and wages.

My Wage is £36,000; which is £3,000 a month, £750 a week at £150 a day which is enough to live with a good quality of life and a good amount of disposable income with the scope to raise a family on.

5.1.2 Service

The service requires equipment such as scanners and measurement equipment, which is hired out to service providers, with a 10% commission on every boot sale and a 50% commission of all instore services. The hire fee of equipment is no profitable as it covers the payment of the equipment over 2 years when it then is 100% profit and benefit will be offered to service provides such as free training, discount and more.

5.2 Financial forecasts

The graph below shows the sales forecast for the first 3 years. Then knowing the predicted sales of the product allows the calculation of the total income (revenue) then by subtracting the total costs including costs of goods sold, operating costs and taxes which was calculated above (5.1.1) the net profit can be calculated as shown below. The first year a loss of over £18,000 is made.

Table 9 Financial Forecasts

No. of Sales	Months												Year			
Year	January	February	March	April	May	June	July	August	September	October	November	December	Total	Total Income	Total cost	Profit
1	25	20	15	15	0	0	0	5	10	15	20	25	150	£150,000.00	£168,224.64	£(18,224.64)
2	40	35	25	20	5	5	5	20	30	40	35	40	300	£300,000.00	£264,164.64	£ 35,835.36
3	50	50	35	30	20	10	15	25	35	40	40	50	400	£400,000.00	£328,124.64	£ 71,875.36

Breakeven analysis dictates that the sale of over 200 units it the breakeven point, based on the fixed costs divided by the difference between the sale price of a unit and the variable costs per unit.

5.3 Statement of financial position

The statement of financial position shows the assets and liabilities of Powder Hund. Including both current and uncurrent affairs.

Table 10 Statement of Financial Position

Current Assets				£	Current Liabilities		£
Boots Sold for	£1,000.00	150	£ 150,000.00		Cost of production		£ 168,224.64
Service			£ 12,500.00				
Built in boot Profit	per sale	£ 200.00	£ 30,000.00		Total		£ 168,224.64
End profit			£ (18,224.64)				
Total				£ 174,275.36			
Non Current Assets				£	Non Current Liabilities		
Property	Office		£ 175,000.00		Initail Expences		£ 345,000.00
	Workshop				Director Loans		£ 125,000.00
Machinary	SLS 3D Printer		£ 300,000.00				
	Tools		£ 40,000.00		Total		£ 470,000.00
Total				£ 515,000.00			

5.4 Set up and operational cost

The initial set-up costs are high due to expensive equipment, particular the SLS 3D printer from 3DSystems which is £300,000. The machinery is fundamental to the production and manufacture of the product. The post and pre-processing machinery and equipment is also expensive at over £40,000.

Payback period was calculated using total profit which is the sum of revenue-based profit and the profit built into the product cost.

Table 11 Initial Expenses

Initail Expense				
			Cost	
Machinary	3D printer	ProX SLS 6100	£300,000.00	
	Post Processing	Coloring	£ 15,000.00	
		Sanding	£ 5,000.00	
		Scanners	£ 10,000.00	
Equipment	Pre Processing	Measurement kit	£ 5,000.00	
	Hand Tools	Genral	£ 500.00	
	Power Tools	Handheld	£ 1,000.00	
		Workshop	£ 2,000.00	
Workshop	Setup	Bench	£ 600.00	
		Tooling	£ 1,000.00	
		Power	£ 200.00	
		Lighting	£ 300.00	
		Air Line	£ 400.00	
		CCTV	£ 600.00	
Service	POS	iZettle	£ 356.00	
Total			£341,956.00	

((Total income - Total cost) + (built in profit x forecast sales))

Table 12 Payback Period

Payback Period	Profit £	Payback required £
Initial Outlay	(300,000)	(300,000)
1	12,000	(298,000)
2	95,000	(203,000)
3	152,000	(51,000)
4	152,000	101,000

$51,000 / (152,000 / 12 \text{ months}) = 4 \text{ Months}$

Total payback period is 3 Years 4 Months

£275,000 of funds have been raised; £125,000 of personal investment, £125,000 for 10% of the business between 2 private investors and £50,000 in a business bank loan. £75,000 is left to be raised possible through crowd funding, further investment (for 6% of the business to drop once investment has been returned) or additional loans. The payment of these loans and investment will be paid based on the payback period.

5.5 Legal implications

Powder Hund will be a registered limited company and will be VAT registered. The reason behind the VAT registration is Powder Hind intends to exceed the annual turnover threshold of £85,000. Also, the initial purchases that the company will undertake will be increase with VAT and if the company is registered on the annual accounting scheme, the VAT paid on purchases will be reimbursed. The company will be registered as a limited company to protect myself and my assets, whilst also allowing investors to come on board.

Employment law is not an issue currently as I am the only employee, but in the future employees will be looked after appropriately.

Health and safety laws applies more for staff and employees, but it's also required but insurances as a measure to reduce risks.

