

Entrepreneurship and Innovation Project (2023-2024)

INFR090532023-4SV1SEM2

April 1, 2024

Group 11 - Tesseract
Kyle Scorgie
Student No. 2143948

Key Assumptions

- Unit Costs: £50 - £70 range, expected to decrease over time due to economies of scale and manufacturing optimizations
- Pricing: Base Price of £120 - £140, with bulk discounts for educational/institutional customers
- Sales Mix: Year 1 focused on institutional sales, shifting towards consumer sales in later years
- Based in the UK, all figures in GBP

Projected Revenue Streams

Year 1

- Pilot Sales to Schools/Institutions: 50 units @ avg. £110 = £5,500
- Expect to convert 10 pilot schools/institutions from product demos & partnerships
- Discounted price of £110 for education/non-profit buyers
- Big Issue Invest Social Enterprise Grant: £20,000
- Total Revenue: £25,500

Year 2

- Institutional Sales: 2,000 units @ avg. £115 = £230,000
- Based on 20% conversion of warm leads from successful pilots
- Avg. price of £115 factors in larger volume discounts
- Consumer eCommerce: 300 units @ £130 = £39,000
- Estimating £20k from owned ecommerce and £19k from online marketplaces
- Total Revenue: £269,000

Year 3

- Institutional Sales: 4,000 units @ avg. £120 = £480,000
- Expecting 50% year-over-year growth fueled by brand awareness
- Consumer (Retail/Online): 800 units @ £135 = £108,000
- £60k from retailer partnerships, £48k from owned ecommerce channels
- Total Revenue: £588,000

Projected Costs & Expenses

Year 1

- R&D & Product Refinement: £115,000
 - Salaries for engineers (£80k) - Assumed 2 full-time engineers @ £40k each
 - Prototyping costs (£25k) - Based on costs for 3D printing, components for multiple prototype iterations
 - Testing & certifications (£10k) - Estimated costs for safety, EMC, and other required certifications
- Marketing & Promotion: £25,000
 - Video production (£8k) - Professional video shoot and editing for 2-3 marketing videos
 - Travel for demos (£7k) - Assumed 4-5 trips for product demos at schools/institutions
 - Website & digital ads (£10k) - Creating lead capture website, SEM/social ads
- Partnership Building: £18,000
 - Conference attendance (£8k) - Exhibiting at 2-3 major education/autism conferences
 - Lead generation services (£10k) - Subscription to relevant lead databases
- Initial Production: £8,250
 - Components & assembly (£2.75k) - Estimated £55 Bill-of-Materials for 50 units
 - Quality assurance (£5.5k) - QA testing at 20% of production costs
- General Operating Expenses: £12,440
 - Office rent & utilities (£12k) - Estimation for basic office/coworking space
 - Insurance & legal (£0.44k) - General liability, professional insurance, legal fees
- Total Costs: £178,690

Year 2

- Scaling Production & Logistics: £175,000
 - New equipment & tooling (£60k) - Investment in manufacturing equipment for higher volumes
 - Warehouse & distribution (£35k) - Leasing warehouse space, packaging, shipping costs
- Cost of Goods Sold: 2,000 units @ £40 (accounting for increased efficiency) = £80,000
- Marketing: £45,000
 - Content & email marketing (£20k) - Paid promotions, marketing automation tools

- Trade shows & events (£25k) - Larger exhibits, sponsorships at key industry events
- Product Refinement: £25,000
 - UX/usability testing (£10k) - Usability studies with target users
 - Firmware updates (£15k) - Developers for firmware enhancements based on feedback
- General Operating Expenses: £27,000
 - Office rent & utilities (£15k)
 - Insurance & legal (£12k)
- Total Costs: £271,000

Year 3

- Brand Marketing: £80,000
 - Influencer campaigns (£30k) - Partnering with popular influencers in autism/education space
 - Video ads & sponsorships (£50k) - Video advertising, sponsoring podcasts/content
- Scaling Production & Logistics: £287,000
 - Additional manufacturing capacity (£50k)
 - Warehouse & distribution (£45k)
- Cost of Goods Sold: 4,800 units @ £40 = £192,000
- Product Updates & New Line: £35,000
 - New accessory development (£25k) - Designing, prototyping complementary accessories
 - Continuous improvement (£10k) - Allocated budget for consistent product upgrades
- Retail Partnerships: £25,000
 - Channel marketing funds (£15k) - Co-op marketing dollars for retail partners
 - Merchandising & promotions (£10k) - In-store displays, promotions, training
- General Operating Expenses: £34,000
 - Office rent & utilities (£20k)
 - Insurance & legal (£14k)
- Total Costs: £461,000

Projected Net Income

- Year 1: -£153,190
Initial investment year to establish market presence
- Year 2: -£2,000
Approaching profitability due to increased institutional sales
- Year 3: £127,000
Secured profitability from institutional and growing consumer sales

Year 1 Broken Down Month-by-Month

Costs

Months 1-6

Month	1	2	3	4	5	6
Engineer Salaries	6,667	6,667	6,667	6,667	6,667	6,667
Prototyping Costs	5,000	0	5,000	0	5,000	0
Testing and certification	0	0	0	0	0	0
Video production	0	0	0	4,000	2,000	2,000
Travel for demos	0	0	0	0	3,000	2,000
Website and digital ads	2,000	2,000	500	500	500	500
Conference Attendance	0	0	0	0	0	4,000
Lead generation services	0	0	1,000	1,000	1,000	1,000
Components and Assembly	0	0	0	0	0	0
Quality assurance	0	0	0	0	0	0
Office rent and utilities	1,000	1,000	1,000	1,000	1,000	1,000
Insurance and Legal	0	0	0	0	0	0
Total	14,667	9,667	14,167	13,167	19,167	17,167

Months 7-12

Month	7	8	9	10	11	12
Engineer Salaries	6,667	6,667	6,667	6,667	6,667	6,667
Prototyping Costs	5,000	0	5,000	0	0	0
Testing and certification	0	5,000	5,000	0	0	0
Video production	0	0	0	0	0	0
Travel for demos	2,000	0	0	0	0	0
Website and digital ads	500	500	500	500	1,000	1,000
Conference Attendance	0	0	4,000	0	0	0
Lead generation services	1,000	1,000	1,000	1,000	1,000	1,000
Components and Assembly	0	0	2,200	0	0	0
Quality assurance	0	0	0	5,500	0	0
Office rent and utilities	1,000	1,000	1,000	1,000	1,000	1,000
Insurance and Legal	0	0	0	0	440	0
Total	16,167	9,167	20,367	14,667	9,607	9,167

Revenue

Month	1	2	3	4	5	6	7	8	9	10	11	12
Pilot Sales	0	0	0	0	0	0	0	0	0	0	5,500	0
Grants and Government Initiatives	0	0	0	0	0	20,000	0	0	0	0	0	0
Total	0	0	0	0	0	20,000	0	0	0	0	5,500	0

Key Financial Metrics

Year	1	2	3
Revenue	25,500	269,000	588,000
Costs	178,690	271,000	461,000
Net Income	-153,190	-2,000	127,000

Use of Funds

- 45% Product Development
- 30% Sales & Marketing
- 15% General Operating Expenses
- 10% Working Capital & Inventory

Exit Strategy

Potential acquisition by a larger education technology company in 4-6 years.