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BUILDIT 3D PRINTING SERVICE BUSINESS PLAN



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EXECUTIVE SUMMARY

This business plan presents a proposed venture known as **BuildIt 3D Printing Services**, a service-based enterprise that provides customised three-dimensional (3D) printing solutions for hobbyists, students, and small businesses. The company will operate in Selangor, Malaysia, and focuses on delivering affordable, high-quality, and reliable 3D printing services using additive manufacturing technology.

BuildIt 3D Printing Services aims to address the growing demand for rapid prototyping, custom-made products, and small-scale production. With the increasing use of digital design tools in education, engineering, creative industries, and entrepreneurship, there is a strong market opportunity for a localised 3D printing service that offers convenience, speed, and flexibility. Customers will be able to submit digital designs and receive printed products within a short turnaround time.

The services provided include 3D printing for academic projects, product prototypes, custom accessories, replacement parts, miniatures, and design mock-ups. The business primarily utilises filament-based 3D printing materials such as Polylactic Acid (PLA), which is cost-effective, safe, and environmentally friendly. Through efficient operations and skilled handling of equipment, BuildIt 3D is able to maintain low operational costs while delivering consistent output quality.

BuildIt 3D Printing Services will operate using a service-oriented business model with a small but efficient management structure. Marketing efforts will focus on digital shopping platforms such as Shopee and Lazada as examples, whilst including social media like Instagram and have direct engagement with universities and small enterprises through word of mouth. Competitive pricing, fast turnaround time, and product customisation will serve as the main competitive advantages.

From a financial perspective, the business will be funded through owner equity and possible small-scale financing, with start-up capital allocated mainly toward equipment, materials, and initial operational expenses. The management anticipates gradual growth within

the first three years of operation as awareness of 3D printing applications continues to expand in Malaysia.

In conclusion, BuildIt 3D Printing Services represents a viable and innovative business opportunity that aligns with current technological trends and market needs. With proper planning and effective execution, the business is expected to achieve sustainability and long-term growth.

1.0 COMPANY PROFILE

1.1 Company Background

BuildIt 3D Printing Services is a proposed service-based enterprise specialising in additive manufacturing through 3D printing technology. The business is planned to be established in 2026 and will operate in Selangor, Malaysia. The company may be registered as a sole proprietorship or partnership, depending on future operational and financial considerations.

The idea for BuildIt 3D Printing Services originally emerged from an engineering student request to print out their prototype part for their project. That situation sparks an idea where there is a potential market for students who do precise prototypes or hobbyists that want to have their 3d creation come to life. While many individuals possess digital design skills, they often lack access to 3D printing equipment due to high initial investment costs and technical barriers. BuildIt 3D aims to bridge this gap by offering reliable printing services at reasonable prices.

The company is committed to providing consistent print quality, timely delivery, and customer satisfaction. BuildIt 3D also seeks to support innovation and creativity by enabling customers to transform digital ideas into physical products.

In the long term, BuildIt 3D Printing Services aims to expand its capabilities by introducing additional printing machines, a wider range of materials, and value-added services such as basic design consultation and prototyping support.

1.2 Product and Service Description

BuildIt 3D Printing Services offers customized 3D printing solutions based on customer requirements. The core service involves converting digital 3D models into physical objects using filament-based 3D printers. Customers may submit ready-made designs or request assistance in preparing files suitable for printing.

The services offered include:

- 3D printing for academic and educational projects
- Rapid prototyping for product development
- Custom-made parts and accessories
- Miniatures, models, and display items
- Replacement components and small-batch production

The primary material used is Polylactic Acid (PLA) filament, which is biodegradable, affordable, and suitable for a wide range of applications. The printing process allows flexibility in terms of size, colour, and design, making each product customisable according to customer needs.

BuildIt 3D Printing Services differentiates itself from traditional manufacturing methods by offering low-volume production without the need for expensive moulds or tooling. This enables customers to reduce costs, test product ideas efficiently, and minimise production risks.

2.0 Environmental and Industry Analysis

2.1 Need in the Marketplace

The demand for 3D printing services in Malaysia has increased due to the growing adoption of digital design, engineering, and creative technologies. Students, entrepreneurs, and small businesses frequently require physical prototypes, customised parts, and small-batch products but lack access to 3D printing facilities.

BuildIt 3D Printing Services addresses this gap by providing affordable and accessible 3D printing solutions without requiring customers to invest in costly equipment. The service is particularly relevant to university students who require prototypes for academic projects, as well as small enterprises that need product samples or replacement components.

