International Journal of
Economics Development Research, Volume 5(6), 2024
pp. 4893-4906

Scaling Profitability: A Business Development Strategy for LCD Display Machines in the Air Compressor Industry

Ahmad Fadhillah[1], Yenny Maya Dora[2]

Abstract:

Screw-type air compressors are essential in modern industries, supporting various manufacturing operations such as textile, automotive, energy, and healthcare. However, operational issues like overcooling and overheating frequently hinder efficiency due to inadequate user understanding and lack of after-sales support. This business plan aims to address these challenges by integrating innovative LCD displays for screw compressors, enhancing operational monitoring and maintenance scheduling. Utilizing a design thinking approach and Business Model Canvas framework, the study employs both qualitative and quantitative methods to analyze market needs and technological feasibility. Findings reveal that the integration of Planned and Unplanned Maintenance features into the LCD display significantly improves machine reliability and user accessibility. This innovation supports cost-efficient operations and provides competitive advantages for PT. Guna Mitra Sinergi. The implications underline the necessity for local suppliers to invest in advanced solutions to maintain market competitiveness and ensure sustainability.

Keywords: *LCD Display; Maintenance; Screw Compressor; Management; Entrepreneurship*

Sumbitted: 12 November 2024, Accepted: 12 December 2024, Published: 30 December 2024

1. Introduction

In recent years, the growth of the manufacturing sector in Indonesia has been one of the main drivers of economic development. Amid technological advancements and increasing demand for efficiency, PT. Guna Mitra Sinergi has emerged to address these challenges through innovations in managing air compressor machines, particularly in after-sales service and machine maintenance. Air compressors, which serve as a vital component in various industries, require reliable monitoring systems to enhance operational efficiency and minimize unplanned downtime. The reliance of industries on precise and durable technology drives the need for innovative and practical solutions to support the continuity of production processes.

In this context, the need for an LCD display that provides real-time critical information is highly relevant. Such an innovation not only addresses technical challenges but also improves the user experience in operating air compressors. With theoretical foundations such as the user-centered design thinking approach (Kelley and Brown, 2019), this business plan aims to create an innovative solution tailored to

[1,2] *Universitas Widyatama, Fadhillah.ahmad@widyatama.ac.id*

customer needs. The development of this LCD display is expected to enhance operational efficiency and provide significant added value to the company's service offerings. Furthermore, utilizing the Business Model Canvas framework (Osterwalder, 2012), this strategy is designed to encompass all aspects of the business, from customer segmentation to key resources.

Tabel 1. Budget Expenditure Data of Manufacturing Companies in Java Island in 2020