6 Conclusions

In conclusion the report looks at the company Powder Hund and its set up and viability as a successful business. It looks at the production plan as well as the financials, including forecasts, pricing, positioning and profit and losses. A strategy of the business operations and logistics laid-out as well as a marketing strategy. Risks of the product and business are investigated and analysed. Management of the company is set out including staffing structure. This all gives an in-depth detailed view into the business and its plans both operational and financial.

7 References

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8 Appendices

8.1 CV

Joshua Grant Brimecombe

Extreme Sports Engineer

10 Willow Ridge, Turners Hill, Crawley, RH10 4PN

Tel: 07513 466559, Email: 1701440@student.uwtsd.ac.uk

Personal Statement

I am a hardworking and energetic individual who enjoys working with others as part of a team. I am currently studying a bachelor's degree in Extreme Sports Engineering within University of Wales Trinity St. David in Swansea. I am practically minded and have a hands-on approach, if I am shown how to do something, I am confident to reproduce it. These qualities that I possess, are the reasons why I chose to further my studies in engineering. My passion for Skiing and other extreme sports, lead me to my degree. I would like to pursue a career in the Extreme Sports industry in Research and Development, Design Engineering or the Manufacture of equipment and would appreciate the chance to learn and work with the best.

Education

2017 – Present

BEng Extreme Sports Engineering, University of Wales Trinity Saint David, Swansea

First Year Modules (Level 4) 2017 - 2018

- Engineering Science 1 (20 credits)
- Engineering Science 2 (20 credits)
- Mathematics (20 credits)
- Engineering Design (20 credits)
- Materials and Manufacturing Technology (20 credits)
- Engineering Application (20 credits)

Second Year Modules (Level 5) 2018 - 2019

- CAE and Stress Analysis (20 credits)
- Dynamics (10 credits)
- Manufacturing Design and Technology (20 credits)
- Management innovation and Sustainability (20 credits)
- Thermofluid Mechanics (10 credits)
- Group Project (20 credits)
- Extreme Sports Engineering (20 credits)

Third Year Modules (Level 6) 2019 - 2020

- Major Project (40 credits)
- Advanced Stress Analysis and FEA (20 credits)
- Advanced Computational Methods (20 credits)
- Entrepreneurship (20 credits)
- Materials & Manufacturing for Niche Markets (20 credits)

2010- 2017

A-levels, Imberhorne Sixth Form

- BTEC subsidiary Applied Science
- Resistant Materials A-level
- Physical Education A-level

GCSE, Imberhorne School (Secondary)

- 8 GCSE (A-C)
- A's in Resistant Materials and Physical Education
- B's in Science, Additional Science, Mathematics, ICT and English Media
- C's in English Language

Skills and Training

- Fluent on Microsoft Office and both Apple Macs and Microsoft Windows machines
- Proficient on Solid Works CAD and Motion Analysis
- Competent with NC programming and CNC Machining
- Intermediate understanding of MATLAB
- Conversant on and understanding of Computational Fluid Dynamics, Value Stream Mapping, Just-in-Time Manufacture, FMEA, QFD, CAE, FEA, Topology and Planning Process.
- Full British DVLA Driving License
- English Speaking
- DBS Basic Certificate
- Full Gatwick Airport (GAL) Security Pass and Airside Driving Pass
- Manual Handling and Dangerous Goods training at Gatwick Airport

Employment / Experience

Project Enduro (Swansea) June - September 2019
Ongoing since commence on 1st

Thales (Crawley) April 2019
One-week immersion into the engineering and manufacture of aviation, nautical and ground communications.

Swissport (Gatwick airport) June - August 2018 (Three months)
Ground Handling Agent – loading and unloading aircraft, manual handling, driving airside whilst towing up to 3 trailers.

Kiln Ceramics 2017 - 2018 Part-time Casual
Ceramic Tiling Labourer.

BA Kitchens (Central London) July - August 2017 Full-time (Two months)
Labourer – Carpentry, Electrics and Plaster work.

Brand Cycles (Felbridge) 2012 – 2016 Part-time (Four years)
Bicycle technician – building, servicing and maintenance.