Additionally, the increasing emphasis on innovation, design thinking, and technology-based learning in educational institutions further supports the demand for 3D printing services.

2.2 Product Competitive Advantages

BuildIt 3D Printing Services offers several competitive advantages compared to traditional manufacturing and existing printing providers:

- Affordable pricing due to low operational and material costs
Customisation of products based on customer specifications
- Fast turnaround time for small-scale production
- No minimum order quantity requirement
- Direct communication with customers for design adjustments

These advantages allow BuildIt 3D to cater effectively to individuals and small organisations that require flexibility and efficiency.

2.3 Industry and Market Trends

The additive manufacturing industry continues to grow as technology becomes more affordable and accessible. In Malaysia, 3D printing is increasingly used in education, product design, engineering, healthcare, and creative industries.

Current trends indicate:

- Increased use of rapid prototyping in product development
- Growth of maker culture and DIY innovation
- Integration of 3D printing into academic curricula
- Demand for sustainable and cost-efficient production methods

BuildIt 3D Printing Services aligns with these trends by offering services that support innovation, experimentation, and small-scale manufacturing.

2.4 Industry Description

The 3D printing service industry in Malaysia can be categorised as a small-to-medium scale service sector with high growth potential. Entry barriers are relatively low compared to traditional manufacturing, making the industry suitable for new entrepreneurs.

The industry is influenced by technological advancements, customer awareness, pricing strategies, and service quality. As awareness of 3D printing applications increases, service providers that offer reliability, affordability, and customer support are expected to gain a competitive advantage.

BuildIt 3D Printing Services operates within this industry by focusing on service quality, accessibility, and customer-oriented solutions.

3.0 DESCRIPTION OF VENTURE

BuildIt 3D Printing Services is a service-based venture that focuses on providing on-demand, customised 3D printing solutions for individuals and small organisations. The business operates using a lean operational model, utilising a single high-performance desktop 3D printer to fulfil customer orders efficiently while maintaining consistent quality.

At the early stage of operation, BuildIt 3D Printing Services will rely on one **Bambu Lab A1** 3D printer, which is known for its speed, reliability, and precision. This allows the business to minimise start-up costs while still delivering professional-grade results. The venture prioritises quality control, print accuracy, and customer satisfaction over mass production.

The core objective of BuildIt 3D Printing Services is to support students, hobbyists, and small businesses by enabling them to transform digital designs into physical products without the need to purchase expensive equipment. The business model emphasises flexibility, low entry cost for customers, and fast turnaround time for small-scale jobs.

Although the business currently operates with a single printer, the venture is designed to be scalable. As demand increases, additional printers and materials may be introduced to expand capacity and service offerings.

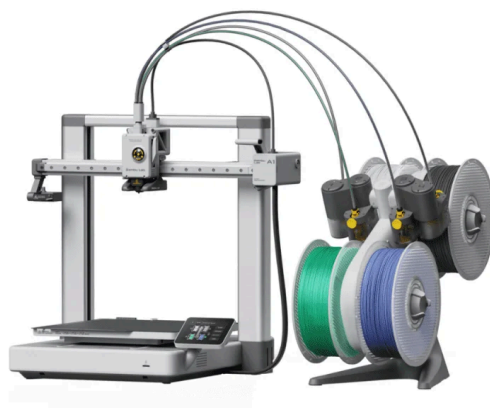


Image 3.0 - Bambu Lab A1 with AMS Lite Combo

4.0 MARKETING ANALYSIS AND COMPETITION

4.1 Target Customers

BuildIt 3D Printing Services targets customers who require small-scale, customised 3D printing services. The primary target markets include:

- University and college students requiring models and prototypes for academic projects
- Hobbyists and makers who need custom parts or miniatures
- Small businesses and startups requiring product prototypes
- Designers and content creators needing display models or mock-ups

These customer groups are chosen due to their frequent need for rapid prototyping and limited access to 3D printing equipment. The service is particularly suitable for customers who prioritise convenience and affordability over mass production.

4.2 Market Size and Trend

Selangor is one of the most populous and economically active states in Malaysia, with a large concentration of educational institutions, small businesses, and creative industries. A significant portion of this population consists of students and young professionals who are increasingly exposed to digital design and technology-based learning.