No	Customers	Budget	Customer Location	Business
1.	PT. Royal Abadi Sejahtera	Rp 400.000.000	Bandung Barat	Foam & Mattresses
2.	PT. Sarana Panca Karya Nusa	Rp 56.000.000	Kabupaten Bandung	Printing
3.	PT. Metiska Farma	Rp 65.000.000	Jakarta	Pharmaceuticals
4.	PT. Trisula Textile Industry	Rp 250.000.000	Cimahi	Textile
5.	PT. Dahana (Persero)	Rp 1.500.000.000	Subang	Explosive Elements
6.	Politeknik Manufaktur Bandung	Rp 300.000.000	Bandung	Mould & Dies
7.	PT. Sinar Sari Sejati	Rp 200.000.000	Kabupaten Bandung	Textile
8.	PT. Indo Gilii Orzora	Rp 450.000.000	Cimahi	Textile
9.	PT. Berdikari Metal Engineering	Rp 350.000.000	Cimahi	Dies & Press Tools
10.	PT. Sinar Terang Logam Jaya	Rp 200.000.000	Cimahi	Dies & Press Tools
11.	PT. Lestari Mahaputra Buana	Rp 450.000.000	Bandung Barat	Wood Slats
12.	PT. Mitra Utama Sejati	Rp 500.000.000	Jakarta	Tools & Machines
13.	PT. Bestari Mulia	Rp 900.000.000	Surabaya	Foam & Mattresses
14.	PT. Pertamina EP (Persero)	Rp 1.800.000.000	Cirebon	Oil Mining
15.	Rumah Sakit Gigi dan Mulut Unjani	Rp 125.000.000	Cimahi	Dental Care
16.	PT. Hini Daiki Indonesia	Rp 1.000.000.000	Tasikmalaya	Garment
17.	PT. Taka Turbomachinery	Rp 900.000.000	Bandung	Turbine Service
18.	PT. Leading Garment Industry	Rp 300.000.000	Bandung	Garment
19.	PT. ING International	Rp 100.000.000	Kabupaten Bandung	Garment
20.	PT. Textile One Indonesia	Rp 800.000.000	Karawang	Textile
21.	PT. Yamatogomu Indonesia	Rp 350.000.000	Karawang	Rubber
22.	PT. Adetex	Rp 1.000.000.000	Kabupaten Bandung	Textile
23.	PT. Gradien Manufaktur Indonesia	Rp 100.000.000	Bandung	Mould & Dies
24.	PT. Dekatama Centra	Rp 200.000.000	Bandung	Garment
25.	PT. Dwidaya Intranusa	Rp 340.000.000	Kabupaten Bandung	Engineering
26.	PT. Harmony Tunas Prima	Rp 240.000.000	Bandung	Screen Printing for
27.	PT. Harum Sari Perkasa	Rp 1.000.000.000	Subang	Garment
28.	PT. Indo Bharat Rayon	Rp 850.000.000	Purwakarta	Rice Flour
29.	PT. Geomed Indonesia	Rp 800.000.000	Semarang	Cotton
30.	PT. Matahari Terbit	Rp 300.000.000	Kabupaten Bandung	Medical Equipment
31.	CV. RMT Manufacture	Rp 175.000.000	Bandung	Gold Producers
32.	PT. Mustika Fortuna	Rp 275.000.000	Bandung Barat	Engineering
33.	PT. Natatex Prima	Rp 125.000.000	Kabupaten Bandung	Gas Processing
34.	PT. Mentari Cahaya Utama	Rp 100.000.000	Bandung	Textile
35.	PT. Clama Indonesia	Rp 900.000.000	Purwakarta	Car Body Repair
36.	PT. Martha Indo Utama	Rp 187.000.000	Kabupaten Bandung	Textile
37.	PT. King Perkasa Mandiri	Rp 150.000.000	Tangerang	Textile
38.	PT. Sinergi Mediatek Informasi	Rp 112.000.000	Bandung	Plastic Packaging
39.	CV. Suho Garmindo (Rabbani)	Rp 145.000.000	Bandung	General Trading
40.	PT. Tjokro Nippon Indonesia	Rp 235.000.0000	Karawang	Textile Automotive Golf

Source: Observations from the Engineering and Procurement Department in 2020

Table 1. highlights the 2020 budget allocations of 40 manufacturing companies for new machinery purchases, such as production support tools, raw materials, general tools, measuring instruments, and machine maintenance. Budget distribution varied

among companies. For example, PT. Dahana (Persero), a state-owned enterprise, allocated 40% for machine spare parts maintenance, 35% for new machinery investments, 15% for general tools, and 10% for emergency funds. These figures were derived from qualitative assessments by the Utility Engineering department and verified by Procurement. This data reflects intense competition among suppliers to meet manufacturing industry needs and ensure production continuity. The spare parts and after-sales service sector faces both challenges and opportunities domestically and globally. Government policies, macroeconomic conditions, and industry initiatives for high-pressure air compressors will be key drivers of growth. With collaborative efforts from governments, businesses, and consumers, the sector is expected to overcome obstacles and unlock significant potential for sustainable growth in the competitive industrial market.

Despite extensive studies on competitive strategies (Porter, 1980) and product innovation (Bhattacharyya & Doloi, 2019), limited research exists on designing business models specifically tailored to the air compressor industry. Previous works have explored general market dynamics and technical advancements; however, they often fail to address how innovative products, such as LCD displays for air compressors, can be developed, distributed, and sustained in a niche market. Studies on customer satisfaction (Amin & Isa, 2008; Homburg et al., 2005) and consumer behavior (Rana & Paul, 2017) provide valuable insights into market preferences but lack application to the specific context of industrial equipment. Furthermore, while research on the role of promotion, price, and product innovation (Agus, 2013; Rajput et al., 2012) offers a foundation for understanding purchasing decisions, it does not integrate these factors into a comprehensive business model framework. Additionally, the importance of financial analysis (Kumar & Shah, 2004) and strategic planning (Zeithaml, 1988) for business sustainability is well established but remains underexplored in the air compressor industry. Addressing these gaps, this research aims to design and implement a business model that supports the development and distribution of LCD display products for air compressors, providing strategic guidance to ensure long-term business sustainability for PT. Guna Mitra Sinergi in Indonesia.