Interests and Hobbies

Skiing (Alpine Downhill, Big Mountain and Free Style)
Motorcycle Trials (Surrey Schoolboys Trials Club)
Downhill Mountain Biking
Rugby (UWTSD/ East Grinstead Second's Team)
Snowboarding
Wake Boarding
Kite Surfing
Surfing
Scouting (6-18)
MSportEng Racing Team (UWTSD MSportEng)

References

Mr. Kelvin Lake (UWTSD), Senior Lecturer / Programme Director
Mr. Richard Morgan (UWTSD), Senior Lecturer / Programme Director
Nick Brand Owner and Manager at Brand Cycles



8.2 Market Research Survey

Survey responses

Total 125 responses

1. On average, how many days do you go skiing per season?

Number of days skied on average: 27

Total number of days skied on average by the responders: 3,375

2. What type of skiing do you take part in?

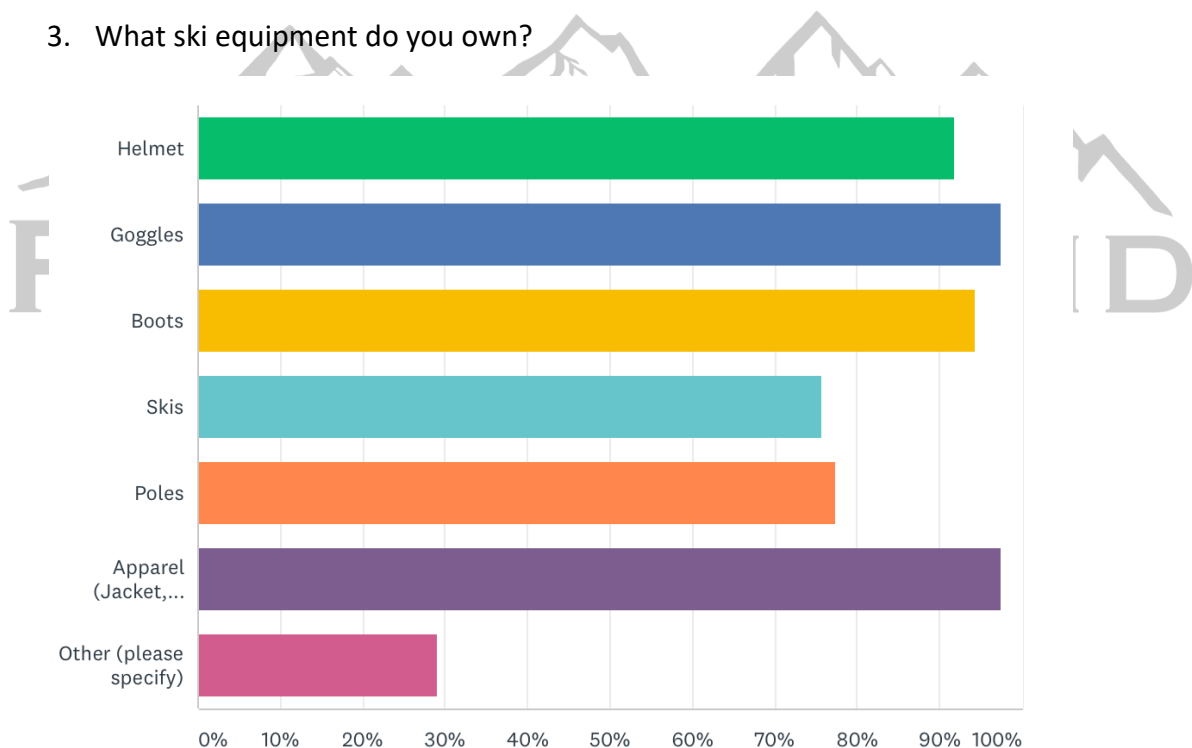
92% of responders ski on piste.

67% of those venture off the piste.

1 or 2 responses take part in racing DH, SG, GS and SL.

35% taking part in freestyle skiing including all mountain.

3. What ski equipment do you own?

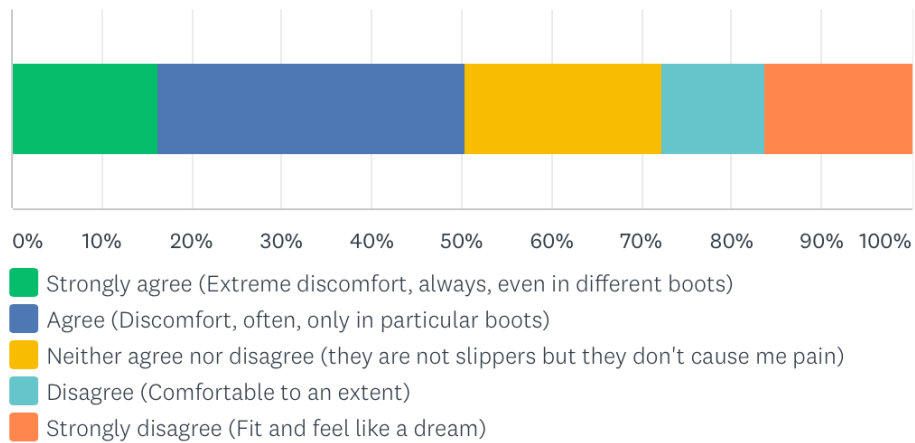


Observations: more people owned goggles and or boots than helmets!?!

65% of the responders owned their own skis.

29% of people selected other and added additional equipment they owned, these predominately included avalanche safety equipment. Which was not included in the survey list due to an oversight.

4. Have you ever had trouble with the fit or comfort of ski boots?



50% agree to some extent that Ski boots are uncomfortable.