Assuming a conservative estimate where only a small percentage of students, hobbyists, and small businesses require 3D printing services, BuildIt 3D Printing Services is still able to secure a sustainable niche market. The increasing integration of 3D design tools such as CAD software into education and entrepreneurship further supports steady demand for 3D printing services.

Market trends indicate growing acceptance of additive manufacturing for prototyping, product testing, and customised items. This trend is expected to continue as technology becomes more affordable and accessible.

4.3 Estimated Market Share and Sales

As a new entrant with limited production capacity, BuildIt 3D Printing Services adopts a conservative sales projection. With one Bambu Lab A1 printer operating an average of 6 to 8 hours per day, the business can fulfil approximately 2 to 5 small-to-medium print jobs daily, depending on complexity and size.

Assuming an average service price of **RM30 per print job** and an average of **3 jobs per day**, estimated sales can be calculated as follows:

- Daily sales: $RM30 \times 3 \text{ jobs} = RM90$
- Monthly sales (26 working days): RM2,340
- Annual sales: RM28,080

As the business gains visibility and repeat customers, sales volume is expected to increase gradually within the first three years. Expansion through additional printers will further improve revenue capacity.

4.4 Competitors and Competitive Analysis

The main competitors of BuildIt 3D Printing Services include:

- Established 3D printing service providers with multiple machines
- Online 3D printing platforms with higher minimum order requirements
- Individual freelancers offering informal printing services

While larger service providers may offer higher production capacity, they often charge higher prices and require longer turnaround times. Online platforms may lack direct communication and customisation support.

BuildIt 3D Printing Services differentiates itself through:

- Competitive pricing suitable for students and small projects
- Faster turnaround time for low-volume orders
- Use of high-quality **Bambu brand PLA filament**, ensuring reliable and consistent prints
- Direct customer communication for design adjustments and file preparation

4.5 Marketing Strategy

A. Pricing Strategy

Pricing will be based on print size, material usage, and printing time. Entry-level pricing will be kept affordable to attract students and first-time users, while more complex jobs will be priced accordingly.

B. Promotion Strategy

Marketing efforts will focus on:

- Social media platforms such as Instagram and WhatsApp
- Word-of-mouth referrals among students and hobbyist communities
- Direct engagement with university students and small businesses

Promotional discounts may be offered during early operations to build customer awareness and trust.

C. Distribution Strategy

Services will operate on a made-to-order basis. Customers will submit designs digitally, and completed prints will be collected through self-pickup or delivered using local courier services.

5.0 OPERATION AND PRODUCTION PLAN

The operation and production plan outlines how BuildIt 3D Printing Services will carry out its daily activities efficiently while maintaining consistent quality. As a service-based venture, the business adopts a lean operational structure that focuses on controlled production, cost efficiency, and customer satisfaction.

5.1 Business Location

BuildIt 3D Printing Services will operate in Selangor, Malaysia. The business will initially function from a small home-based workspace, which is suitable for desktop 3D printing operations and does not require a large commercial premise.

Operating from a home-based location allows the business to minimise rental and utility costs during the early stage of operation. Customer interaction and order submission will primarily be conducted online, reducing the need for a physical storefront.

This operational setup is appropriate for a technology-driven service business and complies with the nature of customised, made-to-order production.

5.2 Production Process

The production workflow of BuildIt 3D Printing Services is designed to be simple, efficient, and quality-focused. The process consists of the following steps:

1. Customers submit 3D design files digitally via messaging or email
2. The design is reviewed to ensure printability and accuracy
3. Printing parameters such as material, size, and print time are determined
4. The object is printed using a **Bambu Lab A1** 3D printer
5. Basic post-processing such as support removal and surface inspection is performed
6. The finished product is prepared for customer collection or delivery

This streamlined workflow allows BuildIt 3D Printing Services to complete small to medium print jobs within a short turnaround time while maintaining consistent output quality.

5.3 Equipment and Machinery

At the initial stage of operation, BuildIt 3D Printing Services will utilise the following equipment:

Equipment	Quantity	Estimated Cost (RM)
Bambu Lab A1 3D Printer + AMS Lite	1	2,349.00
Desktop Computer (Currently owned)	1	0
Work Table	1	299
Basic Hand Tools (scrapers, cutters)	Set	200
Power Extension & Safety Equipment	Set	100
Total Estimated Equipment Cost		2,948.00

The **Bambu Lab A1** printer is selected due to its reliability, high print speed, and consistent performance, making it suitable for a startup-scale 3D printing service.