2. Theoretical Background

Marketing Strategies and Branding in the Technology Industry

Effective marketing strategies are essential for creating and maintaining a competitive edge in the market. Porter (1980) highlights the importance of competitive strategy in analyzing industries and competitors to formulate a strong market position. In this case, the marketing strategy for the LCD display machine should focus on product differentiation based on quality and reliability, setting it apart from competitors. Chen and Chang (2008) further suggest that strong brand development can influence purchase decisions, which is highly relevant in the context of the air compressor market.

Sustainable Business Models and Financial Sustainability

Financial sustainability and a sustainable business model are critical to ensuring the long-term success of a product or company. Kumar and Shah (2004) stress the importance of building profitable customer loyalty to support business continuity. Sweeney et al. (1999) add that customer perceptions of quality and perceived risk significantly affect the quality-value relationship, a key consideration in developing a successful business model in the high-tech industry. In this context, the LCD display machine for air compressors must be designed with considerations for competitive pricing, quality, and innovation to support financial success.

Financial Analysis and Investment Feasibility
Careful financial analysis is a vital part of successful business planning. In previous studies, Matzler et al. (2006) have shown that psychological factors such as extraversion and openness to experience influence brand preferences, which ultimately affect purchase decisions. In this case, accurate market and financial analysis will be essential in determining the investment needed for the production of the LCD display machine. Zeithaml (1988) emphasizes the importance of consumer perceptions of price, quality, and value, which will influence the financial feasibility and investment decisions in the business plan.

Impact of Business Environment on Company Performance
External factors such as the business environment also play a significant role in a company's performance. Wispandono (2010) highlights the influence of the business environment on the performance of craftsmen in the batik industry, noting that environmental factors can greatly impact business outcomes. Similarly, in the context of the air compressor industry, understanding the external business environment—such as regulations, technological advancements, and market trends—is crucial for the successful implementation of a business model for an LCD display machine. A comprehensive analysis of these external factors will help in adapting the business plan to real-world challenges and opportunities.

3. Methodology

In this study, a qualitative method is applied, emphasizing quality over quantity with data collected through direct observation, official documents, and secondary sources. This approach focuses on the processes rather than outcomes, as the relationships among observed components become clearer during the process. For the business planning context of PT. Guna Mitra Sinergi, the researcher utilizes secondary data, including data previously collected and published by other entities, which are valuable for analysis. The secondary data for this business plan includes industry reports and publications, official statistical data, internal company documentation, and online sources.

The research employs several proven analytical frameworks for business planning in the industrial equipment sector. The data analysis in this business plan integrates theories such as Design Thinking, Business Model Canvas, and the Entrepreneurial Process. This leads to the development of a comprehensive business plan for PT. Guna Mitra Sinergi, encompassing: Company Profile, Environmental Analysis, SWOT

Analysis, Business Strategy Formulation Analysis, Marketing Analysis, Operational Analysis, Human Resources Analysis, Financial Analysis, Risk Management Analysis, and Legal Analysis. This structured approach ensures that all critical aspects are addressed to support the company's strategic goals and sustainable growth.

4. Empirical Findings/Result

Design Thinking

The Design Thinking, as applied in this context, emphasizes a human-centered approach to innovation by focusing on understanding user needs, defining specific problems, ideating potential solutions, prototyping, and testing. The initial stage, Empathize, involves deep research to identify user challenges with air compressors, such as system usability, environmental factors, and maintenance requirements. Observations highlight key user needs, including intuitive interfaces and robust system security. The Define phase formulates clear objectives, such as providing concise machine indicators, enhancing operational safety, and incorporating essential functionalities like pressure and temperature monitoring. In the Ideate stage, creative brainstorming generates diverse design concepts, with input from users and industry experts to ensure technical feasibility. The Prototype stage involves creating interactive models of the LCD display to simulate user experiences and refine the design. Finally, the Test phase validates the prototype through user interaction, ensuring an optimal balance between usability, functionality, and cost-efficiency. This iterative approach aims to deliver innovative solutions tailored to industry-specific needs, enhancing operational efficiency and user satisfaction in air compressor systems.