17% strongly disagreed with additional 11% disagreeing so 28% find ski boots comfortable.

5. How many pairs of skis do you own?

Number of pairs = percentage (number of responses)

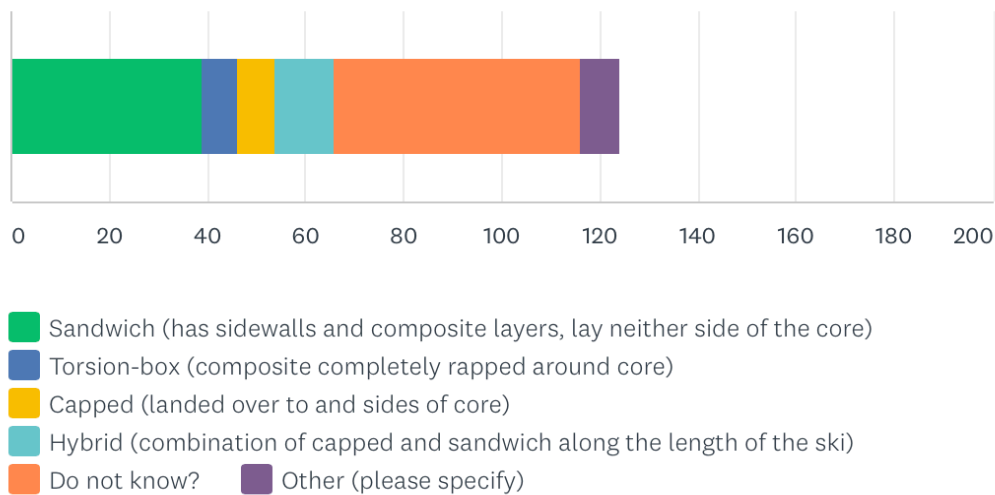
0 = 25% (31)	5 = 5% (6)
1 = 25% (31)	6 = 0.8% (1)
2 = 22.5% (28)	8 = 1.5% (2)
3 = 16% (20)	10 = 0.8% (1)
4 = 2.5% (3)	11 = 0.8% (1)

6. Make and model of your skis?

In order of brand popularity

Salomon	Fisher
Atomic	Nordica
Head	Faction
Rossignol	Dynastar
K2	Movement
Blizzard	
Volkl	
Scott	
Line	

7. What type of construction are your skis?



45% of responders did not know the construction of their ski.

60% of those who did know said that it was sandwich construction.

Torsion and capped getting 8 responses each and 12 for hybrids of the above.

8. What core material do your skis have?

60% of responders did not know what materials their ski was made up of.

40% of those who did know said that it contained wooden cores.

5% said their skis had honeycomb cores with air and foam cores only having 1 response each.

11% had Titanium and 7% other metals.

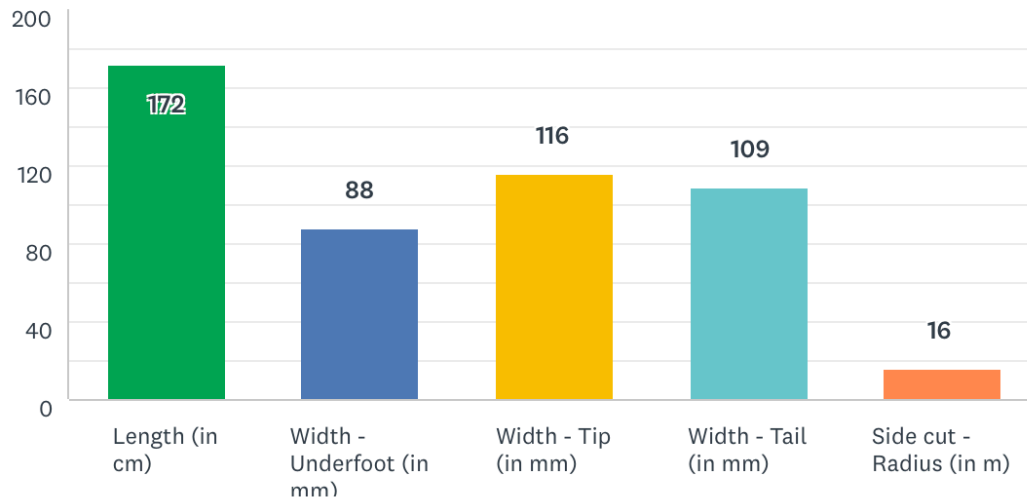
16% Carbon fibre

11% Fibreglass

2% (Kevlar) Aramid

9. Dimensions of your skis?

Averaged dimensions



10. What camber do your skis have?

43% of responses said that they had directional skis with a rocker up front and traditional camber under foot.

35% of responses were for twin tips with rockers front and back and traditional camber under foot.

No responses for reverse camber sides.

And the rest not knowing.