5.4 Materials and Supplies

The primary printing material used by BuildIt 3D Printing Services is **Bambu brand PLA filament**, which is chosen for its quality consistency, ease of use, and suitability for a wide range of applications.

Material	Estimated Monthly Usage	Estimated Cost (RM)
Bambu Lab PLA Basic 1.75mm 1kg	3–4 rolls	396
Packaging Materials	As needed	100
Total Estimated Monthly Material Cost		496

PLA filament is environmentally friendly, affordable, and safe for indoor operation, making it ideal for a home-based 3D printing service.

5.5 Capacity and Production Planning

With one Bambu Lab A1 printer operating approximately 6 to 8 hours per day, BuildIt 3D Printing Services is capable of producing an estimated **2 to 5 print jobs per day**, depending on design complexity and size.

Production capacity will be managed through:

- Scheduled printing queues
- Prioritisation of urgent jobs
- Limiting print acceptance based on machine availability

As customer demand increases, production capacity can be expanded by extending operating hours or acquiring additional printers in future phases.

5.6 Staffing Plan

At the early stage, BuildIt 3D Printing Services will be operated by the owner. The owner will be responsible for:

- Managing customer orders and communication
- Operating and maintaining the 3D printer
- Preparing digital files for printing
- Conducting quality checks and basic post-processing
- Managing deliveries and record keeping

This single-operator structure helps reduce labour costs while ensuring close control over production quality. Additional staff may be considered once business volume increases.

5.7 Quality Control and Safety

Quality control is an important aspect of BuildIt 3D Printing Services. Each printed item will undergo inspection to ensure dimensional accuracy, surface quality, and structural integrity before delivery.

Safety measures include:

- Proper ventilation in the printing area
- Safe handling of heated components
- Regular machine maintenance and calibration
- Use of appropriate tools during post-processing

These measures ensure consistent service quality and safe operation.

6.0 ORGANISATION PLAN

The organisation plan outlines the management structure, key responsibilities, and ownership of BuildIt 3D Printing Services. As a startup operating on a small scale, the business adopts a lean organisational structure to ensure efficiency, cost control, and direct supervision of operations.

6.1 Management Structure

BuildIt 3D Printing Services operates with a simple and centralised management structure. At the initial stage, the business is managed and operated by a single owner who is responsible for all strategic, operational, and administrative decisions.

This structure allows for:

- Faster decision-making
- Direct control over service quality
- Reduced operational and labour costs

As the business grows, additional roles may be introduced to support operations and customer management.

6.2 Key Management Personnel

The key management personnel of BuildIt 3D Printing Services is as follows:

Owner / General Manager

The owner serves as the General Manager and is responsible for overseeing all aspects of the business. The main duties include:

- Planning and managing daily business operations
- Handling customer enquiries and order confirmations
- Operating and maintaining the 3D printing equipment
- Ensuring quality control of printed products
- Managing finances, records, and basic accounting
- Developing marketing strategies and business growth plans

The owner possesses relevant technical knowledge in 3D printing and digital design, enabling efficient management of production and customer requirements.

6.3 Roles and Responsibilities

Due to the small scale of operations, the owner performs multiple roles within the business. These roles include:

Role	Responsibilities
General Manager	Overall planning, decision-making, and business strategy
Operations Manager	Printer operation, scheduling, and quality control
Marketing Executive	Promotion through social media and customer engagement
Administrative Officer	Record keeping, order tracking, and financial documentation

This multi-role approach allows BuildIt 3D Printing Services to operate efficiently with minimal manpower during the startup phase.

6.4 Ownership Structure

BuildIt 3D Printing Services is wholly owned by the founder. The business will be registered as a sole proprietorship under the Companies Commission of Malaysia (SSM).

The owner provides the initial capital investment and holds 100% ownership of the business. This ownership structure allows full control over business decisions and profit distribution.

6.5 Supporting Professional Advisors and Services

BuildIt 3D Printing Services will engage basic professional services to ensure compliance with legal and operational requirements. These include:

Professional Advisor / Service	Function
Companies Commission of Malaysia (SSM)	Business registration
Inland Revenue Board of Malaysia (LHDN)	Tax compliance
Employees Provident Fund (EPF)	Future employee contributions (if applicable)
Social Security Organisation (SOCSO)	Employee social protection (if applicable)

These services ensure that the business operates in accordance with Malaysian regulations.