Business Model Canvass

The Business Model Canvas (BMC) serves as a structured framework divided into nine key components essential for building a business strategy. These components encompass critical elements such as Customer Segments, focusing on target audiences like manufacturing industries, trading companies, and individual technicians; Value Proposition, emphasizing risk reduction, cost efficiency, and excellent service; and Channels, utilizing social media, e-commerce platforms, and direct networks to reach customers effectively. Customer Relationships are maintained through long-term contracts, performance reports, product warranties, and training programs. Revenue Streams include product sales, service contracts, spare parts, and equipment rentals. The framework also highlights Key Resources, such as skilled labor, well-equipped workshops, and responsive digital marketing, and Key Activities, which ensure efficient operations, standard compliance, and effective customer feedback handling. Collaboration is emphasized in Key Partnerships, with suppliers, technicians, and financial experts playing vital roles in supporting business operations and mitigating risks. Finally, the Cost Structure outlines the expenses for employee salaries, transportation, workshop investments, and operational supplies. The BMC enables businesses like PT. Guna Mitra Sinergi to develop structured and efficient business plans, streamlining the ideation and strategy process.

Entrepreuneurial Process

The entrepreneurial process comprises several key stages that guide the transformation of a business idea into a viable and scalable enterprise. The initial stage, Opportunity Identification, involves recognizing promising business opportunities through market observation, industry trend analysis, or creative ideation. This is followed by Opportunity Evaluation, which assesses the feasibility and potential of the identified opportunities through market analysis, risk assessment, and resource considerations. In the Concept Development stage, entrepreneurs refine their ideas into detailed business concepts, including business models, marketing strategies, and resource planning. This progresses to Business Planning, where a comprehensive business plan outlines strategies, financial projections, and operational plans, serving as a roadmap and a tool to attract investors or partners. Funding becomes crucial for implementing the business plan, sourced internally or externally through venture capital or loans. The Launch phase marks the official initiation of the business, involving product or service development, marketing implementation, and customer engagement. Finally, the Growth and Scalability stage focuses on expanding operations, developing new products, and increasing market share to fully realize the business's potential. This structured process ensures a systematic approach to entrepreneurship, fostering sustainable growth and success.

Market Research

Market research highlights significant growth in demand across the Asia-Pacific region from 2019, with projections indicating continued expansion through 2030. Economic and industrial growth in countries like Indonesia, China, Japan, Vietnam, and others drives increased demand for industrial equipment and services. In manufacturing, essential utilities such as electricity, water treatment, and compressed air play a critical role in sustaining production processes. Focusing on the compressed air sector, PT. Guna Mitra Sinergi specializes in selling spare parts and providing maintenance services for industrial air compressors, including screw compressors, air dryer compressors, and related components. Reliable compressor performance is vital for meeting operational efficiency, while maintenance management ensures uninterrupted production, aligning with Bhattacharrya and Doloi (2019) and Tampubolon (2014), who emphasize the importance of maintenance in maintaining equipment readiness and minimizing downtime. However, maintenance incurs costs, as highlighted by Mursyidi (2008), which must be optimized to achieve efficient production. PT. Guna Mitra Sinergi addresses these needs by providing high-quality spare parts and expert services, positioning itself as a key player in supporting industrial productivity through effective maintenance and repair solutions.