The survey got a great response and has aided my dissertation massively, so thank you for your participation. There are many conclusions that can be drawn from this data. In this case the data is being used to establish the materials and construction methods used and evaluate the big picture in terms of the market and industry.

8.3 Price List

8.3.1 Products

Hock ski boot Standard	£1,000
Inner Soles	Included
Heat Moulded Inner Soles	£25 + post fit
Heated Inner Soles	£100
Boots Liners Standard	Included
Heat Moulded Liners	£25 + post fit
Sidas PU Injected Liners	£200 / 275 (Comfort / Race) including post

8.3.1.1 Powder Hund Merchandise (All Branded)

All profits go to charity (Air Mountain Rescue + Snow Sport Disability UK)

Ski socks	£15
Goggle bag / cleaner	£10
Beanie	£20
Bobble Beanie	£25
Boot Bag	£30
T shirt	£30
Hoodie	£50
Softshell	£80

8.3.2 Services

Home pre-fit	Free	2 minutes
Home Scan + app hire	£50	10 minutes (app assess 24 hour)
Instore Pre-fit	£25	20 minutes
Instore Scan	£100	40 - 60 minutes
Instore Post-fit	£25	20 - 60 minutes

8.3.3 Packages

Head Moulded	£100
- (Instore Pre-fit, Instore Post-fit, Heat Moulded Inner Soles, Heat Moulded Liners, Powder Hund socks)	
Custom comfort 3D experience	£300
- (Instore Scan, Instore Post-fit, Heat Moulded Inner Soles, Sidas PU Injected Comfort Liners, Powder Hund socks or beanie)	
Full Custom 3D Race	£450
- (Instore Scan, Instore Post-fit, Heat Moulded Inner Soles, Sidas PU Injected Race Liners, Powder Hund socks and beanie)	
Cold package	£300
- (Instore Pre-fit, Instore Post-fit, Heated Inner Soles, Sidas PU Injected Comfort Liners, Powder Hund socks or beanie)	

8.4 Logo commissioning contract

Powder Hund TM

This document is a contract for the commissioning of a graphical design (logo) for the exclusive use of 'Powder Hund' and founder / director, and not to be used anywhere else without the permission from both. All rights to the design are of the purchasing party.

Payment for the commissioning of the design is to be paid in the full amount on receipt of the design. Full Amount £ 2-00