7.0 FINANCIAL PLAN

The financial plan outlines the estimated start-up costs, working capital requirements, projected income, and cash flow for BuildIt 3D Printing Services. The financial estimates are prepared conservatively to reflect the small-scale nature of the business during its initial stage of operation.

7.1 Start-Up Cost

The start-up cost consists of one-time expenses required to begin operations.

Item	Estimated Cost (RM)
Bambu Lab A1 3D Printer	2,200
Desktop / Laptop	2,000
Work Table & Setup	300
Basic Hand Tools & Safety Equipment	300
Initial PLA Filament Stock (4 rolls)	400
Packaging Materials	200
Business Registration (SSM)	100
Miscellaneous & Contingency	500
Total Start-Up Cost	6,000

This low start-up cost reflects the home-based and service-oriented nature of the business.

7.2 Working Capital

Working capital represents the monthly operational expenses required to sustain the business.

Monthly Working Capital

Expense Category	Estimated Cost (RM)
PLA Filament Refill	400
Packaging Materials	100
Utilities (Electricity & Internet)	150
Marketing & Promotion	100
Delivery & Logistics	100
Maintenance & Miscellaneous	150
Total Monthly Working Capital	1,000

The business maintains low operating expenses by utilising existing workspace and minimal manpower.

7.3 Start-Up Capital and Financing

BuildIt 3D Printing Services will be financed through owner equity.

Source of Capital	Amount (RM)
Owner's Capital	6,000
Loan	0
Total Capital	6,000

The absence of loans reduces financial risk and monthly repayment obligations during the early stage of operation.

7.4 Cash Flow Statement (Pro-Forma)

Projected Cash Flow (Year 1)

Description	Monthly (RM)	Annual (RM)
Cash Inflow		
Sales Revenue	2,340	28,080
Total Cash Inflow	2,340	28,080
Cash Outflow		
Working Capital Expenses	1,000	12,000
Total Cash Outflow	1,000	12,000
Net Cash Flow	1,340	16,080

This projection shows a positive cash flow, indicating that the business is able to cover operational expenses and generate surplus cash.

7.5 Income Statement (Pro-Forma)

Projected Income Statement (Year 1)

Description	Amount (RM)
Sales Revenue	28,080
Less: Operating Expenses	(12,000)
Net Profit Before Tax	16,080
Estimated Tax (10%)	(1,608)
Net Profit After Tax	14,472

The income statement indicates that BuildIt 3D Printing Services is expected to be profitable within its first year of operation.

7.6 Break-Even Analysis

The break-even point indicates the minimum sales required to cover monthly operating costs.

- Monthly fixed expenses: RM1,000
- Average price per print job: RM30

Break-even volume:

$$\text{RM1,000} \div \text{RM30} \approx \mathbf{34 \text{ print jobs per month}}$$

This is achievable with an average of **2 print jobs per working day**, making the business financially sustainable.

8.0 PROJECT MILESTONES

The project milestones outline the key activities and timelines involved in establishing and operating BuildIt 3D Printing Services. These milestones ensure that the business is implemented in a structured and systematic manner.

Activity	Timeline
Business idea development and market research	Week 1
Business name confirmation and planning	Week 1
Business registration with SSM	Week 2
Purchase and setup of equipment	Week 2
Testing and calibration of 3D printer	Week 2
Initial marketing and promotion activities	Week 3
Start of business operations	Week 3
Evaluation of customer feedback and service improvement	Week 4

These milestones allow BuildIt 3D Printing Services to commence operations within a short timeframe while ensuring readiness and quality assurance.

9.0 CONCLUSION

In conclusion, **BuildIt 3D Printing Services** represents a viable and practical business venture that aligns with current technological trends and market demands. The business is designed to provide affordable, customised 3D printing solutions for students, hobbyists, and small businesses who require rapid prototyping and small-scale production.

By adopting a lean operational model and utilising reliable 3D printing technology, BuildIt 3D Printing Services is able to maintain low start-up and operating costs while delivering consistent service quality. The business focuses on customer satisfaction, flexibility, and efficiency, which serve as its main competitive advantages.

The financial projections indicate that the business is capable of achieving profitability within its first year of operation. With positive cash flow and manageable expenses, BuildIt 3D Printing Services demonstrates strong potential for sustainability and future growth.

Overall, this business plan provides a clear roadmap for establishing and operating BuildIt 3D Printing Services. With effective execution and continuous improvement, the business has the potential to expand its operations and contribute positively to the growing additive manufacturing industry in Malaysia.