SWOT Analysis

Tabel 2. SWOT Analysis

Internal Factors (IFAS) / ***Eksternal Factors (EFAS)***	***Strenghts (S)***	***Weakness (W)***
Opportunities (O) • Industrial needs are increasing • Market opportunities for marketing products are wide open • Digital information technology support for marketing • Increased supply chain efficiency • • Competitors who are resellers of the products we offer	• Experience in engine repair maintenance technology • Increased customization and personalization • Competent experts and responsive service • Quality and material differentiation of spare parts • Availability of substitutes as alternatives • Variable number of suppliers	• Limited service times • Availability of non-consumable goods • Individual competitors who influence the price of the service • High operational costs • Large dependence on consumers
STRATEGI (SO – WO) ***STRATEGI (ST – WT)***	***Strategi SO*** • Wide open to developing market industrial segments • Leverage technology to address new technology needs • Use a competent sales team to capture opportunities in specific market segments	***Strategi WO*** • Expand market reach with new distribution partners • Increase the competency of the technical team so they can catch up with the latest technology • Brand Image evaluation and improvement of after-sales service
Treats (T) • Late payments due to decreased productivity • Changes in market demand • Individual competitor rivalry • Economic instability and recession • Changes in regulations and policies	***Strategi ST*** • Carry out a bookkeeping strategy for 60 days (2 months) where payment is made first so that you can process the purchase of goods/services. • Create spare parts stock cards and apply FIFO (First In First Out) • Digitalization of after-sales services to introduce new platforms	***Strategi WT*** • Business penetration into small and medium industries • Create a measurable guarantee system • Recruit professional workers by dividing business segments such as special food and beverage industrial areas

Source: PT. Guna Mitra Sinergi, 2020

The SWOT analysis of PT. Guna Mitra Sinergi highlights the company's strengths, weaknesses, opportunities, and threats within the air compressor maintenance and repair industry. The company’s strengths lie in its extensive experience, skilled workforce, responsive services, high-quality spare parts, diverse product portfolio, and efficient supply chain management. These strengths position PT. Guna Mitra Sinergi as a trusted partner in the market, capable of meeting diverse customer needs and providing cost-effective solutions. However, weaknesses include limited human resources, challenges in supplying non-consumable goods, high operational costs, and dependency on large clients, which can affect bargaining power and operational resilience. Addressing these weaknesses is crucial to ensuring sustained growth and

competitiveness. Opportunities for the company include growing industrial demand, expanding markets, leveraging digital technology, and optimizing supply chain efficiency to enhance customer service and reduce costs. The potential for long-term contracts and market expansion in industrial zones provides a strong foundation for future growth. The company faces significant threats, such as delayed payments due to post-pandemic economic challenges, fluctuating market demands, intense competition, economic uncertainty, and regulatory changes. These factors necessitate proactive strategies to mitigate risks and maintain profitability. Overall, the SWOT analysis underscores the importance of leveraging strengths and opportunities while addressing weaknesses and mitigating threats to achieve sustainable business growth.

Company Profile

Company Name	: PT. Guna Mitra Sinergi
Year Established	: 2020
Address	: Jl. Ibu Sangki Gg Umjani No. 36, West Java. PT. Guna Mitra Sinergi, Cibeber, South Cimahi, Cimahi City, West Java, Indonesia
Phone	: +62 812 2226 6325
Vision	: To become a leading company in Indonesia in the field of Screw Compressors and Heat Transfer Equipment, including sales, after-sales service (maintenance and repair), and industrial products. Committed to providing the best quality service while maintaining product excellence and professional, experienced experts to meet the demands of national and international industrial markets.
Mission	: Safety, Reliability, and Efficiency
Deed of Establishment	: No. 3025, March 20, 2020, Notary Tubagus Zakaria, SH, Sp1
Ministerial Approval	: AHU-0027469-AH.01.15, 2020
NIB	: No. 0220007441579

Taxpayer Identification Number (NPWP): No. 94.406.664.6-421.000
VAT Registration Confirmation (PKP): No. S-5182KT/WPJ.09/KP.0803/2020
Business License (SIUP) : No. 0220007441579
Company Domicile Certificate: No. 500/0002/Ekbang/2020

Founded in 2020, PT. Guna Mitra Sinergi specializes in maintenance and repair services for high-pressure air compressors. Located at Jl. Ibu Sangki Gg Umjani no. 36, Cimahi, West Java, the company was established to address gaps in after-sales service identified by its founder, a former After-Sales Service Engineer. Leveraging extensive industry experience, the company provides high-quality spare parts, repair services, and cooling system solutions tailored to industrial needs.