Artist

Print Name: Garrett Talbot

Sign: GTalbot. Date: 15/01/2020

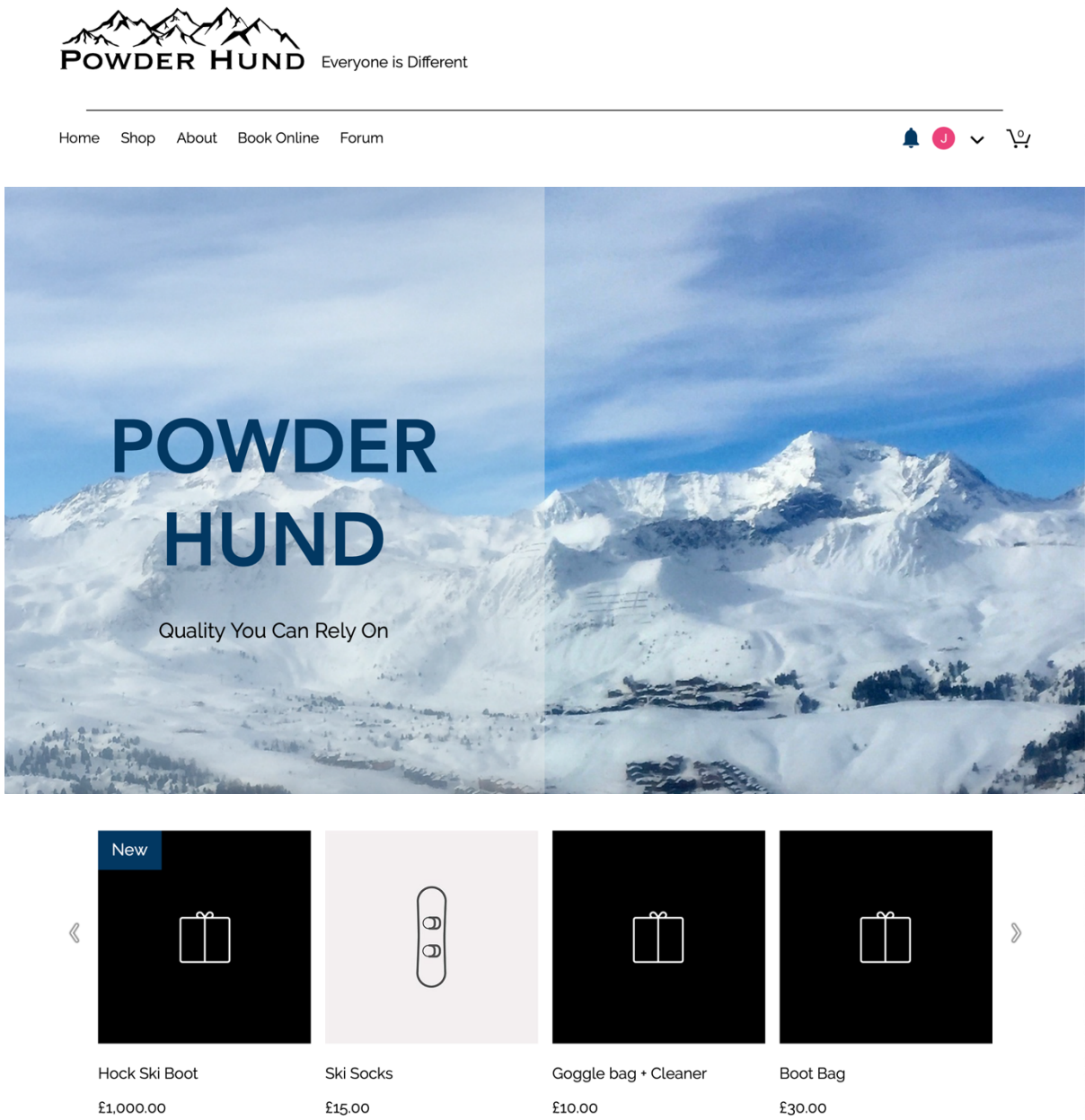
Powder Hund Director

Print Name: Joshua Grant Brimecombe

Sign: [Signature] Date: 15/01/2020

8.5 Web Site

8.5.1 Home Page



POWDER HUND FEATURES



COMFORT

Custom Fit



PERFORMANCE

Stiffness, responsiveness



WORLDWIDE SHIPPING

How We Operate



ECO-FRIENDLY

50% Recycled Raw
Material



SERVICE LIST

Custom fit services, making your boot fit like a glove.

FREE

Home Pre-fit

Take your own measurements in the comfort of your own home. Quick, easy and effortless. Six simple measurements and a few characteristics questions.

[Buy Now](#)

£50

Home Scan

Download the Powder Hund boot fit app. Sign in and scan the shape and size of your feet used to manufacture your boot with your phone. Along with many other features in the app.

[Buy Now](#)

£25

Instore Pre-fit

Visit one of our direct dealers, to receive a comprehensive 15 point fit. Where our qualified technicians will take your measurements and skiing profile.

[Buy Now](#)

£100

Instore Scan

Come instore to receive the same comprehensive 15 point fit from our qualified technicians, combined with a 3D scan and foot profile to complement your skiing profile.

[Buy Now](#)

CONTACT US

Unit M OYO, Arndale Road, Lineside Industrial Estate,
Littlehampton, West Sussex, BN17 7GA

info@powderhund.co.uk

07513 466559



Name

Email

Phone

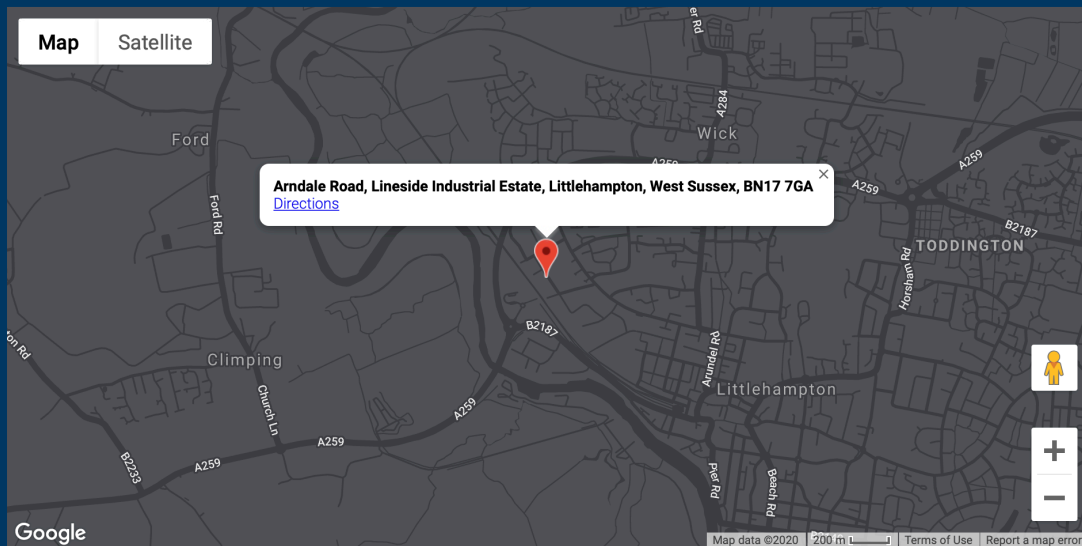
Address

Subject

Type your message here...