Marketing

The marketing strategy formulation for LCD air compressor display products involves several key stages to ensure effective market penetration and customer satisfaction. It

begins with Market Analysis, identifying primary targets such as manufacturing, automotive, and construction industries, while reviewing market needs, trends, and competitor dynamics. Clear and measurable Marketing Objectives are then established, guiding both short- and long-term efforts.Brand Development focuses on creating a cohesive and strong product identity, emphasizing reliability, quality, and innovation. Product Development ensures alignment with customer needs and explores unique features to differentiate from competitors. A competitive Pricing Strategy considers production costs, competitor pricing, and perceived customer value. Effective Distribution channels are identified, including direct online sales and partnerships with distributors, supported by Promotional Strategies leveraging digital platforms, exhibitions, and content marketing to enhance brand visibility. A robust Customer Service system addresses inquiries, complaints, and feedback, ensuring well-trained staff deliver excellent support. Finally, Monitoring and Evaluation employs performance metrics such as sales volume and customer satisfaction rates to assess marketing effectiveness and inform periodic adjustments. This comprehensive approach ensures sustained market relevance and customer engagement.

Operations

The operational activities at PT. Guna Mitra Sinergi are designed to ensure efficiency in the production, maintenance, and repair of LCD displays for air compressors. The process begins with market research and marketing, leveraging digital platforms and direct industry visits to gather customer requirements. Information collected is used for offer preparation, negotiations, purchase orders, and subsequent services or product deliveries. Key steps include verification, invoicing, and maintenance to ensure smooth production processes and equipment reliability, incorporating both preventive and corrective maintenance strategies.

Preventive maintenance focuses on periodic inspections, calibration, and servicing to avoid breakdowns, while corrective maintenance addresses unexpected failures, restoring equipment functionality. These strategies optimize production availability, minimize downtime, and enhance operational efficiency.

The workshop and warehouse layout emphasizes ergonomic design, utilizing the 5S methodology for organization and safety. Modern layouts improve workflow, accessibility, and reduce tool search times, ensuring seamless operations. The manufacturing process for LCD displays involves precise steps, including material selection, panel assembly, and performance testing. Each stage, from component alignment to backlight integration, ensures product quality. The integration of advanced testing and calibration techniques guarantees performance reliability and adherence to industry standards. Overall, PT. Guna Mitra Sinergi's operations combine strategic planning, advanced maintenance practices, and meticulous production techniques to deliver high-quality products and services efficiently.

Human Resources

The organizational planning at PT. Guna Mitra Sinergi emphasizes an organic structure to foster flexibility, adaptability, and collaboration. The structure ensures efficient workflows, clear roles, and responsibilities across key positions, including CEO, Account Manager, Technical Manager, Service Supervisor, Field Service Technician, Marketing Manager, Sales & Digital Marketing, and Warehouse &

Driver. Each role is strategically aligned to enhance operational and customer service efficiency. Effective team management is critical for producing high-quality LCD air compressor displays. This includes comprehensive training and development programs aimed at enhancing technical skills, leadership, communication, and problem-solving abilities. Training covers areas such as safety, diversity, technology, sales, and innovation, fostering employee growth and aligning with company goals. The company prioritizes motivating and rewarding employees, fostering teamwork, and maintaining open communication to ensure a positive work environment. Regular performance evaluations and tailored development plans further support employee engagement and productivity. To achieve organizational objectives, the company focuses on robust planning and monitoring systems, efficient resource management, and leadership skills development. By integrating these strategies, PT. Guna Mitra Sinergi ensures a highly skilled workforce capable of driving innovation and maintaining competitive market positioning.

Finance

The financial planning for PT. Guna Mitra Sinergi's LCD air compressor display project includes detailed projections of cash flow, income statements, balance sheets, and financial metrics such as Break-Even Point (BEP), Payback Period (PP), and Return on Investment (ROI).

- Cash Flow: The cash flow analysis from 2024 to 2029 highlights a positive trajectory, with operational cash flow increasing yearly due to steady revenue growth and controlled operational costs. The project shows strong liquidity and financial stability, supported by investment activities and funding from bank loans and shareholder equity.
- Income Statement: The projected income statement demonstrates consistent profitability, with net profits increasing annually. This reflects efficient cost management, growing sales, and sustainable operational strategies.
- Balance Sheet: The balance sheet shows a significant growth in total assets and a reduction in liabilities over the years. This indicates strong financial health, improved equity, and effective debt management, signifying a stable and expanding business operation.
- Break-Even Point (BEP): The analysis shows the company reaches its break-even point at 1,046 units or approximately IDR 1.83 billion in revenue, ensuring the business achieves operational stability early in its lifecycle.
- Payback Period (PP): With a payback period of 2.51 years, the initial investment of IDR 600 million is recovered efficiently, highlighting strong liquidity and investment attractiveness.
- Return on Investment (ROI): The project yields an ROI of 88.05%, demonstrating exceptional profitability and efficient capital utilization, making it a highly viable and lucrative investment.

5. Discussion

Tabel 3. Business Feasibility Analysis

VARIABLE	CRITERIA	INDICATOR		INFORMATION
		HIGH POTENTIAL	LOW POTENTIAL	
1. Market & Margin Related Issues	Consumer needs and wants	Identified	Not identified	
	Customer	Affordable and accept products/services	No / hard to reach	
	Payback Period	<1 year	>5 years	2 years 6 months
	Internal Rate of Return	IRR 40%	IRR <20%	33.93 %
	Market Growth Rate	20%	<20%	3.99%
	Gross Profit Rate	>40%	<20%	122.10%
2. Competitive Advantage	Fixed and Variable Costs	High	Low	
	Price and Cost Control Levels	High	Low	
	Network	Wide and Strong	Narrow	Social Media, Private and State-Owned Government
3. Value Creation & Realization Issues	Net Profit Margin	10-15% or more	<5%	30.74%
	Positive Cash Flow Time	< 2 years	> 3 years	2 Years 3 Months
	Return Of Investment	40-70% or more	< 20%	88.05%

Business Feasibility Analysis for LCD Compressor Display Project

The business feasibility analysis for the LCD compressor display highlights key aspects that support the viability and profitability of this project:

1. Market & Margin Related Issues:
   - Consumer Needs: Identified as clear and actionable, with demands for intuitive, user-friendly interfaces and secure, real-time data displays to enhance operational efficiency.
   - Customer Readiness: Target markets show a high acceptance rate, with significant purchasing power across diverse industries such as mining, pharmaceuticals, and manufacturing.
   - Payback Period: Achievable within 2 years and 6 months, indicating moderate liquidity.
   - Internal Rate of Return (IRR): Calculated at 33.93%, reflecting high profitability compared to a standard 10% discount rate.

- Market Growth: Moderate growth with a CAGR of 3.99% in the Asia-Pacific region, driven by industrialization and demand for energy-efficient compressors.
- Gross Profit Margin: Strong at 122.10%, indicating significant efficiency in covering variable production costs and achieving robust profitability.

2. Competitive Advantage:
   - Cost Structure: High fixed and variable costs; however, variable costs dominate, urging optimization to enhance margins.
   - Price and Cost Control: High flexibility in pricing due to limited competition in this niche market, providing leverage for strategic pricing and operational efficiency.
   - Network Strength: Wide distribution through online marketplaces, direct government and private sector relationships, and comprehensive product promotion.
3. Value Creation and Realization:
   - Net Profit Margin (NPM): A healthy margin of 30.74% demonstrates strong profitability and effective cost management.
   - Cash Flow Timeline: Positive cash flow achieved in 27 months, reflecting moderate financial resilience with potential for improvement.
   - Return on Investment (ROI): Achieving 88.05%, this project promises high returns, nearly doubling the initial investment, indicating its strong profitability and business potential.

Overall, the analysis confirms that the LCD compressor display project is a profitable and strategically sound investment. The combination of market readiness, efficient cost management, and high returns positions this venture as a viable business opportunity.

6. Conclusions

The feasibility analysis of the LCD compressor display business project confirms its viability and profitability, supported by clear market needs, competitive advantages, and strong financial outcomes. The study highlights the significant contribution to the practical field of industrial solutions by addressing gaps in user interface design, real-time data accessibility, and operational efficiency. The findings contribute to the development of a refined business strategy framework tailored to niche markets with limited competition, such as industrial air compressor displays.

This research proposes a theoretical advancement by emphasizing the integration of user-centric design and robust pricing strategies as critical factors in achieving market dominance in technology-driven sectors. The study also offers a foundation for future research on expanding the application of LCD displays in broader industrial contexts, such as energy efficiency and sustainable operations.