Submit

Thanks for submitting!



Subscribe Form

Email Address

Submit



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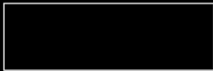
8.5.2 Product Page



HomeShopAboutBook OnlineForum



Hock Ski Boot





New





Quick View





Hock Ski Boot

£1,000.00

Ski Socks

£15.00

Goggle bag + Cleaner

£10.00

Boot Bag

£30.00









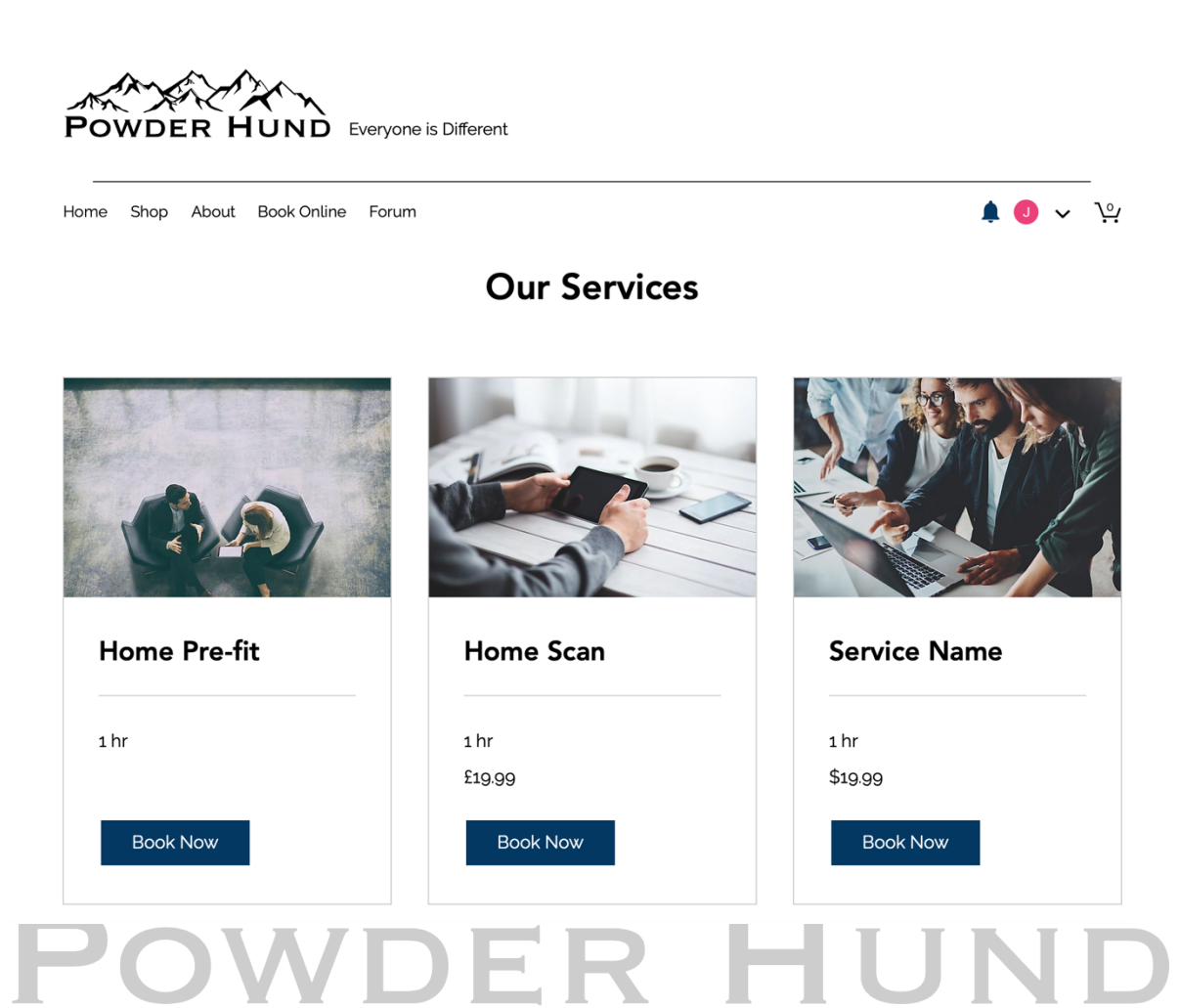
T-Shirt

Hoodie

Beanie

Bobble Beanie

8.5.3 Service (Book Online) Page



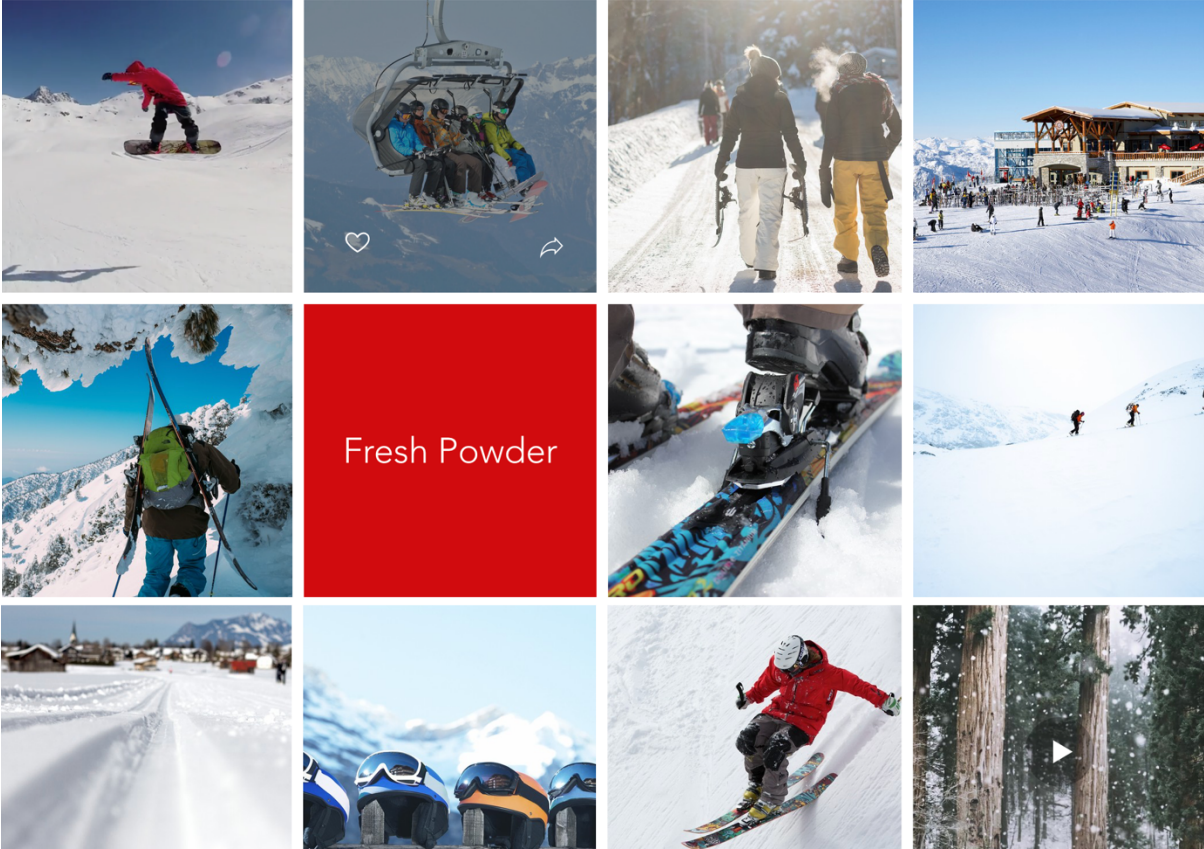
8.5.4 Forum Page



POWDER HUND Everyone is Different

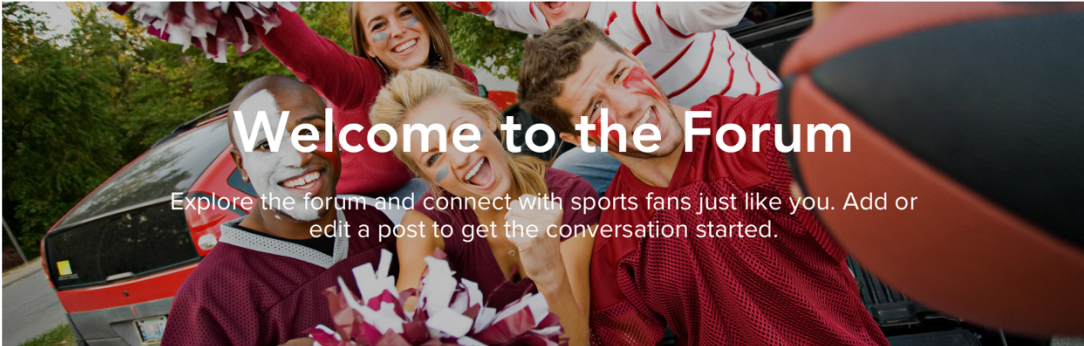
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Sports Forum

 Search  



Welcome to the Forum

Explore the forum and connect with sports fans just like you. Add or edit a post to get the conversation started.

Filter: All posts 

Sort by: Recent Activity 

Create New Post 

 Joshua Brimecombe 

⋮

⋮

Welcome to the Sports Forum

Discussion

This is your forum post. Forums are a great way to engage your audience in all types of discussions. Post relevant information to encourage enqagement and collaboration. With full freedom

 Joshua Brimecombe 

⋮

⋮

Biggest Quarterback Busts

Discussion

As the forum owner, you can assign new moderators from your live site. Having moderators is a great way to increase enqagement and grow your community. There are certain