Theoretically, this study contributes to the understanding of cost control and strategic market positioning, offering insights into balancing high fixed and variable costs with strong gross profit margins. Practically, it serves as a guideline for business practitioners seeking to establish competitive advantages in emerging industrial

markets by leveraging innovative design, efficient operations, and strategic partnerships.

However, this research has limitations, including its focus on a single product category and geographical market, which may restrict the generalizability of the findings. Future research could explore the scalability of the business model in different industrial applications or global markets to validate and expand upon the results.

For practical application, businesses should consider optimizing production efficiency, renegotiating fixed cost components such as workshop rents, and enhancing customer engagement through improved support systems. Additionally, future studies could examine the potential of incorporating advanced technologies, such as IoT and AI, to further enhance product functionality and operational efficiency.

By addressing these areas, this study paves the way for innovative industrial solutions that align with evolving market demands and technological advancements, providing a robust foundation for both academic exploration and practical implementation.

References:

Amin, M., & Isa, Z. (2008). An examination of the relationship between service quality perception and customer satisfaction: A SEM approach towards Malaysian Islamic banking. *International Journal of Islamic and Middle Eastern Finance and Management, 1*(3), 191–209. https://doi.org/10.1108/17538390810901131

Bachtiar, A. (2022). Pengaruh promosi, harga, dan inovasi produk terhadap keputusan pembelian pada PT. Kedaung Medan Industrial Tanjung Morawa. *Jurnal Ilmu Ekonomi dan Bisnis, 8*(1), 12–25.

Bhattacharyya, B., & Doloi, B. (2019). Modern machining technology: Advanced, hybrid, micro machining and super finishing technology. Academic Press. https://doi.org/10.1016/C2017-0-03297-5

Chen, C.-F., & Chang, Y.-Y. (2008). Airline brand equity, brand preference, and purchase intentions—The moderating effects of switching costs. *Journal of Air Transport Management, 14*(1), 40–42. https://doi.org/10.1016/j.jairtraman.2007.11.003

Homburg, C., Koschate, N., & Hoyer, W. D. (2005). Do satisfied customers really pay more? A study of the relationship between customer satisfaction and willingness to pay. *Journal of Marketing, 69*(2), 84–96. https://doi.org/10.1509/jmkg.69.2.84.60760

Kumar, V., & Shah, D. (2004). Building and sustaining profitable customer loyalty for the 21st century. *Journal of Retailing, 80*(4), 317–330. https://doi.org/10.1016/j.jretai.2004.10.007

Liu, Y., & Shankar, V. (2015). The dynamic impact of product-harm crises on brand preference and advertising effectiveness: An empirical analysis of the automobile industry. *Management Science, 61*(10), 2514–2535. https://doi.org/10.1287/mnsc.2014.2085

Matzler, K., Krauter, S. G., & Bidmon, S. (2006). Individual determinants of brand affect: The role of the personality traits of extraversion and openness to experience. *Journal of Product & Brand Management, 15*(7), 427–434. https://doi.org/10.1108/10610420610712801

Rajput, N., Kesharwani, S., & Khanna, A. (2012). Dynamics of female buying behaviour: A study of branded apparels in India. *International Journal of Marketing Studies, 4*(4), 121–129. https://doi.org/10.5539/ijms.v4n4p121

Rana, J., & Paul, J. (2017). Consumer behavior and purchase intention for organic food: A review and research agenda. *Journal of Retailing and Consumer Services, 38*, 157–165. https://doi.org/10.1016/j.jretconser.2017.06.004

Rusdian, S., & Putri, A. O. (2020). The influence of corporate social responsibility on company image at CV. Kunik Garut Snacks. *Prismakom, 16*(1), 12–20.

Rusdian, S. (2021). The effect of product differentiation on purchasing decisions: Study at Roseberry Cake Shop Garut. *Journal of Economics and Business, 8*(1).

Sweeney, J. C., Soutar, G. N., & Johnson, L. W. (1999). The role of perceived risk in the quality-value relationship: A study in a retail environment. *Journal of Retailing, 75*(1), 77–105. https://doi.org/10.1016/S0022-4359(99)80005-0

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing, 52*(3), 2–22. https://doi.org/10.1177/002224298805200302